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# Amazon Elastic Compute Cloud

## API Reference

### API Version 2016-11-15



## Amazon Elastic Compute Cloud: API Reference

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# Welcome

This is the *Amazon EC2 API Reference*. It provides descriptions, syntax, and usage examples for each of the actions and data types for the following services:

- Amazon EC2
- Amazon EBS
- Amazon VPC
- AWS VPN
- AWS Wavelength

The documentation for each action shows the Query API request parameters and the XML response.

Alternatively, you can use one of the AWS SDKs to access an API that's tailored to the programming language or platform that you're using. For more information, see [AWS SDKs](#).

How Do I?	Relevant Documentation
Learn about using the Query API	<a href="#">Making requests to the Amazon EC2 API (p. 2217)</a>
Get the list of API actions by function	<a href="#">Actions by service (p. 3)</a>
Get the alphabetical list of API actions	<a href="#">Actions (p. 19)</a>
Get the alphabetical list of data types	<a href="#">Data Types (p. 1338)</a>
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Get a list of the supported resource-level permissions	<a href="#">Granting IAM users required permissions for Amazon EC2 resources (p. 2250)</a>

To learn more about Amazon EC2, Amazon EBS, Amazon VPC, and AWS VPN, see the following resources:

- Amazon EC2
  - [Product page](#)
  - [Documentation](#)
- Amazon EBS
  - [Product page](#)
  - [Documentation](#)
- Amazon VPC
  - [Product page](#)
  - [Documentation](#)
- AWS VPN
  - [Product page](#)
  - [Documentation](#)
- AWS Wavelength
  - [Product page](#)

- [Documentation](#)
- AWS command line tools
  - [AWS CLI Command Reference - Amazon EC2 commands](#)
  - [AWS Tools for PowerShell Cmdlet Reference - Amazon EC2 cmdlets](#)
  - (Deprecated) [Amazon EC2 Command Line Reference](#)

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## AWS Client VPN actions

The following API actions are available for AWS Client VPN:

### Authorization rules

- [AuthorizeClientVpnIngress \(p. 105\)](#)
- [RevokeClientVpnIngress \(p. 1273\)](#)
- [DescribeClientVpnAuthorizationRules \(p. 518\)](#)

### Certificate revocation lists

- [ImportClientVpnClientCertificateRevocationList \(p. 1039\)](#)

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### **Client connections**

- [DescribeClientVpnConnections \(p. 521\)](#)
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### **Client VPN endpoints**

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### **Configuration files**

- [ExportClientVpnClientConfiguration \(p. 966\)](#)

### **Routes**

- [CreateClientVpnRoute \(p. 168\)](#)
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### **Target networks**

- [ApplySecurityGroupsToClientVpnTargetNetwork \(p. 53\)](#)
- [AssociateClientVpnTargetNetwork \(p. 66\)](#)
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## AWS Site-to-Site VPN actions

The following API actions are available for AWS Site-to-Site VPN:

### **Customer gateways**

- [CreateCustomerGateway \(p. 171\)](#)
- [DeleteCustomerGateway \(p. 366\)](#)
- [DescribeCustomerGateways \(p. 537\)](#)

### **Virtual private gateways**

- [AttachVpnGateway \(p. 103\)](#)
- [CreateVpnGateway \(p. 357\)](#)
- [DeleteVpnGateway \(p. 473\)](#)
- [DescribeVpnGateways \(p. 893\)](#)
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## **Virtual private gateway routes**

- [DisableVgwRoutePropagation \(p. 917\)](#)
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- [CreateVpnConnection \(p. 351\)](#)
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- [DescribeVpnConnections \(p. 889\)](#)
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- [GetVpnConnectionDeviceTypes \(p. 1037\)](#)
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The following API actions are available for AWS Outposts:

## **Customer-owned IP addresses**

- [DescribeCoipPools \(p. 533\)](#)
- [GetCoipPoolUsage \(p. 980\)](#)

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- [CreateLocalGatewayRoute \(p. 217\)](#)
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# AWS Wavelength actions

The following API actions are available for AWS Wavelength:

### Carrier gateways

- [CreateCarrierGateway \(p. 161\)](#)
- [DeleteCarrierGateway \(p. 360\)](#)
- [DescribeCarrierGateways \(p. 513\)](#)

## VM Import/Export actions

The following API actions are available for VM Import/Export:

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- [CancelExportTask \(p. 129\)](#)
- [CreateInstanceExportTask \(p. 202\)](#)
- [DescribeExportImageTasks \(p. 550\)](#)
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- [CancelConversionTask \(p. 127\)](#)
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## AWS Nitro Enclaves

The following API actions are available for AWS Certificate Manager (ACM) for Nitro Enclaves.

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- [AcceptTransitGatewayMulticastDomainAssociations \(p. 32\)](#)
- [AcceptTransitGatewayPeeringAttachment \(p. 34\)](#)
- [AcceptTransitGatewayVpcAttachment \(p. 36\)](#)
- [AcceptVpcEndpointConnections \(p. 38\)](#)
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- [AdvertiseByoipCidr \(p. 42\)](#)
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- [ModifyIdFormat \(p. 1088\)](#)
- [ModifyImageAttribute \(p. 1090\)](#)
- [ModifyInstanceStateAttribute \(p. 1094\)](#)
- [ModifyInstanceStateCapacityReservationAttributes \(p. 1099\)](#)
- [ModifyInstanceStateCreditSpecification \(p. 1101\)](#)
- [ModifyInstanceStateStartTime \(p. 1103\)](#)
- [ModifyInstanceStateWindow \(p. 1105\)](#)
- [ModifyInstanceMetadataOptions \(p. 1107\)](#)
- [ModifyInstancePlacement \(p. 1111\)](#)
- [ModifyLaunchTemplate \(p. 1114\)](#)
- [ModifyManagedPrefixList \(p. 1117\)](#)
- [ModifyNetworkInterfaceAttribute \(p. 1120\)](#)
- [ModifyReservedInstances \(p. 1123\)](#)
- [ModifySecurityGroupRules \(p. 1125\)](#)
- [ModifySnapshotAttribute \(p. 1127\)](#)
- [ModifySpotFleetRequest \(p. 1130\)](#)
- [ModifySubnetAttribute \(p. 1133\)](#)
- [ModifyTrafficMirrorFilterNetworkServices \(p. 1136\)](#)
- [ModifyTrafficMirrorFilterRule \(p. 1138\)](#)
- [ModifyTrafficMirrorSession \(p. 1141\)](#)
- [ModifyTransitGateway \(p. 1144\)](#)
- [ModifyTransitGatewayPrefixListReference \(p. 1146\)](#)
- [ModifyTransitGatewayVpcAttachment \(p. 1149\)](#)
- [ModifyVolume \(p. 1151\)](#)
- [ModifyVolumeAttribute \(p. 1155\)](#)
- [ModifyVpcAttribute \(p. 1157\)](#)
- [ModifyVpcEndpoint \(p. 1159\)](#)
- [ModifyVpcEndpointConnectionNotification \(p. 1162\)](#)

- [ModifyVpcEndpointServiceConfiguration \(p. 1164\)](#)
- [ModifyVpcEndpointServicePermissions \(p. 1167\)](#)
- [ModifyVpcPeeringConnectionOptions \(p. 1169\)](#)
- [ModifyVpcTenancy \(p. 1173\)](#)
- [ModifyVpnConnection \(p. 1175\)](#)
- [ModifyVpnConnectionOptions \(p. 1178\)](#)
- [ModifyVpnTunnelCertificate \(p. 1180\)](#)
- [ModifyVpnTunnelOptions \(p. 1182\)](#)
- [MonitorInstances \(p. 1184\)](#)
- [MoveAddressToVpc \(p. 1186\)](#)
- [ProvisionByoipCidr \(p. 1188\)](#)
- [PurchaseHostReservation \(p. 1191\)](#)
- [PurchaseReservedInstancesOffering \(p. 1194\)](#)
- [PurchaseScheduledInstances \(p. 1197\)](#)
- [RebootInstances \(p. 1199\)](#)
- [RegisterImage \(p. 1201\)](#)
- [RegisterInstanceEventNotificationAttributes \(p. 1207\)](#)
- [RegisterTransitGatewayMulticastGroupMembers \(p. 1209\)](#)
- [RegisterTransitGatewayMulticastGroupSources \(p. 1211\)](#)
- [RejectTransitGatewayMulticastDomainAssociations \(p. 1214\)](#)
- [RejectTransitGatewayPeeringAttachment \(p. 1216\)](#)
- [RejectTransitGatewayVpcAttachment \(p. 1218\)](#)
- [RejectVpcEndpointConnections \(p. 1220\)](#)
- [RejectVpcPeeringConnection \(p. 1222\)](#)
- [ReleaseAddress \(p. 1224\)](#)
- [ReleaseHosts \(p. 1227\)](#)
- [ReplaceElamInstanceProfileAssociation \(p. 1230\)](#)
- [ReplaceNetworkAclAssociation \(p. 1232\)](#)
- [ReplaceNetworkAclEntry \(p. 1234\)](#)
- [ReplaceRoute \(p. 1237\)](#)
- [ReplaceRouteTableAssociation \(p. 1241\)](#)
- [ReplaceTransitGatewayRoute \(p. 1243\)](#)
- [ReportInstanceState \(p. 1245\)](#)
- [RequestSpotFleet \(p. 1248\)](#)
- [RequestSpotInstances \(p. 1250\)](#)
- [ResetAddressAttribute \(p. 1255\)](#)
- [ResetEbsDefaultKmsKeyId \(p. 1257\)](#)
- [ResetFpgalmImageAttribute \(p. 1259\)](#)
- [ResetImageAttribute \(p. 1261\)](#)
- [ResetInstanceAttribute \(p. 1263\)](#)
- [ResetNetworkInterfaceAttribute \(p. 1265\)](#)
- [ResetSnapshotAttribute \(p. 1267\)](#)
- [RestoreAddressToClassic \(p. 1269\)](#)
- [RestoreManagedPrefixListVersion \(p. 1271\)](#)
- [RevokeClientVpnIngress \(p. 1273\)](#)
- [RevokeSecurityGroupEgress \(p. 1275\)](#)

- [RevokeSecurityGroupIngress \(p. 1279\)](#)
- [RunInstances \(p. 1283\)](#)
- [RunScheduledInstances \(p. 1297\)](#)
- [SearchLocalGatewayRoutes \(p. 1299\)](#)
- [SearchTransitGatewayMulticastGroups \(p. 1301\)](#)
- [SearchTransitGatewayRoutes \(p. 1304\)](#)
- [SendDiagnosticInterrupt \(p. 1306\)](#)
- [StartInstances \(p. 1308\)](#)
- [StartNetworkInsightsAnalysis \(p. 1311\)](#)
- [StartVpcEndpointServicePrivateDnsVerification \(p. 1313\)](#)
- [StopInstances \(p. 1315\)](#)
- [TerminateClientVpnConnections \(p. 1318\)](#)
- [TerminateInstances \(p. 1321\)](#)
- [UnassignIpv6Addresses \(p. 1324\)](#)
- [UnassignPrivateIpAddresses \(p. 1326\)](#)
- [UnmonitorInstances \(p. 1328\)](#)
- [UpdateSecurityGroupRuleDescriptionsEgress \(p. 1330\)](#)
- [UpdateSecurityGroupRuleDescriptionsIngress \(p. 1333\)](#)
- [WithdrawByoipCidr \(p. 1336\)](#)

# AcceptReservedInstancesExchangeQuote

Accepts the Convertible Reserved Instance exchange quote described in the [GetReservedInstancesExchangeQuote \(p. 1013\)](#) call.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ReservedInstanceId.N

The IDs of the Convertible Reserved Instances to exchange for another Convertible Reserved Instance of the same or higher value.

Type: Array of strings

Required: Yes

### TargetConfiguration.N

The configuration of the target Convertible Reserved Instance to exchange for your current Convertible Reserved Instances.

Type: Array of [TargetConfigurationRequest \(p. 2079\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### exchangeId

The ID of the successful exchange.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AcceptTransitGatewayMulticastDomainAssociations

Accepts a request to associate subnets with a transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SubnetIds.N

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway attachment.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### associations

Describes the multicast domain associations.

Type: [TransitGatewayMulticastDomainAssociations \(p. 2119\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AcceptTransitGatewayPeeringAttachment

Accepts a transit gateway peering attachment request. The peering attachment must be in the pendingAcceptance state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayPeeringAttachment

The transit gateway peering attachment.

Type: [TransitGatewayPeeringAttachment \(p. 2128\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example accepts the specified transit gateway peering attachment by specifying its attachment ID.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AcceptTransitGatewayVpcAttachment

Accepts a request to attach a VPC to a transit gateway.

The VPC attachment must be in the `pendingAcceptance` state. Use [DescribeTransitGatewayVpcAttachments \(p. 830\)](#) to view your pending VPC attachment requests. Use [RejectTransitGatewayVpcAttachment \(p. 1218\)](#) to reject a VPC attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayVpcAttachment

The VPC attachment.

Type: [TransitGatewayVpcAttachment \(p. 2143\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AcceptVpcEndpointConnections

Accepts one or more interface VPC endpoint connection requests to your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ServiceId

The ID of the VPC endpoint service.

Type: String

Required: Yes

### VpcEndpointId.N

The IDs of one or more interface VPC endpoints.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### unsuccessful

Information about the interface endpoints that were not accepted, if applicable.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example accepts the request for interface endpoint `vpce-0c1308d7312217123` to connect to your service `vpce-svc-abc5ebb7d9579a2b3`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptVpcEndpointConnections
&ServiceId=vpce-svc-abc5ebb7d9579a2b3
&VpcEndpointId.1=vpce-0c1308d7312217123
&AUTHPARAMS
```

#### Sample Response

```
<AcceptVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>986a2264-8a40-4da8-8f11-e8aaexample</requestId>
  <unsuccessful/>
</AcceptVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AcceptVpcPeeringConnection

Accept a VPC peering connection request. To accept a request, the VPC peering connection must be in the pending-acceptance state, and you must be the owner of the peer VPC. Use [DescribeVpcPeeringConnections \(p. 881\)](#) to view your outstanding VPC peering connection requests.

For an inter-Region VPC peering connection request, you must accept the VPC peering connection in the Region of the accepter VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcPeeringConnectionId

The ID of the VPC peering connection. You must specify this parameter in the request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpcPeeringConnection

Information about the VPC peering connection.

Type: [VpcPeeringConnection \(p. 2196\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example accepts the specified VPC peering connection request.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AcceptVpcPeeringConnection
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<AcceptVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <vpcPeeringConnection>
    <vpcPeeringConnectionId>pcx-1a2b3c4d</vpcPeeringConnectionId>
    <requesterVpcInfo>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <cidrBlock>10.0.0.0/28</cidrBlock>
    </requesterVpcInfo>
    <accepterVpcInfo>
      <ownerId>777788889999</ownerId>
      <vpcId>vpc-111aaa22</vpcId>
      <cidrBlock>10.0.1.0/28</cidrBlock>
      <peeringOptions>
        <allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
        <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
        <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
        <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
      </peeringOptions>
    </accepterVpcInfo>
    <status>
      <code>active</code>
      <message>Active</message>
    </status>
    <tagSet/>
  </vpcPeeringConnection>
</AcceptVpcPeeringConnectionResponse>"
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AdvertiseByoipCidr

Advertises an IPv4 or IPv6 address range that is provisioned for use with your AWS resources through bring your own IP addresses (BYOIP).

You can perform this operation at most once every 10 seconds, even if you specify different address ranges each time.

We recommend that you stop advertising the BYOIP CIDR from other locations when you advertise it from AWS. To minimize down time, you can configure your AWS resources to use an address from a BYOIP CIDR before it is advertised, and then simultaneously stop advertising it from the current location and start advertising it through AWS.

It can take a few minutes before traffic to the specified addresses starts routing to AWS because of BGP propagation delays.

To stop advertising the BYOIP CIDR, use [WithdrawByoipCidr \(p. 1336\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Cidr

The address range, in CIDR notation. This must be the exact range that you provisioned. You can't advertise only a portion of the provisioned range.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### byoipCidr

Information about the address range.

Type: [ByoipCidr \(p. 1397\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AllocateAddress

Allocates an Elastic IP address to your AWS account. After you allocate the Elastic IP address you can associate it with an instance or network interface. After you release an Elastic IP address, it is released to the IP address pool and can be allocated to a different AWS account.

You can allocate an Elastic IP address from an address pool owned by AWS or from an address pool created from a public IPv4 address range that you have brought to AWS for use with your AWS resources using bring your own IP addresses (BYOIP). For more information, see [Bring Your Own IP Addresses \(BYOIP\)](#) in the *Amazon Elastic Compute Cloud User Guide*.

[EC2-VPC] If you release an Elastic IP address, you might be able to recover it. You cannot recover an Elastic IP address that you released after it is allocated to another AWS account. You cannot recover an Elastic IP address for EC2-Classic. To attempt to recover an Elastic IP address that you released, specify it in this operation.

An Elastic IP address is for use either in the EC2-Classic platform or in a VPC. By default, you can allocate 5 Elastic IP addresses for EC2-Classic per Region and 5 Elastic IP addresses for EC2-VPC per Region.

For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can allocate a carrier IP address which is a public IP address from a telecommunication carrier, to a network interface which resides in a subnet in a Wavelength Zone (for example an EC2 instance).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Address

[EC2-VPC] The Elastic IP address to recover or an IPv4 address from an address pool.

Type: String

Required: No

### CustomerOwnedIpv4Pool

The ID of a customer-owned address pool. Use this parameter to let Amazon EC2 select an address from the address pool. Alternatively, specify a specific address from the address pool.

Type: String

Required: No

### Domain

Indicates whether the Elastic IP address is for use with instances in a VPC or instances in EC2-Classic.

Default: If the Region supports EC2-Classic, the default is standard. Otherwise, the default is vpc.

Type: String

Valid Values: vpc | standard

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

#### **NetworkBorderGroup**

A unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses. Use this parameter to limit the IP address to this location. IP addresses cannot move between network border groups.

Use [DescribeAvailabilityZones](#) to view the network border groups.

You cannot use a network border group with EC2 Classic. If you attempt this operation on EC2 Classic, you receive an `InvalidParameterCombination` error.

Type: String

Required: No

#### **PublicIpv4Pool**

The ID of an address pool that you own. Use this parameter to let Amazon EC2 select an address from the address pool. To specify a specific address from the address pool, use the `Address` parameter instead.

Type: String

Required: No

#### **TagSpecification.N**

The tags to assign to the Elastic IP address.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **allocationId**

[EC2-VPC] The ID that AWS assigns to represent the allocation of the Elastic IP address for use with instances in a VPC.

Type: String

### **carrierIp**

The carrier IP address. This option is only available for network interfaces which reside in a subnet in a Wavelength Zone (for example an EC2 instance).

Type: String

### **customerOwnedIp**

The customer-owned IP address.

Type: String

### **customerOwnedIpv4Pool**

The ID of the customer-owned address pool.

Type: String

**domain**

Indicates whether the Elastic IP address is for use with instances in a VPC (`vpc`) or instances in EC2-Classic (`standard`).

Type: String

Valid Values: `vpc` | `standard`

**networkBorderGroup**

The set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

Type: String

**publicIp**

The Elastic IP address.

Type: String

**publicIpv4Pool**

The ID of an address pool.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example request allocates an Elastic IP address for use with instances in EC2-Classic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress  
&AUTHPARAMS
```

#### Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <publicIp>192.0.2.1</publicIp>  
  <domain>standard</domain>  
</AllocateAddressResponse>
```

## Example for EC2-VPC

This example request allocates an Elastic IP address for use with instances in a VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&Domain=vpc
&AUTHPARAMS
```

### Sample Response

```
<AllocateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <publicIp>198.51.100.1</publicIp>
  <domain>vpc</domain>
  <allocationId>eipalloc-5723d13e</allocationId>
</AllocateAddressResponse>
```

## Example for Recovery

This example request shows how to recover an Elastic IP address that you previously released.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateAddress
&Domain=vpc
&Address=203.0.113.3
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AllocateHosts

Allocates a Dedicated Host to your account. At a minimum, specify the supported instance type or instance family, the Availability Zone in which to allocate the host, and the number of hosts to allocate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AutoPlacement

Indicates whether the host accepts any untargeted instance launches that match its instance type configuration, or if it only accepts Host tenancy instance launches that specify its unique host ID. For more information, see [Understanding auto-placement and affinity](#) in the *Amazon EC2 User Guide*.

Default: on

Type: String

Valid Values: on | off

Required: No

### AvailabilityZone

The Availability Zone in which to allocate the Dedicated Host.

Type: String

Required: Yes

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### HostRecovery

Indicates whether to enable or disable host recovery for the Dedicated Host. Host recovery is disabled by default. For more information, see [Host recovery](#) in the *Amazon EC2 User Guide*.

Default: off

Type: String

Valid Values: on | off

Required: No

### InstanceFamily

Specifies the instance family to be supported by the Dedicated Hosts. If you specify an instance family, the Dedicated Hosts support multiple instance types within that instance family.

If you want the Dedicated Hosts to support a specific instance type only, omit this parameter and specify **InstanceType** instead. You cannot specify **InstanceFamily** and **InstanceType** in the same request.

Type: String

Required: No

#### **InstanceType**

Specifies the instance type to be supported by the Dedicated Hosts. If you specify an instance type, the Dedicated Hosts support instances of the specified instance type only.

If you want the Dedicated Hosts to support multiple instance types in a specific instance family, omit this parameter and specify **InstanceFamily** instead. You cannot specify **InstanceType** and **InstanceFamily** in the same request.

Type: String

Required: No

#### **Quantity**

The number of Dedicated Hosts to allocate to your account with these parameters.

Type: Integer

Required: Yes

#### **TagSpecification.N**

The tags to apply to the Dedicated Host during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### **hostIdSet**

The ID of the allocated Dedicated Host. This is used to launch an instance onto a specific host.

Type: Array of strings

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example allocates a Dedicated Host to your account, on to which you can launch only `m5.large` instances.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m5.large
&Quantity=1
&AUTHPARAMS
```

## Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <hostIdSet>
    <item>h-00548908djdsgfs</item>
  </hostIdSet>
</AllocateHostsResponse>
```

## Example 2

This example allocates a Dedicated Host to your account, on to which you can launch multiple instance types in the m5 instance family.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceFamily=m5
&Quantity=1
&AUTHPARAMS
```

## Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <hostIdSet>
    <item>h-00548908djdsgfs</item>
  </hostIdSet>
</AllocateHostsResponse>
```

## Example 3

This example allocates a Dedicated Host to your account with host recovery on.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m5.large
&Quantity=1
&HostRecovery=on
&AUTHPARAMS
```

## Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
<hostIdSet>
    <item>h-00548908djdsgfs</item>
</hostIdSet>
</AllocateHostsResponse>
```

## Example 4

This example allocates a Dedicated Host to your account with auto-placement off.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceFamily=m5
&Quantity=1
&AutoPlacement=off
&AUTHPARAMS
```

### Sample Response

```
<AllocateHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
    <hostIdSet>
        <item>h-00548908djdsgfs</item>
    </hostIdSet>
</AllocateHostsResponse>
```

## Example 5

This example allocates a Dedicated Host to your account, on to which you can launch only m5.2xlarge instances, and applies a tag with a key of purpose and a value of production.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m5.2xlarge
&Quantity=1
&TagSpecification.1.ResourceType=dedicated-host
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ApplySecurityGroupsToClientVpnTargetNetwork

Applies a security group to the association between the target network and the Client VPN endpoint. This action replaces the existing security groups with the specified security groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **SecurityGroupId.N**

The IDs of the security groups to apply to the associated target network. Up to 5 security groups can be applied to an associated target network.

Type: Array of strings

Required: Yes

### **VpcId**

The ID of the VPC in which the associated target network is located.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **securityGroupIds**

The IDs of the applied security groups.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example applies a security group to a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ApplySecurityGroupsToClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&SecurityGroupId=sg-0618575f05EXAMPLE
&VpcId=vpc-3db97056EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<ApplySecurityGroupsToClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>5ef84b7f-505e-4e39-80cd-a11dbEXAMPLE</requestId>
    <securityGroupIds>
        <item>sg-0618575f05EXAMPLE</item>
    </securityGroupIds>
</ApplySecurityGroupsToClientVpnTargetNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssignIpv6Addresses

Assigns one or more IPv6 addresses to the specified network interface. You can specify one or more specific IPv6 addresses, or you can specify the number of IPv6 addresses to be automatically assigned from within the subnet's IPv6 CIDR block range. You can assign as many IPv6 addresses to a network interface as you can assign private IPv4 addresses, and the limit varies per instance type. For information, see [IP Addresses Per Network Interface Per Instance Type](#) in the *Amazon Elastic Compute Cloud User Guide*.

You must specify either the IPv6 addresses or the IPv6 address count in the request.

You can optionally use Prefix Delegation on the network interface. You must specify either the IPV6 Prefix Delegation prefixes, or the IPv6 Prefix Delegation count. For information, see [Assigning prefixes to Amazon EC2 network interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Ipv6AddressCount**

The number of additional IPv6 addresses to assign to the network interface. The specified number of IPv6 addresses are assigned in addition to the existing IPv6 addresses that are already assigned to the network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range. You can't use this option if specifying specific IPv6 addresses.

Type: Integer

Required: No

### **Ipv6Addresses.N**

One or more specific IPv6 addresses to be assigned to the network interface. You can't use this option if you're specifying a number of IPv6 addresses.

Type: Array of strings

Required: No

### **Ipv6Prefix.N**

One or more IPv6 prefixes assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of strings

Required: No

### **Ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigns to the network interface. You cannot use this option if you use the `Ipv6Prefixes` option.

Type: Integer

Required: No

### **NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **assignedIpv6Addresses**

The new IPv6 addresses assigned to the network interface. Existing IPv6 addresses that were assigned to the network interface before the request are not included.

Type: Array of strings

### **assignedIpv6PrefixSet**

The IPv6 prefixes that are assigned to the network interface.

Type: Array of strings

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example assigns two IPv6 addresses (2001:db8:1234:1a00::123 and 2001:db8:1234:1a00::456) to the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignIpv6Addresses
&NetworkInterfaceId=en1-d83388b1
&Ipv6Addresses.1=2001:db8:1234:1a00::123
&Ipv6Addresses.2=2001:db8:1234:1a00::456
&AUTHPARAMS
```

#### Sample Response

```
<AssignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>c36d17eb-a0ba-4d38-8727-example</requestId>
```

```
<networkInterfaceId>eni-d83388b1</networkInterfaceId>
<assignedIpv6Addresses>
    <item>2001:db8:1234:1a00::123</item>
    <item>2001:db8:1234:1a00::456</item>
</assignedIpv6Addresses>
</AssignIpv6AddressesResponse>
```

## Example 2

This example assigns two IPv6 addresses to the specified network interface. Amazon EC2 automatically assigns the addresses from the available IPv6 addresses within the subnet's IPv6 CIDR block range.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssignIpv6Addresses
&NetworkInterfaceId=eni-d83388b1
&Ipv6AddressCount=2
&AUTHPARAMS
```

### Sample Response

```
<AssignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c36d17eb-a0ba-4d38-8727-example</requestId>
    <networkInterfaceId>eni-d83388b1</networkInterfaceId>
    <assignedIpv6Addresses>
        <item>2001:db8:1234:1a00:3304:8879:34cf:4071</item>
        <item>2002:db8:1234:1a00:9691:9503:25ad:1761</item>
    </assignedIpv6Addresses>
</AssignIpv6AddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssignPrivateIpAddresses

Assigns one or more secondary private IP addresses to the specified network interface.

You can specify one or more specific secondary IP addresses, or you can specify the number of secondary IP addresses to be automatically assigned within the subnet's CIDR block range. The number of secondary IP addresses that you can assign to an instance varies by instance type. For information about instance types, see [Instance Types](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about Elastic IP addresses, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

When you move a secondary private IP address to another network interface, any Elastic IP address that is associated with the IP address is also moved.

Remapping an IP address is an asynchronous operation. When you move an IP address from one network interface to another, check `network/interfaces/macs/mac/local-ipv4s` in the instance metadata to confirm that the remapping is complete.

You must specify either the IP addresses or the IP address count in the request.

You can optionally use Prefix Delegation on the network interface. You must specify either the IPv4 Prefix Delegation prefixes, or the IPv4 Prefix Delegation count. For information, see [Assigning prefixes to Amazon EC2 network interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllowReassignment

Indicates whether to allow an IP address that is already assigned to another network interface or instance to be reassigned to the specified network interface.

Type: Boolean

Required: No

### Ipv4Prefix.N

One or more IPv4 prefixes assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of strings

Required: No

### Ipv4PrefixCount

The number of IPv4 prefixes that AWS automatically assigns to the network interface. You cannot use this option if you use the `Ipv4 Prefixes` option.

Type: Integer

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

### **PrivateIpAddress.N**

One or more IP addresses to be assigned as a secondary private IP address to the network interface. You can't specify this parameter when also specifying a number of secondary IP addresses.

If you don't specify an IP address, Amazon EC2 automatically selects an IP address within the subnet range.

Type: Array of strings

Required: No

### **SecondaryPrivateIpAddressCount**

The number of secondary IP addresses to assign to the network interface. You can't specify this parameter when also specifying private IP addresses.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **assignedIpv4PrefixSet**

The IPv4 prefixes that are assigned to the network interface.

Type: Array of [Ipv4PrefixSpecification \(p. 1715\)](#) objects

### **assignedPrivateIpAddressesSet**

The private IP addresses assigned to the network interface.

Type: Array of [AssignedPrivateIpAddress \(p. 1376\)](#) objects

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example assigns two secondary private IP addresses (10.0.2.1 and 10.0.2.11) to the specified network interface.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&PrivateIpAddress.1=10.0.2.1
&PrivateIpAddress.2=10.0.2.11
&AUTHPARAMS
```

## Sample Response

```
<AssignPrivateIpAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>3fb591ba-558c-48f8-ae6b-c2f9d6d06425</requestId>
<networkInterfaceId>eni-01d32da61c165ac3e</networkInterfaceId>
<assignedPrivateIpAddressesSet>
  <item>
    <privateIpAddress>10.2.2.1</privateIpAddress>
  </item>
  <item>
    <privateIpAddress>10.2.2.11</privateIpAddress>
  </item>
</assignedPrivateIpAddressesSet>
<return>true</return>
</AssignPrivateIpAddressesResponse>
```

## Example 2

This example assigns two secondary private IP addresses to the specified network interface. Amazon EC2 automatically assigns these IP addresses from the available IP addresses within the subnet's CIDR block range.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AssignPrivateIpAddresses
&NetworkInterfaceId=eni-d83388b1
&SecondaryPrivateIpAddressCount=2
&AUTHPARAMS
```

## Sample Response

```
<AssignPrivateIpAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>3fb591ba-558c-48f8-ae6b-c2f9d6d06425</requestId>
<networkInterfaceId>eni-01d32da61c165ac3e</networkInterfaceId>
<assignedPrivateIpAddressesSet>
  <item>
    <privateIpAddress>10.2.2.7</privateIpAddress>
  </item>
  <item>
    <privateIpAddress>10.2.2.5</privateIpAddress>
  </item>
</assignedPrivateIpAddressesSet>
<return>true</return>
</AssignPrivateIpAddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AssociateAddress

Associates an Elastic IP address, or carrier IP address (for instances that are in subnets in Wavelength Zones) with an instance or a network interface. Before you can use an Elastic IP address, you must allocate it to your account.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

[EC2-Classic, VPC in an EC2-VPC-only account] If the Elastic IP address is already associated with a different instance, it is disassociated from that instance and associated with the specified instance. If you associate an Elastic IP address with an instance that has an existing Elastic IP address, the existing address is disassociated from the instance, but remains allocated to your account.

[VPC in an EC2-Classic account] If you don't specify a private IP address, the Elastic IP address is associated with the primary IP address. If the Elastic IP address is already associated with a different instance or a network interface, you get an error unless you allow reassociation. You cannot associate an Elastic IP address with an instance or network interface that has an existing Elastic IP address.

[Subnets in Wavelength Zones] You can associate an IP address from the telecommunication carrier to the instance or network interface.

You cannot associate an Elastic IP address with an interface in a different network border group.

### Important

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error, and you may be charged for each time the Elastic IP address is remapped to the same instance. For more information, see the *Elastic IP Addresses* section of [Amazon EC2 Pricing](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId

[EC2-VPC] The allocation ID. This is required for EC2-VPC.

Type: String

Required: No

### AllowReassociation

[EC2-VPC] For a VPC in an EC2-Classic account, specify true to allow an Elastic IP address that is already associated with an instance or network interface to be reassigned with the specified instance or network interface. Otherwise, the operation fails. In a VPC in an EC2-VPC-only account, reassignment is automatic, therefore you can specify false to ensure the operation fails if the Elastic IP address is already associated with another resource.

Type: Boolean

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### **InstanceId**

The ID of the instance. The instance must have exactly one attached network interface. For EC2-VPC, you can specify either the instance ID or the network interface ID, but not both. For EC2-Classic, you must specify an instance ID and the instance must be in the running state.

Type: String

Required: No

#### **NetworkInterfaceId**

[EC2-VPC] The ID of the network interface. If the instance has more than one network interface, you must specify a network interface ID.

For EC2-VPC, you can specify either the instance ID or the network interface ID, but not both.

Type: String

Required: No

#### **PrivateIpAddress**

[EC2-VPC] The primary or secondary private IP address to associate with the Elastic IP address. If no private IP address is specified, the Elastic IP address is associated with the primary private IP address.

Type: String

Required: No

#### **PublicIp**

[EC2-Classic] The Elastic IP address to associate with the instance. This is required for EC2-Classic.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **associationId**

[EC2-VPC] The ID that represents the association of the Elastic IP address with an instance.

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example request associates an Elastic IP address with an instance in EC2-Classic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-1234567890abcdef0
&PublicIp=192.0.2.1
&AUTHPARAMS
```

#### Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</AssociateAddressResponse>
```

### Example for EC2-VPC

This example request associates a Elastic IP address with an instance in a VPC. The `AllowReassignment` parameter allows the Elastic IP address to be associated with the specified instance even if it's already associated with a different instance or a network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateAddress
&InstanceId=i-0598c7d356eba48d7
&AllocationId=eipalloc-5723d13e
&AllowReassignment=true
&AUTHPARAMS
```

#### Sample Response

```
<AssociateAddressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
<associationId>eipassoc-fc5ca095</associationId>
</AssociateAddressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateClientVpnTargetNetwork

Associates a target network with a Client VPN endpoint. A target network is a subnet in a VPC. You can associate multiple subnets from the same VPC with a Client VPN endpoint. You can associate only one subnet in each Availability Zone. We recommend that you associate at least two subnets to provide Availability Zone redundancy.

If you specified a VPC when you created the Client VPN endpoint or if you have previous subnet associations, the specified subnet must be in the same VPC. To specify a subnet that's in a different VPC, you must first modify the Client VPN endpoint ([ModifyClientVpnEndpoint \(p. 1067\)](#)) and change the VPC that's associated with it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **SubnetId**

The ID of the subnet to associate with the Client VPN endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **associationId**

The unique ID of the target network association.

Type: String  
**requestId**

The ID of the request.

Type: String  
**status**

The current state of the target network association.

Type: [AssociationStatus \(p. 1379\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example associates a subnet with a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&SubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<AssociateClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">>
  <requestId>7d1f819b-7f2a-4f81-aabf-81caeEXAMPLE</requestId>
  <status>
    <code>associating</code>
  </status>
  <associationId>cvpn-assoc-0822b0983cEXAMPLE</associationId>
</AssociateClientVpnTargetNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# AssociateDhcpOptions

Associates a set of DHCP options (that you've previously created) with the specified VPC, or associates no DHCP options with the VPC.

After you associate the options with the VPC, any existing instances and all new instances that you launch in that VPC use the options. You don't need to restart or relaunch the instances. They automatically pick up the changes within a few hours, depending on how frequently the instance renews its DHCP lease. You can explicitly renew the lease using the operating system on the instance.

For more information, see [DHCP options sets](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DhcpOptionsId

The ID of the DHCP options set, or `default` to associate no DHCP options with the VPC.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example associates the DHCP options with the ID `dopt-7a8b9c2d` with the VPC with the ID `vpc-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

### Example 2

This example changes the VPC with the ID `vpc-1a2b3c4d` to have no associated DHCP options set.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateDhcpOptions
&DhcpOptionsId=default
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AssociateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</AssociateDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AssociateEnclaveCertificateIamRole

Associates an AWS Identity and Access Management (IAM) role with an AWS Certificate Manager (ACM) certificate. This enables the certificate to be used by the ACM for Nitro Enclaves application inside an enclave. For more information, see [AWS Certificate Manager for Nitro Enclaves](#) in the *AWS Nitro Enclaves User Guide*.

When the IAM role is associated with the ACM certificate, the certificate, certificate chain, and encrypted private key are placed in an Amazon S3 bucket that only the associated IAM role can access. The private key of the certificate is encrypted with an AWS managed key that has an attached attestation-based key policy.

To enable the IAM role to access the Amazon S3 object, you must grant it permission to call `s3:GetObject` on the Amazon S3 bucket returned by the command. To enable the IAM role to access the KMS key, you must grant it permission to call `kms:Decrypt` on the KMS key returned by the command. For more information, see [Grant the role permission to access the certificate and encryption key](#) in the *AWS Nitro Enclaves User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CertificateArn

The ARN of the ACM certificate with which to associate the IAM role.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RoleArn

The ARN of the IAM role to associate with the ACM certificate. You can associate up to 16 IAM roles with an ACM certificate.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

## Response Elements

The following elements are returned by the service.

**certificateS3BucketName**

The name of the Amazon S3 bucket to which the certificate was uploaded.

Type: String

**certificateS3ObjectKey**

The Amazon S3 object key where the certificate, certificate chain, and encrypted private key bundle are stored. The object key is formatted as follows: `role_arn/certificate_arn`.

Type: String

**encryptionKmsKeyId**

The ID of the KMS key used to encrypt the private key of the certificate.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateIamInstanceProfile

Associates an IAM instance profile with a running or stopped instance. You cannot associate more than one IAM instance profile with an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### iamInstanceProfile

The IAM instance profile.

Type: [IamInstanceProfileSpecification \(p. 1601\)](#) object

Required: Yes

### InstanceId

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### iamInstanceProfileAssociation

Information about the IAM instance profile association.

Type: [IamInstanceProfileAssociation \(p. 1600\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example associates the IAM instance profile with the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateIamInstanceProfile
```

```
&InstanceId=i-1234567890abcdef0
&IamInstanceProfile.Name=AdminProfile
&AUTHPARAMS
```

## Sample Response

```
<AssociateIamInstanceProfileResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>e10deeaf-7cda-48e7-950b-example</requestId>
  <iamInstanceProfileAssociation>
    <associationId>iip-assoc-0750e3af14e2b4ad</associationId>
    <iamInstanceProfile>
      <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>
      <id>AIPAJEDNCAA64SSD265D6</id>
    </iamInstanceProfile>
    <instanceId>i-1234567890abcdef0</instanceId>
    <state>associating</state>
  </iamInstanceProfileAssociation>
</AssociateIamInstanceProfileResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AssociateInstanceEventWindow

Associates one or more targets with an event window. Only one type of target (instance IDs, Dedicated Host IDs, or tags) can be specified with an event window.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### AssociationTarget

One or more targets associated with the specified event window.

Type: [InstanceEventWindowAssociationRequest \(p. 1646\)](#) object

Required: Yes

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### InstanceEventWindowId

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

#### instanceEventWindow

Information about the event window.

Type: [InstanceEventWindow \(p. 1644\)](#) object

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## AssociateRouteTable

Associates a subnet in your VPC or an internet gateway or virtual private gateway attached to your VPC with a route table in your VPC. This association causes traffic from the subnet or gateway to be routed according to the routes in the route table. The action returns an association ID, which you need in order to disassociate the route table later. A route table can be associated with multiple subnets.

For more information, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GatewayId

The ID of the internet gateway or virtual private gateway.

Type: String

Required: No

### RouteTableId

The ID of the route table.

Type: String

Required: Yes

### SubnetId

The ID of the subnet.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### associationId

The route table association ID. This ID is required for disassociating the route table.

Type: String

### associationState

The state of the association.

Type: [RouteTableAssociationState \(p. 1965\)](#) object

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example associates a route table with the ID `rtb-11223344556677889` with a subnet with the ID `subnet-12345678901234567`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-11223344556677889
&SubnetId=subnet-12345678901234567
```

#### Sample Response

```
<AssociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <associationId>rtbassoc-04ca27a6914a0b4f</associationId>
</AssociateRouteTableResponse>
```

### Example 2

This example associates a route table with the ID `rtb-11223344556677889` with an internet gateway with the ID `igw-1a2b3c4d1a2b3c4d1`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateRouteTable
&RouteTableId=rtb-11223344556677889
&GatewayId=igw-1a2b3c4d1a2b3c4d1
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateSubnetCidrBlock

Associates a CIDR block with your subnet. You can only associate a single IPv6 CIDR block with your subnet. An IPv6 CIDR block must have a prefix length of /64.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Ipv6CidrBlock**

The IPv6 CIDR block for your subnet. The subnet must have a /64 prefix length.

Type: String

Required: Yes

### **SubnetId**

The ID of your subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **Ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: [SubnetIpv6CidrBlockAssociation \(p. 2067\)](#) object

### **requestId**

The ID of the request.

Type: String

### **subnetId**

The ID of the subnet.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example associates IPv6 CIDR block 2001:db8:1234:1a00::/64 with subnet subnet-1a2b3c4d.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateSubnetCidrBlock
&SubnetId=subnet-1a2b3c4d
&Ipv6CidrBlock=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

## Sample Response

```
<AssociateSubnetCidrBlock xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <subnetId>vpc-1a2b3c4d</subnetId>
  <ipv6CidrBlockAssociation>
    <ipv6CidrBlock>2001:db8:1234:1a00::/64</ipv6CidrBlock>
    <ipv6CidrBlockState>
      <state>associating</state>
    </ipv6CidrBlockState>
    <associationId>subnet-cidr-assoc-3aa54053</associationId>
  </ipv6CidrBlockAssociation>
</AssociateSubnetCidrBlock>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateTransitGatewayMulticastDomain

Associates the specified subnets and transit gateway attachments with the specified transit gateway multicast domain.

The transit gateway attachment must be in the available state before you can add a resource. Use [DescribeTransitGatewayAttachments](#) to see the state of the attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SubnetIds.N

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway attachment to associate with the transit gateway multicast domain.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### associations

Information about the transit gateway multicast domain associations.

Type: [TransitGatewayMulticastDomainAssociations \(p. 2119\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example associates the transit gateway attachment `tgw-attach-028c1dd0f8EXAMPLE` with the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateTransitGatewayMulticastDomain
&TransitGatewayAttachmentId=tgw-attach-028c1dd0f8EXAMPLE
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<AssociateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>fa968e66-0290-4479-a8ca-e5c83EXAMPLE</requestId>
  <associations>
    <resourceId>vpc-01128d2c24EXAMPLE</resourceId>
    <resourceType>vpc</resourceType>
    <subnets>
      <item>
        <state>associating</state>
        <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
      </item>
    </subnets>
    <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</transitGatewayAttachmentId>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</transitGatewayMulticastDomainId>
  </associations>
</AssociateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateTransitGatewayRouteTable

Associates the specified attachment with the specified transit gateway route table. You can associate only one route table with an attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### association

The ID of the association.

Type: [TransitGatewayAssociation \(p. 2100\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateTrunkInterface

## Note

This API action is currently in **limited preview only**. If you are interested in using this feature, contact your account manager.

Associates a branch network interface with a trunk network interface.

Before you create the association, run the [create-network-interface](#) command and set --interface-type to `trunk`. You must also create a network interface for each branch network interface that you want to associate with the trunk network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### BranchInterfaceId

The ID of the branch network interface.

Type: String

Required: Yes

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to Ensure Idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GreKey

The application key. This applies to the GRE protocol.

Type: Integer

Required: No

### TrunkInterfaceId

The ID of the trunk network interface.

Type: String

Required: Yes

### VlanId

The ID of the VLAN. This applies to the VLAN protocol.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to Ensure Idempotency](#).

Type: String

### **interfaceAssociation**

Information about the association between the trunk network interface and branch network interface.

Type: [TrunkInterfaceAssociation \(p. 2146\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AssociateVpcCidrBlock

Associates a CIDR block with your VPC. You can associate a secondary IPv4 CIDR block, an Amazon-provided IPv6 CIDR block, or an IPv6 CIDR block from an IPv6 address pool that you provisioned through bring your own IP addresses ([BYOIP](#)). The IPv6 CIDR block size is fixed at /56.

You must specify one of the following in the request: an IPv4 CIDR block, an IPv6 pool, or an Amazon-provided IPv6 CIDR block.

For more information about associating CIDR blocks with your VPC and applicable restrictions, see [VPC and subnet sizing](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AmazonProvidedIpv6CidrBlock**

Requests an Amazon-provided IPv6 CIDR block with a /56 prefix length for the VPC. You cannot specify the range of IPv6 addresses, or the size of the CIDR block.

Type: Boolean

Required: No

### **CidrBlock**

An IPv4 CIDR block to associate with the VPC.

Type: String

Required: No

### **Ipv6CidrBlock**

An IPv6 CIDR block from the IPv6 address pool. You must also specify `Ipv6Pool` in the request.

To let Amazon choose the IPv6 CIDR block for you, omit this parameter.

Type: String

Required: No

### **Ipv6CidrBlockNetworkBorderGroup**

The name of the location from which we advertise the IPV6 CIDR block. Use this parameter to limit the CIDR block to this location.

You must set `AmazonProvidedIpv6CidrBlock` to `true` to use this parameter.

You can have one IPv6 CIDR block association per network border group.

Type: String

Required: No

### **Ipv6Pool**

The ID of an IPv6 address pool from which to allocate the IPv6 CIDR block.

Type: String

Required: No

#### **VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **cidrBlockAssociation**

Information about the IPv4 CIDR block association.

Type: [VpcCidrBlockAssociation \(p. 2187\)](#) object

#### **ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: [VpcIpv6CidrBlockAssociation \(p. 2195\)](#) object

#### **requestId**

The ID of the request.

Type: String

#### **vpcId**

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example associates an IPv6 CIDR block with VPC vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateVpcCidrBlock
&VpcId=vpc-1a2b3c4d
&AmazonProvidedIpv6CidrBlock=true
&AUTHPARAMS
```

#### Sample Response

```
<AssociateVpcCidrBlock xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<ipv6CidrBlockAssociation>
    <ipv6CidrBlockState>
        <state>associating</state>
    </ipv6CidrBlockState>
    <associationId>vpc-cidr-assoc-e2a5408b</associationId>
</ipv6CidrBlockAssociation>
<vpcId>vpc-1a2b3c4d</vpcId>
</AssociateVpcCidrBlock>
```

## Example 2

This example associates the IPv4 CIDR block 10.2.0.0/16 with VPC vpc-1a2b3c4d.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AssociateVpcCidrBlock
&VpcId=vpc-1a2b3c4d
&CidrBlock=10.2.0.0/16
&AUTHPARAMS
```

### Sample Response

```
<AssociateVpcCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>33af6c54-1139-4d50-b4f7-15a8example</requestId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <cidrBlockAssociation>
        <associationId>vpc-cidr-assoc-0280ab6b</associationId>
        <cidrBlock>10.2.0.0/16</cidrBlock>
        <cidrBlockState>
            <state>associating</state>
        </cidrBlockState>
    </cidrBlockAssociation>
</AssociateVpcCidrBlockResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AttachClassicLinkVpc

Links an EC2-Classic instance to a ClassicLink-enabled VPC through one or more of the VPC's security groups. You cannot link an EC2-Classic instance to more than one VPC at a time. You can only link an instance that's in the `running` state. An instance is automatically unlinked from a VPC when it's stopped - you can link it to the VPC again when you restart it.

After you've linked an instance, you cannot change the VPC security groups that are associated with it. To change the security groups, you must first unlink the instance, and then link it again.

Linking your instance to a VPC is sometimes referred to as *attaching* your instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of an EC2-Classic instance to link to the ClassicLink-enabled VPC.

Type: String

Required: Yes

### SecurityGroupId.N

The ID of one or more of the VPC's security groups. You cannot specify security groups from a different VPC.

Type: Array of strings

Required: Yes

### VpcId

The ID of a ClassicLink-enabled VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example links instance `i-1234567890abcdef0` to VPC `vpc-88888888` through the VPC's security group `sg-12312312`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1234567890abcdef0
&GroupId.1=sg-12312312
&AUTHPARAMS
```

#### Sample Response

```
<AttachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachClassicLinkVpcResponse>
```

### Example

This example links instance `i-1234567890abcdef0` to VPC `vpc-88888888` through the VPC's security groups `sg-12312312` and `sg-44455566`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-1234567890abcdef0
&GroupId.1=sg-12312312
&GroupId.2=sg-44455566
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AttachInternetGateway

Attaches an internet gateway or a virtual private gateway to a VPC, enabling connectivity between the internet and the VPC. For more information about your VPC and internet gateway, see the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InternetGatewayId

The ID of the internet gateway.

Type: String

Required: Yes

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example attaches the ternet gateway with the ID igw-eaad4883 to the VPC with the ID vpc-11ad4878.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

#### Sample Response

```
<AttachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AttachInternetGatewayResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AttachNetworkInterface

Attaches a network interface to an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DeviceIndex

The index of the device for the network interface attachment.

Type: Integer

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### NetworkCardIndex

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

Type: Integer

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### attachmentId

The ID of the network interface attachment.

Type: String

#### networkCardIndex

The index of the network card.

Type: Integer

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example attaches the specified network interface to the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachNetworkInterface
&DeviceIndex=1
&InstanceId=i-1234567890abcdef0
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

#### Sample Response

```
<AttachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">>
  <requestId>ace8cd1e-e685-4e44-90fb-92014d907212</requestId>
  <attachmentId>eni-attach-d94b09b0</attachmentId>
</AttachNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AttachVolume

Attaches an EBS volume to a running or stopped instance and exposes it to the instance with the specified device name.

Encrypted EBS volumes must be attached to instances that support Amazon EBS encryption. For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

After you attach an EBS volume, you must make it available. For more information, see [Make an EBS volume available for use](#).

If a volume has an AWS Marketplace product code:

- The volume can be attached only to a stopped instance.
- AWS Marketplace product codes are copied from the volume to the instance.
- You must be subscribed to the product.
- The instance type and operating system of the instance must support the product. For example, you can't detach a volume from a Windows instance and attach it to a Linux instance.

For more information, see [Attach an Amazon EBS volume to an instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Device

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### VolumeId

The ID of the EBS volume. The volume and instance must be within the same Availability Zone.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

### **deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

### **device**

The device name.

Type: String

### **instanceId**

The ID of the instance.

Type: String

### **requestId**

The ID of the request.

Type: String

### **status**

The attachment state of the volume.

Type: String

Valid Values: attaching | attached | detaching | detached | busy

### **volumeId**

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request attaches the volume with the ID vol-1234567890abcdef0 to the instance with the ID i-1234567890abcdef0 and exposes it as /dev/sdh.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVolume
&VolumeId=vol-1234567890abcdef0
&InstanceId=i-1234567890abcdef0
&Device=/dev/sdh
&AUTHPARAMS
```

## Sample Response

```
<AttachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<volumeId>vol-1234567890abcdef0</volumeId>
<instanceId>i-1234567890abcdef0</instanceId>
<device>/dev/sdh</device>
<status>attaching</status>
<attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</AttachVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AttachVpnGateway

Attaches a virtual private gateway to a VPC. You can attach one virtual private gateway to one VPC at a time.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

### VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### attachment

Information about the attachment.

Type: [VpcAttachment \(p. 2186\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example attaches the virtual private gateway with the ID vgw-8db04f81 to the VPC with the ID vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AttachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<AttachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <attachment>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>attaching</state>
  </attachment>
</AttachVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AuthorizeClientVpnIngress

Adds an ingress authorization rule to a Client VPN endpoint. Ingress authorization rules act as firewall rules that grant access to networks. You must configure ingress authorization rules to enable clients to access resources in AWS or on-premises networks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AccessGroupId

The ID of the group to grant access to, for example, the Active Directory group or identity provider (IdP) group. Required if `AuthorizeAllGroups` is `false` or not specified.

Type: String

Required: No

### AuthorizeAllGroups

Indicates whether to grant access to all clients. Specify `true` to grant all clients who successfully establish a VPN connection access to the network. Must be set to `true` if `AccessGroupId` is not specified.

Type: Boolean

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### ClientVpnEndpointId

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### Description

A brief description of the authorization rule.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TargetNetworkCidr

The IPv4 address range, in CIDR notation, of the network for which access is being authorized.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### status

The current state of the authorization rule.

Type: [ClientVpnAuthorizationRuleStatus \(p. 1433\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example adds an authorization rule to a subnet and grants access to all users.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeClientVpnIngress
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&AuthorizeAllGroups=true
&AUTHPARAMS
```

#### Sample Response

```
<AuthorizeClientVpnIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>afafad8c-274c-4584-bbd1-75a21EXAMPLE</requestId>
  <status>
    <code>authorizing</code>
  </status>
</AuthorizeClientVpnIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AuthorizeSecurityGroupEgress

[VPC only] Adds the specified outbound (egress) rules to a security group for use with a VPC.

An outbound rule permits instances to send traffic to the specified IPv4 or IPv6 CIDR address ranges, or to the instances that are associated with the specified destination security groups.

You specify a protocol for each rule (for example, TCP). For the TCP and UDP protocols, you must also specify the destination port or port range. For the ICMP protocol, you must also specify the ICMP type and code. You can use -1 for the type or code to mean all types or all codes.

Rule changes are propagated to affected instances as quickly as possible. However, a small delay might occur.

For information about VPC security group quotas, see [Amazon VPC quotas](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrIp

Not supported. Use a set of IP permissions to specify the CIDR.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### FromPort

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

### GroupId

The ID of the security group.

Type: String

Required: Yes

### IpPermissions.N

The sets of IP permissions. You can't specify a destination security group and a CIDR IP address range in the same set of permissions.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

**IpProtocol**

Not supported. Use a set of IP permissions to specify the protocol name or number.

Type: String

Required: No

**SourceSecurityGroupName**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

**TagSpecification.N**

The tags applied to the security group rule.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**ToPort**

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

**securityGroupRuleSet**

Information about the outbound (egress) security group rules that were added.

Type: Array of [SecurityGroupRule \(p. 1995\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request grants your security group with the ID sg-1a2b3c4d access to the 192.0.2.0/24 and 198.51.100.0/24 IPv4 address ranges on TCP port 80.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

#### Sample Response

```
<AuthorizeSecurityGroupEgressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbbf89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</AuthorizeSecurityGroupEgressResponse>
```

### Example 2

This example request grants egress access from the security group with the ID sg-1a2b3c4d to the security group with the ID sg-9a8d7f5c on TCP port 1433.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

### Example 3

This example request grants your security group with the ID sg-1a2b3c4d access to the 2001:db8:1234:1a00::/64 IPv6 address range on TCP port 22.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
```

```
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

## Example 4

This example grants access over port 3389 (RDP) to the 192.0.2.0/24 IPv4 address range, and includes a description for the rule to help you identify the rule later.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=3389
&IpPermissions.1.ToPort=3389
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.1.Description=Access to London office
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# AuthorizeSecurityGroupIngress

Adds the specified inbound (ingress) rules to a security group.

An inbound rule permits instances to receive traffic from the specified IPv4 or IPv6 CIDR address range, or from the instances that are associated with the specified destination security groups.

You specify a protocol for each rule (for example, TCP). For TCP and UDP, you must also specify the destination port or port range. For ICMP/ICMPv6, you must also specify the ICMP/ICMPv6 type and code. You can use -1 to mean all types or all codes.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

For more information about VPC security group quotas, see [Amazon VPC quotas](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrIp

The IPv4 address range, in CIDR format. You can't specify this parameter when specifying a source security group. To specify an IPv6 address range, use a set of IP permissions.

Alternatively, use a set of IP permissions to specify multiple rules and a description for the rule.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FromPort

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use -1 to specify all types. If you specify all ICMP types, you must specify all codes.

Alternatively, use a set of IP permissions to specify multiple rules and a description for the rule.

Type: Integer

Required: No

### GroupId

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

**GroupName**

[EC2-Classic, default VPC] The name of the security group. You must specify either the security group ID or the security group name in the request.

Type: String

Required: No

**IpPermissions.N**

The sets of IP permissions.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

**IpProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`) or number (see [Protocol Numbers](#)). To specify `icmpv6`, use a set of IP permissions.

[VPC only] Use `-1` to specify all protocols. If you specify `-1` or a protocol other than `tcp`, `udp`, or `icmp`, traffic on all ports is allowed, regardless of any ports you specify.

Alternatively, use a set of IP permissions to specify multiple rules and a description for the rule.

Type: String

Required: No

**SourceSecurityGroupName**

[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. Creates rules that grant full ICMP, UDP, and TCP access. To create a rule with a specific IP protocol and port range, use a set of IP permissions instead. For EC2-VPC, the source security group must be in the same VPC.

Type: String

Required: No

**SourceSecurityGroupOwnerId**

[nondefault VPC] The AWS account ID for the source security group, if the source security group is in a different account. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. Creates rules that grant full ICMP, UDP, and TCP access. To create a rule with a specific IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

**TagSpecification.N**

[VPC Only] The tags applied to the security group rule.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**ToPort**

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use `-1` to specify all codes. If you specify all ICMP types, you must specify all codes.

Alternatively, use a set of IP permissions to specify multiple rules and a description for the rule.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

### **securityGroupRuleSet**

Information about the inbound (ingress) security group rules that were added.

Type: Array of [SecurityGroupRule \(p. 1995\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

[EC2-Classic] This example request grants TCP port 80 access from the 192.0.2.0/24 and 198.51.100.0/24 IPv4 address ranges to the security group in EC2-Classic named `websrv`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24
&IpPermissions.1.IpRanges.2.CidrIp=198.51.100.0/24
&AUTHPARAMS
```

### Example 2

[EC2-Classic, default VPC] This example request grants full ICMP, UDP, and TCP access from a source group called `webserver1` (in AWS account 123456789012) to a security group in your account with the ID `sg-1a2b3c4d`. For EC2-VPC, the group owner ID parameter is not required, and the source security group

must be in the same VPC. For an example of granting access to specific protocols and ports, see example 3.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&SourceSecurityGroupOwnerId=123456789012
&SourceSecurityGroupName=webserver1
&AUTHPARAMS
```

## Example 3

[EC2-Classic, default VPC] This example request grants TCP port 80 access from the source group named OtherAccountGroup (in AWS account 123456789012) to the security group named websrv. For EC2-VPC, the user ID parameter is not required, and the source security group must be in the same VPC.

## Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupName=OtherAccountGroup
&IpPermissions.1.Groups.1.UserId=123456789012
&AUTHPARAMS
```

## Example 4

[EC2-VPC] This example request grants TCP port 80 access from the source group sg-2a2b3c4d to the security group sg-1a2b3c4d. In EC2-VPC, you must use the security group IDs in a request, not the security group names. The source security group must be in the same VPC or in a peer VPC (requires a VPC peering connection).

## Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Groups.1.GroupId=sg-2a2b3c4d
&AUTHPARAMS
```

## Example 5

[EC2-Classic, default VPC] This example request grants your local system the ability to use SSH (port 22) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

## Sample Request

```
https://ec2.amazonaws.com/
?Action=AuthorizeSecurityGroupIngress
&GroupName=default
```

```
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=22  
&IpPermissions.1.ToPort=22  
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32  
&AUTHPARAMS
```

## Example 6

[EC2-Classic, default VPC] This example request grants your local system the ability to use Remote Desktop (port 3389) to connect to any instance in the security group named default. For a nondefault VPC, use the GroupId parameter instead.

### Sample Request

```
https://ec2.amazonaws.com/  
?Action=AuthorizeSecurityGroupIngress  
&GroupName=default  
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=3389  
&IpPermissions.1.ToPort=3389  
&IpPermissions.1.IpRanges.1.CidrIp=your-local-system's-public-ip-address/32
```

## Example 7

[EC2-VPC] This example grants SSH access (port 22) from the IPv6 range 2001:db8:1234:1a00::/64.

### Sample Request

```
https://ec2.amazonaws.com/  
?Action=AuthorizeSecurityGroupIngress  
&GroupId=sg-1a2b3c4d  
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=22  
&IpPermissions.1.ToPort=22  
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64  
&AUTHPARAMS
```

## Example 8

This example grants access over port 3389 (RDP) from the 192.0.2.0/24 IPv4 address range, and includes a description for the rule to help you identify the rule later.

### Sample Request

```
https://ec2.amazonaws.com/?Action=AuthorizeSecurityGroupIngress  
&GroupId=sg-112233  
&IpPermissions.1.IpProtocol=tcp  
&IpPermissions.1.FromPort=3389  
&IpPermissions.1.ToPort=3389  
&IpPermissions.1.IpRanges.1.CidrIp=192.0.2.0/24  
&IpPermissions.1.IpRanges.1.Description=Access from New York office
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## BundleInstance

Bundles an Amazon instance store-backed Windows instance.

During bundling, only the root device volume (C:\) is bundled. Data on other instance store volumes is not preserved.

### Note

This action is not applicable for Linux/Unix instances or Windows instances that are backed by Amazon EBS.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceId

The ID of the instance to bundle.

Type: String

Default: None

Required: Yes

Type: String

Required: Yes

### Storage

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: [Storage \(p. 2056\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

### bundleInstanceTask

Information about the bundle task.

Type: [BundleTask \(p. 1394\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request bundles the specified instance.

Before you specify a value for your access key ID, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

### Sample Request

```
https://ec2.amazonaws.com/?Action=BundleInstance
&InstanceId=i-1234567890abcdef0
&Storage.S3.AWSAccessKeyId='AKIAIOSFODNN7EXAMPLE'
&Storage.S3.Bucket=myawsbucket
&Storage.S3.Prefix=winami
&Storage.S3.UploadPolicy=eyJleHBpcmFOaW9uIjogIjIwMDgtMDgtMzBUMDg6NDk6MD
laIiwiY29uZG10aW9ucyI6IFT7ImJ1Y2tldCI6ICJteS1idWNrZXQifSxbInN0YXJ0cy13aXRoIiwgI
iRrZXkilCAiLCAiXktbmV3LWltYWd1I0seyJhY2wiOiAizWMyLWJ1bmRsZS1yZWFkIn1dfEXAMPLE
&Storage.S3.UploadPolicySignature=fh5tyyyQD8W4COEthj3nlgNEXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<BundleInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<bundleInstanceTask>
  <instanceId>i-1234567890abcdef0</instanceId>
  <bundleId>bun-c1a540a8</bundleId>
  <state>bundling</state>
  <startTime>2008-10-07T11:41:50.000Z</startTime>
  <updateTime>2008-10-07T11:51:50.000Z</updateTime>
  <progress>70%</progress>
  <storage>
    <S3>
      <bucket>myawsbucket</bucket>
      <prefix>winami</prefix>
    </S3>
  </storage>
</bundleInstanceTask>
</BundleInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelBundleTask

Cancels a bundling operation for an instance store-backed Windows instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### BundleId

The ID of the bundle task.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### bundleInstanceTask

Information about the bundle task.

Type: [BundleTask \(p. 1394\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request cancels the specified bundle task.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CancelBundleTask
&BundleId=bun-cla322b9
&AUTHPARAMS
```

## Sample Response

```
<CancelBundleTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<bundleInstanceTask>
    <instanceId>i-1234567890abcdef0</instanceId>
    <bundleId>bun-cla322b9</bundleId>
    <state>canceling</state>
    <startTime>2008-10-07T11:41:50.000Z</startTime>
    <updateTime>2008-10-07T11:51:50.000Z</updateTime>
    <progress>20%</progress>
    <storage>
        <S3>
            <bucket>myawsbucket</bucket>
            <prefix>my-new-image</prefix>
        </S3>
    </storage>
</bundleInstanceTask>
</CancelBundleTaskResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelCapacityReservation

Cancels the specified Capacity Reservation, releases the reserved capacity, and changes the Capacity Reservation's state to cancelled.

Instances running in the reserved capacity continue running until you stop them. Stopped instances that target the Capacity Reservation can no longer launch. Modify these instances to either target a different Capacity Reservation, launch On-Demand Instance capacity, or run in any open Capacity Reservation that has matching attributes and sufficient capacity.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CapacityReservationId**

The ID of the Capacity Reservation to be cancelled.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelCapacityReservationFleets

Cancels one or more Capacity Reservation Fleets. When you cancel a Capacity Reservation Fleet, the following happens:

- The Capacity Reservation Fleet's status changes to `cancelled`.
- The individual Capacity Reservations in the Fleet are cancelled. Instances running in the Capacity Reservations at the time of cancelling the Fleet continue to run in shared capacity.
- The Fleet stops creating new Capacity Reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CapacityReservationFleetId.N**

The IDs of the Capacity Reservation Fleets to cancel.

Type: Array of strings

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **failedFleetCancellationSet**

Information about the Capacity Reservation Fleets that could not be cancelled.

Type: Array of [FailedCapacityReservationFleetCancellationResult \(p. 1541\)](#) objects

### **requestId**

The ID of the request.

Type: String

### **successfulFleetCancellationSet**

Information about the Capacity Reservation Fleets that were successfully cancelled.

Type: Array of [CapacityReservationFleetCancellationState \(p. 1410\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CancelConversionTask

Cancels an active conversion task. The task can be the import of an instance or volume. The action removes all artifacts of the conversion, including a partially uploaded volume or instance. If the conversion is complete or is in the process of transferring the final disk image, the command fails and returns an exception.

For more information, see [Importing a Virtual Machine Using the Amazon EC2 CLI](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### ConversionTaskId

The ID of the conversion task.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ReasonMessage

The reason for canceling the conversion task.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request cancels the conversion task with the ID `import-i-fh95npoc`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelConversionTask
&ConversionTaskId=import-i-fh95npoc
&AUTHPARAMS
```

#### Sample Response

```
<CancelConversionTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CancelConversionTaskResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelExportTask

Cancels an active export task. The request removes all artifacts of the export, including any partially-created Amazon S3 objects. If the export task is complete or is in the process of transferring the final disk image, the command fails and returns an error.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### ExportTaskId

The ID of the export task. This is the ID returned by `CreateInstanceExportTask`.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request cancels the export task with the ID `export-i-1234wxyz`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelExportTask
&exportTaskId=export-i-1234wxyz
&AUTHPARAMS
```

#### Sample Response

```
<CancelExportTask xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</CancelExportTask>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelImportTask

Cancels an in-process import virtual machine or import snapshot task.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CancelReason**

The reason for canceling the task.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **ImportTaskId**

The ID of the import image or import snapshot task to be canceled.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **importTaskId**

The ID of the task being canceled.

Type: String

### **previousState**

The current state of the task being canceled.

Type: String

### **requestId**

The ID of the request.

Type: String

### **state**

The current state of the task being canceled.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelReservedInstancesListing

Cancels the specified Reserved Instance listing in the Reserved Instance Marketplace.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### ReservedInstancesListingId

The ID of the Reserved Instance listing.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### reservedInstancesListingsSet

The Reserved Instance listing.

Type: Array of [ReservedInstancesListing \(p. 1942\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request cancels a Reserved Instance listing in the Reserved Instance Marketplace. The response shows that the status is cancelled.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelReservedInstancesListing
&ReservedInstancesListingId=3ebe97b5-f273-43b6-a204-7a18cEXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<CancelReservedInstancesListingResponse>
  <requestId>bec2cf62-98ef-434a-8a15-886fcexample</requestId>
  <reservedInstancesListingsSet>
    <item>
      <reservedInstancesListingId>3ebe97b5-f273-43b6-a204-7a18cEXAMPLE</reservedInstancesListingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <createDate>2012-07-12T16:55:28.000Z</createDate>
      <updateDate>2012-07-12T16:55:28.000Z</updateDate>
      <status>cancelled</status>
      <statusMessage>CANCELLED</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>1</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>5</term>
          <price>166.64</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>4</term>
          <price>133.32</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>3</term>
          <price>99.99</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>2</term>
          <price>66.66</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>1</term>
          <price>33.33</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
      </priceSchedules>
      <tagSet/>
      <clientToken>XqJIt1342112125076</clientToken>
    </item>
  </reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

```
</item>
</reservedInstancesListingsSet>
</CancelReservedInstancesListingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelSpotFleetRequests

Cancels the specified Spot Fleet requests.

After you cancel a Spot Fleet request, the Spot Fleet launches no new Spot Instances. You must specify whether the Spot Fleet should also terminate its Spot Instances. If you terminate the instances, the Spot Fleet request enters the `cancelled_terminating` state. Otherwise, the Spot Fleet request enters the `cancelled_running` state and the instances continue to run until they are interrupted or you terminate them manually.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SpotFleetRequestId.N

The IDs of the Spot Fleet requests.

Type: Array of strings

Required: Yes

### TerminateInstances

Indicates whether to terminate instances for a Spot Fleet request if it is canceled successfully.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### successfulFleetRequestSet

Information about the Spot Fleet requests that are successfully canceled.

Type: Array of [CancelSpotFleetRequestsSuccessItem \(p. 1402\)](#) objects

### unsuccessfulFleetRequestSet

Information about the Spot Fleet requests that are not successfully canceled.

Type: Array of [CancelSpotFleetRequestsErrorItem](#) (p. 1401) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes](#) (p. 2251).

## Examples

### Example

This example cancels Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 and terminates all instances that were launched by the request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotFleetRequests
&SpotFleetRequestId.1=sfr-123f8fc2-cb31-425e-abcd-example2710
&TerminateInstances=true
&AUTHPARAMS
```

#### Sample Response

```
<CancelSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>e12d2fe5-6503-4b4b-911c-example</requestId>
  <unsuccessfulFleetRequestSet/>
  <successfulFleetRequestSet>
    <item>
      <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</
spotFleetRequestId>
      <currentSpotFleetRequestState>cancelled_terminating</
currentSpotFleetRequestState>
      <previousSpotFleetRequestState>active</previousSpotFleetRequestState>
    </item>
  </successfulFleetRequestSet>
</CancelSpotFleetRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CancelSpotInstanceRequests

Cancels one or more Spot Instance requests.

## Important

Canceling a Spot Instance request does not terminate running Spot Instances associated with the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SpotInstanceRequestId.N

One or more Spot Instance request IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### spotInstanceRequestSet

One or more Spot Instance requests.

Type: Array of [CancelledSpotInstanceRequest \(p. 1399\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example cancels the specified Spot Instance request.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CancelSpotInstanceRequests
&SpotInstanceRequestId.1=sir-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<CancelSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotInstanceRequestSet>
<item>
<spotInstanceRequestId>sir-1a2b3c4d</spotInstanceRequestId>
<state>cancelled</state>
</item>
</spotInstanceRequestSet>
</CancelSpotInstanceRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ConfirmProductInstance

Determines whether a product code is associated with an instance. This action can only be used by the owner of the product code. It is useful when a product code owner must verify whether another user's instance is eligible for support.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### ProductCode

The product code. This must be a product code that you own.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### ownerId

The AWS account ID of the instance owner. This is only present if the product code is attached to the instance.

Type: String

### requestId

The ID of the request.

Type: String

### return

The return value of the request. Returns `true` if the specified product code is owned by the requester and associated with the specified instance.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example determines whether the specified product code is associated with the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ConfirmProductInstance
&ProductCode=774F4FF8
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<ConfirmProductInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
<ownerId>111122223333</ownerId>
</ConfirmProductInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CopyFpgalmage

Copies the specified Amazon FPGA Image (AFI) to the current Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring idempotency](#).

Type: String

Required: No

### **Description**

The description for the new AFI.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **Name**

The name for the new AFI. The default is the name of the source AFI.

Type: String

Required: No

### **SourceFpgalmageld**

The ID of the source AFI.

Type: String

Required: Yes

### **SourceRegion**

The Region that contains the source AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### fpgalmagId

The ID of the new AFI.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example copies the specified AFI from the `us-east-1` Region to the current Region (`eu-west-1`).

#### Sample Request

```
https://ec2.eu-west-1.amazonaws.com/?Action=CopyFpgaImage
&Name=eu-afi
&SourceFpgaImageId=afi-0d123eabcbfc85456
&SourceRegion=us-east-1
&AUTHPARAMS
```

#### Sample Response

```
<CopyFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>2d55d021-9ca9-45a1-8c5c-453example</requestId>
  <fpgaImageId>afi-06b12350a123fbabc</fpgaImageId>
</CopyFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CopyImage

Initiates the copy of an AMI. You can copy an AMI from one Region to another, or from a Region to an Outpost. You can't copy an AMI from an Outpost to a Region, from one Outpost to another, or within the same Outpost. To copy an AMI to another partition, see [CreateStoreImageTask](#).

To copy an AMI from one Region to another, specify the source Region using the **SourceRegion** parameter, and specify the destination Region using its endpoint. Copies of encrypted backing snapshots for the AMI are encrypted. Copies of unencrypted backing snapshots remain unencrypted, unless you set **Encrypted** during the copy operation. You cannot create an unencrypted copy of an encrypted backing snapshot.

To copy an AMI from a Region to an Outpost, specify the source Region using the **SourceRegion** parameter, and specify the ARN of the destination Outpost using **DestinationOutpostArn**. Backing snapshots copied to an Outpost are encrypted by default using the default encryption key for the Region, or a different key that you specify in the request using **KmsKeyId**. Outposts do not support unencrypted snapshots. For more information, [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information about the prerequisites and limits when copying an AMI, see [Copying an AMI](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 224\)](#).

### **ClientToken**

Unique, case-sensitive identifier you provide to ensure idempotency of the request. For more information, see [Ensuring idempotency](#) in the *Amazon EC2 API Reference*.

Type: String

Required: No

### **Description**

A description for the new AMI in the destination Region.

Type: String

Required: No

### **DestinationOutpostArn**

The Amazon Resource Name (ARN) of the Outpost to which to copy the AMI. Only specify this parameter when copying an AMI from an AWS Region to an Outpost. The AMI must be in the Region of the destination Outpost. You cannot copy an AMI from an Outpost to a Region, from one Outpost to another, or within the same Outpost.

For more information, see [Copying AMIs from an AWS Region to an Outpost](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Encrypted

Specifies whether the destination snapshots of the copied image should be encrypted. You can encrypt a copy of an unencrypted snapshot, but you cannot create an unencrypted copy of an encrypted snapshot. The default KMS key for Amazon EBS is used unless you specify a non-default AWS Key Management Service (AWS KMS) KMS key using `KmsKeyId`. For more information, see [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

### KmsKeyId

The identifier of the symmetric AWS Key Management Service (AWS KMS) KMS key to use when creating encrypted volumes. If this parameter is not specified, your AWS managed KMS key for Amazon EBS is used. If you specify a KMS key, you must also set the `encrypted` state to `true`.

You can specify a KMS key using any of the following:

- Key ID. For example, `1234abcd-12ab-34cd-56ef-1234567890ab`.
- Key alias. For example, `alias/ExampleAlias`.
- Key ARN. For example, `arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab`.
- Alias ARN. For example, `arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias`.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an identifier that is not valid, the action can appear to complete, but eventually fails.

The specified KMS key must exist in the destination Region.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

### Name

The name of the new AMI in the destination Region.

Type: String

Required: Yes

### SourceImageId

The ID of the AMI to copy.

Type: String

Required: Yes

### SourceRegion

The name of the Region that contains the AMI to copy.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### imageId

The ID of the new AMI.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request copies the AMI in us-west-2 with the ID ami-1a2b3c4d, naming the new AMI My-Standard-AMI.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CopyImage
&SourceRegion=us-west-2
&SourceImageId=ami-1a2b3c4d
&Name=My-Standard-AMI
&Description=This%20is%20the%20new%20version%20of%20My-Standard-AMI
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

### Sample Response

```
<CopyImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
  <imageId>ami-4d3c2b1a</imageId>
</CopyImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CopySnapshot

Copies a point-in-time snapshot of an EBS volume and stores it in Amazon S3. You can copy a snapshot within the same Region, from one Region to another, or from a Region to an Outpost. You can't copy a snapshot from an Outpost to a Region, from one Outpost to another, or within the same Outpost.

You can use the snapshot to create EBS volumes or Amazon Machine Images (AMIs).

When copying snapshots to a Region, copies of encrypted EBS snapshots remain encrypted. Copies of unencrypted snapshots remain unencrypted, unless you enable encryption for the snapshot copy operation. By default, encrypted snapshot copies use the default AWS Key Management Service (AWS KMS) KMS key; however, you can specify a different KMS key. To copy an encrypted snapshot that has been shared from another account, you must have permissions for the KMS key used to encrypt the snapshot.

Snapshots copied to an Outpost are encrypted by default using the default encryption key for the Region, or a different key that you specify in the request using **KmsKeyId**. Outposts do not support unencrypted snapshots. For more information, [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

Snapshots created by copying another snapshot have an arbitrary volume ID that should not be used for any purpose.

For more information, see [Copy an Amazon EBS snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

A description for the EBS snapshot.

Type: String

Required: No

### DestinationOutpostArn

The Amazon Resource Name (ARN) of the Outpost to which to copy the snapshot. Only specify this parameter when copying a snapshot from an AWS Region to an Outpost. The snapshot must be in the Region for the destination Outpost. You cannot copy a snapshot from an Outpost to a Region, from one Outpost to another, or within the same Outpost.

For more information, see [Copy snapshots from an AWS Region to an Outpost](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

### DestinationRegion

The destination Region to use in the **PresignedUrl** parameter of a snapshot copy operation. This parameter is only valid for specifying the destination Region in a **PresignedUrl** parameter, where it is required.

The snapshot copy is sent to the regional endpoint that you sent the HTTP request to (for example, `ec2.us-east-1.amazonaws.com`).

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Encrypted**

To encrypt a copy of an unencrypted snapshot if encryption by default is not enabled, enable encryption using this parameter. Otherwise, omit this parameter. Encrypted snapshots are encrypted, even if you omit this parameter and encryption by default is not enabled. You cannot set this parameter to false. For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

**KmsKeyId**

The identifier of the AWS Key Management Service (AWS KMS) KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If `KmsKeyId` is specified, the `encrypted` state must be `true`.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Type: String

Required: No

**PresignedUrl**

When you copy an encrypted source snapshot using the Amazon EC2 Query API, you must supply a pre-signed URL. This parameter is optional for unencrypted snapshots. For more information, see [Query requests](#).

The `PresignedUrl` should use the snapshot source endpoint, the `CopySnapshot` action, and include the `SourceRegion`, `SourceSnapshotId`, and `DestinationRegion` parameters. The `PresignedUrl` must be signed using AWS Signature Version 4. Because EBS snapshots are stored in Amazon S3, the signing algorithm for this parameter uses the same logic that is described in [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) in the *Amazon Simple Storage Service API Reference*. An invalid or improperly signed `PresignedUrl` will cause the copy operation to fail asynchronously, and the snapshot will move to an `error` state.

Type: String

Required: No

**SourceRegion**

The ID of the Region that contains the snapshot to be copied.

Type: String

Required: Yes

**SourceSnapshotId**

The ID of the EBS snapshot to copy.

Type: String

Required: Yes

**TagSpecification.N**

The tags to apply to the new snapshot.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the new snapshot.

Type: String

**tagSet**

Any tags applied to the new snapshot.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Create copy of an unencrypted snapshot in the same Region as the original

This example request copies the snapshot in the us-west-1 Region with the ID snap-1234567890abcdef0.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CopySnapshot
&SourceRegion=us-west-1
&SourceSnapshotId=snap-1234567890abcdef0
&Description=My_snapshot
&AUTHPARAMS
```

## Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>60bc441d-fa2c-494d-b155-5d6a3EXAMPLE</requestId>
<snapshotId>snap-1234567890abcdef1</snapshotId>
</CopySnapshotResponse>
```

## Create a copy of an encrypted snapshot in a Region different from the original

This example request copies an encrypted snapshot in the us-west-1 Region to the us-east-1 Region with the ID snap-0987654321abcdef0.

## Sample Request

```
https://ec2.amazonaws.com/?SourceSnapshotId=snap-005a01bf6eEXAMPLE
&SourceRegion=us-west-1
&KmsKeyId=arn%3Aaws%3Akms%3Aus-west-2%3A210774411744%3Akey%2FfEXAMPLE-24bc-479b-
a9da-7132eEXAMPLE
&Action=CopySnapshot
&Encrypted=true
&DestinationRegion=us-east-1
&AUTHPARAMS
```

## Sample Response

```
<CopySnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>256f6c57-6648-4544-a79a-35a03EXAMPLE</requestId>
<snapshotId>snap-0987654321abcdef0</snapshotId>
</CopySnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# CreateCapacityReservation

Creates a new Capacity Reservation with the specified attributes.

Capacity Reservations enable you to reserve capacity for your Amazon EC2 instances in a specific Availability Zone for any duration. This gives you the flexibility to selectively add capacity reservations and still get the Regional RI discounts for that usage. By creating Capacity Reservations, you ensure that you always have access to Amazon EC2 capacity when you need it, for as long as you need it. For more information, see [Capacity Reservations](#) in the *Amazon EC2 User Guide*.

Your request to create a Capacity Reservation could fail if Amazon EC2 does not have sufficient capacity to fulfill the request. If your request fails due to Amazon EC2 capacity constraints, either try again at a later time, try in a different Availability Zone, or request a smaller capacity reservation. If your application is flexible across instance types and sizes, try to create a Capacity Reservation with different instance attributes.

Your request could also fail if the requested quantity exceeds your On-Demand Instance limit for the selected instance type. If your request fails due to limit constraints, increase your On-Demand Instance limit for the required instance type and try again. For more information about increasing your instance limits, see [Amazon EC2 Service Quotas](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZone

The Availability Zone in which to create the Capacity Reservation.

Type: String

Required: No

### AvailabilityZoneId

The ID of the Availability Zone in which to create the Capacity Reservation.

Type: String

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensure Idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **EbsOptimized**

Indicates whether the Capacity Reservation supports EBS-optimized instances. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS- optimized instance.

Type: Boolean

Required: No

### **EndDate**

The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

You must provide an `EndDate` value if `EndDateType` is `limited`. Omit `EndDate` if `EndDateType` is `unlimited`.

If the `EndDateType` is `limited`, the Capacity Reservation is cancelled within an hour from the specified time. For example, if you specify `5/31/2019, 13:30:55`, the Capacity Reservation is guaranteed to end between `13:30:55` and `14:30:55` on `5/31/2019`.

Type: Timestamp

Required: No

### **EndDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- `unlimited` - The Capacity Reservation remains active until you explicitly cancel it. Do not provide an `EndDate` if the `EndDateType` is `unlimited`.
- `limited` - The Capacity Reservation expires automatically at a specified date and time. You must provide an `EndDate` value if the `EndDateType` value is `limited`.

Type: String

Valid Values: `unlimited` | `limited`

Required: No

### **EphemeralStorage**

Indicates whether the Capacity Reservation supports instances with temporary, block-level storage.

Type: Boolean

Required: No

### **InstanceCount**

The number of instances for which to reserve capacity.

Valid range: 1 - 1000

Type: Integer

Required: Yes

### **InstanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation accepts. The options include:

- **open** - The Capacity Reservation automatically matches all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes run in the Capacity Reservation automatically without specifying any additional parameters.
- **targeted** - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.

Default: open

Type: String

Valid Values: open | targeted

Required: No

#### **InstancePlatform**

The type of operating system for which to reserve capacity.

Type: String

Valid Values: Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise

Required: Yes

#### **InstanceType**

The instance type for which to reserve capacity. For more information, see [Instance types in the Amazon EC2 User Guide](#).

Type: String

Required: Yes

#### **OutpostArn**

The Amazon Resource Name (ARN) of the Outpost on which to create the Capacity Reservation.

Type: String

Pattern: ^arn:aws([a-z-]+):outposts:[a-z\d-]+\d{12}:outpost/op-[a-f0-9]{17}\$

Required: No

#### **TagSpecifications.N**

The tags to apply to the Capacity Reservation during launch.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **Tenancy**

Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:

- **default** - The Capacity Reservation is created on hardware that is shared with other AWS accounts.
- **dedicated** - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: default | dedicated

Required: No

## Response Elements

The following elements are returned by the service.

### **capacityReservation**

Information about the Capacity Reservation.

Type: [CapacityReservation \(p. 1403\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateCapacityReservationFleet

Creates a Capacity Reservation Fleet. For more information, see [Create a Capacity Reservation Fleet](#) in the Amazon EC2 User Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationStrategy

The strategy used by the Capacity Reservation Fleet to determine which of the specified instance types to use. Currently, only the prioritized allocation strategy is supported. For more information, see [Allocation strategy](#) in the Amazon EC2 User Guide.

Valid values: prioritized

Type: String

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensure Idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### EndDate

The date and time at which the Capacity Reservation Fleet expires. When the Capacity Reservation Fleet expires, its state changes to expired and all of the Capacity Reservations in the Fleet expire.

The Capacity Reservation Fleet expires within an hour after the specified time. For example, if you specify 5/31/2019, 13:30:55, the Capacity Reservation Fleet is guaranteed to expire between 13:30:55 and 14:30:55 on 5/31/2019.

Type: Timestamp

Required: No

### InstanceMatchCriteria

Indicates the type of instance launches that the Capacity Reservation Fleet accepts. All Capacity Reservations in the Fleet inherit this instance matching criteria.

Currently, Capacity Reservation Fleets support open instance matching criteria only. This means that instances that have matching attributes (instance type, platform, and Availability Zone) run

in the Capacity Reservations automatically. Instances do not need to explicitly target a Capacity Reservation Fleet to use its reserved capacity.

Type: String

Valid Values: open

Required: No

#### **InstanceTypeSpecification.N**

Information about the instance types for which to reserve the capacity.

Type: Array of [ReservationFleetInstanceSpecification \(p. 1927\)](#) objects

Required: Yes

#### **TagSpecification.N**

The tags to assign to the Capacity Reservation Fleet. The tags are automatically assigned to the Capacity Reservations in the Fleet.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **Tenancy**

Indicates the tenancy of the Capacity Reservation Fleet. All Capacity Reservations in the Fleet inherit this tenancy. The Capacity Reservation Fleet can have one of the following tenancy settings:

- default - The Capacity Reservation Fleet is created on hardware that is shared with other AWS accounts.
- dedicated - The Capacity Reservations are created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: default

Required: No

#### **TotalTargetCapacity**

The total number of capacity units to be reserved by the Capacity Reservation Fleet. This value, together with the instance type weights that you assign to each instance type used by the Fleet determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see [Total target capacity](#) in the Amazon EC2 User Guide.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **allocationStrategy**

The allocation strategy used by the Capacity Reservation Fleet.

Type: String

**capacityReservationFleetId**

The ID of the Capacity Reservation Fleet.

Type: String

**createTime**

The date and time at which the Capacity Reservation Fleet was created.

Type: Timestamp

**endDate**

The date and time at which the Capacity Reservation Fleet expires.

Type: Timestamp

**fleetCapacityReservationSet**

Information about the individual Capacity Reservations in the Capacity Reservation Fleet.

Type: Array of [FleetCapacityReservation \(p. 1546\)](#) objects

**instanceMatchCriteria**

The instance matching criteria for the Capacity Reservation Fleet.

Type: String

Valid Values: open

**requestId**

The ID of the request.

Type: String

**state**

The status of the Capacity Reservation Fleet.

Type: String

Valid Values: submitted | modifying | active | partially\_fulfilled | expiring | expired | cancelling | cancelled | failed

**tagSet**

The tags assigned to the Capacity Reservation Fleet.

Type: Array of [Tag \(p. 2070\)](#) objects

**tenancy**

Indicates the tenancy of Capacity Reservation Fleet.

Type: String

Valid Values: default

**totalFulfilledCapacity**

The requested capacity units that have been successfully reserved.

Type: Double

**totalTargetCapacity**

The total number of capacity units for which the Capacity Reservation Fleet reserves capacity.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateCarrierGateway

Creates a carrier gateway. For more information about carrier gateways, see [Carrier gateways in the AWS Wavelength Developer Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **TagSpecification.N**

The tags to associate with the carrier gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### **VpcId**

The ID of the VPC to associate with the carrier gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **carrierGateway**

Information about the carrier gateway.

Type: [CarrierGateway \(p. 1418\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateClientVpnEndpoint

Creates a Client VPN endpoint. A Client VPN endpoint is the resource you create and configure to enable and manage client VPN sessions. It is the destination endpoint at which all client VPN sessions are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Authentication.N**

Information about the authentication method to be used to authenticate clients.

Type: Array of [ClientVpnAuthenticationRequest \(p. 1432\)](#) objects

Required: Yes

### **ClientCidrBlock**

The IPv4 address range, in CIDR notation, from which to assign client IP addresses. The address range cannot overlap with the local CIDR of the VPC in which the associated subnet is located, or the routes that you add manually. The address range cannot be changed after the Client VPN endpoint has been created. The CIDR block should be /22 or greater.

Type: String

Required: Yes

### **ClientConnectOptions**

The options for managing connection authorization for new client connections.

Type: [ClientConnectOptions \(p. 1428\)](#) object

Required: No

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **ConnectionLogOptions**

Information about the client connection logging options.

If you enable client connection logging, data about client connections is sent to a Cloudwatch Logs log stream. The following information is logged:

- Client connection requests
- Client connection results (successful and unsuccessful)
- Reasons for unsuccessful client connection requests
- Client connection termination time

Type: [ConnectionLogOptions \(p. 1448\)](#) object

Required: Yes

### Description

A brief description of the Client VPN endpoint.

Type: String

Required: No

### DnsServers.N

Information about the DNS servers to be used for DNS resolution. A Client VPN endpoint can have up to two DNS servers. If no DNS server is specified, the DNS address configured on the device is used for the DNS server.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SecurityGroupId.N

The IDs of one or more security groups to apply to the target network. You must also specify the ID of the VPC that contains the security groups.

Type: Array of strings

Required: No

### SelfServicePortal

Specify whether to enable the self-service portal for the Client VPN endpoint.

Default Value: enabled

Type: String

Valid Values: enabled | disabled

Required: No

### ServerCertificateArn

The ARN of the server certificate. For more information, see the [AWS Certificate Manager User Guide](#).

Type: String

Required: Yes

### SplitTunnel

Indicates whether split-tunnel is enabled on the AWS Client VPN endpoint.

By default, split-tunnel on a VPN endpoint is disabled.

For information about split-tunnel VPN endpoints, see [Split-tunnel AWS Client VPN endpoint](#) in the [AWS Client VPN Administrator Guide](#).

Type: Boolean

Required: No

**TagSpecification.N**

The tags to apply to the Client VPN endpoint during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**TransportProtocol**

The transport protocol to be used by the VPN session.

Default value: `udp`

Type: String

Valid Values: `tcp` | `udp`

Required: No

**VpcId**

The ID of the VPC to associate with the Client VPN endpoint. If no security group IDs are specified in the request, the default security group for the VPC is applied.

Type: String

Required: No

**VpnPort**

The port number to assign to the Client VPN endpoint for TCP and UDP traffic.

Valid Values: `443` | `1194`

Default Value: `443`

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

**dnsName**

The DNS name to be used by clients when establishing their VPN session.

Type: String

**requestId**

The ID of the request.

Type: String  
**status**  
The current state of the Client VPN endpoint.  
Type: [ClientVpnEndpointStatus \(p. 1442\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateClientVpnEndpoint
&ClientCidrBlock=11.0.0.0/16
&ServerCertificateArn=arn:aws:acm:us-east-1:123456789098:certificate/82916b3c-7449-43cf-
ab9e-EXAMPLE
&Authentication.1.Type=certificate-authentication
&Authentication.1.MutualAuthentication.1.ClientRootCertificateChainArn=arn:aws:acm:us-
east-1:123456789098:certificate/82916b3c-7449-43cf-ab9e-EXAMPLE
&ConnectionLogOptions.Enabled=false
&DnsServers=11.11.0.1
&AUTHPARAMS
```

#### Sample Response

```
<CreateClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>c11b2aa2-c48d-4711-a394-43cbe8961c46</requestId>
  <dnsName>cvpn-endpoint-00c5d11fc4729f2a5.prod.clientvpn.us-east-1.amazonaws.com</
dnsName>
  <status>
    <code>pending-associate</code>
  </status>
  <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4729f2a5</clientVpnEndpointId>
</CreateClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateClientVpnRoute

Adds a route to a network to a Client VPN endpoint. Each Client VPN endpoint has a route table that describes the available destination network routes. Each route in the route table specifies the path for traffic to specific resources or networks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint to which to add the route.

Type: String

Required: Yes

### **Description**

A brief description of the route.

Type: String

Required: No

### **DestinationCidrBlock**

The IPv4 address range, in CIDR notation, of the route destination. For example:

- To add a route for Internet access, enter 0.0.0.0/0
- To add a route for a peered VPC, enter the peered VPC's IPv4 CIDR range
- To add a route for an on-premises network, enter the AWS Site-to-Site VPN connection's IPv4 CIDR range
- To add a route for the local network, enter the client CIDR range

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TargetVpcSubnetId

The ID of the subnet through which you want to route traffic. The specified subnet must be an existing target network of the Client VPN endpoint.

Alternatively, if you're adding a route for the local network, specify `local`.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### status

The current state of the route.

Type: [ClientVpnRouteStatus \(p. 1445\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example adds a route for Internet access to the Client VPN endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateClientVpnRoute
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&DestinationCidrBlock=0.0.0.0/0
&TargetVpcSubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<CreateClientVpnRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>5b301186-e6d3-436b-87d6-7c400EXAMPLE</requestId>
  <status>
    <code>creating</code>
  </status>
</CreateClientVpnRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateCustomerGateway

Provides information to AWS about your VPN customer gateway device. The customer gateway is the appliance at your end of the VPN connection. (The device on the AWS side of the VPN connection is the virtual private gateway.) You must provide the internet-routable IP address of the customer gateway's external interface. The IP address must be static and can be behind a device performing network address translation (NAT).

For devices that use Border Gateway Protocol (BGP), you can also provide the device's BGP Autonomous System Number (ASN). You can use an existing ASN assigned to your network. If you don't have an ASN already, you can use a private ASN (in the 64512 - 65534 range).

### Note

Amazon EC2 supports all 4-byte ASN numbers in the range of 1 - 2147483647, with the exception of the following:

- 7224 - reserved in the `us-east-1` Region
- 9059 - reserved in the `eu-west-1` Region
- 17943 - reserved in the `ap-southeast-1` Region
- 10124 - reserved in the `ap-northeast-1` Region

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

### Important

To create more than one customer gateway with the same VPN type, IP address, and BGP ASN, specify a unique device name for each customer gateway. Identical requests return information about the existing customer gateway and do not create new customer gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### BgpAsn

For devices that support BGP, the customer gateway's BGP ASN.

Default: 65000

Type: Integer

Required: Yes

### CertificateArn

The Amazon Resource Name (ARN) for the customer gateway certificate.

Type: String

Required: No

### DeviceName

A name for the customer gateway device.

Length Constraints: Up to 255 characters.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**IpAddress**

The Internet-routable IP address for the customer gateway's outside interface. The address must be static.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the customer gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**Type**

The type of VPN connection that this customer gateway supports (`ipsec.1`).

Type: String

Valid Values: `ipsec.1`

Required: Yes

## Response Elements

The following elements are returned by the service.

**customerGateway**

Information about the customer gateway.

Type: [CustomerGateway \(p. 1467\)](#) object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a customer gateway with the name `my-device`, the IP address `12.1.2.3`, and BGP ASN `65534`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateCustomerGateway
&Type=ipsec.1
&PublicIp=12.1.2.3
&BgpAsn=65534
&DeviceName=my-device
&AUTHPARAMS
```

#### Sample Response

```
<CreateCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <customerGateway>
    <customerGatewayId>cgw-11223344556677abc</customerGatewayId>
    <state>pending</state>
    <type>ipsec.1</type>
    <ipAddress>12.1.2.3</ipAddress>
    <bpgAsn>65534</bpgAsn>
    <deviceName>my-device</deviceName>
    <tagSet/>
  </customerGateway>
</CreateCustomerGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateDefaultSubnet

Creates a default subnet with a size /20 IPv4 CIDR block in the specified Availability Zone in your default VPC. You can have only one default subnet per Availability Zone. For more information, see [Creating a default subnet](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZone

The Availability Zone in which to create the default subnet.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### subnet

Information about the subnet.

Type: [Subnet \(p. 2060\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a default subnet in Availability Zone `us-east-2a`.

## Sample Request

```
https://ec2.us-east-2.amazonaws.com/?Action/CreateDefaultSubnet
&AvailabilityZone=us-east-2a
&AUTHPARAMS
```

## Sample Response

```
<CreateDefaultSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>12e2fb2e-e566-488a-926d-4655example</requestId>
  <subnet>
    <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
    <availabilityZone>us-east-2a</availabilityZone>
    <availableIpAddressCount>4091</availableIpAddressCount>
    <cidrBlock>172.31.32.0/20</cidrBlock>
    <defaultForAz>true</defaultForAz>
    <ipv6CidrBlockAssociationSet/>
    <mapPublicIpOnLaunch>true</mapPublicIpOnLaunch>
    <state>available</state>
    <subnetId>subnet-111f7123</subnetId>
    <tagSet/>
    <vpcId>vpc-8eaaaabc</vpcId>
  </subnet>
</CreateDefaultSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateDefaultVpc

Creates a default VPC with a size /16 IPv4 CIDR block and a default subnet in each Availability Zone. For more information about the components of a default VPC, see [Default VPC and default subnets](#) in the *Amazon Virtual Private Cloud User Guide*. You cannot specify the components of the default VPC yourself.

If you deleted your previous default VPC, you can create a default VPC. You cannot have more than one default VPC per Region.

If your account supports EC2-Classic, you cannot use this action to create a default VPC in a Region that supports EC2-Classic. If you want a default VPC in a Region that supports EC2-Classic, see "I really want a default VPC for my existing EC2 account. Is that possible?" in the [Default VPCs FAQ](#).

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpc

Information about the VPC.

Type: [Vpc \(p. 2184\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a default VPC.

## Sample Request

```
https://ec2.amazonaws.com/?Action/CreateDefaultVpc  
&AUTHPARAMS
```

## Sample Response

```
<CreateDefaultVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>056298f3-5f3e-48fb-9221-7c0example</requestId>  
  <vpc>  
    <cidrBlock>172.31.0.0/16</cidrBlock>  
    <dhcpOptionsId>dopt-61079b07</dhcpOptionsId>  
    <instanceTenancy>default</instanceTenancy>  
    <ipv6CidrBlockAssociationSet/>  
    <isDefault>true</isDefault>  
    <state>pending</state>  
    <tagSet/>  
    <vpcId>vpc-3f139646</vpcId>  
  </vpc>  
</CreateDefaultVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateDhcpOptions

Creates a set of DHCP options for your VPC. After creating the set, you must associate it with the VPC, causing all existing and new instances that you launch in the VPC to use this set of DHCP options. The following are the individual DHCP options you can specify. For more information about the options, see [RFC 2132](#).

- **domain-name-servers** - The IP addresses of up to four domain name servers, or AmazonProvidedDNS. The default DHCP option set specifies AmazonProvidedDNS. If specifying more than one domain name server, specify the IP addresses in a single parameter, separated by commas. To have your instance receive a custom DNS hostname as specified in `domain-name`, you must set `domain-name-servers` to a custom DNS server.
- **domain-name** - If you're using AmazonProvidedDNS in `us-east-1`, specify `ec2.internal`. If you're using AmazonProvidedDNS in another Region, specify `region.compute.internal` (for example, `ap-northeast-1.compute.internal`). Otherwise, specify a domain name (for example, `ExampleCompany.com`). This value is used to complete unqualified DNS hostnames. **Important:** Some Linux operating systems accept multiple domain names separated by spaces. However, Windows and other Linux operating systems treat the value as a single domain, which results in unexpected behavior. If your DHCP options set is associated with a VPC that has instances with multiple operating systems, specify only one domain name.
- **ntp-servers** - The IP addresses of up to four Network Time Protocol (NTP) servers.
- **netbios-name-servers** - The IP addresses of up to four NetBIOS name servers.
- **netbios-node-type** - The NetBIOS node type (1, 2, 4, or 8). We recommend that you specify 2 (broadcast and multicast are not currently supported). For more information about these node types, see [RFC 2132](#).

Your VPC automatically starts out with a set of DHCP options that includes only a DNS server that we provide (AmazonProvidedDNS). If you create a set of options, and if your VPC has an internet gateway, make sure to set the `domain-name-servers` option either to AmazonProvidedDNS or to a domain name server of your choice. For more information, see [DHCP options sets in the Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DhcpConfiguration.N

A DHCP configuration option.

Type: Array of [NewDhcpConfiguration \(p. 1854\)](#) objects

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TagSpecification.N

The tags to assign to the DHCP option.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### dhcpOptions

A set of DHCP options.

Type: [DhcpOptions \(p. 1485\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a set of DHCP options with a domain name `example.com` and two DNS servers (`10.2.5.1` and `10.2.5.2`). The DNS servers' IP addresses are specified in a single parameter, separated by commas, to preserve the order in which they are specified.

### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateDhcpOptions
&DhcpConfiguration.1.Key=domain-name
&DhcpConfiguration.1.Value.1=example.com
&DhcpConfiguration.2.Key=domain-name-servers
&DhcpConfiguration.2.Value.1=10.2.5.1,10.2.5.2
&AUTHPARAMS
```

### Sample Response

```
<CreateDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<dhcpOptions>
  <dhcpOptionsId>dopt-096c1234cade2dabc</dhcpOptionsId>
  <dhcpConfigurationSet>
    <item>
      <key>domain-name</key>
      <valueSet>
        <item>
          <value>example.com</value>
        </item>
      </valueSet>
    </item>
  </dhcpConfigurationSet>
</dhcpOptions>
```

```
</item>
<item>
  <key>domain-name-servers</key>
  <valueSet>
    <item>
      <value>10.2.5.1</value>
    </item>
    <item>
      <value>10.2.5.2</value>
    </item>
  </valueSet>
</item>
</dhcpConfigurationSet>
<tagSet/>
</dhcpOptions>
</CreateDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateEgressOnlyInternetGateway

[IPv6 only] Creates an egress-only internet gateway for your VPC. An egress-only internet gateway is used to enable outbound communication over IPv6 from instances in your VPC to the internet, and prevents hosts outside of your VPC from initiating an IPv6 connection with your instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **TagSpecification.N**

The tags to assign to the egress-only internet gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### **VpcId**

The ID of the VPC for which to create the egress-only internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

### **egressOnlyInternetGateway**

Information about the egress-only internet gateway.

Type: [EgressOnlyInternetGateway \(p. 1509\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an egress-only internet gateway in VPC vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateEgressOnlyInternetGateway
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<CreateEgressOnlyInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>c617595f-6c29-4a00-a941-example</requestId>
  <egressOnlyInternetGateway>
    <attachmentSet>
      <item>
        <state>attached</state>
        <vpcId>vpc-1a2b3c4d</vpcId>
      </item>
    </attachmentSet>
    <egressOnlyInternetGatewayId>eigw-01eadbd45ecd7943f</egressOnlyInternetGatewayId>
  </egressOnlyInternetGateway>
</CreateEgressOnlyInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateFleet

Launches an EC2 Fleet.

You can create a single EC2 Fleet that includes multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.

For more information, see [Launching an EC2 Fleet](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **Context**

Reserved.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **ExcessCapacityTerminationPolicy**

Indicates whether running instances should be terminated if the total target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Type: String

Valid Values: `no-termination` | `termination`

Required: No

### **LaunchTemplateConfigs.N**

The configuration for the EC2 Fleet.

Type: Array of [FleetLaunchTemplateConfigRequest \(p. 1555\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: Yes

### **OnDemandOptions**

Describes the configuration of On-Demand Instances in an EC2 Fleet.

Type: [OnDemandOptionsRequest \(p. 1857\)](#) object

Required: No

#### **ReplaceUnhealthyInstances**

Indicates whether EC2 Fleet should replace unhealthy Spot Instances. Supported only for fleets of type `maintain`. For more information, see [EC2 Fleet health checks](#) in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

#### **SpotOptions**

Describes the configuration of Spot Instances in an EC2 Fleet.

Type: [SpotOptionsRequest \(p. 2044\)](#) object

Required: No

#### **TagSpecification.N**

The key-value pair for tagging the EC2 Fleet request on creation. For more information, see [Tagging your resources](#).

If the fleet type is `instant`, specify a resource type of `fleet` to tag the fleet or `instance` to tag the instances at launch.

If the fleet type is `maintain` or `request`, specify a resource type of `fleet` to tag the fleet. You cannot specify a resource type of `instance`. To tag instances at launch, specify the tags in a [launch template](#).

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **TargetCapacitySpecification**

The number of units to request.

Type: [TargetCapacitySpecificationRequest \(p. 2076\)](#) object

Required: Yes

#### **TerminateInstancesWithExpiration**

Indicates whether running instances should be terminated when the EC2 Fleet expires.

Type: Boolean

Required: No

#### **Type**

The fleet type. The default value is `maintain`.

- `maintain` - The EC2 Fleet places an asynchronous request for your desired capacity, and continues to maintain your desired Spot capacity by replenishing interrupted Spot Instances.
- `request` - The EC2 Fleet places an asynchronous one-time request for your desired capacity, but does submit Spot requests in alternative capacity pools if Spot capacity is unavailable, and does not maintain Spot capacity if Spot Instances are interrupted.
- `instant` - The EC2 Fleet places a synchronous one-time request for your desired capacity, and returns errors for any instances that could not be launched.

For more information, see [EC2 Fleet request types](#) in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `request` | `maintain` | `instant`

Required: No

#### **ValidFrom**

The start date and time of the request, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). The default is to start fulfilling the request immediately.

Type: Timestamp

Required: No

#### **ValidUntil**

The end date and time of the request, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). At this point, no new EC2 Fleet requests are placed or able to fulfill the request. If no value is specified, the request remains until you cancel it.

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

#### **errorSet**

Information about the instances that could not be launched by the fleet. Supported only for fleets of type `instant`.

Type: Array of [CreateFleetError \(p. 1456\)](#) objects

#### **fleetId**

The ID of the EC2 Fleet.

Type: String

#### **fleetInstanceSet**

Information about the instances that were launched by the fleet. Supported only for fleets of type `instant`.

Type: Array of [CreateFleetInstance \(p. 1457\)](#) objects

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an EC2 Fleet with a target capacity of 100 instances, of which 70 are specified as On-Demand Instances, and the balance are Spot Instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFleet
&FleetRequestConfig.IamFleetRole=arn:aws:iam::123456789011:role/fleet-role
&FleetRequestConfig.LaunchTemplateName=ABC123
&FleetRequestConfig.TotalTargetCapacity=100
&FleetRequestConfig.OnDemandTargetCapacity=70
&FleetRequestConfig.InstanceTypes=c3.large, c4.large, c5.large
&FleetRequestConfig.DefaultTargetCapacity=Spot
&AUTHPARAMS
```

#### Sample Response

```
<CreateFleetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>60262cc5-2bd4-4c8d-98ed-example</requestId>
  <fleetId>fleet-123f8fc2-cb31-425e-abcd-example2710</fleetId>
</CreateFleetResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateFlowLogs

Creates one or more flow logs to capture information about IP traffic for a specific network interface, subnet, or VPC.

Flow log data for a monitored network interface is recorded as flow log records, which are log events consisting of fields that describe the traffic flow. For more information, see [Flow log records](#) in the *Amazon Virtual Private Cloud User Guide*.

When publishing to CloudWatch Logs, flow log records are published to a log group, and each network interface has a unique log stream in the log group. When publishing to Amazon S3, flow log records for all of the monitored network interfaces are published to a single log file object that is stored in the specified bucket.

For more information, see [VPC Flow Logs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **DeliverLogsPermissionArn**

The ARN for the IAM role that permits Amazon EC2 to publish flow logs to a CloudWatch Logs log group in your account.

If you specify `LogDestinationType` as `s3`, do not specify `DeliverLogsPermissionArn` or `LogGroupName`.

Type: String

Required: No

### **DestinationOptions**

The destination options.

Type: [DestinationOptionsRequest \(p. 1482\)](#) object

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **LogDestination**

The destination to which the flow log data is to be published. Flow log data can be published to a CloudWatch Logs log group or an Amazon S3 bucket. The value specified for this parameter depends on the value specified for `LogDestinationType`.

If `LogDestinationType` is not specified or `cloud-watch-logs`, specify the Amazon Resource Name (ARN) of the CloudWatch Logs log group. For example, to publish to a log group called `my-logs`, specify `arn:aws:logs:us-east-1:123456789012:log-group:my-logs`. Alternatively, use `LogGroupName` instead.

If `LogDestinationType` is `s3`, specify the ARN of the Amazon S3 bucket. You can also specify a subfolder in the bucket. To specify a subfolder in the bucket, use the following ARN format: `bucket_ARN/subfolder_name/`. For example, to specify a subfolder named `my-logs` in a bucket named `my-bucket`, use the following ARN: `arn:aws:s3:::my-bucket/my-logs/`. You cannot use `AWSLogs` as a subfolder name. This is a reserved term.

Type: String

Required: No

### **LogDestinationType**

The type of destination to which the flow log data is to be published. Flow log data can be published to CloudWatch Logs or Amazon S3. To publish flow log data to CloudWatch Logs, specify `cloud-watch-logs`. To publish flow log data to Amazon S3, specify `s3`.

If you specify `LogDestinationType` as `s3`, do not specify `DeliverLogsPermissionArn` or `LogGroupName`.

Default: `cloud-watch-logs`

Type: String

Valid Values: `cloud-watch-logs` | `s3`

Required: No

### **LogFormat**

The fields to include in the flow log record, in the order in which they should appear. For a list of available fields, see [Flow log records](#). If you omit this parameter, the flow log is created using the default format. If you specify this parameter, you must specify at least one field.

Specify the fields using the  `${field-id}`  format, separated by spaces. For the AWS CLI, surround this parameter value with single quotes on Linux or double quotes on Windows.

Type: String

Required: No

### **LogGroupName**

The name of a new or existing CloudWatch Logs log group where Amazon EC2 publishes your flow logs.

If you specify `LogDestinationType` as `s3`, do not specify `DeliverLogsPermissionArn` or `LogGroupName`.

Type: String

Required: No

### **MaxAggregationInterval**

The maximum interval of time during which a flow of packets is captured and aggregated into a flow log record. You can specify 60 seconds (1 minute) or 600 seconds (10 minutes).

When a network interface is attached to a [Nitro-based instance](#), the aggregation interval is always 60 seconds or less, regardless of the value that you specify.

Default: 600

Type: Integer

Required: No

### **ResourceId.N**

The ID of the subnet, network interface, or VPC for which you want to create a flow log.

Constraints: Maximum of 1000 resources

Type: Array of strings

Required: Yes

### **ResourceType**

The type of resource for which to create the flow log. For example, if you specified a VPC ID for the `ResourceId` property, specify `VPC` for this property.

Type: String

Valid Values: `VPC` | `Subnet` | `NetworkInterface`

Required: Yes

### **TagSpecification.N**

The tags to apply to the flow logs.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### **TrafficType**

The type of traffic to log. You can log traffic that the resource accepts or rejects, or all traffic.

Type: String

Valid Values: `ACCEPT` | `REJECT` | `ALL`

Required: Yes

## **Response Elements**

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

### **flowLogIdSet**

The IDs of the flow logs.

Type: Array of strings

### **requestId**

The ID of the request.

Type: String

### **unsuccessful**

Information about the flow logs that could not be created successfully.

Type: Array of [UnsuccessfullItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

(CloudWatch Logs) This example creates a flow log that captures all rejected traffic for network interface eni-aa22bb33 and publishes the data to an CloudWatch Logs log group named my-flow-logs in account 123456789101, using the IAM role publishFlowLogs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=REJECT
&ResourceId.1=eni-aa22bb33
&DeliverLogsPermissionArn=arn:aws:iam::123456789101:role/publishFlowLogs
&LogDestinationType=cloud-watch-logs
&LogDestination=arn:aws:logs:us-east-1:123456789101:log-group:my-flow-logs
&AUTHPARAMS
```

#### Sample Response

```
<CreateFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>2d96dae3-504b-4fc4-bf50-266EXAMPLE</requestId>
  <unsuccessful/>
  <flowLogIdSet>
    <item>fl-1a2b3c4d</item>
  </flowLogIdSet>
</CreateFlowLogsResponse>
```

### Example 2

(Amazon S3) This example creates a flow log that captures all traffic for network interface eni-aa22bb33 and publishes the data to an Amazon S3 bucket named my-bucket in account 123456789101.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=ALL
&ResourceId.1=eni-aa22bb33
&LogDestinationType=s3
&LogDestination=arn:aws:s3:::my-flow-log-bucket
&AUTHPARAMS
```

## Example 3

(Amazon S3) This example creates a flow log with a custom flow log format that captures the version, instance ID, network interface ID, type, packet source address, packet destination address, protocol, bytes, the start time, the end time, and the action of the traffic, in that order. The flow log is published to an Amazon S3 bucket named my-bucket.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFlowLogs
&ResourceType=NetworkInterface
&TrafficType=ALL
&ResourceId.1=eni-1235b8ca123456789
&LogDestinationType=s3
&LogDestination=arn:aws:s3:::my-bucket
&LogFormat='${version} ${instance-id} ${interface-id} ${type} ${pkt-srcaddr} ${pkt-dstaddr}
${protocol} ${bytes} ${start} ${end} ${action}'
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateFpgalmage

Creates an Amazon FPGA Image (AFI) from the specified design checkpoint (DCP).

The create operation is asynchronous. To verify that the AFI is ready for use, check the output logs.

An AFI contains the FPGA bitstream that is ready to download to an FPGA. You can securely deploy an AFI on multiple FPGA-accelerated instances. For more information, see the [AWS FPGA Hardware Development Kit](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **Description**

A description for the AFI.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InputStorageLocation**

The location of the encrypted design checkpoint in Amazon S3. The input must be a tarball.

Type: [StorageLocation \(p. 2057\)](#) object

Required: Yes

### **LogsStorageLocation**

The location in Amazon S3 for the output logs.

Type: [StorageLocation \(p. 2057\)](#) object

Required: No

### **Name**

A name for the AFI.

Type: String

Required: No

#### **TagSpecification.N**

The tags to apply to the FPGA image during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### **fpgalmageGlobalId**

The global FPGA image identifier (AGFI ID).

Type: String

#### **fpgalmageld**

The FPGA image identifier (AFI ID).

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an AFI from the specified tarball in the specified bucket.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateFpgaImage
&Name=my-afi
&Description=test-afi
&InputStorageLocation.Bucket=my-fpga-bucket
&InputStorageLocation.Key=dcp/17_12_22-103226.Developer_CL.tar
&LogsStorageLocation.Bucket=my-fpga-bucket
&LogsStorageLocation.Key=logs
&AUTHPARAMS
```

#### Sample Response

```
<CreateFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>d97baa5e-d3dd-4ead-9586-c68example</requestId>
<fpgaImageId>afi-0d123e123bfc85abc</fpgaImageId>
<fpgaImageGlobalId>agfi-123cb27b5e84a0abc</fpgaImageGlobalId>
</CreateFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateImage

Creates an Amazon EBS-backed AMI from an Amazon EBS-backed instance that is either running or stopped.

If you customized your instance with instance store volumes or Amazon EBS volumes in addition to the root device volume, the new AMI contains block device mapping information for those volumes. When you launch an instance from this new AMI, the instance automatically launches with those additional volumes.

For more information, see [Creating Amazon EBS-Backed Linux AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **BlockDeviceMapping.N**

The block device mappings. This parameter cannot be used to modify the encryption status of existing volumes or snapshots. To create an AMI with encrypted snapshots, use the [CopyImage \(p. 144\)](#) action.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

### **Description**

A description for the new image.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **InstanceId**

The ID of the instance.

Type: String

Required: Yes

### **Name**

A name for the new image.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces (), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(\_)

Type: String

Required: Yes

#### NoReboot

By default, Amazon EC2 attempts to shut down and reboot the instance before creating the image. If the No Reboot option is set, Amazon EC2 doesn't shut down the instance before creating the image. Without a reboot, the AMI will be crash consistent (all the volumes are snapshotted at the same time), but not application consistent (all the operating system buffers are not flushed to disk before the snapshots are created).

Type: Boolean

Required: No

#### TagSpecification.N

The tags to apply to the AMI and snapshots on creation. You can tag the AMI, the snapshots, or both.

- To tag the AMI, the value for `ResourceType` must be `image`.
- To tag the snapshots that are created of the root volume and of other Amazon EBS volumes that are attached to the instance, the value for `ResourceType` must be `snapshot`. The same tag is applied to all of the snapshots that are created.

If you specify other values for `ResourceType`, the request fails.

To tag an AMI or snapshot after it has been created, see [CreateTags](#).

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### imageId

The ID of the new AMI.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request creates an AMI from the specified instance.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&AUTHPARAMS
```

## Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Example 2

This example request creates an AMI from the specified instance, and sets the NoReboot parameter to true (the instance is not rebooted before the image is created).

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&Description=Standard+Web+Server+v1.0
&InstanceId=i-1234567890abcdef0
&Name=standard-web-server-v1.0
&NoReboot=true
&AUTHPARAMS
```

## Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## Example 3

This example request creates an AMI from the specified instance, and tags on creation the AMI and the snapshots that are created of the root volume and of other Amazon EBS volumes that are attached to the instance. In this example, the tag that is applied to the AMI and the snapshots is the same, with a key of purpose and a value of test.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateImage
&InstanceId=i-1234567890abcdef0
&TagSpecification.1.ResourceType=image
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=test
&TagSpecification.2.ResourceType=snapshot
&TagSpecification.2.Tag.1.Key=purpose
&TagSpecification.2.Tag.1.Value=test
&AUTHPARAMS
```

## Sample Response

```
<CreateImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<imageId>ami-4fa54026</imageId>
</CreateImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateInstanceEventWindow

Creates an event window in which scheduled events for the associated Amazon EC2 instances can run.

You can define either a set of time ranges or a cron expression when creating the event window, but not both. All event window times are in UTC.

You can create up to 200 event windows per AWS Region.

When you create the event window, targets (instance IDs, Dedicated Host IDs, or tags) are not yet associated with it. To ensure that the event window can be used, you must associate one or more targets with it by using the [AssociateInstanceEventWindow \(p. 76\)](#) API.

### Important

Event windows are applicable only for scheduled events that stop, reboot, or terminate instances.

Event windows are *not* applicable for:

- Expedited scheduled events and network maintenance events.
- Unscheduled maintenance such as AutoRecovery and unplanned reboots.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CronExpression

The cron expression for the event window, for example, \* 0-4,20-23 \* \* 1,5. If you specify a cron expression, you can't specify a time range.

Constraints:

- Only hour and day of the week values are supported.
- For day of the week values, you can specify either integers 0 through 6, or alternative single values SUN through SAT.
- The minute, month, and year must be specified by \*.
- The hour value must be one or a multiple range, for example, 0-4 or 0-4,20-23.
- Each hour range must be >= 2 hours, for example, 0-2 or 20-23.
- The event window must be >= 4 hours. The combined total time ranges in the event window must be >= 4 hours.

For more information about cron expressions, see [cron](#) on the *Wikipedia website*.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**Name**

The name of the event window.

Type: String

Required: No

**TagSpecification.N**

The tags to apply to the event window.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**TimeRange.N**

The time range for the event window. If you specify a time range, you can't specify a cron expression.

Type: Array of [InstanceEventWindowTimeRangeRequest \(p. 1651\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

**instanceEventWindow**

Information about the event window.

Type: [InstanceEventWindow \(p. 1644\)](#) object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateInstanceExportTask

Exports a running or stopped instance to an Amazon S3 bucket.

For information about the supported operating systems, image formats, and known limitations for the types of instances you can export, see [Exporting an instance as a VM Using VM Import/Export](#) in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

A description for the conversion task or the resource being exported. The maximum length is 255 characters.

Type: String

Required: No

### ExportToS3

The format and location for an export instance task.

Type: [ExportToS3TaskSpecification \(p. 1540\)](#) object

Required: Yes

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### TagSpecification.N

The tags to apply to the export instance task during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TargetEnvironment

The target virtualization environment.

Type: String

Valid Values: `citrix` | `vmware` | `microsoft`

Required: Yes

## Response Elements

The following elements are returned by the service.

### exportTask

Information about the export instance task.

Type: [ExportTask \(p. 1535\)](#) object

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request creates an Export VM task that makes a Windows instance available as an OVA.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInstanceExportTask
&Description=Example%20for%20docs
&InstanceId=i-1234567890abcdef0
&TargetEnvironment=VMWare
&ExportToS3.DiskImageFormat=VMDK
&ExportToS3.ContainerFormat=OVA
&ExportToS3.S3bucket=my-bucket-for-exported-vm
&ExportToS3.S3prefix=my-exports/
&AUTHPARAMS
```

#### Sample Response

```
<CreateInstanceExportTaskResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<exportTask>
  <exportTaskId>export-i-1234wxyz</exportTaskId>
  <description>Example for docs</description>
  <state>active</state>
  <statusMessage>Running</statusMessage>
  <instanceExport>
    <instanceId>i-1234567890abcdef0</instanceId>
    <targetEnvironment>VMWare</targetEnvironment>
  </instanceExport>
  <exportToS3>
    <diskImageFormat>VMDK</diskImageFormat>
    <containerFormat>OVA</containerFormat>
    <s3Bucket>my-bucket-for-exported-vm</s3Bucket>
    <s3Key>my-exports/ export-i-1234wxyz.ova</s3Key>
  </exportToS3>
</exportTask>
</CreateInstanceExportTaskResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateInternetGateway

Creates an internet gateway for use with a VPC. After creating the internet gateway, you attach it to a VPC using [AttachInternetGateway \(p. 96\)](#).

For more information about your VPC and internet gateway, see the [Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TagSpecification.N

The tags to assign to the internet gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### internetGateway

Information about the internet gateway.

Type: [InternetGateway \(p. 1710\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an internet gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateInternetGateway  
&AUTHPARAMS
```

## Sample Response

```
<CreateInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <internetGateway>  
    <internetGatewayId>igw-eaad4883</internetGatewayId>  
    <attachmentSet/>  
    <tagSet/>  
  </internetGateway>  
</CreateInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateKeyPair

Creates an ED25519 or 2048-bit RSA key pair with the specified name. Amazon EC2 stores the public key and displays the private key for you to save to a file. The private key is returned as an unencrypted PEM encoded PKCS#1 private key. If a key with the specified name already exists, Amazon EC2 returns an error.

The key pair returned to you is available only in the AWS Region in which you create it. If you prefer, you can create your own key pair using a third-party tool and upload it to any Region using [ImportKeyPair \(p. 1049\)](#).

You can have up to 5,000 key pairs per AWS Region.

For more information, see [Amazon EC2 key pairs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### KeyName

A unique name for the key pair.

Constraints: Up to 255 ASCII characters

Type: String

Required: Yes

### KeyType

The type of key pair. Note that ED25519 keys are not supported for Windows instances, EC2 Instance Connect, and EC2 Serial Console.

Default: `rsa`

Type: String

Valid Values: `rsa` | `ed25519`

Required: No

### TagSpecification.N

The tags to apply to the new key pair.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **keyFingerprint**

The SHA-1 digest of the DER encoded private key.

Type: String

### **keyMaterial**

An unencrypted PEM encoded RSA or ED25519 private key.

Type: String

### **keyName**

The name of the key pair.

Type: String

### **keyPairId**

The ID of the key pair.

Type: String

### **requestId**

The ID of the request.

Type: String

### **tagSet**

Any tags applied to the key pair.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request creates a key pair named `my-key-pair`, and applies a tag with a key of `purpose` and a value of `production`.

### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateKeyPair
&KeyName=my-key-pair
&TagSpecification.1.ResourceType=key-pair
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

## Sample Response

```
<CreateKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b5b5bcf-3670-4c16-83d7-c2c9example</requestId>
  <keyName>my-key-pair</keyName>
  <keyPairId>key-abcd12345eEXAMPLE</keyPairId>
  <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFingerprint>
  <keyMaterial>---- BEGIN RSA PRIVATE KEY ----
MIICiTCCAfCCQD6m7oRw0uXo{jANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAgTAldBMRAwDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgNVBAsTC01BTSBDb25zb2x1MRIwEAYDVQQDEwLUZXN0Q21sYWMxHzAd
BgkqhkiG9w0BCQEWEVG5vb251QGftYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRAwDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgNVBAsTC01BTSBDb25z
b2x1MRIwEAYDVQQDEwLUZXN0Q21sYWMxHzAdBgkqhkiG9w0BCQEWEVG5vb251QGft
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAOGBAMaK0dn+a4GmWIWJ
21uUsfwfEvYSwC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
rDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzzswY6786m86gpE
Ibb3OhjZnzcvQAArHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNKyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJ1lJ00zbhNYSSf6GuoEDmFJ10ZxBHjJnyp3780D8uTs7fLvjx79LjSTb
NYiytVbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
-----END RSA PRIVATE KEY-----</keyMaterial>
  <tagSet>
    <item>
      <key>purpose</key>
      <value>production</value>
    </item>
  </tagSet>
</CreateKeyPairResponse>
```

## Saving the File

Create a file named `my-key-pair.pem` and paste the entire key from the response into this file. Keep this file in a safe place; it is required to decrypt login information when you connect to an instance that you launched using this key pair. If you're using an SSH client on a Linux computer to connect to your instance, use the following command to set the permissions of your private key file so that only you can read it.

## Sample Request

```
chmod 400 my-key-pair.pem
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# CreateLaunchTemplate

Creates a launch template. A launch template contains the parameters to launch an instance. When you launch an instance using [RunInstances \(p. 1283\)](#), you can specify a launch template instead of providing the launch parameters in the request. For more information, see [Launching an instance from a launch template](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **LaunchTemplateData**

The information for the launch template.

Type: [RequestLaunchTemplateData \(p. 1916\)](#) object

Required: Yes

### **LaunchTemplateName**

A name for the launch template.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: Yes

### **TagSpecification.N**

The tags to apply to the launch template during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### **VersionDescription**

A description for the first version of the launch template.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

## Response Elements

The following elements are returned by the service.

### launchTemplate

Information about the launch template.

Type: [LaunchTemplate \(p. 1734\)](#) object

### requestId

The ID of the request.

Type: String

### warning

If the launch template contains parameters or parameter combinations that are not valid, an error code and an error message are returned for each issue that's found.

Type: [ValidationWarning \(p. 2161\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

The following example creates a launch template that specifies AMI `ami-1a2b3c4d` and an instance type of `t2.micro`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateLaunchTemplate
&LaunchTemplateName=MyLaunchTemplate
&VersionDescription=FirstVersion
&LaunchTemplateData.ImageId=ami-1a2b3c4d
&LaunchTemplateData.InstanceType=t2.micro
&AUTHPARAMS
```

#### Sample Response

```
<CreateLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>39f602bc-7580-4239-a6d8-af56example</requestId>
  <launchTemplate>
    <createTime>2017-10-31T11:38:52.000Z</createTime>
```

```
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersionNumber>1</defaultVersionNumber>
<latestVersionNumber>1</latestVersionNumber>
<launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
<launchTemplateName>MyLaunchTemplate</launchTemplateName>
</launchTemplate>
</CreateLaunchTemplateResponse>
```

## Example 2

The following example creates a launch template that specifies the subnet in which to launch the instance (subnet-7b16de0c), assigns a public IP address and an IPv6 address to the instance, and creates a tag for the instance (Name=webserver).

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateLaunchTemplate
&LaunchTemplateName=TemplateForWebServer
&VersionDescription=WebVersion1
&LaunchTemplateData.ImageId=ami-8c1be5f6
&LaunchTemplateData.InstanceType=t2.micro
&LaunchTemplateData.NetworkInterface.1.AssociatePublicIpAddress=true
&LaunchTemplateData.NetworkInterface.1.DeviceIndex=0
&LaunchTemplateData.NetworkInterface.1.SubnetId=subnet-7b16de0c
&LaunchTemplateData.NetworkInterface.1.Ipv6AddressCount=1
&LaunchTemplateData.TagSpecification.1.ResourceType=instance
&LaunchTemplateData.TagSpecification.1.Tag.1.Key=Name
&LaunchTemplateData.TagSpecification.1.Tag.1.Value=webserver
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateLaunchTemplateVersion

Creates a new version for a launch template. You can specify an existing version of launch template from which to base the new version.

Launch template versions are numbered in the order in which they are created. You cannot specify, change, or replace the numbering of launch template versions.

For more information, see [Managing launch template versions](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **LaunchTemplateData**

The information for the launch template.

Type: [RequestLaunchTemplateData \(p. 1916\)](#) object

Required: Yes

### **LaunchTemplateId**

The ID of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Required: No

### **LaunchTemplateName**

The name of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\)\.\-\\_]+

Required: No

#### **SourceVersion**

The version number of the launch template version on which to base the new version. The new version inherits the same launch parameters as the source version, except for parameters that you specify in `LaunchTemplateData`. Snapshots applied to the block device mapping are ignored when creating a new version unless they are explicitly included.

Type: String

Required: No

#### **VersionDescription**

A description for the version of the launch template.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

## Response Elements

The following elements are returned by the service.

#### **launchTemplateVersion**

Information about the launch template version.

Type: [LaunchTemplateVersion \(p. 1786\)](#) object

#### **requestId**

The ID of the request.

Type: String

#### **warning**

If the new version of the launch template contains parameters or parameter combinations that are not valid, an error code and an error message are returned for each issue that's found.

Type: [ValidationWarning \(p. 2161\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The following example creates a new launch template version for launch template `MyLaunchTemplate` and uses version 2 of the launch template as the base for the new version. The new launch template uses `ami-aabbccdd`. All other launch template data is inherited from the source version.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateLaunchTemplate
&SourceVersion=2
&LaunchTemplateName=MyLaunchTemplate
&VersionDescription=VersionWithNewAMI
&LaunchTemplateData.ImageId=ami-aabbccdd
&AUTHPARAMS
```

## Sample Response

```
<CreateLaunchTemplateVersionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>6657423a-2616-461a-9ce5-3c65example</requestId>
  <launchTemplateVersion>
    <createTime>2017-10-31T11:56:00.000Z</createTime>
    <createdBy>arn:aws:iam::123456789012:root</createdBy>
    <defaultVersion>false</defaultVersion>
    <launchTemplateData>
      <imageId>ami-aabbccdd</imageId>
      <instanceType>t2.micro</instanceType>
    </launchTemplateData>
    <launchTemplateId>lt-0a20c965061f6454a</launchTemplateId>
    <launchTemplateName>MyLaunchTemplate</launchTemplateName>
    <versionDescription>VersionWithNewAMI</versionDescription>
    <versionNumber>4</versionNumber>
  </launchTemplateVersion>
</CreateLaunchTemplateVersionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateLocalGatewayRoute

Creates a static route for the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The CIDR range used for destination matches. Routing decisions are based on the most specific match.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LocalGatewayRouteTableId

The ID of the local gateway route table.

Type: String

Required: Yes

### LocalGatewayVirtualInterfaceGroupId

The ID of the virtual interface group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### route

Information about the route.

Type: [LocalGatewayRoute \(p. 1795\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateLocalGatewayRouteTableVpcAssociation

Associates the specified VPC with the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LocalGatewayRouteTableId

The ID of the local gateway route table.

Type: String

Required: Yes

### TagSpecification.N

The tags to assign to the local gateway route table VPC association.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### localGatewayRouteTableVpcAssociation

Information about the association.

Type: [LocalGatewayRouteTableVpcAssociation \(p. 1801\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateManagedPrefixList

Creates a managed prefix list. You can specify one or more entries for the prefix list. Each entry consists of a CIDR block and an optional description.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AddressFamily

The IP address type.

Valid Values: [IPv4](#) | [IPv6](#)

Type: String

Required: Yes

### ClientToken

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraints: Up to 255 UTF-8 characters in length.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Entry.N

One or more entries for the prefix list.

Type: Array of [AddPrefixListEntry \(p. 1358\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

### MaxEntries

The maximum number of entries for the prefix list.

Type: Integer

Required: Yes

### PrefixListName

A name for the prefix list.

Constraints: Up to 255 characters in length. The name cannot start with com.amazonaws.

Type: String

Required: Yes

#### TagSpecification.N

The tags to apply to the prefix list during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### prefixList

Information about the prefix list.

Type: [ManagedPrefixList \(p. 1806\)](#) object

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a managed prefix list with a maximum of 10 entries, and adds 2 entries. The prefix list support IPv4 CIDR blocks.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateManagedPrefixList
&PrefixListName=tgw-attachments
&Entry.1.Cidr=10.0.0.0/16
&Entry.1.Description=vpc-a
&Entry.2.Cidr=10.2.0.0/16
&Entry.2.Description=vpc-b
&MaxEntries=10
&AddressFamily=IPv4
&AUTHPARAMS
```

#### Sample Response

```
<CreateManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>2989de6e-5305-49c7-809a-example</requestId>
<prefixList>
    <addressFamily>IPv4</addressFamily>
    <maxEntries>10</maxEntries>
    <ownerId>123456789012</ownerId>
    <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123abcd</prefixListArn>
    <prefixListId>pl-0123123123123abcd</prefixListId>
    <prefixListName>tgw-attachments</prefixListName>
    <state>create-in-progress</state>
    <tagSet/>
    <version>1</version>
</prefixList>
</CreateManagedPrefixListResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateNatGateway

Creates a NAT gateway in the specified subnet. This action creates a network interface in the specified subnet with a private IP address from the IP address range of the subnet. You can create either a public NAT gateway or a private NAT gateway.

With a public NAT gateway, internet-bound traffic from a private subnet can be routed to the NAT gateway, so that instances in a private subnet can connect to the internet.

With a private NAT gateway, private communication is routed across VPCs and on-premises networks through a transit gateway or virtual private gateway. Common use cases include running large workloads behind a small pool of allowlisted IPv4 addresses, preserving private IPv4 addresses, and communicating between overlapping networks.

For more information, see [NAT gateways](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId

[Public NAT gateways only] The allocation ID of an Elastic IP address to associate with the NAT gateway. You cannot specify an Elastic IP address with a private NAT gateway. If the Elastic IP address is associated with another resource, you must first disassociate it.

Type: String

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Constraint: Maximum 64 ASCII characters.

Type: String

Required: No

### ConnectivityType

Indicates whether the NAT gateway supports public or private connectivity. The default is public connectivity.

Type: String

Valid Values: `private` | `public`

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### **SubnetId**

The subnet in which to create the NAT gateway.

Type: String

Required: Yes

#### **TagSpecification.N**

The tags to assign to the NAT gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### **clientToken**

Unique, case-sensitive identifier to ensure the idempotency of the request. Only returned if a client token was provided in the request.

Type: String

#### **natGateway**

Information about the NAT gateway.

Type: [NatGateway \(p. 1822\)](#) object

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a public NAT gateway in the specified subnet and associates the Elastic IP address with the specified allocation ID to the NAT gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNatGateway
&SubnetId=subnet-1234567890abcdef0
&AllocationId=eipalloc-0abcdef1234567890
```

&AUTHPARAMS

## Sample Response

```
<CreateNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b74dc5c-bcda-403f-867d-example</requestId>
  <natGateway>
    <subnetId>subnet-1234567890abcdef0</subnetId>
    <natGatewayAddressSet>
      <item>
        <allocationId>eipalloc-0abcdef1234567890</allocationId>
        <networkInterfaceId>eni-0123abc456def7890</networkInterfaceId>
        <privateIp>10.0.0.191</privateIp>
        <publicIp>203.0.113.5</publicIp>
      </item>
    </natGatewayAddressSet>
    <createTime>2019-11-25T14:00:55.416Z</createTime>
    <vpcId>vpc-0598c7d356eba48d7</vpcId>
    <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
    <connectivityType>public</connectivityType>
    <state>pending</state>
  </natGateway>
</CreateNatGatewayResponse>
```

## Example 2

This example creates a private NAT gateway in the specified subnet.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNatGateway
&SubnetId=subnet-1234567890abcdef0
&ConnectivityType=private
&AUTHPARAMS
```

## Sample Response

```
<CreateNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b74dc5c-bcda-403f-867d-example</requestId>
  <natGateway>
    <subnetId>subnet-1234567890abcdef0</subnetId>
    <natGatewayAddressSet>
      <item>
        <networkInterfaceId>eni-1a2b3c4d5e6f78901</networkInterfaceId>
        <privateIp>10.0.1.26</privateIp>
      </item>
    </natGatewayAddressSet>
    <createTime>2021-06-05T14:00:55.416Z</createTime>
    <vpcId>vpc-0598c7d356eba48d7</vpcId>
    <natGatewayId>nat-04e77a5e9c34432f9</natGatewayId>
    <connectivityType>private</connectivityType>
    <state>pending</state>
  </natGateway>
</CreateNatGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateNetworkAcl

Creates a network ACL in a VPC. Network ACLs provide an optional layer of security (in addition to security groups) for the instances in your VPC.

For more information, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TagSpecification.N

The tags to assign to the network ACL.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### networkAcl

Information about the network ACL.

Type: [NetworkAcl \(p. 1826\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a network ACL in the specified IPv6-enabled VPC. The response includes default IPv4 and IPv6 entries for egress and ingress traffic, each with a high rule number. These are the last entries we process to decide whether traffic is allowed in or out of an associated subnet. If the traffic doesn't match any rules with a lower rule number, then these default entries ultimately deny the traffic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAcl
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <networkAcl>
    <networkAclId>acl-5fb85d36</networkAclId>
    <vpcId>vpc-11ad4878</vpcId>
    <default>false</default>
    <entrySet>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>true</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>32767</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>false</egress>
        <cidrBlock>0.0.0.0/0</cidrBlock>
      </item>
      <item>
        <ruleNumber>32768</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>true</egress>
        <ipv6CidrBlock>::/0</ipv6CidrBlock>
      </item>
      <item>
        <ruleNumber>32768</ruleNumber>
        <protocol>all</protocol>
        <ruleAction>deny</ruleAction>
        <egress>false</egress>
        <ipv6CidrBlock>::/0</ipv6CidrBlock>
      </item>
    </entrySet>
    <associationSet/>
    <tagSet/>
  </networkAcl>
</CreateNetworkAclResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateNetworkAclEntry

Creates an entry (a rule) in a network ACL with the specified rule number. Each network ACL has a set of numbered ingress rules and a separate set of numbered egress rules. When determining whether a packet should be allowed in or out of a subnet associated with the ACL, we process the entries in the ACL according to the rule numbers, in ascending order. Each network ACL has a set of ingress rules and a separate set of egress rules.

We recommend that you leave room between the rule numbers (for example, 100, 110, 120, ...), and not number them one right after the other (for example, 101, 102, 103, ...). This makes it easier to add a rule between existing ones without having to renumber the rules.

After you add an entry, you can't modify it; you must either replace it, or create an entry and delete the old one.

For more information about network ACLs, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrBlock

The IPv4 network range to allow or deny, in CIDR notation (for example 172.16.0.0/24). We modify the specified CIDR block to its canonical form; for example, if you specify 100.68.0.18/18, we modify it to 100.68.0.0/18.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Egress

Indicates whether this is an egress rule (rule is applied to traffic leaving the subnet).

Type: Boolean

Required: Yes

### Icmp

ICMP protocol: The ICMP or ICMPv6 type and code. Required if specifying protocol 1 (ICMP) or protocol 58 (ICMPv6) with an IPv6 CIDR block.

Type: [IcmpTypeCode \(p. 1602\)](#) object

Required: No

### **Ipv6CidrBlock**

The IPv6 network range to allow or deny, in CIDR notation (for example 2001:db8:1234:1a00::/64).

Type: String

Required: No

### **NetworkAclId**

The ID of the network ACL.

Type: String

Required: Yes

### **PortRange**

TCP or UDP protocols: The range of ports the rule applies to. Required if specifying protocol 6 (TCP) or 17 (UDP).

Type: [PortRange \(p. 1885\)](#) object

Required: No

### **Protocol**

The protocol number. A value of "-1" means all protocols. If you specify "-1" or a protocol number other than "6" (TCP), "17" (UDP), or "1" (ICMP), traffic on all ports is allowed, regardless of any ports or ICMP types or codes that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv4 CIDR block, traffic for all ICMP types and codes allowed, regardless of any that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv6 CIDR block, you must specify an ICMP type and code.

Type: String

Required: Yes

### **RuleAction**

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow` | `deny`

Required: Yes

### **RuleNumber**

The rule number for the entry (for example, 100). ACL entries are processed in ascending order by rule number.

Constraints: Positive integer from 1 to 32766. The range 32767 to 65535 is reserved for internal use.

Type: Integer

Required: Yes

## **Response Elements**

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates an entry with rule number 110 in the specified network ACL. The rule allows ingress traffic from any IPv4 address (0.0.0.0/0) on UDP port 53.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol="17"
&RuleAction=allow
&Egress=false
&CidrBlock=0.0.0.0/0
&PortRange.From=53
&PortRange.To=53
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</CreateNetworkAclEntryResponse>
```

### Example 2

This example creates an entry with rule number 120 in the specified network ACL. The rule allows ingress traffic from any IPv6 address (::/0) on TCP port 80.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=120
&Protocol="6"
&RuleAction=allow
```

```
&Egress=false
&Ipv6CidrBlock=::/0
&PortRange.From=80
&PortRange.To=80
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateNetworkInsightsPath

Creates a path to analyze for reachability.

Reachability Analyzer enables you to analyze and debug network reachability between two resources in your virtual private cloud (VPC). For more information, see [What is Reachability Analyzer](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: Yes

### **Destination**

The AWS resource that is the destination of the path.

Type: String

Required: Yes

### **DestinationIp**

The IP address of the AWS resource that is the destination of the path.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### **DestinationPort**

The destination port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **Protocol**

The protocol.

Type: String

Valid Values: `tcp` | `udp`

Required: Yes

#### **Source**

The AWS resource that is the source of the path.

Type: String

Required: Yes

#### **Sourcelp**

The IP address of the AWS resource that is the source of the path.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

#### **TagSpecification.N**

The tags to add to the path.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### **networkInsightsPath**

Information about the path.

Type: [NetworkInsightsPath \(p. 1836\)](#) object

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateNetworkInterface

Creates a network interface in the specified subnet.

For more information about network interfaces, see [Elastic Network Interfaces](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **Description**

A description for the network interface.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InterfaceType**

Indicates the type of network interface. To create an Elastic Fabric Adapter (EFA), specify `efa`. For more information, see [Elastic Fabric Adapter](#) in the *Amazon Elastic Compute Cloud User Guide*. To create a trunk network interface, specify `efa`. For more information, see [Network interface trunking](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid Values: `efa` | `branch` | `trunk`

Required: No

### **Ipv4Prefix.N**

One or more IPv4 prefixes assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of [Ipv4PrefixSpecificationRequest \(p. 1716\)](#) objects

Required: No

### **Ipv4PrefixCount**

The number of IPv4 prefixes that AWS automatically assigns to the network interface. You cannot use this option if you use the `Ipv4Prefixes` option.

Type: Integer

Required: No

### **Ipv6AddressCount**

The number of IPv6 addresses to assign to a network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range. You can't use this option if specifying specific IPv6 addresses. If your subnet has the `AssignIpv6AddressOnCreation` attribute set to `true`, you can specify 0 to override this setting.

Type: Integer

Required: No

### **Ipv6Addresses.N**

One or more specific IPv6 addresses from the IPv6 CIDR block range of your subnet. You can't use this option if you're specifying a number of IPv6 addresses.

Type: Array of [InstanceIpv6Address \(p. 1655\)](#) objects

Required: No

### **Ipv6Prefix.N**

One or more IPv6 prefixes assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of [Ipv6PrefixSpecificationRequest \(p. 1722\)](#) objects

Required: No

### **Ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigns to the network interface. You cannot use this option if you use the `Ipv6Prefixes` option.

Type: Integer

Required: No

### **PrivateIpAddress**

The primary private IPv4 address of the network interface. If you don't specify an IPv4 address, Amazon EC2 selects one for you from the subnet's IPv4 CIDR range. If you specify an IP address, you cannot indicate any IP addresses specified in `privateIpAddresses` as primary (only one IP address can be designated as primary).

Type: String

Required: No

### **PrivateIpAddresses.N**

One or more private IPv4 addresses.

Type: Array of [PrivateIpAddressSpecification \(p. 1896\)](#) objects

Required: No

### **SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses to assign to a network interface. When you specify a number of secondary IPv4 addresses, Amazon EC2 selects these IP addresses within the subnet's IPv4 CIDR range. You can't specify this option and specify more than one private IP address using `privateIpAddresses`.

The number of IP addresses you can assign to a network interface varies by instance type. For more information, see [IP Addresses Per ENI Per Instance Type](#) in the *Amazon Virtual Private Cloud User Guide*.

Type: Integer

Required: No

### **SecurityGroupId.N**

The IDs of one or more security groups.

Type: Array of strings

Required: No

### **SubnetId**

The ID of the subnet to associate with the network interface.

Type: String

Required: Yes

### **TagSpecification.N**

The tags to apply to the new network interface.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **networkInterface**

Information about the network interface.

Type: [NetworkInterface \(p. 1838\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a network interface in the specified subnet with a primary IPv4 address that is automatically selected by Amazon EC2.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterface
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>8dbe591e-5a22-48cb-b948-example</requestId>
<networkInterface>
    <networkInterfaceId>eni-cfca76a6</networkInterfaceId>
    <subnetId>subnet-b2a249da</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>available</status>
    <macAddress>02:74:b0:79:61</macAddress>
    <privateIpAddress>10.0.2.157</privateIpAddress>
    <privateDnsName>ip-10-0-2-157.ap-southeast-1.compute.internal</privateDnsName>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
        <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>default</groupName>
        </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
        <item>
            <privateIpAddress>10.0.2.157</privateIpAddress>
            <privateDnsName>ip-10-0-2-157.ap-southeast-1.compute.internal</
privateDnsName>
            <primary>true</primary>
        </item>
    </privateIpAddressesSet>
    <ipv6AddressesSet/>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

### Example 2

This example creates a network interface in the specified subnet with a primary IPv4 address of 10.0.2.140 and four secondary private IPv4 addresses that are automatically selected by Amazon EC2.

## Sample Request

```
https://ec2.amazonaws.com/?Action/CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.140
&SecondaryPrivateIpAddressCount=4
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>bd78c839-0895-4fac-a17f-example</requestId>
<networkInterface>
    <networkInterfaceId>eni-1bcb7772</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:70:7f:1a</macAddress>
    <privateIpAddress>10.0.2.140</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
        <item>
            <groupId>sg-1a2b3c4d</groupId>
            <groupName>default</groupName>
        </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
        <item>
            <privateIpAddress>10.0.2.140</privateIpAddress>
            <primary>true</primary>
        </item>
        <item>
            <privateIpAddress>10.0.2.172</privateIpAddress>
            <primary>false</primary>
        </item>
        <item>
            <privateIpAddress>10.0.2.169</privateIpAddress>
            <primary>false</primary>
        </item>
        <item>
            <privateIpAddress>10.0.2.170</privateIpAddress>
            <primary>false</primary>
        </item>
        <item>
            <privateIpAddress>10.0.2.171</privateIpAddress>
            <primary>false</primary>
        </item>
    </privateIpAddressesSet>
    <ipv6AddressesSet/>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## Example 3

This example creates a network interface with a primary private IPv4 address of 10.0.2.130 and two secondary IPv4 addresses of 10.0.2.132 and 10.0.2.133.

## Sample Request

```
https://ec2.amazonaws.com/?Action/CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&PrivateIpAddresses.2.Primary=false
&PrivateIpAddresses.2.PrivateIpAddress=10.0.2.132
&PrivateIpAddresses.3.Primary=false
&PrivateIpAddresses.3.PrivateIpAddress=10.0.2.133
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example 4

This example creates a network interface with a primary private IPv4 address of 10.0.2.130 and two IPv6 addresses that are selected by Amazon EC2.

## Sample Request

```
https://ec2.amazonaws.com/?Action/CreateNetworkInterface
&PrivateIpAddresses.1.Primary=true
&PrivateIpAddresses.1.PrivateIpAddress=10.0.2.130
&Ipv6AddressCount=2
&SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Sample Response

```
<CreateNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>a9565f4c-f928-4113-859b-example</requestId>
<networkInterface>
    <networkInterfaceId>eni-41c47828</networkInterfaceId>
    <subnetId>subnet-a61dafcf</subnetId>
    <vpcId>vpc-c31dafaa</vpcId>
    <availabilityZone>ap-southeast-1b</availabilityZone>
    <description/>
    <ownerId>251839141158</ownerId>
    <requesterManaged>false</requesterManaged>
    <status>pending</status>
    <macAddress>02:74:b0:78:bf:ab</macAddress>
    <privateIpAddress>10.0.2.130</privateIpAddress>
    <sourceDestCheck>true</sourceDestCheck>
    <groupSet>
        <item>
            <groupId>sg-188d9f74</groupId>
            <groupName>default</groupName>
        </item>
    </groupSet>
    <tagSet/>
    <privateIpAddressesSet>
        <item>
            <privateIpAddress>10.0.2.130</privateIpAddress>
            <primary>true</primary>
        </item>
    </privateIpAddressesSet>
    <ipv6AddressesSet>
        <item>
            <ipv6Address>2001:db8:1234:1a00::123</ipv6Address>
        </item>
        <item>
            <ipv6Address>2001:db8:1234:1a00::456</ipv6Address>
        </item>
    </ipv6AddressesSet>
</networkInterface>
```

```
</item>
</ipv6AddressesSet>
</networkInterface>
</CreateNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateNetworkInterfacePermission

Grants an AWS-authorized account permission to attach the specified network interface to an instance in their account.

You can grant permission to a single AWS account only, and only one account at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AwsAccountId

The AWS account ID.

Type: String

Required: No

### AwsService

The AWS service. Currently not supported.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

### Permission

The type of permission to grant.

Type: String

Valid Values: INSTANCE-ATTACH | EIP-ASSOCIATE

Required: Yes

## Response Elements

The following elements are returned by the service.

### interfacePermission

Information about the permission for the network interface.

Type: [NetworkInterfacePermission \(p. 1850\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example grants permission to account 123456789012 to attach network interface eni-1a2b3c4d to an instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateNetworkInterfacePermission
&NetworkInterfaceId=eni-1a2b3c4d
&AwsAccountId=123456789012
&Permission=INSTANCE-ATTACH
&AUTHPARAMS
```

#### Sample Response

```
<CreateNetworkInterfacePermissionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>e9633d41-093e-4944-981b-ca7example</requestId>
  <interfacePermission>
    <awsAccountId>123456789012</awsAccountId>
    <networkInterfaceId>eni-1a2b3c4d</networkInterfaceId>
    <networkInterfacePermissionId>eni-perm-06fd19020ede149ea</
    networkInterfacePermissionId>
    <permission>INSTANCE-ATTACH</permission>
    <permissionState>
      <state>GRANTED</state>
    </permissionState>
  </interfacePermission>
</CreateNetworkInterfacePermissionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreatePlacementGroup

Creates a placement group in which to launch instances. The strategy of the placement group determines how the instances are organized within the group.

A `cluster` placement group is a logical grouping of instances within a single Availability Zone that benefit from low network latency, high network throughput. A `spread` placement group places instances on distinct hardware. A `partition` placement group places groups of instances in different partitions, where instances in one partition do not share the same hardware with instances in another partition.

For more information, see [Placement groups](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupName

A name for the placement group. Must be unique within the scope of your account for the Region.

Constraints: Up to 255 ASCII characters

Type: String

Required: No

### PartitionCount

The number of partitions. Valid only when `Strategy` is set to `partition`.

Type: Integer

Required: No

### Strategy

The placement strategy.

Type: String

Valid Values: `cluster` | `spread` | `partition`

Required: No

### TagSpecification.N

The tags to apply to the new placement group.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### placementGroup

Describes a placement group.

Type: [PlacementGroup \(p. 1880\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a cluster placement group named `XYZ-cluster`, and applies a tag with a key of `purpose` and a value of `production`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=XYZ-cluster
&Strategy=cluster
&TagSpecification.1.ResourceType=placement-group
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

### Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1bbcacf48-7155-4154-a7ac-c6031EXAMPLE</requestId>
  <return>true</return>
  <placementGroup>
    <groupName>XYZ-cluster</groupName>
    <groupId>pg-0bea0ad0bexample</groupId>
    <strategy>cluster</strategy>
    <state>available</state>
    <>tagSet>
      <item>
        <key>purpose</key>
        <value>production</value>
      </item>
    </tagSet>
```

```
</placementGroup>
</CreatePlacementGroupResponse>
```

## Example

This example creates a partition placement group named `HDFS-Group-A` with five partitions.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreatePlacementGroup
&GroupName=HDFS-Group-A
&Strategy=partition
&PartitionCount=5
&AUTHPARAMS
```

### Sample Response

```
<CreatePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1bbcraf48-7155-4154-a7ac-c6031EXAMPLE</requestId>
  <return>true</return>
  <placementGroup>
    <groupName>HDFS-Group-A</groupName>
    <groupId>pg-0fc13f6eb3example</groupId>
    <strategy>partition</strategy>
    <state>available</state>
    <partitionCount>5</partitionCount>
  </placementGroup>
</CreatePlacementGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateReplaceRootVolumeTask

Creates a root volume replacement task for an Amazon EC2 instance. The root volume can either be restored to its initial launch state, or it can be restored using a specific snapshot.

For more information, see [Replace a root volume](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If you do not specify a client token, a randomly generated token is used for the request to ensure idempotency.

For more information, see [Ensuring idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceId**

The ID of the instance for which to replace the root volume.

Type: String

Required: Yes

### **SnapshotId**

The ID of the snapshot from which to restore the replacement root volume. If you want to restore the volume to the initial launch state, omit this parameter.

Type: String

Required: No

### **TagSpecification.N**

The tags to apply to the root volume replacement task.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **replaceRootVolumeTask**

Information about the root volume replacement task.

Type: [ReplaceRootVolumeTask \(p. 1914\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateReservedInstancesListing

Creates a listing for Amazon EC2 Standard Reserved Instances to be sold in the Reserved Instance Marketplace. You can submit one Standard Reserved Instance listing at a time. To get a list of your Standard Reserved Instances, you can use the [DescribeReservedInstances \(p. 719\)](#) operation.

## Note

Only Standard Reserved Instances can be sold in the Reserved Instance Marketplace. Convertible Reserved Instances cannot be sold.

The Reserved Instance Marketplace matches sellers who want to resell Standard Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

To sell your Standard Reserved Instances, you must first register as a seller in the Reserved Instance Marketplace. After completing the registration process, you can create a Reserved Instance Marketplace listing of some or all of your Standard Reserved Instances, and specify the upfront price to receive for them. Your Standard Reserved Instance listings then become available for purchase. To view the details of your Standard Reserved Instance listing, you can use the [DescribeReservedInstancesListings \(p. 723\)](#) operation.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### ClientToken

Unique, case-sensitive identifier you provide to ensure idempotency of your listings. This helps avoid duplicate listings. For more information, see [Ensuring Idempotency](#).

Type: String

Required: Yes

### InstanceCount

The number of instances that are a part of a Reserved Instance account to be listed in the Reserved Instance Marketplace. This number should be less than or equal to the instance count associated with the Reserved Instance ID specified in this call.

Type: Integer

Required: Yes

### PriceSchedules.N

A list specifying the price of the Standard Reserved Instance for each month remaining in the Reserved Instance term.

Type: Array of [PriceScheduleSpecification \(p. 1891\)](#) objects

Required: Yes

### ReservedInstancesId

The ID of the active Standard Reserved Instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### reservedInstancesListingsSet

Information about the Standard Reserved Instance listing.

Type: Array of [ReservedInstancesListing \(p. 1942\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a Reserved Instance Marketplace listing from the specified Standard Reserved Instance, which has 11 months remaining in its term. In this example, we set the upfront price at \$2.50, and the price drops over the course of the 11-month term if the instance is still not sold.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateReservedInstancesListing
&ClientToken=myIdempToken1
&InstanceCount=1
&PriceSchedules.1.Price=2.5
&PriceSchedules.1.Term=11
&PriceSchedules.2.Price=2.0
&PriceSchedules.2.Term=8
&PriceSchedules.3.Price=1.5
&PriceSchedules.3.Term=5
&PriceSchedules.4.Price=0.7
&PriceSchedules.4.Term=3
&PriceSchedules.5.Price=0.1
&PriceSchedules.5.Term=1
&ReservedInstancesId=e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE
&AUTHPARAMS
```

### Sample Response

```
<CreateReservedInstancesListingResponse>
  <requestId>a42481af-335a-4e9e-b291-bd18dexample</requestId>
  <reservedInstancesListingsSet>
```

```
<item>
    <reservedInstancesListingId>5ec28771-05ff-4b9b-aa31-9e57dEXAMPLE</
reservedInstancesListingId>
    <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
    <createDate>2012-07-17T17:11:09.449Z</createDate>
    <updateDate>2012-07-17T17:11:09.468Z</updateDate>
    <status>active</status>
    <statusMessage>ACTIVE</statusMessage>
    <instanceCounts>
        <item>
            <state>Available</state>
            <instanceCount>1</instanceCount>
        </item>
        <item>
            <state>Sold</state>
            <instanceCount>0</instanceCount>
        </item>
        <item>
            <state>Cancelled</state>
            <instanceCount>0</instanceCount>
        </item>
        <item>
            <state>Pending</state>
            <instanceCount>0</instanceCount>
        </item>
    </instanceCounts>
    <priceSchedules>
        <item>
            <term>11</term>
            <price>2.5</price>
            <currencyCode>USD</currencyCode>
            <active>true</active>
        </item>
        <item>
            <term>10</term>
            <price>2.5</price>
            <currencyCode>USD</currencyCode>
            <active>false</active>
        </item>
        <item>
            <term>9</term>
            <price>2.5</price>
            <currencyCode>USD</currencyCode>
            <active>false</active>
        </item>
        <item>
            <term>8</term>
            <price>2.0</price>
            <currencyCode>USD</currencyCode>
            <active>false</active>
        </item>
        <item>
            <term>7</term>
            <price>2.0</price>
            <currencyCode>USD</currencyCode>
            <active>false</active>
        </item>
        <item>
            <term>6</term>
            <price>2.0</price>
            <currencyCode>USD</currencyCode>
            <active>false</active>
        </item>
        <item>
            <term>5</term>
            <price>1.5</price>
        </item>
    </priceSchedules>

```

```
<currencyCode>USD</currencyCode>
<active>false</active>
</item>
<item>
  <term>4</term>
  <price>1.5</price>
  <currencyCode>USD</currencyCode>
  <active>false</active>
</item>
<item>
  <term>3</term>
  <price>0.7</price>
  <currencyCode>USD</currencyCode>
  <active>false</active>
</item>
<item>
  <term>2</term>
  <price>0.7</price>
  <currencyCode>USD</currencyCode>
  <active>false</active>
</item>
<item>
  <term>1</term>
  <price>0.1</price>
  <currencyCode>USD</currencyCode>
  <active>false</active>
</item>
</priceSchedules>
<tagSet/>
<clientToken>myIdempToken1</clientToken>
</item>
</reservedInstancesListingsSet>
</CreateReservedInstancesListingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateRestoreImageTask

Starts a task that restores an AMI from an Amazon S3 object that was previously created by using [CreateStoreImageTask](#).

To use this API, you must have the required permissions. For more information, see [Permissions for storing and restoring AMIs using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see [Store and restore an AMI using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Bucket

The name of the Amazon S3 bucket that contains the stored AMI object.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Name

The name for the restored AMI. The name must be unique for AMIs in the Region for this account. If you do not provide a name, the new AMI gets the same name as the original AMI.

Type: String

Required: No

### ObjectKey

The name of the stored AMI object in the bucket.

Type: String

Required: Yes

### TagSpecification.N

The tags to apply to the AMI and snapshots on restoration. You can tag the AMI, the snapshots, or both.

- To tag the AMI, the value for `ResourceType` must be `image`.
- To tag the snapshots, the value for `ResourceType` must be `snapshot`. The same tag is applied to all of the snapshots that are created.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **imageId**

The AMI ID.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateRoute

Creates a route in a route table within a VPC.

You must specify one of the following targets: internet gateway or virtual private gateway, NAT instance, NAT gateway, VPC peering connection, network interface, egress-only internet gateway, or transit gateway.

When determining how to route traffic, we use the route with the most specific match. For example, traffic is destined for the IPv4 address 192.0.2.3, and the route table includes the following two IPv4 routes:

- 192.0.2.0/24 (goes to some target A)
- 192.0.2.0/28 (goes to some target B)

Both routes apply to the traffic destined for 192.0.2.3. However, the second route in the list covers a smaller number of IP addresses and is therefore more specific, so we use that route to determine where to target the traffic.

For more information about route tables, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CarrierGatewayId

The ID of the carrier gateway.

You can only use this option when the VPC contains a subnet which is associated with a Wavelength Zone.

Type: String

Required: No

### CoreNetworkArn

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

### DestinationCidrBlock

The IPv4 CIDR address block used for the destination match. Routing decisions are based on the most specific match. We modify the specified CIDR block to its canonical form; for example, if you specify 100.68.0.18/18, we modify it to 100.68.0.0/18.

Type: String

Required: No

### DestinationIpv6CidrBlock

The IPv6 CIDR block used for the destination match. Routing decisions are based on the most specific match.

Type: String

Required: No

**DestinationPrefixListId**

The ID of a prefix list used for the destination match.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId**

[IPv6 traffic only] The ID of an egress-only internet gateway.

Type: String

Required: No

**GatewayId**

The ID of an internet gateway or virtual private gateway attached to your VPC.

Type: String

Required: No

**InstanceId**

The ID of a NAT instance in your VPC. The operation fails if you specify an instance ID unless exactly one network interface is attached.

Type: String

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: No

**NatGatewayId**

[IPv4 traffic only] The ID of a NAT gateway.

Type: String

Required: No

**NetworkInterfaceId**

The ID of a network interface.

Type: String

Required: No

**RouteTableId**

The ID of the route table for the route.

Type: String

Required: Yes

**TransitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**VpcEndpointId**

The ID of a VPC endpoint. Supported for Gateway Load Balancer endpoints only.

Type: String

Required: No

**VpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a route in the route table with the ID `rtb-1122334455667788a`. The route matches all IPv4 traffic (`0.0.0.0/0`) and routes it to the internet gateway with the ID `igw-eaad4883`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=0.0.0.0/0
&GatewayId=igw-eaad4883
&AUTHPARAMS
```

## Example 2

This example creates a route in the route table with the ID `rtb-1122334455667788a`. The route sends all IPv4 traffic (`0.0.0.0/0`) to the NAT instance with the ID `i-1234567890abcdef0`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=0.0.0.0/0
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

## Example 3

This example creates a route in route table `rtb-1122334455667788a`. The route matches traffic for the IPv4 CIDR block `10.0.0.0/16` and routes it to VPC peering connection, `pcx-111aaa22`. This route enables IPv4 traffic to be directed to the other peered VPC in the VPC peering connection.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a&DestinationCidrBlock=10.0.0.0/16
&vpcPeeringConnectionId=pcx-111aaa22
&AUTHPARAMS
```

## Example 4

This example creates a route in route table `rtb-1122334455667788a`. The route sends all IPv6 traffic `::/0` to an egress-only internet gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRoute
&RouteTableId=rtb-1122334455667788a
&DestinationIpv6CidrBlock=::/0
&EgressOnlyInternetGatewayId=eigw-1234567890abc1234
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateRouteTable

Creates a route table for the specified VPC. After you create a route table, you can add routes and associate the table with a subnet.

For more information, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TagSpecification.N

The tags to assign to the route table.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### routeTable

Information about the route table.

Type: [RouteTable \(p. 1961\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a route table for the VPC with the ID vpc-1122334455667788a. By default, every route table includes a local route that enables traffic to flow within the VPC. The following response shows that route.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-1122334455667788a
&AUTHPARAMS
```

#### Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-029e01e661a8ffffd9</routeTableId>
    <vpcId>vpc-11ad4878</vpcId>
    <routeSet>
      <item>
        <destinationCidrBlock>10.0.0.0/22</destinationCidrBlock>
        <gatewayId>local</gatewayId>
        <state>active</state>
      </item>
    </routeSet>
    <associationSet/>
    <tagSet/>
  </routeTable>
</CreateRouteTableResponse>
```

### Example 2

This example creates a route table for a VPC that has an associated IPv6 CIDR block. The route table includes a local route that enables IPv6 traffic to flow within the VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateRouteTable
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<CreateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <routeTable>
    <routeTableId>rtb-8bda6cef</routeTableId>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <routeSet>
      <item>
        <destinationCidrBlock>10.0.0.0/16</destinationCidrBlock>
        <gatewayId>local</gatewayId>
        <state>active</state>
        <origin>CreateRouteTable</origin>
      </item>
    </routeSet>
  </routeTable>
</CreateRouteTableResponse>
```

```
</item>
<item>
    <destinationIpv6CidrBlock>2001:db8:1234:1a00::/56</
destinationIpv6CidrBlock>
    <gatewayId>local</gatewayId>
    <state>active</state>
    <origin>CreateRouteTable</origin>
</item>
</routeSet>
<associationSet/>
<propagatingVgwSet/>
<tagSet/>
</routeTable></CreateRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSecurityGroup

Creates a security group.

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. For more information, see [Amazon EC2 security groups](#) in the *Amazon Elastic Compute Cloud User Guide* and [Security groups for your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

When you create a security group, you specify a friendly name of your choice. You can have a security group for use in EC2-Classic with the same name as a security group for use in a VPC. However, you can't have two security groups for use in EC2-Classic with the same name or two security groups for use in a VPC with the same name.

You have a default security group for use in EC2-Classic and a default security group for use in your VPC. If you don't specify a security group when you launch an instance, the instance is launched into the appropriate default security group. A default security group includes a default rule that grants instances unrestricted network access to each other.

You can add or remove rules from your security groups using [AuthorizeSecurityGroupIngress](#) (p. 112), [AuthorizeSecurityGroupEgress](#) (p. 108), [RevokeSecurityGroupIngress](#) (p. 1279), and [RevokeSecurityGroupEgress](#) (p. 1275).

For more information about VPC security group limits, see [Amazon VPC Limits](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](#) (p. 2247).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupDescription

A description for the security group. This is informational only.

Constraints: Up to 255 characters in length

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and .\_-:/()#@[]+=&;!\$\*

Type: String

Required: Yes

### GroupName

The name of the security group.

Constraints: Up to 255 characters in length. Cannot start with sg-.

Constraints for EC2-Classic: ASCII characters

Constraints for EC2-VPC: a-z, A-Z, 0-9, spaces, and .\_-:/()#,@[]+=&;{}!\$\*

Type: String

Required: Yes

#### **TagSpecification.N**

The tags to assign to the security group.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **VpcId**

[EC2-VPC] The ID of the VPC. Required for EC2-VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **groupId**

The ID of the security group.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **tagSet**

The tags assigned to the security group.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example creates a security group named `websrv` for EC2-Classic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSecurityGroup
&GroupName=websrv
```

```
&GroupDescription=Web Servers  
&AUTHPARAMS
```

## Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
  <groupId>sg-1a2b3c4d</groupId>  
</CreateSecurityGroupResponse>
```

## Example for EC2-VPC

This example creates a security group named `WebServerSG` for the specified VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateSecurityGroup  
&GroupName=WebServerSG  
&GroupDescription=Web Servers  
&VpcId=vpc-3325caf2  
&AUTHPARAMS
```

### Sample Response

```
<CreateSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
  <groupId>sg-0a42d66a</groupId>  
</CreateSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSnapshot

Creates a snapshot of an EBS volume and stores it in Amazon S3. You can use snapshots for backups, to make copies of EBS volumes, and to save data before shutting down an instance.

You can create snapshots of volumes in a Region and volumes on an Outpost. If you create a snapshot of a volume in a Region, the snapshot must be stored in the same Region as the volume. If you create a snapshot of a volume on an Outpost, the snapshot can be stored on the same Outpost as the volume, or in the Region for that Outpost.

When a snapshot is created, any AWS Marketplace product codes that are associated with the source volume are propagated to the snapshot.

You can take a snapshot of an attached volume that is in use. However, snapshots only capture data that has been written to your Amazon EBS volume at the time the snapshot command is issued; this might exclude any data that has been cached by any applications or the operating system. If you can pause any file systems on the volume long enough to take a snapshot, your snapshot should be complete. However, if you cannot pause all file writes to the volume, you should unmount the volume from within the instance, issue the snapshot command, and then remount the volume to ensure a consistent and complete snapshot. You may remount and use your volume while the snapshot status is pending.

To create a snapshot for Amazon EBS volumes that serve as root devices, you should stop the instance before taking the snapshot.

Snapshots that are taken from encrypted volumes are automatically encrypted. Volumes that are created from encrypted snapshots are also automatically encrypted. Your encrypted volumes and any associated snapshots always remain protected.

You can tag your snapshots during creation. For more information, see [Tag your Amazon EC2 resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see [Amazon Elastic Block Store](#) and [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

A description for the snapshot.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### OutpostArn

The Amazon Resource Name (ARN) of the Outpost on which to create a local snapshot.

- To create a snapshot of a volume in a Region, omit this parameter. The snapshot is created in the same Region as the volume.
- To create a snapshot of a volume on an Outpost and store the snapshot in the Region, omit this parameter. The snapshot is created in the Region for the Outpost.
- To create a snapshot of a volume on an Outpost and store the snapshot on an Outpost, specify the ARN of the destination Outpost. The snapshot must be created on the same Outpost as the volume.

For more information, see [Create local snapshots from volumes on an Outpost](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

#### **TagSpecification.N**

The tags to apply to the snapshot during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **VolumeId**

The ID of the Amazon EBS volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **dataEncryptionKeyId**

The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by [DescribeSnapshots \(p. 765\)](#).

Type: String

#### **description**

The description for the snapshot.

Type: String

#### **encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

#### **kmsKeyId**

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) KMS key that was used to protect the volume encryption key for the parent volume.

Type: String

**outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

**ownerAlias**

The AWS owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console.

Type: String

**ownerId**

The ID of the AWS account that owns the EBS snapshot.

Type: String

**progress**

The progress of the snapshot, as a percentage.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotId**

The ID of the snapshot. Each snapshot receives a unique identifier when it is created.

Type: String

**startTime**

The time stamp when the snapshot was initiated.

Type: Timestamp

**status**

The snapshot state.

Type: String

Valid Values: `pending` | `completed` | `error`

**statusMessage**

Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation fails (for example, if the proper AWS Key Management Service (AWS KMS) permissions are not obtained) this field displays error state details to help you diagnose why the error occurred. This parameter is only returned by [DescribeSnapshots \(p. 765\)](#).

Type: String

**tagSet**

Any tags assigned to the snapshot.

Type: Array of [Tag \(p. 2070\)](#) objects

#### **volumeId**

The ID of the volume that was used to create the snapshot. Snapshots created by the [CopySnapshot](#) (p. 148) action have an arbitrary volume ID that should not be used for any purpose.

Type: String

#### **volumeSize**

The size of the volume, in GiB.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common client error codes](#) (p. 2251).

## Examples

### Example

This example creates a snapshot of the volume with the ID vol-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSnapshot
&VolumeId=vol-1234567890abcdef0
&Description=Daily+Backup
&AUTHPARAMS
```

#### Sample Response

```
<CreateSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<snapshotId>snap-1234567890abcdef0</snapshotId>
<volumeId>vol-1234567890abcdef0</volumeId>
<status>pending</status>
<startTime>YYYY-MM-DDTHH:MM:SS.000Z</startTime>
<progress>60%</progress>
<ownerId>111122223333</ownerId>
<volumeSize>30</volumeSize>
<description>Daily Backup</description>
</CreateSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSnapshots

Creates crash-consistent snapshots of multiple EBS volumes and stores the data in S3. Volumes are chosen by specifying an instance. Any attached volumes will produce one snapshot each that is crash-consistent across the instance. Boot volumes can be excluded by changing the parameters.

You can create multi-volume snapshots of instances in a Region and instances on an Outpost. If you create snapshots from an instance in a Region, the snapshots must be stored in the same Region as the instance. If you create snapshots from an instance on an Outpost, the snapshots can be stored on the same Outpost as the instance, or in the Region for that Outpost.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CopyTagsFromSource**

Copies the tags from the specified volume to corresponding snapshot.

Type: String

Valid Values: `volume`

Required: No

### **Description**

A description propagated to every snapshot specified by the instance.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceSpecification**

The instance to specify which volumes should be included in the snapshots.

Type: [InstanceSpecification \(p. 1688\)](#) object

Required: Yes

### **OutpostArn**

The Amazon Resource Name (ARN) of the Outpost on which to create the local snapshots.

- To create snapshots from an instance in a Region, omit this parameter. The snapshots are created in the same Region as the instance.
- To create snapshots from an instance on an Outpost and store the snapshots in the Region, omit this parameter. The snapshots are created in the Region for the Outpost.

- To create snapshots from an instance on an Outpost and store the snapshots on an Outpost, specify the ARN of the destination Outpost. The snapshots must be created on the same Outpost as the instance.

For more information, see [Create multi-volume local snapshots from instances on an Outpost](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

#### TagSpecification.N

Tags to apply to every snapshot specified by the instance.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### snapshotSet

List of snapshots.

Type: Array of [SnapshotInfo \(p. 2014\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSpotDatafeedSubscription

Creates a data feed for Spot Instances, enabling you to view Spot Instance usage logs. You can create one data feed per AWS account. For more information, see [Spot Instance data feed in the Amazon EC2 User Guide for Linux Instances](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Bucket

The name of the Amazon S3 bucket in which to store the Spot Instance data feed. For more information about bucket names, see [Rules for bucket naming](#) in the *Amazon S3 Developer Guide*.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Prefix

The prefix for the data feed file names.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### spotDatafeedSubscription

The Spot Instance data feed subscription.

Type: [SpotDatafeedSubscription \(p. 2019\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a Spot Instance data feed for the account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSpotDatafeedSubscription
&Bucket=my-s3-bucket
&AUTHPARAMS
```

#### Sample Response

```
<CreateSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotDatafeedSubscription>
<ownerId>123456789012</ownerId>
<bucket>my-s3-bucket</bucket>
<prefix>spotdata_</prefix>
<state>Active</state>
</spotDatafeedSubscription>
</CreateSpotDatafeedSubscriptionResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateStoreImageTask

Stores an AMI as a single object in an Amazon S3 bucket.

To use this API, you must have the required permissions. For more information, see [Permissions for storing and restoring AMIs using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see [Store and restore an AMI using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Bucket

The name of the Amazon S3 bucket in which the AMI object will be stored. The bucket must be in the Region in which the request is being made. The AMI object appears in the bucket only after the upload task has completed.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

### S3ObjectTag.N

The tags to apply to the AMI object that will be stored in the Amazon S3 bucket.

Type: Array of [S3ObjectTag \(p. 1967\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### objectKey

The name of the stored AMI object in the S3 bucket.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSubnet

Creates a subnet in a specified VPC.

You must specify an IPv4 CIDR block for the subnet. After you create a subnet, you can't change its CIDR block. The allowed block size is between a /16 netmask (65,536 IP addresses) and /28 netmask (16 IP addresses). The CIDR block must not overlap with the CIDR block of an existing subnet in the VPC.

If you've associated an IPv6 CIDR block with your VPC, you can create a subnet with an IPv6 CIDR block that uses a /64 prefix length.

**Important**

AWS reserves both the first four and the last IPv4 address in each subnet's CIDR block. They're not available for use.

If you add more than one subnet to a VPC, they're set up in a star topology with a logical router in the middle.

When you stop an instance in a subnet, it retains its private IPv4 address. It's therefore possible to have a subnet with no running instances (they're all stopped), but no remaining IP addresses available.

For more information about subnets, see [Your VPC and subnets](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

**AvailabilityZone**

The Availability Zone or Local Zone for the subnet.

Default: AWS selects one for you. If you create more than one subnet in your VPC, we do not necessarily select a different zone for each subnet.

To create a subnet in a Local Zone, set this value to the Local Zone ID, for example `us-west-2-1ax-1a`. For information about the Regions that support Local Zones, see [Available Regions](#) in the *Amazon Elastic Compute Cloud User Guide*.

To create a subnet in an Outpost, set this value to the Availability Zone for the Outpost and specify the Outpost ARN.

Type: String

Required: No

**AvailabilityZoneId**

The AZ ID or the Local Zone ID of the subnet.

Type: String

Required: No

**CidrBlock**

The IPv4 network range for the subnet, in CIDR notation. For example, `10.0.0.0/24`. We modify the specified CIDR block to its canonical form; for example, if you specify `100.68.0.18/18`, we modify it to `100.68.0.0/18`.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

**Ipv6CidrBlock**

The IPv6 network range for the subnet, in CIDR notation. The subnet size must use a /64 prefix length.

Type: String

Required: No

**OutpostArn**

The Amazon Resource Name (ARN) of the Outpost. If you specify an Outpost ARN, you must also specify the Availability Zone of the Outpost subnet.

Type: String

Required: No

**TagSpecification.N**

The tags to assign to the subnet.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**subnet**

Information about the subnet.

Type: [Subnet \(p. 2060\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a subnet with CIDR block 10.0.1.0/24 in the VPC with the ID vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-1a2b3c4d
&CidrBlock=10.0.1.0/24
&AUTHPARAMS
```

#### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>e6cb93f0-eb09-40ee-b9aa-16db90a0524f</requestId>
  <subnet>
    <subnetId>subnet-0397b6c47c42e4dc0</subnetId>
    <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-0397b6c47cEXAMPLE</subnetArn>
    <state>pending</state>
    <ownerId>111122223333</ownerId>
    <vpcId>vpc-06b7830650EXAMPLE</vpcId>
    <cidrBlock>10.0.0.0/24</cidrBlock>
    <ipv6CidrBlockAssociationSet/>
    <availableIpAddressCount>251</availableIpAddressCount>
    <availabilityZone>us-east-2a</availabilityZone>
    <availabilityZoneId>use2-az1</availabilityZoneId>
    <defaultForAz>false</defaultForAz>
    <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
    <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
  </subnet>
</CreateSubnetResponse>
```

### Example 2

This example creates a subnet with an IPv6 CIDR block in the VPC vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-07e8ffd50fEXAMPLE
&CidrBlock=10.0.1.0/24
&Ipv6CidrBlock=2600:1f16:115:200::/64
&AUTHPARAMS
```

#### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<subnet>
  <subnetId>subnet-02bf4c428bEXAMPLE</subnetId>
  <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-02bf4c428bEXAMPLE</subnetArn>
  <state>available</state>
  <ownerId>111122223333</ownerId>
  <vpcId>vpc-07e8ffd50fEXAMPLE</vpcId>
  <cidrBlock>10.0.0.0/24</cidrBlock>
  <ipv6CidrBlockAssociationSet>
    <item>
      <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
      <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
      <ipv6CidrBlockState>
        <state>associated</state>
      </ipv6CidrBlockState>
    </item>
  </ipv6CidrBlockAssociationSet>
  <availableIpAddressCount>251</availableIpAddressCount>
  <availabilityZone>us-east-2b</availabilityZone>
  <availabilityZoneId>use2-az2</availabilityZoneId>
  <defaultForAz>false</defaultForAz>
  <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
  <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
</subnet>
</CreateSubnetResponse>
```

## Example 3

This example creates a subnet with an IPv6 CIDR block in the specified Local Zone.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateSubnet
&VpcId=vpc-07e8ffd50fEXAMPLE
&CidrBlock=10.0.1.0/24
&Ipv6CidrBlock=2600:1f16:115:200::/64
&AvailabilityZone=us-west-2-lax-1a
&AUTHPARAMS
```

### Sample Response

```
<CreateSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <subnet>
    <subnetId>subnet-093cb4a1ecEXAMPLE</subnetId>
    <subnetArn>arn:aws:ec2:us-west-2:111122223333:subnet/subnet-093cb4a1ecEXAMPLE</subnetArn>
    <state>available</state>
    <ownerId>111122223333</ownerId>
    <vpcId>vpc-07d80fe1a43298172</vpcId>
    <cidrBlock>10.0.0.0/24</cidrBlock>
    <ipv6CidrBlockAssociationSet>
      <item>
        <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
        <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
        <ipv6CidrBlockState>
          <state>associated</state>
        </ipv6CidrBlockState>
      </item>
    </ipv6CidrBlockAssociationSet>
    <availableIpAddressCount>251</availableIpAddressCount>
```

```
<availabilityZone>us-west-2-lax-1a</availabilityZone>
<availabilityZoneId>usw2-lax1-az1</availabilityZoneId>
<defaultForAz>false</defaultForAz>
<mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
<assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation
</subnet>
</CreateSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateSubnetCidrReservation

Creates a subnet CIDR reservation. For information about subnet CIDR reservations, see [Subnet CIDR reservations in the Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Cidr

The IPv4 or IPV6 CIDR range to reserve.

Type: String

Required: Yes

### Description

The description to assign to the subnet CIDR reservation.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ReservationType

The type of reservation.

The following are valid values:

- `prefix`: The Amazon EC2 Prefix Delegation feature assigns the IP addresses to network interfaces that are associated with an instance. For information about Prefix Delegation, see [Prefix Delegation for Amazon EC2 network interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.
- `explicit`: You manually assign the IP addresses to resources that reside in your subnet.

Type: String

Valid Values: `prefix` | `explicit`

Required: Yes

### SubnetId

The ID of the subnet.

Type: String

Required: Yes

### TagSpecification.N

The tags to assign to the subnet CIDR reservation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **subnetCidrReservation**

Information about the created subnet CIDR reservation.

Type: [SubnetCidrReservation \(p. 2065\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateTags

Adds or overwrites only the specified tags for the specified Amazon EC2 resource or resources. When you specify an existing tag key, the value is overwritten with the new value. Each resource can have a maximum of 50 tags. Each tag consists of a key and optional value. Tag keys must be unique per resource.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*. For more information about creating IAM policies that control users' access to resources based on tags, see [Supported Resource-Level Permissions for Amazon EC2 API Actions](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ResourceId.N

The IDs of the resources, separated by spaces.

Constraints: Up to 1000 resource IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

### Tag.N

The tags. The `value` parameter is required, but if you don't want the tag to have a value, specify the parameter with no value, and we set the value to an empty string.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request adds (or overwrites) two tags for an AMI and an instance. One of the tags is a key (`webserver`), with no value (we set the value to an empty string). The other tag consists of a key (`stack`) and value (`Production`).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTags
&ResourceId.1=ami-1a2b3c4d
&ResourceId.2=i-1234567890abcdef0
&Tag.1.Key=webserver
&Tag.1.Value=
&Tag.2.Key=stack
&Tag.2.Value=Production
&AUTHPARAMS
```

#### Sample Response

```
<CreateTagsResponse
xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<return>true</return>
</CreateTagsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTrafficMirrorFilter

Creates a Traffic Mirror filter.

A Traffic Mirror filter is a set of rules that defines the traffic to mirror.

By default, no traffic is mirrored. To mirror traffic, use [CreateTrafficMirrorFilterRule](#) to add Traffic Mirror rules to the filter. The rules you add define what traffic gets mirrored. You can also use [ModifyTrafficMirrorFilterNetworkServices](#) to mirror supported network services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **Description**

The description of the Traffic Mirror filter.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **TagSpecification.N**

The tags to assign to a Traffic Mirror filter.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilter**

Information about the Traffic Mirror filter.

Type: [TrafficMirrorFilter \(p. 2088\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTrafficMirrorFilterRule

Creates a Traffic Mirror filter rule.

A Traffic Mirror rule defines the Traffic Mirror source traffic to mirror.

You need the Traffic Mirror filter ID when you create the rule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **Description**

The description of the Traffic Mirror rule.

Type: String

Required: No

### **DestinationCidrBlock**

The destination CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: Yes

### **DestinationPortRange**

The destination port range.

Type: [TrafficMirrorPortRangeRequest \(p. 2093\)](#) object

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Protocol**

The protocol, for example UDP, to assign to the Traffic Mirror rule.

For information about the protocol value, see [Protocol Numbers](#) on the Internet Assigned Numbers Authority (IANA) website.

Type: Integer

Required: No

**RuleAction**

The action to take on the filtered traffic.

Type: String

Valid Values: `accept` | `reject`

Required: Yes

**RuleNumber**

The number of the Traffic Mirror rule. This number must be unique for each Traffic Mirror rule in a given direction. The rules are processed in ascending order by rule number.

Type: Integer

Required: Yes

**SourceCidrBlock**

The source CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: Yes

**SourcePortRange**

The source port range.

Type: [TrafficMirrorPortRangeRequest \(p. 2093\)](#) object

Required: No

**TrafficDirection**

The type of traffic.

Type: String

Valid Values: `ingress` | `egress`

Required: Yes

**TrafficMirrorFilterId**

The ID of the filter that this rule is associated with.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterRule**

The Traffic Mirror rule.

Type: [TrafficMirrorFilterRule \(p. 2090\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTrafficMirrorSession

Creates a Traffic Mirror session.

A Traffic Mirror session actively copies packets from a Traffic Mirror source to a Traffic Mirror target. Create a filter, and then assign it to the session to define a subset of the traffic to mirror, for example all TCP traffic.

The Traffic Mirror source and the Traffic Mirror target (monitoring appliances) can be in the same VPC, or in a different VPC connected via VPC peering or a transit gateway.

By default, no traffic is mirrored. Use [CreateTrafficMirrorFilter](#) to create filter rules that specify the traffic to mirror.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **Description**

The description of the Traffic Mirror session.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **NetworkInterfaceId**

The ID of the source network interface.

Type: String

Required: Yes

### **PacketLength**

The number of bytes in each packet to mirror. These are bytes after the VXLAN header. Do not specify this parameter when you want to mirror the entire packet. To mirror a subset of the packet, set this to the length (in bytes) that you want to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target.

If you do not want to mirror the entire packet, use the `PacketLength` parameter to specify the number of bytes in each packet to mirror.

Type: Integer

Required: No

#### **SessionNumber**

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: Yes

#### **TagSpecification.N**

The tags to assign to a Traffic Mirror session.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

#### **TrafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: Yes

#### **VirtualNetworkId**

The VXLAN ID for the Traffic Mirror session. For more information about the VXLAN protocol, see [RFC 7348](#). If you do not specify a `VirtualNetworkId`, an account-wide unique id is chosen at random.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

#### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorSession**

Information about the Traffic Mirror session.

Type: [TrafficMirrorSession \(p. 2094\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTrafficMirrorTarget

Creates a target for your Traffic Mirror session.

A Traffic Mirror target is the destination for mirrored traffic. The Traffic Mirror source and the Traffic Mirror target (monitoring appliances) can be in the same VPC, or in different VPCs connected via VPC peering or a transit gateway.

A Traffic Mirror target can be a network interface, or a Network Load Balancer.

To use the target in a Traffic Mirror session, use [CreateTrafficMirrorSession](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **Description**

The description of the Traffic Mirror target.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **NetworkInterfaceId**

The network interface ID that is associated with the target.

Type: String

Required: No

### **NetworkLoadBalancerArn**

The Amazon Resource Name (ARN) of the Network Load Balancer that is associated with the target.

Type: String

Required: No

### **TagSpecification.N**

The tags to assign to the Traffic Mirror target.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

### **requestId**

The ID of the request.

Type: String

### **trafficMirrorTarget**

Information about the Traffic Mirror target.

Type: [TrafficMirrorTarget \(p. 2096\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGateway

Creates a transit gateway.

You can use a transit gateway to interconnect your virtual private clouds (VPC) and on-premises networks. After the transit gateway enters the available state, you can attach your VPCs and VPN connections to the transit gateway.

To attach your VPCs, use [CreateTransitGatewayVpcAttachment \(p. 318\)](#).

To attach a VPN connection, use [CreateCustomerGateway \(p. 171\)](#) to create a customer gateway and specify the ID of the customer gateway and the ID of the transit gateway in a call to [CreateVpnConnection \(p. 351\)](#).

When you create a transit gateway, we create a default transit gateway route table and use it as the default association route table and the default propagation route table. You can use [CreateTransitGatewayRouteTable \(p. 316\)](#) to create additional transit gateway route tables. If you disable automatic route propagation, we do not create a default transit gateway route table. You can use [EnableTransitGatewayRouteTablePropagation \(p. 954\)](#) to propagate routes from a resource attachment to a transit gateway route table. If you disable automatic associations, you can use [AssociateTransitGatewayRouteTable \(p. 86\)](#) to associate a resource attachment with a transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

A description of the transit gateway.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Options

The transit gateway options.

Type: [TransitGatewayRequestOptions \(p. 2135\)](#) object

Required: No

### TagSpecification.N

The tags to apply to the transit gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **transitGateway**

Information about the transit gateway.

Type: [TransitGateway \(p. 2098\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayConnect

Creates a Connect attachment from a specified transit gateway attachment. A Connect attachment is a GRE-based tunnel attachment that you can use to establish a connection between a transit gateway and an appliance.

A Connect attachment uses an existing VPC or AWS Direct Connect attachment as the underlying transport mechanism.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Options

The Connect attachment options.

Type: [CreateTransitGatewayConnectRequestOptions \(p. 1460\)](#) object

Required: Yes

### TagSpecification.N

The tags to apply to the Connect attachment.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransportTransitGatewayAttachmentId

The ID of the transit gateway attachment. You can specify a VPC attachment or AWS Direct Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### **transitGatewayConnect**

Information about the Connect attachment.

Type: [TransitGatewayConnect \(p. 2107\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayConnectPeer

Creates a Connect peer for a specified transit gateway Connect attachment between a transit gateway and an appliance.

The peer address and transit gateway address must be the same IP address family (IPv4 or IPv6).

For more information, see [Connect peers](#) in the *Transit Gateways Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### BgpOptions

The BGP options for the Connect peer.

Type: [TransitGatewayConnectRequestBgpOptions \(p. 2113\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InsideCidrBlocks.N

The range of inside IP addresses that are used for BGP peering. You must specify a size /29 IPv4 CIDR block from the 169.254.0.0/16 range. The first address from the range must be configured on the appliance as the BGP IP address. You can also optionally specify a size /125 IPv6 CIDR block from the fd00::/8 range.

Type: Array of strings

Required: Yes

### PeerAddress

The peer IP address (GRE outer IP address) on the appliance side of the Connect peer.

Type: String

Required: Yes

### TagSpecification.N

The tags to apply to the Connect peer.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayAddress

The peer IP address (GRE outer IP address) on the transit gateway side of the Connect peer, which must be specified from a transit gateway CIDR block. If not specified, Amazon automatically assigns the first available IP address from the transit gateway CIDR block.

Type: String

Required: No

**TransitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectPeer**

Information about the Connect peer.

Type: [TransitGatewayConnectPeer \(p. 2110\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayMulticastDomain

Creates a multicast domain using the specified transit gateway.

The transit gateway must be in the available state before you create a domain. Use [DescribeTransitGateways](#) to see the state of transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Options

The options for the transit gateway multicast domain.

Type: [CreateTransitGatewayMulticastDomainRequestOptions \(p. 1461\)](#) object

Required: No

### TagSpecification.N

The tags for the transit gateway multicast domain.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayMulticastDomain

Information about the transit gateway multicast domain.

Type: [TransitGatewayMulticastDomain \(p. 2116\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a multicast domain for the specified transit gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitMulticastDomain
&TransitGatewayId=tgw-0d88d2d0d5EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>763fb04b-258f-4710-8f91-b202aEXAMPLE</requestId>
  <transitGatewayMulticastDomain>
    <creationTime>2019-11-20T22:02:03.000Z</creationTime>
    <state>pending</state>
    <transitGatewayId>tgw-0d88d2d0d5EXAMPLE</transitGatewayId>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-02bb79002EXAMPLE</
transitGatewayMulticastDomainId>
  </transitGatewayMulticastDomain>
</CreateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayPeeringAttachment

Requests a transit gateway peering attachment between the specified transit gateway (requester) and a peer transit gateway (accepter). The transit gateways must be in different Regions. The peer transit gateway can be in your account or a different AWS account.

After you create the peering attachment, the owner of the accepter transit gateway must accept the attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PeerAccountId

The ID of the AWS account that owns the peer transit gateway.

Type: String

Required: Yes

### PeerRegion

The Region where the peer transit gateway is located.

Type: String

Required: Yes

### PeerTransitGatewayId

The ID of the peer transit gateway with which to create the peering attachment.

Type: String

Required: Yes

### TagSpecification.N

The tags to apply to the transit gateway peering attachment.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayPeeringAttachment

The transit gateway peering attachment.

Type: [TransitGatewayPeeringAttachment \(p. 2128\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a transit gateway peering attachment for the specified transit gateways. The accepter (peer) transit gateway is in the us-west-2 Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayPeeringAttachment
&TransitGatewayId=tgw-11223344aabcc112
&PeerTransitGatewayId=tgw-1234567890abc1234
&PeerAccountId=123456789012
&PeerRegion=us-west-2
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayPeeringAttachmentResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>701859fa-6a57-4e55-858c-e63example</requestId>
  <transitGatewayPeeringAttachment>
    <accepterTgwInfo>
      <ownerId>123456789012</ownerId>
      <region>us-west-2</region>
      <transitGatewayId>tgw-1234567890abc1234</transitGatewayId>
    </accepterTgwInfo>
    <creationTime>2019-11-11T11:36:30.000Z</creationTime>
    <requesterTgwInfo>
      <ownerId>123456789012</ownerId>
      <region>us-east-1</region>
      <transitGatewayId>tgw-11223344aabcc112</transitGatewayId>
    </requesterTgwInfo>
    <state>initiatingRequest</state>
    <transitGatewayAttachmentId>tgw-attach-0a73702c5c7123123</
    transitGatewayAttachmentId>
```

```
</transitGatewayPeeringAttachment>
</CreateTransitGatewayPeeringAttachmentResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayPrefixListReference

Creates a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **PrefixListId**

The ID of the prefix list that is used for destination matches.

Type: String

Required: Yes

### **TransitGatewayAttachmentId**

The ID of the attachment to which traffic is routed.

Type: String

Required: No

### **TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### transitGatewayPrefixListReference

Information about the prefix list reference.

Type: [TransitGatewayPrefixListReference \(p. 2131\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a reference to a prefix list in the specified transit gateway route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcbc
&PrefixListId=pl-001122334455aabbc
&TransitGatewayAttachmentId=tgw-attach-01234567abcabcabc
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>326fdc31-cd8d-491a-824a-example</requestId>
  <transitGatewayPrefixListReference>
    <blackhole>false</blackhole>
    <prefixListId>pl-001122334455aabbc</prefixListId>
    <prefixListOwnerId>123456789012</prefixListOwnerId>
    <state>pending</state>
    <transitGatewayAttachment>
      <resourceId>vpn-12312312312312312</resourceId>
      <resourceType>vpn</resourceType>
      <transitGatewayAttachmentId>tgw-attach-01234567abcabcabc</
transitGatewayAttachmentId>
    </transitGatewayAttachment>
    <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcbc</transitGatewayRouteTableId>
  </transitGatewayPrefixListReference>
</CreateTransitGatewayPrefixListReferenceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayRoute

Creates a static route for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

### **DestinationCidrBlock**

The CIDR range used for destination matches. Routing decisions are based on the most specific match.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

### **TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

#### route

Information about the route.

Type: [TransitGatewayRoute \(p. 2137\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayRouteTable

Creates a route table for the specified transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TagSpecifications.N

The tags to apply to the transit gateway route table.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayRouteTable

Information about the transit gateway route table.

Type: [TransitGatewayRouteTable \(p. 2139\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a transit gateway route table for the specified transit gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayRouteTable
&TransitGatewayId=tgw-02f776b1a7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>9c6751fa-a1ee-4006-92a8-c6cc1816a0f5</requestId>
  <transitGatewayRouteTable>
    <creationTime>2019-07-17T20:27:26.000Z</creationTime>
    <defaultAssociationRouteTable>false</defaultAssociationRouteTable>
    <defaultPropagationRouteTable>false</defaultPropagationRouteTable>
    <state>pending</state>
    <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
    <transitGatewayRouteTableId>tgw-rtb-0b6f6aaa01EXAMPLE</transitGatewayRouteTableId>
  </transitGatewayRouteTable>
</CreateTransitGatewayRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayVpcAttachment

Attaches the specified VPC to the specified transit gateway.

If you attach a VPC with a CIDR range that overlaps the CIDR range of a VPC that is already attached, the new VPC CIDR range is not propagated to the default propagation route table.

To send VPC traffic to an attached transit gateway, add a route to the VPC route table using [CreateRoute \(p. 259\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Options

The VPC attachment options.

Type: [CreateTransitGatewayVpcAttachmentRequestOptions \(p. 1462\)](#) object

Required: No

### SubnetIds.N

The IDs of one or more subnets. You can specify only one subnet per Availability Zone. You must specify at least one subnet, but we recommend that you specify two subnets for better availability. The transit gateway uses one IP address from each specified subnet.

Type: Array of strings

Required: Yes

### TagSpecifications.N

The tags to apply to the VPC attachment.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **transitGatewayVpcAttachment**

Information about the VPC attachment.

Type: [TransitGatewayVpcAttachment \(p. 2143\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a transit gateway VPC attachment for the specified transit gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateTransitGatewayVpcAttachment
&TransitGatewayId=tgw-02f776b1a7EXAMPLE
&VpcID=vpc-0065acced4EXAMPLE
&SubnetIds.1=subnet-0187aff814EXAMPLE
&Options.DnsSupport=enable
&Options.Ipv6Support=disable
&AUTHPARAMS
```

#### Sample Response

```
<CreateTransitGatewayVpcAttachmentResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>374ab4fd-5ccd-4d98-93f5-034c80f67d79</requestId>
  <transitGatewayVpcAttachment>
    <creationTime>2019-07-17T16:04:27.000Z</creationTime>
    <options>
      <dnsSupport>enable</dnsSupport>
      <ipv6Support>disable</ipv6Support>
    </options>
    <state>pending</state>
    <subnetIds>
      <item>subnet-0187aff814EXAMPLE</item>
    </subnetIds>
```

```
<transitGatewayAttachmentId>tgw-attach-0d2c54bdb3EXAMPLE</transitGatewayAttachmentId>
<transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
<vpcId>vpc-0065acc4EXAMPLE</vpcId>
<vpcOwnerId>111122223333</vpcOwnerId>
</transitGatewayVpcAttachment>
</CreateTransitGatewayVpcAttachmentResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVolume

Creates an EBS volume that can be attached to an instance in the same Availability Zone.

You can create a new empty volume or restore a volume from an EBS snapshot. Any AWS Marketplace product codes from the snapshot are propagated to the volume.

You can create encrypted volumes. Encrypted volumes must be attached to instances that support Amazon EBS encryption. Volumes that are created from encrypted snapshots are also automatically encrypted. For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can tag your volumes during creation. For more information, see [Tag your Amazon EC2 resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see [Create an Amazon EBS volume](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZone

The Availability Zone in which to create the volume.

Type: String

Required: Yes

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensure Idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Encrypted

Indicates whether the volume should be encrypted. The effect of setting the encryption state to `true` depends on the volume origin (new or from a snapshot), starting encryption state, ownership, and whether encryption by default is enabled. For more information, see [Encryption by default](#) in the *Amazon Elastic Compute Cloud User Guide*.

Encrypted Amazon EBS volumes must be attached to instances that support Amazon EBS encryption. For more information, see [Supported instance types](#).

Type: Boolean

Required: No

#### Iops

The number of I/O operations per second (IOPS). For gp3, io1, and io2 volumes, this represents the number of IOPS that are provisioned for the volume. For gp2 volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- gp3: 3,000-16,000 IOPS
- io1: 100-64,000 IOPS
- io2: 100-64,000 IOPS

io1 and io2 volumes support up to 64,000 IOPS only on [Instances built on the Nitro System](#). Other instance families support performance up to 32,000 IOPS.

This parameter is required for io1 and io2 volumes. The default for gp3 volumes is 3,000 IOPS. This parameter is not supported for gp2, st1, sc1, or standard volumes.

Type: Integer

Required: No

#### KmsKeyId

The identifier of the AWS Key Management Service (AWS KMS) KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If KmsKeyId is specified, the encrypted state must be true.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Type: String

Required: No

#### MultiAttachEnabled

Indicates whether to enable Amazon EBS Multi-Attach. If you enable Multi-Attach, you can attach the volume to up to 16 [Instances built on the Nitro System](#) in the same Availability Zone. This parameter is supported with io1 and io2 volumes only. For more information, see [Amazon EBS Multi-Attach](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

#### OutpostArn

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

### Size

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. If you specify a snapshot, the default is the snapshot size. You can specify a volume size that is equal to or larger than the snapshot size.

The following are the supported volumes sizes for each volume type:

- gp2 and gp3: 1-16,384
- io1 and io2: 4-16,384
- st1 and sc1: 125-16,384
- standard: 1-1,024

Type: Integer

Required: No

### SnapshotId

The snapshot from which to create the volume. You must specify either a snapshot ID or a volume size.

Type: String

Required: No

### TagSpecification.N

The tags to apply to the volume during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### Throughput

The throughput to provision for a volume, with a maximum of 1,000 MiB/s.

This parameter is valid only for gp3 volumes.

Valid Range: Minimum value of 125. Maximum value of 1000.

Type: Integer

Required: No

### VolumeType

The volume type. This parameter can be one of the following values:

- General Purpose SSD: gp2 | gp3
- Provisioned IOPS SSD: io1 | io2
- Throughput Optimized HDD: st1
- Cold HDD: sc1
- Magnetic: standard

For more information, see [Amazon EBS volume types](#) in the *Amazon Elastic Compute Cloud User Guide*.

Default: gp2

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

## Response Elements

The following elements are returned by the service.

### **attachmentSet**

Information about the volume attachments.

Type: Array of [VolumeAttachment \(p. 2170\)](#) objects

### **availabilityZone**

The Availability Zone for the volume.

Type: String

### **createTime**

The time stamp when volume creation was initiated.

Type: Timestamp

### **encrypted**

Indicates whether the volume is encrypted.

Type: Boolean

### **fastRestored**

Indicates whether the volume was created using fast snapshot restore.

Type: Boolean

### **iops**

The number of I/O operations per second (IOPS). For gp3, io1, and io2 volumes, this represents the number of IOPS that are provisioned for the volume. For gp2 volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

Type: Integer

### **kmsKeyId**

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) KMS key that was used to protect the volume encryption key for the volume.

Type: String

### **multiAttachEnabled**

Indicates whether Amazon EBS Multi-Attach is enabled.

Type: Boolean

### **outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

### **requestId**

The ID of the request.

Type: String

**size**

The size of the volume, in GiBs.

Type: Integer

**snapshotId**

The snapshot from which the volume was created, if applicable.

Type: String

**status**

The volume state.

Type: String

Valid Values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

**tagSet**

Any tags assigned to the volume.

Type: Array of [Tag \(p. 2070\)](#) objects

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

**volumId**

The ID of the volume.

Type: String

**volumeType**

The volume type.

Type: String

Valid Values: `standard` | `io1` | `io2` | `gp2` | `sc1` | `st1` | `gp3`

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request creates an 150 GiB Multi-Attach enabled `io1` volume in the `us-east-1a` Availability Zone.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVolume
```

```
&VolumeType=io1
&Size=150
&Iops=7500
&AvailabilityZone=us-east-1a
&MultiAttachEnabled=true
&AUTHPARAMS
```

## Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<volumeId>vol-1234567890abcdef0</volumeId>
<size>150</size>
<iops>7500</iops>
<snapshotId/>
<availabilityZone>us-east-1a</availabilityZone>
<status>creating</status>
<createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
<volumeType>io1;</volumeType>
<encrypted>true</encrypted>
<multiAttachEnabled>true</multiAttachEnabled>
</CreateVolumeResponse>
```

## Example 2

This example request creates an 80 GiB encrypted volume in the Availability Zone us-east-1a.

### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&Encrypted=true
&AUTHPARAMS
```

## Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>248f69ab-c7a9-4ad2-8e7c-b7556EXAMPLE</requestId>
<volumeId>vol-08bf1d00afabcdef0</volumeId>
<size>80</size>
<snapshotId></snapshotId>
<availabilityZone>us-east-1a</availabilityZone>
<status>creating</status>
<createTime>2020-11-30T10:39:56.000Z</createTime>
<volumeType>gp2</volumeType>
<iops>189</iops>
<encrypted>true</encrypted>
<kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/237eb1a7-2fa1-44dc-b95e-6c526EXAMPLE</kmsKeyId>
<tagSet/>
<multiAttachEnabled>false</multiAttachEnabled>
</CreateVolumeResponse>
```

## Example 3

This example request creates a volume and applies a tag with a key of `stack` and a value of `production`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVolume
&Size=80
&AvailabilityZone=us-east-1a
&TagSpecification.1.ResourceType=volume
&TagSpecification.1.Tag.1.Key=stack
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

## Sample Response

```
<CreateVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>bb216d10-54b9-4bc2-958d-fcfe2EXAMPLE</requestId>
    <volumeId>vol-043c91f2fa4abcdef</volumeId>
    <size>80</size>
    <snapshotId></snapshotId>
    <availabilityZone>us-east-1a</availabilityZone>
    <status>creating</status>
    <createTime>2020-11-30T10:47:43.000Z</createTime>
    <volumeType>gp2</volumeType>
    <iops>189</iops>
    <encrypted>true</encrypted>
    <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/237eb1a7-2fa1-44dc-b95e-6c526EXAMPLE</kmsKeyId>
    <tagSet>
        <item>
            <key>stack</key>
            <value>production</value>
        </item>
    </tagSet>
    <multiAttachEnabled>false</multiAttachEnabled>
</CreateVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## CreateVpc

Creates a VPC with the specified IPv4 CIDR block. The smallest VPC you can create uses a /28 netmask (16 IPv4 addresses), and the largest uses a /16 netmask (65,536 IPv4 addresses). For more information about how large to make your VPC, see [Your VPC and subnets in the Amazon Virtual Private Cloud User Guide](#).

You can optionally request an IPv6 CIDR block for the VPC. You can request an Amazon-provided IPv6 CIDR block from Amazon's pool of IPv6 addresses, or an IPv6 CIDR block from an IPv6 address pool that you provisioned through bring your own IP addresses ([BYOIP](#)).

By default, each instance you launch in the VPC has the default DHCP options, which include only a default DNS server that we provide (AmazonProvidedDNS). For more information, see [DHCP options sets](#) in the *Amazon Virtual Private Cloud User Guide*.

You can specify the instance tenancy value for the VPC when you create it. You can't change this value for the VPC after you create it. For more information, see [Dedicated Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AmazonProvidedIpv6CidrBlock**

Requests an Amazon-provided IPv6 CIDR block with a /56 prefix length for the VPC. You cannot specify the range of IP addresses, or the size of the CIDR block.

Type: Boolean

Required: No

### **CidrBlock**

The IPv4 network range for the VPC, in CIDR notation. For example, 10.0.0.0/16. We modify the specified CIDR block to its canonical form; for example, if you specify 100.68.0.18/18, we modify it to 100.68.0.0/18.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceTenancy**

The tenancy options for instances launched into the VPC. For `default`, instances are launched with shared tenancy by default. You can launch instances with any tenancy into a shared tenancy VPC. For `dedicated`, instances are launched as dedicated tenancy instances by default. You can only launch instances with a tenancy of `dedicated` or `host` into a dedicated tenancy VPC.

**Important:** The host value cannot be used with this parameter. Use the default or dedicated values only.

Default: default

Type: String

Valid Values: default | dedicated | host

Required: No

#### **Ipv6CidrBlock**

The IPv6 CIDR block from the IPv6 address pool. You must also specify `Ipv6Pool` in the request.

To let Amazon choose the IPv6 CIDR block for you, omit this parameter.

Type: String

Required: No

#### **Ipv6CidrBlockNetworkBorderGroup**

The name of the location from which we advertise the IPV6 CIDR block. Use this parameter to limit the address to this location.

You must set `AmazonProvidedIpv6CidrBlock` to true to use this parameter.

Type: String

Required: No

#### **Ipv6Pool**

The ID of an IPv6 address pool from which to allocate the IPv6 CIDR block.

Type: String

Required: No

#### **TagSpecification.N**

The tags to assign to the VPC.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **vpc**

Information about the VPC.

Type: [Vpc \(p. 2184\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a VPC with the IPv4 CIDR block 10.0.0.0/16 and a tag with the key set to `tag` and the value set to `example`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&CidrBlock=10.0.0.0/16
&TagSpecification.1.ResourceType=vpc
&TagSpecification.1.Key=tag
&TagSpecification.1.Value=example
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>63c5a2ed-4195-4445-b841-294629e7d8bd</requestId>
  <vpc>
    <vpcId>vpc-06b7830650EXAMPLE</vpcId>
    <ownerId>111122223333</ownerId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <cidrBlockAssociationSet>
      <item>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <associationId>vpc-cidr-assoc-017043e963EXAMPLE</associationId>
        <cidrBlockState>
          <state>associated</state>
        </cidrBlockState>
      </item>
    </cidrBlockAssociationSet>
    <ipv6CidrBlockAssociationSet/>
    <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
    <tagSet/>
    <instanceTenancy>default</instanceTenancy>
    <isDefault>false</isDefault>
    <tagSet>
      <item>
        <key>example</key>
        <value>tag</value>
      </item>
    </tagSet>
  </vpc>
</CreateVpcResponse>
```

### Example 2

This example creates a VPC with the dedicated tenancy option.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.32.0.0/16
&InstanceTenancy=dedicated
&AUTHPARAMS
```

## Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>1d536f17-5a03-4030-95b4-4d051e65e7bb</requestId>
<vpc>
    <vpcId>vpc-07dde827dEXAMPLE</vpcId>
    <ownerId>111122223333</ownerId>
    <state>pending</state>
    <cidrBlock>10.32.0.0/16</cidrBlock>
    <cidrBlockAssociationSet>
        <item>
            <cidrBlock>10.32.0.0/16</cidrBlock>
            <associationId>vpc-cidr-assoc-0cc7b90dfeEXAMPLE</associationId>
            <cidrBlockState>
                <state>associated</state>
            </cidrBlockState>
        </item>
    </cidrBlockAssociationSet>
    <ipv6CidrBlockAssociationSet/>
    <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
    <tagSet/>
    <instanceTenancy>dedicated</instanceTenancy>
    <isDefault>false</isDefault>
</vpc>
</CreateVpcResponse>
```

## Example 3

This example creates a VPC and requests an IPv6 CIDR block for the VPC.

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AmazonProvidedIpv6CidrBlock=true
&AUTHPARAMS
```

## Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>b1a2b2b5-5806-4e24-824b-0c8996c608c1</requestId>
<vpc>
    <vpcId>vpc-03914afb3ed6c7632</vpcId>
    <ownerId>111122223333</ownerId>
    <state>pending</state>
    <cidrBlock>10.0.0.0/16</cidrBlock>
    <cidrBlockAssociationSet>
        <item>
            <cidrBlock>10.0.0.0/16</cidrBlock>
            <associationId>vpc-cidr-assoc-03ca48bbbeEXAMPLE</associationId>
            <cidrBlockState>
                <state>associated</state>
```

```
        </cidrBlockState>
    </item>
</cidrBlockAssociationSet>
<ipv6CidrBlockAssociationSet>
    <item>
        <ipv6CidrBlock></ipv6CidrBlock>
        <associationId>vpc-cidr-assoc-0bd6cc7621EXAMPLE</associationId>
        <ipv6CidrBlockState>
            <state>associating</state>
        </ipv6CidrBlockState>
    </item>
</ipv6CidrBlockAssociationSet>
<dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
<tagSet/>
<instanceTenancy>default</instanceTenancy>
<isDefault>false</isDefault>
</vpc>
</CreateVpcResponse>
```

## Example 4

This example creates a VPC and requests an IPv6 CIDR block for the VPC for the specified Network Border Group.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpc
&CidrBlock=10.0.0.0/16
&AmazonProvidedIpv6CidrBlock=true
&Ipv6CidrBlockNetworkBorderGroup=us-west-2-lax-1
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>b1a2b2b5-5806-4e24-824b-0c8996c608c1</requestId>
    <vpc>
        <vpcId>vpc-03914afb3ed6c7632</vpcId>
        <ownerId>111122223333</ownerId>
        <state>pending</state>
        <cidrBlock>10.0.0.0/16</cidrBlock>
        <cidrBlockAssociationSet>
            <item>
                <cidrBlock>10.0.0.0/16</cidrBlock>
                <associationId>vpc-cidr-assoc-03ca48bbbeEXAMPLE</associationId>
                <cidrBlockState>
                    <state>associated</state>
                </cidrBlockState>
            </item>
        </cidrBlockAssociationSet>
        <ipv6CidrBlockAssociationSet>
            <item>
                <ipv6CidrBlock></ipv6CidrBlock>
                <associationId>vpc-cidr-assoc-0bd6cc7621EXAMPLE</associationId>
                <ipv6CidrBlockState>
                    <state>associating</state>
                </ipv6CidrBlockState>
                <Ipv6CidrBlockNetworkBorderGroup>us-west-2-lax-1<
I Pv6CidrBlockNetworkBorderGroup>
            </item>
        </ipv6CidrBlockAssociationSet>
        <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
```

```
<tagSet/>
<instanceTenancy>default</instanceTenancy>
<isDefault>false</isDefault>
<availabilityZone>us-west-2-lax-1a</availabilityZone>
</vpc>
</CreateVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpcEndpoint

Creates a VPC endpoint for a specified service. An endpoint enables you to create a private connection between your VPC and the service. The service may be provided by AWS, an AWS Marketplace Partner, or another AWS account. For more information, see [VPC Endpoints](#) in the *Amazon Virtual Private Cloud User Guide*.

A gateway endpoint serves as a target for a route in your route table for traffic destined for the AWS service. You can specify an endpoint policy to attach to the endpoint, which will control access to the service from your VPC. You can also specify the VPC route tables that use the endpoint.

An interface endpoint is a network interface in your subnet that serves as an endpoint for communicating with the specified service. You can specify the subnets in which to create an endpoint, and the security groups to associate with the endpoint network interface.

A `GatewayLoadBalancer` endpoint is a network interface in your subnet that serves an endpoint for communicating with a Gateway Load Balancer that you've configured as a VPC endpoint service.

Use [DescribeVpcEndpointServices](#) (p. 875) to get a list of supported services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](#) (p. 2247).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **PolicyDocument**

(Interface and gateway endpoints) A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format. If this parameter is not specified, we attach a default policy that allows full access to the service.

Type: String

Required: No

### **PrivateDnsEnabled**

(Interface endpoint) Indicates whether to associate a private hosted zone with the specified VPC. The private hosted zone contains a record set for the default public DNS name for the service for the Region (for example, `kinesis.us-east-1.amazonaws.com`), which resolves to the private IP addresses of the endpoint network interfaces in the VPC. This enables you to make requests to

the default public DNS name for the service instead of the public DNS names that are automatically generated by the VPC endpoint service.

To use a private hosted zone, you must set the following VPC attributes to `true`: `enableDnsHostnames` and `enableDnsSupport`. Use [ModifyVpcAttribute \(p. 1157\)](#) to set the VPC attributes.

Default: `true`

Type: Boolean

Required: No

**RouteTableId.N**

(Gateway endpoint) One or more route table IDs.

Type: Array of strings

Required: No

**SecurityGroupId.N**

(Interface endpoint) The ID of one or more security groups to associate with the endpoint network interface.

Type: Array of strings

Required: No

**ServiceName**

The service name. To get a list of available services, use the [DescribeVpcEndpointServices \(p. 875\)](#) request, or get the name from the service provider.

Type: String

Required: Yes

**SubnetId.N**

(Interface and Gateway Load Balancer endpoints) The ID of one or more subnets in which to create an endpoint network interface. For a Gateway Load Balancer endpoint, you can specify one subnet only.

Type: Array of strings

Required: No

**TagSpecification.N**

The tags to associate with the endpoint.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**VpcEndpointType**

The type of endpoint.

Default: Gateway

Type: String

Valid Values: `Interface` | `Gateway` | `GatewayLoadBalancer`

Required: No

**VpcId**

The ID of the VPC in which the endpoint will be used.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**requestId**

The ID of the request.

Type: String

**vpcEndpoint**

Information about the endpoint.

Type: [VpcEndpoint \(p. 2190\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a gateway endpoint between vpc-1a2b3c4d and Amazon S3 in us-east-1, and associates route table rtb-11aa22bb with the endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.s3
&RouteTableId.1=rtb-11aa22bb
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <vpcEndpoint>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <state>available</state>
```

```
<routeTableIdSet>
    <item>rtb-11aa22bb</item>
</routeTableIdSet>
<vpcEndpointId>vpce-abc12345</vpcEndpointId>
<creationTimestamp>2015-02-20T16:46:40Z</creationTimestamp>
<policyDocument>{"Version": "2008-10-17", "Statement": [{"Sid": "", "Effect": "Allow", "Principal": "*", "Action": "*", "Resource": "*"}]}</policyDocument>
<serviceName>com.amazonaws.us-west-1.s3</serviceName>
</vpcEndpoint>
<requestId>4b373100-473a-46a0-9006-example</requestId>
</CreateVpcEndpointResponse>
```

## Example 2

This example creates an interface endpoint between vpc-1a2b3c4d and Elastic Load Balancing in us-east-1 in subnet subnet-1a2b3c4d, and associates security group sg-11aa22bb with the network interface.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1a2b3c4d
&ServiceName=com.amazonaws.us-east-1.elasticloadbalancing
&VpcEndpointType=Interface
&SubnetId.1=subnet-1a2b3c4d
&SecurityGroupId.1=sg-11aa22bb
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>bf5a49f9-4c36-41c9-a4be-13dexample</requestId>
    <vpcEndpoint>
        <policyDocument>
            "Statement": [
                {
                    "Action": "*",
                    "Effect": "Allow",
                    "Principal": "*",
                    "Resource": "*"
                }
            ]
        </policyDocument>
        <routeTableIdSet/>
        <dnsEntrySet>
            <item>
                <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                <dnsName>vpce-0324151a02f327ff5-3k8nfxtt.elasticloadbalancing.us-
east-1.vpce.amazonaws.com</dnsName>
            </item>
            <item>
                <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
                <dnsName>vpce-0324151a02f327ff5-3k8nfxtt-us-
east-1a.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
            </item>
            <item>
                <hostedZoneId>Z2THV5YBYUN78V</hostedZoneId>
                <dnsName>elasticloadbalancing.us-east-1.amazonaws.com</dnsName>
            </item>
        </dnsEntrySet>
        <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
    </vpcEndpoint>
</CreateVpcEndpointResponse>
```

```
<privateDnsEnabled>true</privateDnsEnabled>
<groupSet>
  <item>
    <groupName>default</groupName>
    <groupId>sg-11aa22bb</groupId>
  </item>
</groupSet>
<vpcEndpointId>vpce-0324151a02f327ff5</vpcEndpointId>
<subnetIdSet>
  <item>subnet-1a2b3c4d</item>
</subnetIdSet>
<networkInterfaceIdSet>
  <item>eni-cd1a3319</item>
</networkInterfaceIdSet>
<vpcEndpointType>Interface</vpcEndpointType>
<vpcId>vpc-1a2b3c4d</vpcId>
<creationTimestamp>2017-09-05T20:57:46.307Z</creationTimestamp>
<state>pending</state>
</vpcEndpoint>
</CreateVpcEndpointResponse>
```

## Example 3

This example creates a Gateway Load Balancer endpoint between vpc-1112222333344445 and a VPC endpoint service that's configured using a Gateway Load Balancer.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpoint
&VpcId=vpc-1112222333344445
&ServiceName=com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123
&VpcEndpointType=GatewayLoadBalancer
&SubnetId.1=subnet-aaaa1111bbbb22233
&AUTHPARAMS
```

### Sample Response

```
<CreateVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>bf5a49f9-4c36-41c9-a4be-13dexample</requestId>
  <vpcEndpoint>
    <ownerId>123456789012</ownerId>
    <requesterManaged>false</requesterManaged>
    <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</serviceName>
    <vpcEndpointId>vpce-bbbb22222333</vpcEndpointId>
    <subnetIdSet>
      <item>subnet-aaaa1111bbbb22233</item>
    </subnetIdSet>
    <networkInterfaceIdSet>
      <item>eni-1111111222222aaa</item>
    </networkInterfaceIdSet>
    <vpcEndpointType>GatewayLoadBalancer</vpcEndpointType>
    <vpcId>vpc-1112222333344445</vpcId>
    <creationTimestamp>2020-11-11T08:06:03.522Z</creationTimestamp>
    <state>pending</state>
  </vpcEndpoint>
</CreateVpcEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpcEndpointConnectionNotification

Creates a connection notification for a specified VPC endpoint or VPC endpoint service. A connection notification notifies you of specific endpoint events. You must create an SNS topic to receive notifications. For more information, see [Create a Topic](#) in the *Amazon Simple Notification Service Developer Guide*.

You can create a connection notification for interface endpoints only.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### **ConnectionEvents.N**

One or more endpoint events for which to receive notifications. Valid values are Accept, Connect, Delete, and Reject.

Type: Array of strings

Required: Yes

### **ConnectionNotificationArn**

The ARN of the SNS topic for the notifications.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **ServiceId**

The ID of the endpoint service.

Type: String

Required: No

### **VpcEndpointId**

The ID of the endpoint.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

### **connectionNotification**

Information about the notification.

Type: [ConnectionNotification \(p. 1450\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a notification for the endpoint vpce-1234151a02f327123. The notification is sent when the endpoint is rejected or deleted.

#### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateVpcEndpointConnectionNotification
&VpcEndpointId=vpce-1234151a02f327123
&ConnectionNotificationArn=arn:aws:sns:us-east-1:123456789012:endpointtopic
&ConnectionEvents.1=Reject
&ConnectionEvents.2=Delete
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcEndpointConnectionNotificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>6bf51e2a-a99e-4839-af31-a0d72example</requestId>
    <connectionNotification>
        <connectionNotificationArn>arn:aws:sns:us-east-1:123456789012:endpointtopic</
connectionNotificationArn>
        <connectionEvents>
            <item>Delete</item>
            <item>Reject</item>
        </connectionEvents>
    </connectionNotification>
```

```
<connectionNotificationType>Topic</connectionNotificationType>
<connectionNotificationState>Enabled</connectionNotificationState>
<connectionNotificationId>vpce-nfn-04bcb952bc8af759b</connectionNotificationId>
<vpcEndpointId>vpce-1234151a02f327123</vpcEndpointId>
</connectionNotification>
</CreateVpcEndpointConnectionNotificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpcEndpointServiceConfiguration

Creates a VPC endpoint service configuration to which service consumers (AWS accounts, IAM users, and IAM roles) can connect.

To create an endpoint service configuration, you must first create one of the following for your service:

- A [Network Load Balancer](#). Service consumers connect to your service using an interface endpoint.
- A [Gateway Load Balancer](#). Service consumers connect to your service using a Gateway Load Balancer endpoint.

For more information, see [VPC Endpoint Services](#) in the *Amazon Virtual Private Cloud User Guide*.

If you set the private DNS name, you must prove that you own the private DNS domain name. For more information, see [VPC Endpoint Service Private DNS Name Verification](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 224\)](#).

### AcceptanceRequired

Indicates whether requests from service consumers to create an endpoint to your service must be accepted. To accept a request, use [AcceptVpcEndpointConnections \(p. 38\)](#).

Type: Boolean

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GatewayLoadBalancerArn.N

The Amazon Resource Names (ARNs) of one or more Gateway Load Balancers.

Type: Array of strings

Required: No

### NetworkLoadBalancerArn.N

The Amazon Resource Names (ARNs) of one or more Network Load Balancers for your service.

Type: Array of strings

Required: No

**PrivateDnsName**

(Interface endpoint configuration) The private DNS name to assign to the VPC endpoint service.

Type: String

Required: No

**TagSpecification.N**

The tags to associate with the service.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

**clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request.

Type: String

**requestId**

The ID of the request.

Type: String

**serviceConfiguration**

Information about the service configuration.

Type: [ServiceConfiguration \(p. 2001\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a VPC endpoint service configuration using the load balancer my-nlb. This example also specifies that requests to connect to the service through a VPC endpoint must be accepted.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpointServiceConfiguration
&NetworkLoadBalancerArn.1=arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/
net/my-nlb/e94221227f1ba532
```

```
&AcceptanceRequired=true  
&AUTHPARAMS
```

## Sample Response

```
<CreateVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b2f25d4-9d9f-4256-a8e3-297f7example</requestId>
  <serviceConfiguration>
    <serviceState>Available</serviceState>
    <serviceType>
      <item>
        <serviceType>Interface</serviceType>
      </item>
    </serviceType>
    <baseEndpointDnsNameSet>
      <item>vpce-svc-0552b9c1298c4f123.us-east-1.vpce.amazonaws.com</item>
    </baseEndpointDnsNameSet>
    <acceptanceRequired>true</acceptanceRequired>
    <availabilityZoneSet>
      <item>us-east-1d</item>
    </availabilityZoneSet>
    <serviceId>vpce-svc-0552b9c1298c4f123</serviceId>
    <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-0552b9c1298c4f123</serviceName>
    <networkLoadBalancerArnSet>
      <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/net/my-nlb/e94221227f1ba532</item>
    </networkLoadBalancerArnSet>
  </serviceConfiguration>
</CreateVpcEndpointServiceConfigurationResponse>
```

## Example 2

This example creates a VPC endpoint service configuration using the specified Gateway Load Balancer. This example also specifies that requests to connect to the service do have to be accepted.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcEndpointServiceConfiguration
&GatewayLoadBalancerArn.1=arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/gwy/GWLBSERVICE/abc210844e429abc
&AcceptanceRequired=false
&AUTHPARAMS
```

## Sample Response

```
<CreateVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b2f25d4-9d9f-4256-a8e3-297f7example</requestId>
  <serviceConfiguration>
    <serviceState>Available</serviceState>
    <serviceType>
      <item>
        <serviceType>GatewayLoadBalancer</serviceType>
      </item>
    </serviceType>
    <acceptanceRequired>false</acceptanceRequired>
    <availabilityZoneSet>
      <item>us-east-1d</item>
    </availabilityZoneSet>
```

```
<serviceId>vpce-svc-123abcc1298abc123</serviceId>
<serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</serviceName>
<gatewayLoadBalancerArnSet>
    <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/gwy/
GWLBService/abc210844e429abc</item>
</gatewayLoadBalancerArnSet>
</serviceConfiguration>
</CreateVpcEndpointServiceConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpcPeeringConnection

Requests a VPC peering connection between two VPCs: a requester VPC that you own and an accepter VPC with which to create the connection. The accepter VPC can belong to another AWS account and can be in a different Region to the requester VPC. The requester VPC and accepter VPC cannot have overlapping CIDR blocks.

## Note

Limitations and rules apply to a VPC peering connection. For more information, see the [limitations](#) section in the *VPC Peering Guide*.

The owner of the accepter VPC must accept the peering request to activate the peering connection. The VPC peering connection request expires after 7 days, after which it cannot be accepted or rejected.

If you create a VPC peering connection request between VPCs with overlapping CIDR blocks, the VPC peering connection has a status of `failed`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PeerOwnerId

The AWS account ID of the owner of the accepter VPC.

Default: Your AWS account ID

Type: String

Required: No

### PeerRegion

The Region code for the accepter VPC, if the accepter VPC is located in a Region other than the Region in which you make the request.

Default: The Region in which you make the request.

Type: String

Required: No

### PeerVpcId

The ID of the VPC with which you are creating the VPC peering connection. You must specify this parameter in the request.

Type: String

Required: No

### TagSpecification.N

The tags to assign to the peering connection.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### VpcId

The ID of the requester VPC. You must specify this parameter in the request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpcPeeringConnection

Information about the VPC peering connection.

Type: [VpcPeeringConnection \(p. 2196\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example requests a peering connection between your VPC (`vpc-1a2b3c4d`), and a VPC (`vpc-a1b2c3d4`) that belongs to AWS account 123456789012.

#### Sample Request

```
https://ec2.amazonaws.com/?Action/CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerOwnerId=123456789012
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
```

```
<vpcPeeringConnection>
  <vpcPeeringConnectionId>pcx-73a5401a</vpcPeeringConnectionId>
  <requesterVpcInfo>
    <ownerId>777788889999</ownerId>
    <vpcId>vpc-vpc-1a2b3c4d</vpcId>
    <cidrBlock>10.0.0.0/28</cidrBlock>
    <peeringOptions>
      <allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
      <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
      <allowEgressFromLocalVpcToRemoteClassicLink>false</allowEgressFromLocalVpcToRemoteClassicLink>
      <allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
    </peeringOptions>
  </requesterVpcInfo>
  <accepterVpcInfo>
    <ownerId>123456789012</ownerId>
    <vpcId>vpc-a1b2c3d4</vpcId>
  </accepterVpcInfo>
  <status>
    <code>initiating-request</code>
    <message>Initiating Request to 123456789012</message>
  </status>
  <expirationTime>2014-02-18T14:37:25.000Z</expirationTime>
  <tagSet/>
</vpcPeeringConnection>
</CreateVpcPeeringConnectionResponse>
```

## Example 2

This example requests a peering connection between your VPCs vpc-1a2b3c4d and vpc-11122233.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-11122233
&AUTHPARAMS
```

## Example 3

This example requests an inter-region peering connection between two VPCs in your account. VPC vpc-1a2b3c4d is located in the US East (N. Virginia) Region (us-east-1), and accepter VPC vpc-a1b2c3d4 is located in the US West (Oregon) Region (us-west-2). The VPC peering connection must be accepted in the us-west-2 Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpcPeeringConnection
&VpcId=vpc-1a2b3c4d
&PeerVpcId=vpc-a1b2c3d4
&PeerRegion=us-west-2
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpnConnection

Creates a VPN connection between an existing virtual private gateway or transit gateway and a customer gateway. The supported connection type is ipsec.1.

The response includes information that you need to give to your network administrator to configure your customer gateway.

## Important

We strongly recommend that you use HTTPS when calling this operation because the response contains sensitive cryptographic information for configuring your customer gateway device.

If you decide to shut down your VPN connection for any reason and later create a new VPN connection, you must reconfigure your customer gateway with the new information returned from this call.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CustomerGatewayId

The ID of the customer gateway.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Options

The options for the VPN connection.

Type: [VpnConnectionOptionsSpecification \(p. 2208\)](#) object

Required: No

### TagSpecification.N

The tags to apply to the VPN connection.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### TransitGatewayId

The ID of the transit gateway. If you specify a transit gateway, you cannot specify a virtual private gateway.

Type: String

Required: No

#### Type

The type of VPN connection (ipsec.1).

Type: String

Required: Yes

#### VpnGatewayId

The ID of the virtual private gateway. If you specify a virtual private gateway, you cannot specify a transit gateway.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### vpnConnection

Information about the VPN connection.

Type: [VpnConnection \(p. 2202\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a VPN connection between the specified virtual private gateway and the specified customer gateway. The response includes configuration information for configuring the customer gateway device. Because it's a long set of information, we haven't included the complete response here. To see an example of the configuration information, see the [Your customer gateway device](#).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-112233445566aabbc
&VpnGatewayId=vgw-aabbccdee1234567
&AUTHPARAMS
```

## Sample Response

```
<CreateVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>22896b9b-e2fe-4574-9a20-example</requestId>
  <vpnConnection>
    <vpnConnectionId>vpn-01234abca123456</vpnConnectionId>
    <state>pending</state>
    <customerGatewayConfiguration>...Customer gateway configuration data in escaped XML
format...</customerGatewayConfiguration>
    <customerGatewayId>cgw-112233445566aabbc</customerGatewayId>
    <vpnGatewayId>vgw-aabbccdee1234567</vpnGatewayId>
    <tagSet/>
    <options>
      <enableAcceleration>false</enableAcceleration>
      <staticRoutesOnly>false</staticRoutesOnly>
      <localIpv4NetworkCidr>0.0.0.0/0</localIpv4NetworkCidr>
      <remoteIpv4NetworkCidr>0.0.0.0/0</remoteIpv4NetworkCidr>
      <tunnelInsideIpVersion>ipv4</tunnelInsideIpVersion>
      <tunnelOptionSet>
        <item/>
        <item/>
      </tunnelOptionSet>
    </options>
    <routes/>
    <category>VPN</category>
  </vpnConnection>
</CreateVpnConnectionResponse>
```

## Example 2

This example creates a VPN connection with the static routes option between the virtual private gateway with the ID vgw-8db04f81, and the customer gateway with the ID cgw-b4dc3961, for a device that does not support the Border Gateway Protocol (BGP).

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.StaticRoutesOnly=true
&AUTHPARAMS
```

## Example 3

This example creates a VPN connection between the virtual private gateway with the ID vgw-8db04f81 and the customer gateway with the ID cgw-b4dc3961 and specifies the inside IP address CIDR block and a custom pre-shared key for each tunnel.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-b4dc3961
&VpnGatewayId=vgw-8db04f81
&Options.TunnelOptions.1.PreSharedKey=wMp_IGf0ld1o9AT41F6tJLFN4EXAMPLE
&Options.TunnelOptions.1.TunnelInsideCidr=169.254.44.110/30
&Options.TunnelOptions.2.PreSharedKey=HAM8lcnFYEvfl6gUrOatJLFN4EXAMPLE
&Options.TunnelOptions.2.TunnelInsideCidr=169.254.44.240/30
```

&AUTHPARAMS

## Example 4

This example creates a VPN connection between the specified transit gateway and the specified customer gateway. The VPN connection processes IPv6 traffic inside the tunnels, and the tunnel options for both tunnels specify that AWS must initiate the IKE negotiation. A tag with a key of `Location` and a value of `NewYorkVPN` is applied to the VPN connection.

### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnection
&Type=ipsec.1
&CustomerGatewayId=cgw-112233445566aabbc
&TransitGatewayId=tgw-0123f96e7b3f5babc
&Options.StaticRoutesOnly=false
&Options.TunnelInsideIpVersion=ipv6
&Options.TunnelOptions.1.StartupAction=start
&Options.TunnelOptions.2.StartupAction=start
&TagSpecification.1.ResourceType=vpn-connection
&TagSpecification.1.Tag.1.Key=Location
&TagSpecification.1.Tag.1.Value>NewYorkVPN
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpnConnectionRoute

Creates a static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

### VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a static route to the VPN connection for the VPN connection with the ID vpn-83ad48ea to the destination CIDR block 11.12.0.0/16. Note that when using the Query API the "/" is denoted as "%2F".

## Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

## Sample Response

```
<CreateVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</CreateVpnConnectionRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# CreateVpnGateway

Creates a virtual private gateway. A virtual private gateway is the endpoint on the VPC side of your VPN connection. You can create a virtual private gateway before creating the VPC itself.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AmazonSideAsn

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. If you're using a 16-bit ASN, it must be in the 64512 to 65534 range. If you're using a 32-bit ASN, it must be in the 4200000000 to 4294967294 range.

Default: 64512

Type: Long

Required: No

### AvailabilityZone

The Availability Zone for the virtual private gateway.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### TagSpecification.N

The tags to apply to the virtual private gateway.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

### Type

The type of VPN connection this virtual private gateway supports.

Type: String

Valid Values: ipsec.1

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpnGateway

Information about the virtual private gateway.

Type: [VpnGateway \(p. 2210\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a virtual private gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
&AUTHPARAMS
```

#### Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpnGateway>
    <vpnGatewayId>vgw-fe4aa197</vpnGatewayId>
    <state>available</state>
    <type>ipsec.1</type>
    <amazonSideAsn>64512</amazonSideAsn>
    <attachments/>
</vpnGateway>
</CreateVpnGatewayResponse>
```

### Example 2

This example creates a virtual private gateway and specifies a private ASN of 65001 for the Amazon side of the gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=CreateVpnGateway
&Type=ipsec.1
```

```
&AmazonSideAsn=65001  
&AUTHPARAMS
```

## Sample Response

```
<CreateVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>fe90b404-d4e5-4153-8677-31dexample</requestId>  
  <vpnGateway>  
    <vpnGatewayId>vgw-f74aa19e</vpnGatewayId>  
    <state>available</state>  
    <type>ipsec.1</type>  
    <amazonSideAsn>65001</amazonSideAsn>  
    <attachments/>  
  </vpnGateway>  
</CreateVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteCarrierGateway

Deletes a carrier gateway.

**Important**

If you do not delete the route that contains the carrier gateway as the Target, the route is a blackhole route. For information about how to delete a route, see [DeleteRoute](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

**CarrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: Yes

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

**carrierGateway**

Information about the carrier gateway.

Type: [CarrierGateway \(p. 1418\)](#) object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteClientVpnEndpoint

Deletes the specified Client VPN endpoint. You must disassociate all target networks before you can delete a Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN to be deleted.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **status**

The current state of the Client VPN endpoint.

Type: [ClientVpnEndpointStatus \(p. 1442\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example applies a security group to a Client VPN endpoint.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteClientVpnEndpoint
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DeleteClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>f1e0fdfc-96a4-4d7d-bc78-22eb0EXAMPLE</requestId>
  <status>
    <code>deleting</code>
  </status>
</DeleteClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteClientVpnRoute

Deletes a route from a Client VPN endpoint. You can only delete routes that you manually added using the [CreateClientVpnRoute](#) action. You cannot delete routes that were automatically added when associating a subnet. To remove routes that have been automatically added, disassociate the target subnet from the Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint from which the route is to be deleted.

Type: String

Required: Yes

### **DestinationCidrBlock**

The IPv4 address range, in CIDR notation, of the route to be deleted.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **TargetVpcSubnetId**

The ID of the target subnet used by the route.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **status**

The current state of the route.

Type: [ClientVpnRouteStatus \(p. 1445\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes a route from a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteClientVpnRoute
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&DestinationCidrBlock=0.0.0.0/0
&TargetVpcSubnetId=subnet-057fa0918fEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteClientVpnRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>00d80748-708d-40f7-8635-f34acEXAMPLE</requestId>
  <status>
    <code>deleting</code>
  </status>
</DeleteClientVpnRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteCustomerGateway

Deletes the specified customer gateway. You must delete the VPN connection before you can delete the customer gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CustomerGatewayId**

The ID of the customer gateway.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified customer gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteCustomerGateway
&CustomerGatewayId=cgw-b4dc3961
&AUTHPARAMS
```

## Sample Response

```
<DeleteCustomerGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteCustomerGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteDhcpOptions

Deletes the specified set of DHCP options. You must disassociate the set of DHCP options before you can delete it. You can disassociate the set of DHCP options by associating either a new set of options or the default set of options with the VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DhcpOptionsId

The ID of the DHCP options set.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified set of DHCP options.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteDhcpOptions
&DhcpOptionsId=dopt-7a8b9c2d
&AUTHPARAMS
```

## Sample Response

```
<DeleteDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteDhcpOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteEgressOnlyInternetGateway

Deletes an egress-only internet gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EgressOnlyInternetGatewayId

The ID of the egress-only internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### returnCode

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified egress-only internet gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteEgressOnlyInternetGateway
&EgressOnlyInternetGatewayId=eigw-015e0e244e24dfe8a
&AUTHPARAMS
```

## Sample Response

```
<DeleteEgressOnlyInternetGateway xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<returnCode>true</returnCode>
</DeleteEgressOnlyInternetGateway>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteFleets

Deletes the specified EC2 Fleet.

After you delete an EC2 Fleet, it launches no new instances.

You must specify whether a deleted EC2 Fleet should also terminate its instances. If you choose to terminate the instances, the EC2 Fleet enters the `deleted_terminating` state. Otherwise, the EC2 Fleet enters the `deleted_running` state, and the instances continue to run until they are interrupted or you terminate them manually.

For instant fleets, EC2 Fleet must terminate the instances when the fleet is deleted. A deleted instant fleet with running instances is not supported.

## Restrictions

- You can delete up to 25 instant fleets in a single request. If you exceed this number, no instant fleets are deleted and an error is returned. There is no restriction on the number of fleets of type `maintain` or `request` that can be deleted in a single request.
- Up to 1000 instances can be terminated in a single request to delete instant fleets.

For more information, see [Deleting an EC2 Fleet](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FleetId.N

The IDs of the EC2 Fleets.

Type: Array of strings

Required: Yes

### TerminateInstances

Indicates whether to terminate the instances when the EC2 Fleet is deleted. The default is to terminate the instances.

To let the instances continue to run after the EC2 Fleet is deleted, specify `NoTerminateInstances`. Supported only for fleets of type `maintain` and `request`.

For instant fleets, you cannot specify `NoTerminateInstances`. A deleted instant fleet with running instances is not supported.

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successfulFleetDeletionSet**

Information about the EC2 Fleets that are successfully deleted.

Type: Array of [DeleteFleetSuccessItem \(p. 1471\)](#) objects

### **unsuccessfulFleetDeletionSet**

Information about the EC2 Fleets that are not successfully deleted.

Type: Array of [DeleteFleetErrorItem \(p. 1470\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteFlowLogs

Deletes one or more flow logs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### FlowLogId.N

One or more flow log IDs.

Constraint: Maximum of 1000 flow log IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### unsuccessful

Information about the flow logs that could not be deleted successfully.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes flow log fl-1a2b3c4d.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteFlowLogs
&FlowLogId.1=f1-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<DeleteFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>c5c4f51f-f4e9-42bc-8700-EXAMPLE</requestId>
  <unsuccessful/>
</DeleteFlowLogsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteFpgalmage

Deletes the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FpgalmagId

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified AFI.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteFpgaImage
&FpgaImageId=afi-0d123e21abcc85abc
&AUTHPARAMS
```

## Sample Response

```
<DeleteFpgaImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>dd3bf051-468e-4490-ad8a-2ffexample</requestId>
  <return>true</return>
</DeleteFpgaImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteInstanceEventWindow

Deletes the specified event window.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ForceDelete

Specify `true` to force delete the event window. Use the force delete parameter if the event window is currently associated with targets.

Type: Boolean

Required: No

### InstanceEventWindowId

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### instanceEventWindowState

The state of the event window.

Type: [InstanceEventWindowStateChange \(p. 1649\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteInternetGateway

Deletes the specified internet gateway. You must detach the internet gateway from the VPC before you can delete it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InternetGatewayId

The ID of the internet gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified internet gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteInternetGateway
&InternetGatewayId=igw-eaad4883
&AUTHPARAMS
```

## Sample Response

```
<DeleteInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteKeyPair

Deletes the specified key pair, by removing the public key from Amazon EC2.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### KeyName

The name of the key pair.

Type: String

Required: No

### KeyId

The ID of the key pair.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request deletes the key pair named `my-key-pair`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyName=my-key-pair
&AUTHPARAMS
```

#### Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

### Example 2

This example request deletes a key pair with the ID `key-abcd12345eEXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteKeyPair
&KeyId=key-abcd12345eEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeleteKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteKeyPairResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteLaunchTemplate

Deletes a launch template. Deleting a launch template deletes all of its versions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LaunchTemplateId

The ID of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Required: No

### LaunchTemplateName

The name of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

## Response Elements

The following elements are returned by the service.

### launchTemplate

Information about the launch template.

Type: [LaunchTemplate \(p. 1734\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes launch template `lt-0a20c965061f64abc`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteLaunchTemplate
&LaunchTemplateId=lt-0a20c965061f64abc
&AUTHPARAMS
```

#### Sample Response

```
<DeleteLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>c12605de-c470-4eaa-a4d0-ab4dexample</requestId>
  <launchTemplate>
    <createTime>2017-10-31T11:38:52.000Z</createTime>
    <createdBy>arn:aws:iam::123456789012:root</createdBy>
    <defaultVersionNumber>2</defaultVersionNumber>
    <latestVersionNumber>2</latestVersionNumber>
    <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
    <launchTemplateName>MyLaunchTemplate</launchTemplateName>
  </launchTemplate>
</DeleteLaunchTemplateResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteLaunchTemplateVersions

Deletes one or more versions of a launch template. You cannot delete the default version of a launch template; you must first assign a different version as the default. If the default version is the only version for the launch template, you must delete the entire launch template using [DeleteLaunchTemplate \(p. 384\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### LaunchTemplateId

The ID of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Required: No

### LaunchTemplateName

The name of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### LaunchTemplateVersion.N

The version numbers of one or more launch template versions to delete.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

#### **successfullyDeletedLaunchTemplateVersionSet**

Information about the launch template versions that were successfully deleted.

Type: Array of [DeleteLaunchTemplateVersionsResponseSuccessItem](#) (p. 1473) objects

#### **unsuccessfullyDeletedLaunchTemplateVersionSet**

Information about the launch template versions that could not be deleted.

Type: Array of [DeleteLaunchTemplateVersionsResponseErrorItem](#) (p. 1472) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes](#) (p. 2251).

## Examples

### Example

This example deletes version 3 of launch template lt-0a20c965061f64abc.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteLaunchTemplateVersions
&LaunchTemplateId=lt-0a20c965061f64abc
&LaunchTemplateVersion.1=3
&AUTHPARAMS
```

#### Sample Response

```
<DeleteLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>67fc746a-1b3f-467e-8583-7061cexample</requestId>
  <unsuccessfullyDeletedLaunchTemplateVersionSet/>
  <successfullyDeletedLaunchTemplateVersionSet>
    <item>
      <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
      <launchTemplateName>MyLaunchTemplate</launchTemplateName>
      <versionNumber>3</versionNumber>
    </item>
  </successfullyDeletedLaunchTemplateVersionSet>
</DeleteLaunchTemplateVersionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteLocalGatewayRoute

Deletes the specified route from the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The CIDR range for the route. This must match the CIDR for the route exactly.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### LocalGatewayRouteTableId

The ID of the local gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### route

Information about the route.

Type: [LocalGatewayRoute \(p. 1795\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteLocalGatewayRouteTableVpcAssociation

Deletes the specified association between a VPC and local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LocalGatewayRouteTableVpcAssociationId

The ID of the association.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### localGatewayRouteTableVpcAssociation

Information about the association.

Type: [LocalGatewayRouteTableVpcAssociation \(p. 1801\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteManagedPrefixList

Deletes the specified managed prefix list. You must first remove all references to the prefix list in your resources.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### prefixList

Information about the prefix list.

Type: [ManagedPrefixList \(p. 1806\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified prefix list.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteManagedPrefixList
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

## Sample Response

```
<DeleteManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>06152571-575a-49aa-af95-example</requestId>
  <prefixList>
    <addressFamily>IPv6</addressFamily>
    <maxEntries>25</maxEntries>
    <ownerId>123456789012</ownerId>
    <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123aabb</prefixListArn>
    <prefixListId>pl-0123123123aabb</prefixListId>
    <prefixListName>test-pl</prefixListName>
    <state>delete-in-progress</state>
    <version>1</version>
  </prefixList>
</DeleteManagedPrefixListResponse>'
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DeleteNatGateway

Deletes the specified NAT gateway. Deleting a public NAT gateway disassociates its Elastic IP address, but does not release the address from your account. Deleting a NAT gateway does not delete any NAT gateway routes in your route tables.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### NatGatewayId

The ID of the NAT gateway.

Type: String

Required: Yes

### Response Elements

The following elements are returned by the service.

#### natGatewayId

The ID of the NAT gateway.

Type: String

#### requestId

The ID of the request.

Type: String

### Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

### Examples

#### Example

This example deletes NAT gateway `nat-04ae55e711cec5680`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNatGateway
&NatGatewayId=nat-04ae55e711cec5680
&AUTHPARAMS
```

## Sample Response

```
<DeleteNatGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>741fc8ab-6ebe-452b-b92b-example</requestId>
<natGatewayId>nat-04ae55e711cec5680</natGatewayId>
</DeleteNatGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkAcl

Deletes the specified network ACL. You can't delete the ACL if it's associated with any subnets. You can't delete the default network ACL.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkAclId

The ID of the network ACL.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified network ACL.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAcl
&NetworkAclId=acl-2cb85d45
&AUTHPARAMS
```

## Sample Response

```
<DeleteNetworkAclResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkAclEntry

Deletes the specified ingress or egress entry (rule) from the specified network ACL.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Egress

Indicates whether the rule is an egress rule.

Type: Boolean

Required: Yes

### NetworkAclId

The ID of the network ACL.

Type: String

Required: Yes

### RuleNumber

The rule number of the entry to delete.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes ingress rule number 100 from the specified network ACL.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=100
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteNetworkAclEntryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkInsightsAnalysis

Deletes the specified network insights analysis.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkInsightsAnalysisId

The ID of the network insights analysis.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### networkInsightsAnalysisId

The ID of the network insights analysis.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkInsightsPath

Deletes the specified path.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkInsightsPathId

The ID of the path.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### networkInsightsPathId

The ID of the path.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkInterface

Deletes the specified network interface. You must detach the network interface before you can delete it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified network interface.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterface
&NetworkInterfaceId=eni-ffda3197
&AUTHPARAMS
```

## Sample Response

```
<DeleteNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>e1c6d73b-edaa-4e62-9909-6611404e1739</requestId>
  <return>true</return>
</DeleteNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteNetworkInterfacePermission

Deletes a permission for a network interface. By default, you cannot delete the permission if the account for which you're removing the permission has attached the network interface to an instance. However, you can force delete the permission, regardless of any attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Force

Specify `true` to remove the permission even if the network interface is attached to an instance.

Type: Boolean

Required: No

### NetworkInterfacePermissionId

The ID of the network interface permission.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds, otherwise returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified network interface permission.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteNetworkInterfacePermission
&NetworkInterfacePermissionId=eni-perm-06fd19020ede149ea
&AUTHPARAMS
```

#### Sample Response

```
<DeleteNetworkInterfacePermissionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a296942-8fa0-45a3-8406-09e9example</requestId>
  <return>true</return>
</DeleteNetworkInterfacePermissionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeletePlacementGroup

Deletes the specified placement group. You must terminate all instances in the placement group before you can delete the placement group. For more information, see [Placement groups in the Amazon EC2 User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupName

The name of the placement group.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the placement group named `xyz-cluster`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeletePlacementGroup
&GroupName=XYZ-cluster
&AUTHPARAMS
```

## Sample Response

```
<DeletePlacementGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</return>
</DeletePlacementGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteQueuedReservedInstances

Deletes the queued purchases for the specified Reserved Instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ReservedInstancesId.N

The IDs of the Reserved Instances.

Type: Array of strings

Array Members: Minimum number of 1 item. Maximum number of 100 items.

Required: Yes

## Response Elements

The following elements are returned by the service.

### failedQueuedPurchaseDeletionSet

Information about the queued purchases that could not be deleted.

Type: Array of [FailedQueuedPurchaseDeletion \(p. 1542\)](#) objects

### requestId

The ID of the request.

Type: String

### successfulQueuedPurchaseDeletionSet

Information about the queued purchases that were successfully deleted.

Type: Array of [SuccessfulQueuedPurchaseDeletion \(p. 2069\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteRoute

Deletes the specified route from the specified route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The IPv4 CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: No

### DestinationIpv6CidrBlock

The IPv6 CIDR range for the route. The value you specify must match the CIDR for the route exactly.

Type: String

Required: No

### DestinationPrefixListId

The ID of the prefix list for the route.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RouteTableId

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example deletes the route with destination IPv4 CIDR 172.16.1.0/24 from the specified route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-1122334455667788a
&DestinationCidrBlock=172.16.1.0/24
&AUTHPARAMS
```

#### Sample Response

```
<DeleteRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteResponse>
```

### Example 2

This example deletes the route with destination IPv6 CIDR ::/0 from the specified route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRoute
&RouteTableId=rtb-1122334455667788a
&DestinationIpv6CidrBlock=:/:0
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteRouteTable

Deletes the specified route table. You must disassociate the route table from any subnets before you can delete it. You can't delete the main route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RouteTableId

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified route table.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteRouteTable
&RouteTableId=rtb-1122334455667788a
&AUTHPARAMS
```

## Sample Response

```
<DeleteRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DeleteRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteSecurityGroup

Deletes a security group.

If you attempt to delete a security group that is associated with an instance, or is referenced by another security group, the operation fails with `InvalidGroup.InUse` in EC2-Classic or `DependencyViolation` in EC2-VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupId

The ID of the security group. Required for a nondefault VPC.

Type: String

Required: No

### GroupName

[EC2-Classic, default VPC] The name of the security group. You can specify either the security group name or the security group ID.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example deletes the specified security group for EC2-Classic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupName=websrv
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteSecurityGroupResponse>
```

### Example for EC2-VPC

This example deletes the specified security group for EC2-VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSecurityGroup
&GroupId=sg-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSecurityGroupResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteSnapshot

Deletes the specified snapshot.

When you make periodic snapshots of a volume, the snapshots are incremental, and only the blocks on the device that have changed since your last snapshot are saved in the new snapshot. When you delete a snapshot, only the data not needed for any other snapshot is removed. So regardless of which prior snapshots have been deleted, all active snapshots will have access to all the information needed to restore the volume.

You cannot delete a snapshot of the root device of an EBS volume used by a registered AMI. You must first de-register the AMI before you can delete the snapshot.

For more information, see [Delete an Amazon EBS snapshot](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SnapshotId

The ID of the EBS snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request deletes the snapshot with the ID snap-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSnapshot  
&SnapshotId.1=snap-1234567890abcdef0  
&AUTHPARAMS
```

#### Sample Response

```
<DeleteSnapshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <return>true</return>  
</DeleteSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteSpotDatafeedSubscription

Deletes the data feed for Spot Instances.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request deletes the data feed for the AWS account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSpotDatafeedSubscription&AUTHPARAMS
```

### Sample Response

```
<DeleteSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteSpotDatafeedSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DeleteSubnet

Deletes the specified subnet. You must terminate all running instances in the subnet before you can delete the subnet.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

#### SubnetId

The ID of the subnet.

Type: String

Required: Yes

### Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

### Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

### Examples

#### Example

This example deletes the specified subnet.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteSubnet
&SubnetId=subnet-9d4a7b6c
&AUTHPARAMS
```

## Sample Response

```
<DeleteSubnetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteSubnetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteSubnetCidrReservation

Deletes a subnet CIDR reservation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SubnetCidrReservationId

The ID of the subnet CIDR reservation.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### deletedSubnetCidrReservation

Information about the deleted subnet CIDR reservation.

Type: [SubnetCidrReservation \(p. 2065\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTags

Deletes the specified set of tags from the specified set of resources.

To list the current tags, use [DescribeTags \(p. 801\)](#). For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ResourceId.N

The IDs of the resources, separated by spaces.

Constraints: Up to 1000 resource IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

### Tag.N

The tags to delete. Specify a tag key and an optional tag value to delete specific tags. If you specify a tag key without a tag value, we delete any tag with this key regardless of its value. If you specify a tag key with an empty string as the tag value, we delete the tag only if its value is an empty string.

If you omit this parameter, we delete all user-defined tags for the specified resources. We do not delete AWS-generated tags (tags that have the `aws:` prefix).

Constraints: Up to 1000 tags.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes all the user-defined tags for the AMI with the ID `ami-1a2b3c4d`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=ami-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteTagsResponse>
```

### Example

This example deletes the `stack` and `webserver` tags for two particular instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-1234567890abcdef0
&ResourceId.2=i-0598c7d356eba48d7
&Tag.1.Key=stack
&Tag.2.Key=webserver
&AUTHPARAMS
```

### Example

You can specify a tag key without a corresponding tag value to delete the tag regardless of its value. This example request deletes all tags that have a key of `Purpose`, regardless of the tag value.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-0598c7d356eba48d7
&Tag.1.Key=Purpose
&AUTHPARAMS
```

### Example

When you create a tag, you can set the tag value to the empty string. Correspondingly, you can delete only tags that have a specific key and whose value is the empty string. This example request deletes all tags for the specified instance where the key is `Purpose` and the tag value is the empty string.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTags
&ResourceId.1=i-1234567890abcdef0
&Tag.1.Key=Purpose
&Tag.2.Value=
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTrafficMirrorFilter

Deletes the specified Traffic Mirror filter.

You cannot delete a Traffic Mirror filter that is in use by a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TrafficMirrorFilterId

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### trafficMirrorFilterId

The ID of the Traffic Mirror filter.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTrafficMirrorFilterRule

Deletes the specified Traffic Mirror rule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TrafficMirrorFilterRuleId

The ID of the Traffic Mirror rule.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### trafficMirrorFilterRuleId

The ID of the deleted Traffic Mirror rule.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTrafficMirrorSession

Deletes the specified Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TrafficMirrorSessionId

The ID of the Traffic Mirror session.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### trafficMirrorSessionId

The ID of the deleted Traffic Mirror session.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTrafficMirrorTarget

Deletes the specified Traffic Mirror target.

You cannot delete a Traffic Mirror target that is in use by a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TrafficMirrorTargetId

The ID of the Traffic Mirror target.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### trafficMirrorTargetId

The ID of the deleted Traffic Mirror target.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGateway

Deletes the specified transit gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGateway

Information about the deleted transit gateway.

Type: [TransitGateway \(p. 2098\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayConnect

Deletes the specified Connect attachment. You must first delete any Connect peers for the attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the Connect attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayConnect

Information about the deleted Connect attachment.

Type: [TransitGatewayConnect \(p. 2107\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayConnectPeer

Deletes the specified Connect peer.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayConnectPeerId

The ID of the Connect peer.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayConnectPeer

Information about the deleted Connect peer.

Type: [TransitGatewayConnectPeer \(p. 2110\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayMulticastDomain

Deletes the specified transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayMulticastDomain

Information about the deleted transit gateway multicast domain.

Type: [TransitGatewayMulticastDomain \(p. 2116\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example deletes the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayMulticastDomain
&TransitGatewayMulticastDomainId=tgw-mcast-domain-02bb79002bEXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DeleteTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>19914ba0-eb6c-43aa-9381-0bdaffEXAMPLE</requestId>
  <transitGatewayMulticastDomain>
    <creationTime>2019-11-20T22:02:03.000Z</creationTime>
    <state>deleting</state>
    <transitGatewayId>tgw-0d88d2d0d5EXAMPLE</transitGatewayId>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-02bb79002bEXAMPLE</
transitGatewayMulticastDomainId>
  </transitGatewayMulticastDomain>
</DeleteTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayPeeringAttachment

Deletes a transit gateway peering attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway peering attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayPeeringAttachment

The transit gateway peering attachment.

Type: [TransitGatewayPeeringAttachment \(p. 2128\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified transit gateway peering attachment by specifying its attachment ID.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayPrefixListReference

Deletes a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayPrefixListReference

Information about the deleted prefix list reference.

Type: [TransitGatewayPrefixListReference \(p. 2131\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified prefix list reference in the specified transit gateway route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&PrefixListId=pl-001122334455aabbc
&AUTHPARAMS
```

#### Sample Response

```
<DeleteTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>482823e8-8165-4312-86ee-example</requestId>
  <transitGatewayPrefixListReference>
    <blackhole>false</blackhole>
    <prefixListId>pl-001122334455aabbc</prefixListId>
    <prefixListOwnerId>123456789012</prefixListOwnerId>
    <state>deleting</state>
    <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</transitGatewayRouteTableId>
  </transitGatewayPrefixListReference>
</DeleteTransitGatewayPrefixListReferenceResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayRoute

Deletes the specified route from the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The CIDR range for the route. This must match the CIDR for the route exactly.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### route

Information about the route.

Type: [TransitGatewayRoute \(p. 2137\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayRouteTable

Deletes the specified transit gateway route table. You must disassociate the route table from any transit gateway route tables before you can delete it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayRouteTable

Information about the deleted transit gateway route table.

Type: [TransitGatewayRouteTable \(p. 2139\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteTransitGatewayVpcAttachment

Deletes the specified VPC attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayVpcAttachment

Information about the deleted VPC attachment.

Type: [TransitGatewayVpcAttachment \(p. 2143\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVolume

Deletes the specified EBS volume. The volume must be in the available state (not attached to an instance).

The volume can remain in the deleting state for several minutes.

For more information, see [Delete an Amazon EBS volume](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VolumeId

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request deletes the volume with the ID `vol-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeleteVolumeResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpc

Deletes the specified VPC. You must detach or delete all gateways and resources that are associated with the VPC before you can delete it. For example, you must terminate all instances running in the VPC, delete all security groups associated with the VPC (except the default one), delete all route tables associated with the VPC (except the default one), and so on.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified VPC.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpc
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpcEndpointConnectionNotifications

Deletes one or more VPC endpoint connection notifications.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ConnectionNotificationId.N**

One or more notification IDs.

Type: Array of strings

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **unsuccessful**

Information about the notifications that could not be deleted successfully.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes connection notification `vpce-nfn-04bcb952bc8af7123`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpointConnectionNotifications
&ConnectionNotificationId.1=vpce-nfn-04bcb952bc8af7123
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpcEndpointConnectionNotificationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>2bf45d2e-a871-4375-9a93-f4188example</requestId>
  <unsuccessful/>
</DeleteVpcEndpointConnectionNotificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpcEndpoints

Deletes one or more specified VPC endpoints. You can delete any of the following types of VPC endpoints.

- Gateway endpoint,
- Gateway Load Balancer endpoint,
- Interface endpoint

The following rules apply when you delete a VPC endpoint:

- When you delete a gateway endpoint, we delete the endpoint routes in the route tables that are associated with the endpoint.
- When you delete a Gateway Load Balancer endpoint, we delete the endpoint network interfaces.

You can only delete Gateway Load Balancer endpoints when the routes that are associated with the endpoint are deleted.

- When you delete an interface endpoint, we delete the endpoint network interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcEndpointId.N

One or more VPC endpoint IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### unsuccessful

Information about the VPC endpoints that were not successfully deleted.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes endpoint vpce-aa22bb33.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpoints
&VpcEndpointId.1=vpce-aa22bb33
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <unsuccessful/>
  <requestId>b59c2643-789a-4bf7-aac4-example</requestId>
</DeleteVpcEndpointsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpcEndpointServiceConfigurations

Deletes one or more VPC endpoint service configurations in your account. Before you delete the endpoint service configuration, you must reject any `Available` or `PendingAcceptance` interface endpoint connections that are attached to the service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ServiceId.N

The IDs of one or more services.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### unsuccessful

Information about the service configurations that were not deleted, if applicable.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes your VPC endpoint service configuration `vpce-svc-03d5ebb7d9579a2b3`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcEndpointServiceConfigurations
ServiceId.1=vpce-svc-03d5ebb7d9579a2b3
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpcEndpointServiceConfigurationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>12345d2e-a871-4375-9a93-f4188example</requestId>
  <unsuccessful/>
</DeleteVpcEndpointServiceConfigurations>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpcPeeringConnection

Deletes a VPC peering connection. Either the owner of the requester VPC or the owner of the accepter VPC can delete the VPC peering connection if it's in the active state. The owner of the requester VPC can delete a VPC peering connection in the pending-acceptance state. You cannot delete a VPC peering connection that's in the failed state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns true if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified VPC peering connection.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<return>true</return>
</DeleteVpcPeeringConnectionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpnConnection

Deletes the specified VPN connection.

If you're deleting the VPC and its associated components, we recommend that you detach the virtual private gateway from the VPC and delete the VPC before deleting the VPN connection. If you believe that the tunnel credentials for your VPN connection have been compromised, you can delete the VPN connection and create a new one that has new keys, without needing to delete the VPC or virtual private gateway. If you create a new VPN connection, you must reconfigure the customer gateway device using the new configuration information returned with the new VPN connection ID.

For certificate-based authentication, delete all AWS Certificate Manager (ACM) private certificates used for the AWS-side tunnel endpoints for the VPN connection before deleting the VPN connection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified VPN connection.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnection
&vpnConnectionId=vpn-44a8938f
&AUTHPARAMS
```

#### Sample Response

```
<DeleteVpnConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnConnectionResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpnConnectionRoute

Deletes the specified static route associated with a VPN connection between an existing virtual private gateway and a VPN customer gateway. The static route allows traffic to be routed from the virtual private gateway to the VPN customer gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DestinationCidrBlock

The CIDR block associated with the local subnet of the customer network.

Type: String

Required: Yes

### VpnConnectionId

The ID of the VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes a static route to the destination CIDR block 11.12.0.0/16 associated with the VPN connection with the ID vpn-83ad48ea. Note that when using the Query API, the "/" is denoted as "%2F".

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnConnectionRoute
&DestinationCidrBlock=11.12.0.0%2F16
&VpnConnectionId=vpn-83ad48ea
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpnConnectionRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">>
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DeleteVpnConnectionRouteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeleteVpnGateway

Deletes the specified virtual private gateway. You must first detach the virtual private gateway from the VPC. Note that you don't need to delete the virtual private gateway if you plan to delete and recreate the VPN connection between your VPC and your network.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deletes the specified virtual private gateway.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DeleteVpnGateway
&vpnGatewayId=vgw-8db04f81
&AUTHPARAMS
```

## Sample Response

```
<DeleteVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DeleteVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeprovisionByoipCidr

Releases the specified address range that you provisioned for use with your AWS resources through bring your own IP addresses (BYOIP) and deletes the corresponding address pool.

Before you can release an address range, you must stop advertising it using [WithdrawByoipCidr \(p. 1336\)](#) and you must not have any IP addresses allocated from its address range.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Cidr

The address range, in CIDR notation. The prefix must be the same prefix that you specified when you provisioned the address range.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### byoipCidr

Information about the address range.

Type: [ByoipCidr \(p. 1397\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeregisterImage

Deregisters the specified AMI. After you deregister an AMI, it can't be used to launch new instances; however, it doesn't affect any instances that you've already launched from the AMI. You'll continue to incur usage costs for those instances until you terminate them.

When you deregister an Amazon EBS-backed AMI, it doesn't affect the snapshot that was created for the root volume of the instance during the AMI creation process. When you deregister an instance store-backed AMI, it doesn't affect the files that you uploaded to Amazon S3 when you created the AMI.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request deregisters the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterImage
&ImageId=ami-4fa54026
&AUTHPARAMS
```

#### Sample Response

```
<DeregisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DeregisterImageResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeregisterInstanceEventNotificationAttributes

C

Deregisters tag keys to prevent tags that have the specified tag keys from being included in scheduled event notifications for resources in the Region.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceTagAttribute

Information about the tag keys to deregister.

Type: [DeregisterInstanceTagAttributeRequest \(p. 1475\)](#) object

Required: No

## Response Elements

The following elements are returned by the service.

### instanceTagAttribute

The resulting set of tag keys.

Type: [InstanceTagNotificationAttribute \(p. 1698\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeregisterTransitGatewayMulticastGroupMembers

Deregisters the specified members (network interfaces) from the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### NetworkInterfaceIds.N

The IDs of the group members' network interfaces.

Type: Array of strings

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### deregisteredMulticastGroupMembers

Information about the deregistered members.

Type: [TransitGatewayMulticastDeregisteredGroupMembers \(p. 2114\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example deregisters the network interface as a group member `eni-0e246d3269EXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterTransitGatewayMulticastGroupMembers
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-0e246d3269EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeregisterTransitGatewayMulticastGroupMembersResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>6f4167cd-0870-4858-8872-f1c34EXAMPLE</requestId>
  <registeredMulticastGroupMembers>
    <groupIpAddress>224.0.1.0</groupIpAddress>
    <registeredNetworkInterfaceIds>
      <item>eni-0e246d3269EXAMPLE</item>
    </registeredNetworkInterfaceIds>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
  </registeredMulticastGroupMembers>
</DeregisterTransitGatewayMulticastGroupMembersResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DeregisterTransitGatewayMulticastGroupSources

Deregisters the specified sources (network interfaces) from the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### NetworkInterfaceIds.N

The IDs of the group sources' network interfaces.

Type: Array of strings

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### deregisteredMulticastGroupSources

Information about the deregistered group sources.

Type: [TransitGatewayMulticastDeregisteredGroupSources \(p. 2115\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example deregisters the network interface as a group source `eni-07f290fc3cEXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DeregisterTransitGatewayMulticastGroupSources
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-07f290fc3cEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DeregisterTransitGatewayMulticastGroupSourcesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>1ca916e8-a4b5-4ff8-9fc3-3052dEXAMPLE</requestId>
  <deregisteredMulticastGroupSources>
    <deregisteredNetworkInterfaceIds>
      <item>eni-07f290fc3cEXAMPLE</item>
    </deregisteredNetworkInterfaceIds>
    <groupIpAddress>224.0.1.0</groupIpAddress>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
  </deregisteredMulticastGroupSources>
</DeregisterTransitGatewayMulticastGroupSourcesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeAccountAttributes

Describes attributes of your AWS account. The following are the supported account attributes:

- **supported-platforms**: Indicates whether your account can launch instances into EC2-Classic and EC2-VPC, or only into EC2-VPC.
- **default-vpc**: The ID of the default VPC for your account, or `none`.
- **max-instances**: This attribute is no longer supported. The returned value does not reflect your actual vCPU limit for running On-Demand Instances. For more information, see [On-Demand Instance Limits](#) in the *Amazon Elastic Compute Cloud User Guide*.
- **vpc-max-security-groups-per-interface**: The maximum number of security groups that you can assign to a network interface.
- **max-elastic-ips**: The maximum number of Elastic IP addresses that you can allocate for use with EC2-Classic.
- **vpc-max-elastic-ips**: The maximum number of Elastic IP addresses that you can allocate for use with EC2-VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AttributeName.N

The account attribute names.

Type: Array of strings

Valid Values: `supported-platforms` | `default-vpc`

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### accountAttributeSet

Information about the account attributes.

Type: Array of [AccountAttribute \(p. 1355\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes your account attributes. The response is for an account that supports EC2-Classic and EC2-VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <accountAttributeSet>  
    <item>  
      <attributeName>vpc-max-security-groups-per-interface</attributeName>  
      <attributeValueSet>  
        <item>  
          <attributeValue>5</attributeValue>  
        </item>  
      </attributeValueSet>  
    </item>  
    <item>  
      <attributeName>max-instances</attributeName>  
      <attributeValueSet>  
        <item>  
          <attributeValue>20</attributeValue>  
        </item>  
      </attributeValueSet>  
    </item>  
    <item>  
      <attributeName>supported-platforms</attributeName>  
      <attributeValueSet>  
        <item>  
          <attributeValue>EC2</attributeValue>  
        </item>  
        <item>  
          <attributeValue>VPC</attributeValue>  
        </item>  
      </attributeValueSet>  
    </item>  
    <item>  
      <attributeName>default-vpc</attributeName>  
      <attributeValueSet>  
        <item>  
          <attributeValue>none</attributeValue>  
        </item>  
      </attributeValueSet>  
    </item>  
  </accountAttributeSet>  
</DescribeAccountAttributesResponse>
```

```
<item>
    <attributeName>max-elastic-ips</attributeName>
    <attributeValueSet>
        <item>
            <attributeValue>5</attributeValue>
        </item>
    </attributeValueSet>
</item>
<item>
    <attributeName>vpc-max-elastic-ips</attributeName>
    <attributeValueSet>
        <item>
            <attributeValue>5</attributeValue>
        </item>
    </attributeValueSet>
</item>
</accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## Example 2

This example describes the ID of your default VPC. The first response is for an account that supports only EC2-VPC. The second response if for an account that supports both EC2-Classic and EC2-VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAccountAttributes
&AttributeName.1=default-vpc
&AUTHPARAMS
```

### Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<accountAttributeSet>
    <item>
        <attributeName>default-vpc</attributeName>
        <attributeValueSet>
            <item>
                <attributeValue>none</attributeValue>
            </item>
        </attributeValueSet>
    </item>
</accountAttributeSet>
</DescribeAccountAttributesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeAddresses

Describes the specified Elastic IP addresses or all of your Elastic IP addresses.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId.N

[EC2-VPC] Information about the allocation IDs.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. Filter names and values are case-sensitive.

- `allocation-id` - [EC2-VPC] The allocation ID for the address.
- `association-id` - [EC2-VPC] The association ID for the address.
- `domain` - Indicates whether the address is for use in EC2-Classic (`standard`) or in a VPC (`vpc`).
- `instance-id` - The ID of the instance the address is associated with, if any.
- `network-border-group` - A unique set of Availability Zones, Local Zones, or Wavelength Zones from where AWS advertises IP addresses.
- `network-interface-id` - [EC2-VPC] The ID of the network interface that the address is associated with, if any.
- `network-interface-owner-id` - The AWS account ID of the owner.
- `private-ip-address` - [EC2-VPC] The private IP address associated with the Elastic IP address.
- `public-ip` - The Elastic IP address, or the carrier IP address.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### PublicIp.N

One or more Elastic IP addresses.

Default: Describes all your Elastic IP addresses.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### addressesSet

Information about the Elastic IP addresses.

Type: Array of [Address \(p. 1359\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example request describes two specific Elastic IP addresses allocated to your account. Both addresses were created for instances in EC2-Classic, so you must specify them using their IP addresses. The address 192.0.2.1 is assigned to instance i-1234567890abcdef0, and 198.51.100.2 isn't assigned to an instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&PublicIp.1=192.0.2.1
&PublicIp.2=198.51.100.2
&AUTHPARAMS
```

#### Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<addressesSet>
  <item>
    <publicIp>192.0.2.1</publicIp>
    <domain>standard</domain>
    <instanceId>i-1234567890abcdef0</instanceId>
  </item>
  <item>
    <publicIp>198.51.100.2</publicIp>
    <domain>standard</domain>
```

```
<instanceId/>
</item>
</addressesSet>
</DescribeAddressesResponse>
```

## Example 1 for EC2-VPC

This example request describes a specific Elastic IP address allocated to your account. This address was created for instances in EC2-VPC, so you must use the allocation ID to specify the address.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&AllocationId.1= eipalloc-08229861
&AUTHPARAMS
```

### Sample Response

```
<DescribeAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <addressesSet>
    <item>
      <publicIp>203.0.113.41</publicIp>
      <allocationId>eipalloc-08229861</allocationId>
      <domain>vpc</domain>
      <instanceId>i-0598c7d356eba48d7</instanceId>
      <associationId>eipassoc-f0229899</associationId>
      <networkInterfaceId>eni-ef229886</networkInterfaceId>
      <networkInterfaceOwnerId>053230519467</networkInterfaceOwnerId>
      <privateIpAddress>10.0.0.228</privateIpAddress>
    </item>
  </addressesSet>
</DescribeAddressesResponse>
```

## Example 2 for EC2-VPC

This example describes your Elastic IP addresses for EC2-VPC only.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAddresses
&Filter.1.Name=domain
&Filter.1.Value.1=vpc
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribeAddressesAttribute

Describes the attributes of the specified Elastic IP addresses. For requirements, see [Using reverse DNS for email applications](#).

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### **AllocationId.N**

[EC2-VPC] The allocation IDs.

Type: Array of strings

Required: No

#### **Attribute**

The attribute of the IP address.

Type: String

Valid Values: domain-name

Required: No

#### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

#### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned nextToken value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

#### **NextToken**

The token for the next page of results.

Type: String

Required: No

### Response Elements

The following elements are returned by the service.

**addressSet**

Information about the IP addresses.

Type: Array of [AddressAttribute \(p. 1362\)](#) objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeAggregateIdFormat

Describes the longer ID format settings for all resource types in a specific Region. This request is useful for performing a quick audit to determine whether a specific Region is fully opted in for longer IDs (17-character IDs).

This request only returns information about resource types that support longer IDs.

The following resource types support longer IDs: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### statusSet

Information about each resource's ID format.

Type: Array of [IdFormat \(p. 1603\)](#) objects

### useLongIdsAggregated

Indicates whether all resource types in the Region are configured to use longer IDs. This value is only true if all users are configured to use longer IDs for all resources types in the Region.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the overall ID format settings for the default Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAggregateIdFormat  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeAggregateIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <useLongIdsAggregated>true</useLongIdsAggregated>  
  <statusSet>  
    <item>  
      <resource>security-group</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>route-table-association</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>vpc</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>flow-log</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>vpc-peering-connection</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>elastic-ip-association</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>vpc-cidr-block-association</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>network-interface</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>subnet</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <deadline>2016-12-15T14:00:00.000Z</deadline>  
      <resource>volume</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>vpc-ipv6-cidr-block-association</resource>  
      <useLongIds>true</useLongIds>  
    </item>
```

```
<item>
    <resource>network-acl-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>dhcp-options</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <deadline>2016-12-15T14:00:00.000Z</deadline>
    <resource>snapshot</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>subnet-ipv6-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-interface-attachment</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>elastic-ip-allocation</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>internet-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <deadline>2016-12-15T14:00:00.000Z</deadline>
    <resource>reservation</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <deadline>2016-12-15T14:00:00.000Z</deadline>
    <resource>instance</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>customer-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-endpoint</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpn-connection</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpn-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
</statusSet>
</DescribeAggregateIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeAvailabilityZones

Describes the Availability Zones, Local Zones, and Wavelength Zones that are available to you. If there is an event impacting a zone, you can use this request to view the state and any provided messages for that zone.

For more information about Availability Zones, Local Zones, and Wavelength Zones, see [Regions and zones](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllAvailabilityZones

Include all Availability Zones, Local Zones, and Wavelength Zones regardless of your opt-in status.

If you do not use this parameter, the results include only the zones for the Regions where you have chosen the option to opt in.

Type: Boolean

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Filter.N

The filters.

- group-name - For Availability Zones, use the Region name. For Local Zones, use the name of the group associated with the Local Zone (for example, us-west-2-lax-1) For Wavelength Zones, use the name of the group associated with the Wavelength Zone (for example, us-east-1-wl1-bos-wlz-1).
- message - The Zone message.
- opt-in-status - The opt-in status (opted-in, and not-opted-in | opt-in-not-required).
- parent-zoneID - The ID of the zone that handles some of the Local Zone and Wavelength Zone control plane operations, such as API calls.
- parent-zoneName - The ID of the zone that handles some of the Local Zone and Wavelength Zone control plane operations, such as API calls.
- region-name - The name of the Region for the Zone (for example, us-east-1).
- state - The state of the Availability Zone, the Local Zone, or the Wavelength Zone (available | information | impaired | unavailable).
- zone-id - The ID of the Availability Zone (for example, use1-az1), the Local Zone (for example, usw2-lax1-az1), or the Wavelength Zone (for example, us-east-1-wl1-bos-wlz-1).
- zone-type - The type of zone, for example, local-zone.
- zone-name - The name of the Availability Zone (for example, us-east-1a), the Local Zone (for example, us-west-2-lax-1a), or the Wavelength Zone (for example, us-east-1-wl1-bos-wlz-1).

- **zone-type** - The type of zone, for example, local-zone.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### **ZoneId.N**

The IDs of the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of strings

Required: No

#### **ZoneName.N**

The names of the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **availabilityZoneInfo**

Information about the Availability Zones, Local Zones, and Wavelength Zones.

Type: Array of [AvailabilityZone \(p. 1385\)](#) objects

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example request describes the zones that are available to you.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeAvailabilityZones
&AUTHPARAMS
```

#### Sample Response

```
<DescribeAvailabilityZonesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>e23c5a54-a29c-43ee-8b55-0c13c26e9e01</requestId>
```

```
<availabilityZoneInfo>
    <item>
        <optInStatus>opt-in-not-required</optInStatus>
        <zoneName>us-west-2a</zoneName>
        <zoneId>usw2-az1</zoneId>
        <zoneState>available</zoneState>
        <regionName>us-west-2</regionName>
        <messageSet/>
        <NetworkBorderGroup>us-west-2-lax-1</NetworkBorderGroup>
    </item>
    <item>
        <groupName>us-west-2</groupName>
        <optInStatus>opt-in-not-required</optInStatus>
        <zoneName>us-west-2b</zoneName>
        <zoneId>usw2-az2</zoneId>
        <zoneState>available</zoneState>
        <regionName>us-west-2</regionName>
        <messageSet/>
        <NetworkBorderGroup>us-west-2-lax-1</NetworkBorderGroup>
    </item>
    <item>
        <groupName>us-west-2c</groupName>
        <optInStatus>opt-in-not-required</optInStatus>
        <zoneName>us-west-2c</zoneName>
        <zoneId>usw2-az3</zoneId>
        <zoneState>available</zoneState>
        <regionName>us-west-2</regionName>
        <messageSet/>
        <NetworkBorderGroup>us-west-2-lax-1</NetworkBorderGroup>
    </item>
    <item>
        <groupName>us-west-2d</groupName>
        <optInStatus>opt-in-not-required</optInStatus>
        <zoneName>us-west-2d</zoneName>
        <zoneId>usw2-az4</zoneId>
        <zoneState>available</zoneState>
        <regionName>us-west-2</regionName>
        <messageSet/>
    </item>
    <item>
        <groupName>us-west-2-lax-1</groupName>
        <optInStatus>opted-in</optInStatus>
        <zoneName>us-west-2-lax-1a</zoneName>
        <zoneId>usw2-lax1-az1</zoneId>
        <zoneState>available</zoneState>
        <regionName>us-west-2</regionName>
        <messageSet/>
    </item>
</availabilityZoneInfo>
</DescribeAvailabilityZonesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeBundleTasks

Describes the specified bundle tasks or all of your bundle tasks.

## Note

Completed bundle tasks are listed for only a limited time. If your bundle task is no longer in the list, you can still register an AMI from it. Just use `RegisterImage` with the Amazon S3 bucket name and image manifest name you provided to the bundle task.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### BundleId.N

The bundle task IDs.

Default: Describes all your bundle tasks.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `bundle-id` - The ID of the bundle task.
- `error-code` - If the task failed, the error code returned.
- `error-message` - If the task failed, the error message returned.
- `instance-id` - The ID of the instance.
- `progress` - The level of task completion, as a percentage (for example, 20%).
- `s3-bucket` - The Amazon S3 bucket to store the AMI.
- `s3-prefix` - The beginning of the AMI name.
- `start-time` - The time the task started (for example, 2013-09-15T17:15:20.000Z).
- `state` - The state of the task (`pending` | `waiting-for-shutdown` | `bundling` | `storing` | `cancelling` | `complete` | `failed`).
- `update-time` - The time of the most recent update for the task.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### bundleInstanceTasksSet

Information about the bundle tasks.

Type: Array of [BundleTask \(p. 1394\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the status of the specified bundle task.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&bundleId.1=bun-c1a540a8
&AUTHPARAMS
```

#### Sample Response

```
<DescribeBundleTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <bundleInstanceTasksSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <bundleId>bun-c1a540a8</bundleId>
      <state>cancelling</state>
      <startTime>2008-10-07T11:41:50.000Z</startTime>
      <updateTime>2008-10-07T11:51:50.000Z</updateTime>
      <storage>
        <S3>
          <bucket>myawsbucket</bucket>
          <prefix>winami</prefix>
        </S3>
      </storage>
      <progress>20%</progress>
    </item>
  </bundleInstanceTasksSet>
</DescribeBundleTasksResponse>
```

### Example 2

This example filters the response to include only bundle tasks whose state is either `complete` or `failed`, and in addition are targeted for the Amazon S3 bucket named `myawsbucket`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeBundleTasks
&Filter.1.Name=s3-bucket
&Filter.1.Value.1=myawsbucket
&Filter.2.Name=state
&Filter.2.Name.1=complete
&Filter.2.Name.2=failed
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeByoipCidrs

Describes the IP address ranges that were specified in calls to [ProvisionByoipCidr \(p. 1188\)](#).

To describe the address pools that were created when you provisioned the address ranges, use [DescribePublicIpv4Pools \(p. 712\)](#) or [DescribeIpv6Pools \(p. 646\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: Yes

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### byoipCidrSet

Information about your address ranges.

Type: Array of [ByoipCidr \(p. 1397\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCapacityReservationFleets

Describes one or more Capacity Reservation Fleets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CapacityReservationFleetId.N**

The IDs of the Capacity Reservation Fleets to describe.

Type: Array of strings

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters.

- `state` - The state of the Fleet (`submitted` | `modifying` | `active` | `partially_fulfilled` | `expiring` | `expired` | `cancelling` | `cancelled` | `failed`).
- `instance-match-criteria` - The instance matching criteria for the Fleet. Only `open` is supported.
- `tenancy` - The tenancy of the Fleet (`default` | `dedicated`).
- `allocation-strategy` - The allocation strategy used by the Fleet. Only `prioritized` is supported.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### **NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **capacityReservationFleetSet**

Information about the Capacity Reservation Fleets.

Type: Array of [CapacityReservationFleet \(p. 1407\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCapacityReservations

Describes one or more of your Capacity Reservations. The results describe only the Capacity Reservations in the AWS Region that you're currently using.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CapacityReservationId.N

The ID of the Capacity Reservation.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `instance-type` - The type of instance for which the Capacity Reservation reserves capacity.
- `owner-id` - The ID of the AWS account that owns the Capacity Reservation.
- `availability-zone-id` - The Availability Zone ID of the Capacity Reservation.
- `instance-platform` - The type of operating system for which the Capacity Reservation reserves capacity.
- `availability-zone` - The Availability Zone ID of the Capacity Reservation.
- `tenancy` - Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:
  - `default` - The Capacity Reservation is created on hardware that is shared with other AWS accounts.
  - `dedicated` - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost on which the Capacity Reservation was created.
- `state` - The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:
  - `active` - The Capacity Reservation is active and the capacity is available for your use.
  - `expired` - The Capacity Reservation expired automatically at the date and time specified in your request. The reserved capacity is no longer available for your use.
  - `cancelled` - The Capacity Reservation was cancelled. The reserved capacity is no longer available for your use.
  - `pending` - The Capacity Reservation request was successful but the capacity provisioning is still pending.

- **failed** - The Capacity Reservation request has failed. A request might fail due to invalid request parameters, capacity constraints, or instance limit constraints. Failed requests are retained for 60 minutes.
- **start-date** - The date and time at which the Capacity Reservation was started.
- **end-date** - The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to expired when it reaches its end date and time.
- **end-date-type** - Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:
  - **unlimited** - The Capacity Reservation remains active until you explicitly cancel it.
  - **limited** - The Capacity Reservation expires automatically at a specified date and time.
- **instance-match-criteria** - Indicates the type of instance launches that the Capacity Reservation accepts. The options include:
  - **open** - The Capacity Reservation accepts all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes launch into the Capacity Reservation automatically without specifying any additional parameters.
  - **targeted** - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

#### NextToken

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### capacityReservationSet

Information about the Capacity Reservations.

Type: Array of [CapacityReservation \(p. 1403\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String  
**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCarrierGateways

Describes one or more of your carrier gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CarrierGatewayId.N**

One or more carrier gateway IDs.

Type: Array of strings

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters.

- `carrier-gateway-id` - The ID of the carrier gateway.
- `state` - The state of the carrier gateway (`pending` | `failed` | `available` | `deleting` | `deleted`).
- `owner-id` - The AWS account ID of the owner of the carrier gateway.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC associated with the carrier gateway.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **carrierGatewaySet**

Information about the carrier gateway.

Type: Array of [CarrierGateway \(p. 1418\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClassicLinkInstances

Describes one or more of your linked EC2-Classic instances. This request only returns information about EC2-Classic instances linked to a VPC through ClassicLink. You cannot use this request to return information about other instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `group-id` - The ID of a VPC security group that's associated with the instance.
  - `instance-id` - The ID of the instance.
  - `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
  - `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
  - `vpc-id` - The ID of the VPC to which the instance is linked.
- `vpc-id` - The ID of the VPC that the instance is linked to.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InstanceId.N

One or more instance IDs. Must be instances linked to a VPC through ClassicLink.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Constraint: If the value is greater than 1000, we return only 1000 items.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### instancesSet

Information about one or more linked EC2-Classic instances.

Type: Array of [ClassicLinkInstance \(p. 1424\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example lists all of your linked EC2-Classic instances.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances&AUTHPARAMS
```

### Sample Response

```
<DescribeClassicLinkInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <vpcId>vpc-1a2b3c4d</vpcId>
      <groupSet>
```

```
<item>
    <groupId>sg-a1a1a1a1</groupId>
    </item>
</groupSet>
<tagSet/>
</item>
</instancesSet>
</DescribeClassicLinkInstancesResponse>
```

## Example

This example lists all linked EC2-Classic instances, and filters the response to include only instances that are linked to VPC vpc-1a2b3c4d.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClassicLinkInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-1a2b3c4d
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClientVpnAuthorizationRules

Describes the authorization rules for a specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `description` - The description of the authorization rule.
- `destination-cidr` - The CIDR of the network to which the authorization rule applies.
- `group-id` - The ID of the Active Directory group to which the authorization rule grants access.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### authorizationRule

Information about the authorization rules.

Type: Array of [AuthorizationRule \(p. 1383\)](#) objects

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the authorization rules for a specific Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnAuthorizationRules
&ClientVpnEndpointId.1=cvpn-endpoint-EXAMPLEc8db8d3536
&AUTHPARAMS
```

#### Sample Response

```
<DescribeClientVpnAuthorizationRulesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>9d5c69db-763e-4b63-88ee-EXAMPLE</requestId>
  <authorizationRule>
    <item>
      <accessAll>true</accessAll>
      <description>auth-rule-one</description>
      <destinationCidr>10.0.0.0/16</destinationCidr>
      <clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
      <groupId/>
      <status>
        <code>active</code>
      </status>
    </item>
  </authorizationRule>
</DescribeClientVpnAuthorizationRulesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClientVpnConnections

Describes active client connections and connections that have been terminated within the last 60 minutes for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **Filter.N**

One or more filters. Filter names and values are case-sensitive.

- connection-id - The ID of the connection.
- username - For Active Directory client authentication, the user name of the client who established the client connection.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### connections

Information about the active and terminated client connections.

Type: Array of [ClientVpnConnection \(p. 1434\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes Client VPN endpoint connections.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnConnections
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&RevokeAllGroups=true
&AUTHPARAMS
```

### Sample Response

```
<DescribeClientVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7263df00-d3ed-4f32-a3b9-88177EXAMPLE</requestId>
  <connections>
    <item>
      <clientIp>11.0.0.98</clientIp>
      <commonName>client1</commonName>
      <connectionEndTime>2018-12-13 18:38:10</connectionEndTime>
      <connectionEstablishedTime>2018-12-13 18:32:49</connectionEstablishedTime>
      <connectionId>cvpn-connection-010b1282b7EXAMPLE</connectionId>
      <egressBytes>14891</egressBytes>
      <egressPackets>309</egressPackets>
      <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
      <ingressBytes>14947</ingressBytes>
      <ingressPackets>285</ingressPackets>
      <status>
        <code>terminated</code>
      </status>
      <timestamp>2018-12-13 18:38:10</timestamp>
    </item>
  </connections>
</DescribeClientVpnConnectionsResponse>
```

```
</connections>
</DescribeClientVpnConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClientVpnEndpoints

Describes one or more Client VPN endpoints in the account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId.N**

The ID of the Client VPN endpoint.

Type: Array of strings

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **Filter.N**

One or more filters. Filter names and values are case-sensitive.

- endpoint-id - The ID of the Client VPN endpoint.
- transport-protocol - The transport protocol (tcp | udp).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### clientVpnEndpoint

Information about the Client VPN endpoints.

Type: Array of [ClientVpnEndpoint \(p. 1438\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the Client VPN endpoints in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnEndpointsResponse  
&AUTHPARAMS
```

### Sample Response

```
<DescribeClientVpnEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>e69f64d5-e763-4cf5-844e-c278b1946ddf</requestId>  
  <clientVpnEndpoint>  
    <item>  
      <authenticationOptions>  
        <item>  
          <mutualAuthentication>  
            <clientRootCertificateChain>arn:aws:acm:us-  
east-1:724145273726:certificate/82916b3c-7449-43cf-ab9e-31c18ef401c6</  
clientRootCertificateChain>  
          </mutualAuthentication>  
          <type>certificate-authentication</type>  
        </item>  
      </authenticationOptions>  
      <clientCidrBlock>10.0.0.0/24</clientCidrBlock>  
      <connectionLogOptions>  
        <Enabled>false</Enabled>  
      </connectionLogOptions>  
      <creationTime>2018-12-11T13:14:10</creationTime>  
      <description>ash-test</description>  
      <dnsName>cvpn-endpoint-0043a94c5c27c7997.prod.clientvpn.us-east-1.amazonaws.com</  
dnsName>
```

```
<clientVpnEndpointId>cvpn-endpoint-0043a94c5c27c7997</clientVpnEndpointId>
<status>
  <code>pending-associate</code>
</status>
<serverCertificateArn>arn:aws:acm:us-
east-1:724145273726:certificate/82916b3c-7449-43cf-ab9e-31c18ef401c6</
serverCertificateArn">
  <splitTunnel>false</splitTunnel">
  <transportProtocol>tcp</transportProtocol">
    <vpnProtocol>openvpn</vpnProtocol">
  <item">
</clientVpnEndpoint">
</DescribeClientVpnEndpointsResponse">
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClientVpnRoutes

Describes the routes for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `destination-cidr` - The CIDR of the route destination.
- `origin` - How the route was associated with the Client VPN endpoint (`associate` | `add-route`).
- `target-subnet` - The ID of the subnet through which traffic is routed.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### routes

Information about the Client VPN endpoint routes.

Type: Array of [ClientVpnRoute \(p. 1443\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the routes for a specific Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnRoutes
&ClientVpnEndpointId.1=cvpn-endpoint-EXAMPLEc8db8d3536
&AUTHPARAMS
```

#### Sample Response

```
<DescribeClientVpnRoutesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>08fb643f-4d8f-443b-b853-EXAMPLE9cc8c</requestId>
<routes>
<item>
<destinationCidr>10.0.0.0/16</destinationCidr>
<clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
<origin>associate</origin>
<status>
<code>active</code>
</status>
<targetSubnet>subnet-EXAMPLE18f440ab91</targetSubnet>
<type>Nat</type>
</item>
<item>
<destinationCidr>10.0.1.128/28</destinationCidr>
<clientVpnEndpointId>cvpn-endpoint-EXAMPLEc8db8d3536</clientVpnEndpointId>
<origin>add-route</origin>
<status>
<code>active</code>
</status>
<targetSubnet>EXAMPLE18f440ab91</targetSubnet>
```

```
<type>Nat</type>
</item>
</routes>
</DescribeClientVpnRoutesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeClientVpnTargetNetworks

Describes the target networks associated with the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationIds.N**

The IDs of the target network associations.

Type: Array of strings

Required: No

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters. Filter names and values are case-sensitive.

- `association-id` - The ID of the association.
- `target-network-id` - The ID of the subnet specified as the target network.
- `vpc-id` - The ID of the VPC in which the target network is located.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **clientVpnTargetNetworks**

Information about the associated target networks.

Type: Array of [TargetNetwork \(p. 2082\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the target networks associated with a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeClientVpnTargetNetworks
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DescribeClientVpnTargetNetworksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>1f92d56a-4494-4cbe-ad85-d9387EXAMPLE</requestId>
<clientVpnTargetNetworks>
  <item>
    <associationId>cvpn-assoc-0822b0983cEXAMPLE</associationId>
    <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
    <targetNetworkId>subnet-057fa0918fEXAMPLE</targetNetworkId>
    <securityGroups>
      <item>sg-123456EXAMPLE</item>
    </securityGroups>
    <status>
      <code>associated</code>
    </status>
```

```
<vpcId>vpc-3db97056EXAMPLE</vpcId>
</item>
</clientVpnTargetNetworks>
</DescribeClientVpnTargetNetworksResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCoipPools

Describes the specified customer-owned address pools or all of your customer-owned address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters. The following are the possible values:

- `coip-pool.pool-id`
- `coip-pool.local-gateway-route-table-id`

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PoolId.N

The IDs of the address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **coipPoolSet**

Information about the address pools.

Type: Array of [CoipPool \(p. 1447\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeConversionTasks

Describes the specified conversion tasks or all your conversion tasks. For more information, see the [VM Import/Export User Guide](#).

For information about the import manifest referenced by this API action, see [VM Import Manifest](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### ConversionTaskId.N

The conversion task IDs.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### conversionTasks

Information about the conversion tasks.

Type: Array of [ConversionTask \(p. 1452\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all your conversion tasks.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeConversionTasks  
&AUTHPARAMS
```

## Sample Response

```
<DescribeConversionTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <conversionTasks>  
    <item>  
      <conversionTask>  
        <conversionTaskId>import-i-fh95npoc</conversionTaskId>  
        <expirationTime>2010-12-22T12:01Z</expirationTime>  
        <importVolume>  
          <bytesConverted>1000</bytesConverted>  
          <availabilityZone>us-east-1a</availabilityZone>  
          <description/>  
          <image>  
            <format>VDMK</format>  
            <size>128696320</size>  
            <importManifestUrl>  
              https://s3.amazonaws.com/myawsbucket/  
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.  
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&  
Signature=5snej01T1tL0uR7KExtEXAMPLE%3D  
            </importManifestUrl>  
          </image>  
          <volume>  
            <size>8</size>  
            <id>vol-1234567890abcdef0</id>  
          </volume>  
        </importVolume>  
        <state>active</state>  
        <statusMessage/>  
      </conversionTask>  
    </item>  
  </conversionTasks>  
</DescribeConversionTasksResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeCustomerGateways

Describes one or more of your VPN customer gateways.

For more information, see [AWS Site-to-Site VPN](#) in the [AWS Site-to-Site VPN User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CustomerGatewayId.N**

One or more customer gateway IDs.

Default: Describes all your customer gateways.

Type: Array of strings

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters.

- `bgp ASN` - The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).
- `customer-gateway-id` - The ID of the customer gateway.
- `ip-address` - The IP address of the customer gateway's Internet-routable external interface.
- `state` - The state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).
- `type` - The type of customer gateway. Currently, the only supported type is `ipsec.1`.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### customerGatewaySet

Information about one or more customer gateways.

Type: Array of [CustomerGateway \(p. 1467\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example request describes the specified customer gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&CustomerGatewayId.1=cgw-b4dc3961
&AUTHPARAMS
```

#### Sample Response

```
<DescribeCustomerGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<customerGatewaySet>
  <item>
    <customerGatewayId>cgw-b4dc3961</customerGatewayId>
    <state>available</state>
    <type>ipsec.1</type>
    <ipAddress>12.1.2.3</ipAddress>
    <bgpAsn>65534</bgpasn>
    <tagSet/>
  </item>
</customerGatewaySet>
</DescribeCustomerGatewaysResponse>
```

### Example 2

This example request uses filters to describe any customer gateway you own whose IP address is 12.1.2.3, and whose state is either pending or available.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeCustomerGateways
&Filter.1.Name=ip-address
&Filter.1.Value.1=12.1.2.3
&Filter.2.Name=state
```

```
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeDhcpOptions

Describes one or more of your DHCP options sets.

For more information, see [DHCP options sets](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DhcpOptionsId.N

The IDs of one or more DHCP options sets.

Default: Describes all your DHCP options sets.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `dhcp-options-id` - The ID of a DHCP options set.
- `key` - The key for one of the options (for example, `domain-name`).
- `value` - The value for one of the options.
- `owner-id` - The ID of the AWS account that owns the DHCP options set.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### dhcpOptionsSet

Information about one or more DHCP options sets.

Type: Array of [DhcpOptions \(p. 1485\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the DHCP options sets.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&AUTHPARAMS
```

#### Sample Response

```
<DescribeDhcpOptionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>a0d78ea6-7bc7-4cb8-b827-c5ff0aff0140</requestId>
  <dhcpOptionsSet>
    <item>
      <dhcpOptionsId>dopt-1EXAMPLE</dhcpOptionsId>
      <ownerId>111122223333</ownerId>
      <dhcpConfigurationSet>
        <item>
```

```
<key>domain-name</key>
<valueSet>
    <item>
        <value>us-east-2.compute.internal</value>
    </item>
</valueSet>
</item>
<item>
    <key>domain-name-servers</key>
    <valueSet>
        <item>
            <value>AmazonProvidedDNS</value>
        </item>
    </valueSet>
</item>
</dhcpConfigurationSet>
</item>
<item>
    <dhcpOptionsId>dopt-fEXAMPLE</dhcpOptionsId>
    <ownerId>111122223333</ownerId>
    <dhcpConfigurationSet>
        <item>
            <key>domain-name</key>
            <valueSet>
                <item>
                    <value>us-east-2.compute.internal</value>
                </item>
            </valueSet>
        </item>
        <item>
            <key>domain-name-servers</key>
            <valueSet>
                <item>
                    <value>AmazonProvidedDNS</value>
                </item>
            </valueSet>
        </item>
    </dhcpConfigurationSet>
</item>
</dhcpOptionsSet>
</DescribeDhcpOptionsResponse>
```

## Example 2

This example uses filters to describe any DHCP options set that includes a domain-name option whose value includes the string example.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeDhcpOptions
&Filter.1.Name=key
&Filter.1.Value.1=domain-name
&Filter.2.Name=value
&Filter.2.Value.1=*example*
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeEgressOnlyInternetGateways

Describes one or more of your egress-only internet gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EgressOnlyInternetGatewayId.N

One or more egress-only internet gateway IDs.

Type: Array of strings

Required: No

### Filter.N

One or more filters.

- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **egressOnlyInternetGatewaySet**

Information about the egress-only internet gateways.

Type: Array of [EgressOnlyInternetGateway \(p. 1509\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your egress-only internet gateways.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeEgressOnlyInternetGateways  
&AUTHPARAMS
```

### Sample Response

```
<DescribeEgressOnlyInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>ec441b4c-357f-4483-b4a7-example</requestId>  
    <egressOnlyInternetGatewaySet>  
        <item>  
            <attachmentSet>  
                <item>  
                    <state>attached</state>  
                    <vpcId>vpc-0c62a468</vpcId>  
                </item>  
            </attachmentSet>  
            <egressOnlyInternetGatewayId>eigw-015e0e244e24dfe8a</egressOnlyInternetGatewayId>  
        </item>  
    </egressOnlyInternetGatewaySet>  
</DescribeEgressOnlyInternetGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeElasticGpus

Describes the Elastic Graphics accelerator associated with your instances. For more information about Elastic Graphics, see [Amazon Elastic Graphics](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ElasticGpuId.N

The Elastic Graphics accelerator IDs.

Type: Array of strings

Required: No

### Filter.N

The filters.

- `availability-zone` - The Availability Zone in which the Elastic Graphics accelerator resides.
- `elastic-gpu-health` - The status of the Elastic Graphics accelerator (`OK` | `IMPAIRED`).
- `elastic-gpu-state` - The state of the Elastic Graphics accelerator (`ATTACHED`).
- `elastic-gpu-type` - The type of Elastic Graphics accelerator; for example, `eg1.medium`.
- `instance-id` - The ID of the instance to which the Elastic Graphics accelerator is associated.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 5 and 1000.

Type: Integer

Valid Range: Minimum value of 10. Maximum value of 1000.

Required: No

### NextToken

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **elasticGpuSet**

Information about the Elastic Graphics accelerators.

Type: Array of [ElasticGpus \(p. 1512\)](#) objects

### **maxResults**

The total number of items to return. If the total number of items available is more than the value specified in max-items then a Next-Token will be provided in the output that you can use to resume pagination.

Type: Integer

### **nextToken**

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of the Elastic Graphics accelerators associated with your instances.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeElasticGpus  
&AUTHPARAMS
```

### Sample Response

```
<DescribeElasticGpusResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>450268ba-0e1d-4401-958e-9a3example</requestId>  
<elasticGpuSet>  
<item>  
<elasticGpuId>egpu-0833fd743e7227123</elasticGpuId>  
<availabilityZone>us-east-1a</availabilityZone>  
<elasticGpuType>eg1.small</elasticGpuType>  
<elasticGpuHealth>OK</elasticGpuHealth>  
<elasticGpuState>ATTACHED</elasticGpuState>
```

```
<instanceId>i-1234567890abc1234</instanceId>
</item>
</elasticGpuSet>
</DescribeElasticGpusResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeExportImageTasks

Describes the specified export image tasks or all of your export image tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ExportImageTaskId.N

The IDs of the export image tasks.

Type: Array of strings

Required: No

### Filter.N

Filter tasks using the task-state filter and one of the following values: `active`, `completed`, `deleting`, or `deleted`.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 500.

Required: No

### NextToken

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### exportImageTaskSet

Information about the export image tasks.

Type: Array of [ExportImageTask \(p. 1533\)](#) objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeExportTasks

Describes the specified export instance tasks or all of your export instance tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ExportTaskId.N**

The export task IDs.

Type: Array of strings

Required: No

### **Filter.N**

the filters for the export tasks.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **exportTaskSet**

Information about the export tasks.

Type: Array of [ExportTask \(p. 1535\)](#) objects

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes a single export task.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeExportTasks
```

```
&exportTaskId.1=export-i-1234wxyz  
&AUTHPARAMS
```

## Sample Response

```
<DescribeExportTasksResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
<exportTaskSet>  
  <item>  
    <exportTaskId>export-i-1234wxyz</exportTaskId>  
    <description>Example for docs</description>  
    <state>active</state>  
    <statusMessage>Running</statusMessage>  
    <instanceExport>  
      <instanceId>i-12345678</instanceId>  
      <targetEnvironment>VMWare</targetEnvironment>  
    </instanceExport>  
    <exportToS3>  
      <diskImageFormat>VMDK</diskImageFormat>  
      <containerFormat>OVA</containerFormat>  
      <s3Bucket>my-bucket-for-exported-vm</s3Bucket>  
      <s3Key>my-exports/ export-i-1234wxyz.ova</s3Key>  
    </exportToS3>  
  </item>  
</exportTaskSet>  
</DescribeExportTasksResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFastSnapshotRestores

Describes the state of fast snapshot restores for your snapshots.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters. The possible values are:

- `availability-zone`: The Availability Zone of the snapshot.
- `owner-id`: The ID of the AWS account that enabled fast snapshot restore on the snapshot.
- `snapshot-id`: The ID of the snapshot.
- `state`: The state of fast snapshot restores for the snapshot (`enabling` | `optimizing` | `enabled` | `disabling` | `disabled`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 200.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### fastSnapshotRestoreSet

Information about the state of fast snapshot restores.

Type: Array of [DescribeFastSnapshotRestoreSuccessItem \(p. 1476\)](#) objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFleetHistory

Describes the events for the specified EC2 Fleet during the specified time.

EC2 Fleet events are delayed by up to 30 seconds before they can be described. This ensures that you can query by the last evaluated time and not miss a recorded event. EC2 Fleet events are available for 48 hours.

For more information, see [Monitor fleet events using Amazon EventBridge](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EventType

The type of events to describe. By default, all events are described.

Type: String

Valid Values: `instance-change` | `fleet-change` | `service-error`

Required: No

### FleetId

The ID of the EC2 Fleet.

Type: String

Required: Yes

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

### StartTime

The start date and time for the events, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

### **fleetId**

The ID of the EC Fleet.

Type: String

### **historyRecordSet**

Information about the events in the history of the EC2 Fleet.

Type: Array of [HistoryRecordEntry \(p. 1588\)](#) objects

### **lastEvaluatedTime**

The last date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). All records up to this time were retrieved.

If `nextToken` indicates that there are more results, this value is not present.

Type: Timestamp

### **nextToken**

The token for the next set of results.

Type: String

### **requestId**

The ID of the request.

Type: String

### **startTime**

The start date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFleetInstances

Describes the running instances for the specified EC2 Fleet.

For more information, see [Monitoring your EC2 Fleet in the Amazon EC2 User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `instance-type` - The instance type.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### FleetId

The ID of the EC2 Fleet.

Type: String

Required: Yes

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**activeInstanceSet**

The running instances. This list is refreshed periodically and might be out of date.

Type: Array of [ActiveInstance \(p. 1357\)](#) objects

**fleetId**

The ID of the EC2 Fleet.

Type: String

**nextToken**

The token for the next set of results.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFleets

Describes the specified EC2 Fleets or all of your EC2 Fleets.

For more information, see [Monitoring your EC2 Fleet in the Amazon EC2 User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `activity-status` - The progress of the EC2 Fleet (`error` | `pending-fulfillment` | `pending-termination` | `fulfilled`).
- `excess-capacity-termination-policy` - Indicates whether to terminate running instances if the target capacity is decreased below the current EC2 Fleet size (`true` | `false`).
- `fleet-state` - The state of the EC2 Fleet (`submitted` | `active` | `deleted` | `failed` | `deleted-running` | `deleted-terminating` | `modifying`).
- `replace-unhealthy-instances` - Indicates whether EC2 Fleet should replace unhealthy instances (`true` | `false`).
- `type` - The type of request (`instant` | `request` | `maintain`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### FleetId.N

The ID of the EC2 Fleets.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **fleetSet**

Information about the EC2 Fleets.

Type: Array of [FleetData \(p. 1550\)](#) objects

### **nextToken**

The token for the next set of results.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFlowLogs

Describes one or more flow logs. To view the information in your flow logs (the log streams for the network interfaces), you must use the CloudWatch console or the CloudWatch Logs API.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `deliver-log-status` - The status of the logs delivery (SUCCESS | FAILED).
- `log-destination-type` - The type of destination to which the flow log publishes data. Possible destination types include `cloud-watch-logs` and `s3`.
- `flow-log-id` - The ID of the flow log.
- `log-group-name` - The name of the log group.
- `resource-id` - The ID of the VPC, subnet, or network interface.
- `traffic-type` - The type of traffic (ACCEPT | REJECT | ALL).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### FlowLogId.N

One or more flow log IDs.

Constraint: Maximum of 1000 flow log IDs.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

#### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### flowLogSet

Information about the flow logs.

Type: Array of [FlowLog \(p. 1570\)](#) objects

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your flow logs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFlowLogs  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeFlowLogsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>3cb46f23-099e-4bf0-891c-EXAMPLE</requestId>  
  <flowLogSet>  
    <item>  
      <logDestination>arn:aws:s3:::my-log-bucket/my-logs/</logDestination>  
      <resourceId>vpc-001234183afc7cabc</resourceId>
```

```
<logDestinationType>s3</logDestinationType>
<creationTime>2020-02-04T11:46:13.831Z</creationTime>
<trafficType>ALL</trafficType>
<deliverLogsStatus>SUCCESS</deliverLogsStatus>
<logFormat>${version} ${instance-id} ${interface-id} ${type} ${pkt-srcaddr}
${pkt-dstaddr} ${protocol} ${bytes} ${start} ${end} ${action}</logFormat>
<flowLogStatus>ACTIVE</flowLogStatus>
<flowLogId>fl-1234c5499532dbabc</flowLogId>
<maxAggregationInterval>60</maxAggregationInterval>
<tagSet>
    <item>
        <key>Name</key>
        <value>FlowsForVpcA</value>
    </item>
</tagSet>
</item>
<item>
    <resourceId>vpc-1122e8183afc74455</resourceId>
    <logDestinationType>cloud-watch-logs</logDestinationType>
    <deliverLogsPermissionArn>arn:aws:iam::123456789101:role/flowlogsrole</
deliverLogsPermissionArn>
    <creationTime>2019-07-24T13:11:42.383Z</creationTime>
    <trafficType>ALL</trafficType>
    <deliverLogsStatus>SUCCESS</deliverLogsStatus>
    <logFormat>${version} ${account-id} ${interface-id} ${srcaddr} ${dstaddr}
${srcport} ${dstport} ${protocol} ${packets} ${bytes} ${start} ${end} ${action} ${log-
status}</logFormat>
    <flowLogStatus>ACTIVE</flowLogStatus>
    <logGroupName>FlowLogsForSubnetB</logGroupName>
    <flowLogId>fl-0abc1235983d13123</flowLogId>
    <maxAggregationInterval>600</maxAggregationInterval>
    <tagSet>
        <item>
            <key>Name</key>
            <value>FlowsForVpcB</value>
        </item>
    </tagSet>
</item>
</flowLogSet>
</DescribeFlowLogsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFpgalmageAttribute

Describes the specified attribute of the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The AFI attribute.

Type: String

Valid Values: `description` | `name` | `loadPermission` | `productCodes`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FpgalmageId

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### fpgalmageAttribute

Information about the attribute.

Type: [FpgalmageAttribute \(p. 1578\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the load permissions for the specified AFI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&AUTHPARAMS
```

#### Sample Response

```
<DescribeFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>19106033-3723-481e-8cc4-aedexample</requestId>
  <fpgaImageAttribute>
    <fpgaImageId>afi-0d123e21abcc85abc</fpgaImageId>
    <loadPermissions>
      <item>
        <userId>123456789012</userId>
      </item>
    </loadPermissions>
  </fpgaImageAttribute>
</DescribeFpgaImageAttributeResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeFpgaImages

Describes the Amazon FPGA Images (AFIs) available to you. These include public AFIs, private AFIs that you own, and AFIs owned by other AWS accounts for which you have load permissions.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `create-time` - The creation time of the AFI.
- `fpga-image-id` - The FPGA image identifier (AFI ID).
- `fpga-image-global-id` - The global FPGA image identifier (AGFI ID).
- `name` - The name of the AFI.
- `owner-id` - The AWS account ID of the AFI owner.
- `product-code` - The product code.
- `shell-version` - The version of the AWS Shell that was used to create the bitstream.
- `state` - The state of the AFI (`pending` | `failed` | `available` | `unavailable`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `update-time` - The time of the most recent update.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### Fpgaid.N

The AFI IDs.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**Owner.N**

Filters the AFIs by owner. Specify an AWS account ID, `self` (owner is the sender of the request), or an AWS owner alias (valid values are `amazon` | `aws-marketplace`).

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**fpgaImageSet**

Information about the FPGA images.

Type: Array of [FpgaImage \(p. 1575\)](#) objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes AFIs that are owned by account 123456789012.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeFpgaImages
&Filter.1.Name=owner-id
&Filter.1.Value.1=123456789012
```

&AUTHPARAMS

## Sample Response

```
<DescribeFpgaImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>c984bf72-784e-43b0-be87-d7903example</requestId>
    <fpgaImageSet>
        <item>
            <createTime>2017-12-22T11:43:33.000Z</createTime>
            <description>my-afi</description>
            <fpgaImageGlobalId>agfi-05fabc8e7fcc8abc</fpgaImageGlobalId>
            <fpgaImageId>afi-0feabc187988f4abc</fpgaImageId>
            <public>false</public>
            <name>my-afi</name>
            <ownerId>123456789012</ownerId>
            <pciId>
                <DeviceId>0xf000</DeviceId>
                <SubsystemId>0x1d51</SubsystemId>
                <SubsystemVendorId>0xffff</SubsystemVendorId>
                <VendorId>0x1d0f</VendorId>
            </pciId>
            <shellVersion>0x071417d3</shellVersion>
            <state>
                <code>available</code>
            </state>
            <updateTime>2017-12-22T12:09:14.000Z</updateTime>
        </item>
        <item>
            <createTime>2017-12-22T11:44:54.000Z</createTime>
            <description>my-afi-2</description>
            <fpgaImageGlobalId>agfi-0312327b5e84a0123</fpgaImageGlobalId>
            <fpgaImageId>afi-0d0123214bfc85123</fpgaImageId>
            <public>false</public>
            <name>my-afi-2</name>
            <ownerId>123456789012</ownerId>
            <pciId>
                <DeviceId>0xf000</DeviceId>
                <SubsystemId>0x1d51</SubsystemId>
                <SubsystemVendorId>0xffff</SubsystemVendorId>
                <VendorId>0x1d0f</VendorId>
            </pciId>
            <shellVersion>0x071417d3</shellVersion>
            <state>
                <code>available</code>
            </state>
            <updateTime>2017-12-22T12:10:24.000Z</updateTime>
        </item>
    </fpgaImageSet>
</DescribeFpgaImagesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeHostReservationOfferings

Describes the Dedicated Host reservations that are available to purchase.

The results describe all of the Dedicated Host reservation offerings, including offerings that might not match the instance family and Region of your Dedicated Hosts. When purchasing an offering, ensure that the instance family and Region of the offering matches that of the Dedicated Hosts with which it is to be associated. For more information about supported instance types, see [Dedicated Hosts](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Filter.N

The filters.

- `instance-family` - The instance family of the offering (for example, `m4`).
- `payment-option` - The payment option (`NoUpfront` | `PartialUpfront` | `AllUpfront`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxDuration

This is the maximum duration of the reservation to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 94608000 for three years.

Type: Integer

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 500.

Required: No

### MinDuration

This is the minimum duration of the reservation you'd like to purchase, specified in seconds. Reservations are available in one-year and three-year terms. The number of seconds specified must be the number of seconds in a year (365x24x60x60) times one of the supported durations (1 or 3). For example, specify 31536000 for one year.

Type: Integer

Required: No

### NextToken

The token to use to retrieve the next page of results.

Type: String

Required: No

#### **OfferingId**

The ID of the reservation offering.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **offeringSet**

Information about the offerings.

Type: Array of [HostOffering \(p. 1593\)](#) objects

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes all of the Dedicated Host Reservation offerings.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>d4904fd9-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>  
<offeringSet>
```

```
<item>
  <duration>94608000</duration>
  <upfrontPrice>28396.000</upfrontPrice>
  <paymentOption>AllUpfront</paymentOption>
  <instanceFamily>m4</instanceFamily>
  <offeringId>hro-0875903788203856fg</offeringId>
  <hourlyPrice>0.000</hourlyPrice>
</item>
<item>
  <duration>31536000</duration>
  <upfrontPrice>13603.000</upfrontPrice>
  <paymentOption>AllUpfront</paymentOption>
  <instanceFamily>r3</instanceFamily>
  <offeringId>hro-08ddf1lb8990hhkmp</offeringId>
  <hourlyPrice>0.000</hourlyPrice>
</item>
<item>
  <duration>94608000</duration>
  <upfrontPrice>57382.000</upfrontPrice>
  <paymentOption>PartialUpfront</paymentOption>
  <instanceFamily>x1</instanceFamily>
  <offeringId>hro-0875903788207657fg</offeringId>
  <hourlyPrice>2.183</hourlyPrice>
</item>
</offeringSet>
</DescribeHostReservationOfferingsResult>
```

## Example 2

This example describes all of the Dedicated Host reservation offerings, with a maximum duration of three years, that are available to purchase.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservationOfferings
&MaxDuration=94608000
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostReservationOfferingsResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>d4905678-84c3-4ea5-gtyk-a9cc3EXAMPLE</requestId>
<offeringSet>
  <item>
    <duration>31536000</duration>
    <upfrontPrice>4879.000</upfrontPrice>
    <paymentOption>PartialUpfront</paymentOption>
    <instanceFamily>c3</instanceFamily>
    <offeringId>hro-7890903788203856fg</offeringId>
    <hourlyPrice>0.557</hourlyPrice>
  </item>
  <item>
    <duration>94608000</duration>
    <upfrontPrice>18892.000</upfrontPrice>
    <paymentOption>AllUpfront</paymentOption>
    <instanceFamily>c4</instanceFamily>
    <offeringId>hro-1092903788203856fg</offeringId>
    <hourlyPrice>0.000</hourlyPrice>
  </item>
</offeringSet>
</DescribeHostReservationOfferingsResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeHostReservations

Describes reservations that are associated with Dedicated Hosts in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Filter.N**

The filters.

- `instance-family` - The instance family (for example, `m4`).
- `payment-option` - The payment option (`NoUpfront` | `PartialUpfront` | `AllUpfront`).
- `state` - The state of the reservation (`payment-pending` | `payment-failed` | `active` | `retired`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **HostReservationIdSet.N**

The host reservation IDs.

Type: Array of strings

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Required: No

### **NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### hostReservationSet

Details about the reservation's configuration.

Type: Array of [HostReservation \(p. 1596\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of the Dedicated Host reservations in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHostReservations  
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostReservationsResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>d4904fd9-84c3-4ea5-gtyk-a9983EXAMPLE</requestId>  
<hostReservationSet>  
    <item>  
        <upfrontPrice>0.000</upfrontPrice>  
        <count>2</count>  
        <start>2016-08-01T15:43:15Z</start>  
        <instanceFamily>m4</instanceFamily>  
        <offeringId>hro-0875903778903856fg</offeringId>  
        <duration>31536000</duration>  
        <paymentOption>NoUpfront</paymentOption>  
        <end>2017-08-01T15:43:15Z</end>  
        <hostReservationId>hr-0875903778903856fg</hostReservationId>  
        <state>active</state>  
        <hourlyPrice>1.990</hourlyPrice>  
        <hostIdSet>  
            <item>h-0897086hfkttn</item>  
            <item>h-0891346hytrtn</item>  
        </hostIdSet>  
    </item>  
</hostReservationSet>  
</DescribeHostReservationsResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeHosts

Describes the specified Dedicated Hosts or all your Dedicated Hosts.

The results describe only the Dedicated Hosts in the Region you're currently using. All listed instances consume capacity on your Dedicated Host. Dedicated Hosts that have recently been released are listed with the state `released`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Filter.N**

The filters.

- `auto-placement` - Whether auto-placement is enabled or disabled (`on` | `off`).
- `availability-zone` - The Availability Zone of the host.
- `client-token` - The idempotency token that you provided when you allocated the host.
- `host-reservation-id` - The ID of the reservation assigned to this host.
- `instance-type` - The instance type size that the Dedicated Host is configured to support.
- `state` - The allocation state of the Dedicated Host (`available` | `under-assessment` | `permanent-failure` | `released` | `released-permanent-failure`).
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **HostId.N**

The IDs of the Dedicated Hosts. The IDs are used for targeted instance launches.

Type: Array of strings

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

You cannot specify this parameter and the host IDs parameter in the same request.

Type: Integer

Required: No

### **NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### hostSet

Information about the Dedicated Hosts.

Type: Array of [Host \(p. 1589\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the Dedicated Hosts in your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHosts  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
<hostSet>  
<item>  
<availableCapacity>  
<availableVCpus>96</availableVCpus>  
<availableInstanceCapacity>  
<item>  
<availableCapacity>48</availableCapacity>  
<totalCapacity>48</totalCapacity>  
<instanceType>m5.large</instanceType>  
</item>  
</availableInstanceCapacity>  
</availableCapacity>  
<instances/>  
<autoPlacement>off</autoPlacement>  
<hostRecovery>off</hostRecovery>
```

```
<hostId>h-05abcd96ee9ca123</hostId>
<allocationTime>2018-01-23T12:33:31.692Z</allocationTime>
<state>available</state>
<hostProperties>
    <totalVCpus>96</totalVCpus>
    <cores>48</cores>
    <sockets>2</sockets>
    <instanceType>m5.large</instanceType>
</hostProperties>
<availabilityZone>us-east-1a</availabilityZone>
</item>
</hostSet>
</DescribeHostsResponse>
```

## Example 2

This example describes a released Dedicated Host in your account using the `state` filter to show only hosts with a state of `released`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeHosts
&Filter.1.Name=state
&Filter.1.Value=released
&AUTHPARAMS
```

### Sample Response

```
<DescribeHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>d4904fd9-82c2-4ea5-adfe-a9983EXAMPLE</requestId>
<hostSet>
    <item>
        <releaseTime>2018-04-06T14:48:40.068Z</releaseTime>
        <instances/>
        <autoPlacement>on</autoPlacement>
        <hostRecovery>off</hostRecovery>
        <hostId>h-0abcd595047722123</hostId>
        <state>released</state>
        <allocationTime>2018-01-23T12:23:01.501Z</allocationTime>
        <hostProperties>
            <totalVCpus>96</totalVCpus>
            <cores>48</cores>
            <sockets>2</sockets>
            <instanceType>m5.large</instanceType>
        </hostProperties>
        <availabilityZone>us-east-1a</availabilityZone>
    </item>
</hostSet>
</DescribeHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeIamInstanceProfileAssociations

Describes your IAM instance profile associations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId.N**

The IAM instance profile associations.

Type: Array of strings

Required: No

### **Filter.N**

The filters.

- `instance-id` - The ID of the instance.
- `state` - The state of the association (`associating` | `associated` | `disassociating`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **iamInstanceProfileAssociationSet**

Information about the IAM instance profile associations.

Type: Array of [IamInstanceProfileAssociation \(p. 1600\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your IAM instance profile associations.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIamInstanceProfileAssociations  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeIamInstanceProfileAssociationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>84c2d2a6-12dc-491f-a9ee-example</requestId>  
    <iامInstanceProfileAssociations>  
        <item>  
            <associationId>iip-assoc-08049da59357d598c</associationId>  
            <iامInstanceProfile>  
                <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>  
                <id>AIPAJEDNCAA64SSD265D6</id>  
            </iامInstanceProfile>  
            <instanceId>i-1234567890abcdef0</instanceId>  
            <state>associated</state>  
        </item>  
    </iamInstanceProfileAssociations>  
</DescribeIamInstanceProfileAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

## DescribeldentityIdFormat

Describes the ID format settings for resources for the specified IAM user, IAM role, or root user. For example, you can view the resource types that are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types. For more information, see [Resource IDs](#) in the *Amazon Elastic Compute Cloud User Guide*.

The following resource types support longer IDs: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

These settings apply to the principal specified in the request. They do not apply to the principal that makes the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### PrincipalArn

The ARN of the principal, which can be an IAM role, IAM user, or the root user.

Type: String

Required: Yes

### Resource

The type of resource: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### statusSet

Information about the ID format for the resources.

Type: Array of [IdFormat \(p. 1603\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the ID format for the IAM role 'EC2Role'.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIdentityIdFormat
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS
```

#### Sample Response

```
<DescribeIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<statusSet>
<item>
<useLongIds>true</useLongIds>
<deadline>2016-12-15T12:00:00Z</deadline>
<resource>reservation</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<deadline>2016-12-15T12:00:00Z</deadline>
<resource>instance</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<deadline>2016-12-15T12:00:00Z</deadline>
<resource>volume</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<deadline>2016-12-15T12:00:00Z</deadline>
<resource>snapshot</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<resource>network-interface-attachment</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<resource>network-interface</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<resource>elastic-ip-allocation</resource>
</item>
<item>
<useLongIds>true</useLongIds>
<resource>elastic-ip-association</resource>
</item>
```

```
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>vpc</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>subnet</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>route-table</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>route-table-association</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>network-acl</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>network-acl-association</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>dhcp-options</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>internet-gateway</resource>
</item>
<item>
    <useLongIds>false</useLongIds>
    <resource>vpc-cidr-block-association</resource>
</item>
<item>
    <useLongIds>false</useLongIds>
    <resource>vpc-ipv6-cidr-block-association</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>subnet-ipv6-cidr-block-association</resource>
</item>
<item>
    <useLongIds>false</useLongIds>
    <resource>vpc-peering-connection</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>security-group</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>flow-log</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>customer-gateway</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>vpc-endpoint</resource>
</item>
<item>
```

```
<useLongIds>true</useLongIds>
<resource>vpn-connection</resource>
</item>
<item>
    <useLongIds>true</useLongIds>
    <resource>vpn-gateway</resource>
</item>
</statusSet>
</DescribeIdentityIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribeldFormat

Describes the ID format settings for your resources on a per-Region basis, for example, to view which resource types are enabled for longer IDs. This request only returns information about resource types whose ID formats can be modified; it does not return information about other resource types.

The following resource types support longer IDs: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

These settings apply to the IAM user who makes the request; they do not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user, unless they explicitly override the settings by running the [ModifyIdFormat \(p. 1088\)](#) command. Resources created with longer IDs are visible to all IAM users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Resource

The type of resource: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### statusSet

Information about the ID format for the resource.

Type: Array of [IdFormat \(p. 1603\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the ID format for all resources that support longer IDs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeIdFormat  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <statusSet>  
    <item>  
      <resource>reservation</resource>  
      <useLongIds>true</useLongIds>  
      <deadline>2016-12-15T12:00:00.000Z</deadline>  
    </item>  
    <item>  
      <resource>instance</resource>  
      <useLongIds>true</useLongIds>  
      <deadline>2016-12-15T12:00:00.000Z</deadline>  
    </item>  
    <item>  
      <resource>volume</resource>  
      <useLongIds>true</useLongIds>  
      <deadline>2016-12-15T12:00:00.000Z</deadline>  
    </item>  
    <item>  
      <resource>snapshot</resource>  
      <useLongIds>true</useLongIds>  
      <deadline>2016-12-15T12:00:00.000Z</deadline>  
    </item>  
    <item>  
      <resource>network-interface-attachment</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>network-interface</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>elastic-ip-allocation</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>elastic-ip-association</resource>  
      <useLongIds>true</useLongIds>  
    </item>  
    <item>  
      <resource>vpc</resource>  
      <useLongIds>true</useLongIds>  
    </item>
```

```
</item>
<item>
    <resource>subnet</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>dhcp-options</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>internet-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-ipv6-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>subnet-ipv6-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-peering-connection</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>security-group</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>flow-log</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>customer-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-endpoint</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpn-connection</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
```

```
<resource>vpn-gateway</resource>
<useLongIds>true</useLongIds>
</item>
</statusSet>
</DescribeIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeImageAttribute

Describes the specified attribute of the specified AMI. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The AMI attribute.

**Note:** The `blockDeviceMapping` attribute is deprecated. Using this attribute returns the `Client.AuthFailure` error. To get information about the block device mappings for an AMI, use the [DescribeImages \(p. 597\)](#) action.

Type: String

Valid Values: `description` | `kernel` | `ramdisk` | `launchPermission` | `productCodes` | `blockDeviceMapping` | `sriovNetSupport` | `bootMode`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### blockDeviceMapping

The block device mapping entries.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

### bootMode

Describes a value for a resource attribute that is a String.

Type: [AttributeValue \(p. 1382\)](#) object

### description

A description for the AMI.

Type: [AttributeValue \(p. 1382\)](#) object

**imageId**

The ID of the AMI.

Type: String

**kernel**

The kernel ID.

Type: [AttributeValue \(p. 1382\)](#) object

**launchPermission**

The launch permissions.

Type: Array of [LaunchPermission \(p. 1728\)](#) objects

**productCodes**

The product codes.

Type: Array of [ProductCode \(p. 1898\)](#) objects

**ramdisk**

The RAM disk ID.

Type: [AttributeValue \(p. 1382\)](#) object

**requestId**

The ID of the request.

Type: String

**sriovNetSupport**

Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: [AttributeValue \(p. 1382\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example lists the launch permissions for the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

## Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-61a54008</imageId>
  <launchPermission>
    <item>
      <group>all</group>
    </item>
    <item>
      <userId>495219933132</userId>
    </item>
  </launchPermission>
</DescribeImageAttributeResponse>
```

## Example 2

This example lists the product codes for the specified AMI.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImageAttribute
&ImageId=ami-2bb65342
&Attribute=productCodes
&AUTHPARAMS
```

## Sample Response

```
<DescribeImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-2bb65342</imageId>
  <productCodes>
    <item>
      <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
      <type>marketplace</type>
    </item>
  </productCodes>
</DescribeImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribelImages

Describes the specified images (AMIs, AKIs, and ARIs) available to you or all of the images available to you.

The images available to you include public images, private images that you own, and private images owned by other AWS accounts for which you have explicit launch permissions.

Recently deregistered images appear in the returned results for a short interval and then return empty results. After all instances that reference a deregistered AMI are terminated, specifying the ID of the image will eventually return an error indicating that the AMI ID cannot be found.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ExecutableBy.N

Scopes the images by users with explicit launch permissions. Specify an AWS account ID, `self` (the sender of the request), or `all` (public AMIs).

- If you specify an AWS account ID that is not your own, only AMIs shared with that specific AWS account ID are returned. However, AMIs that are shared with the account's organization or organizational unit (OU) are not returned.
- If you specify `self` or your own AWS account ID, AMIs shared with your account are returned. In addition, AMIs that are shared with the organization or OU of which you are member are also returned.
- If you specify `all`, all public AMIs are returned.

Type: Array of strings

Required: No

### Filter.N

The filters.

- `architecture` - The image architecture (`i386` | `x86_64` | `arm64`).
- `block-device-mapping.delete-on-termination` - A Boolean value that indicates whether the Amazon EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name specified in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.snapshot-id` - The ID of the snapshot used for the Amazon EBS volume.
- `block-device-mapping.volume-size` - The volume size of the Amazon EBS volume, in GiB.
- `block-device-mapping.volume-type` - The volume type of the Amazon EBS volume (`io1` | `io2` | `gp2` | `gp3` | `sc1` | `st1` | `standard`).

- `block-device-mapping.encrypted` - A Boolean that indicates whether the Amazon EBS volume is encrypted.
- `description` - The description of the image (provided during image creation).
- `ena-support` - A Boolean that indicates whether enhanced networking with ENA is enabled.
- `hypervisor` - The hypervisor type (`ovm` | `xen`).
- `image-id` - The ID of the image.
- `image-type` - The image type (`machine` | `kernel` | `ramdisk`).
- `is-public` - A Boolean that indicates whether the image is public.
- `kernel-id` - The kernel ID.
- `manifest-location` - The location of the image manifest.
- `name` - The name of the AMI (provided during image creation).
- `owner-alias` - The owner alias (`amazon` | `aws-marketplace`). The valid aliases are defined in an Amazon-maintained list. This is not the AWS account alias that can be set using the IAM console. We recommend that you use the **Owner** request parameter instead of this filter.
- `owner-id` - The AWS account ID of the owner. We recommend that you use the **Owner** request parameter instead of this filter.
- `platform` - The platform. To only list Windows-based AMIs, use `windows`.
- `product-code` - The product code.
- `product-code.type` - The type of the product code (`marketplace`).
- `ramdisk-id` - The RAM disk ID.
- `root-device-name` - The device name of the root device volume (for example, `/dev/sda1`).
- `root-device-type` - The type of the root device volume (`ebs` | `instance-store`).
- `state` - The state of the image (`available` | `pending` | `failed`).
- `state-reason-code` - The reason code for the state change.
- `state-reason-message` - The message for the state change.
- `sriov-net-support` - A value of `simple` indicates that enhanced networking with the Intel 82599 VF interface is enabled.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `virtualization-type` - The virtualization type (`paravirtual` | `hvm`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### ImageId.N

The image IDs.

Default: Describes all images available to you.

Type: Array of strings

Required: No

#### IncludeDeprecated

If `true`, all deprecated AMIs are included in the response. If `false`, no deprecated AMIs are included in the response. If no value is specified, the default value is `false`.

**Note**

If you are the AMI owner, all deprecated AMIs appear in the response regardless of the value (true or false) that you set for this parameter.

Type: Boolean

Required: No

**Owner.N**

Scopes the results to images with the specified owners. You can specify a combination of AWS account IDs, self, amazon, and aws-marketplace. If you omit this parameter, the results include all images for which you have launch permissions, regardless of ownership.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**imagesSet**

Information about the images.

Type: Array of [Image \(p. 1606\)](#) objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&ImageId.1=ami-1234567890EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<imagesSet>
```

```
<item>
  <virtualizationType>hvm</virtualizationType>
  <description>Provided by Red Hat, Inc.</description>
  <platformDetails>Red Hat Enterprise Linux</platformDetails>
  <enaSupport>true</enaSupport>
  <hypervisor>xen</hypervisor>
  <state>available</state>
  <sriovNetSupport>simple</sriovNetSupport>
  <imageId>ami-1234567890EXAMPLE</imageId>
  <usageOperation>RunInstances:0010</usageOperation>
  <blockDeviceMapping>
    <item>
      <deviceName>/dev/sda1</deviceName>
      <ebs>
        <snapshotId>snap-1234567890abcdef0</snapshotId>
        <volumeSize>15</volumeSize>
        <deleteOnTermination>false</deleteOnTermination>
        <volumeType>standard</volumeType>
      </ebs>
    </item>
  </blockDeviceMapping>
  <architecture>x86_64</architecture>
  <imageLocation>123456789012/RHEL-8.0.0_HVM-20190618-x86_64-1-Hourly2-GP2</imageLocation>
  <rootDeviceType>ebs</rootDeviceType>
  <ownerId>123456789012</ownerId>
  <rootDeviceName>/dev/sda1</rootDeviceName>
  <creationDate>2019-05-10T13:17:12.000Z</creationDate>
  <public>true</public>
  <imageType>machine</imageType>
  <name>RHEL-8.0.0_HVM-20190618-x86_64-1-Hourly2-GP2</name>
  <tagSet/>
</item>
</imagesSet>
</DescribeImagesResponse>
```

## Example 2

This example filters the response to include only public Windows images with an `x86_64` architecture.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Filter.1.Name=is-public
&Filter.1.Value.1=true
&Filter.2.Name=architecture
&Filter.2.Value.1=x86_64
&Filter.3.Name=platform
&Filter.3.Value.1=windows
&AUTHPARAMS
```

### Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imagesSet>
    <item>
      <imageId>ami-1a2b3c4d</imageId>
      <imageLocation>ec2-public-windows-images/Server2003r2-x86_64-Win-
v1.07.manifest.xml</imageLocation>
      <imageState>available</imageState>
      <imageOwnerId>123456789012</imageOwnerId>
```

```
<isPublic>true</isPublic>
<architecture>x86_64</architecture>
<imageType>machine</imageType>
<platform>windows</platform>
<imageOwnerAlias>amazon</imageOwnerAlias>
<rootDeviceType>instance-store</rootDeviceType>
<blockDeviceMapping/>
<virtualizationType>hvm</virtualizationType>
<tagSet/>
<hypervisor>xen</hypervisor>
</item>
...
</imagesSet>
</DescribeImagesResponse>
```

## Example 3

This example returns the results to display images where the owner is aws-marketplace.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeImages
&Owner.1=aws-marketplace
&AUTHPARAMS
```

### Sample Response

```
<DescribeImagesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>4a4a27a2-2e7c-475d-b35b-ca822EXAMPLE</requestId>
    <imagesSet>
        <item>
            <imageId>ami-1a2b3c4d</imageId>
            <imageLocation>aws-marketplace/example-marketplace-amzn-ami.1</imageLocation>
            <imageState>available</imageState>
            <imageOwnerId>123456789012</imageOwnerId>
            <isPublic>true</isPublic>
            <productCodes>
                <item>
                    <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
                    <type>marketplace</type>
                </item>
            </productCodes>
            <architecture>i386</architecture>
            <imageType>machine</imageType>
            <kernelId>aki-1a2b3c4d</kernelId>
            <imageOwnerAlias>aws-marketplace</imageOwnerAlias>
            <name>example-marketplace-amzn-ami.1</name>
            <description>Amazon Linux AMI i386 EBS</description>
            <rootDeviceType>ebs</rootDeviceType>
            <rootDeviceName>/dev/sda1</rootDeviceName>
            <blockDeviceMapping>
                <item>
                    <deviceName>/dev/sda1</deviceName>
                    <ebs>
                        <snapshotId>snap-1234567890abcdef0</snapshotId>
                        <volumeSize>8</volumeSize>
                        <deleteOnTermination>true</deleteOnTermination>
                    </ebs>
                </item>
            </blockDeviceMapping>
            <virtualizationType>paravirtual</virtualizationType>
            <hypervisor>xen</hypervisor>
        </item>
    </imagesSet>
</DescribeImagesResponse>
```

```
</item>
...
</imagesSet>
</DescribeImagesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeImportImageTasks

Displays details about an import virtual machine or import snapshot tasks that are already created.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filters.N

Filter tasks using the task-state filter and one of the following values: `active`, `completed`, `deleting`, or `deleted`.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### ImportTaskId.N

The IDs of the import image tasks.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call.

Type: Integer

Required: No

### NextToken

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### importImageTaskSet

A list of zero or more import image tasks that are currently active or were completed or canceled in the previous 7 days.

Type: Array of [ImportImageTask \(p. 1615\)](#) objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeImportSnapshotTasks

Describes your import snapshot tasks.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filters.N

The filters.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### ImportTaskId.N

A list of import snapshot task IDs.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

A token that indicates the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### importSnapshotTaskSet

A list of zero or more import snapshot tasks that are currently active or were completed or canceled in the previous 7 days.

Type: Array of [ImportSnapshotTask \(p. 1625\)](#) objects

**nextToken**

The token to use to get the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceAttribute

Describes the specified attribute of the specified instance. You can specify only one attribute at a time. Valid attribute values are: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport`

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The instance attribute.

Note: The `enaSupport` attribute is not supported at this time.

Type: String

Valid Values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport` | `enaSupport` | `enclaveOptions`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### blockDeviceMapping

The block device mapping of the instance.

Type: Array of [InstanceBlockDeviceMapping \(p. 1638\)](#) objects

### disableApiTermination

If the value is `true`, you can't terminate the instance through the Amazon EC2 console, CLI, or API; otherwise, you can.

Type: [AttributeValue \(p. 1381\)](#) object

**ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O.

Type: [AttributeValue \(p. 1381\)](#) object

**enaSupport**

Indicates whether enhanced networking with ENA is enabled.

Type: [AttributeValue \(p. 1381\)](#) object

**enclaveOptions**

To enable the instance for AWS Nitro Enclaves, set this parameter to `true`; otherwise, set it to `false`.

Type: [EnclaveOptions \(p. 1523\)](#) object

**groupSet**

The security groups associated with the instance.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

**instanceId**

The ID of the instance.

Type: String

**instanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: [AttributeValue \(p. 1382\)](#) object

**instanceType**

The instance type.

Type: [AttributeValue \(p. 1382\)](#) object

**kernel**

The kernel ID.

Type: [AttributeValue \(p. 1382\)](#) object

**productCodes**

A list of product codes.

Type: Array of [ProductCode \(p. 1898\)](#) objects

**ramdisk**

The RAM disk ID.

Type: [AttributeValue \(p. 1382\)](#) object

**requestId**

The ID of the request.

Type: String

**rootDeviceName**

The device name of the root device volume (for example, /dev/sda1).

Type: [AttributeValue \(p. 1382\)](#) object

**sourceDestCheck**

Enable or disable source/destination checks, which ensure that the instance is either the source or the destination of any traffic that it receives. If the value is true, source/destination checks are enabled; otherwise, they are disabled. The default value is true. You must disable source/destination checks if the instance runs services such as network address translation, routing, or firewalls.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

**sriovNetSupport**

Indicates whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: [AttributeValue \(p. 1382\)](#) object

**userData**

The user data.

Type: [AttributeValue \(p. 1382\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example lists the instance type of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=instanceType
&AUTHPARAMS
```

#### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instanceId>i-1234567890abcdef0</instanceId>
<instanceType>
  <value>t1.micro</value>
</instanceType>
</DescribeInstanceAttributeResponse>
```

## Example 2

This example lists the current value of the `InstanceInitiatedShutdownBehavior` attribute for the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=instanceInitiatedShutdownBehavior
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instanceId>i-1234567890abcdef0</instanceId>
<instanceInitiatedShutdownBehavior>
<value>stop</value>
</instanceInitiatedShutdownBehavior>
</DescribeInstanceAttributeResponse>
```

## Example 3

This example lists the current value of the `DisableApiTermination` attribute for the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=disableApiTermination
&AUTHPARAMS
```

### Sample Response

```
<DescribeInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instanceId>i-1234567890abcdef0</instanceId>
<disableApiTermination>
<value>false</value>
</disableApiTermination>
</DescribeInstanceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceCreditSpecifications

Describes the credit option for CPU usage of the specified burstable performance instances. The credit options are **standard** and **unlimited**.

If you do not specify an instance ID, Amazon EC2 returns burstable performance instances with the **unlimited** credit option, as well as instances that were previously configured as T2, T3, and T3a with the **unlimited** credit option. For example, if you resize a T2 instance, while it is configured as **unlimited**, to an M4 instance, Amazon EC2 returns the M4 instance.

If you specify one or more instance IDs, Amazon EC2 returns the credit option (**standard** or **unlimited**) of those instances. If you specify an instance ID that is not valid, such as an instance that is not a burstable performance instance, an error is returned.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

If an Availability Zone is experiencing a service disruption and you specify instance IDs in the affected zone, or do not specify any instance IDs at all, the call fails. If you specify only instance IDs in an unaffected zone, the call works normally.

For more information, see [Burstable performance instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `instance-id` - The ID of the instance.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InstanceId.N

The instance IDs.

Default: Describes all your instances.

Constraints: Maximum 1000 explicitly specified instance IDs.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 5 and 1000. You cannot specify this parameter and the `instanceIds` parameter in the same call.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### instanceCreditSpecificationSet

Information about the credit option for CPU usage of an instance.

Type: Array of [InstanceCreditSpecification \(p. 1642\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This request describes the current credit option for CPU usage of the specified instance.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstanceCreditSpecifications
&InstanceId.1=i-1234567890abcdef0
```

&AUTHPARAMS

## Sample Response

```
<DescribeInstanceCreditSpecificationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1b234b5c-d6ef-7gh8-90i1-j2345678901</requestId>
  <instanceCreditSpecificationSet>
    <item>
      <cpuCredits>unlimited</cpuCredits>
      <instanceId>i-1234567890abcdef0</instanceId>
    </item>
  </instanceCreditSpecificationSet>
</DescribeInstanceCreditSpecificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceEventNotificationAttributes

Describes the tag keys that are registered to appear in scheduled event notifications for resources in the current Region.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### instanceTagAttribute

Information about the registered tag keys.

Type: [InstanceTagNotificationAttribute \(p. 1698\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# DescribeInstanceEventWindows

Describes the specified event windows or all event windows.

If you specify event window IDs, the output includes information for only the specified event windows. If you specify filters, the output includes information for only those event windows that meet the filter criteria. If you do not specify event windows IDs or filters, the output includes information for all event windows, which can affect performance. We recommend that you use pagination to ensure that the operation returns quickly and successfully.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `dedicated-host-id` - The event windows associated with the specified Dedicated Host ID.
- `event-window-name` - The event windows associated with the specified names.
- `instance-id` - The event windows associated with the specified instance ID.
- `instance-tag` - The event windows associated with the specified tag and value.
- `instance-tag-key` - The event windows associated with the specified tag key, regardless of the value.
- `instance-tag-value` - The event windows associated with the specified tag value, regardless of the key.
- `tag:<key>` - The key/value combination of a tag assigned to the event window. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `CMX`, specify `tag:Owner` for the filter name and `CMX` for the filter value.
- `tag-key` - The key of a tag assigned to the event window. Use this filter to find all event windows that have a tag with a specific key, regardless of the tag value.
- `tag-value` - The value of a tag assigned to the event window. Use this filter to find all event windows that have a tag with a specific value, regardless of the tag key.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InstanceEventWindowId.N

The IDs of the event windows.

Type: Array of strings

Required: No

#### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 20 and 500. You cannot specify this parameter and the event window IDs parameter in the same call.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 500.

Required: No

#### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **instanceEventWindowSet**

Information about the event windows.

Type: Array of [InstanceEventWindow \(p. 1644\)](#) objects

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstances

Describes the specified instances or all instances.

If you specify instance IDs, the output includes information for only the specified instances. If you specify filters, the output includes information for only those instances that meet the filter criteria. If you do not specify instance IDs or filters, the output includes information for all instances, which can affect performance. We recommend that you use pagination to ensure that the operation returns quickly and successfully.

If you specify an instance ID that is not valid, an error is returned. If you specify an instance that you do not own, it is not included in the output.

Recently terminated instances might appear in the returned results. This interval is usually less than one hour.

If you describe instances in the rare case where an Availability Zone is experiencing a service disruption and you specify instance IDs that are in the affected zone, or do not specify any instance IDs at all, the call fails. If you describe instances and specify only instance IDs that are in an unaffected zone, the call works normally.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `affinity` - The affinity setting for an instance running on a Dedicated Host (`default` | `host`).
- `architecture` - The instance architecture (`i386` | `x86_64` | `arm64`).
- `availability-zone` - The Availability Zone of the instance.
- `block-device-mapping.attach-time` - The attach time for an EBS volume mapped to the instance, for example, `2010-09-15T17:15:20.000Z`.
- `block-device-mapping.delete-on-termination` - A Boolean that indicates whether the EBS volume is deleted on instance termination.
- `block-device-mapping.device-name` - The device name specified in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `block-device-mapping.status` - The status for the EBS volume (`attaching` | `attached` | `detaching` | `detached`).
- `block-device-mapping.volume-id` - The volume ID of the EBS volume.
- `client-token` - The idempotency token you provided when you launched the instance.
- `dns-name` - The public DNS name of the instance.
- `group-id` - The ID of the security group for the instance. EC2-Classic only.

- `group-name` - The name of the security group for the instance. EC2-Classic only.
- `hibernation-options.configured` - A Boolean that indicates whether the instance is enabled for hibernation. A value of `true` means that the instance is enabled for hibernation.
- `host-id` - The ID of the Dedicated Host on which the instance is running, if applicable.
- `hypervisor` - The hypervisor type of the instance (`ovm` | `xen`). The value `xen` is used for both Xen and Nitro hypervisors.
- `iam-instance-profile.arn` - The instance profile associated with the instance. Specified as an ARN.
- `image-id` - The ID of the image used to launch the instance.
- `instance-id` - The ID of the instance.
- `instance-lifecycle` - Indicates whether this is a Spot Instance or a Scheduled Instance (`spot` | `scheduled`).
- `instance-state-code` - The state of the instance, as a 16-bit unsigned integer. The high byte is used for internal purposes and should be ignored. The low byte is set based on the state represented. The valid values are: 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-type` - The type of instance (for example, `t2.micro`).
- `instance.group-id` - The ID of the security group for the instance.
- `instance.group-name` - The name of the security group for the instance.
- `ip-address` - The public IPv4 address of the instance.
- `kernel-id` - The kernel ID.
- `key-name` - The name of the key pair used when the instance was launched.
- `launch-index` - When launching multiple instances, this is the index for the instance in the launch group (for example, 0, 1, 2, and so on).
- `launch-time` - The time when the instance was launched, in the ISO 8601 format in the UTC time zone (YYYY-MM-DDThh:mm:ss.sssZ), for example, 2021-09-29T11:04:43.305Z. You can use a wildcard (\*), for example, 2021-09-29T\*, which matches an entire day.
- `metadata-options.http-tokens` - The metadata request authorization state (`optional` | `required`)
- `metadata-options.http-put-response-hop-limit` - The http metadata request put response hop limit (integer, possible values 1 to 64)
- `metadata-options.http-endpoint` - Enable or disable metadata access on http endpoint (`enabled` | `disabled`)
- `monitoring-state` - Indicates whether detailed monitoring is enabled (`disabled` | `enabled`).
- `network-interface.addresses.private-ip-address` - The private IPv4 address associated with the network interface.
- `network-interface.addresses.primary` - Specifies whether the IPv4 address of the network interface is the primary private IPv4 address.
- `network-interface.addresses.association.public-ip` - The ID of the association of an Elastic IP address (IPv4) with a network interface.
- `network-interface.addresses.association.ip-owner-id` - The owner ID of the private IPv4 address associated with the network interface.
- `network-interface.association.public-ip` - The address of the Elastic IP address (IPv4) bound to the network interface.
- `network-interface.association.ip-owner-id` - The owner of the Elastic IP address (IPv4) associated with the network interface.
- `network-interface.association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address (IPv4) for your network interface.

- `network-interface.association.association-id` - The association ID returned when the network interface was associated with an IPv4 address.
- `network-interface.attachment.attachment-id` - The ID of the interface attachment.
- `network-interface.attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `network-interface.attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `network-interface.attachment.device-index` - The device index to which the network interface is attached.
- `network-interface.attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `network-interface.attachment.attach-time` - The time that the network interface was attached to an instance.
- `network-interface.attachment.delete-on-termination` - Specifies whether the attachment is deleted when an instance is terminated.
- `network-interface.availability-zone` - The Availability Zone for the network interface.
- `network-interface.description` - The description of the network interface.
- `network-interface.group-id` - The ID of a security group associated with the network interface.
- `network-interface.group-name` - The name of a security group associated with the network interface.
- `network-interface.ipv6-addresses.ipv6-address` - The IPv6 address associated with the network interface.
- `network-interface.mac-address` - The MAC address of the network interface.
- `network-interface.network-interface-id` - The ID of the network interface.
- `network-interface.owner-id` - The ID of the owner of the network interface.
- `network-interface.private-dns-name` - The private DNS name of the network interface.
- `network-interface.requester-id` - The requester ID for the network interface.
- `network-interface.requester-managed` - Indicates whether the network interface is being managed by AWS.
- `network-interface.status` - The status of the network interface (`available`) | `in-use`).
- `network-interface.source-dest-check` - Whether the network interface performs source/destination checking. A value of `true` means that checking is enabled, and `false` means that checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.
- `network-interface.subnet-id` - The ID of the subnet for the network interface.
- `network-interface.vpc-id` - The ID of the VPC for the network interface.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The AWS account ID of the instance owner.
- `placement-group-name` - The name of the placement group for the instance.
- `placement-partition-number` - The partition in which the instance is located.
- `platform` - The platform. To list only Windows instances, use `windows`.
- `private-dns-name` - The private IPv4 DNS name of the instance.
- `private-ip-address` - The private IPv4 address of the instance.
- `product-code` - The product code associated with the AMI used to launch the instance.
- `product-code.type` - The type of product code (`devpay` | `marketplace`).
- `ramdisk-id` - The RAM disk ID.

- **reason** - The reason for the current state of the instance (for example, shows "User Initiated [date]" when you stop or terminate the instance). Similar to the state-reason-code filter.
- **requester-id** - The ID of the entity that launched the instance on your behalf (for example, AWS Management Console, Auto Scaling, and so on).
- **reservation-id** - The ID of the instance's reservation. A reservation ID is created any time you launch an instance. A reservation ID has a one-to-one relationship with an instance launch request, but can be associated with more than one instance if you launch multiple instances using the same launch request. For example, if you launch one instance, you get one reservation ID. If you launch ten instances using the same launch request, you also get one reservation ID.
- **root-device-name** - The device name of the root device volume (for example, /dev/sda1).
- **root-device-type** - The type of the root device volume (ebs | instance-store).
- **source-dest-check** - Indicates whether the instance performs source/destination checking. A value of true means that checking is enabled, and false means that checking is disabled. The value must be false for the instance to perform network address translation (NAT) in your VPC.
- **spot-instance-request-id** - The ID of the Spot Instance request.
- **state-reason-code** - The reason code for the state change.
- **state-reason-message** - A message that describes the state change.
- **subnet-id** - The ID of the subnet for the instance.
- **tag:<key>** - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key Owner and the value TeamA, specify tag:Owner for the filter name and TeamA for the filter value.
- **tag-key** - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.
- **tenancy** - The tenancy of an instance (dedicated | default | host).
- **virtualization-type** - The virtualization type of the instance (paravirtual | hvm).
- **vpc-id** - The ID of the VPC that the instance is running in.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### **InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Type: Array of strings

Required: No

#### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned NextToken value. This value can be between 5 and 1000. You cannot specify this parameter and the instance IDs parameter in the same call.

Type: Integer

Required: No

#### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **reservationSet**

Information about the reservations.

Type: Array of [Reservation \(p. 1926\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1: Describe all instances

This example describes all instances owned by your AWS account in the current Region. It uses pagination. The first example request gets the first page of results. The second example request uses the token returned by the previous request. Continue until there are no more results.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances  
&MaxResults=10  
&AUTHPARAMS
```

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances  
&MaxResults=10  
&NextToken=eyJOZXh0VG9rZW4iOiBudWxsLCAiYm90b190cnVuY2F0ZV9hbW91bnQiEXAMPLE=  
&AUTHPARAMS
```

### Example 2: Describe an instance

This example describes the specified instance.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

## Sample Response

```
<DescribeInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>8f7724cf-496f-496e-8fe3-example</requestId>
  <reservationSet>
    <item>
      <reservationId>r-1234567890abcdef0</reservationId>
      <ownerId>123456789012</ownerId>
      <groupSet/>
      <instancesSet>
        <item>
          <instanceId>i-1234567890abcdef0</instanceId>
          <imageId>ami-bff32ccc</imageId>
          <instanceState>
            <code>16</code>
            <name>running</name>
          </instanceState>
          <privateDnsName>ip-192-168-1-88.eu-west-1.compute.internal</
privateDnsName>
          <dnsName>ec2-54-194-252-215.eu-west-1.compute.amazonaws.com</dnsName>
          <reason/>
          <keyName>my_keypair</keyName>
          <amiLaunchIndex>0</amiLaunchIndex>
          <productCodes/>
          <instanceType>t2.micro</instanceType>
          <launchTime>2018-05-08T16:46:19.000Z</launchTime>
          <placement>
            <availabilityZone>eu-west-1c</availabilityZone>
            <groupName/>
            <tenancy>default</tenancy>
          </placement>
          <monitoring>
            <state>disabled</state>
          </monitoring>
          <subnetId>subnet-56f5f633</subnetId>
          <vpcId>vpc-11112222</vpcId>
          <privateIpAddress>192.168.1.88</privateIpAddress>
          <ipAddress>54.194.252.215</ipAddress>
          <sourceDestCheck>true</sourceDestCheck>
          <groupSet>
            <item>
              <groupId>sg-e4076980</groupId>
              <groupName>SecurityGroup1</groupName>
            </item>
          </groupSet>
          <architecture>x86_64</architecture>
          <rootDeviceType>ebs</rootDeviceType>
          <rootDeviceName>/dev/xvda</rootDeviceName>
          <blockDeviceMapping>
            <item>
              <deviceName>/dev/xvda</deviceName>
              <ebs>
                <volumeId>vol-1234567890abcdef0</volumeId>
                <status>attached</status>
                <attachTime>2015-12-22T10:44:09.000Z</attachTime>
                <deleteOnTermination>true</deleteOnTermination>
              </ebs>
            </item>
          </blockDeviceMapping>
        </item>
      </instancesSet>
    </item>
  </reservationSet>
</DescribeInstancesResponse>
```

```
</item>
</blockDeviceMapping>
<virtualizationType>hvm</virtualizationType>
<clientToken>xMcwG14507example</clientToken>
<tagSet>
    <item>
        <key>Name</key>
        <value>Server_1</value>
    </item>
</tagSet>
<hypervisor>xen</hypervisor>
<networkInterfaceSet>
    <item>
        <networkInterfaceId>eni-551ba033</networkInterfaceId>
        <subnetId>subnet-56f5f633</subnetId>
        <vpcId>vpc-11112222</vpcId>
        <description>Primary network interface</description>
        <ownerId>123456789012</ownerId>
        <status>in-use</status>
        <macAddress>02:dd:2c:5e:01:69</macAddress>
        <privateIpAddress>192.168.1.88</privateIpAddress>
        <privateDnsName>ip-192-168-1-88.eu-west-1.compute.internal</
privateDnsName>
        <sourceDestCheck>true</sourceDestCheck>
        <groupSet>
            <item>
                <groupId>sg-e4076980</groupId>
                <groupName>SecurityGroup1</groupName>
            </item>
        </groupSet>
        <attachment>
            <attachmentId>eni-attach-39697adc</attachmentId>
            <deviceIndex>0</deviceIndex>
            <status>attached</status>
            <attachTime>2018-05-08T16:46:19.000Z</attachTime>
            <deleteOnTermination>true</deleteOnTermination>
        </attachment>
        <association>
            <publicIp>54.194.252.215</publicIp>
            <publicDnsName>ec2-54-194-252-215.eu-
west-1.compute.amazonaws.com</publicDnsName>
            <ipOwnerId>amazon</ipOwnerId>
        </association>
        <privateIpAddressesSet>
            <item>
                <privateIpAddress>192.168.1.88</privateIpAddress>
                <privateDnsName>ip-192-168-1-88.eu-
west-1.compute.internal</privateDnsName>
                <primary>true</primary>
                <association>
                    <publicIp>54.194.252.215</publicIp>
                    <publicDnsName>ec2-54-194-252-215.eu-
west-1.compute.amazonaws.com</publicDnsName>
                    <ipOwnerId>amazon</ipOwnerId>
                </association>
            </item>
        </privateIpAddressesSet>
        <ipv6AddressesSet>
            <item>
                <ipv6Address>2001:db8:1234:1a2b::123</ipv6Address>
            </item>
        </ipv6AddressesSet>
    </item>
</networkInterfaceSet>
<iamInstanceProfile>
    <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
```

```
<id>ABC AJEDNCAA64SSD123AB</id>
</iamInstanceProfile>
<ebsOptimized>false</ebsOptimized>
<cpuOptions>
    <coreCount>1</coreCount>
    <threadsPerCore>1</threadsPerCore>
</cpuOptions>
</item>
</instancesSet>
</item>
</reservationSet>
</DescribeInstancesResponse>
```

## Example 3: Filter by instance type

This example describes only the instances that have the `m1.small` or `m1.large` instance type and an attached Amazon EBS volume to be deleted on termination.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-type
&Filter.1.Value.1=m1.small
&Filter.1.Value.2=m1.large
&Filter.2.Name=block-device-mapping.status
&Filter.2.Value.1=attached
&Filter.3.Name=block-device-mapping.delete-on-termination
&Filter.3.Value.1=true
&AUTHPARAMS
```

## Example 4: Filter by VPC

This example describes all instances that are running in the specified VPC.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=vpc-id
&Filter.1.Value.1=*
&AUTHPARAMS
```

## Example 5: Filter by tag key

This example describes any instances that have a tag with the key `Owner`, regardless of the value of the tag.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=tag-key
&Filter.1.Value.1=Owner
&AUTHPARAMS
```

## Example 6: Filter by tag key and value

This example lists only the instances that have a tag with the key `Owner` and the value `DbAdmin`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name>tag:Owner
&Filter.1.Value.1=DbAdmin
&AUTHPARAMS
```

## Example 7: Filter by placement group

This example describes any instances that are in the placement group with the name `HDFS-Group-A`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=placement-group-name
&Filter.1.Value=HDFS-Group-A
&AUTHPARAMS
```

## Example 8: Filter by placement group partition

This example describes only the instances that are in partition 2 of the placement group with the name `HDFS-Group-A`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=placement-group-name
&Filter.1.Value=HDFS-Group-A
&Filter.2.Name=placement-partition-number
&Filter.2.Value=2
&AUTHPARAMS
```

## Example 9: Filter by metadata authentication

The following example displays details about your instances that are not using any token header authentication requirement to access instance metadata. The response is truncated to show only the relevant pieces.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.Name=metadata-options.http-tokens
&Filter.Values=optional
&AUTHPARAMS
```

## Sample Response

```
<DescribeInstances xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <instanceId>i-1234567890abcdef0</instanceId>
  <MetadataOptions>
    <state>applied</state>
    <HttpTokens>optional</HttpTokens>
    <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
    <HttpEndpoint>enabled</HttpEndpoint>
  </MetadataOptions>
```

```
</DescribeInstances>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceStatus

Describes the status of the specified instances or all of your instances. By default, only running instances are described, unless you specifically indicate to return the status of all instances.

Instance status includes the following components:

- **Status checks** - Amazon EC2 performs status checks on running EC2 instances to identify hardware and software issues. For more information, see [Status checks for your instances](#) and [Troubleshoot instances with failed status checks](#) in the *Amazon EC2 User Guide*.
- **Scheduled events** - Amazon EC2 can schedule events (such as reboot, stop, or terminate) for your instances related to hardware issues, software updates, or system maintenance. For more information, see [Scheduled events for your instances](#) in the *Amazon EC2 User Guide*.
- **Instance state** - You can manage your instances from the moment you launch them through their termination. For more information, see [Instance lifecycle](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `availability-zone` - The Availability Zone of the instance.
- `event.code` - The code for the scheduled event (`instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`).
- `event.description` - A description of the event.
- `event.instance-event-id` - The ID of the event whose date and time you are modifying.
- `event.not-after` - The latest end time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `event.not-before` - The earliest start time for the scheduled event (for example, `2014-09-15T17:15:20.000Z`).
- `event.not-before-deadline` - The deadline for starting the event (for example, `2014-09-15T17:15:20.000Z`).
- `instance-state-code` - The code for the instance state, as a 16-bit unsigned integer. The high byte is used for internal purposes and should be ignored. The low byte is set based on the state represented. The valid values are 0 (pending), 16 (running), 32 (shutting-down), 48 (terminated), 64 (stopping), and 80 (stopped).
- `instance-state-name` - The state of the instance (`pending` | `running` | `shutting-down` | `terminated` | `stopping` | `stopped`).
- `instance-status.reachability` - Filters on instance status where the name is `reachability` (`passed` | `failed` | `initializing` | `insufficient-data`).

- `instance-status.status` - The status of the instance (ok | impaired | initializing | insufficient-data | not-applicable).
- `system-status.reachability` - Filters on system status where the name is reachability (passed | failed | initializing | insufficient-data).
- `system-status.status` - The system status of the instance (ok | impaired | initializing | insufficient-data | not-applicable).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### **IncludeAllInstances**

When `true`, includes the health status for all instances. When `false`, includes the health status for running instances only.

Default: `false`

Type: Boolean

Required: No

#### **InstanceId.N**

The instance IDs.

Default: Describes all your instances.

Constraints: Maximum 100 explicitly specified instance IDs.

Type: Array of strings

Required: No

#### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 5 and 1000. You cannot specify this parameter and the `instance IDs` parameter in the same call.

Type: Integer

Required: No

#### **NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **instanceStatusSet**

Information about the status of the instances.

Type: Array of [InstanceState \(p. 1691\)](#) objects

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String  
**requestId**  
The ID of the request.  
Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example returns instance status descriptions for all running instances.

#### Sample Request

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&AUTHPARAMS
```

### Example 2

This example returns instance status descriptions for the specified instances.

#### Sample Request

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&InstanceId.1=i-1234567890abcdef0  
&InstanceId.2=i-0598c7d356eba48d7  
&AUTHPARAMS
```

### Example 3

This example returns instance status descriptions for all instances specified by supported `DescribeInstanceStatus` filters.

#### Sample Request

```
https://ec2.amazonaws.com/?  
Action=DescribeInstanceStatus  
&Filter.1.Name=system-status.reachability  
&Filter.1.Value.failed  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeInstanceStatusResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>3be1508e-c444-4fef-89cc-0b1223c4f02fEXAMPLE</requestId>
<instanceStatusSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <availabilityZone>us-east-1d</availabilityZone>
    <instanceState>
      <code>16</code>
      <name>running</name>
    </instanceState>
    <systemStatus>
      <status>impaired</status>
      <details>
        <item>
          <name>reachability</name>
          <status>failed</status>
          <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
        </item>
      </details>
    </systemStatus>
    <instanceStatus>
      <status>impaired</status>
      <details>
        <item>
          <name>reachability</name>
          <status>failed</status>
          <impairedSince>YYYY-MM-DDTHH:MM:SS.000Z</impairedSince>
        </item>
      </details>
    </instanceStatus>
    <eventsSet>
      <item>
        <code>instance-retirement</code>
        <description>The instance is running on degraded hardware</description>
        <notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
        <notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
      </item>
    </eventsSet>
  </item>
  <item>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <availabilityZone>us-east-1d</availabilityZone>
    <instanceState>
      <code>16</code>
      <name>running</name>
    </instanceState>
    <systemStatus>
      <status>ok</status>
      <details>
        <item>
          <name>reachability</name>
          <status>passed</status>
        </item>
      </details>
    </systemStatus>
    <instanceStatus>
      <status>ok</status>
      <details>
        <item>
          <name>reachability</name>
          <status>passed</status>
        </item>
      </details>
    </instanceStatus>
    <eventsSet>
      <item>
        <code>instance-reboot</code>

```

```
<description>The instance is scheduled for a reboot</description>
<notBefore>YYYY-MM-DDTHH:MM:SS+0000</notBefore>
<notAfter>YYYY-MM-DDTHH:MM:SS+0000</notAfter>
</item>
</eventsSet>
</item>
<item>
<instanceId>i-0987654321abcdef0</instanceId>
<availabilityZone>us-east-1d</availabilityZone>
<instanceState>
<code>16</code>
<name>running</name>
</instanceState>
<systemStatus>
<status>ok</status>
<details>
<item>
<name>reachability</name>
<status>passed</status>
</item>
</details>
</systemStatus>
<instanceStatus>
<status>ok</status>
<details>
<item>
<name>reachability</name>
<status>passed</status>
</item>
</details>
</instanceStatus>
</item>
<item>
<instanceId>i-0598c7d356eba48d8</instanceId>
<availabilityZone>us-east-1d</availabilityZone>
<instanceState>
<code>16</code>
<name>running</name>
</instanceState>
<systemStatus>
<status>ok</status>
<details>
<item>
<name>reachability</name>
<status>passed</status>
</item>
</details>
</systemStatus>
<instanceStatus>
<status>insufficient-data</status>
<details>
<item>
<name>reachability</name>
<status>insufficient-data</status>
</item>
</details>
</instanceStatus>
</item>
</instanceStatusSet>
</DescribeInstanceStatusResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceTypeOfferings

Returns a list of all instance types offered. The results can be filtered by location (Region or Availability Zone). If no location is specified, the instance types offered in the current Region are returned.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. Filter names and values are case-sensitive.

- `location` - This depends on the location type. For example, if the location type is `region` (default), the location is the Region code (for example, `us-east-2`.)
- `instance-type` - The instance type. For example, `c5.2xlarge`.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocationType

The location type.

Type: String

Valid Values: `region` | `availability-zone` | `availability-zone-id`

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the next token value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **instanceTypeOfferingSet**

The instance types offered.

Type: Array of [InstanceTypeOffering \(p. 1705\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInstanceTypes

Describes the details of the instance types that are offered in a location. The results can be filtered by the attributes of the instance types.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Filter.N

One or more filters. Filter names and values are case-sensitive.

- auto-recovery-supported - Indicates whether auto recovery is supported (true | false).
- bare-metal - Indicates whether it is a bare metal instance type (true | false).
- burstable-performance-supported - Indicates whether it is a burstable performance instance type (true | false).
- current-generation - Indicates whether this instance type is the latest generation instance type of an instance family (true | false).
- ebs-info.ebs-optimized-info.baseline-bandwidth-in-mbps - The baseline bandwidth performance for an EBS-optimized instance type, in Mbps.
- ebs-info.ebs-optimized-info.baseline-iops - The baseline input/output storage operations per second for an EBS-optimized instance type.
- ebs-info.ebs-optimized-info.baseline-throughput-in-mbps - The baseline throughput performance for an EBS-optimized instance type, in MB/s.
- ebs-info.ebs-optimized-info.maximum-bandwidth-in-mbps - The maximum bandwidth performance for an EBS-optimized instance type, in Mbps.
- ebs-info.ebs-optimized-info.maximum-iops - The maximum input/output storage operations per second for an EBS-optimized instance type.
- ebs-info.ebs-optimized-info.maximum-throughput-in-mbps - The maximum throughput performance for an EBS-optimized instance type, in MB/s.
- ebs-info.ebs-optimized-support - Indicates whether the instance type is EBS-optimized (supported | unsupported | default).
- ebs-info.encryption-support - Indicates whether EBS encryption is supported (supported | unsupported).
- ebs-info.nvme-support - Indicates whether non-volatile memory express (NVMe) is supported for EBS volumes (required | supported | unsupported).
- free-tier-eligible - Indicates whether the instance type is eligible to use in the free tier (true | false).
- hibernation-supported - Indicates whether On-Demand hibernation is supported (true | false).
- hypervisor - The hypervisor (nitro | xen).

- `instance-storage-info.disk.count` - The number of local disks.
- `instance-storage-info.disk.size-in-gb` - The storage size of each instance storage disk, in GB.
- `instance-storage-info.disk.type` - The storage technology for the local instance storage disks (hdd | ssd).
- `instance-storage-info.encryption-supported` - Indicates whether data is encrypted at rest (required | unsupported).
- `instance-storage-info.nvme-support` - Indicates whether non-volatile memory express (NVMe) is supported for instance store (required | supported | unsupported).
- `instance-storage-info.total-size-in-gb` - The total amount of storage available from all local instance storage, in GB.
- `instance-storage-supported` - Indicates whether the instance type has local instance storage (true | false).
- `instance-type` - The instance type (for example `c5.2xlarge` or `c5*`).
- `memory-info.size-in-mib` - The memory size.
- `network-info.efa-info.maximum-efa-interfaces` - The maximum number of Elastic Fabric Adapters (EFAs) per instance.
- `network-info.efa-supported` - Indicates whether the instance type supports Elastic Fabric Adapter (EFA) (true | false).
- `network-info.ena-support` - Indicates whether Elastic Network Adapter (ENA) is supported or required (required | supported | unsupported).
- `network-info.encryption-in-transit-supported` - Indicates whether the instance type automatically encrypts in-transit traffic between instances (true | false).
- `network-info.ipv4-addresses-per-interface` - The maximum number of private IPv4 addresses per network interface.
- `network-info.ipv6-addresses-per-interface` - The maximum number of private IPv6 addresses per network interface.
- `network-info.ipv6-supported` - Indicates whether the instance type supports IPv6 (true | false).
- `network-info.maximum-network-interfaces` - The maximum number of network interfaces per instance.
- `network-info.network-performance` - The network performance (for example, "25 Gigabit").
- `processor-info.supported-architecture` - The CPU architecture (arm64 | i386 | x86\_64).
- `processor-info.sustained-clock-speed-in-ghz` - The CPU clock speed, in GHz.
- `supported-boot-mode` - The boot mode (legacy-bios | uefi).
- `supported-root-device-type` - The root device type (ebs | instance-store).
- `supported-usage-class` - The usage class (on-demand | spot).
- `supported-virtualization-type` - The virtualization type (hvm | paravirtual).
- `vcpu-info.default-cores` - The default number of cores for the instance type.
- `vcpu-info.default-threads-per-core` - The default number of threads per core for the instance type.
- `vcpu-info.default-vcpus` - The default number of vCPUs for the instance type.
- `vcpu-info.valid-cores` - The number of cores that can be configured for the instance type.
- `vcpu-info.valid-threads-per-core` - The number of threads per core that can be configured for the instance type. For example, "1" or "1,2".

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InstanceType.N

The instance types. For more information, see [Instance types](#) in the *Amazon EC2 User Guide*.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | xle.xlarge | xle.2xlarge | xle.4xlarge | xle.8xlarge | xle.16xlarge | xle.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |

```
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge |
g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |
g5.24xlarge | g5.48xlarge
```

Required: No

#### MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the next token value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 100.

Required: No

#### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **instanceTypeSet**

The instance type. For more information, see [Instance types](#) in the *Amazon EC2 User Guide*.

Type: Array of [InstanceTypeInfo](#) (p. 1699) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes](#) (p. 2251).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeInternetGateways

Describes one or more of your internet gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `attachment.state` - The current state of the attachment between the gateway and the VPC (`available`). Present only if a VPC is attached.
- `attachment.vpc-id` - The ID of an attached VPC.
- `internet-gateway-id` - The ID of the Internet gateway.
- `owner-id` - The ID of the AWS account that owns the internet gateway.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InternetGatewayId.N

One or more internet gateway IDs.

Default: Describes all your internet gateways.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### internetGatewaySet

Information about one or more internet gateways.

Type: Array of [InternetGateway \(p. 1710\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all your internet gateways.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInternetGateways  
&AUTHPARAMS
```

### Sample Response

```
<DescribeInternetGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>e0fbdd4f-8e6d-437c-92eb-bc72864831d8</requestId>  
  <internetGatewaySet>  
    <item>  
      <internetGatewayId>igw-036dde5c85EXAMPLE</internetGatewayId>  
      <ownerId>11112222333304</ownerId>  
      <attachmentSet/>
```

```
<tagSet/>
</item>
<item>
    <internetGatewayId>igw-0EXAMPLE</internetGatewayId>
    <ownerId>053534965804</ownerId>
    <attachmentSet>
        <item>
            <vpcId>vpc-cEXAMPLE</vpcId>
            <state>available</state>
        </item>
    </attachmentSet>
    <tagSet/>
</item>
</internetGatewaySet>
</DescribeInternetGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Describelpv6Pools

Describes your IPv6 address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PoolId.N

The IDs of the IPv6 address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **ipv6PoolSet**

Information about the IPv6 address pools.

Type: Array of [Ipv6Pool \(p. 1720\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeKeyPairs

Describes the specified key pairs or all of your key pairs.

For more information about key pairs, see [Amazon EC2 key pairs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `key-pair-id` - The ID of the key pair.
- `fingerprint` - The fingerprint of the key pair.
- `key-name` - The name of the key pair.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### KeyName.N

The key pair names.

Default: Describes all of your key pairs.

Type: Array of strings

Required: No

### KeyPairId.N

The IDs of the key pairs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### keySet

Information about the key pairs.

Type: Array of [KeyPairInfo \(p. 1725\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the key pair with name my-key-pair.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&KeyName.1=my-key-pair
&AUTHPARAMS
```

#### Sample Response

```
<DescribeKeyPairsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <keySet>
    <item>
      <keyName>my-key-pair</keyName>
      <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFingerprint>
    </item>
  </keySet>
</DescribeKeyPairsResponse>
```

### Example

This example filters the response to include only key pairs whose names include the string Dave.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeKeyPairs
&Filter.1.Name=key-name
&Filter.1.Value.1=*Dave*
```

&AUTHPARAMS

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLaunchTemplates

Describes one or more launch templates.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `create-time` - The time the launch template was created.
- `launch-template-name` - The name of the launch template.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LaunchTemplateId.N

One or more launch template IDs.

Type: Array of strings

Required: No

### LaunchTemplateName.N

One or more launch template names.

Type: Array of strings

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 1 and 200.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 200.

Required: No

#### NextToken

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### launchTemplates

Information about the launch templates.

Type: Array of [LaunchTemplate \(p. 1734\)](#) objects

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your launch templates.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplates
&AUTHPARAMS
```

#### Sample Response

```
<DescribeLaunchTemplatesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1afa6e44-eb38-4229-8db6-d5eaexample</requestId>
  <launchTemplates>
    <item>
```

```
<createTime>2017-10-31T11:38:52.000Z</createTime>
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersionNumber>1</defaultVersionNumber>
<latestVersionNumber>1</latestVersionNumber>
<launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
<launchTemplateName>MyLaunchTemplate</launchTemplateName>
</item>
</launchTemplates>
</DescribeLaunchTemplatesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLaunchTemplateVersions

Describes one or more versions of a specified launch template. You can describe all versions, individual versions, or a range of versions. You can also describe all the latest versions or all the default versions of all the launch templates in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `create-time` - The time the launch template version was created.
- `ebs-optimized` - A boolean that indicates whether the instance is optimized for Amazon EBS I/O.
- `iam-instance-profile` - The ARN of the IAM instance profile.
- `image-id` - The ID of the AMI.
- `instance-type` - The instance type.
- `is-default-version` - A boolean that indicates whether the launch template version is the default version.
- `kernel-id` - The kernel ID.
- `ram-disk-id` - The RAM disk ID.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LaunchTemplateId

The ID of the launch template. To describe one or more versions of a specified launch template, you must specify either the launch template ID or the launch template name in the request. To describe all the latest or default launch template versions in your account, you must omit this parameter.

Type: String

Required: No

### LaunchTemplateName

The name of the launch template. To describe one or more versions of a specified launch template, you must specify either the launch template ID or the launch template name in the request. To describe all the latest or default launch template versions in your account, you must omit this parameter.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

#### **LaunchTemplateVersion.N**

One or more versions of the launch template. Valid values depend on whether you are describing a specified launch template (by ID or name) or all launch templates in your account.

To describe one or more versions of a specified launch template, valid values are `$Latest`, `$Default`, and numbers.

To describe all launch templates in your account that are defined as the latest version, the valid value is `$Latest`. To describe all launch templates in your account that are defined as the default version, the valid value is `$Default`. You can specify `$Latest` and `$Default` in the same call. You cannot specify numbers.

Type: Array of strings

Required: No

#### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 1 and 200.

Type: Integer

Required: No

#### **MaxVersion**

The version number up to which to describe launch template versions.

Type: String

Required: No

#### **MinVersion**

The version number after which to describe launch template versions.

Type: String

Required: No

#### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **launchTemplateVersionSet**

Information about the launch template versions.

Type: Array of [LaunchTemplateVersion \(p. 1786\)](#) objects

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes all versions of launch template `lt-0a20c965061f64abc` up to version 3.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplateVersions
&LaunchTemplateId=lt-0a20c965061f64abc
&MaxVersion=3
&AUTHPARAMS
```

#### Sample Response

```
<DescribeLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">>
  <requestId>65cadec1-b364-4354-8ca8-4176dexample</requestId>
  <launchTemplateVersionSet>
    <item>
      <createTime>2017-10-31T11:38:52.000Z</createTime>
      <createdBy>arn:aws:iam::123456789012:root</createdBy>
      <defaultVersion>true</defaultVersion>
      <launchTemplateData>
        <imageId>ami-8c1be5f6</imageId>
        <instanceType>t2.micro</instanceType>
      </launchTemplateData>
      <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
      <launchTemplateName>MyLaunchTemplate</launchTemplateName>
      <versionDescription>FirstVersion</versionDescription>
      <versionNumber>1</versionNumber>
    </item>
    <item>
      <createTime>2017-10-31T11:52:03.000Z</createTime>
      <createdBy>arn:aws:iam::123456789012:root</createdBy>
      <defaultVersion>false</defaultVersion>
      <launchTemplateData>
        <imageId>ami-12345678</imageId>
      </launchTemplateData>
      <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
    </item>
  </launchTemplateVersionSet>
</DescribeLaunchTemplateVersionsResponse>
```

```
<launchTemplateName>MyLaunchTemplate</launchTemplateName>
<versionDescription>AMIOOnlyv1</versionDescription>
<versionNumber>2</versionNumber>
</item>
<item>
<createTime>2017-10-31T11:55:15.000Z</createTime>
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersion>false</defaultVersion>
<launchTemplateData>
<imageId>ami-aabbccdd</imageId>
</launchTemplateData>
<launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
<launchTemplateName>MyLaunchTemplate</launchTemplateName>
<versionDescription>AMIOOnlyv2</versionDescription>
<versionNumber>3</versionNumber>
</item>
</launchTemplateVersionSet>
</DescribeLaunchTemplateVersionsResponse>
```

## Example 2

This example describes all the latest versions of the launch templates in your account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeLaunchTemplateVersions
&LaunchTemplateVersion.1=$Latest
&AUTHPARAMS
```

### Sample Response

```
<DescribeLaunchTemplateVersionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>65cadec1-b364-4354-8ca8-4176dexample</requestId>
<launchTemplateVersionSet>
<item>
<createTime>2020-01-31T11:38:52.000Z</createTime>
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersion>true</defaultVersion>
<launchTemplateData>
<imageId>ami-8c1be5f6</imageId>
<instanceType>t2.micro</instanceType>
</launchTemplateData>
<launchTemplateId>lt-111111111EXAMPLE</launchTemplateId>
<launchTemplateName>MyLaunchTemplate1</launchTemplateName>
<versionDescription>FirstTemplate</versionDescription>
<versionNumber>1</versionNumber>
</item>
<item>
<createTime>2020-02-14T11:52:03.000Z</createTime>
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersion>false</defaultVersion>
<launchTemplateData>
<imageId>ami-12345678</imageId>
<instanceType>t2.micro</instanceType>
</launchTemplateData>
<launchTemplateId>lt-222222222EXAMPLE</launchTemplateId>
<launchTemplateName>MyLaunchTemplate2</launchTemplateName>
<versionDescription>ThirdVersion</versionDescription>
<versionNumber>3</versionNumber>
</item>
<item>
<createTime>2020-03-03T11:55:15.000Z</createTime>
```

```
<createdBy>arn:aws:iam::123456789012:root</createdBy>
<defaultVersion>false</defaultVersion>
<launchTemplateData>
    <imageId>ami-aabbccdd</imageId>
    <instanceType>t3.small</instanceType>
</launchTemplateData>
<launchTemplateId>lt-3333333333EXAMPLE</launchTemplateId>
<launchTemplateName>MyLaunchTemplate3</launchTemplateName>
<versionDescription>AMIOOnlyv2</versionDescription>
<versionNumber>2</versionNumber>
</item>
</launchTemplateVersionSet>
</DescribeLaunchTemplateVersionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGatewayRouteTables

Describes one or more local gateway route tables. By default, all local gateway route tables are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-id` - The ID of a local gateway route table.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `state` - The state of the local gateway route table.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayRouteTableId.N

The IDs of the local gateway route tables.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **localGatewayRouteTableSet**

Information about the local gateway route tables.

Type: Array of [LocalGatewayRouteTable \(p. 1797\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGatewayRouteTableVirtualInterfaceGroupAssociations

Describes the associations between virtual interface groups and local gateway route tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-id` - The ID of the local gateway route table.
- `local-gateway-route-table-virtual-interface-group-association-id` - The ID of the association.
- `local-gateway-route-table-virtual-interface-group-id` - The ID of the virtual interface group.
- `state` - The state of the association.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayRouteTableVirtualInterfaceGroupAssociationId.N

The IDs of the associations.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **localGatewayRouteTableVirtualInterfaceGroupAssociationSet**

Information about the associations.

Type: Array of [LocalGatewayRouteTableVirtualInterfaceGroupAssociation \(p. 1799\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGatewayRouteTableVpcAssociations

Describes the specified associations between VPCs and local gateway route tables.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-id` - The ID of the local gateway route table.
- `local-gateway-route-table-vpc-association-id` - The ID of the association.
- `state` - The state of the association.
- `vpc-id` - The ID of the VPC.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayRouteTableVpcAssociationId.N

The IDs of the associations.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **localGatewayRouteTableVpcAssociationSet**

Information about the associations.

Type: Array of [LocalGatewayRouteTableVpcAssociation \(p. 1801\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGateways

Describes one or more local gateways. By default, all local gateways are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayId.N

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-route-table-id` - The ID of the local gateway route table.
- `local-gateway-route-table-virtual-interface-group-association-id` - The ID of the association.
- `local-gateway-route-table-virtual-interface-group-id` - The ID of the virtual interface group.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `state` - The state of the association.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **localGatewaySet**

Information about the local gateways.

Type: Array of [LocalGateway \(p. 1794\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGatewayVirtualInterfaceGroups

Describes the specified local gateway virtual interface groups.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `local-gateway-id` - The ID of a local gateway.
- `local-gateway-virtual-interface-id` - The ID of the virtual interface.
- `local-gateway-virtual-interface-group-id` - The ID of the virtual interface group.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayVirtualInterfaceGroupId.N

The IDs of the virtual interface groups.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **localGatewayVirtualInterfaceGroupSet**

The virtual interface groups.

Type: Array of [LocalGatewayVirtualInterfaceGroup \(p. 1805\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeLocalGatewayVirtualInterfaces

Describes the specified local gateway virtual interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayVirtualInterfaceId.N

The IDs of the virtual interfaces.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### localGatewayVirtualInterfaceSet

Information about the virtual interfaces.

Type: Array of [LocalGatewayVirtualInterface \(p. 1803\)](#) objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeManagedPrefixLists

Describes your managed prefix lists and any AWS-managed prefix lists.

To view the entries for your prefix list, use [GetManagedPrefixListEntries \(p. 1008\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `owner-id` - The ID of the prefix list owner.
- `prefix-list-id` - The ID of the prefix list.
- `prefix-list-name` - The name of the prefix list.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PrefixListId.N

One or more prefix list IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### prefixListSet

Information about the prefix lists.

Type: Array of [ManagedPrefixList \(p. 1806\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes managed prefix lists and filters by the prefix lists owned by account 123456789012.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeManagedPrefixList
&Filter.1.Name=owner-id
&Filter.1.Value.1=123456789012
&AUTHPARAMS
```

#### Sample Response

```
<DescribeManagedPrefixListsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>ace27020-4268-4c9c-a8d3-example</requestId>
  <prefixListSet>
    <item>
      <addressFamily>IPv4</addressFamily>
      <maxEntries>10</maxEntries>
      <ownerId>123456789012</ownerId>
      <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
      <prefixListId>pl-0123123123123aabb</prefixListId>
      <prefixListName>tgw-attachments</prefixListName>
      <state>create-complete</state>
      <tagSet>
```

```
<item>
  <key>Purpose</key>
  <value>For TGW-1a attachments</value>
</item>
</tagSet>
<version>1</version>
</item>
</prefixListSet>
</DescribeManagedPrefixListsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeMovingAddresses

Describes your Elastic IP addresses that are being moved to the EC2-VPC platform, or that are being restored to the EC2-Classic platform. This request does not return information about any other Elastic IP addresses in your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `moving-status` - The status of the Elastic IP address (`MovingToVpc` | `RestoringToClassic`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1000; if `MaxResults` is given a value outside of this range, an error is returned.

Default: If no value is provided, the default is 1000.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PublicIp.N

One or more Elastic IP addresses.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **movingAddressStatusSet**

The status for each Elastic IP address.

Type: Array of [MovingAddressStatus \(p. 1821\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all your moving Elastic IP addresses.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeMovingAddresses  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeMovingAddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>127c36e6-6781-469f-89c1-EXAMPLE</requestId>  
  <movingAddressStatusSet>  
    <item>  
      <publicIp>198.18.125.129</publicIp>  
      <moveStatus>MovingToVpc</moveStatus>  
    </item>  
  </movingAddressStatusSet>  
</DescribeMovingAddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNatGateways

Describes one or more of your NAT gateways.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `nat-gateway-id` - The ID of the NAT gateway.
- `state` - The state of the NAT gateway (`pending` | `failed` | `available` | `deleting` | `deleted`).
- `subnet-id` - The ID of the subnet in which the NAT gateway resides.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC in which the NAT gateway resides.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NatGatewayId.N

One or more NAT gateway IDs.

Type: Array of strings

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **natGatewaySet**

Information about the NAT gateways.

Type: Array of [NatGateway \(p. 1822\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your NAT gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNatGateways  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNatGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>fcb1ea98-1c04-4f9f-a96d-61442example</requestId>  
  <natGatewaySet>  
    <item>  
      <createTime>2017-02-22T09:30:33.000Z</createTime>  
      <natGatewayAddressSet>  
        <item>  
          <allocationId>eipalloc-8f409cb1</allocationId>  
          <networkInterfaceId>eni-1c8fa2fc</networkInterfaceId>  
          <privateIp>10.0.0.174</privateIp>  
          <publicIp>203.0.113.5</publicIp>
```

```
</item>
</natGatewayAddressSet>
<natGatewayId>nat-05a4fd8a2a3e2574d</natGatewayId>
<state>available</state>
<subnetId>subnet-7b16de0c</subnetId>
<tagSet>
  <item>
    <key>Name</key>
    <value>MyNatGateway</value>
  </item>
</tagSet>
<vpcId>vpc-1a2b3c4d</vpcId>
</item>
</natGatewaySet>
</DescribeNatGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNetworkAcls

Describes one or more of your network ACLs.

For more information, see [Network ACLs](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `association.association-id` - The ID of an association ID for the ACL.
- `association.network-acl-id` - The ID of the network ACL involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `default` - Indicates whether the ACL is the default network ACL for the VPC.
- `entry.cidr` - The IPv4 CIDR range specified in the entry.
- `entry.icmp.code` - The ICMP code specified in the entry, if any.
- `entry.icmp.type` - The ICMP type specified in the entry, if any.
- `entry.ipv6-cidr` - The IPv6 CIDR range specified in the entry.
- `entry.port-range.from` - The start of the port range specified in the entry.
- `entry.port-range.to` - The end of the port range specified in the entry.
- `entry.protocol` - The protocol specified in the entry (`tcp` | `udp` | `icmp` or a protocol number).
- `entry.rule-action` - Allows or denies the matching traffic (`allow` | `deny`).
- `entry.rule-number` - The number of an entry (in other words, rule) in the set of ACL entries.
- `network-acl-id` - The ID of the network ACL.
- `owner-id` - The ID of the AWS account that owns the network ACL.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the network ACL.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### **NetworkAclId.N**

One or more network ACL IDs.

Default: Describes all your network ACLs.

Type: Array of strings

Required: No

#### **NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **networkAclSet**

Information about one or more network ACLs.

Type: Array of [NetworkAcl \(p. 1826\)](#) objects

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all your network ACLs.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkAcls  
&AUTHPARAMS
```

## Sample Response

```
<DescribeNetworkAclsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>be8171a0-2b2a-4a02-8b13-9c3436f2f02d</requestId>  
    <networkAclSet>  
        <item>  
            <networkAclId>acl-0ea1f54ca7EXAMPLE</networkAclId>  
            <vpcId>vpc-06e4ab6c6cEXAMPLE</vpcId>  
            <ownerId>111122223333</ownerId>  
            <default>true</default>  
            <entrySet>  
                <item>  
                    <ruleNumber>100</ruleNumber>  
                    <protocol>-1</protocol>  
                    <ruleAction>allow</ruleAction>  
                    <egress>true</egress>  
                    <cidrBlock>0.0.0.0/0</cidrBlock>  
                </item>  
                <item>  
                    <ruleNumber>32767</ruleNumber>  
                    <protocol>-1</protocol>  
                    <ruleAction>deny</ruleAction>  
                    <egress>true</egress>  
                    <cidrBlock>0.0.0.0/0</cidrBlock>  
                </item>  
                <item>  
                    <ruleNumber>100</ruleNumber>  
                    <protocol>-1</protocol>  
                    <ruleAction>allow</ruleAction>  
                    <egress>false</egress>  
                    <cidrBlock>0.0.0.0/0</cidrBlock>  
                </item>  
                <item>  
                    <ruleNumber>32767</ruleNumber>  
                    <protocol>-1</protocol>  
                    <ruleAction>deny</ruleAction>  
                    <egress>false</egress>  
                    <cidrBlock>0.0.0.0/0</cidrBlock>  
                </item>  
            </entrySet>  
            <associationSet>  
                <item>  
                    <networkAclAssociationId>aclassoc-0c1679dc41EXAMPLE</  
networkAclAssociationId>  
                    <networkAclId>acl-0ea1f54ca7EXAMPLE</networkAclId>  
                    <subnetId>subnet-0931fc2fa5EXAMPLE</subnetId>  
                </item>  
            </associationSet>  
            <tagSet/>  
        </item>  
        <item>  
            <networkAclId>acl-09a47ac966EXAMPLE</networkAclId>  
            <vpcId>vpc-06b7830650EXAMPLE</vpcId>  
            <ownerId>111122223333</ownerId>  
            <default>true</default>  
            <entrySet>  
                <item>  
                    <ruleNumber>100</ruleNumber>
```

```
<protocol>-1</protocol>
<ruleAction>allow</ruleAction>
<egress>true</egress>
<cidrBlock>0.0.0.0/0</cidrBlock>
</item>
<item>
<ruleNumber>32767</ruleNumber>
<protocol>-1</protocol>
<ruleAction>deny</ruleAction>
<egress>true</egress>
<cidrBlock>0.0.0.0/0</cidrBlock>
</item>
<item>
<ruleNumber>100</ruleNumber>
<protocol>-1</protocol>
<ruleAction>allow</ruleAction>
<egress>false</egress>
<cidrBlock>0.0.0.0/0</cidrBlock>
</item>
<item>
<ruleNumber>32767</ruleNumber>
<protocol>-1</protocol>
<ruleAction>deny</ruleAction>
<egress>false</egress>
<cidrBlock>0.0.0.0/0</cidrBlock>
</item>
</entrySet>
<associationSet/>
<tagSet/>
</item>
</networkAclSet>
</DescribeNetworkAclsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNetworkInsightsAnalyses

Describes one or more of your network insights analyses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AnalysisEndTime**

The time when the network insights analyses ended.

Type: Timestamp

Required: No

### **AnalysisStartTime**

The time when the network insights analyses started.

Type: Timestamp

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

The filters. The following are possible values:

- `PathFound` - A Boolean value that indicates whether a feasible path is found.
- `Status` - The status of the analysis (running | succeeded | failed).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### **NetworkInsightsAnalysisId.N**

The ID of the network insights analyses. You must specify either analysis IDs or a path ID.

Type: Array of strings

Required: No

### **NetworkInsightsPathId**

The ID of the path. You must specify either a path ID or analysis IDs.

Type: String

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **networkInsightsAnalysisSet**

Information about the network insights analyses.

Type: Array of [NetworkInsightsAnalysis \(p. 1834\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# DescribeNetworkInsightsPaths

Describes one or more of your paths.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters. The following are possible values:

- Destination - The ID of the resource.
- DestinationPort - The destination port.
- Name - The path name.
- Protocol - The protocol.
- Source - The ID of the resource.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### NetworkInsightsPathId.N

The IDs of the paths.

Type: Array of strings

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **networkInsightsPathSet**

Information about the paths.

Type: Array of [NetworkInsightsPath \(p. 1836\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNetworkInterfaceAttribute

Describes a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Attribute**

The attribute of the network interface. This parameter is required.

Type: String

Valid Values: `description` | `groupSet` | `sourceDestCheck` | `attachment`

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **attachment**

The attachment (if any) of the network interface.

Type: [NetworkInterfaceAttachment \(p. 1844\)](#) object

### **description**

The description of the network interface.

Type: [AttributeValue \(p. 1382\)](#) object

### **groupSet**

The security groups associated with the network interface.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

### **networkInterfaceId**

The ID of the network interface.

Type: String  
**requestId**

The ID of the request.

Type: String  
**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the `sourceDestCheck` attribute of the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaceAttribute
&NetworkInterfaceId=eni-686ea200
&Attribute=sourceDestCheck
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>7a20c6b2-d71c-45fb-bba7-37306850544b</requestId>
  <networkInterfaceId>eni-686ea200</networkInterfaceId>
  <sourceDestCheck>
    <value>true</value>
  </sourceDestCheck>
</DescribeNetworkInterfaceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNetworkInterfacePermissions

Describes the permissions for your network interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Filter.N**

One or more filters.

- `network-interface-permission.network-interface-permission-id` - The ID of the permission.
- `network-interface-permission.network-interface-id` - The ID of the network interface.
- `network-interface-permission.aws-account-id` - The AWS account ID.
- `network-interface-permission.aws-service` - The AWS service.
- `network-interface-permission.permission` - The type of permission (`INSTANCE-ATTACH` | `EIP-ASSOCIATE`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. If this parameter is not specified, up to 50 results are returned by default.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### **NetworkInterfacePermissionId.N**

One or more network interface permission IDs.

Type: Array of strings

Required: No

### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### networkInterfacePermissions

The network interface permissions.

Type: Array of [NetworkInterfacePermission \(p. 1850\)](#) objects

### nextToken

The token to use to retrieve the next page of results.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your network interface permissions.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfacePermissions  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNetworkInterfacePermissionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>6d4fe5e1-4bd2-4e76-8980-04cexample</requestId>  
  <networkInterfacePermissions>  
    <item>  
      <awsAccountId>123456789012</awsAccountId>  
      <networkInterfaceId>eni-b909511a</networkInterfaceId>  
      <networkInterfacePermissionId>eni-perm-06fd19020ede149ea</networkInterfacePermissionId>  
      <permission>INSTANCE-ATTACH</permission>  
      <permissionState>  
        <state>GRANTED</state>  
      </permissionState>  
    </item>  
  </networkInterfacePermissions>  
</DescribeNetworkInterfacePermissionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeNetworkInterfaces

Describes one or more of your network interfaces.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `addresses.private-ip-address` - The private IPv4 addresses associated with the network interface.
- `addresses.primary` - Whether the private IPv4 address is the primary IP address associated with the network interface.
- `addresses.association.public-ip` - The association ID returned when the network interface was associated with the Elastic IP address (IPv4).
- `addresses.association.owner-id` - The owner ID of the addresses associated with the network interface.
- `association.association-id` - The association ID returned when the network interface was associated with an IPv4 address.
- `association.allocation-id` - The allocation ID returned when you allocated the Elastic IP address (IPv4) for your network interface.
- `association.ip-owner-id` - The owner of the Elastic IP address (IPv4) associated with the network interface.
- `association.public-ip` - The address of the Elastic IP address (IPv4) bound to the network interface.
- `association.public-dns-name` - The public DNS name for the network interface (IPv4).
- `attachment.attachment-id` - The ID of the interface attachment.
- `attachment.attach-time` - The time that the network interface was attached to an instance.
- `attachment.delete-on-termination` - Indicates whether the attachment is deleted when an instance is terminated.
- `attachment.device-index` - The device index to which the network interface is attached.
- `attachment.instance-id` - The ID of the instance to which the network interface is attached.
- `attachment.instance-owner-id` - The owner ID of the instance to which the network interface is attached.
- `attachment.status` - The status of the attachment (`attaching` | `attached` | `detaching` | `detached`).
- `availability-zone` - The Availability Zone of the network interface.
- `description` - The description of the network interface.
- `group-id` - The ID of a security group associated with the network interface.

- `group-name` - The name of a security group associated with the network interface.
- `ipv6-addresses.ipv6-address` - An IPv6 address associated with the network interface.
- `mac-address` - The MAC address of the network interface.
- `network-interface-id` - The ID of the network interface.
- `owner-id` - The AWS account ID of the network interface owner.
- `private-ip-address` - The private IPv4 address or addresses of the network interface.
- `private-dns-name` - The private DNS name of the network interface (IPv4).
- `requester-id` - The alias or AWS account ID of the principal or service that created the network interface.
- `requester-managed` - Indicates whether the network interface is being managed by an AWS service (for example, AWS Management Console, Auto Scaling, and so on).
- `source-dest-check` - Indicates whether the network interface performs source/destination checking. A value of `true` means checking is enabled, and `false` means checking is disabled. The value must be `false` for the network interface to perform network address translation (NAT) in your VPC.
- `status` - The status of the network interface. If the network interface is not attached to an instance, the status is `available`; if a network interface is attached to an instance the status is `in-use`.
- `subnet-id` - The ID of the subnet for the network interface.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the network interface.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results. You cannot specify this parameter and the `network-interface-ids` parameter in the same request.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### NetworkInterfaceId.N

One or more network interface IDs.

Default: Describes all your network interfaces.

Type: Array of strings

Required: No

#### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **networkInterfaceSet**

Information about one or more network interfaces.

Type: Array of [NetworkInterface \(p. 1838\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes all your network interfaces.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeNetworkInterfacesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>fc45294c-006b-457b-bab9-012f5b3b0e40</requestId>  
  <networkInterfaceSet>  
    <item>  
      <networkInterfaceId>eni-0f62d866</networkInterfaceId>  
      <subnetId>subnet-c53c87ac</subnetId>  
      <vpcId>vpc-cc3c87a5</vpcId>  
      <availabilityZone>api-southeast-1b</availabilityZone>  
      <description/>  
      <ownerId>053230519467</ownerId>  
      <requesterManaged>false</requesterManaged>  
      <status>in-use</status>  
      <macAddress>02:81:60:cb:27:37</macAddress>  
      <privateIpAddress>10.0.0.146</privateIpAddress>
```

```
<sourceDestCheck>true</sourceDestCheck>
<groupSet>
  <item>
    <groupId>sg-3f4b5653</groupId>
    <groupName>default</groupName>
  </item>
</groupSet>
<attachment>
  <attachmentId>eni-attach-6537fc0c</attachmentId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <instanceOwnerId>053230519467</instanceOwnerId>
  <deviceIndex>0</deviceIndex>
  <status>attached</status>
  <attachTime>2012-07-01T21:45:27.000Z</attachTime>
  <deleteOnTermination>true</deleteOnTermination>
</attachment>
<tagSet/>
<privateIpAddressesSet>
  <item>
    <privateIpAddress>10.0.0.146</privateIpAddress>
    <primary>true</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.148</privateIpAddress>
    <primary>false</primary>
  </item>
  <item>
    <privateIpAddress>10.0.0.150</privateIpAddress>
    <primary>false</primary>
  </item>
</privateIpAddressesSet>
<ipv6AddressesSet/>
</item>
<item>
  <networkInterfaceId>eni-a66ed5cf</networkInterfaceId>
  <subnetId>subnet-cd8a35a4</subnetId>
  <vpcId>vpc-f28a359b</vpcId>
  <availabilityZone>ap-southeast-1b</availabilityZone>
  <description>Primary network interface</description>
  <ownerId>053230519467</ownerId>
  <requesterManaged>false</requesterManaged>
  <status>in-use</status>
  <macAddress>02:78:d7:00:8a:1e</macAddress>
  <privateIpAddress>10.0.1.233</privateIpAddress>
  <sourceDestCheck>true</sourceDestCheck>
  <groupSet>
    <item>
      <groupId>sg-a2a0b2ce</groupId>
      <groupName>quick-start-1</groupName>
    </item>
  </groupSet>
  <attachment>
    <attachmentId>eni-attach-a99c57c0</attachmentId>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <instanceOwnerId>053230519467</instanceOwnerId>
    <deviceIndex>0</deviceIndex>
    <status>attached</status>
    <attachTime>2012-06-27T20:08:44.000Z</attachTime>
    <deleteOnTermination>true</deleteOnTermination>
  </attachment>
  <tagSet/>
  <privateIpAddressesSet>
    <item>
      <privateIpAddress>10.0.1.233</privateIpAddress>
      <primary>true</primary>
    </item>
```

```
<item>
    <privateIpAddress>10.0.1.20</privateIpAddress>
    <primary>false</primary>
</item>
</privateIpAddressesSet>
<ipv6AddressesSet>
    <item>
        <ipv6Address>2001:db8:1234:1a00::123</ipv6Address>
    </item>
    <item>
        <ipv6Address>2001:db8:1234:1a00::456</ipv6Address>
    </item>
</ipv6AddressesSet>
</item>
</networkInterfaceSet>
</DescribeNetworkInterfacesResponse>
```

## Example 2

This example uses a filter to describe only network interfaces that are in Availability Zone us-east-2a.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeNetworkInterfaces
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-2a
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribePlacementGroups

Describes the specified placement groups or all of your placement groups. For more information, see [Placement groups](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `group-name` - The name of the placement group.
- `state` - The state of the placement group (`pending` | `available` | `deleting` | `deleted`).
- `strategy` - The strategy of the placement group (`cluster` | `spread` | `partition`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### GroupId.N

The IDs of the placement groups.

Type: Array of strings

Required: No

### GroupName.N

The names of the placement groups.

Default: Describes all your placement groups, or only those otherwise specified.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

## placementGroupSet

Information about the placement groups.

Type: Array of [PlacementGroup \(p. 1880\)](#) objects

## requestId

The ID of the request.

Type: String

# Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the placement group named ABC-spread.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=ABC-spread
&AUTHPARAMS
```

#### Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>ABC-spread</groupName>
      <strategy>spread</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

### Example 2

This example filters the response to include only placement groups that include the string Project in the name.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&Filter.1.Name=group-name
&Filter.1.Value=*Project*
&AUTHPARAMS
```

## Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>Project-cluster</groupName>
      <strategy>cluster</strategy>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## Example 3

This example describes the partition placement group named `HDSF-Group-A` with three partitions.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePlacementGroups
&GroupName.1=HDSF-Group-A
&AUTHPARAMS
```

## Sample Response

```
<DescribePlacementGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestID>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestID>
  <placementGroupSet>
    <item>
      <groupName>HDSF-Group-A</groupName>
      <strategy>partition</strategy>
      <partitionCount>3</partitionCount>
      <state>available</state>
    </item>
  </placementGroupSet>
</DescribePlacementGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribePrefixLists

Describes available AWS services in a prefix list format, which includes the prefix list name and prefix list ID of the service and the IP address range for the service.

We recommend that you use [DescribeManagedPrefixLists \(p. 671\)](#) instead.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `prefix-list-id`: The ID of a prefix list.
- `prefix-list-name`: The name of a prefix list.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PrefixListId.N

One or more prefix list IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### prefixListSet

All available prefix lists.

Type: Array of [PrefixList \(p. 1886\)](#) objects

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example lists all available AWS prefix lists.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePrefixLists  
&AUTHPARAMS
```

#### Sample Response

```
<DescribePrefixListsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <prefixListSet>  
    <item>  
      <prefixListName>com.amazonaws.us-west-2.s3</prefixListName>  
      <prefixListId>pl-12345678</prefixListId>  
      <cidrSet>  
        <item>54.123.456.7/19</item>  
      </cidrSet>  
    </item>  
  </prefixListSet>  
  <requestId>614db4d4-ac7b-4cb6-853e-example</requestId>  
</DescribePrefixListsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribePrincipalIdFormat

Describes the ID format settings for the root user and all IAM roles and IAM users that have explicitly specified a longer ID (17-character ID) preference.

By default, all IAM roles and IAM users default to the same ID settings as the root user, unless they explicitly override the settings. This request is useful for identifying those IAM users and IAM roles that have overridden the default ID settings.

The following resource types support longer IDs: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token to request the next page of results.

Type: String

Required: No

### Resource.N

The type of resource: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | instance | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | reservation | route-table | route-table-association | security-group | snapshot | subnet | subnet-cidr-block-association | volume | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

### principalSet

Information about the ID format settings for the ARN.

Type: Array of [PrincipalIdFormat \(p. 1893\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the ID format for the root user and all IAM roles and IAM users that have explicitly specified a longer ID preference.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribePrincipalIdFormat
&AUTHPARAMS
```

### Sample Response

```
<DescribePrincipalIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <principalSet>
    <item>
      <arn>arn:aws:iam::123456789012:root</arn>
      <statusSet>
        <item>
          <deadline>2016-12-15T12:00:00.000Z</deadline>
          <resource>reservation</resource>
          <useLongIds>true</useLongIds>
```

```
</item>
<item>
    <deadline>2016-12-15T12:00:00.000Z</deadline>
    <resource>instance</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <deadline>2016-12-15T12:00:00.000Z</deadline>
    <resource>volume</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <deadline>2016-12-15T12:00:00.000Z</deadline>
    <resource>snapshot</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-interface-attachment</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-interface</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>elastic-ip-allocation</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>elastic-ip-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>subnet</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>dhcp-options</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>internet-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-cidr-block-association</resource>
```

```
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>vpc-ipv6-cidr-block-association</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>subnet-ipv6-cidr-block-association</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>vpc-peering-connection</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>security-group</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>flow-log</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>customer-gateway</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>vpc-endpoint</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>vpn-connection</resource>
        <useLongIds>true</useLongIds>
    </item>
    <item>
        <resource>vpn-gateway</resource>
        <useLongIds>true</useLongIds>
    </item>
    </statusSet>
</item>
<item>
    <arn>arn:aws:iam::987654321000:user/user1</arn>
    <statusSet>
        <item>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
            <resource>reservation</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
            <resource>instance</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
            <resource>volume</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <deadline>2016-12-15T12:00:00.000Z</deadline>
            <resource>snapshot</resource>
            <useLongIds>true</useLongIds>
        </item>
        <item>
            <resource>network-interface-attachment</resource>
            <useLongIds>true</useLongIds>
        </item>
    </statusSet>
</item>
```

```
</item>
<item>
    <resource>network-interface</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>elastic-ip-allocation</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>elastic-ip-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc</resource>
    <useLongIds>false</useLongIds>
</item>
<item>
    <resource>subnet</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>route-table-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>network-acl-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>dhcp-options</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>internet-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-ipv6-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>subnet-ipv6-cidr-block-association</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-peering-connection</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>security-group</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
```

```
<resource>flow-log</resource>
<useLongIds>true</useLongIds>
</item>
<item>
    <resource>customer-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpc-endpoint</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpn-connection</resource>
    <useLongIds>true</useLongIds>
</item>
<item>
    <resource>vpn-gateway</resource>
    <useLongIds>true</useLongIds>
</item>
</statusSet>
</item>
</principalSet>
</DescribePrincipalIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribePublicIpv4Pools

Describes the specified IPv4 address pools.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Filter.N**

One or more filters.

- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 10.

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Required: No

### **PoolId.N**

The IDs of the address pools.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **publicIpv4PoolSet**

Information about the address pools.

Type: Array of [PublicIpv4Pool \(p. 1903\)](#) objects

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeRegions

Describes the Regions that are enabled for your account, or all Regions.

For a list of the Regions supported by Amazon EC2, see [Amazon Elastic Compute Cloud endpoints and quotas](#).

For information about enabling and disabling Regions for your account, see [Managing AWS Regions](#) in the [AWS General Reference](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllRegions

Indicates whether to display all Regions, including Regions that are disabled for your account.

Type: Boolean

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `endpoint` - The endpoint of the Region (for example, `ec2.us-east-1.amazonaws.com`).
- `opt-in-status` - The opt-in status of the Region (`opt-in-not-required` | `opted-in` | `not-opted-in`).
- `region-name` - The name of the Region (for example, `us-east-1`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### RegionName.N

The names of the Regions. You can specify any Regions, whether they are enabled and disabled for your account.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### regionInfo

Information about the Regions.

Type: Array of [Region \(p. 1911\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example displays information about all Regions enabled for your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions  
&AUTHPARAMS
```

### Example 2

This example displays information about all Regions, even the Regions that are disabled for your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions  
&AllRegions=true  
&AUTHPARAMS
```

### Example 3

This example displays information about the specified Regions only.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRegions  
&RegionName.1=us-east-1  
&RegionName.2=eu-west-1  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeRegionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<regionInfo>
  <item>
    <regionName>us-east-1</regionName>
    <regionEndpoint>ec2.us-east-1.amazonaws.com</regionEndpoint>
  </item>
  <item>
    <regionName>eu-west-1</regionName>
    <regionEndpoint>ec2.eu-west-1.amazonaws.com</regionEndpoint>
  </item>
</regionInfo>
</DescribeRegionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeReplaceRootVolumeTasks

Describes a root volume replacement task. For more information, see [Replace a root volume](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

Filter to use:

- `instance-id` - The ID of the instance for which the root volume replacement task was created.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 50.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### ReplaceRootVolumeTaskId.N

The ID of the root volume replacement task to view.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**replaceRootVolumeTaskSet**

Information about the root volume replacement task.

Type: Array of [ReplaceRootVolumeTask \(p. 1914\)](#) objects

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeReservedInstances

Describes one or more of the Reserved Instances that you purchased.

For more information about Reserved Instances, see [Reserved Instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (one year or three years), in seconds (31536000 | 94608000).
- `end` - The time when the Reserved Instance expires (for example, 2015-08-07T11:54:42.000Z).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type that is covered by the reservation.
- `scope` - The scope of the Reserved Instance (Region or Availability Zone).
- `product-description` - The Reserved Instance product platform description. Instances that include (Amazon VPC) in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC (Linux/UNIX | Linux/UNIX (Amazon VPC) | SUSE Linux | SUSE Linux (Amazon VPC) | Red Hat Enterprise Linux | Red Hat Enterprise Linux (Amazon VPC) | Red Hat Enterprise Linux with HA (Amazon VPC) | Windows | Windows (Amazon VPC) | Windows with SQL Server Standard | Windows with SQL Server Standard (Amazon VPC) | Windows with SQL Server Web | Windows with SQL Server Web (Amazon VPC) | Windows with SQL Server Enterprise | Windows with SQL Server Enterprise (Amazon VPC)).
- `reserved-instances-id` - The ID of the Reserved Instance.
- `start` - The time at which the Reserved Instance purchase request was placed (for example, 2014-08-07T11:54:42.000Z).
- `state` - The state of the Reserved Instance (payment-pending | active | payment-failed | retired).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

**OfferingClass**

Describes whether the Reserved Instance is Standard or Convertible.

Type: String

Valid Values: standard | convertible

Required: No

**OfferingType**

The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the Medium Utilization Reserved Instance offering type.

Type: String

Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront

Required: No

**ReservedInstancesId.N**

One or more Reserved Instance IDs.

Default: Describes all your Reserved Instances, or only those otherwise specified.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**reservedInstancesSet**

A list of Reserved Instances.

Type: Array of [ReservedInstances \(p. 1933\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes Reserved Instances owned by your account.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances  
&AUTHPARAMS
```

## Sample Response

```
<DescribeReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <reservedInstancesSet>  
    ...  
    <item>  
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>  
      <instanceType>m1.xlarge</instanceType>  
      <availabilityZone>us-east-1b</availabilityZone>  
      <start>2015-07-14T11:00:00.000Z</start>  
      <end>2016-07-13T12:00:00.000Z</end>  
      <duration>31536000</duration>  
      <fixedPrice>0.0</fixedPrice>  
      <usagePrice>0.034</usagePrice>  
      <instanceCount>2</instanceCount>  
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>  
      <state>active</state>  
      <instanceTenancy>default</instanceTenancy>  
      <currencyCode>USD</currencyCode>  
      <offeringType>Partial Upfront</offeringType>  
      <recurringCharges>  
        <item>  
          <frequency>Hourly</frequency>  
          <amount>0.05</amount>  
        </item>  
      </recurringCharges>  
      <offeringClass>standard</offeringClass>  
      <scope>AvailabilityZone</scope>  
    </item>  
    ...  
  </reservedInstancesSet>  
</DescribeReservedInstancesResponse>
```

## Example

This example filters the response to include only one-year, m1.small Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstances  
&Filter.1.Name=duration  
&Filter.1.Value.1=31536000  
&Filter.2.Name=instance-type  
&Filter.2.Value.1=m1.small  
&Filter.3.Name=product-description  
&Filter.3.Value.1=Linux%2FUNIX  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeReservedInstancesListings

Describes your account's Reserved Instance listings in the Reserved Instance Marketplace.

The Reserved Instance Marketplace matches sellers who want to resell Reserved Instance capacity that they no longer need with buyers who want to purchase additional capacity. Reserved Instances bought and sold through the Reserved Instance Marketplace work like any other Reserved Instances.

As a seller, you choose to list some or all of your Reserved Instances, and you specify the upfront price to receive for them. Your Reserved Instances are then listed in the Reserved Instance Marketplace and are available for purchase.

As a buyer, you specify the configuration of the Reserved Instance to purchase, and the Marketplace matches what you're searching for with what's available. The Marketplace first sells the lowest priced Reserved Instances to you, and continues to sell available Reserved Instance listings to you until your demand is met. You are charged based on the total price of all of the listings that you purchase.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Filter.N

One or more filters.

- `reserved-instances-id` - The ID of the Reserved Instances.
- `reserved-instances-listing-id` - The ID of the Reserved Instances listing.
- `status` - The status of the Reserved Instance listing (`pending` | `active` | `cancelled` | `closed`).
- `status-message` - The reason for the status.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### ReservedInstancesId

One or more Reserved Instance IDs.

Type: String

Required: No

### ReservedInstancesListingId

One or more Reserved Instance listing IDs.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### reservedInstancesListingsSet

Information about the Reserved Instance listing.

Type: Array of [ReservedInstancesListing \(p. 1942\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example shows all the listings associated with your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesListings  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeReservedInstancesListingsResponse>  
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>  
  <reservedInstancesListingsSet>  
    <item>  
      <reservedInstancesListingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</reservedInstancesListingId>  
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>  
      <createDate>2012-07-06T19:35:29.000Z</createDate>  
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>  
      <status>active</status>  
      <statusMessage>ACTIVE</statusMessage>  
      <instanceCounts>  
        <item>  
          <state>Available</state>  
          <instanceCount>20</instanceCount>  
        </item>  
        <item>  
          <state>Sold</state>  
          <instanceCount>0</instanceCount>  
        </item>  
        <item>  
          <state>Cancelled</state>  
          <instanceCount>0</instanceCount>  
        </item>  
        <item>  
          <state>Pending</state>  
          <instanceCount>0</instanceCount>  
        </item>  
      </instanceCounts>  
    </item>  
  </reservedInstancesListingsSet>  
</DescribeReservedInstancesListingsResponse>
```

```
<priceSchedules>
  <item>
    <term>8</term>
    <price>480.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>7</term>
    <price>420.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>6</term>
    <price>360.0</price>
    <currencyCode>USD</currencyCode>
    <active>active</active>
  </item>
  <item>
    <term>5</term>
    <price>300.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>4</term>
    <price>240.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>3</term>
    <price>180.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>2</term>
    <price>120.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
  <item>
    <term>1</term>
    <price>60.0</price>
    <currencyCode>USD</currencyCode>
    <active>false</active>
  </item>
</priceSchedules>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesListingsSet>
</DescribeReservedInstancesListingsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeReservedInstancesModifications

Describes the modifications made to your Reserved Instances. If no parameter is specified, information about all your Reserved Instances modification requests is returned. If a modification ID is specified, only information about the specific modification is returned.

For more information, see [Modifying Reserved Instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Filter.N

One or more filters.

- `client-token` - The idempotency token for the modification request.
- `create-date` - The time when the modification request was created.
- `effective-date` - The time when the modification becomes effective.
- `modification-result.reserved-instances-id` - The ID for the Reserved Instances created as part of the modification request. This ID is only available when the status of the modification is fulfilled.
- `modification-result.target-configuration.availability-zone` - The Availability Zone for the new Reserved Instances.
- `modification-result.target-configuration.instance-count` - The number of new Reserved Instances.
- `modification-result.target-configuration.instance-type` - The instance type of the new Reserved Instances.
- `modification-result.target-configuration.platform` - The network platform of the new Reserved Instances (EC2-Classic | EC2-VPC).
- `reserved-instances-id` - The ID of the Reserved Instances modified.
- `reserved-instances-modification-id` - The ID of the modification request.
- `status` - The status of the Reserved Instances modification request (processing | fulfilled | failed).
- `status-message` - The reason for the status.
- `update-date` - The time when the modification request was last updated.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

### ReservedInstancesModificationId.N

IDs for the submitted modification request.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### reservedInstancesModificationsSet

The Reserved Instance modification information.

Type: Array of [ReservedInstancesModification \(p. 1944\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example illustrates one usage of `DescribeReservedInstancesModifications`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications  
&AUTHPARAMS
```

### Example 2

This example filters the response to include only Reserved Instances modification requests with status `processing`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesModifications  
&Filter.1.Name=status  
&Filter.1.Value.1=processing  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeReservedInstancesOfferings

Describes Reserved Instance offerings that are available for purchase. With Reserved Instances, you purchase the right to launch instances for a period of time. During that time period, you do not receive insufficient capacity errors, and you pay a lower usage rate than the rate charged for On-Demand instances for the actual time used.

If you have listed your own Reserved Instances for sale in the Reserved Instance Marketplace, they will be excluded from these results. This is to ensure that you do not purchase your own Reserved Instances.

For more information, see [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZone

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `availability-zone` - The Availability Zone where the Reserved Instance can be used.
- `duration` - The duration of the Reserved Instance (for example, one year or three years), in seconds (31536000 | 94608000).
- `fixed-price` - The purchase price of the Reserved Instance (for example, 9800.0).
- `instance-type` - The instance type that is covered by the reservation.
- `marketplace` - Set to `true` to show only Reserved Instance Marketplace offerings. When this filter is not used, which is the default behavior, all offerings from both AWS and the Reserved Instance Marketplace are listed.
- `product-description` - The Reserved Instance product platform description. Instances that include (Amazon VPC) in the product platform description will only be displayed to EC2-Classic account holders and are for use with Amazon VPC. (Linux/UNIX | Linux/UNIX (Amazon VPC) | SUSE Linux | SUSE Linux (Amazon VPC) | Red Hat Enterprise Linux | Red Hat Enterprise Linux (Amazon VPC) | Red Hat Enterprise Linux with HA (Amazon VPC) | Windows | Windows (Amazon VPC) | Windows with SQL Server Standard | Windows with SQL Server Standard (Amazon VPC) | Windows with SQL Server Web | Windows with SQL Server Web (Amazon VPC) | Windows with SQL Server Enterprise | Windows with SQL Server Enterprise (Amazon VPC))
- `reserved-instances-offering-id` - The Reserved Instances offering ID.
- `scope` - The scope of the Reserved Instance (Availability Zone or Region).
- `usage-price` - The usage price of the Reserved Instance, per hour (for example, 0.84).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### IncludeMarketplace

Include Reserved Instance Marketplace offerings in the response.

Type: Boolean

Required: No

#### InstanceTenancy

The tenancy of the instances covered by the reservation. A Reserved Instance with a tenancy of `dedicated` is applied to instances that run in a VPC on single-tenant hardware (i.e., Dedicated Instances).

**Important:** The `host` value cannot be used with this parameter. Use the `default` or `dedicated` values only.

Default: `default`

Type: String

Valid Values: `default` | `dedicated` | `host`

Required: No

#### InstanceType

The instance type that the reservation will cover (for example, `m1.small`). For more information, see [Instance types](#) in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `t1.micro` | `t2.nano` | `t2.micro` | `t2.small` | `t2.medium` | `t2.large` | `t2.xlarge` | `t2.2xlarge` | `t3.nano` | `t3.micro` | `t3.small` | `t3.medium` | `t3.large` | `t3.xlarge` | `t3.2xlarge` | `t3a.nano` | `t3a.micro` | `t3a.small` | `t3a.medium` | `t3a.large` | `t3a.xlarge` | `t3a.2xlarge` | `t4g.nano` | `t4g.micro` | `t4g.small` | `t4g.medium` | `t4g.large` | `t4g.xlarge` | `t4g.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m4.large` | `m4.xlarge` | `m4.2xlarge` | `m4.4xlarge` | `m4.10xlarge` | `m4.16xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `r4.large` | `r4.xlarge` | `r4.2xlarge` | `r4.4xlarge` | `r4.8xlarge` | `r4.16xlarge` | `r5.large` | `r5.xlarge` | `r5.2xlarge` | `r5.4xlarge` | `r5.8xlarge` | `r5.12xlarge` | `r5.16xlarge` | `r5.24xlarge` | `r5.metal` | `r5a.large` | `r5a.xlarge` | `r5a.2xlarge` | `r5a.4xlarge` | `r5a.8xlarge` | `r5a.12xlarge` | `r5a.16xlarge` | `r5a.24xlarge` | `r5b.large` | `r5b.xlarge` | `r5b.2xlarge` | `r5b.4xlarge` | `r5b.8xlarge` | `r5b.12xlarge` | `r5b.16xlarge` | `r5b.24xlarge` | `r5b.metal` | `r5d.large` | `r5d.xlarge` | `r5d.2xlarge` | `r5d.4xlarge` | `r5d.8xlarge` | `r5d.12xlarge` | `r5d.16xlarge` | `r5d.24xlarge` | `r5d.metal` | `r5ad.large` | `r5ad.xlarge` | `r5ad.2xlarge` | `r5ad.4xlarge` | `r5ad.8xlarge` | `r5ad.12xlarge` | `r5ad.16xlarge` | `r5ad.24xlarge` | `r6g.metal` | `r6g.medium` | `r6g.large` | `r6g.xlarge` | `r6g.2xlarge` | `r6g.4xlarge` | `r6g.8xlarge` | `r6g.12xlarge` | `r6g.16xlarge` | `r6gd.metal` | `r6gd.medium` | `r6gd.large` | `r6gd.xlarge` | `r6gd.2xlarge` | `r6gd.4xlarge` | `r6gd.8xlarge` | `r6gd.12xlarge` | `r6gd.16xlarge` | `x1.16xlarge` | `x1.32xlarge` | `x1e.xlarge` | `x1e.2xlarge` | `x1e.4xlarge` | `x1e.8xlarge` | `x1e.16xlarge` | `x1e.32xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `i3.large` | `i3.xlarge` | `i3.2xlarge` | `i3.4xlarge` | `i3.8xlarge` | `i3.16xlarge` | `i3.metal` | `i3en.large` | `i3en.xlarge` | `i3en.2xlarge` | `i3en.3xlarge` | `i3en.6xlarge` | `i3en.12xlarge` | `i3en.24xlarge` | `i3en.metal` |

hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
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m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal |  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal |  
m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large |  
m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge |  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge |  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge |  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium |  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge |  
m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge |  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge |  
m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge |  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge |  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**MaxDuration**

The maximum duration (in seconds) to filter when searching for offerings.

Default: 94608000 (3 years)

Type: Long

Required: No

**MaxInstanceCount**

The maximum number of instances to filter when searching for offerings.

Default: 20

Type: Integer

Required: No

**MaxResults**

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. The maximum is 100.

Default: 100

Type: Integer

Required: No

**MinDuration**

The minimum duration (in seconds) to filter when searching for offerings.

Default: 2592000 (1 month)

Type: Long

Required: No

**NextToken**

The token to retrieve the next page of results.

Type: String

Required: No

**OfferingClass**

The offering class of the Reserved Instance. Can be `standard` or `convertible`.

Type: String

Valid Values: `standard` | `convertible`

Required: No

**OfferingType**

The Reserved Instance offering type. If you are using tools that predate the 2011-11-01 API version, you only have access to the `Medium Utilization` Reserved Instance offering type.

Type: String

Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront

Required: No

#### **ProductDescription**

The Reserved Instance product platform description. Instances that include (Amazon VPC) in the description are for use with Amazon VPC.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

#### **ReservedInstancesOfferingId.N**

One or more Reserved Instances offering IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **reservedInstancesOfferingsSet**

A list of Reserved Instances offerings.

Type: Array of [ReservedInstancesOffering \(p. 1947\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example Describing Reserved Instance Marketplace Offerings Only

This example requests a list of Linux/UNIX, No Upfront Reserved Instances that are available through the Reserved Instance Marketplace only. When using the Query API, all strings must be URL-encoded.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=marketplace
&Filter.1.Value.1=true
&IncludeMarketplace=true
&OfferingType=No+Upfront
&ProductDescription=Linux%2FUNIX
&Version=2016-11-15
&AUTHPARAMS
```

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&AUTHPARAMS
```

## Sample Response

```
<DescribeReservedInstancesOfferingsResponse>
  <requestId>cec5c904-8f3a-4de5-8f5a-ff7f9EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>253dfbf9-c335-4808-b956-d942cEXAMPLE</
      reservedInstancesOfferingId>
      <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
      <createDate>2012-07-06T19:35:29.000Z</createDate>
      <updateDate>2012-07-06T19:35:30.000Z</updateDate>
      <status>active</status>
      <statusMessage>ACTIVE</statusMessage>
      <instanceCounts>
        <item>
          <state>Available</state>
          <instanceCount>20</instanceCount>
        </item>
        <item>
          <state>Sold</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Cancelled</state>
          <instanceCount>0</instanceCount>
        </item>
        <item>
          <state>Pending</state>
          <instanceCount>0</instanceCount>
        </item>
      </instanceCounts>
      <priceSchedules>
        <item>
          <term>8</term>
          <price>480.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>7</term>
          <price>420.0</price>
          <currencyCode>USD</currencyCode>
          <active>false</active>
        </item>
        <item>
          <term>6</term>
```

```
<price>360.0</price>
<currencyCode>USD</currencyCode>
<active>active</active>
</item>
<item>
<term>5</term>
<price>300.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>
<item>
<term>4</term>
<price>240.0</price>
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</item>
<item>
<term>2</term>
<price>120.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>
<item>
<term>1</term>
<price>60.0</price>
<currencyCode>USD</currencyCode>
<active>false</active>
</item>
</priceSchedules>
<tagSet/>
<clientToken>myclienttoken1</clientToken>
</item>
</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>2bc7dafa-daf4-4257-bdf9-c0814EXAMPLE</requestId>
<reservedInstancesOfferingsSet>
<item>
<reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a7f5-0841cEXAMPLE</reservedInstancesOfferingId>
<instanceType>m3.xlarge</instanceType>
<availabilityZone>us-east-1e</availabilityZone>
<duration>2332800</duration>
<fixedPrice>0.0</fixedPrice>
<usagePrice>0.0</usagePrice>
<productDescription>Linux/UNIX</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>No Upfront</offeringType>
<recurringCharges>
<item>
<frequency>Hourly</frequency>
<amount>0.19</amount>
</item>
</recurringCharges>
<marketplace>true</marketplace>
```

```
<pricingDetailsSet>
  <item>
    <price>0.0</price>
    <count>3</count>
  </item>
</pricingDetailsSet>
<offeringClass>standard</offeringClass>
<scope>Availability Zone</scope>
</item>
<item>
  <reservedInstancesOfferingId>2bc7dafa-daf8-4257-bdf9-c0814EXAMPLE</
reservedInstancesOfferingId>
  <instanceType>m3.2xlarge</instanceType>
  <availabilityZone>us-east-1b</availabilityZone>
  <duration>15552000</duration>
  <fixedPrice>1.01</fixedPrice>
  <usagePrice>0.0</usagePrice>
  <productDescription>Linux/UNIX</productDescription>
  <instanceTenancy>default</instanceTenancy>
  <currencyCode>USD</currencyCode>
  <offeringType>No Upfront</offeringType>
  <recurringCharges>
    <item>
      <frequency>Hourly</frequency>
      <amount>0.38</amount>
    </item>
  </recurringCharges>
  <marketplace>true</marketplace>
  <pricingDetailsSet>
    <item>
      <price>1.01</price>
      <count>1</count>
    </item>
  </pricingDetailsSet>
  <offeringClass>standard</offeringClass>
  <scope>Availability Zone</scope>
</item>
</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Describing Offerings Only

This example lists AWS offerings only.

### Sample Request

```
http://ec2.amazonaws.com/doc/2016-11-15/?Action=DescribeReservedInstancesOfferings
&IncludeMarketplace=false
&AUTHPARAMS
```

### Sample Response

```
<DescribeReservedInstancesOfferingsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>2bc7dafa-daf8-4257-bdf9-c0814EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    <item>
      <reservedInstancesOfferingId>a6ce8269-7b8c-42cd-a6y5-0841cEXAMPLE</
reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1e</availabilityZone>
      <duration>94608000</duration>
```

```
<fixedPrice>631.0</fixedPrice>
<usagePrice>0.0</usagePrice>
<productDescription>Linux/UNIX</productDescription>
<instanceTenancy>default</instanceTenancy>
<currencyCode>USD</currencyCode>
<offeringType>Partial Upfront</offeringType>
<recurringCharges>
  <item>
    <frequency>Hourly</frequency>
    <amount>0.28</amount>
  </item>
</recurringCharges>
<marketplace>false</marketplace>
<pricingDetailsSet/>
<offeringClass>standard</offeringClass>
<scope>Availability Zone</scope>
</item>
<item>
  <reservedInstancesOfferingId>2bc7dafa-rafd-6t7y-bdf9-c0814EXAMPLE</
reservedInstancesOfferingId>
  <instanceType>c1.medium</instanceType>
  <availabilityZone>us-east-1b</availabilityZone>
  <duration>94608000</duration>
  <fixedPrice>631.0</fixedPrice>
  <usagePrice>0.0</usagePrice>
  <productDescription>Linux/UNIX</productDescription>
  <instanceTenancy>default</instanceTenancy>
  <currencyCode>USD</currencyCode>
  <offeringType>Partial Upfront</offeringType>
  <recurringCharges>
    <item>
      <frequency>Hourly</frequency>
      <amount>0.88</amount>
    </item>
  </recurringCharges>
  <marketplace>false</marketplace>
  <pricingDetailsSet/>
  <offeringClass>convertible</offeringClass>
  <scope>Availability Zone</scope>
</reservedInstancesOfferingsSet>
</DescribeReservedInstancesOfferingsResponse>
```

## Example Using Tokens to Manage Results

You can use pagination support to query the results sequentially and in parts.

Specify the maximum number of results that are returned in the response. Then, each paginated response contains a token that can be provided as input to a subsequent `DescribeReservedInstancesOfferings` call to fetch the next page. (Make sure that you use URL encoding for the token value.)

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&MaxResults=5
&AUTHPARAMS
```

### Sample Response

```

<DescribeReservedInstancesOfferingsResponse>
  <requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
  <reservedInstancesOfferingsSet>
    ...
    <item>
      <reservedInstancesOfferingId>649fd0c8-7846-46b8-8f84-a6400EXAMPLE</
      reservedInstancesOfferingId>
      <instanceType>c1.medium</instanceType>
      <availabilityZone>us-east-1a</availabilityZone>
      <duration>94608000</duration>
      <fixedPrice>631.0</fixedPrice>
      <usagePrice>0.0</usagePrice>
      <productDescription>Linux/UNIX (Amazon VPC)</productDescription>
      <instanceTenancy>default</instanceTenancy>
      <currencyCode>USD</currencyCode>
      <offeringType>Partial Upfront</offeringType>
      <recurringCharges>
        <item>
          <frequency>>Hourly</frequency>
          <amount>0.028</amount>
        </item>
      </recurringCharges>
      <marketplace>false</marketplace>
      <pricingDetailsSet/>
      <offeringClass>standard</offeringClass>
      <scope>Availability Zone</scope>
    </item>
    ...
  </reservedInstancesOfferingsSet>
  <nextToken>h/C8YKPQBHEjW8xKz1827/Zzyb0VqsqkjRo3TqhFYeE=</nextToken>
</DescribeReservedInstancesOfferingsResponse>
&MaxResults=5
&NextToken=h%2FC8YKPQBHEjW8xKz1827%2FZzyb0VqsqkjRo3TqhFYeE%3D
&AUTHPARAMS

```

## Example Using Filters

This example filters the response to include only one-year, m1.small or m1.large Linux/UNIX Reserved Instances. If you want Linux/UNIX Reserved Instances specifically for use with a VPC, set the product description to Linux/UNIX (Amazon VPC).

### Sample Request

```

https://ec2.amazonaws.com/?Action=DescribeReservedInstancesOfferings
&Filter.1.Name=duration
&Filter.1.Value.1=31536000
&Filter.2.Name=instance-type
&Filter.2.Value.1=m1.small
&Filter.2.Value.2=m1.large
&Filter.3.Name=product-description
&Filter.3.Value.1=Linux%2FUNIX
&AUTHPARAMS

```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeRouteTables

Describes one or more of your route tables.

Each subnet in your VPC must be associated with a route table. If a subnet is not explicitly associated with any route table, it is implicitly associated with the main route table. This command does not return the subnet ID for implicit associations.

For more information, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `association.route-table-association-id` - The ID of an association ID for the route table.
- `association.route-table-id` - The ID of the route table involved in the association.
- `association.subnet-id` - The ID of the subnet involved in the association.
- `association.main` - Indicates whether the route table is the main route table for the VPC (true | false). Route tables that do not have an association ID are not returned in the response.
- `owner-id` - The ID of the AWS account that owns the route table.
- `route-table-id` - The ID of the route table.
- `route.destination-cidr-block` - The IPv4 CIDR range specified in a route in the table.
- `route.destination-ipv6-cidr-block` - The IPv6 CIDR range specified in a route in the route table.
- `route.destination-prefix-list-id` - The ID (prefix) of the AWS service specified in a route in the table.
- `route.egress-only-internet-gateway-id` - The ID of an egress-only Internet gateway specified in a route in the route table.
- `route.gateway-id` - The ID of a gateway specified in a route in the table.
- `route.instance-id` - The ID of an instance specified in a route in the table.
- `route.nat-gateway-id` - The ID of a NAT gateway.
- `route.transit-gateway-id` - The ID of a transit gateway.
- `route.origin` - Describes how the route was created. `CreateRouteTable` indicates that the route was automatically created when the route table was created; `CreateRoute` indicates that the route was manually added to the route table; `EnableVgwRoutePropagation` indicates that the route was propagated by route propagation.
- `route.state` - The state of a route in the route table (active | blackhole). The blackhole state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, the specified NAT instance has been terminated, and so on).

- `route.vpc-peering-connection-id` - The ID of a VPC peering connection specified in a route in the table.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the route table.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 100.

Required: No

#### NextToken

The token for the next page of results.

Type: String

Required: No

#### RouteTableId.N

One or more route table IDs.

Default: Describes all your route tables.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### routeTableSet

Information about one or more route tables.

Type: Array of [RouteTable \(p. 1961\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all your route tables. The first route table in the returned list is the VPC's main route table. Its association ID represents the association between the table and the VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeRouteTables  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeRouteTablesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>fe876446-c8c0-4f2d-a6df-ed506example</requestId>  
  <routeTableSet>  
    <item>  
      <routeTableId>rtb-1122334455667788a</routeTableId>  
      <vpcId>vpc-12345678912345678</vpcId>  
      <ownerId>111122223333</ownerId>  
      <routeSet>  
        <item>  
          <destinationCidrBlock>10.0.1.0/32</destinationCidrBlock>  
          <gatewayId>igw-012345678901abcdef</gatewayId>  
          <state>active</state>  
          <origin>CreateRoute</origin>  
        </item>  
        <item>  
          <destinationCidrBlock>172.31.0.0/16</destinationCidrBlock>  
          <gatewayId>local</gatewayId>  
          <state>active</state>  
          <origin>CreateRouteTable</origin>  
        </item>  
        <item>  
          <destinationCidrBlock>0.0.0.0/0</destinationCidrBlock>  
          <gatewayId>igw-012345678901abcdef</gatewayId>  
          <state>active</state>  
          <origin>CreateRoute</origin>  
        </item>  
      </routeSet>  
      <associationSet>  
        <item>  
          <routeTableAssociationId>rtbassoc-04ca27a6914a0b4fc</routeTableAssociationId>  
          <routeTableId>rtb-1122334455667788a</routeTableId>  
          <main>true</main>  
        </item>  
      </associationSet>  
      <propagatingVgwSet/>  
      <tagSet/>  
    </item>
```

```
</routeTableSet>
</DescribeRouteTablesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeScheduledInstanceIdAvailability

Finds available schedules that meet the specified criteria.

You can search for an available schedule no more than 3 months in advance. You must meet the minimum required duration of 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

After you find a schedule that meets your needs, call [PurchaseScheduledInstances \(p. 1197\)](#) to purchase Scheduled Instances with that schedule.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `availability-zone` - The Availability Zone (for example, `us-west-2a`).
- `instance-type` - The instance type (for example, `c4.large`).
- `network-platform` - The network platform (`EC2-Classic` or `EC2-VPC`).
- `platform` - The platform (`Linux/UNIX` or `Windows`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### FirstSlotStartTimeRange

The time period for the first schedule to start.

Type: [SlotDateTimeRangeRequest \(p. 2006\)](#) object

Required: Yes

### MaxResults

The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 300. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 300.

Required: No

### MaxSlotDurationInHours

The maximum available duration, in hours. This value must be greater than `MinSlotDurationInHours` and less than 1,720.

Type: Integer

Required: No

#### **MinSlotDurationInHours**

The minimum available duration, in hours. The minimum required duration is 1,200 hours per year. For example, the minimum daily schedule is 4 hours, the minimum weekly schedule is 24 hours, and the minimum monthly schedule is 100 hours.

Type: Integer

Required: No

#### **NextToken**

The token for the next set of results.

Type: String

Required: No

#### **Recurrence**

The schedule recurrence.

Type: [ScheduledInstanceRecurrenceRequest \(p. 1976\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **scheduledInstanceIdAvailabilitySet**

Information about the available Scheduled Instances.

Type: Array of [ScheduledInstanceAvailability \(p. 1973\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeScheduledInstances

Describes the specified Scheduled Instances or all your Scheduled Instances.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `availability-zone` - The Availability Zone (for example, `us-west-2a`).
- `instance-type` - The instance type (for example, `c4.large`).
- `network-platform` - The network platform (`EC2-Classic` or `EC2-VPC`).
- `platform` - The platform (`Linux/UNIX` or `Windows`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return in a single call. This value can be between 5 and 300. The default value is 100. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

### ScheduledInstanceId.N

The Scheduled Instance IDs.

Type: Array of strings

Required: No

### SlotStartTimeRange

The time period for the first schedule to start.

Type: [SlotStartTimeRangeRequest \(p. 2007\)](#) object

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **scheduledInstanceSet**

Information about the Scheduled Instances.

Type: Array of [ScheduledInstance \(p. 1970\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSecurityGroupReferences

[VPC only] Describes the VPCs on the other side of a VPC peering connection that are referencing the security groups you've specified in this request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupId.N

The IDs of the security groups in your account.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### securityGroupReferenceSet

Information about the VPCs with the referencing security groups.

Type: Array of [SecurityGroupReference \(p. 1994\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the security group references for sg-11aa22bb. The response indicates that this security group is referenced by a security group in VPC vpc-1a2b3c4d.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences
&GroupId.1=sg-11aa22bb
&AUTHPARAMS
```

## Sample Response

```
<DescribeSecurityGroupReferencesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>19744c88-baa2-45df-905f-example</requestId>
  <securityGroupReferenceSet>
    <item>
      <referencingVpcId>vpc-1a2b3c4d</referencingVpcId>
      <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
      <groupId>sg-11aa22bb</groupId>
    </item>
  </securityGroupReferenceSet>
</DescribeSecurityGroupReferencesResponse>
```

## Example 2

This example describes the security group references for sg-11aa22bb and sg-1111aaaa.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroupReferences
&GroupId.1=sg-11aa22bb
&GroupId.2=sg-1111aaaa
&AUTHPARAMS
```

## Sample Response

```
<DescribeSecurityGroupReferencesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d1835dca-61c1-459d-99cb-example</requestId>
  <securityGroupReferenceSet>
    <item>
      <referencingVpcId>vpc-81326ae4</referencingVpcId>
      <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
      <groupId>sg-11aa22bb</groupId>
    </item>
    <item>
      <referencingVpcId>vpc-1a2b3c4d</referencingVpcId>
      <vpcPeeringConnectionId>pcx-aabbccdd</vpcPeeringConnectionId>
      <groupId>sg-1111aaaa</groupId>
    </item>
  </securityGroupReferenceSet>
</DescribeSecurityGroupReferencesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSecurityGroupRules

Describes one or more of your security group rules.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `group-id` - The ID of the security group.
- `security-group-rule-id` - The ID of the security group rule.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another request with the returned `NextToken` value. This value can be between 5 and 1000. If this parameter is not specified, then all results are returned.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### SecurityGroupId.N

The IDs of the security group rules.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **securityGroupRuleSet**

Information about security group rules.

Type: Array of [SecurityGroupRule \(p. 1995\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSecurityGroups

Describes the specified security groups or all of your security groups.

A security group is for use with instances either in the EC2-Classic platform or in a specific VPC. For more information, see [Amazon EC2 security groups](#) in the *Amazon Elastic Compute Cloud User Guide* and [Security groups for your VPC](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters. If using multiple filters for rules, the results include security groups for which any combination of rules - not necessarily a single rule - match all filters.

- `description` - The description of the security group.
- `egress.ip-permission.cidr` - An IPv4 CIDR block for an outbound security group rule.
- `egress.ip-permission.from-port` - For an outbound rule, the start of port range for the TCP and UDP protocols, or an ICMP type number.
- `egress.ip-permission.group-id` - The ID of a security group that has been referenced in an outbound security group rule.
- `egress.ip-permission.group-name` - The name of a security group that is referenced in an outbound security group rule.
- `egress.ip-permission.ipv6-cidr` - An IPv6 CIDR block for an outbound security group rule.
- `egress.ip-permission.prefix-list-id` - The ID of a prefix list to which a security group rule allows outbound access.
- `egress.ip-permission.protocol` - The IP protocol for an outbound security group rule (`tcp` | `udp` | `icmp`, a protocol number, or `-1` for all protocols).
- `egress.ip-permission.to-port` - For an outbound rule, the end of port range for the TCP and UDP protocols, or an ICMP code.
- `egress.ip-permission.user-id` - The ID of an AWS account that has been referenced in an outbound security group rule.
- `group-id` - The ID of the security group.
- `group-name` - The name of the security group.
- `ip-permission.cidr` - An IPv4 CIDR block for an inbound security group rule.
- `ip-permission.from-port` - For an inbound rule, the start of port range for the TCP and UDP protocols, or an ICMP type number.
- `ip-permission.group-id` - The ID of a security group that has been referenced in an inbound security group rule.
- `ip-permission.group-name` - The name of a security group that is referenced in an inbound security group rule.

- `ip-permission.ipv6-cidr` - An IPv6 CIDR block for an inbound security group rule.
- `ip-permission.prefix-list-id` - The ID of a prefix list from which a security group rule allows inbound access.
- `ip-permission.protocol` - The IP protocol for an inbound security group rule (`tcp` | `udp` | `icmp`, a protocol number, or `-1` for all protocols).
- `ip-permission.to-port` - For an inbound rule, the end of port range for the TCP and UDP protocols, or an ICMP code.
- `ip-permission.user-id` - The ID of an AWS account that has been referenced in an inbound security group rule.
- `owner-id` - The AWS account ID of the owner of the security group.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC specified when the security group was created.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### **GroupId.N**

The IDs of the security groups. Required for security groups in a nondefault VPC.

Default: Describes all of your security groups.

Type: Array of strings

Required: No

#### **GroupName.N**

[EC2-Classic and default VPC only] The names of the security groups. You can specify either the security group name or the security group ID. For security groups in a nondefault VPC, use the `group-name` filter to describe security groups by name.

Default: Describes all of your security groups.

Type: Array of strings

Required: No

#### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another request with the returned `NextToken` value. This value can be between 5 and 1000. If this parameter is not specified, then all results are returned.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **securityGroupInfo**

Information about the security groups.

Type: Array of [SecurityGroup \(p. 1991\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example returns information about a security group named `WebServers`. Note that the `GroupName` parameter returns information about security groups in EC2-Classic or a default VPC only. If no security groups are found in either platform, an exception is returned, regardless of whether you have a security group with the specified name in a nondefault VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupName.1=WebServers
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<securityGroupInfo>
<item>
<ownerId>123456789012</ownerId>
<groupId>sg-1a2b3c4d</groupId>
<groupName>WebServers</groupName>
<groupDescription>Web Servers</groupDescription>
<vpcId>vpc-614cc409</vpcId>
```

```
<ipPermissions>
  <item>
    <ipProtocol>-1</ipProtocol>
    <groups>
      <item>
        <userId>123456789012</userId>
        <groupId>sg-af8661c0</groupId>
      </item>
    </groups>
    <ipRanges/>
    <prefixListIds/>
  </item>
  <item>
    <ipProtocol>tcp</ipProtocol>
    <fromPort>22</fromPort>
    <toPort>22</toPort>
    <groups/>
    <ipRanges>
      <item>
        <cidrIp>204.246.162.38/32</cidrIp>
      </item>
    </ipRanges>
    <prefixListIds/>
  </item>
</ipPermissions>
<ipPermissionsEgress>
  <item>
    <ipProtocol>-1</ipProtocol>
    <groups/>
    <ipRanges>
      <item>
        <cidrIp>0.0.0.0/0</cidrIp>
      </item>
    </ipRanges>
    <prefixListIds/>
  </item>
</ipPermissionsEgress>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example 2

[EC2-VPC] This example describes security group sg-1a2b3c4d. The response indicates that this security group references another security group. The referenced group can be in a different VPC if used through a VPC peering connection. If the referenced security group or the VPC peering connection is deleted, the rule becomes stale but is not automatically removed from the security group.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>edb7c570-be05-4192-bd1b-example</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>123456789012</ownerId>
```

```

<groupId>sg-1a2b3c4d</groupId>
<groupName>MySecurityGroup</groupName>
<groupDescription>MySecurityGroup</groupDescription>
<vpcId>vpc-81326ae4</vpcId>
<ipPermissions>
    <item>
        <ipProtocol>tcp</ipProtocol>
        <fromPort>22</fromPort>
        <toPort>22</toPort>
        <groups/>
        <ipRanges>
            <item>
                <cidrIp>0.0.0.0/0</cidrIp>
            </item>
        </ipRanges>
        <prefixListIds/>
    </item>
    <item>
        <ipProtocol>icmp</ipProtocol>
        <fromPort>-1</fromPort>
        <toPort>-1</toPort>
        <groups>
            <item>
                <securityGroupRuleId>sgr-abcdefghi01234560</
securityGroupRuleId>
                <userId>111222333444</userId>
                <groupId>sg-11aa22bb</groupId>
                <vpcId>vpc-dd326ab8</vpcId>
                <vpcPeeringConnectionId>pcx-11223344</vpcPeeringConnectionId>
                <peeringStatus>active</peeringStatus>
            </item>
        </groups>
        <ipRanges/>
        <prefixListIds/>
    </item>
</ipPermissions>
<ipPermissionsEgress>
    <item>
        <ipProtocol>-1</ipProtocol>
        <groups/>
        <ipRanges>
            <item>
                <cidrIp>0.0.0.0/0</cidrIp>
            </item>
        </ipRanges>
        <prefixListIds/>
    </item>
</ipPermissionsEgress>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>

```

## Example 3

This example describes all security groups that grant access over port 22 and that grant access from instances associated with `app_server_group` or `database_group`.

### Sample Request

```

https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&Filter.1.Name=ip-permission.protocol
&Filter.1.Value.1=tcp
&Filter.2.Name=ip-permission.from-port

```

```
&Filter.2.Value.1=22
&Filter.3.Name=ip-permission.to-port
&Filter.3.Value.1=22
&Filter.4.Name=ip-permission.group-name
&Filter.4.Value.1=app_server_group
&Filter.4.Value.2=database_group
&AUTHPARAMS
```

## Example 4

[EC2-VPC] This example describes the specified security group. The security group has a rule that allows all outbound IPv6 traffic (this rule is added by default for security groups in an IPv6-enabled VPC) and a rule that allows inbound access over SSH for IPv6 traffic.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-9bf6ceff
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>1d62eae0-acdd-481d-88c9-example</requestId>
  <securityGroupInfo>
    <item>
      <ownerId>123456789012</ownerId>
      <groupId>sg-9bf6ceff</groupId>
      <groupName>SSHAccess</groupName>
      <groupDescription>Security group for SSH access</groupDescription>
      <vpcId>vpc-31896b55</vpcId>
      <ipPermissions>
        <item>
          <ipProtocol>tcp</ipProtocol>
          <fromPort>22</fromPort>
          <toPort>22</toPort>
          <groups/>
          <ipRanges>
            <item>
              <cidrIp>0.0.0.0/0</cidrIp>
            </item>
          </ipRanges>
          <ipv6Ranges>
            <item>
              <cidrIpv6>::/0</cidrIpv6>
            </item>
          </ipv6Ranges>
          <prefixListIds/>
        </item>
      </ipPermissions>
      <ipPermissionsEgress>
        <item>
          <ipProtocol>-1</ipProtocol>
          <groups/>
          <ipRanges>
            <item>
              <cidrIp>0.0.0.0/0</cidrIp>
            </item>
          </ipRanges>
          <ipv6Ranges>
            <item>
```

```
<cidrIpv6>::/0</cidrIpv6>
    </item>
</ipv6Ranges>
<prefixListIds/>
    </item>
</ipPermissionsEgress>
    </item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## Example 5

[EC2-VPC] This example describes the specified security group. For the ingress rule that permits RDP traffic from IPv4 address range 203.0.113.0/24, there is a rule description.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSecurityGroups
&GroupId.1=sg-bcc24bcd
&AUTHPARAMS
```

### Sample Response

```
<DescribeSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>6b0c76fb-0da6-4357-bb60-1fexample</requestId>
<securityGroupInfo>
    <item>
        <ownerId>123456789012</ownerId>
        <groupId>sg-bcc24bcd</groupId>
        <groupName>default</groupName>
        <groupDescription>default VPC security group</groupDescription>
        <vpcId>vpc-a33cbfda</vpcId>
        <ipPermissions>
            <item>
                <ipProtocol>-1</ipProtocol>
                <groups>
                    <item>
                        <userId>123456789012</userId>
                        <groupId>sg-bcc24bcd</groupId>
                    </item>
                </groups>
                <ipRanges/>
                <ipv6Ranges/>
                <prefixListIds/>
            </item>
            <item>
                <ipProtocol>tcp</ipProtocol>
                <fromPort>3389</fromPort>
                <toPort>3389</toPort>
                <groups/>
                <ipRanges>
                    <item>
                        <cidrIp>203.0.113.0/24</cidrIp>
                        <description>RDP access from B network</description>
                    </item>
                </ipRanges>
                <ipv6Ranges/>
                <prefixListIds/>
            </item>
        </ipPermissions>
        <ipPermissionsEgress>
            <item>
```

```
<ipProtocol>-1</ipProtocol>
<groups/>
<ipRanges>
    <item>
        <cidrIp>0.0.0.0/0</cidrIp>
    </item>
</ipRanges>
<ipv6Ranges/>
<prefixListIds/>
</item>
</ipPermissionsEgress>
</item>
</securityGroupInfo>
</DescribeSecurityGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSnapshotAttribute

Describes the specified attribute of the specified snapshot. You can specify only one attribute at a time.

For more information about EBS snapshots, see [Amazon EBS snapshots](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The snapshot attribute you would like to view.

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SnapshotId

The ID of the EBS snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### createVolumePermission

The users and groups that have the permissions for creating volumes from the snapshot.

Type: Array of [CreateVolumePermission \(p. 1463\)](#) objects

### productCodes

The product codes.

Type: Array of [ProductCode \(p. 1898\)](#) objects

### requestId

The ID of the request.

Type: String

### **snapshotId**

The ID of the EBS snapshot.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the create volume permissions for the specified snapshot.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<snapshotId>snap-1234567890abcdef0</snapshotId>
<createVolumePermission>
<item>
<group>all</group>
</item>
</createVolumePermission>
</DescribeSnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSnapshots

Describes the specified EBS snapshots available to you or all of the EBS snapshots available to you.

The snapshots available to you include public snapshots, private snapshots that you own, and private snapshots owned by other AWS accounts for which you have explicit create volume permissions.

The create volume permissions fall into the following categories:

- *public*: The owner of the snapshot granted create volume permissions for the snapshot to the `all` group. All AWS accounts have create volume permissions for these snapshots.
- *explicit*: The owner of the snapshot granted create volume permissions to a specific AWS account.
- *implicit*: An AWS account has implicit create volume permissions for all snapshots it owns.

The list of snapshots returned can be filtered by specifying snapshot IDs, snapshot owners, or AWS accounts with create volume permissions. If no options are specified, Amazon EC2 returns all snapshots for which you have create volume permissions.

If you specify one or more snapshot IDs, only snapshots that have the specified IDs are returned. If you specify an invalid snapshot ID, an error is returned. If you specify a snapshot ID for which you do not have access, it is not included in the returned results.

If you specify one or more snapshot owners using the `OwnerIds` option, only snapshots from the specified owners and for which you have access are returned. The results can include the AWS account IDs of the specified owners, `amazon` for snapshots owned by Amazon, or `self` for snapshots that you own.

If you specify a list of restorable users, only snapshots with create snapshot permissions for those users are returned. You can specify AWS account IDs (if you own the snapshots), `self` for snapshots for which you own or have explicit permissions, or `all` for public snapshots.

If you are describing a long list of snapshots, we recommend that you paginate the output to make the list more manageable. The `MaxResults` parameter sets the maximum number of results returned in a single page. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeSnapshots` request to retrieve the remaining results.

To get the state of fast snapshot restores for a snapshot, use [DescribeFastSnapshotRestores \(p. 554\)](#).

For more information about EBS snapshots, see [Amazon EBS snapshots](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Filter.N

The filters.

- `description` - A description of the snapshot.
- `encrypted` - Indicates whether the snapshot is encrypted (`true` | `false`)
- `owner-alias` - The owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console. We recommend that you use the related parameter instead of this filter.
- `owner-id` - The AWS account ID of the owner. We recommend that you use the related parameter instead of this filter.
- `progress` - The progress of the snapshot, as a percentage (for example, 80%).
- `snapshot-id` - The snapshot ID.
- `start-time` - The time stamp when the snapshot was initiated.
- `status` - The status of the snapshot (`pending` | `completed` | `error`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `volume-id` - The ID of the volume the snapshot is for.
- `volume-size` - The size of the volume, in GiB.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

## MaxResults

The maximum number of snapshot results returned by `DescribeSnapshots` in paginated output. When this parameter is used, `DescribeSnapshots` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `DescribeSnapshots` request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned. If this parameter is not used, then `DescribeSnapshots` returns all results. You cannot specify this parameter and the `snapshot IDs` parameter in the same request.

Type: Integer

Required: No

## NextToken

The `NextToken` value returned from a previous paginated `DescribeSnapshots` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is `null` when there are no more results to return.

Type: String

Required: No

## Owner.N

Scopes the results to snapshots with the specified owners. You can specify a combination of AWS account IDs, `self`, and `amazon`.

Type: Array of strings

Required: No

**RestorableBy.N**

The IDs of the AWS accounts that can create volumes from the snapshot.

Type: Array of strings

Required: No

**SnapshotId.N**

The snapshot IDs.

Default: Describes the snapshots for which you have create volume permissions.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The `NextToken` value to include in a future `DescribeSnapshots` request. When the results of a `DescribeSnapshots` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotSet**

Information about the snapshots.

Type: Array of [Snapshot \(p. 2008\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes a snapshot with an ID of `snap-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
```

```
&SnapshotId=snap-1234567890abcdef0
&AUTHPARAMS
```

## Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1234567890abcdef0</snapshotId>
      <volumeId>vol-1234567890abcdef0</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>80%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <encrypted>true</encrypted>
      <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/6876fb1b-example</kmsKeyId>
      <tagSet/>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

## Example

This example filters the response to include only snapshots with the pending status, and a tag with the key Owner and the value DbAdmin.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSnapshots
&Filter.1.Name=status
&Filter.1.Value.1=pending
&Filter.2.Name=tag:Owner
&Filter.2.Value.1=DbAdmin
&AUTHPARAMS
```

## Sample Response

```
<DescribeSnapshotsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <snapshotSet>
    <item>
      <snapshotId>snap-1234567890abcdef0</snapshotId>
      <volumeId>vol-1234567890abcdef0</volumeId>
      <status>pending</status>
      <startTime>YYYY-MM-DDTHH:MM:SS.SSSZ</startTime>
      <progress>30%</progress>
      <ownerId>111122223333</ownerId>
      <volumeSize>15</volumeSize>
      <description>Daily Backup</description>
      <tagSet>
        <item>
          <key>Purpose</key>
          <value>demo_db_14_backup</value>
        </item>
      </tagSet>
      <encrypted>true</encrypted>
      <kmsKeyId>arn:aws:kms:us-east-1:123456789012:key/6876fb1b-example</kmsKeyId>
    </item>
  </snapshotSet>
</DescribeSnapshotsResponse>
```

```
</item>
</snapshotSet>
</DescribeSnapshotsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotDatafeedSubscription

Describes the data feed for Spot Instances. For more information, see [Spot Instance data feed](#) in the [Amazon EC2 User Guide for Linux Instances](#).

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### spotDatafeedSubscription

The Spot Instance data feed subscription.

Type: [SpotDatafeedSubscription \(p. 2019\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the data feed for the account.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotDatafeedSubscription
&AUTHPARAMS
```

### Sample Response

```
<DescribeSpotDatafeedSubscriptionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotDatafeedSubscription>
    <ownerId>123456789012</ownerId>
    <bucket>my-s3-bucket</bucket>
    <prefix>spotdata_</prefix>
    <state>Active</state>
</spotDatafeedSubscription>
</DescribeSpotDatafeedSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotFleetInstances

Describes the running instances for the specified Spot Fleet.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

### SpotFleetRequestId

The ID of the Spot Fleet request.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### activeInstanceSet

The running instances. This list is refreshed periodically and might be out of date.

Type: Array of [ActiveInstance \(p. 1357\)](#) objects

### nextToken

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String  
**requestId**

The ID of the request.

Type: String  
**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the running instances for Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetInstances
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotFleetInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>cfb09950-45e2-472d-a6a9-example</requestId>
  <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
  <activeInstanceSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <spotInstanceRequestId>sir-1a1a1a1a</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef1</instanceId>
      <spotInstanceRequestId>sir-2b2b2b2b</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef2</instanceId>
      <spotInstanceRequestId>sir-3c3c3c3c</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
      <instanceId>i-1234567890abcdef3</instanceId>
      <spotInstanceRequestId>sir-4d4d4d4d</spotInstanceRequestId>
      <instanceType>m3.medium</instanceType>
    </item>
    <item>
```

```
<instanceId>i-1234567890abcdef4</instanceId>
<spotInstanceRequestId>sir-5e5e5e5e</spotInstanceRequestId>
<instanceType>m3.medium</instanceType>
</item>
</activeInstanceSet>
</DescribeSpotFleetInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotFleetRequestHistory

Describes the events for the specified Spot Fleet request during the specified time.

Spot Fleet events are delayed by up to 30 seconds before they can be described. This ensures that you can query by the last evaluated time and not miss a recorded event. Spot Fleet events are available for 48 hours.

For more information, see [Monitor fleet events using Amazon EventBridge](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EventType

The type of events to describe. By default, all events are described.

Type: String

Valid Values: `instanceChange` | `fleetRequestChange` | `error` | `information`

Required: No

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

### SpotFleetRequestId

The ID of the Spot Fleet request.

Type: String

Required: Yes

**StartTime**

The starting date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

**historyRecordSet**

Information about the events in the history of the Spot Fleet request.

Type: Array of [HistoryRecord \(p. 1587\)](#) objects

**lastEvaluatedTime**

The last date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ). All records up to this time were retrieved.

If `nextToken` indicates that there are more results, this value is not present.

Type: Timestamp

**nextToken**

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

**startTime**

The starting date and time for the events, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the events for Spot Fleet request sfr-123f8fc2-cb31-425e-abcd-example2710 from the specified start time.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequestHistory
&SpotFleetRequestId=sfr-123f8fc2-cb31-425e-abcd-example2710
&StartTime=2015-07-01T12:00:00Z
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotFleetRequestHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>30be3aaaf-afd2-408c-b62b-example</requestId>
  <lastEvaluatedTime>2015-07-01T13:29:40+0000</lastEvaluatedTime>
  <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
  <startTime>2015-07-01T12:00:00Z</startTime>
  <historyRecordSet>
    <item>
      <eventInformation>
        <eventSubType>submitted</eventSubType>
      </eventInformation>
      <eventType>fleetRequestChange</eventType>
      <timestamp>2015-07-01T13:10:10.219Z</timestamp>
    </item>
    <item>
      <eventInformation>
        <eventSubType>active</eventSubType>
      </eventInformation>
      <eventType>fleetRequestChange</eventType>
      <timestamp>2015-07-01T13:10:11.624Z</timestamp>
    </item>
    <item>
      <eventInformation>
        <eventDescription>m3.medium, ami-1ecae776, Linux/UNIX (Amazon VPC); old
price: 0.0153, new price: 0.0153</eventDescription>
        <eventSubType>price_update</eventSubType>
      </eventInformation>
      <eventType>fleetRequestChange</eventType>
      <timestamp>2015-07-01T13:10:13.365Z</timestamp>
    </item>
    <item>
      <eventInformation>
        <instanceId>i-1234567890abcdef0</instanceId>
        <eventSubType>launched</eventSubType>
      </eventInformation>
      <eventType>instanceChange</eventType>
      <timestamp>2015-07-01T13:19:53.795Z</timestamp>
    </item>
    <item>
      <eventInformation>
        <instanceId>i-1234567890abcdef1</instanceId>
        <eventSubType>launched</eventSubType>
      </eventInformation>
      <eventType>instanceChange</eventType>
      <timestamp>2015-07-01T13:20:39.777Z</timestamp>
    </item>
```

```
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef2</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
  <timestamp>2015-07-01T13:20:57.773Z</timestamp>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef3</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
  <timestamp>2015-07-01T13:22:05.696Z</timestamp>
</item>
<item>
  <eventInformation>
    <instanceId>i-1234567890abcdef4</instanceId>
    <eventSubType>launched</eventSubType>
  </eventInformation>
  <eventType>instanceChange</eventType>
  <timestamp>2015-07-01T13:23:58.927Z</timestamp>
</item>
</historyRecordSet>
</DescribeSpotFleetRequestHistoryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotFleetRequests

Describes your Spot Fleet requests.

Spot Fleet requests are deleted 48 hours after they are canceled and their instances are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next set of results.

Type: String

Required: No

### SpotFleetRequestId.N

The IDs of the Spot Fleet requests.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token required to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### spotFleetRequestConfigSet

Information about the configuration of your Spot Fleet.

Type: Array of [SpotFleetRequestConfig \(p. 2026\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your Spot Fleet requests.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotFleetRequests  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotFleetRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>4d68a6cc-8f2e-4be1-b425-example</requestId>  
  <spotFleetRequestConfigSet>  
    <item>  
      <spotFleetRequestId>sfr-12345678-cb31-425e-8c23-example2710</spotFleetRequestId>  
      <spotFleetRequestState>cancelled</spotFleetRequestState>  
      <spotFleetRequestConfig>  
        <spotPrice>0.0153</spotPrice>  
        <targetCapacity>20</targetCapacity>  
        <iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</iamFleetRole>  
        <launchSpecifications>  
          <item>  
            <subnetId>subnet-1a2b3c4d</subnetId>  
            <ebsOptimized>false</ebsOptimized>  
            <imageId>ami-1ecae776</imageId>  
            <instanceType>m4.xlarge</instanceType>  
          </item>  
          <item>  
            <subnetId>subnet-1a2b3c4d</subnetId>  
            <ebsOptimized>false</ebsOptimized>  
            <imageId>ami-1ecae776</imageId>  
            <instanceType>m3.medium</instanceType>  
          </item>  
        </launchSpecifications>  
      </spotFleetRequestConfig>  
    </item>  
    <item>  
      <spotFleetRequestId>sfr-abcdefgh-e71f-450d-880d-examplec127</spotFleetRequestId>  
      <spotFleetRequestState>active</spotFleetRequestState>  
      <spotFleetRequestConfig>  
        <spotPrice>0.0153</spotPrice>
```

```
<targetCapacity>5</targetCapacity>
<iamFleetRole>arn:aws:iam::123456789011:role/spot-fleet-role</iamFleetRole>
<launchSpecifications>
  <item>
    <subnetId>subnet-abc123ab</subnetId>
    <ebsOptimized>false</ebsOptimized>
    <imageId>ami-1ecae776</imageId>
    <instanceType>m4.large</instanceType>
  </item>
  <item>
    <subnetId>subnet-abc123ab</subnetId>
    <ebsOptimized>false</ebsOptimized>
    <imageId>ami-1ecae776</imageId>
    <instanceType>m3.medium</instanceType>
  </item>
</launchSpecifications>
</spotFleetRequestConfig>
</item>
</spotFleetRequestConfigSet>
</DescribeSpotFleetRequestsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotInstanceRequests

Describes the specified Spot Instance requests.

You can use `DescribeSpotInstanceRequests` to find a running Spot Instance by examining the response. If the status of the Spot Instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance. Alternatively, you can use `DescribeInstances` with a filter to look for instances where the instance lifecycle is spot.

We recommend that you set `MaxResults` to a value between 5 and 1000 to limit the number of results returned. This paginates the output, which makes the list more manageable and returns the results faster. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeSpotInstanceRequests` request to retrieve the remaining results.

Spot Instance requests are deleted four hours after they are canceled and their instances are terminated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `availability-zone-group` - The Availability Zone group.
- `create-time` - The time stamp when the Spot Instance request was created.
- `fault-code` - The fault code related to the request.
- `fault-message` - The fault message related to the request.
- `instance-id` - The ID of the instance that fulfilled the request.
- `launch-group` - The Spot Instance launch group.
- `launch.block-device-mapping.delete-on-termination` - Indicates whether the EBS volume is deleted on instance termination.
- `launch.block-device-mapping.device-name` - The device name for the volume in the block device mapping (for example, `/dev/sdh` or `xvdh`).
- `launch.block-device-mapping.snapshot-id` - The ID of the snapshot for the EBS volume.
- `launch.block-device-mapping.volume-size` - The size of the EBS volume, in GiB.
- `launch.block-device-mapping.volume-type` - The type of EBS volume: `gp2` for General Purpose SSD, `io1` or `io2` for Provisioned IOPS SSD, `st1` for Throughput Optimized HDD, `sc1` for Cold HDD, or `standard` for Magnetic.
- `launch.group-id` - The ID of the security group for the instance.
- `launch.group-name` - The name of the security group for the instance.
- `launch.image-id` - The ID of the AMI.

- `launch.instance-type` - The type of instance (for example, `m3.medium`).
- `launch.kernel-id` - The kernel ID.
- `launch.key-name` - The name of the key pair the instance launched with.
- `launch.monitoring-enabled` - Whether detailed monitoring is enabled for the Spot Instance.
- `launch.ramdisk-id` - The RAM disk ID.
- `launched-availability-zone` - The Availability Zone in which the request is launched.
- `network-interface.addresses.primary` - Indicates whether the IP address is the primary private IP address.
- `network-interface.delete-on-termination` - Indicates whether the network interface is deleted when the instance is terminated.
- `network-interface.description` - A description of the network interface.
- `network-interface.device-index` - The index of the device for the network interface attachment on the instance.
- `network-interface.group-id` - The ID of the security group associated with the network interface.
- `network-interface.network-interface-id` - The ID of the network interface.
- `network-interface.private-ip-address` - The primary private IP address of the network interface.
- `network-interface.subnet-id` - The ID of the subnet for the instance.
- `product-description` - The product description associated with the instance (Linux/UNIX | Windows).
- `spot-instance-request-id` - The Spot Instance request ID.
- `spot-price` - The maximum hourly price for any Spot Instance launched to fulfill the request.
- `state` - The state of the Spot Instance request (`open` | `active` | `closed` | `cancelled` | `failed`). Spot request status information can help you track your Amazon EC2 Spot Instance requests. For more information, see [Spot request status](#) in the *Amazon EC2 User Guide for Linux Instances*.
- `status-code` - The short code describing the most recent evaluation of your Spot Instance request.
- `status-message` - The message explaining the status of the Spot Instance request.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of Spot Instance request (`one-time` | `persistent`).
- `valid-from` - The start date of the request.
- `valid-until` - The end date of the request.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of results to return in a single call. Specify a value between 5 and 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### **NextToken**

The token to request the next set of results. This value is `null` when there are no more results to return.

Type: String

Required: No

### **SpotInstanceRequestId.N**

One or more Spot Instance request IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next set of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **spotInstanceRequestSet**

One or more Spot Instance requests.

Type: Array of [SpotInstanceRequest \(p. 2034\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for `DescribeSpotInstanceRequests`

This example returns information about current Spot Instance requests. In the response, if the status of the Spot Instance is fulfilled, the instance ID appears in the response and contains the identifier of the instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests  
&AUTHPARAMS
```

## Sample Response

```
<DescribeSpotInstanceRequestsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<spotInstanceRequestSet>
  <item>
    <spotInstanceId>sir-1a2b3c4d</spotInstanceId>
    <spotPrice>0.09</spotPrice>
    <type>one-time</type>
    <state>active</state>
    <status>
      <code>fulfilled</code>
      <updateTime>YYYY-MM-DDTHH:MM:SS.000Z</updateTime>
      <message>Your Spot request is fulfilled.</message>
    </status>
    <launchSpecification>
      <imageId>ami-1a2b3c4d</imageId>
      <keyName>my-key-pair</keyName>
      <groupSet>
        <item>
          <groupId>sg-1a2b3c4d</groupId>
          <groupName>websrv</groupName>
        </item>
      </groupSet>
      <instanceType>m3.medium</instanceType>
      <monitoring>
        <enabled>false</enabled>
      </monitoring>
      <ebsOptimized>false</ebsOptimized>
    </launchSpecification>
    <instanceId>i-1234567890abcdef0</instanceId>
    <createTime>YYYY-MM-DDTHH:MM:SS.000Z</createTime>
    <productDescription>Linux/UNIX</productDescription>
    <launchedAvailabilityZone>us-west-2a</launchedAvailabilityZone>
  </item>
<spotInstanceRequestSet/>
<DescribeSpotInstanceRequestsResponse>
```

## Example for DescribeSpotInstanceRequests

This example describes all persistent Spot Instance requests that have resulted in the launch of at least one instance, that has been fulfilled in the us-west-2a Availability Zone, and that also has monitoring enabled.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotInstanceRequests
&Filter.1.Name=type
&Filter.1.Value.1=persistent
&Filter.2.Name=instance-type
&Filter.2.Value.1=m3.medium
&Filter.3.Name=monitoring-enabled
&Filter.3.Value.1=true
&Filter.4.Name=launched-availability-zone
&Filter.4.Value.1=us-west-2a
&AUTHPARAMS
```

## Example for DescribeInstances

Alternatively, you can use [DescribeInstances](#) and use a filter to look for instances where the instance lifecycle contains spot.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeInstances
&Filter.1.Name=instance-lifecycle
&Filter.1.Value.1=spot
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSpotPriceHistory

Describes the Spot price history. For more information, see [Spot Instance pricing history](#) in the *Amazon EC2 User Guide for Linux Instances*.

When you specify a start and end time, the operation returns the prices of the instance types within that time range. It also returns the last price change before the start time, which is the effective price as of the start time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZone

Filters the results by the specified Availability Zone.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EndTime

The date and time, up to the current date, from which to stop retrieving the price history data, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

Required: No

### Filter.N

One or more filters.

- `availability-zone` - The Availability Zone for which prices should be returned.
- `instance-type` - The type of instance (for example, `m3.medium`).
- `product-description` - The product description for the Spot price (`Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Linux/UNIX (Amazon VPC) | Red Hat Enterprise Linux (Amazon VPC) | SUSE Linux (Amazon VPC) | Windows (Amazon VPC)`).
- `spot-price` - The Spot price. The value must match exactly (or use wildcards; greater than or less than comparison is not supported).
- `timestamp` - The time stamp of the Spot price history, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). You can use wildcards (\* and ?). Greater than or less than comparison is not supported.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### InstanceType.N

Filters the results by the specified instance types.

Type: Array of strings

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | r1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge

| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

#### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

#### NextToken

The token for the next set of results.

Type: String

Required: No

#### ProductDescription.N

Filters the results by the specified basic product descriptions.

Type: Array of strings

Required: No

#### StartTime

The date and time, up to the past 90 days, from which to start retrieving the price history data, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token required to retrieve the next set of results. This value is null or an empty string when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### spotPriceHistorySet

The historical Spot prices.

Type: Array of [SpotPrice \(p. 2048\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets Spot price history for the first day in November 2016 for the specified Availability Zone.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&StartTime=2016-11-01T00:00:00.000Z
&EndTime=2016-11-01T23:59:59.000Z
&AvailabilityZone=us-west-2a
&AUTHPARAMS
```

#### Sample Response

```
<DescribeSpotPriceHistoryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
```

```
<spotPriceHistorySet>
  <item>
    <instanceType>m3.medium</instanceType>
    <productDescription>Linux/UNIX</productDescription>
    <spotPrice>0.287</spotPrice>
    <timestamp>2016-11-01T20:56:05.000Z</timestamp>
    <availabilityZone>us-west-2a</availabilityZone>
  </item>
  <item>
    <instanceType>m3.medium</instanceType>
    <productDescription>Windows</productDescription>
    <spotPrice>0.033</spotPrice>
    <timestamp>2016-11-01T22:33:47.000Z</timestamp>
    <availabilityZone>us-west-2a</availabilityZone>
  </item>
</spotPriceHistorySet>
<nextToken/>
</DescribeSpotPriceHistoryResponse>
```

## Example with Filters

This example uses filters to get the same results as the previous example.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSpotPriceHistory
&Filter.1.Name=timestamp
&Filter.1.Value.1=2016-11-01*
&Filter.2.Name=availability-zone
&Filter.2.Value.1=us-west-2a
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeStaleSecurityGroups

[VPC only] Describes the stale security group rules for security groups in a specified VPC. Rules are stale when they reference a deleted security group in a peer VPC, or a security group in a peer VPC for which the VPC peering connection has been deleted.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### NextToken

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

#### requestId

The ID of the request.

Type: String

#### staleSecurityGroupSet

Information about the stale security groups.

Type: Array of [StaleSecurityGroup \(p. 2053\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes stale security group rules for vpc-11223344. The response shows that sg-5fa68d3a in your account has a stale ingress SSH rule that references sg-279ab042 in the peer VPC, and sg-fe6fba9a in your account has a stale egress SSH rule that references sg-ef6fba8b in the peer VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeStaleSecurityGroups
&VpcId=vpc-11223344
&AUTHPARAMS
```

#### Sample Response

```
<DescribeStaleSecurityGroupsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>ece1f9a0-b201-4eec-b74b-example</requestId>
  <staleSecurityGroupSet>
    <item>
      <staleIpPermissionsEgress>
        <item>
          <fromPort>22</fromPort>
          <toPort>22</toPort>
          <groups>
            <item>
              <vpcId>vpc-7a20e51f</vpcId>
              <groupId>sg-ef6fba8b</groupId>
              <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
              <peeringStatus>active</peeringStatus>
              <description>Access to pcx-b04deed9</description>
            </item>
          </groups>
          <ipProtocol>tcp</ipProtocol>
        </item>
      </staleIpPermissionsEgress>
      <groupName>Sg-1</groupName>
      <vpcId>vpc-11223344</vpcId>
      <groupId>sg-fe6fba9a</groupId>
      <description>Sg-1 for peering</description>
    <staleIpPermissions/>
```

```
</item>
<item>
    <staleIpPermissionsEgress/>
    <groupName>Sg-2</groupName>
    <vpcId>vpc-11223344</vpcId>
    <groupId>sg-5fa68d3a</groupId>
    <description>Sg-2 for peering</description>
    <staleIpPermissions>
        <item>
            <fromPort>22</fromPort>
            <toPort>22</toPort>
            <groups>
                <item>
                    <vpcId>vpc-7a20e51f</vpcId>
                    <groupId>sg-279ab042</groupId>
                    <vpcPeeringConnectionId>pcx-b04deed9</vpcPeeringConnectionId>
                    <peeringStatus>active</peeringStatus>
                    <description>Access from pcx-b04deed9</description>
                </item>
            </groups>
            <ipProtocol>tcp</ipProtocol>
        </item>
    </staleIpPermissions>
</item>
</staleSecurityGroupSet>
</DescribeStaleSecurityGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeStoreImageTasks

Describes the progress of the AMI store tasks. You can describe the store tasks for specified AMIs. If you don't specify the AMIs, you get a paginated list of store tasks from the last 31 days.

For each AMI task, the response indicates if the task is `InProgress`, `Completed`, or `Failed`. For tasks `InProgress`, the response shows the estimated progress as a percentage.

Tasks are listed in reverse chronological order. Currently, only tasks from the past 31 days can be viewed.

To use this API, you must have the required permissions. For more information, see [Permissions for storing and restoring AMIs using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

For more information, see [Store and restore an AMI using Amazon S3](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `task-state` - Returns tasks in a certain state (`InProgress` | `Completed` | `Failed`)
- `bucket` - Returns task information for tasks that targeted a specific bucket. For the filter value, specify the bucket name.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### ImageId.N

The AMI IDs for which to show progress. Up to 20 AMI IDs can be included in a request.

Type: Array of strings

Required: No

### MaxResults

The maximum number of results to return in a single call. To retrieve the remaining results, make another call with the returned `NextToken` value. This value can be between 1 and 200. You cannot specify this parameter and the `ImageIDs` parameter in the same call.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 200.

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **storeImageTaskResultSet**

The information about the AMI store tasks.

Type: Array of [StoreImageTaskResult](#) (p. 2058) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeSubnets

Describes one or more of your subnets.

For more information, see [Your VPC and subnets](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `availability-zone` - The Availability Zone for the subnet. You can also use `availabilityZone` as the filter name.
- `availability-zone-id` - The ID of the Availability Zone for the subnet. You can also use `availabilityZoneId` as the filter name.
- `available-ip-address-count` - The number of IPv4 addresses in the subnet that are available.
- `cidr-block` - The IPv4 CIDR block of the subnet. The CIDR block you specify must exactly match the subnet's CIDR block for information to be returned for the subnet. You can also use `cidr` or `cidrBlock` as the filter names.
- `default-for-az` - Indicates whether this is the default subnet for the Availability Zone. You can also use `defaultForAz` as the filter name.
- `ipv6-cidr-block-association.ipv6-cidr-block` - An IPv6 CIDR block associated with the subnet.
- `ipv6-cidr-block-association.association-id` - An association ID for an IPv6 CIDR block associated with the subnet.
- `ipv6-cidr-block-association.state` - The state of an IPv6 CIDR block associated with the subnet.
- `outpost-arn` - The Amazon Resource Name (ARN) of the Outpost.
- `owner-id` - The ID of the AWS account that owns the subnet.
- `state` - The state of the subnet (`pending` | `available`).
- `subnet-arn` - The Amazon Resource Name (ARN) of the subnet.
- `subnet-id` - The ID of the subnet.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC for the subnet.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### **NextToken**

The token for the next page of results.

Type: String

Required: No

#### **SubnetId.N**

One or more subnet IDs.

Default: Describes all your subnets.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **subnetSet**

Information about one or more subnets.

Type: Array of [Subnet \(p. 2060\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the subnets.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets  
&AUTHPARAMS
```

#### Sample Response

```
<requestId>1927e20c-0ed0-4a02-a6d7-d955fb2d13c</requestId>
    <subnetSet>
        <item>
            <subnetId>subnet-0bb1c79de301436ee</subnetId>
            <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-0bb1c79de3EXAMPLE</
subnetArn>
            <state>available</state>
            <ownerId>111122223333</ownerId>
            <vpcId>vpc-0ee975135dEXAMPLE</vpcId>
            <cidrBlock>10.0.2.0/24</cidrBlock>
            <ipv6CidrBlockAssociationSet/>
            <availableIpAddressCount>251</availableIpAddressCount>
            <availabilityZone>us-east-2c</availabilityZone>
            <availabilityZoneId>use2-az3</availabilityZoneId>
            <defaultForAz>false</defaultForAz>
            <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
            <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        </item>
        <item>
            <subnetId>subnet-02bf4c428bf44ebce</subnetId>
            <subnetArn>arn:aws:ec2:us-east-2:111122223333:subnet/subnet-02bf4c428bEXAMPLE</
subnetArn>
            <state>available</state>
            <ownerId>111122223333</ownerId>
            <vpcId>vpc-07e8ffd50fEXAMPLE</vpcId>
            <cidrBlock>10.0.0.0/24</cidrBlock>
            <ipv6CidrBlockAssociationSet>
                <item>
                    <ipv6CidrBlock>2600:1f16:115:200::/64</ipv6CidrBlock>
                    <associationId>subnet-cidr-assoc-002afb9f3cEXAMPLE</associationId>
                    <ipv6CidrBlockState>
                        <state>associated</state>
                    </ipv6CidrBlockState>
                </item>
            </ipv6CidrBlockAssociationSet>
            <availableIpAddressCount>251</availableIpAddressCount>
            <availabilityZone>us-east-2b</availabilityZone>
            <availabilityZoneId>use2-az2</availabilityZoneId>
            <defaultForAz>false</defaultForAz>
            <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
            <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
        </item>
    </subnetSet>
</DescribeSubnetsResponse>
```

## Example 2

This example uses filters to describe any subnet you own that is in the VPC with the ID vpc-0056ae9ffdEXAMPLE or vpc-0096ae9ffdEXAMPLE, and whose state is available.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeSubnets
&Filter.1.Name=vpc-id
&Filter.1.Value.1=vpc-0056ae9ffdEXAMPLE
&Filter.1.Value.2=vpc-0096ae9ffdEXAMPLE
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

### Sample Response

```
<DescribeSubnetsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>43e9cb52-0e10-40fe-b457-988c8fbfea26</requestId>
  <subnetSet>
    <item>
      <subnetId>subnet-0f8c6c2f37EXAMPLE</subnetId>
      <subnetArn>arn:aws:ec2:us-west-2:123456789012:subnet/subnet-0f8c6c2f37903e9dc</subnetArn>
      <state>available</state>
      <ownerId>123456789012</ownerId>
      <vpcId>vpc-vpc-0056ae9ffdEXAMPLE</vpcId>
      <cidrBlock>172.168.0.0/16</cidrBlock>
      <ipv6CidrBlockAssociationSet/>
      <availableIpAddressCount>65531</availableIpAddressCount>
      <availabilityZone>us-west-2b</availabilityZone>
      <availabilityZoneId>usw2-az2</availabilityZoneId>
      <defaultForAz>false</defaultForAz>
      <mapPublicIpOnLaunch>false</mapPublicIpOnLaunch>
      <assignIpv6AddressOnCreation>false</assignIpv6AddressOnCreation>
    </item>
  </subnetSet>
</DescribeSubnetsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTags

Describes the specified tags for your EC2 resources.

For more information about tags, see [Tagging Your Resources](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `key` - The tag key.
- `resource-id` - The ID of the resource.
- `resource-type` - The resource type (`customer-gateway` | `dedicated-host` | `dhcp-options` | `elastic-ip` | `fleet` | `fpga-image` | `host-reservation` | `image` | `instance` | `internet-gateway` | `key-pair` | `launch-template` | `natgateway` | `network-acl` | `network-interface` | `placement-group` | `reserved-instances` | `route-table` | `security-group` | `snapshot` | `spot-instances-request` | `subnet` | `volume` | `vpc` | `vpc-endpoint` | `vpc-endpoint-service` | `vpc-peering-connection` | `vpc-connection` | `vpn-gateway`).
- `tag:<key>` - The key/value combination of the tag. For example, specify "tag:Owner" for the filter name and "TeamA" for the filter value to find resources with the tag "Owner=TeamA".
- `value` - The tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return in a single call. This value can be between 5 and 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### tagSet

The tags.

Type: Array of [TagDescription \(p. 2071\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all the tags in your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15//"\>  
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>  
  <tagSet>  
    <item>  
      <resourceId>ami-1a2b3c4d</resourceId>  
      <resourceType>image</resourceType>  
      <key>webserver</key>  
      <value/>  
    </item>  
    <item>  
      <resourceId>ami-1a2b3c4d</resourceId>  
      <resourceType>image</resourceType>  
      <key>stack</key>  
      <value>Production</value>  
    </item>  
    <item>
```

```
<resourceId>i-1234567890abcdef0</resourceId>
<resourceType>instance</resourceType>
<key>webserver</key>
<value/>
</item>
<item>
<resourceId>i-1234567890abcdef0</resourceId>
<resourceType>instance</resourceType>
<key>stack</key>
<value>Production</value>
</item>
<item>
<resourceId>i-0598c7d356eba48d7</resourceId>
<resourceType>instance</resourceType>
<key>database_server</key>
<value/>
</item>
<item>
<resourceId>i-0598c7d356eba48d7</resourceId>
<resourceType>instance</resourceType>
<key>stack</key>
<value>Test</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example

This example describes only the tags for the AMI with ID ami-1a2b3c4d.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-id
&Filter.1.Value.1=ami-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15//"\>
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<tagSet>
<item>
<resourceId>ami-1a2b3c4d</resourceId>
<resourceType>image</resourceType>
<key>webserver</key>
<value/>
</item>
<item>
<resourceId>ami-1a2b3c4d</resourceId>
<resourceType>image</resourceType>
<key>stack</key>
<value>Production</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&AUTHPARAMS
```

## Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15//"\>
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
      <resourceId>i-0598c7d356eba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>webserver</key>
      <value/>
    </item>
    <item>
      <resourceId>i-0598c7d356eba48d7</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Production</value>
    </item>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>database_server</key>
      <value/>
    </item>
    <item>
      <resourceId>i-1234567890abcdef0</resourceId>
      <resourceType>instance</resourceType>
      <key>stack</key>
      <value>Test</value>
    </item>
  </tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with the key *webserver*. You can use wildcards with filters, so you could specify the value as `?ebserver` to find tags with the key *webserver* or *Webserver*.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=key
&Filter.1.Value.1=webserver
&AUTHPARAMS
```

## Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15//"\>
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <tagSet>
    <item>
```

```
<resourceId>i-1234567890abcdef0</resourceId>
<resourceType>instance</resourceType>
<key>webserver</key>
<value/>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with either stack=Test or stack=Production.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=stack
&Filter.3.Name=value
&Filter.3.Value.1=Test
&Filter.3.Value.2=Production
&AUTHPARAMS
```

### Sample Response

```
<DescribeTagsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15//">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<tagSet>
<item>
<resourceId>i-1234567890abcdef0</resourceId>
<resourceType>instance</resourceType>
<key>stack</key>
<value>Production</value>
</item>
<item>
<resourceId>i-0598c7d356eba48d7</resourceId>
<resourceType>instance</resourceType>
<key>stack</key>
<value>Test</value>
</item>
</tagSet>
</DescribeTagsResponse>
```

## Example

This example describes the tags for all your instances tagged with Purpose=[empty string].

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTags
&Filter.1.Name=resource-type
&Filter.1.Value.1=instance
&Filter.2.Name=key
&Filter.2.Value.1=Purpose
&Filter.3.Name=value
&Filter.3.Value.1=
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTrafficMirrorFilters

Describes one or more Traffic Mirror filters.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `description`: The Traffic Mirror filter description.
- `traffic-mirror-filter-id`: The ID of the Traffic Mirror filter.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TrafficMirrorFilterId.N

The ID of the Traffic Mirror filter.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**trafficMirrorFilterSet**

Information about one or more Traffic Mirror filters.

Type: Array of [TrafficMirrorFilter \(p. 2088\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTrafficMirrorSessions

Describes one or more Traffic Mirror sessions. By default, all Traffic Mirror sessions are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `description`: The Traffic Mirror session description.
- `network-interface-id`: The ID of the Traffic Mirror session network interface.
- `owner-id`: The ID of the account that owns the Traffic Mirror session.
- `packet-length`: The assigned number of packets to mirror.
- `session-number`: The assigned session number.
- `traffic-mirror-filter-id`: The ID of the Traffic Mirror filter.
- `traffic-mirror-session-id`: The ID of the Traffic Mirror session.
- `traffic-mirror-target-id`: The ID of the Traffic Mirror target.
- `virtual-network-id`: The virtual network ID of the Traffic Mirror session.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TrafficMirrorSessionId.N

The ID of the Traffic Mirror session.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **trafficMirrorSessionSet**

Describes one or more Traffic Mirror sessions. By default, all Traffic Mirror sessions are described. Alternatively, you can filter the results.

Type: Array of [TrafficMirrorSession \(p. 2094\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTrafficMirrorTargets

Information about one or more Traffic Mirror targets.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- **description**: The Traffic Mirror target description.
- **network-interface-id**: The ID of the Traffic Mirror session network interface.
- **network-load-balancer-arn**: The Amazon Resource Name (ARN) of the Network Load Balancer that is associated with the session.
- **owner-id**: The ID of the account that owns the Traffic Mirror session.
- **traffic-mirror-target-id**: The ID of the Traffic Mirror target.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TrafficMirrorTargetId.N

The ID of the Traffic Mirror targets.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. The value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **trafficMirrorTargetSet**

Information about one or more Traffic Mirror targets.

Type: Array of [TrafficMirrorTarget \(p. 2096\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayAttachments

Describes one or more attachments between resources and transit gateways. By default, all attachments are described. Alternatively, you can filter the results by attachment ID, attachment state, resource ID, or resource owner.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `association.state` - The state of the association (`associating` | `associated` | `disassociating`).
- `association.transit-gateway-route-table-id` - The ID of the route table for the transit gateway.
- `resource-id` - The ID of the resource.
- `resource-owner-id` - The ID of the AWS account that owns the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `state` - The state of the attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`.
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `transit-gateway-owner-id` - The ID of the AWS account that owns the transit gateway.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

**TransitGatewayAttachmentIds.N**

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayAttachments**

Information about the attachments.

Type: Array of [TransitGatewayAttachment \(p. 2102\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayConnectPeers

Describes one or more Connect peers.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `state` - The state of the Connect peer (`pending` | `available` | `deleting` | `deleted`).
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-connect-peer-id` - The ID of the Connect peer.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayConnectPeerIds.N

The IDs of the Connect peers.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayConnectPeerSet**

Information about the Connect peers.

Type: Array of [TransitGatewayConnectPeer \(p. 2110\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayConnects

Describes one or more Connect attachments.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `options.protocol` - The tunnel protocol (`gre`).
- `state` - The state of the attachment (`initiating` | `initiatingRequest` | `pendingAcceptance` | `rollingBack` | `pending` | `available` | `modifying` | `deleting` | `deleted` | `failed` | `rejected` | `rejecting` | `failing`).
- `transit-gateway-attachment-id` - The ID of the Connect attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `transport-transit-gateway-attachment-id` - The ID of the transit gateway attachment from which the Connect attachment was created.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayAttachmentIds.N

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **transitGatewayConnectSet**

Information about the Connect attachments.

Type: Array of [TransitGatewayConnect \(p. 2107\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayMulticastDomains

Describes one or more transit gateway multicast domains.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- state - The state of the transit gateway multicast domain. Valid values are `pending` | `available` | `deleting` | `deleted`.
- transit-gateway-id - The ID of the transit gateway.
- transit-gateway-multicast-domain-id - The ID of the transit gateway multicast domain.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayMulticastDomainIds.N

The ID of the transit gateway multicast domain.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### transitGatewayMulticastDomains

Information about the transit gateway multicast domains.

Type: Array of [TransitGatewayMulticastDomain \(p. 2116\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes your multicast domains.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayMulticastDomains  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewayMulticastDomainsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>e19ec53b-f3f5-4eae-97c3-a9605EXAMPLE</requestId>  
    <transitGatewayMulticastDomains>  
        <item>  
            <creationTime>2019-11-19T22:05:50.000Z</creationTime>  
            <state>available</state>  
            <tagSet/>  
            <transitGatewayId>tgw-06150e5ae0EXAMPLE</transitGatewayId>  
            <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</transitGatewayMulticastDomainId>  
        </item>  
    </transitGatewayMulticastDomains>  
</DescribeTransitGatewayMulticastDomainsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)

- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayPeeringAttachments

Describes your transit gateway peering attachments.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `transit-gateway-attachment-id` - The ID of the transit gateway attachment.
- `local-owner-id` - The ID of your AWS account.
- `remote-owner-id` - The ID of the AWS account in the remote Region that owns the transit gateway.
- `state` - The state of the peering attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources that have a tag with a specific key, regardless of the tag value.
- `transit-gateway-id` - The ID of the transit gateway.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### **TransitGatewayAttachmentIds.N**

One or more IDs of the transit gateway peering attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **transitGatewayPeeringAttachments**

The transit gateway peering attachments.

Type: Array of [TransitGatewayPeeringAttachment \(p. 2128\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes your peering attachment.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayPeeringAttachments  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewayPeeringAttachmentsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>f2ad2616-b1bc-42ab-8533-bd50example</requestId>  
    <transitGatewayPeeringAttachments>  
        <item>  
            <accepterTgwInfo>  
                <ownerId>111111111111</ownerId>
```

```
<region>us-west-2</region>
<transitGatewayId>tgw-123456789012abc12</transitGatewayId>
</accepterTgwInfo>
<creationTime>2019-11-11T11:25:31.000Z</creationTime>
<requesterTgwInfo>
  <ownerId>123456789012</ownerId>
  <region>us-east-1</region>
  <transitGatewayId>tgw-abc123abc123abc12</transitGatewayId>
</requesterTgwInfo>
<state>pendingAcceptance</state>
<tagSet/>
<transitGatewayAttachmentId>tgw-attach-1122334455aabbc1</transitGatewayAttachmentId>
</item>
</transitGatewayPeeringAttachments>
</DescribeTransitGatewayPeeringAttachmentsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayRouteTables

Describes one or more transit gateway route tables. By default, all transit gateway route tables are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- default-association-route-table - Indicates whether this is the default association route table for the transit gateway (true | false).
- default-propagation-route-table - Indicates whether this is the default propagation route table for the transit gateway (true | false).
- state - The state of the route table (available | deleting | deleted | pending).
- transit-gateway-id - The ID of the transit gateway.
- transit-gateway-route-table-id - The ID of the transit gateway route table.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned nextToken value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayRouteTableIds.N

The IDs of the transit gateway route tables.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **transitGatewayRouteTables**

Information about the transit gateway route tables.

Type: Array of [TransitGatewayRouteTable \(p. 2139\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGateways

Describes one or more transit gateways. By default, all transit gateways are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `options.propagation-default-route-table-id` - The ID of the default propagation route table.
- `options.amazon-side ASN` - The private ASN for the Amazon side of a BGP session.
- `options.association-default-route-table-id` - The ID of the default association route table.
- `options.auto-accept-shared-attachments` - Indicates whether there is automatic acceptance of attachment requests (enable | disable).
- `options.default-route-table-association` - Indicates whether resource attachments are automatically associated with the default association route table (enable | disable).
- `options.default-route-table-propagation` - Indicates whether resource attachments automatically propagate routes to the default propagation route table (enable | disable).
- `options.dns-support` - Indicates whether DNS support is enabled (enable | disable).
- `options.vpn-ecmp-support` - Indicates whether Equal Cost Multipath Protocol support is enabled (enable | disable).
- `owner-id` - The ID of the AWS account that owns the transit gateway.
- `state` - The state of the transit gateway (available | deleted | deleting | modifying | pending).
- `transit-gateway-id` - The ID of the transit gateway.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### **NextToken**

The token for the next page of results.

Type: String

Required: No

#### **TransitGatewayIds.N**

The IDs of the transit gateways.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **transitGatewaySet**

Information about the transit gateways.

Type: Array of [TransitGateway \(p. 2098\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes your transit gateways.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGateways  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>151283df-f7dc-4317-89b4-01c9888b1d45</requestId>
<transitGatewaySet>
    <item>
        <creationTime>2019-05-08T13:21:33.000Z</creationTime>
        <description>example tgw</description>
        <options>
            <amazonSideAsn>64512</amazonSideAsn>
            <associationDefaultRouteTableId>tgw-rtb-002573ed1eEXAMPLE</
associationDefaultRouteTableId>
            <autoAcceptSharedAttachments>disable</autoAcceptSharedAttachments>
            <defaultRouteTableAssociation>enable</defaultRouteTableAssociation>
            <defaultRouteTablePropagation>enable</defaultRouteTablePropagation>
            <dnsSupport>enable</dnsSupport>
            <propagationDefaultRouteTableId>tgw-rtb-002573ed1eEXAMPLE</
propagationDefaultRouteTableId>
            <vpnEcmpSupport>enable</vpnEcmpSupport>
        </options>
        <ownerId>111122223333</ownerId>
        <state>available</state>
        <tagSet/>
        <transitGatewayArn>arn:aws:ec2:us-east-1:111122223333:transit-gateway/
tgw-02f776b1a7EXAMPLE</transitGatewayArn>
        <transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
    </item>
</transitGatewaySet>
</DescribeTransitGatewaysResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTransitGatewayVpcAttachments

Describes one or more VPC attachments. By default, all VPC attachments are described. Alternatively, you can filter the results.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `state` - The state of the attachment. Valid values are `available` | `deleted` | `deleting` | `failed` | `failing` | `initiatingRequest` | `modifying` | `pendingAcceptance` | `pending` | `rollingBack` | `rejected` | `rejecting`.
- `transit-gateway-attachment-id` - The ID of the attachment.
- `transit-gateway-id` - The ID of the transit gateway.
- `vpc-id` - The ID of the VPC.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayAttachmentIds.N

The IDs of the attachments.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### transitGatewayVpcAttachments

Information about the VPC attachments.

Type: Array of [TransitGatewayVpcAttachment \(p. 2143\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes your transit gateway VPC attachments.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeTransitGatewayVpcAttachment  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeTransitGatewayVpcAttachmentsResponse xmlns="http://ec2.amazonaws.com/  
doc/2016-11-15/">  
    <requestId>5eeb22d7-c1cf-4efd-9725-1e92e8f9a4e7</requestId>  
    <transitGatewayVpcAttachments>  
        <item>  
            <creationTime>2019-07-17T16:04:27.000Z</creationTime>  
            <options>  
                <dnsSupport>enable</dnsSupport>  
                <ipv6Support>disable</ipv6Support>  
            </options>  
            <state>available</state>  
            <subnetIds>  
                <item>subnet-0187aff814EXAMPLE</item>  
            </subnetIds>  
            <tagSet/>  
            <transitGatewayAttachmentId>tgw-attach-0d2c54bdb3EXAMPLE</  
transitGatewayAttachmentId>
```

```
<transitGatewayId>tgw-02f776b1a7EXAMPLE</transitGatewayId>
<vpcId>vpc-0065acced4EXAMPLE</vpcId>
<vpcOwnerId>111122223333</vpcOwnerId>
</item>
</transitGatewayVpcAttachments>
</DescribeTransitGatewayVpcAttachmentsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeTrunkInterfaceAssociations

## Note

This API action is currently in **limited preview only**. If you are interested in using this feature, contact your account manager.

Describes one or more network interface trunk associations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId.N

The IDs of the associations.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `gre-key` - The ID of a trunk interface association.
- `interface-protocol` - The interface protocol. Valid values are `VLAN` and `GRE`.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **interfaceAssociationSet**

Information about the trunk associations.

Type: Array of [TrunkInterfaceAssociation \(p. 2146\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVolumeAttribute

Describes the specified attribute of the specified volume. You can specify only one attribute at a time.

For more information about EBS volumes, see [Amazon EBS volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The attribute of the volume. This parameter is required.

Type: String

Valid Values: `autoEnableIO` | `productCodes`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VolumeId

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### autoEnableIO

The state of `autoEnableIO` attribute.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

### productCodes

A list of product codes.

Type: Array of [ProductCode \(p. 1898\)](#) objects

### requestId

The ID of the request.

Type: String

### volumId

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the `autoEnableIO` attribute of the volume `vol-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=autoEnableIO
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
<volumeId>vol-1234567890abcdef0</volumeId>
<autoEnableIO>
  <value>false</value>
</autoEnableIO>
</DescribeVolumeAttributeResponse>
```

### Example

This example describes the `productCodes` attribute of the volume `vol-1234567890abcdef0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeAttribute
&Attribute=productCodes
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
<volumeId>vol-1234567890abcdef0</volumeId>
<productCodes>
  <item>
    <productCode>a1b2c3d4e5f6g7h8i9j10k11</productCode>
    <type>marketplace</type>
```

```
</item>
</productCodes>
</DescribeVolumeAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVolumes

Describes the specified EBS volumes or all of your EBS volumes.

If you are describing a long list of volumes, we recommend that you paginate the output to make the list more manageable. The `MaxResults` parameter sets the maximum number of results returned in a single page. If the list of results exceeds your `MaxResults` value, then that number of results is returned along with a `NextToken` value that can be passed to a subsequent `DescribeVolumes` request to retrieve the remaining results.

For more information about EBS volumes, see [Amazon EBS volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `attachment.attach-time` - The time stamp when the attachment initiated.
- `attachment.delete-on-termination` - Whether the volume is deleted on instance termination.
- `attachment.device` - The device name specified in the block device mapping (for example, `/dev/sda1`).
- `attachment.instance-id` - The ID of the instance the volume is attached to.
- `attachment.status` - The attachment state (`attaching` | `attached` | `detaching`).
- `availability-zone` - The Availability Zone in which the volume was created.
- `create-time` - The time stamp when the volume was created.
- `encrypted` - Indicates whether the volume is encrypted (`true` | `false`)
- `multi-attach-enabled` - Indicates whether the volume is enabled for Multi-Attach (`true` | `false`)
- `fast-restored` - Indicates whether the volume was created from a snapshot that is enabled for fast snapshot restore (`true` | `false`).
- `size` - The size of the volume, in GiB.
- `snapshot-id` - The snapshot from which the volume was created.
- `status` - The state of the volume (`creating` | `available` | `in-use` | `deleting` | `deleted` | `error`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.

- **tag-key** - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- **volume-id** - The volume ID.
- **volume-type** - The Amazon EBS volume type (gp2 | gp3 | io1 | io2 | st1 | sc1| standard)

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of volume results returned by `DescribeVolumes` in paginated output. When this parameter is used, `DescribeVolumes` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `DescribeVolumes` request with the returned `NextToken` value. This value can be between 5 and 500; if `MaxResults` is given a value larger than 500, only 500 results are returned. If this parameter is not used, then `DescribeVolumes` returns all results. You cannot specify this parameter and the `volume IDs` parameter in the same request.

Type: Integer

Required: No

#### NextToken

The `NextToken` value returned from a previous paginated `DescribeVolumes` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is `null` when there are no more results to return.

Type: String

Required: No

#### VolumeId.N

The volume IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The `NextToken` value to include in a future `DescribeVolumes` request. When the results of a `DescribeVolumes` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### volumeSet

Information about the volumes.

Type: Array of [Volume \(p. 2167\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all volumes associated with your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumes  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>  
  <volumeSet>  
    <item>  
      <volumeId>vol-1234567890abcdef0</volumeId>  
      <size>80</size>  
      <snapshotId/>  
      <availabilityZone>us-east-1a</availabilityZone>  
      <status>in-use</status>  
      <createTime>YYYY-MM-DDTHH:MM:SS.SSSZ</createTime>  
      <attachmentSet>  
        <item>  
          <volumeId>vol-1234567890abcdef0</volumeId>  
          <instanceId>i-1234567890abcdef0</instanceId>  
          <device>/dev/sdh</device>  
          <status>attached</status>  
          <attachTime>YYYY-MM-DDTHH:MM:SS.SSSZ</attachTime>  
          <deleteOnTermination>false</deleteOnTermination>  
        </item>  
      </attachmentSet>  
      <volumeType>standard</volumeType>  
      <encrypted>true</encrypted>  
      <multiAttachEnabled>false</multiAttachEnabled>  
    </item>  
  </volumeSet>  
</DescribeVolumesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVolumesModifications

Describes the most recent volume modification request for the specified EBS volumes.

If a volume has never been modified, some information in the output will be null. If a volume has been modified more than once, the output includes only the most recent modification request.

You can also use CloudWatch Events to check the status of a modification to an EBS volume. For information about CloudWatch Events, see the [Amazon CloudWatch Events User Guide](#). For more information, see [Monitor the progress of volume modifications](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `modification-state` - The current modification state (modifying | optimizing | completed | failed).
- `original-iops` - The original IOPS rate of the volume.
- `original-size` - The original size of the volume, in GiB.
- `original-volume-type` - The original volume type of the volume (standard | io1 | io2 | gp2 | sc1 | st1).
- `originalMultiAttachEnabled` - Indicates whether Multi-Attach support was enabled (true | false).
- `start-time` - The modification start time.
- `target-iops` - The target IOPS rate of the volume.
- `target-size` - The target size of the volume, in GiB.
- `target-volume-type` - The target volume type of the volume (standard | io1 | io2 | gp2 | sc1 | st1).
- `targetMultiAttachEnabled` - Indicates whether Multi-Attach support is to be enabled (true | false).
- `volume-id` - The ID of the volume.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results (up to a limit of 500) to be returned in a paginated request.

Type: Integer

Required: No

**NextToken**

The `nextToken` value returned by a previous paginated request.

Type: String

Required: No

**VolumeId.N**

The IDs of the volumes.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

Token for pagination, null if there are no more results

Type: String

**requestId**

The ID of the request.

Type: String

**volumeModificationSet**

Information about the volume modifications.

Type: Array of [VolumeModification \(p. 2173\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example displays volume status after modifications to size, type, IOPS provisioning, and Multi-Attach support.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumesModifications
&VolumeId.1=vol-0123456789EXAMPLE
&Version=2016-11-15
```

## Sample Response

```
<DescribeVolumesModificationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<volumeModificationSet>
  <item>
    <targetIops>10000</targetIops>
    <originalIops>300</originalIops>
    <modificationState>optimizing</modificationState>
    <targetSize>200</targetSize>
    <targetVolumeType>io1</targetVolumeType>
    <volumeId>vol-0123456789EXAMPLE</volumeId>
    <progress>40</progress>
    <startTime>2017-01-19T23:58:04.922Z</startTime>
    <originalSize>100</originalSize>
    <originalVolumeType>gp2</originalVolumeType>
    <originalMultiAttachEnabled>false</originalMultiAttachEnabled>
    <targetMultiAttachEnabled>true</targetMultiAttachEnabled>
  </item>
</volumeModificationSet>
</DescribeVolumesModificationsResponse>
```

## Example 2

This example displays information about all volumes in a Region with a modification state of optimizing or completed.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumesModifications
&Filter.1.Value.2=completed
&Filter.1.Value.1=optimizing
&Version=2016-11-15
&Filter.1.Name=modification-state
```

## Sample Response

```
<DescribeVolumesModificationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>35fdf8d3-6ffa-46dc-8f8e-62fe70bc31a2</requestId>
<volumeModificationSet>
  <item>
    <targetIops>10000</targetIops>
    <originalIops>100</originalIops>
    <modificationState>optimizing</modificationState>
    <targetSize>2000</targetSize>
    <targetVolumeType>io1</targetVolumeType>
    <volumeId>vol-06397e7a0eEXAMPLE</volumeId>
    <progress>3</progress>
    <startTime>2017-02-10T23:40:57.612Z</startTime>
    <originalSize>10</originalSize>
    <originalVolumeType>gp2</originalVolumeType>
  </item>
  <item>
    <targetIops>10000</targetIops>
    <originalIops>100</originalIops>
    <modificationState>completed</modificationState>
    <targetSize>200</targetSize>
    <targetVolumeType>io1</targetVolumeType>
    <volumeId>vol-bEXAMPLE</volumeId>
    <progress>100</progress>
  </item>
</volumeModificationSet>
</DescribeVolumesModificationsResponse>
```

```
<startTime>2017-02-10T22:50:52.207Z</startTime>
<endTime>2017-02-10T22:56:04.823Z</endTime>
<originalSize>8</originalSize>
<originalVolumeType>gp2</originalVolumeType>
</item>
</volumeModificationSet>
</DescribeVolumesModificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## DescribeVolumeStatus

Describes the status of the specified volumes. Volume status provides the result of the checks performed on your volumes to determine events that can impair the performance of your volumes. The performance of a volume can be affected if an issue occurs on the volume's underlying host. If the volume's underlying host experiences a power outage or system issue, after the system is restored, there could be data inconsistencies on the volume. Volume events notify you if this occurs. Volume actions notify you if any action needs to be taken in response to the event.

The `DescribeVolumeStatus` operation provides the following information about the specified volumes:

*Status*: Reflects the current status of the volume. The possible values are `ok`, `impaired`, `warning`, or `insufficient-data`. If all checks pass, the overall status of the volume is `ok`. If the check fails, the overall status is `impaired`. If the status is `insufficient-data`, then the checks might still be taking place on your volume at the time. We recommend that you retry the request. For more information about volume status, see [Monitor the status of your volumes](#) in the *Amazon Elastic Compute Cloud User Guide*.

*Events*: Reflect the cause of a volume status and might require you to take action. For example, if your volume returns an `impaired` status, then the volume event might be `potential-data-inconsistency`. This means that your volume has been affected by an issue with the underlying host, has all I/O operations disabled, and might have inconsistent data.

*Actions*: Reflect the actions you might have to take in response to an event. For example, if the status of the volume is `impaired` and the volume event shows `potential-data-inconsistency`, then the action shows `enable-volume-io`. This means that you may want to enable the I/O operations for the volume by calling the [EnableVolumeIO](#) (p. 958) action and then check the volume for data consistency.

Volume status is based on the volume status checks, and does not reflect the volume state. Therefore, volume status does not indicate volumes in the `error` state (for example, when a volume is incapable of accepting I/O).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](#) (p. 2247).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters.

- `action.code` - The action code for the event (for example, `enable-volume-io`).
- `action.description` - A description of the action.
- `action.event-id` - The event ID associated with the action.
- `availability-zone` - The Availability Zone of the instance.
- `event.description` - A description of the event.

- `event.event-id` - The event ID.
- `event.event-type` - The event type (for `io-enabled:passed | failed`; for `io-performance:io-performance:degraded | io-performance:severely-degraded | io-performance:stalled`).
- `event.not-after` - The latest end time for the event.
- `event.not-before` - The earliest start time for the event.
- `volume-status.details-name` - The cause for `volume-status.status` (`io-enabled | io-performance`).
- `volume-status.details-status` - The status of `volume-status.details-name` (for `io-enabled:passed | failed`; for `io-performance:normal | degraded | severely-degraded | stalled`).
- `volume-status.status` - The status of the volume (`ok | impaired | warning | insufficient-data`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

#### MaxResults

The maximum number of volume results returned by `DescribeVolumeStatus` in paginated output. When this parameter is used, the request only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned. If this parameter is not used, then `DescribeVolumeStatus` returns all results. You cannot specify this parameter and the `volume IDs` parameter in the same request.

Type: Integer

Required: No

#### NextToken

The `NextToken` value to include in a future `DescribeVolumeStatus` request. When the results of the request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

Required: No

#### VolumeId.N

The IDs of the volumes.

Default: Describes all your volumes.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**volumeStatusSet**

Information about the status of the volumes.

Type: Array of [VolumeStatusItem \(p. 2182\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the status of all the volumes associated with your account.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVolumeStatus xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <volumeStatusSet>  
    <item>  
      <volumeId>vol-1234567890abcdef0</volumeId>  
      <availabilityZone>us-east-1d</availabilityZone>  
      <volumeStatus>  
        <status>ok</status>  
        <details>  
          <item>  
            <title>io-enabled</title>  
            <status>passed</status>  
          </item>  
        </details>  
      </volumeStatus>  
    </item>  
    <item>  
      <volumeId>vol-1234567890abcdef1</volumeId>  
      <availabilityZone>us-east-1d</availabilityZone>  
      <volumeStatus>  
        <status>impaired</status>  
        <details>  
          <item>  
            <title>io-enabled</title>  
            <status>failed</status>  
          </item>  
        </details>  
      </volumeStatus>  
    </item>  
  </volumeStatusSet>  
</DescribeVolumeStatus>
```

```
</volumeStatus>
<eventsSet>
  <item>
    <eventId>evol-61a54008</eventId>
    <eventType>potential-data-inconsistency</eventType>
    <description>THIS IS AN EXAMPLE</description>
    <notBefore>2011-12-01T14:00:00.000Z</notBefore>
    <notAfter>2011-12-01T15:00:00.000Z</notAfter>
  </item>
</eventsSet>
<actionsSet>
  <item>
    <code>enable-volume-io</code>
    <eventId> evol-61a54008</eventId>
    <eventType>potential-data-inconsistency</eventType>
    <description>THIS IS AN EXAMPLE</description>
  </item>
</actionsSet>
</item>
</volumeStatusSet>
</DescribeVolumesStatusResponse>
```

## Example

This example describes all the volumes in the `us-east-1d` Availability Zone with failed io-enabled status.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVolumeStatus
&Filter.1.Name=availability-zone
&Filter.1.Value.1=us-east-1d
&Filter.2.Name=volume-status.details-name
&Filter.2.Value.1=io-enabled
&Filter.3.Name=volume-status.details-status
&Filter.3.Value.1=failed
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcAttribute

Describes the specified attribute of the specified VPC. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The VPC attribute.

Type: String

Valid Values: enableDnsSupport | enableDnsHostnames

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### enableDnsHostnames

Indicates whether the instances launched in the VPC get DNS hostnames. If this attribute is true, instances in the VPC get DNS hostnames; otherwise, they do not.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

### enableDnsSupport

Indicates whether DNS resolution is enabled for the VPC. If this attribute is true, the Amazon DNS server resolves DNS hostnames for your instances to their corresponding IP addresses; otherwise, it does not.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

### requestId

The ID of the request.

Type: String

### vpcId

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the `enableDnsSupport` attribute of the specified VPC. The sample response indicates that DNS resolution is supported.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsSupport
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpcId>vpc-1a2b3c4d</vpcId>
<enableDnsSupport>
  <value>true</value>
</enableDnsSupport>
</DescribeVpcAttributeResponse>
```

### Example 2

This request describes the `enableDnsHostnames` attribute of the specified VPC. The sample response indicates that DNS hostnames are supported.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcAttribute
&VpcId=vpc-1a2b3c4d
&Attribute=enableDnsHostnames
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpcId>vpc-1a2b3c4d</vpcId>
<enableDnsHostnames>
  <value>true</value>
```

```
</enableDnsHostnames>
</DescribeVpcAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcClassicLink

Describes the ClassicLink status of one or more VPCs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `is-classic-link-enabled` - Whether the VPC is enabled for ClassicLink (`true` | `false`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### VpcId.N

One or more VPCs for which you want to describe the ClassicLink status.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpcSet

The ClassicLink status of one or more VPCs.

Type: Array of [VpcClassicLink \(p. 2189\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example lists the ClassicLink status of vpc-88888888.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcClassicLink
&VpcId.1=vpc-88888888
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-0441b461</vpcId>
      <classicLinkEnabled>true</classicLinkEnabled>
      <tagSet/>
    </item>
  </vpcSet>
</DescribeVpcClassicLinkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcClassicLinkDnsSupport

Describes the ClassicLink DNS support status of one or more VPCs. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance. For more information, see [ClassicLink](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

Required: No

### **VpcIds.N**

One or more VPC IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1024.

### **requestId**

The ID of the request.

Type: String

## vpcs

Information about the ClassicLink DNS support status of the VPCs.

Type: Array of [ClassicLinkDnsSupport \(p. 1423\)](#) objects

# Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the ClassicLink DNS support status of all of your VPCs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcClassicLinkDnsSupport  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcClassicLinkDnsSupportResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>14eea823-b88b-472a-9225-5f6a54ab1a5c</requestId>  
  <vpcs>  
    <item>  
      <classicLinkDnsSupported>true</classicLinkDnsSupported>  
      <vpcId>vpc-wxy987wz</vpcId>  
    </item>  
    <item>  
      <classicLinkDnsSupported>false</classicLinkDnsSupported>  
      <vpcId>vpc-123abc12</vpcId>  
    </item>  
  </vpcs>  
</DescribeVpcClassicLinkDnsSupportResponse>
```

### Example

This example describes the ClassicLink DNS support status of vpc-1a2b3c4d.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcClassicLinkDnsSupport  
&VpcId.1=vpc-1a2b3c4d  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcEndpointConnectionNotifications

Describes the connection notifications for VPC endpoints and VPC endpoint services.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ConnectionNotificationId**

The ID of the notification.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Filter.N**

One or more filters.

- `connection-notification-arn` - The ARN of the SNS topic for the notification.
- `connection-notification-id` - The ID of the notification.
- `connection-notification-state` - The state of the notification (`Enabled` | `Disabled`).
- `connection-notification-type` - The type of notification (`Topic`).
- `service-id` - The ID of the endpoint service.
- `vpc-endpoint-id` - The ID of the VPC endpoint.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return in a single call. To retrieve the remaining results, make another request with the returned `NextToken` value.

Type: Integer

Required: No

### **NextToken**

The token to request the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **connectionNotificationSet**

One or more notifications.

Type: Array of [ConnectionNotification \(p. 1450\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your connection notifications.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointConnectionNotifications  
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointConnectionNotificationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
    <requestId>48541e40-9b6f-488e-8da7-a52a7example</requestId>  
    <connectionNotificationSet>  
        <item>  
            <connectionNotificationArn>arn:aws:sns:us-east-1:123456789012:EndpointNotification</connectionNotificationArn>  
            <connectionEvents>  
                <item>Accept</item>  
                <item>Connect</item>  
                <item>Delete</item>  
                <item>Reject</item>  
            </connectionEvents>  
            <connectionNotificationType>Topic</connectionNotificationType>  
            <connectionNotificationState>Enabled</connectionNotificationState>  
            <connectionNotificationId>vpce-nfn-123cb952bc8af7123</connectionNotificationId>  
            <vpcEndpointId>vpce-1234151a02f327123</vpcEndpointId>
```

```
</item>
</connectionNotificationSet>
</DescribeVpcEndpointConnectionNotificationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcEndpointConnections

Describes the VPC endpoint connections to your VPC endpoint services, including any endpoints that are pending your acceptance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `service-id` - The ID of the service.
- `vpc-endpoint-owner` - The ID of the AWS account ID that owns the endpoint.
- `vpc-endpoint-state` - The state of the endpoint (`pendingAcceptance` | `pending` | `available` | `deleting` | `deleted` | `rejected` | `failed`).
- `vpc-endpoint-id` - The ID of the endpoint.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

#### vpcEndpointConnectionSet

Information about one or more VPC endpoint connections.

Type: Array of [VpcEndpointConnection \(p. 2193\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of the VPC endpoint connections for all of your services.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointConnections  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>ed2d237f-426b-4927-981b-980example</requestId>  
  <vpcEndpointConnectionSet>  
    <item>  
      <vpcEndpointOwner>123456789012</vpcEndpointOwner>  
      <creationTimestamp>2017-10-19T12:36:10.939Z</creationTimestamp>  
      <vpcEndpointState>available</vpcEndpointState>  
      <serviceId>vpce-svc-0127881c0d25a3123</serviceId>  
      <vpcEndpointId>vpce-09bce00dc3edcc329</vpcEndpointId>  
    </item>  
    <item>  
      <vpcEndpointOwner>112233445566</vpcEndpointOwner>  
      <creationTimestamp>2017-10-18T12:14:41.892Z</creationTimestamp>  
      <vpcEndpointState>rejected</vpcEndpointState>  
      <serviceId>vpce-svc-0435c4480f65e3abc</serviceId>  
      <vpcEndpointId>vpce-051a4ba136c8a12d8</vpcEndpointId>  
    </item>  
    <item>  
      <vpcEndpointOwner>123123123123</vpcEndpointOwner>  
      <creationTimestamp>2017-10-18T13:25:07.739Z</creationTimestamp>  
      <vpcEndpointState>pendingAcceptance</vpcEndpointState>  
      <serviceId>vpce-svc-01f406f3e99f8a123</serviceId>  
    </item>  
  </vpcEndpointConnectionSet>  
</DescribeVpcEndpointConnectionsResponse>
```

```
<vpcEndpointId>vpce-09593ee8e85835659</vpcEndpointId>
</item>
</vpcEndpointConnectionSet>
</DescribeVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcEndpoints

Describes one or more of your VPC endpoints.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `service-name` - The name of the service.
- `vpc-id` - The ID of the VPC in which the endpoint resides.
- `vpc-endpoint-id` - The ID of the endpoint.
- `vpc-endpoint-state` - The state of the endpoint (`pendingAcceptance` | `pending` | `available` | `deleting` | `deleted` | `rejected` | `failed`).
- `vpc-endpoint-type` - The type of VPC endpoint (`Interface` | `Gateway` | `GatewayLoadBalancer`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1,000, we return only 1,000 items.

Type: Integer

Required: No

### NextToken

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

### VpcEndpointId.N

One or more endpoint IDs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

### requestId

The ID of the request.

Type: String

### vpcEndpointSet

Information about the endpoints.

Type: Array of [VpcEndpoint \(p. 2190\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your endpoints.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpoints  
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>8d3e7656-3328-451d-8c86-7156example</requestId>  
  <vpcEndpointSet>  
    <item>  
      <policyDocument>{"Version":"2008-10-17","Statement":  
      [{"Effect":"Allow","Principal":"*","Action":"*","Resource":"*"}]}</policyDocument>  
      <routeTableIdSet>
```

```
<item>rtb-3d560345</item>
</routeTableIdSet>
<dnsEntrySet/>
<serviceName>com.amazonaws.us-east-1.dynamodb</serviceName>
<privateDnsEnabled>true</privateDnsEnabled>
<groupSet/>
<vpcEndpointId>vpce-032a826a</vpcEndpointId>
<subnetIdSet/>
<networkInterfaceIdSet/>
<vpcEndpointType>Gateway</vpcEndpointType>
<vpcId>vpc-aabb1122</vpcId>
<creationTimestamp>2017-09-05T20:41:28Z</creationTimestamp>
<state>available</state>
<tagSet>
    <item>
        <key>Name</key>
        <value>TeamA</value>
    </item>
</tagSet>
</item>
<item>
    <policyDocument>{"Statement": [{"Action": "*", "Effect": "Allow", "Principal": "*",
    "Resource": "*"}]}</policyDocument>
    <routeTableIdSet/>
    <dnsEntrySet>
        <item>
            <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
            <dnsName>vpce-0f89a33420c1931d7-bluzidnv.elasticloadbalancing.us-
east-1.vpce.amazonaws.com</dnsName>
        </item>
        <item>
            <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
            <dnsName>vpce-0f89a33420c1931d7-bluzidnv-us-
east-1b.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
        </item>
        <item>
            <hostedZoneId>Z7HUB22UULQXV</hostedZoneId>
            <dnsName>vpce-0f89a33420c1931d7-bluzidnv-us-
east-1a.elasticloadbalancing.us-east-1.vpce.amazonaws.com</dnsName>
        </item>
    </dnsEntrySet>
    <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
    <privateDnsEnabled>false</privateDnsEnabled>
    <groupSet>
        <item>
            <groupName>default</groupName>
            <groupId>sg-54e8bf31</groupId>
        </item>
    </groupSet>
    <vpcEndpointId>vpce-0f89a33420c1931d7</vpcEndpointId>
    <subnetIdSet>
        <item>subnet-d6fcaa8d</item>
        <item>subnet-7b16de0c</item>
    </subnetIdSet>
    <networkInterfaceIdSet>
        <item>eni-2ec2b084</item>
        <item>eni-1b4a65cf</item>
    </networkInterfaceIdSet>
    <vpcEndpointType>Interface</vpcEndpointType>
    <vpcId>vpc-1a2b3c4d</vpcId>
    <creationTimestamp>2017-09-05T17:55:27.583Z</creationTimestamp>
    <state>available</state>
    <tagSet>
        <item>
            <key>Name</key>
            <value>TeamA</value>
        </item>
```

```
        </item>
    </tagSet>
</item>
<item>
    <creationTimestamp>2020-11-11T08:06:03.522Z</creationTimestamp>
    <networkInterfaceIdSet>
        <item>eni-11111222222333aad</item>
    </networkInterfaceIdSet>
    <ownerId>123456789012</ownerId>
    <requesterManaged>false</requesterManaged>
    <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-abcd33a1c4321c123</
serviceName>
    <state>available</state>
    <subnetIdSet>
        <item>subnet-aaaabbbb333322211</item>
    </subnetIdSet>
    <tagSet/>
    <vpcEndpointId>vpce-22223333bbbbaaaa1</vpcEndpointId>
    <vpcEndpointType>GatewayLoadBalancer</vpcEndpointType>
    <vpcId>vpc-abcabcbc12312312</vpcId>
    </item>
</vpcEndpointSet>
</DescribeVpcEndpointsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcEndpointServiceConfigurations

Describes the VPC endpoint service configurations in your account (your services).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `service-name` - The name of the service.
- `service-id` - The ID of the service.
- `service-state` - The state of the service (`Pending` | `Available` | `Deleting` | `Deleted` | `Failed`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

### ServiceId.N

The IDs of one or more services.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### serviceConfigurationSet

Information about one or more services.

Type: Array of [ServiceConfiguration \(p. 2001\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes all of your VPC endpoint service configurations.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServiceConfigurations  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointServiceConfigurationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15">  
    <requestId>d5bad480-0167-4a7f-a1c6-2651example</requestId>  
    <serviceConfigurationSet>  
        <item>  
            <serviceState>Available</serviceState>  
            <serviceType>  
                <item>  
                    <serviceType>Interface</serviceType>  
                </item>  
            </serviceType>  
            <baseEndpointDnsNameSet>  
                <item>vpce-svc-0799b7d1c483b0123.us-east-1.vpce.amazonaws.com</item>
```

```
</baseEndpointDnsNameSet>
<acceptanceRequired>true</acceptanceRequired>
<availabilityZoneSet>
    <item>us-east-1d</item>
</availabilityZoneSet>
<serviceId>vpce-svc-0799b7d1c483b0123</serviceId>
<serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-0799b7d1c483b0123</serviceName>
<networkLoadBalancerArnSet>
    <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/net/mynlb/1238753950b25123</item>
</networkLoadBalancerArnSet>
<tagSet>
    <item>
        <key>Name</key>
        <value>TeamA</value>
    </item>
</tagSet>
</item>
<item>
    <serviceState>Available</serviceState>
    <serviceType>
        <item>
            <serviceType>GatewayLoadBalancer</serviceType>
        </item>
    </serviceType>
    <acceptanceRequired>false</acceptanceRequired>
    <availabilityZoneSet>
        <item>us-east-1d</item>
    </availabilityZoneSet>
    <serviceId>vpce-svc-123abcc1298abc123</serviceId>
    <serviceName>com.amazonaws.vpce.us-east-1.vpce-svc-123abcc1298abc123</serviceName>
    <gatewayLoadBalancerArnSet>
        <item>arn:aws:elasticloadbalancing:us-east-1:123456789012:loadbalancer/gwy/GWLBSERVICE/abc210844e429abc</item>
    </gatewayLoadBalancerArnSet>
    <tagSet>
        <item>
            <key>Name</key>
            <value>SecurityAppliance</value>
        </item>
    </tagSet>
    </item>
</serviceConfigurationSet>
</DescribeVpcEndpointServiceConfigurationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# DescribeVpcEndpointServicePermissions

Describes the principals (service consumers) that are permitted to discover your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `principal` - The ARN of the principal.
- `principal-type` - The principal type (`All` | `Service` | `OrganizationUnit` | `Account` | `User` | `Role`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results of the initial request can be seen by sending another request with the returned `NextToken` value. This value can be between 5 and 1,000; if `MaxResults` is given a value larger than 1,000, only 1,000 results are returned.

Type: Integer

Required: No

### NextToken

The token to retrieve the next page of results.

Type: String

Required: No

### ServiceId

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### allowedPrincipals

Information about one or more allowed principals.

Type: Array of [AllowedPrincipal \(p. 1363\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the permissions for service `vpce-svc-03d5ebb7d9579a123`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServicePermissions
&ServiceId=vpce-svc-03d5ebb7d9579a123
&AUTHPARAMS
```

### Sample Response

```
<DescribeVpcEndpointServicePermissionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>5359c8a3-9151-4964-abed-b4422example</requestId>
  <allowedPrincipals>
    <item>
      <principal>arn:aws:iam::123456789012:root</principal>
      <principalType>Account</principalType>
    </item>
  </allowedPrincipals>
</DescribeVpcEndpointServicePermissionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcEndpointServices

Describes available services to which you can create a VPC endpoint.

When the service provider and the consumer have different accounts in multiple Availability Zones, and the consumer views the VPC endpoint service information, the response only includes the common Availability Zones. For example, when the service provider account uses `us-east-1a` and `us-east-1c` and the consumer uses `us-east-1a` and `us-east-1b`, the response includes the VPC endpoint services in the common Availability Zone, `us-east-1a`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `service-name` - The name of the service.
- `service-type` - The type of service (`Interface` | `Gateway`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of items to return for this request. The request returns a token that you can specify in a subsequent call to get the next set of results.

Constraint: If the value is greater than 1,000, we return only 1,000 items.

Type: Integer

Required: No

### NextToken

The token for the next set of items to return. (You received this token from a prior call.)

Type: String

Required: No

### **ServiceName.N**

One or more service names.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use when requesting the next set of items. If there are no additional items to return, the string is empty.

Type: String

### **requestId**

The ID of the request.

Type: String

### **serviceDetailSet**

Information about the service.

Type: Array of [ServiceDetail \(p. 2003\)](#) objects

### **serviceNameSet**

A list of supported services.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes all available endpoint services.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcEndpointServices  
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpcEndpointServicesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
<requestId>19a9ff46-7df6-49b8-9726-3df27527089d</requestId>
```

```
<serviceNameSet>
    <item>com.amazonaws.us-east-1.dynamodb</item>
    <item>com.amazonaws.us-east-1.ec2</item>
    <item>com.amazonaws.us-east-1.ec2messages</item>
    <item>com.amazonaws.us-east-1.elasticloadbalancing</item>
    <item>com.amazonaws.us-east-1.kinesis-streams</item>
    <item>com.amazonaws.us-east-1.s3</item>
    <item>com.amazonaws.us-east-1.ssm</item>
</serviceNameSet>
<serviceDetailSet>
    <item>
        <owner>amazon</owner>
        <serviceType>
            <item>
                <serviceType>Gateway</serviceType>
            </item>
        </serviceType>
        <baseEndpointDnsNameSet>
            <item>dynamodb.us-east-1.amazonaws.com</item>
        </baseEndpointDnsNameSet>
        <acceptanceRequired>false</acceptanceRequired>
        <availabilityZoneSet>
            <item>us-east-1a</item>
            <item>us-east-1b</item>
            <item>us-east-1c</item>
            <item>us-east-1d</item>
            <item>us-east-1e</item>
            <item>us-east-1f</item>
        </availabilityZoneSet>
        <serviceName>com.amazonaws.us-east-1.dynamodb</serviceName>
        <vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
        <>tagSet>
            <item>
                <key>Name</key>
                <value>TeamA</value>
            </item>
        </tagSet>
    </item>
    <item>
        <owner>amazon</owner>
        <serviceType>
            <item>
                <serviceType>Interface</serviceType>
            </item>
        </serviceType>
        <baseEndpointDnsNameSet>
            <item>ec2.us-east-1.vpce.amazonaws.com</item>
        </baseEndpointDnsNameSet>
        <acceptanceRequired>false</acceptanceRequired>
        <privateDnsName>ec2.us-east-1.amazonaws.com</privateDnsName>
        <availabilityZoneSet>
            <item>us-east-1a</item>
            <item>us-east-1b</item>
            <item>us-east-1c</item>
            <item>us-east-1d</item>
            <item>us-east-1e</item>
            <item>us-east-1f</item>
        </availabilityZoneSet>
        <serviceName>com.amazonaws.us-east-1.ec2</serviceName>
        <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
        <>tagSet>
            <item>
                <key>Name</key>
                <value>TeamA</value>
            </item>
        </tagSet>
    </item>
</serviceDetailSet>
```

```
</item>
<item>
    <owner>amazon</owner>
    <serviceType>
        <item>
            <serviceType>Interface</serviceType>
        </item>
    </serviceType>
    <baseEndpointDnsNameSet>
        <item>ec2messages.us-east-1.vpce.amazonaws.com</item>
    </baseEndpointDnsNameSet>
    <acceptanceRequired>false</acceptanceRequired>
    <privateDnsName>ec2messages.us-east-1.amazonaws.com</privateDnsName>
    <availabilityZoneSet>
        <item>us-east-1a</item>
        <item>us-east-1b</item>
        <item>us-east-1c</item>
        <item>us-east-1d</item>
        <item>us-east-1e</item>
        <item>us-east-1f</item>
    </availabilityZoneSet>
    <serviceName>com.amazonaws.us-east-1.ec2messages</serviceName>
    <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
    <>tagSet>
        <item>
            <key>Name</key>
            <value>TeamA</value>
        </item>
    </tagSet>
</item>
<item>
    <owner>amazon</owner>
    <serviceType>
        <item>
            <serviceType>Interface</serviceType>
        </item>
    </serviceType>
    <baseEndpointDnsNameSet>
        <item>elasticloadbalancing.us-east-1.vpce.amazonaws.com</item>
    </baseEndpointDnsNameSet>
    <acceptanceRequired>false</acceptanceRequired>
    <privateDnsName>elasticloadbalancing.us-east-1.amazonaws.com</privateDnsName>
    <availabilityZoneSet>
        <item>us-east-1a</item>
        <item>us-east-1b</item>
        <item>us-east-1c</item>
        <item>us-east-1d</item>
        <item>us-east-1e</item>
        <item>us-east-1f</item>
    </availabilityZoneSet>
    <serviceName>com.amazonaws.us-east-1.elasticloadbalancing</serviceName>
    <vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
    <>tagSet>
        <item>
            <key>Name</key>
            <value>TeamA</value>
        </item>
    </tagSet>
</item>
<item>
    <owner>amazon</owner>
    <serviceType>
        <item>
            <serviceType>Interface</serviceType>
        </item>
    </serviceType>
```

```
<baseEndpointDnsNameSet>
    <item>kinesis.us-east-1.vpce.amazonaws.com</item>
</baseEndpointDnsNameSet>
<acceptanceRequired>false</acceptanceRequired>
<privateDnsName>kinesis.us-east-1.amazonaws.com</privateDnsName>
<availabilityZoneSet>
    <item>us-east-1a</item>
    <item>us-east-1b</item>
    <item>us-east-1c</item>
    <item>us-east-1d</item>
    <item>us-east-1e</item>
    <item>us-east-1f</item>
</availabilityZoneSet>
<serviceName>com.amazonaws.us-east-1.kinesis-streams</serviceName>
<vpcEndpointPolicySupported>false</vpcEndpointPolicySupported>
<tagSet>
    <item>
        <key>Name</key>
        <value>TeamA</value>
    </item>
</tagSet>
</item>
<item>
    <owner>amazon</owner>
    <serviceType>
        <item>
            <serviceType>Gateway</serviceType>
        </item>
    </serviceType>
    <baseEndpointDnsNameSet>
        <item>s3.us-east-1.amazonaws.com</item>
    </baseEndpointDnsNameSet>
    <acceptanceRequired>false</acceptanceRequired>
    <availabilityZoneSet>
        <item>us-east-1a</item>
        <item>us-east-1b</item>
        <item>us-east-1c</item>
        <item>us-east-1d</item>
        <item>us-east-1e</item>
        <item>us-east-1f</item>
    </availabilityZoneSet>
    <serviceName>com.amazonaws.us-east-1.s3</serviceName>
    <vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
    <tagSet>
        <item>
            <key>Name</key>
            <value>TeamA</value>
        </item>
    </tagSet>
</item>
<item>
    <owner>amazon</owner>
    <serviceType>
        <item>
            <serviceType>Interface</serviceType>
        </item>
    </serviceType>
    <baseEndpointDnsNameSet>
        <item>ssm.us-east-1.vpce.amazonaws.com</item>
    </baseEndpointDnsNameSet>
    <acceptanceRequired>false</acceptanceRequired>
    <privateDnsName>ssm.us-east-1.amazonaws.com</privateDnsName>
    <availabilityZoneSet>
        <item>us-east-1a</item>
        <item>us-east-1b</item>
        <item>us-east-1c</item>
```

```
<item>us-east-1d</item>
<item>us-east-1e</item>
</availabilityZoneSet>
<serviceName>com.amazonaws.us-east-1.ssm</serviceName>
<vpcEndpointPolicySupported>true</vpcEndpointPolicySupported>
<tagSet>
  <item>
    <key>Name</key>
    <value>TeamA</value>
  </item>
</tagSet>
</item>
</serviceDetailSet>
</DescribeVpcEndpointServicesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcPeeringConnections

Describes one or more of your VPC peering connections.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `accepter-vpc-info.cidr-block` - The IPv4 CIDR block of the accepter VPC.
- `accepter-vpc-info.owner-id` - The ID of the AWS account that owns the accepter VPC.
- `accepter-vpc-info.vpc-id` - The ID of the accepter VPC.
- `expiration-time` - The expiration date and time for the VPC peering connection.
- `requester-vpc-info.cidr-block` - The IPv4 CIDR block of the requester's VPC.
- `requester-vpc-info.owner-id` - The ID of the AWS account that owns the requester VPC.
- `requester-vpc-info.vpc-id` - The ID of the requester VPC.
- `status-code` - The status of the VPC peering connection (`pending-acceptance` | `failed` | `expired` | `provisioning` | `active` | `deleting` | `deleted` | `rejected`).
- `status-message` - A message that provides more information about the status of the VPC peering connection, if applicable.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-peering-connection-id` - The ID of the VPC peering connection.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

#### **NextToken**

The token for the next page of results.

Type: String

Required: No

#### **VpcPeeringConnectionId.N**

One or more VPC peering connection IDs.

Default: Describes all your VPC peering connections.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **vpcPeeringConnectionSet**

Information about the VPC peering connections.

Type: Array of [VpcPeeringConnection \(p. 2196\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes all of your VPC peering connections.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
```

&AUTHPARAMS

## Sample Response

```
<DescribeVpcPeeringConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpcPeeringConnectionSet>
<item>
<vpcPeeringConnectionId>pcx-111aaa22</vpcPeeringConnectionId>
<requesterVpcInfo>
<ownerId>777788899999</ownerId>
<vpcId>vpc-1a2b3c4d</vpcId>
<cidrBlock>172.31.0.0/16</cidrBlock>
</requesterVpcInfo>
<accepterVpcInfo>
<ownerId>123456789012</ownerId>
<vpcId>vpc-aa22cc33</vpcId>
<cidrBlock>10.0.0.0/16</cidrBlock>
<peeringOptions>
<allowEgressFromLocalClassicLinkToRemoteVpc>false</allowEgressFromLocalClassicLinkToRemoteVpc>
<allowEgressFromLocalVpcToRemoteClassicLink>true</allowEgressFromLocalVpcToRemoteClassicLink>
<allowEgressFromLocalVpcToRemoteClassicLink>
<allowDnsResolutionFromRemoteVpc>false</allowDnsResolutionFromRemoteVpc>
</peeringOptions>
</accepterVpcInfo>
<status>
<code>active</code>
<message>Active</message>
</status>
<tagSet/>
</item>
</vpcPeeringConnectionSet>
</DescribeVpcPeeringConnectionsResponse>
```

## Example 2

This example describes all of your VPC peering connections that are in the pending-acceptance state.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=status-code
&Filter.1.Value=pending-acceptance
&AUTHPARAMS
```

## Example 3

This example describes all of your VPC peering connections that have the tag Name=Finance or Name=Accounts.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=tag:Name
&Filter.1.Value.1=Finance
&Filter.1.Value.2=Accounts
&AUTHPARAMS
```

## Example 4

This example describes all of the VPC peering connections for your specified VPC, vpc-1a2b3c4d.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcPeeringConnections
&Filter.1.Name=requester-vpc-info.vpc-id
&Filter.1.Value=vpc-1a2b3c4d
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpcs

Describes one or more of your VPCs.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `cidr` - The primary IPv4 CIDR block of the VPC. The CIDR block you specify must exactly match the VPC's CIDR block for information to be returned for the VPC. Must contain the slash followed by one or two digits (for example, `/28`).
- `cidr-block-association.cidr-block` - An IPv4 CIDR block associated with the VPC.
- `cidr-block-association.association-id` - The association ID for an IPv4 CIDR block associated with the VPC.
- `cidr-block-association.state` - The state of an IPv4 CIDR block associated with the VPC.
- `dhcp-options-id` - The ID of a set of DHCP options.
- `ipv6-cidr-block-association.ipv6-cidr-block` - An IPv6 CIDR block associated with the VPC.
- `ipv6-cidr-block-association.ipv6-pool` - The ID of the IPv6 address pool from which the IPv6 CIDR block is allocated.
- `ipv6-cidr-block-association.association-id` - The association ID for an IPv6 CIDR block associated with the VPC.
- `ipv6-cidr-block-association.state` - The state of an IPv6 CIDR block associated with the VPC.
- `is-default` - Indicates whether the VPC is the default VPC.
- `owner-id` - The ID of the AWS account that owns the VPC.
- `state` - The state of the VPC (`pending` | `available`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `vpc-id` - The ID of the VPC.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### **MaxResults**

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### **NextToken**

The token for the next page of results.

Type: String

Required: No

### **VpcId.N**

One or more VPC IDs.

Default: Describes all your VPCs.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **vpcSet**

Information about one or more VPCs.

Type: Array of [Vpc \(p. 2184\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the specified VPC.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&VpcId.1=vpc-081ec835f3EXAMPLE
&VpcId.2=vpc-0ee975135dEXAMPLE
&VpcId.3=vpc-06e4ab6c6cEXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DescribeVpcsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>8b67ac77-886c-4027-8f0e-d351f7fc9971</requestId>
  <vpcSet>
    <item>
      <vpcId>vpc-081ec835f3EXAMPLE</vpcId>
      <ownerId>111122223333</ownerId>
      <state>available</state>
      <cidrBlock>10.0.1.0/24</cidrBlock>
      <cidrBlockAssociationSet>
        <item>
          <cidrBlock>10.0.1.0/24</cidrBlock>
          <associationId>vpc-cidr-assoc-043f572c17EXAMPLE</associationId>
          <cidrBlockState>
            <state>associated</state>
          </cidrBlockState>
        </item>
      </cidrBlockAssociationSet>
      <dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
      <tagSet>
        <item>
          <key>Name</key>
          <value>MyVPC</value>
        </item>
      </tagSet>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>false</isDefault>
    </item>
    <item>
      <vpcId>vpc-0ee975135dEXAMPLE</vpcId>
      <ownerId>111122223333</ownerId>
      <state>available</state>
      <cidrBlock>10.0.0.0/16</cidrBlock>
      <cidrBlockAssociationSet>
        <item>
          <cidrBlock>10.0.0.0/16</cidrBlock>
          <associationId>vpc-cidr-assoc-067c3a0a1fEXAMPLE</associationId>
          <cidrBlockState>
            <state>associated</state>
          </cidrBlockState>
        </item>
      </cidrBlockAssociationSet>
      <dhcpOptionsId>dopt-f30d649a</dhcpOptionsId>
      <instanceTenancy>default</instanceTenancy>
      <isDefault>false</isDefault>
    </item>
    <item>
      <vpcId>vpc-06e4ab6c6cEXAMPLE</vpcId>
      <ownerId>123456789012</ownerId>
      <state>available</state>
      <cidrBlock>10.0.0.0/16</cidrBlock>
      <cidrBlockAssociationSet>
        <item>
          <cidrBlock>10.0.0.0/16</cidrBlock>
```

```
<associationId>vpc-cidr-assoc-00b17b4eddEXAMPLE</associationId>
<cidrBlockState>
    <state>associated</state>
</cidrBlockState>
</item>
</cidrBlockAssociationSet>
<dhcpOptionsId>dopt-19edf471</dhcpOptionsId>
<tagSet>
    <item>
        <key>Name</key>
        <value>Shared VPC</value>
    </item>
</tagSet>
<instanceTenancy>default</instanceTenancy>
<isDefault>false</isDefault>
</item>
</vpcSet>
</DescribeVpcsResponse>
```

## Example 2

This example uses filters to describe any VPC you own that uses the set of DHCP options with the ID dopt-7a8b9c2d or dopt-2b2a3d3c and whose state is available.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpcs
&Filter.1.Name=dhcp-options-id
&Filter.1.Value.1=dopt-7a8b9c2d
&Filter.1.Value.2=dopt-2b2a3d3c
&Filter.2.Name=state
&Filter.2.Value.1=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DescribeVpnConnections

Describes one or more of your VPN connections.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `customer-gateway-configuration` - The configuration information for the customer gateway.
- `customer-gateway-id` - The ID of a customer gateway associated with the VPN connection.
- `state` - The state of the VPN connection (`pending` | `available` | `deleting` | `deleted`).
- `option.static-routes-only` - Indicates whether the connection has static routes only. Used for devices that do not support Border Gateway Protocol (BGP).
- `route.destination-cidr-block` - The destination CIDR block. This corresponds to the subnet used in a customer data center.
- `bgp-asn` - The BGP Autonomous System Number (ASN) associated with a BGP device.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of VPN connection. Currently the only supported type is `ipsec.1`.
- `vpn-connection-id` - The ID of the VPN connection.
- `vpn-gateway-id` - The ID of a virtual private gateway associated with the VPN connection.
- `transit-gateway-id` - The ID of a transit gateway associated with the VPN connection.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### VpnConnectionId.N

One or more VPN connection IDs.

Default: Describes your VPN connections.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **vpnConnectionSet**

Information about one or more VPN connections.

Type: Array of [VpnConnection \(p. 2202\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the specified VPN connection. The response includes the customer gateway device configuration information. Because it's a long set of information, we haven't displayed it here. To see an example of the configuration information, see the [Your customer gateway device](#).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&VpnConnectionId.1=vpn-1122334455aabbcdd
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>6791f4b8-5717-4272-aed2-faa18example</requestId>
  <vpnConnectionSet>
    <item>
      <vpnConnectionId>vpn-1122334455aabbcdd</vpnConnectionId>
      <state>available</state>
      <customerGatewayConfiguration>..Customer gateway configuration data in escaped
XML format...</customerGatewayConfiguration>
      <type>ipsec.1</type>
      <customerGatewayId>cgw-01234567abcde1234</customerGatewayId>
      <tagSet>
        <item>
          <key>Name</key>
          <value>CanadaVPN</value>
        </item>
      </tagSet>
      <vgwTelemetry>
```

```
<item>
    <outsideIpAddress>203.0.113.3</outsideIpAddress>
    <status>DOWN</status>
    <lastStatusChange>2020-07-29T10:35:11.000Z</lastStatusChange>
    <statusMessage></statusMessage>
    <acceptedRouteCount>0</acceptedRouteCount>
</item>
<item>
    <outsideIpAddress>203.0.113.5</outsideIpAddress>
    <status>UP</status>
    <lastStatusChange>2020-09-02T09:09:33.000Z</lastStatusChange>
    <statusMessage></statusMessage>
    <acceptedRouteCount>0</acceptedRouteCount>
</item>
</vgwTelemetry>
<transitGatewayId>tgw-00112233445566aab</transitGatewayId>
<options>
    <enableAcceleration>false</enableAcceleration>
    <staticRoutesOnly>true</staticRoutesOnly>
    <localIpv4NetworkCidr>0.0.0.0/0</localIpv4NetworkCidr>
    <remoteIpv4NetworkCidr>0.0.0.0/0</remoteIpv4NetworkCidr>
    <tunnelInsideIpVersion>ipv4</tunnelInsideIpVersion>
</options>
<routes/>
<category>VPN</category>
</item>
</vpnConnectionSet>
</DescribeVpnConnectionsResponse>
```

## Example 2

This example describes any VPN connection you own that is associated with the customer gateway with ID `cgw-b4dc3961`, and whose state is either `pending` or `available`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnConnections
&Filter.1.Name=customer-gateway-id
&Filter.1.Value.1=cgw-b4dc3961
&Filter.2.Name=state
&Filter.2.Value.1=pending
&Filter.2.Value.2=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# DescribeVpnGateways

Describes one or more of your virtual private gateways.

For more information, see [AWS Site-to-Site VPN](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `amazon-side ASN` - The Autonomous System Number (ASN) for the Amazon side of the gateway.
- `attachment.state` - The current state of the attachment between the gateway and the VPC (`attaching` | `attached` | `detaching` | `detached`).
- `attachment.vpc-id` - The ID of an attached VPC.
- `availability-zone` - The Availability Zone for the virtual private gateway (if applicable).
- `state` - The state of the virtual private gateway (`pending` | `available` | `deleting` | `deleted`).
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.
- `type` - The type of virtual private gateway. Currently the only supported type is `ipsec.1`.
- `vpn-gateway-id` - The ID of the virtual private gateway.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### VpnGatewayId.N

One or more virtual private gateway IDs.

Default: Describes all your virtual private gateways.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **vpnGatewaySet**

Information about one or more virtual private gateways.

Type: Array of [VpnGateway \(p. 2210\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example describes the specified virtual private gateway.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&VpnGatewayId.1=vgw-8db04f81
&AUTHPARAMS
```

#### Sample Response

```
<DescribeVpnGatewaysResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
<vpnGatewaySet>
  <item>
    <vpnGatewayId>vgw-8db04f81</vpnGatewayId>
    <state>available</state>
    <type>ipsec.1</type>
    <attachments>
      <item>
        <vpcId>vpc-4c090c2a</vpcId>
        <state>attached</state>
      </item>
    </attachments>
    <amazonSideAsn>65001</amazonSideAsn>
    <tagSet>
      <item>
        <key>Name</key>
        <value>NYOffice</value>
      </item>
    </tagSet>
  </item>
</vpnGatewaySet>
</DescribeVpnGatewaysResponse>
```

### Example 2

This example uses filters to describe any virtual private gateway you own whose state is either pending or available.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DescribeVpnGateways
&Filter.1.Name=state
&Filter.1.Value.1=pending
&Filter.1.Value.2=available
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DetachClassicLinkVpc

Unlinks (detaches) a linked EC2-Classic instance from a VPC. After the instance has been unlinked, the VPC security groups are no longer associated with it. An instance is automatically unlinked from a VPC when it's stopped.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance to unlink from the VPC.

Type: String

Required: Yes

### VpcId

The ID of the VPC to which the instance is linked.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example unlinks instance `i-0598c7d356eba48d7` from VPC `vpc-88888888`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachClassicLinkVpc
&VpcId=vpc-88888888
&InstanceId=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<DetachClassicLinkVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachClassicLinkVpcResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DetachInternetGateway

Detaches an internet gateway from a VPC, disabling connectivity between the internet and the VPC. The VPC must not contain any running instances with Elastic IP addresses or public IPv4 addresses.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InternetGatewayId

The ID of the internet gateway.

Type: String

Required: Yes

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The example detaches the specified internet gateway from the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachInternetGateway
&InternetGatewayId=igw-eaad4883
&VpcId=vpc-11ad4878
&AUTHPARAMS
```

#### Sample Response

```
<DetachInternetGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DetachInternetGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DetachNetworkInterface

Detaches a network interface from an instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AttachmentId

The ID of the attachment.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Force

Specifies whether to force a detachment.

#### Note

- Use the `Force` parameter only as a last resort to detach a network interface from a failed instance.
- If you use the `Force` parameter to detach a network interface, you might not be able to attach a different network interface to the same index on the instance without first stopping and starting the instance.
- If you force the detachment of a network interface, the `instance metadata` might not get updated. This means that the attributes associated with the detached network interface might still be visible. The instance metadata will get updated when you stop and start the instance.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example detaches the specified elastic network interface (ENI).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachNetworkInterface
&AttachmentId=eni-attach-d94b09b0
&AUTHPARAMS
```

#### Sample Response

```
<DetachNetworkInterfaceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>ce540707-0635-46bc-97da-33a8a362a0e8</requestId>
  <return>true</return>
</DetachNetworkInterfaceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DetachVolume

Detaches an EBS volume from an instance. Make sure to unmount any file systems on the device within your operating system before detaching the volume. Failure to do so can result in the volume becoming stuck in the `busy` state while detaching. If this happens, detachment can be delayed indefinitely until you unmount the volume, force detachment, reboot the instance, or all three. If an EBS volume is the root device of an instance, it can't be detached while the instance is running. To detach the root volume, stop the instance first.

When a volume with an AWS Marketplace product code is detached from an instance, the product code is no longer associated with the instance.

For more information, see [Detach an Amazon EBS volume](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Device

The device name.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Force

Forces detachment if the previous detachment attempt did not occur cleanly (for example, logging into an instance, unmounting the volume, and detaching normally). This option can lead to data loss or a corrupted file system. Use this option only as a last resort to detach a volume from a failed instance. The instance won't have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures.

Type: Boolean

Required: No

### InstanceId

The ID of the instance. If you are detaching a Multi-Attach enabled volume, you must specify an instance ID.

Type: String

Required: No

### VolumeId

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

### **deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

### **device**

The device name.

Type: String

### **instanceId**

The ID of the instance.

Type: String

### **requestId**

The ID of the request.

Type: String

### **status**

The attachment state of the volume.

Type: String

Valid Values: attaching | attached | detaching | detached | busy

### **volumeId**

The ID of the volume.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example detaches volume vol-1234567890abcdef0.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVolume
&VolumeId=vol-1234567890abcdef0
&AUTHPARAMS
```

## Sample Response

```
<DetachVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <volumeId>vol-1234567890abcdef0</volumeId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <device>/dev/sdh</device>
  <status>detaching</status>
  <attachTime>YYYY-MM-DDTHH:MM:SS.000Z</attachTime>
</DetachVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DetachVpnGateway

Detaches a virtual private gateway from a VPC. You do this if you're planning to turn off the VPC and not use it anymore. You can confirm a virtual private gateway has been completely detached from a VPC by describing the virtual private gateway (any attachments to the virtual private gateway are also described).

You must wait for the attachment's state to switch to detached before you can delete the VPC or attach a different VPC to the virtual private gateway.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

### VpnGatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example detaches the specified virtual private gateway from the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DetachVpnGateway
&VpnGatewayId=vgw-8db04f81
&VpcId=vpc-1a2b3c4d
&AUTHPARAMS
```

#### Sample Response

```
<DetachVpnGatewayResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</DetachVpnGatewayResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableEbsEncryptionByDefault

Disables EBS encryption by default for your account in the current Region.

After you disable encryption by default, you can still create encrypted volumes by enabling encryption when you create each volume.

Disabling encryption by default does not change the encryption status of your existing volumes.

For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### ebsEncryptionByDefault

The updated status of encryption by default.

Type: Boolean

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableFastSnapshotRestores

Disables fast snapshot restores for the specified snapshots in the specified Availability Zones.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AvailabilityZone.N**

One or more Availability Zones. For example, us-east-2a.

Type: Array of strings

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **SourceSnapshotId.N**

The IDs of one or more snapshots. For example, snap-1234567890abcdef0.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successful**

Information about the snapshots for which fast snapshot restores were successfully disabled.

Type: Array of [DisableFastSnapshotRestoreSuccessItem \(p. 1491\)](#) objects

### **unsuccessful**

Information about the snapshots for which fast snapshot restores could not be disabled.

Type: Array of [DisableFastSnapshotRestoreErrorItem \(p. 1488\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableImageDeprecation

Cancels the deprecation of the specified AMI.

For more information, see [Deprecate an AMI](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example cancels the planned deprecation of the specified AMI.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DisableImageDeprecation
&ImageId=ami-0123456789EXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<DisableImageDeprecationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>11aabb229-4eac-35bd-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DisableImageDeprecationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableSerialConsoleAccess

Disables access to the EC2 serial console of all instances for your account. By default, access to the EC2 serial console is disabled for your account. For more information, see [Manage account access to the EC2 serial console](#) in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### serialConsoleAccessEnabled

If `true`, access to the EC2 serial console of all instances is enabled for your account. If `false`, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableTransitGatewayRouteTablePropagation

Disables the specified resource attachment from propagating routes to the specified propagation route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the propagation route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### propagation

Information about route propagation.

Type: [TransitGatewayPropagation \(p. 2133\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableVgwRoutePropagation

Disables a virtual private gateway (VGW) from propagating routes to a specified route table of a VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GatewayId

The ID of the virtual private gateway.

Type: String

Required: Yes

### RouteTableId

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disables the virtual private gateway vgw-d8e09e8a from automatically propagating routes to the route table with ID rtb-c98a35a0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVgwRoutePropagationResponse
&RouteTableId=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS
```

#### Sample Response

```
<DisableVgwRoutePropagationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</DisableVgwRoutePropagationResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableVpcClassicLink

Disables ClassicLink for a VPC. You cannot disable ClassicLink for a VPC that has EC2-Classic instances linked to it.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disables ClassicLink for `vpc-8888888`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
```

## Sample Response

```
<DisableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisableVpcClassicLinkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisableVpcClassicLinkDnsSupport

Disables ClassicLink DNS support for a VPC. If disabled, DNS hostnames resolve to public IP addresses when addressed between a linked EC2-Classic instance and instances in the VPC to which it's linked. For more information, see [ClassicLink](#) in the *Amazon Elastic Compute Cloud User Guide*.

You must specify a VPC ID in the request.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### VpcId

The ID of the VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disables ClassicLink DNS support for `vpc-8888888`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=DisableVpcClassicLinkDnsSupport
&VpcId=vpc-8888888
&AUTHPARAMS
```

## Sample Response

```
<DisableVpcClassicLinkDnsSupportResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</DisableVpcClassicLinkDnsSupportResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateAddress

Disassociates an Elastic IP address from the instance or network interface it's associated with.

An Elastic IP address is for use in either the EC2-Classic platform or in a VPC. For more information, see [Elastic IP Addresses](#) in the *Amazon Elastic Compute Cloud User Guide*.

This is an idempotent operation. If you perform the operation more than once, Amazon EC2 doesn't return an error.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId

[EC2-VPC] The association ID. Required for EC2-VPC.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PublicIp

[EC2-Classic] The Elastic IP address. Required for EC2-Classic.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example disassociates the specified Elastic IP address from the instance in EC2-Classic to which it is associated.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress  
&PublicIp=192.0.2.1  
&AUTHPARAMS
```

### Example for EC2-VPC

This example disassociates the specified Elastic IP address from the instance in a VPC to which it is associated.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateAddress  
&AssociationId=eipassoc-aa7486c3  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateClientVpnTargetNetwork

Disassociates a target network from the specified Client VPN endpoint. When you disassociate the last target network from a Client VPN, the following happens:

- The route that was automatically added for the VPC is deleted
- All active client connections are terminated
- New client connections are disallowed
- The Client VPN endpoint's status changes to pending-associate

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId**

The ID of the target network association.

Type: String

Required: Yes

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint from which to disassociate the target network.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **associationId**

The ID of the target network association.

Type: String

### **requestId**

The ID of the request.

Type: String

### status

The current state of the target network association.

Type: [AssociationStatus \(p. 1379\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disassociates a target network from a Client VPN endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateClientVpnTargetNetwork
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AssociationId=cvpn-assoc-0bc4bd8cecEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateClientVpnTargetNetworkResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>61312648-93ec-4a86-a1d1-098c9EXAMPLE</requestId>
  <status>
    <code>disassociating</code>
  </status>
  <associationId>cvpn-assoc-0bc4bd8cecEXAMPLE</associationId>
</DisassociateClientVpnTargetNetworkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateEnclaveCertificateFromRole

Disassociates an IAM role from an AWS Certificate Manager (ACM) certificate. Disassociating an IAM role from an ACM certificate removes the Amazon S3 object that contains the certificate, certificate chain, and encrypted private key from the Amazon S3 bucket. It also revokes the IAM role's permission to use the KMS key used to encrypt the private key. This effectively revokes the role's permission to use the certificate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CertificateArn

The ARN of the ACM certificate from which to disassociate the IAM role.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RoleArn

The ARN of the IAM role to disassociate.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateIamInstanceProfile

Disassociates an IAM instance profile from a running or stopped instance.

Use [DescribeIamInstanceProfileAssociations \(p. 583\)](#) to get the association ID.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId

The ID of the IAM instance profile association.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### iamInstanceProfileAssociation

Information about the IAM instance profile association.

Type: [IamInstanceProfileAssociation \(p. 1600\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disassociates the specified IAM instance profile association.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateIamInstanceProfile
&AssociationId=iip-assoc-08049da59357d598c
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateIamInstanceProfileResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>4840f938-fc84-4791-8ae5-example</requestId>
<iamInstanceProfileAssociation>
    <associationId>iip-assoc-08049da59357d598c</associationId>
    <iamInstanceProfile>
        <arn>arn:aws:iam::123456789012:instance-profile/AdminProfile</arn>
        <id>AIPAI5IVIHMFFYY2DKV5Y</id>
    </iamInstanceProfile>
    <instanceId>i-1234567890abcdef0</instanceId>
    <state>disassociating</state>
</iamInstanceProfileAssociation>
</DisassociateIamInstanceProfileResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateInstanceEventWindow

Disassociates one or more targets from an event window.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationTarget

One or more targets to disassociate from the specified event window.

Type: [InstanceEventWindowDisassociationRequest \(p. 1648\)](#) object

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceEventWindowId

The ID of the event window.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### instanceEventWindow

Information about the event window.

Type: [InstanceEventWindow \(p. 1644\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateRouteTable

Disassociates a subnet or gateway from a route table.

After you perform this action, the subnet no longer uses the routes in the route table. Instead, it uses the routes in the VPC's main route table. For more information about route tables, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId

The association ID representing the current association between the route table and subnet or gateway.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disassociates the specified route table from the subnet it's associated to.

## Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateRouteTable
&AssociationId=rtbassoc-0531ae3257956bdfb
&AUTHPARAMS
```

## Sample Response

```
<DisassociateRouteTableResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</DisassociateRouteTableResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateSubnetCidrBlock

Disassociates a CIDR block from a subnet. Currently, you can disassociate an IPv6 CIDR block only. You must detach or delete all gateways and resources that are associated with the CIDR block before you can disassociate it.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId

The association ID for the CIDR block.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### ipv6CidrBlockAssociation

Information about the IPv6 CIDR block association.

Type: [SubnetIpv6CidrBlockAssociation \(p. 2067\)](#) object

### requestId

The ID of the request.

Type: String

### subnetId

The ID of the subnet.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disassociates the IPv6 CIDR block from the subnet.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateSubnetCidrBlock
```

```
&AssociationId=subnet-cidr-assoc-3aa54053
&AUTHPARAMS
```

## Sample Response

```
<DisassociateSubnetCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <subnetId>subnet-5f46ec3b</subnetId>
  <ipv6CidrBlockAssociation>
    <ipv6CidrBlock>2001:db8:1234:1a00::/64</ipv6CidrBlock>
    <ipv6CidrBlockState>
      <state>disassociating</state>
    </ipv6CidrBlockState>
    <associationId>subnet-cidr-assoc-3aa54053</associationId>
  </ipv6CidrBlockAssociation>
</DisassociateSubnetCidrBlockResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateTransitGatewayMulticastDomain

Disassociates the specified subnets from the transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SubnetIds.N

The IDs of the subnets;

Type: Array of strings

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### associations

Information about the association.

Type: [TransitGatewayMulticastDomainAssociations \(p. 2119\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example disassociates the subnet `subnet-000de86e3bEXAMPLE` from the multicast domain `tgw-mcast-domain-0c4905cef7EXAMPLE`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateTransitGatewayMulticastDomain
&TransitGatewayAttachmentId=tgw-attach-070e571cd1EXAMPLE
&SubnetId=subnet-000de86e3bEXAMPLE
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateTransitGatewayMulticastDomainResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>0008db4a-b98a-46f7-b047-e262aEXAMPLE</requestId>
  <associations>
    <resourceId>vpc-7EXAMPLE</resourceId>
    <resourceType>vpc</resourceType>
    <subnets>
      <item>
        <state>disassociating</state>
        <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
      </item>
    </subnets>
    <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
  </associations>
</DisassociateTransitGatewayMulticastDomainResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# DisassociateTransitGatewayRouteTable

Disassociates a resource attachment from a transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### association

Information about the association.

Type: [TransitGatewayAssociation \(p. 2100\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateTrunkInterface

## Note

This API action is currently in **limited preview only**. If you are interested in using this feature, contact your account manager.

Removes an association between a branch network interface with a trunk network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssociationId

The ID of the association

Type: String

Required: Yes

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to Ensure Idempotency](#).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### clientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to Ensure Idempotency](#).

Type: String

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# DisassociateVpcCidrBlock

Disassociates a CIDR block from a VPC. To disassociate the CIDR block, you must specify its association ID. You can get the association ID by using [DescribeVpcs \(p. 885\)](#). You must detach or delete all gateways and resources that are associated with the CIDR block before you can disassociate it.

You cannot disassociate the CIDR block with which you originally created the VPC (the primary CIDR block).

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId**

The association ID for the CIDR block.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **cidrBlockAssociation**

Information about the IPv4 CIDR block association.

Type: [VpcCidrBlockAssociation \(p. 2187\)](#) object

### **ipv6CidrBlockAssociation**

Information about the IPv6 CIDR block association.

Type: [VpcIpv6CidrBlockAssociation \(p. 2195\)](#) object

### **requestId**

The ID of the request.

Type: String

### **vpcId**

The ID of the VPC.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disassociates the IPv6 CIDR block from the VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=DisassociateVpcCidrBlock
&AssociationId=vpc-cidr-assoc-e2a5408b
&AUTHPARAMS
```

#### Sample Response

```
<DisassociateVpcCidrBlockResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <ipv6CidrBlockAssociation>
    <ipv6CidrBlock>2001:db8:1234:1a00::/56</ipv6CidrBlock>
    <ipv6CidrBlockState>
      <state>disassociating</state>
    </ipv6CidrBlockState>
    <associationId>vpc-cidr-assoc-e2a5408b</associationId>
  </ipv6CidrBlockAssociation>
  <vpcId>vpc-a034d6c4</vpcId>
</DisassociateVpcCidrBlockResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableEbsEncryptionByDefault

Enables EBS encryption by default for your account in the current Region.

After you enable encryption by default, the EBS volumes that you create are always encrypted, either using the default KMS key or the KMS key that you specified when you created each volume. For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

You can specify the default KMS key for encryption by default using [ModifyEbsDefaultKmsKeyId](#) (p. 1073) or [ResetEbsDefaultKmsKeyId](#) (p. 1257).

Enabling encryption by default has no effect on the encryption status of your existing volumes.

After you enable encryption by default, you can no longer launch instances using instance types that do not support encryption. For more information, see [Supported instance types](#).

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](#) (p. 2247).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### ebsEncryptionByDefault

The updated status of encryption by default.

Type: Boolean

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes](#) (p. 2251).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableFastSnapshotRestores

Enables fast snapshot restores for the specified snapshots in the specified Availability Zones.

You get the full benefit of fast snapshot restores after they enter the enabled state. To get the current state of fast snapshot restores, use [DescribeFastSnapshotRestores \(p. 554\)](#). To disable fast snapshot restores, use [DisableFastSnapshotRestores \(p. 909\)](#).

For more information, see [Amazon EBS fast snapshot restore](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AvailabilityZone.N**

One or more Availability Zones. For example, us-east-2a.

Type: Array of strings

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **SourceSnapshotId.N**

The IDs of one or more snapshots. For example, snap-1234567890abcdef0. You can specify a snapshot that was shared with you from another AWS account.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successful**

Information about the snapshots for which fast snapshot restores were successfully enabled.

Type: Array of [EnableFastSnapshotRestoreSuccessItem \(p. 1521\)](#) objects

### **unsuccessful**

Information about the snapshots for which fast snapshot restores could not be enabled.

Type: Array of [EnableFastSnapshotRestoreErrorItem \(p. 1518\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableImageDeprecation

Enables deprecation of the specified AMI at the specified date and time.

For more information, see [Deprecate an AMI](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DeprecateAt

The date and time to deprecate the AMI, in UTC, in the following format: `YYYY-MM-DDTHH:MM:SSZ`. If you specify a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

You can't specify a date in the past. The upper limit for `DeprecateAt` is 10 years from now.

Type: Timestamp

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example deprecates the specified AMI at the specified date and time. If you specify a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableImageDeprecation
&ImageId=ami-0123456789EXAMPLE
&DeprecateAt="2022-06-15T13:17:00.000Z"
&AUTHPARAMS
```

#### Sample Response

```
<EnableImageDeprecationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableImageDeprecationResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableSerialConsoleAccess

Enables access to the EC2 serial console of all instances for your account. By default, access to the EC2 serial console is disabled for your account. For more information, see [Manage account access to the EC2 serial console](#) in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### serialConsoleAccessEnabled

If true, access to the EC2 serial console of all instances is enabled for your account. If false, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableTransitGatewayRouteTablePropagation

Enables the specified attachment to propagate routes to the specified propagation route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the propagation route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### propagation

Information about route propagation.

Type: [TransitGatewayPropagation \(p. 2133\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableVgwRoutePropagation

Enables a virtual private gateway (VGW) to propagate routes to the specified route table of a VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GatewayId

The ID of the virtual private gateway that is attached to a VPC. The virtual private gateway must be attached to the same VPC that the routing tables are associated with.

Type: String

Required: Yes

### RouteTableId

The ID of the route table. The routing table must be associated with the same VPC that the virtual private gateway is attached to.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example enables the specified virtual private gateway to propagate routes automatically to the route table with the ID `rtb-c98a35a0`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVgwRoutePropagation
&RouteTableID=rtb-c98a35a0
&GatewayId=vgw-d8e09e8a
&AUTHPARAMS
```

#### Sample Response

```
<EnableVgwRoutePropagation xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>4f35a1b2-c2c3-4093-b51f-abb9d7311990</requestId>
  <return>true</return>
</EnableVgwRoutePropagation>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## EnableVolumeIO

Enables I/O operations for a volume that had I/O operations disabled because the data on the volume was potentially inconsistent.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### VolumeId

The ID of the volume.

Type: String

Required: Yes

### Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

### Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

### Examples

#### Example

This example enables the I/O operations of the volume vol-88888888.

## Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVolumeIO
&VolumeId= vol-8888888
&AUTHPARAMS
```

## Sample Response

```
<EnableVolumeIOResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVolumeIOResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableVpcClassicLink

Enables a VPC for ClassicLink. You can then link EC2-Classic instances to your ClassicLink-enabled VPC to allow communication over private IP addresses. You cannot enable your VPC for ClassicLink if any of your VPC route tables have existing routes for address ranges within the 10.0.0.0/8 IP address range, excluding local routes for VPCs in the 10.0.0.0/16 and 10.1.0.0/16 IP address ranges. For more information, see [ClassicLink](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example enables vpc-8888888 for ClassicLink.

## Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVpcClassicLink
&VpcId=vpc-8888888
&AUTHPARAMS
```

## Sample Response

```
<EnableVpcClassicLinkResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVpcClassicLinkResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# EnableVpcClassicLinkDnsSupport

Enables a VPC to support DNS hostname resolution for ClassicLink. If enabled, the DNS hostname of a linked EC2-Classic instance resolves to its private IP address when addressed from an instance in the VPC to which it's linked. Similarly, the DNS hostname of an instance in a VPC resolves to its private IP address when addressed from a linked EC2-Classic instance. For more information, see [ClassicLink](#) in the *Amazon Elastic Compute Cloud User Guide*.

You must specify a VPC ID in the request.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### VpcId

The ID of the VPC.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example enables `vpc-8888888` for ClassicLink DNS support.

### Sample Request

```
https://ec2.amazonaws.com/?Action=EnableVpcClassicLinkDnsSupport
&VpcId=vpc-8888888
```

&AUTHPARAMS

## Sample Response

```
<EnableVpcClassicLinkDnsSupportResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</EnableVpcClassicLinkDnsSupportResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExportClientVpnClientCertificateRevocationList

Downloads the client certificate revocation list for the specified Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **certificateRevocationList**

Information about the client certificate revocation list.

Type: String

### **requestId**

The ID of the request.

Type: String

### **status**

The current state of the client certificate revocation list.

Type: [ClientCertificateRevocationListStatus \(p. 1427\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExportClientVpnClientConfiguration

Downloads the contents of the Client VPN endpoint configuration file for the specified Client VPN endpoint. The Client VPN endpoint configuration file includes the Client VPN endpoint and certificate information clients need to establish a connection with the Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **clientConfiguration**

The contents of the Client VPN endpoint configuration file.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example downloads a Client VPN endpoint configuration file.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ExportClientVpnClientConfiguration
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&AUTHPARAMS
```

## Sample Response

```
<ExportClientVpnClientConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>44e88bf8-d460-4c43-80b8-a27e4EXAMPLE</requestId>
    <clientConfiguration>client
dev tun
proto udp
remote cvpn-endpoint-00c5d11fc4EXAMPLE.clientvpn.us-east-1.amazonaws.com 443
remote-random-hostname
resolv-retry infinite
nobind
persist-key
persist-tun
remote-cert-tls server
cipher AES-256-CBC
verb 3
<ca>
-----BEGIN CERTIFICATE-----
EXAMPLECAgmgAwIBAgIJA0jnW3hL6o+7MA0GCSqGSIb3DQEBCwUAMBAXDEXAMPLE
-----END CERTIFICATE-----

</ca></clientConfiguration>
</ExportClientVpnClientConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExportImage

Exports an Amazon Machine Image (AMI) to a VM file. For more information, see [Exporting a VM directly from an Amazon Machine Image \(AMI\)](#) in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Token to enable idempotency for export image requests.

Type: String

Required: No

### **Description**

A description of the image being exported. The maximum length is 255 characters.

Type: String

Required: No

### **DiskImageFormat**

The disk image format.

Type: String

Valid Values: VMDK | RAW | VHD

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **ImageId**

The ID of the image.

Type: String

Required: Yes

### **RoleName**

The name of the role that grants VM Import/Export permission to export images to your Amazon S3 bucket. If this parameter is not specified, the default role is named 'vmimport'.

Type: String

Required: No

### S3ExportLocation

Information about the destination Amazon S3 bucket. The bucket must exist and grant WRITE and READ\_ACP permissions to the AWS account vm-import-export@amazon.com.

Type: [ExportTaskS3LocationRequest \(p. 1538\)](#) object

Required: Yes

### TagSpecification.N

The tags to apply to the export image task during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### description

A description of the image being exported.

Type: String

### diskImageFormat

The disk image format for the exported image.

Type: String

Valid Values: VMDK | RAW | VHD

### exportImageTaskId

The ID of the export image task.

Type: String

### imageId

The ID of the image.

Type: String

### progress

The percent complete of the export image task.

Type: String

### requestId

The ID of the request.

Type: String

### roleName

The name of the role that grants VM Import/Export permission to export images to your Amazon S3 bucket.

Type: String

### **s3ExportLocation**

Information about the destination Amazon S3 bucket.

Type: [ExportTaskS3Location \(p. 1537\)](#) object

#### **status**

The status of the export image task. The possible values are `active`, `completed`, `deleting`, and `deleted`.

Type: String

#### **statusMessage**

The status message for the export image task.

Type: String

#### **tagSet**

Any tags assigned to the export image task.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ExportTransitGatewayRoutes

Exports routes from the specified transit gateway route table to the specified S3 bucket. By default, all routes are exported. Alternatively, you can filter by CIDR range.

The routes are saved to the specified bucket in a JSON file. For more information, see [Export Route Tables to Amazon S3 in Transit Gateways](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `attachment.transit-gateway-attachment-id` - The id of the transit gateway attachment.
- `attachment.resource-id` - The resource id of the transit gateway attachment.
- `route-search.exact-match` - The exact match of the specified filter.
- `route-search.longest-prefix-match` - The longest prefix that matches the route.
- `route-search.subnet-of-match` - The routes with a subnet that match the specified CIDR filter.
- `route-search.supernet-of-match` - The routes with a CIDR that encompass the CIDR filter. For example, if you have 10.0.1.0/29 and 10.0.1.0/31 routes in your route table and you specify supernet-of-match as 10.0.1.0/30, then the result returns 10.0.1.0/29.
- `state` - The state of the route (`active` | `blackhole`).
- `transit-gateway-route-destination-cidr-block` - The CIDR range.
- `type` - The type of route (`propagated` | `static`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### S3Bucket

The name of the S3 bucket.

Type: String

Required: Yes

### TransitGatewayRouteTableId

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **s3Location**

The URL of the exported file in Amazon S3. For example, `s3://bucket_name/VPCTransitGateway/TransitGatewayRouteTables/file_name`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetAssociatedEnclaveCertificateIamRoles

Returns the IAM roles that are associated with the specified ACM (ACM) certificate. It also returns the name of the Amazon S3 bucket and the Amazon S3 object key where the certificate, certificate chain, and encrypted private key bundle are stored, and the ARN of the KMS key that's used to encrypt the private key.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CertificateArn

The ARN of the ACM certificate for which to view the associated IAM roles, encryption keys, and Amazon S3 object information.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### associatedRoleSet

Information about the associated IAM roles.

Type: Array of [AssociatedRole \(p. 1377\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetAssociatedIpv6PoolCidrs

Gets information about the IPv6 CIDR block associations for a specified IPv6 address pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PoolId

The ID of the IPv6 address pool.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### ipv6CidrAssociationSet

Information about the IPv6 CIDR block associations.

Type: Array of [Ipv6CidrAssociation \(p. 1718\)](#) objects

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String  
**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetCapacityReservationUsage

Gets usage information about a Capacity Reservation. If the Capacity Reservation is shared, it shows usage information for the Capacity Reservation owner and each AWS account that is currently using the shared capacity. If the Capacity Reservation is not shared, it shows only the Capacity Reservation owner's usage.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CapacityReservationId

The ID of the Capacity Reservation.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Valid range: Minimum value of 1. Maximum value of 1000.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### NextToken

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### availableInstanceCount

The remaining capacity. Indicates the number of instances that can be launched in the Capacity Reservation.

Type: Integer

**capacityReservationId**

The ID of the Capacity Reservation.

Type: String

**instanceType**

The type of instance for which the Capacity Reservation reserves capacity.

Type: String

**instanceUsageSet**

Information about the Capacity Reservation usage.

Type: Array of [InstanceUsage \(p. 1708\)](#) objects

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**state**

The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:

- `active` - The Capacity Reservation is active and the capacity is available for your use.
- `expired` - The Capacity Reservation expired automatically at the date and time specified in your request. The reserved capacity is no longer available for your use.
- `cancelled` - The Capacity Reservation was cancelled. The reserved capacity is no longer available for your use.
- `pending` - The Capacity Reservation request was successful but the capacity provisioning is still pending.
- `failed` - The Capacity Reservation request has failed. A request might fail due to invalid request parameters, capacity constraints, or instance limit constraints. Failed requests are retained for 60 minutes.

Type: String

Valid Values: `active` | `expired` | `cancelled` | `pending` | `failed`

**totalInstanceCount**

The number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetCoipPoolUsage

Describes the allocations from the specified customer-owned address pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

The filters. The following are the possible values:

- `coip-address-usage.allocation-id`
- `coip-address-usage.aws-account-id`
- `coip-address-usage.aws-service`
- `coip-address-usage.co-ip`

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PoolId

The ID of the address pool.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**coipAddressUsageSet**

Information about the address usage.

Type: Array of [CoipAddressUsage \(p. 1446\)](#) objects

**coipPoolId**

The ID of the customer-owned address pool.

Type: String

**localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetConsoleOutput

Gets the console output for the specified instance. For Linux instances, the instance console output displays the exact console output that would normally be displayed on a physical monitor attached to a computer. For Windows instances, the instance console output includes the last three system event log errors.

By default, the console output returns buffered information that was posted shortly after an instance transition state (start, stop, reboot, or terminate). This information is available for at least one hour after the most recent post. Only the most recent 64 KB of console output is available.

You can optionally retrieve the latest serial console output at any time during the instance lifecycle. This option is supported on instance types that use the Nitro hypervisor.

For more information, see [Instance console output](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### Latest

When enabled, retrieves the latest console output for the instance.

Default: disabled (`false`)

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### InstanceId

The ID of the instance.

Type: String

#### **output**

The console output, base64-encoded. If you are using a command line tool, the tool decodes the output for you.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **timestamp**

The time at which the output was last updated.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example retrieves the console output for the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<GetConsoleOutputResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instanceId>i-1234567890abcdef0</instanceId>
<timestamp>2010-10-14T01:12:41.000Z</timestamp>
<output>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj
YyB2ZXJzaW9uIDQuMC4xIDIwMDUwNzI3IChsZWQgSGF0IDQuMC4xLTUpKSAjMSBTTVAgVCh1IE9j
dCAyNiAwODo0MToyNiBTQVNUIDiwmDYKQklPUy1wcm92aWR1ZCBwaH1zaWNhbCBSQU0gbWFwOgpY
ZW46IDAwMDAwMDAwMDAwMDAgLSAwMDAwMDAwMDZhNDAwMDAwICh1c2FibGUpcjk4ME1CIEhJ
R0hNRU0gYXZhawXhYmx1Lgo3MjdNQiBMT1dNRU0gYXZhawXhYmx1LgpOWCAoRXh1Y3V0ZSBearXNh
Ymx1KSBebcm90ZWN0aW9uOiBhY3RpdmUKSVJRIGxvY2t1cCBkZXr1Y3Rp24gZGlzYWJsZWQKQnVp
bHdgMSB6b25lbGlzdHMKS2VybmvSIGNvbW1hbmqgbGluZTogcm9vdD0vZGV2L3NkYTEgcm8gNApF
bmFibGluZyBmYXN0IEZQVSbzYXz1IGFuZCByZXN0b3J1L14uIGRvbmuCg==</output>
</GetConsoleOutputResponse>
```

### Example 2

This example retrieves the latest console output for the specified instance.

## Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleOutput
&InstanceId=i-1234567890abcdef0
&Latest=true
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetConsoleScreenshot

Retrieve a JPG-format screenshot of a running instance to help with troubleshooting.

The returned content is Base64-encoded.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

### WakeUp

When set to true, acts as keystroke input and wakes up an instance that's in standby or "sleep" mode.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### imageData

The data that comprises the image.

Type: String

### instanceId

The ID of the instance.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example returns the image data of a successful request.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetConsoleScreenshot
&InstanceId=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<GetConsoleScreenshotResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<imagedata>997987/8kgj49ikjhewkwwe0008084EXAMPLE</imagedata>
<instanceId>i-765950</instanceId>
</GetConsoleScreenshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetDefaultCreditSpecification

Describes the default credit option for CPU usage of a burstable performance instance family.

For more information, see [Burstable performance instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceFamily

The instance family.

Type: String

Valid Values: t2 | t3 | t3a | t4g

Required: Yes

## Response Elements

The following elements are returned by the service.

### instanceFamilyCreditSpecification

The default credit option for CPU usage of the instance family.

Type: [InstanceFamilyCreditSpecification \(p. 1653\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets the default credit option for CPU usage of instances in the T2 instance family in the specified Region.

## Sample Request

```
https://ec2.amazonaws.com/?Action=GetDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t2
&AUTHPARAMS
```

## Sample Response

```
<GetDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
  <instanceFamilyCreditSpecification>
    <cpuCredits>unlimited</cpuCredits>
    <instanceFamily>t2</instanceFamily>
  </instanceFamilyCreditSpecification>
</GetDefaultCreditSpecificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetEbsDefaultKmsKeyId

Describes the default AWS KMS key for EBS encryption by default for your account in this Region. You can change the default KMS key for encryption by default using [ModifyEbsDefaultKmsKeyId \(p. 1073\)](#) or [ResetEbsDefaultKmsKeyId \(p. 1257\)](#).

For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### kmsKeyId

The Amazon Resource Name (ARN) of the default KMS key for encryption by default.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetEbsEncryptionByDefault

Describes whether EBS encryption by default is enabled for your account in the current Region.

For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### ebsEncryptionByDefault

Indicates whether encryption by default is enabled.

Type: Boolean

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetFlowLogsIntegrationTemplate

Generates a CloudFormation template that streamlines and automates the integration of VPC flow logs with Amazon Athena. This make it easier for you to query and gain insights from VPC flow logs data. Based on the information that you provide, we configure resources in the template to do the following:

- Create a table in Athena that maps fields to a custom log format
- Create a Lambda function that updates the table with new partitions on a daily, weekly, or monthly basis
- Create a table partitioned between two timestamps in the past
- Create a set of named queries in Athena that you can use to get started quickly

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ConfigDeliveryS3DestinationArn**

To store the CloudFormation template in Amazon S3, specify the location in Amazon S3.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **FlowLogId**

The ID of the flow log.

Type: String

Required: Yes

### **IntegrateService**

Information about the service integration.

Type: [IntegrateServices \(p. 1709\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

**result**

The generated CloudFormation template.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetGroupsForCapacityReservation

Lists the resource groups to which a Capacity Reservation has been added.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CapacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **MaxResults**

The maximum number of results to return for the request in a single page. The remaining results can be seen by sending another request with the returned `nextToken` value. This value can be between 5 and 500. If `maxResults` is given a larger value than 500, you receive an error.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 1000.

Required: No

### **NextToken**

The token to use to retrieve the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **capacityReservationGroupSet**

Information about the resource groups to which the Capacity Reservation has been added.

Type: Array of [CapacityReservationGroup \(p. 1411\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String  
**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetHostReservationPurchasePreview

Preview a reservation purchase with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation.

This is a preview of the [PurchaseHostReservation \(p. 1191\)](#) action and does not result in the offering being purchased.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **HostIdSet.N**

The IDs of the Dedicated Hosts with which the reservation is associated.

Type: Array of strings

Required: Yes

### **OfferingId**

The offering ID of the reservation.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **currencyCode**

The currency in which the `totalUpfrontPrice` and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: `USD`

### **purchase**

The purchase information of the Dedicated Host reservation and the Dedicated Hosts associated with it.

Type: Array of [Purchase \(p. 1906\)](#) objects

### **requestId**

The ID of the request.

Type: String

### **totalHourlyPrice**

The potential total hourly price of the reservation per hour.

Type: String

### totalUpfrontPrice

The potential total upfront price. This is billed immediately.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example is a preview of the reservation to be purchased.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetHostReservationPurchasePreview
&OfferingId=hro-0eb3541dght849c2d
&HostIdSet=h-0fgr9ddb0ecd0a1cd
&AUTHPARAMS
```

#### Sample Response

```
<GetHostReservationPurchasePreviewResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-84c3-4967-gtyk-a9983EXAMPLE</requestId>
    <purchase>
      <item>
        <duration>31536000</duration>
        <upfrontPrice>7453.000</upfrontPrice>
        <paymentOption>PartialUpfront</paymentOption>
        <instanceFamily>m4</instanceFamily>
        <hourlyPrice>0.850</hourlyPrice>
        <hostIdSet>
          <item>h-0fgr9ddb0ecd0a1cd</item>
        </hostIdSet>
      </item>
    </purchase>
    <totalHourlyPrice>0.850</totalHourlyPrice>
    <totalUpfrontPrice>7453.000</totalUpfrontPrice>
  </GetHostReservationPurchasePreviewResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetInstanceTypesFromInstanceRequirements

Returns a list of instance types with the specified instance attributes. You can use the response to preview the instance types without launching instances. Note that the response does not consider capacity.

When you specify multiple parameters, you get instance types that satisfy all of the specified parameters. If you specify multiple values for a parameter, you get instance types that satisfy any of the specified values.

For more information, see [Preview instance types with specified attributes](#), [Attribute-based instance type selection for EC2 Fleet](#), [Attribute-based instance type selection for Spot Fleet](#), and [Spot placement score](#) in the *Amazon EC2 User Guide*, and [Creating an Auto Scaling group using attribute-based instance type selection](#) in the *Amazon EC2 Auto Scaling User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ArchitectureType.N**

The processor architecture type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 3 items.

Valid Values: i386 | x86\_64 | arm64 | x86\_64\_mac

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **InstanceRequirements**

The attributes required for the instance types.

Type: [InstanceRequirementsRequest \(p. 1681\)](#) object

Required: Yes

### **MaxResults**

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned NextToken value.

Type: Integer

Required: No

### **NextToken**

The token for the next set of results.

Type: String

Required: No

#### **VirtualizationType.N**

The virtualization type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: hvm | paravirtual

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **instanceTypeSet**

The instance types with the specified instance attributes.

Type: Array of [InstanceTypeInfoFromInstanceRequirements \(p. 1704\)](#) objects

#### **nextToken**

The token for the next set of results.

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# GetLaunchTemplateData

Retrieves the configuration data of the specified instance. You can use this data to create a launch template.

This action calls on other describe actions to get instance information. Depending on your instance configuration, you may need to allow the following actions in your IAM policy: `DescribeSpotInstanceRequests`, `DescribeInstanceCreditSpecifications`, `DescribeVolumes`, `DescribeInstanceAttribute`, and `DescribeElasticGpus`. Or, you can allow `describe*` depending on your instance requirements.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### launchTemplateData

The instance data.

Type: [ResponseLaunchTemplateData \(p. 1952\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets the data for instance i-123456abcabc123ab.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetLaunchTemplateData
&InstanceId=i-123456abcabc123ab
&AUTHPARAMS
```

#### Sample Response

```
<GetLaunchTemplateDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>57372b95-c320-409e-b268-1e4example</requestId>
  <launchTemplateData>
    <blockDeviceMappingSet>
      <item>
        <deviceName>/dev/xvda</deviceName>
        <ebs>
          <deleteOnTermination>true</deleteOnTermination>
        </ebs>
      </item>
    </blockDeviceMappingSet>
    <ebsOptimized>false</ebsOptimized>
    <iamInstanceProfile>
      <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
    </iamInstanceProfile>
    <imageId>ami-1a2b3c4d</imageId>
    <instanceType>t2.micro</instanceType>
    <keyName>kp-us-east</keyName>
    <monitoring/>
    <networkInterfaceSet>
      <item>
        <description>Primary network interface</description>
        <groupSet>
          <groupId>sg-7c227abc</groupId>
        </groupSet>
        <ipv6AddressesSet/>
        <networkInterfaceId>eni-d26c8f36</networkInterfaceId>
        <privateIpAddress>10.0.0.197</privateIpAddress>
        <privateIpAddressesSet>
          <item>
            <primary>true</primary>
            <privateIpAddress>10.0.0.197</privateIpAddress>
          </item>
        </privateIpAddressesSet>
        <subnetId>subnet-7b16dabc</subnetId>
      </item>
      <item>
        <description>my network interface</description>
        <groupSet>
          <groupId>sg-54e8b123</groupId>
        </groupSet>
        <ipv6AddressesSet/>
        <networkInterfaceId>eni-714bc4a5</networkInterfaceId>
        <privateIpAddress>10.0.0.190</privateIpAddress>
        <privateIpAddressesSet>
          <item>
            <primary>true</primary>
```

```
        <privateIpAddress>10.0.0.190</privateIpAddress>
    </item>
</privateIpAddressesSet>
<subnetId>subnet-7b16de0c</subnetId>
</item>
</networkInterfaceSet>
<placement>
    <availabilityZone>us-east-1a</availabilityZone>
    <groupName/>
    <tenancy>default</tenancy>
</placement>
</launchTemplateData>
</GetLaunchTemplateDataResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetManagedPrefixListAssociations

Gets information about the resources that are associated with the specified managed prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 255.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### prefixListAssociationSet

Information about the associations.

Type: Array of [PrefixListAssociation \(p. 1887\)](#) objects

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets the associations for the specified managed prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetManagedPrefixListAssociations
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

#### Sample Response

```
<GetManagedPrefixListAssociationsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>3ae1bcdf-4042-47f8-9b8a-example</requestId>
  <prefixListAssociationSet>
    <item>
      <resourceId>sg-01234567811abcaba</resourceId>
      <resourceOwner>123456789012</resourceOwner>
    </item>
  </prefixListAssociationSet>
</GetManagedPrefixListAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetManagedPrefixListEntries

Gets information about the entries for a specified managed prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 100.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: Yes

### TargetVersion

The version of the prefix list for which to return the entries. The default is the current version.

Type: Long

Required: No

## Response Elements

The following elements are returned by the service.

### entrySet

Information about the prefix list entries.

Type: Array of [PrefixListEntry \(p. 1888\)](#) objects

#### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets the entries for the specified managed prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetManagedPrefixListEntries
&PrefixListId=pl-0123123123123aabb
&AUTHPARAMS
```

#### Sample Response

```
<GetManagedPrefixListEntriesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>39a3c79f-846f-4382-a592-example</requestId>
  <entrySet>
    <item>
      <cidr>10.0.0.0/16</cidr>
      <description>vpc-a</description>
    </item>
    <item>
      <cidr>10.2.0.0/16</cidr>
      <description>NY office</description>
    </item>
  </entrySet>
</GetManagedPrefixListEntriesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## GetPasswordData

Retrieves the encrypted administrator password for a running Windows instance.

The Windows password is generated at boot by the `EC2Config` service or `EC2Launch` scripts (Windows Server 2016 and later). This usually only happens the first time an instance is launched. For more information, see [EC2Config](#) and [EC2Launch](#) in the *Amazon EC2 User Guide*.

For the `EC2Config` service, the password is not generated for rebundled AMIs unless `Ec2SetPassword` is enabled before bundling.

The password is encrypted using the key pair that you specified when you launched the instance. You must provide the corresponding key pair file.

When you launch an instance, password generation and encryption may take a few minutes. If you try to retrieve the password before it's available, the output returns an empty string. We recommend that you wait up to 15 minutes after launching an instance before trying to retrieve the generated password.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the Windows instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### instanceId

The ID of the Windows instance.

Type: String

### passwordData

The password of the instance. Returns an empty string if the password is not available.

Type: String

### requestId

The ID of the request.

Type: String  
**timestamp**

The time the data was last updated.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example returns the encrypted version of the administrator password for the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetPasswordData
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<GetPasswordDataResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instanceId>i-1234567890abcdef0</instanceId>
<timestamp>2009-10-24 15:00:00</timestamp>

<passwordData>TGludXggdmVyc2lvbiAyLjYuMTYteGVuVSAoYnVpbGRlckBwYXRjaGJhdC5hbWF6b25zYSkgKGdj</
passwordData>
</GetPasswordDataResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetReservedInstancesExchangeQuote

Returns a quote and exchange information for exchanging one or more specified Convertible Reserved Instances for a new Convertible Reserved Instance. If the exchange cannot be performed, the reason is returned in the response. Use [AcceptReservedInstancesExchangeQuote \(p. 30\)](#) to perform the exchange.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### ReservedInstanceId.N

The IDs of the Convertible Reserved Instances to exchange.

Type: Array of strings

Required: Yes

### TargetConfiguration.N

The configuration of the target Convertible Reserved Instance to exchange for your current Convertible Reserved Instances.

Type: Array of [TargetConfigurationRequest \(p. 2079\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### currencyCode

The currency of the transaction.

Type: String

### isValidExchange

If true, the exchange is valid. If false, the exchange cannot be completed.

Type: Boolean

### outputReservedInstancesWillExpireAt

The new end date of the reservation term.

Type: Timestamp

**paymentDue**

The total true upfront charge for the exchange.

Type: String

**requestId**

The ID of the request.

Type: String

**reservedInstanceStateRollup**

The cost associated with the Reserved Instance.

Type: [ReservationValue \(p. 1930\)](#) object

**reservedInstanceStateSet**

The configuration of your Convertible Reserved Instances.

Type: Array of [ReservedInstanceReservationValue \(p. 1932\)](#) objects

**targetConfigurationValueRollup**

The cost associated with the Reserved Instance.

Type: [ReservationValue \(p. 1930\)](#) object

**targetConfigurationValueSet**

The values of the target Convertible Reserved Instances.

Type: Array of [TargetReservationValue \(p. 2084\)](#) objects

**validationFailureReason**

Describes the reason why the exchange cannot be completed.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example describes the output of requesting whether a potential exchange is valid.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetReservedInstancesExchangeQuote
&ReservedInstanceId.1=649fd0c8-7768-46b8-8f84-a6400EXAMPLE
&TargetConfiguration.1.OfferingId=24167194-6541-4041-9e31-bc7c5984aa53
&AUTHPARAMS
```

## Sample Response

```
<GetReservedInstancesExchangeQuoteResponse>
<requestId>d072f652-cc57-458c-89e0-e6c02EXAMPLE</requestId>
<outputReservedInstancesWillExpireAt>2019-05-17T12:32:53Z</
outputReservedInstancesWillExpireAt>
<reservedInstanceValueSet>
  <item>
    <reservedInstancesId>649fd0c8-7768-46b8-8f84-a6400EXAMPLE</reservedInstancesId>
    <reservationValue>
      <remainingTotalValue>98.048402</remainingTotalValue>
      <hourlyPrice>0.018000</hourlyPrice>
      <remainingUpfrontValue>631.0</remainingUpfrontValue>
    </reservationValue>
  </item>
</reservedInstanceValueSet>
<targetConfigurationValueSet>
<isValidExchange>false</isValidExchange>
<paymentDue>-448.416438</paymentDue>
<targetConfigurationValueRollup>
  <remainingTotalValue>0</remainingTotalValue>
  <hourlyPrice>0</hourlyPrice>
  <remainingUpfrontValue>0</remainingUpfrontValue>
<targetConfigurationValueRollup>
<reservedInstanceValueRollup>
  <remainingTotalValue>873.504438</remainingTotalValue>
  <hourlyPrice>0.018000</hourlyPrice>
  <remainingUpfrontValue>448.416438</remainingUpfrontValue>
</reservedInstanceValueRollup>
<currencyCode>USD</currencyCode>
<validationFailureReason>The target configuration value is less than the input</
validationFailureReason>
</GetReservedInstancesExchangeQuoteResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSerialConsoleAccessStatus

Retrieves the access status of your account to the EC2 serial console of all instances. By default, access to the EC2 serial console is disabled for your account. For more information, see [Manage account access to the EC2 serial console](#) in the *Amazon EC2 User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### serialConsoleAccessEnabled

If `true`, access to the EC2 serial console of all instances is enabled for your account. If `false`, access to the EC2 serial console of all instances is disabled for your account.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSpotPlacementScores

Calculates the Spot placement score for a Region or Availability Zone based on the specified target capacity and compute requirements.

You can specify your compute requirements either by using `InstanceRequirementsWithMetadata` and letting Amazon EC2 choose the optimal instance types to fulfill your Spot request, or you can specify the instance types by using `InstanceTypes`.

For more information, see [Spot placement score](#) in the Amazon EC2 User Guide.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceRequirementsWithMetadata

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

If you specify `InstanceRequirementsWithMetadata`, you can't specify `InstanceTypes`.

Type: [InstanceRequirementsWithMetadataRequest \(p. 1687\)](#) object

Required: No

### InstanceType.N

The instance types. We recommend that you specify at least three instance types. If you specify one or two instance types, or specify variations of a single instance type (for example, an `m3.xlarge` with and without instance storage), the returned placement score will always be low.

If you specify `InstanceTypes`, you can't specify `InstanceRequirementsWithMetadata`.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 1000 items.

Required: No

### MaxResults

The maximum number of results to return in a single call. Specify a value between 1 and 1000. The default value is 1000. To retrieve the remaining results, make another call with the returned `NextToken` value.

Type: Integer

Valid Range: Minimum value of 10. Maximum value of 1000.

Required: No

**NextToken**

The token for the next set of results.

Type: String

Required: No

**RegionName.N**

The Regions used to narrow down the list of Regions to be scored. Enter the Region code, for example, us-east-1.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 10 items.

Required: No

**SingleAvailabilityZone**

Specify true so that the response returns a list of scored Availability Zones. Otherwise, the response returns a list of scored Regions.

A list of scored Availability Zones is useful if you want to launch all of your Spot capacity into a single Availability Zone.

Type: Boolean

Required: No

**TargetCapacity**

The target capacity.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 2000000000.

Required: Yes

**TargetCapacityUnitType**

The unit for the target capacity.

Default: units (translates to number of instances)

Type: String

Valid Values: vcpu | memory-mib | units

Required: No

## Response Elements

The following elements are returned by the service.

**nextToken**

The token for the next set of results.

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **spotPlacementScoreSet**

The Spot placement score for the top 10 Regions or Availability Zones, scored on a scale from 1 to 10. Each score

reflects how likely it is that each Region or Availability Zone will succeed at fulfilling the specified target capacity

*at the time of the Spot placement score request.* A score of 10 means that your Spot capacity request is highly likely to succeed in that Region or Availability Zone.

If you request a Spot placement score for Regions, a high score assumes that your fleet request will be configured to use all Availability Zones and the capacity-optimized allocation strategy. If you request a Spot placement score for Availability Zones, a high score assumes that your fleet request will be configured to use a single Availability Zone and the capacity-optimized allocation strategy.

Different

Regions or Availability Zones might return the same score.

#### **Note**

The Spot placement score serves as a recommendation only. No score guarantees that your Spot request will be fully or partially fulfilled.

Type: Array of [SpotPlacementScore \(p. 2047\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetSubnetCidrReservations

Gets information about the subnet CIDR reservations.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

- `reservationType` - The type of reservation (`prefix` | `explicit`).
- `subnet-id` - The ID of the subnet.
- `tag:<key>` - The key/value combination of a tag assigned to the resource. Use the tag key in the filter name and the tag value as the filter value. For example, to find all resources that have a tag with the key `Owner` and the value `TeamA`, specify `tag:Owner` for the filter name and `TeamA` for the filter value.
- `tag-key` - The key of a tag assigned to the resource. Use this filter to find all resources assigned a tag with a specific key, regardless of the tag value.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### SubnetId

The ID of the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

### **subnetIpv4CidrReservationSet**

Information about the IPv4 subnet CIDR reservations.

Type: Array of [SubnetCidrReservation \(p. 2065\)](#) objects

### **subnetIpv6CidrReservationSet**

Information about the IPv6 subnet CIDR reservations.

Type: Array of [SubnetCidrReservation \(p. 2065\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTransitGatewayAttachmentPropagations

Lists the route tables to which the specified resource attachment propagates routes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `transit-gateway-route-table-id` - The ID of the transit gateway route table.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayAttachmentPropagations**

Information about the propagation route tables.

Type: Array of [TransitGatewayAttachmentPropagation \(p. 2106\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTransitGatewayMulticastDomainAssociations

Gets information about the associations for the transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The type of resource. The valid value is: `vpc`.
- `state` - The state of the subnet association. Valid values are `associated` | `associating` | `disassociated` | `disassociating`.
- `subnet-id` - The ID of the subnet.
- `transit-gateway-attachment-id` - The id of the transit gateway attachment.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **multicastDomainAssociations**

Information about the multicast domain associations.

Type: Array of [TransitGatewayMulticastDomainAssociation \(p. 2118\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example gets the multicast domain `tgw-attach-028c1dd0f8EXAMPLE` associations.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetTransitGatewayMulticastDomainAssociations
&TransitGatewayMulticastDomainId=tgw-attach-028c1dd0f8EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<GetTransitGatewayMulticastDomainAssociationsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>ca392437-3f6c-4193-92cd-24404EXAMPLE</requestId>
  <multicastDomainAssociations>
    <item>
      <resourceId>vpc-01128d2c24EXAMPLE</resourceId>
      <resourceType>vpc</resourceType>
      <subnet>
        <state>associated</state>
        <subnetId>subnet-000de86e3bEXAMPLE</subnetId>
      </subnet>
      <transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
    </item>
    <item>
      <resourceId>vpc-7EXAMPLE</resourceId>
```

```
<resourceType>vpc</resourceType>
<subnet>
    <state>associated</state>
    <subnetId>subnet-4EXAMPLE</subnetId>
</subnet>
<transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
</item>
<item>
    <resourceId>vpc-7f67ec07</resourceId>
    <resourceType>vpc</resourceType>
    <subnet>
        <state>associated</state>
        <subnetId>subnet-5EXAMPLE</subnetId>
    </subnet>
    <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
</item>
<item>
    <resourceId>vpc-7EXAMPLE</resourceId>
    <resourceType>vpc</resourceType>
    <subnet>
        <state>associated</state>
        <subnetId>subnet-aEXAMPLE</subnetId>
    </subnet>
    <transitGatewayAttachmentId>tgw-attach-070e571cd1d3ee8e6</
transitGatewayAttachmentId>
</item>
<item>
    <resourceId>vpc-7f67ec07</resourceId>
    <resourceType>vpc</resourceType>
    <subnet>
        <state>associated</state>
        <subnetId>subnet-fEXAMPLE</subnetId>
    </subnet>
    <transitGatewayAttachmentId>tgw-attach-070e571cd1EXAMPLE</
transitGatewayAttachmentId>
</item>
</multicastDomainAssociations>
</GetTransitGatewayMulticastDomainAssociationsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTransitGatewayPrefixListReferences

Gets information about the prefix list references in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `attachment.resource-id` - The ID of the resource for the attachment.
- `attachment.resource-type` - The type of resource for the attachment. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering`.
- `attachment.transit-gateway-attachment-id` - The ID of the attachment.
- `is-blackhole` - Whether traffic matching the route is blocked (`true` | `false`).
- `prefix-list-id` - The ID of the prefix list.
- `prefix-list-owner-id` - The ID of the owner of the prefix list.
- `state` - The state of the prefix list reference (`pending` | `available` | `modifying` | `deleting`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### requestId

The ID of the request.

Type: String

### transitGatewayPrefixListReferenceSet

Information about the prefix list references.

Type: Array of [TransitGatewayPrefixListReference \(p. 2131\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example gets the prefix list references for the specified transit gateway route table.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=GetTransitGatewayPrefixListReferences
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&AUTHPARAMS
```

#### Sample Response

```
<GetTransitGatewayPrefixListReferencesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15">
  <requestId>b194523f-807a-4a41-920a-example</requestId>
  <transitGatewayPrefixListReferenceSet>
    <item>
      <blackhole>false</blackhole>
      <prefixListId>pl-001122334455aabbc</prefixListId>
      <prefixListOwnerId>123456789012</prefixListOwnerId>
      <state>available</state>
      <transitGatewayAttachment>
        <resourceId>vpn-12312312312312312</resourceId>
        <resourceType>vpn</resourceType>
```

```
<transitGatewayAttachmentId>tgw-attach-01234567abcabcabc</
transitGatewayAttachmentId>
</transitGatewayAttachment>
<transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</
transitGatewayRouteTableId>
</item>
</transitGatewayPrefixListReferenceSet>
</GetTransitGatewayPrefixListReferencesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTransitGatewayRouteTableAssociations

Gets information about the associations for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `transit-gateway-attachment-id` - The ID of the attachment.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **associations**

Information about the associations.

Type: Array of [TransitGatewayRouteTableAssociation \(p. 2141\)](#) objects

#### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetTransitGatewayRouteTablePropagations

Gets information about the route table propagations for the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `resource-id` - The ID of the resource.
- `resource-type` - The resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `transit-gateway-attachment-id` - The ID of the attachment.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**transitGatewayRouteTablePropagations**

Information about the route table propagations.

Type: Array of [TransitGatewayRouteTablePropagation \(p. 2142\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetVpnConnectionDeviceSampleConfiguration

Download an AWS-provided sample configuration file to be used with the customer gateway device specified for your Site-to-Site VPN connection.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InternetKeyExchangeVersion

The IKE version to be used in the sample configuration file for your customer gateway device. You can specify one of the following versions: `ikev1` or `ikev2`.

Type: String

Required: No

### VpnConnectionDeviceTypeId

Device identifier provided by the `GetVpnConnectionDeviceTypes` API.

Type: String

Required: Yes

### VpnConnectionId

The `VpnConnectionId` specifies the Site-to-Site VPN connection used for the sample configuration.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpnConnectionDeviceSampleConfiguration

Sample configuration file for the specified customer gateway device.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# GetVpnConnectionDeviceTypes

Obtain a list of customer gateway devices for which sample configuration files can be provided. The request has no additional parameters. You can also see the list of device types with sample configuration files available under [Your customer gateway device](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### MaxResults

The maximum number of results returned by `GetVpnConnectionDeviceTypes` in paginated output. When this parameter is used, `GetVpnConnectionDeviceTypes` only returns `MaxResults` results in a single page along with a `NextToken` response element. The remaining results of the initial request can be seen by sending another `GetVpnConnectionDeviceTypes` request with the returned `NextToken` value. This value can be between 200 and 1000. If this parameter is not used, then `GetVpnConnectionDeviceTypes` returns all results.

Type: Integer

Valid Range: Minimum value of 200. Maximum value of 1000.

Required: No

### NextToken

The `NextToken` value returned from a previous paginated `GetVpnConnectionDeviceTypes` request where `MaxResults` was used and the results exceeded the value of that parameter. Pagination continues from the end of the previous results that returned the `NextToken` value. This value is null when there are no more results to return.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The `NextToken` value to include in a future `GetVpnConnectionDeviceTypes` request. When the results of a `GetVpnConnectionDeviceTypes` request exceed `MaxResults`, this value can be used to retrieve the next page of results. This value is null when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**vpnConnectionDeviceTypeSet**

List of customer gateway devices that have a sample configuration file available for use.

Type: Array of [VpnConnectionDeviceType \(p. 2205\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportClientVpnClientCertificateRevocationList

Uploads a client certificate revocation list to the specified Client VPN endpoint. Uploading a client certificate revocation list overwrites the existing client certificate revocation list.

Uploading a client certificate revocation list resets existing client connections.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CertificateRevocationList

The client certificate revocation list file. For more information, see [Generate a Client Certificate Revocation List](#) in the *AWS Client VPN Administrator Guide*.

Type: String

Required: Yes

### ClientVpnEndpointId

The ID of the Client VPN endpoint to which the client certificate revocation list applies.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns true if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportImage

Import single or multi-volume disk images or EBS snapshots into an Amazon Machine Image (AMI).

For more information, see [Importing a VM as an image using VM Import/Export](#) in the *VM Import/Export User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Architecture

The architecture of the virtual machine.

Valid values: `i386` | `x86_64` | `arm64`

Type: String

Required: No

### BootMode

The boot mode of the virtual machine.

Type: String

Valid Values: `legacy-bios` | `uefi`

Required: No

### ClientData

The client-specific data.

Type: [ClientData \(p. 1430\)](#) object

Required: No

### ClientToken

The token to enable idempotency for VM import requests.

Type: String

Required: No

### Description

A description string for the import image task.

Type: String

Required: No

### DiskContainer.N

Information about the disk containers.

Type: Array of [ImageDiskContainer \(p. 1611\)](#) objects

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Encrypted

Specifies whether the destination AMI of the imported image should be encrypted. The default KMS key for EBS is used unless you specify a non-default KMS key using `KmsKeyId`. For more information, see [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

### Hypervisor

The target hypervisor platform.

Valid values: `xen`

Type: String

Required: No

### KmsKeyId

An identifier for the symmetric KMS key to use when creating the encrypted AMI. This parameter is only required if you want to use a non-default KMS key; if this parameter is not specified, the default KMS key for EBS is used. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

The KMS key identifier may be provided in any of the following formats:

- Key ID
- Key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, `arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias`.
- ARN using key ID. The ID ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `key` namespace, and then the key ID. For example, `arn:aws:kms:us-east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef`.
- ARN using key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, `arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias`.

AWS parses `KmsKeyId` asynchronously, meaning that the action you call may appear to complete even though you provided an invalid identifier. This action will eventually report failure.

The specified KMS key must exist in the Region that the AMI is being copied to.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

### LicenseSpecifications.N

The ARNs of the license configurations.

Type: Array of [ImportImageLicenseConfigurationRequest \(p. 1613\)](#) objects

Required: No

#### **LicenseType**

The license type to be used for the Amazon Machine Image (AMI) after importing.

By default, we detect the source-system operating system (OS) and apply the appropriate license. Specify `AWS` to replace the source-system license with an AWS license, if appropriate. Specify `BYOL` to retain the source-system license, if appropriate.

To use `BYOL`, you must have existing licenses with rights to use these licenses in a third party cloud, such as AWS. For more information, see [Prerequisites](#) in the VM Import/Export User Guide.

Type: String

Required: No

#### **Platform**

The operating system of the virtual machine.

Valid values: `Windows` | `Linux`

Type: String

Required: No

#### **RoleName**

The name of the role to use when not using the default role, '`vmimport`'.

Type: String

Required: No

#### **TagSpecification.N**

The tags to apply to the import image task during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **UsageOperation**

The usage operation value. For more information, see [Licensing options](#) in the *VM Import/Export User Guide*.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **architecture**

The architecture of the virtual machine.

Type: String

**description**

A description of the import task.

Type: String

**encrypted**

Indicates whether the AMI is encrypted.

Type: Boolean

**hypervisor**

The target hypervisor of the import task.

Type: String

**imageId**

The ID of the Amazon Machine Image (AMI) created by the import task.

Type: String

**importTaskId**

The task ID of the import image task.

Type: String

**kmsKeyId**

The identifier for the symmetric KMS key that was used to create the encrypted AMI.

Type: String

**licenseSpecifications**

The ARNs of the license configurations.

Type: Array of [ImportImageLicenseConfigurationResponse \(p. 1614\)](#) objects

**licenseType**

The license type of the virtual machine.

Type: String

**platform**

The operating system of the virtual machine.

Type: String

**progress**

The progress of the task.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotDetailSet**

Information about the snapshots.

Type: Array of [SnapshotDetail \(p. 2011\)](#) objects

**status**

A brief status of the task.

Type: String

**statusMessage**

A detailed status message of the import task.

Type: String

**tagSet**

Any tags assigned to the import image task.

Type: Array of [Tag \(p. 2070\)](#) objects

**usageOperation**

The usage operation value.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportInstance

Creates an import instance task using metadata from the specified disk image.

This API action supports only single-volume VMs. To import multi-volume VMs, use [ImportImage \(p. 1041\)](#) instead.

This API action is not supported by the AWS Command Line Interface (AWS CLI). For information about using the Amazon EC2 CLI, which is deprecated, see [Importing a VM to Amazon EC2](#) in the *Amazon EC2 CLI Reference* PDF file.

For information about the import manifest referenced by this API action, see [VM Import Manifest](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

A description for the instance being imported.

Type: String

Required: No

### DiskImage.N

The disk image.

Type: Array of [DiskImage \(p. 1493\)](#) objects

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LaunchSpecification

The launch specification.

Type: [ImportInstanceLaunchSpecification \(p. 1618\)](#) object

Required: No

### Platform

The instance operating system.

Type: String

Valid Values: Windows

Required: Yes

## Response Elements

The following elements are returned by the service.

### conversionTask

Information about the conversion task.

Type: [ConversionTask \(p. 1452\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an import instance task that migrates a Windows Server 2008 SP2 (32-bit) VM into the us-east-1 Region.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportInstance
&LaunchSpecification.Architecture=x86_64
&LaunchSpecification.InstanceType=m1.xlarge
&DiskImage.1.Image.Format=VMDK
&DiskImage.1.Image.Bytes=1179593728
&DiskImage.1.Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01T1TtL0uR7KExtEXAMPLE%3D
&DiskImage.1.Volume.Size=12
&Platform=Windows
&AUTHPARAMS
```

### Sample Response

```
<ImportInstanceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<conversionTask>
  <conversionTaskId>import-i-ffvko9js</conversionTaskId>
  <expirationTime>2010-12-22T12:01Z</expirationTime>
  <importInstance>
    <volumes>
      <item>
        <bytesConverted>0</bytesConverted>
        <availabilityZone>us-east-1a</availabilityZone>
        <image>
          <format>VMDK</format>
          <size>1179593728</size>
```

```
<importManifestUrl>
    https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/
Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=
AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01TlTtL0uR7KExtEXAMPLE%3D
</importManifestUrl>
</image>
<description/>
<volume>
    <size>12</size>
    <id>vol-1234567890abcdef0</id>
</volume>
<status>active</status>
<statusMessage/>
</item>
</volumes>
<instanceId>i-1234567890abcdef0</instanceId>
<description/>
</importInstance>
</conversionTask>
</ImportInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportKeyPair

Imports the public key from an RSA or ED25519 key pair that you created with a third-party tool. Compare this with [CreateKeyPair \(p. 207\)](#), in which AWS creates the key pair and gives the keys to you (AWS keeps a copy of the public key). With ImportKeyPair, you create the key pair and give AWS just the public key. The private key is never transferred between you and AWS.

For more information about key pairs, see [Amazon EC2 key pairs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### KeyName

A unique name for the key pair.

Type: String

Required: Yes

### PublicKeyMaterial

The public key. For API calls, the text must be base64-encoded. For command line tools, base64 encoding is performed for you.

Type: Base64-encoded binary data object

Required: Yes

### TagSpecification.N

The tags to apply to the imported key pair.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### keyFingerprint

The MD5 public key fingerprint as specified in section 4 of RFC 4716.

Type: String

**keyName**

The key pair name that you provided.

Type: String

**keyPairId**

The ID of the resulting key pair.

Type: String

**requestId**

The ID of the request.

Type: String

**tagSet**

The tags applied to the imported key pair.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example imports the public key named `my-key-pair`, and applies a tag with a key of `purpose` and a value of `production`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportKeyPair
&KeyName=my-key-pair
&PublicKeyMaterial=MIICiTCCAFICCQD6m7oRw0uXOjANBgkqhkiG9w0BAQUFADCBiDELMAkGA1UEBhMC
VVMxCzAJBgNVBAgTAldBMRawDgYDVQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6
b24xFDASBgnVBAsTC01BTSBDb25zb2x1MRIwEAYDVQQDEw1UZXN0Q21sYWmxHzAd
BgkqhkiG9w0BCQEWEg5vb25lQGFtYXpvbi5jb20wHhcNMTEwNDI1MjA0NTIxWhcN
MTIwNDI0MjA0NTIxWjCBiDELMAkGA1UEBhMCVVMxCzAJBgNVBAgTAldBMRawDgYD
VQQHEwdTZWF0dGx1MQ8wDQYDVQQKEwZBbWF6b24xFDASBgnVBAsTC01BTSBDb25z
b2x1MRIwEAYDVQQDEw1UZXN0Q21sYWmxHzAdBgkqhkiG9w0BCQEWEg5vb25lQGFt
YXpvbi5jb20wgZ8wDQYJKoZIhvcNAQEBBQADgY0AMIGJAOGBAMaK0dn+a4GmWIWJ
21uUSfwfEvySwtC2XADZ4nB+BLYgVIk60CpiwsZ3G93vUEIO3IyNoH/f0wYK8m9T
xDHudUZg3qX4waLG5M43q7Wgc/MbQITxOUSQv7c7ugFFDzQGBzzswY6786m86gpE
Ibb3OhjZnzcqvQaaRHhd1QWIMm2nrAgMBAAEwDQYJKoZIhvcNAQEFBQADgYEAtCu4
nUhVVxYUntneD9+h8Mg9q6q+auNkyExzyLwaxlAoo7TJHidbtS4J5iNmZgXL0Fkb
FFBjvSfpJ11J00zbhNYSS5f6GuoEDmFJ10ZxBHjnyp3780D8uTs7fLvjkx79LjStb
NYiytvbZPQUQ5Yaxu2jXnimvw3rrszlaEXAMPLE
&TagSpecification.1.ResourceType=key-pair
&TagSpecification.1.Tag.1.Key=purpose
&TagSpecification.1.Tag.1.Value=production
&AUTHPARAMS
```

## Sample Response

```
<ImportKeyPairResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <keyName>my-key-pair</keyName>
  <keyPairId>key-abced1234eEXAMPLE</keyPairId>
  <keyFingerprint>1f:51:ae:28:bf:89:e9:d8:1f:25:5d:37:2d:7d:b8:ca:9f:f5:f1:6f</keyFingerprint>
  <tagSet>
    <item>
      <key>purpose</key>
      <value>production</value>
    </item>
  </tagSet>
</ImportKeyPairResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportSnapshot

Imports a disk into an EBS snapshot.

For more information, see [Importing a disk as a snapshot using VM Import/Export in the VM Import/Export User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientData**

The client-specific data.

Type: [ClientData \(p. 1430\)](#) object

Required: No

### **ClientToken**

Token to enable idempotency for VM import requests.

Type: String

Required: No

### **Description**

The description string for the import snapshot task.

Type: String

Required: No

### **DiskContainer**

Information about the disk container.

Type: [SnapshotDiskContainer \(p. 2013\)](#) object

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Encrypted**

Specifies whether the destination snapshot of the imported image should be encrypted. The default KMS key for EBS is used unless you specify a non-default KMS key using `KmsKeyId`. For more information, see [Amazon EBS Encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Boolean

Required: No

### KmsKeyId

An identifier for the symmetric KMS key to use when creating the encrypted snapshot. This parameter is only required if you want to use a non-default KMS key; if this parameter is not specified, the default KMS key for EBS is used. If a `KmsKeyId` is specified, the `Encrypted` flag must also be set.

The KMS key identifier may be provided in any of the following formats:

- Key ID
- Key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, `arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias`.
- ARN using key ID. The ID ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `key` namespace, and then the key ID. For example, `arn:aws:kms:us-east-1:012345678910:key/abcd1234-a123-456a-a12b-a123b4cd56ef`.
- ARN using key alias. The alias ARN contains the `arn:aws:kms` namespace, followed by the Region of the key, the AWS account ID of the key owner, the `alias` namespace, and then the key alias. For example, `arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias`.

AWS parses `KmsKeyId` asynchronously, meaning that the action you call may appear to complete even though you provided an invalid identifier. This action will eventually report failure.

The specified KMS key must exist in the Region that the snapshot is being copied to.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: No

### RoleName

The name of the role to use when not using the default role, 'vmimport'.

Type: String

Required: No

### TagSpecification.N

The tags to apply to the import snapshot task during creation.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### description

A description of the import snapshot task.

Type: String

### importTaskId

The ID of the import snapshot task.

Type: String

**requestId**

The ID of the request.

Type: String

**snapshotTaskDetail**

Information about the import snapshot task.

Type: [SnapshotTaskDetail \(p. 2016\)](#) object

**tagSet**

Any tags assigned to the import snapshot task.

Type: Array of [Tag \(p. 2070\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ImportVolume

Creates an import volume task using metadata from the specified disk image.

This API action supports only single-volume VMs. To import multi-volume VMs, use [ImportImage \(p. 1041\)](#) instead. To import a disk to a snapshot, use [ImportSnapshot \(p. 1052\)](#) instead.

This API action is not supported by the AWS Command Line Interface (AWS CLI). For information about using the Amazon EC2 CLI, which is deprecated, see [Importing Disks to Amazon EBS](#) in the *Amazon EC2 CLI Reference* PDF file.

For information about the import manifest referenced by this API action, see [VM Import Manifest](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AvailabilityZone**

The Availability Zone for the resulting EBS volume.

Type: String

Required: Yes

### **Description**

A description of the volume.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Image**

The disk image.

Type: [DiskImageDetail \(p. 1495\)](#) object

Required: Yes

### **Volume**

The volume size.

Type: [VolumeDetail \(p. 2172\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

### conversionTask

Information about the conversion task.

Type: [ConversionTask \(p. 1452\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates an import volume task that migrates a Windows Server 2008 SP2 (32-bit) volume into the us-east-1 Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ImportVolume
&AvailabilityZone=us-east-1c
&Image.Format=VMDK
&Image.Bytes=128696320
&Image.ImportManifestUrl=https://s3.amazonaws.com/myawsbucket/
a3a5e1b6-590d-43cc-97c1-15c7325d3f41/Win_2008_Server_Data_Center_SP2_32-bit.
vmdkmanifest.xml?AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1294855591&
Signature=5snej01T1TtL0uR7KExtEXAMPLE%3D
&VolumeSize=8
&AUTHPARAMS>
```

#### Sample Response

```
<ImportVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <conversionTask>
    <conversionTaskId>import-i-fh95npoc</conversionTaskId>
    <expirationTime>2010-12-22T12:01Z</expirationTime>
    <importVolume>
      <bytesConverted>0</bytesConverted>
      <availabilityZone>us-east-1c</availabilityZone>
      <description/>
      <image>
        <format>VMDK</format>
        <size>128696320</size>
        <importManifestUrl>
          https://s3.amazonaws.com/myawsbucket/a3a5e1b6-590d-43cc-97c1-15c7325d3f41/
          Win_2008_Server_Data_Center_SP2_32-bit.vmdkmanifest.xml?AWSAccessKeyId=
          AKIAIOSFODNN7EXAMPLE&Expires=1294855591&Signature=5snej01T1TtL0uR7KExtEXAMPLE%3D
        </importManifestUrl>
      </image>
    </importVolume>
  </conversionTask>
</ImportVolumeResponse>
```

```
</importManifestUrl>
<checksum>ccb1b0536a4a70e86016b85229b5c6b10b14a4eb</checksum>
</image>
<volume>
  <size>8</size>
  <id>vol-1234567890abcdef0</id>
</volume>
</importVolume>
<state>active</state>
<statusMessage/>
</conversionTask>
</ImportVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyAddressAttribute

Modifies an attribute of the specified Elastic IP address. For requirements, see [Using reverse DNS for email applications](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId

[EC2-VPC] The allocation ID.

Type: String

Required: Yes

### DomainName

The domain name to modify for the IP address.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### address

Information about the Elastic IP address.

Type: [AddressAttribute \(p. 1362\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyAvailabilityZoneGroup

Changes the opt-in status of the Local Zone and Wavelength Zone group for your account.

Use [DescribeAvailabilityZones](#) to view the value for `GroupName`.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupName

The name of the Availability Zone group, Local Zone group, or Wavelength Zone group.

Type: String

Required: Yes

### OptInStatus

Indicates whether you are opted in to the Local Zone group or Wavelength Zone group. The only valid value is `opted-in`. You must contact [AWS Support](#) to opt out of a Local Zone or Wavelength Zone group.

Type: String

Valid Values: `opted-in` | `not-opted-in`

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyCapacityReservation

Modifies a Capacity Reservation's capacity and the conditions under which it is to be released. You cannot change a Capacity Reservation's instance type, EBS optimization, instance store settings, platform, Availability Zone, or instance eligibility. If you need to modify any of these attributes, we recommend that you cancel the Capacity Reservation, and then create a new one with the required attributes.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Accept

Reserved. Capacity Reservations you have created are accepted by default.

Type: Boolean

Required: No

### AdditionalInfo

Reserved for future use.

Type: String

Required: No

### CapacityReservationId

The ID of the Capacity Reservation.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EndDate

The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

The Capacity Reservation is cancelled within an hour from the specified time. For example, if you specify 5/31/2019, 13:30:55, the Capacity Reservation is guaranteed to end between 13:30:55 and 14:30:55 on 5/31/2019.

You must provide an `EndDate` value if `EndDateType` is `limited`. Omit `EndDate` if `EndDateType` is `unlimited`.

Type: Timestamp

Required: No

**EndDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- **unlimited** - The Capacity Reservation remains active until you explicitly cancel it. Do not provide an `EndDate` value if `EndDateType` is **unlimited**.
- **limited** - The Capacity Reservation expires automatically at a specified date and time. You must provide an `EndDate` value if `EndDateType` is **limited**.

Type: String

Valid Values: `unlimited` | `limited`

Required: No

**InstanceCount**

The number of instances for which to reserve capacity. The number of instances can't be increased or decreased by more than 1000 in a single request.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyCapacityReservationFleet

Modifies a Capacity Reservation Fleet.

When you modify the total target capacity of a Capacity Reservation Fleet, the Fleet automatically creates new Capacity Reservations, or modifies or cancels existing Capacity Reservations in the Fleet to meet the new total target capacity. When you modify the end date for the Fleet, the end dates for all of the individual Capacity Reservations in the Fleet are updated accordingly.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 224\)](#).

### **CapacityReservationFleetId**

The ID of the Capacity Reservation Fleet to modify.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **EndDate**

The date and time at which the Capacity Reservation Fleet expires. When the Capacity Reservation Fleet expires, its state changes to `expired` and all of the Capacity Reservations in the Fleet expire.

The Capacity Reservation Fleet expires within an hour after the specified time. For example, if you specify `5/31/2019, 13:30:55`, the Capacity Reservation Fleet is guaranteed to expire between `13:30:55` and `14:30:55` on `5/31/2019`.

You can't specify `EndDate` and `RemoveEndDate` in the same request.

Type: Timestamp

Required: No

### **RemoveEndDate**

Indicates whether to remove the end date from the Capacity Reservation Fleet. If you remove the end date, the Capacity Reservation Fleet does not expire and it remains active until you explicitly cancel it using the `CancelCapacityReservationFleet` action.

You can't specify `RemoveEndDate` and `EndDate` in the same request.

Type: Boolean

Required: No

### **TotalTargetCapacity**

The total number of capacity units to be reserved by the Capacity Reservation Fleet. This value, together with the instance type weights that you assign to each instance type used by the Fleet

determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see [Total target capacity](#) in the Amazon EC2 User Guide.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyClientVpnEndpoint

Modifies the specified Client VPN endpoint. Modifying the DNS server resets existing client connections.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientConnectOptions**

The options for managing connection authorization for new client connections.

Type: [ClientConnectOptions \(p. 1428\)](#) object

Required: No

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint to modify.

Type: String

Required: Yes

### **ConnectionLogOptions**

Information about the client connection logging options.

If you enable client connection logging, data about client connections is sent to a Cloudwatch Logs log stream. The following information is logged:

- Client connection requests
- Client connection results (successful and unsuccessful)
- Reasons for unsuccessful client connection requests
- Client connection termination time

Type: [ConnectionLogOptions \(p. 1448\)](#) object

Required: No

### **Description**

A brief description of the Client VPN endpoint.

Type: String

Required: No

### **DnsServers**

Information about the DNS servers to be used by Client VPN connections. A Client VPN endpoint can have up to two DNS servers.

Type: [DnsServersOptionsModifyStructure \(p. 1499\)](#) object

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**SecurityGroupId.N**

The IDs of one or more security groups to apply to the target network.

Type: Array of strings

Required: No

**SelfServicePortal**

Specify whether to enable the self-service portal for the Client VPN endpoint.

Type: String

Valid Values: `enabled` | `disabled`

Required: No

**ServerCertificateArn**

The ARN of the server certificate to be used. The server certificate must be provisioned in AWS Certificate Manager (ACM).

Type: String

Required: No

**SplitTunnel**

Indicates whether the VPN is split-tunnel.

For information about split-tunnel VPN endpoints, see [Split-tunnel AWS Client VPN endpoint](#) in the [AWS Client VPN Administrator Guide](#).

Type: Boolean

Required: No

**VpcId**

The ID of the VPC to associate with the Client VPN endpoint.

Type: String

Required: No

**VpnPort**

The port number to assign to the Client VPN endpoint for TCP and UDP traffic.

Valid Values: `443` | `1194`

Default Value: `443`

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies a Client VPN endpoint's description.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyClientVpnEndpoint
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&Description=my-client-vpn-endpoint
&AUTHPARAMS
```

#### Sample Response

```
<ModifyClientVpnEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>fe4813d3-1e79-4f67-bbd7-3186eEXAMPLE</requestId>
  <return>true</return>
</ModifyClientVpnEndpointResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyDefaultCreditSpecification

Modifies the default credit option for CPU usage of burstable performance instances. The default credit option is set at the account level per AWS Region, and is specified per instance family. All new burstable performance instances in the account launch using the default credit option.

`ModifyDefaultCreditSpecification` is an asynchronous operation, which works at an AWS Region level and modifies the credit option for each Availability Zone. All zones in a Region are updated within five minutes. But if instances are launched during this operation, they might not get the new credit option until the zone is updated. To verify whether the update has occurred, you can call `GetDefaultCreditSpecification` and check `DefaultCreditSpecification` for updates.

For more information, see [Burstable performance instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CpuCredits

The credit option for CPU usage of the instance family.

Valid Values: `standard` | `unlimited`

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceFamily

The instance family.

Type: String

Valid Values: `t2` | `t3` | `t3a` | `t4g`

Required: Yes

## Response Elements

The following elements are returned by the service.

### instanceFamilyCreditSpecification

The default credit option for CPU usage of the instance family.

Type: [InstanceFamilyCreditSpecification \(p. 1653\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example modifies the default credit option for CPU usage to `unlimited` for all instances in the T2 instance family in the specified Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t2
&CpuCredits=unlimited
&AUTHPARAMS
```

#### Sample Response

```
<ModifyDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
  <instanceFamilyCreditSpecification>
    <cpuCredits>unlimited</cpuCredits>
    <instanceFamily>t2</instanceFamily>
  </instanceFamilyCreditSpecification>
</ModifyDefaultCreditSpecificationResponse>
```

### Example 2

This example modifies the default credit option for CPU usage to `standard` for all instances in the T3 instance family in the specified Region.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyDefaultCreditSpecification
&Region=us-east-1
&InstanceFamily=t3
&CpuCredits=standard
&AUTHPARAMS
```

#### Sample Response

```
<ModifyDefaultCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
  <instanceFamilyCreditSpecification>
```

```
<cpuCredits>standard</cpuCredits>
<instanceFamily>t3</instanceFamily>
</instanceFamilyCreditSpecification>
</ModifyDefaultCreditSpecificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyEbsDefaultKmsKeyId

Changes the default AWS KMS key for EBS encryption by default for your account in this Region.

AWS creates a unique AWS managed KMS key in each Region for use with encryption by default. If you change the default KMS key to a symmetric customer managed KMS key, it is used instead of the AWS managed KMS key. To reset the default KMS key to the AWS managed KMS key for EBS, use [ResetEbsDefaultKmsKeyId \(p. 1257\)](#). Amazon EBS does not support asymmetric KMS keys.

If you delete or disable the customer managed KMS key that you specified for use with encryption by default, your instances will fail to launch.

For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### KmsKeyId

The identifier of the AWS Key Management Service (AWS KMS) KMS key to use for Amazon EBS encryption. If this parameter is not specified, your AWS KMS key for Amazon EBS is used. If `KmsKeyId` is specified, the encrypted state must be `true`.

You can specify the KMS key using any of the following:

- Key ID. For example, 1234abcd-12ab-34cd-56ef-1234567890ab.
- Key alias. For example, alias/ExampleAlias.
- Key ARN. For example, arn:aws:kms:us-east-1:012345678910:key/1234abcd-12ab-34cd-56ef-1234567890ab.
- Alias ARN. For example, arn:aws:kms:us-east-1:012345678910:alias/ExampleAlias.

AWS authenticates the KMS key asynchronously. Therefore, if you specify an ID, alias, or ARN that is not valid, the action can appear to complete, but eventually fails.

Amazon EBS does not support asymmetric KMS keys.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### kmsKeyId

The Amazon Resource Name (ARN) of the default KMS key for encryption by default.

Type: String  
**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyFleet

Modifies the specified EC2 Fleet.

You can only modify an EC2 Fleet request of type `maintain`.

While the EC2 Fleet is being modified, it is in the `modifying` state.

To scale up your EC2 Fleet, increase its target capacity. The EC2 Fleet launches the additional Spot Instances according to the allocation strategy for the EC2 Fleet request. If the allocation strategy is `lowest-price`, the EC2 Fleet launches instances using the Spot Instance pool with the lowest price. If the allocation strategy is `diversified`, the EC2 Fleet distributes the instances across the Spot Instance pools. If the allocation strategy is `capacity-optimized`, EC2 Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching.

To scale down your EC2 Fleet, decrease its target capacity. First, the EC2 Fleet cancels any open requests that exceed the new target capacity. You can request that the EC2 Fleet terminate Spot Instances until the size of the fleet no longer exceeds the new target capacity. If the allocation strategy is `lowest-price`, the EC2 Fleet terminates the instances with the highest price per unit. If the allocation strategy is `capacity-optimized`, the EC2 Fleet terminates the instances in the Spot Instance pools that have the least available Spot Instance capacity. If the allocation strategy is `diversified`, the EC2 Fleet terminates instances across the Spot Instance pools. Alternatively, you can request that the EC2 Fleet keep the fleet at its current size, but not replace any Spot Instances that are interrupted or that you terminate manually.

If you are finished with your EC2 Fleet for now, but will use it again later, you can set the target capacity to 0.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Context

Reserved.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ExcessCapacityTerminationPolicy

Indicates whether running instances should be terminated if the total target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Type: String

Valid Values: `no-termination` | `termination`

Required: No

**FleetId**

The ID of the EC2 Fleet.

Type: String

Required: Yes

**LaunchTemplateConfig.N**

The launch template and overrides.

Type: Array of [FleetLaunchTemplateConfigRequest \(p. 1555\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 50 items.

Required: No

**TargetCapacitySpecification**

The size of the EC2 Fleet.

Type: [TargetCapacitySpecificationRequest \(p. 2076\)](#) object

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyFpgalmageAttribute

Modifies the specified attribute of the specified Amazon FPGA Image (AFI).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The name of the attribute.

Type: String

Valid Values: `description` | `name` | `loadPermission` | `productCodes`

Required: No

### Description

A description for the AFI.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FpgalmageId

The ID of the AFI.

Type: String

Required: Yes

### LoadPermission

The load permission for the AFI.

Type: [LoadPermissionModifications \(p. 1792\)](#) object

Required: No

### Name

A name for the AFI.

Type: String

Required: No

### OperationType

The operation type.

Type: String

Valid Values: add | remove

Required: No

#### **ProductCode.N**

The product codes. After you add a product code to an AFI, it can't be removed. This parameter is valid only when modifying the `productCodes` attribute.

Type: Array of strings

Required: No

#### **UserGroup.N**

The user groups. This parameter is valid only when modifying the `loadPermission` attribute.

Type: Array of strings

Required: No

#### **UserId.N**

The AWS account IDs. This parameter is valid only when modifying the `loadPermission` attribute.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **fpgalmageAttribute**

Information about the attribute.

Type: [FpgalmageAttribute \(p. 1578\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example adds load permissions for account ID 123456789012.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&LoadPermission.Add.1.UserId=123456789012
&AUTHPARAMS
```

## Sample Response

```
<ModifyFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>75837959-edf9-4183-ad01-6cb1example</requestId>
  <fpgaImageAttribute>
    <fpgaImageId>afi-0d123e21abcc85abc</fpgaImageId>
    <loadPermissions>
      <item>
        <userId>123456789012</userId>
      </item>
    </loadPermissions>
  </fpgaImageAttribute>
</ModifyFpgaImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyHosts

Modify the auto-placement setting of a Dedicated Host. When auto-placement is enabled, any instances that you launch with a tenancy of host but without a specific host ID are placed onto any available Dedicated Host in your account that has auto-placement enabled. When auto-placement is disabled, you need to provide a host ID to have the instance launch onto a specific host. If no host ID is provided, the instance is launched onto a suitable host with auto-placement enabled.

You can also use this API action to modify a Dedicated Host to support either multiple instance types in an instance family, or to support a specific instance type only.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AutoPlacement**

Specify whether to enable or disable auto-placement.

Type: String

Valid Values: on | off

Required: No

### **HostId.N**

The IDs of the Dedicated Hosts to modify.

Type: Array of strings

Required: Yes

### **HostRecovery**

Indicates whether to enable or disable host recovery for the Dedicated Host. For more information, see [Host recovery](#) in the *Amazon EC2 User Guide*.

Type: String

Valid Values: on | off

Required: No

### **InstanceFamily**

Specifies the instance family to be supported by the Dedicated Host. Specify this parameter to modify a Dedicated Host to support multiple instance types within its current instance family.

If you want to modify a Dedicated Host to support a specific instance type only, omit this parameter and specify **InstanceType** instead. You cannot specify **InstanceFamily** and **InstanceType** in the same request.

Type: String

Required: No

### **InstanceType**

Specifies the instance type to be supported by the Dedicated Host. Specify this parameter to modify a Dedicated Host to support only a specific instance type.

If you want to modify a Dedicated Host to support multiple instance types in its current instance family, omit this parameter and specify **InstanceFamily** instead. You cannot specify **InstanceType** and **InstanceFamily** in the same request.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successful**

The IDs of the Dedicated Hosts that were successfully modified.

Type: Array of strings

### **unsuccessful**

The IDs of the Dedicated Hosts that could not be modified. Check whether the setting you requested can be used.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example enables the auto-placement setting on a Dedicated Host.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts
&AutoPlacement=on
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

#### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <unsuccessful/>
  <successful>
    <item>h-00548908djdsgfs</item>
```

```
</successful>  
</ModifyHostsResponse>
```

## Example 2

This example enables host recovery on a Dedicated Host.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts  
&HostRecovery=on  
&HostId=h-00548908djdsgfs  
&AUTHPARAMS
```

### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
  <unsuccessful/>  
  <successful>  
    <item>h-00548908djdsgfs</item>  
  </successful>  
</ModifyHostsResponse>
```

## Example 3

This example modifies a Dedicated Host that supports only `m5.large` instances to support multiple instance types in the `m5` instance family.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyHosts  
&InstanceFamily=m5  
&HostId=h-00548908djdsgfs  
&AUTHPARAMS
```

### Sample Response

```
<ModifyHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>  
  <unsuccessful/>  
  <successful>  
    <item>h-00548908djdsgfs</item>  
  </successful>  
</ModifyHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyIdentityFormat

Modifies the ID format of a resource for a specified IAM user, IAM role, or the root user for an account; or all IAM users, IAM roles, and the root user for an account. You can specify that resources should receive longer IDs (17-character IDs) when they are created.

This request can only be used to modify longer ID settings for resource types that are within the opt-in period. Resources currently in their opt-in period include: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | route-table | route-table-association | security-group | subnet | subnet-cidr-block-association | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

For more information, see [Resource IDs](#) in the *Amazon Elastic Compute Cloud User Guide*.

This setting applies to the principal specified in the request; it does not apply to the principal that makes the request.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### PrincipalArn

The ARN of the principal, which can be an IAM user, IAM role, or the root user. Specify `all` to modify the ID format for all IAM users, IAM roles, and the root user of the account.

Type: String

Required: Yes

### Resource

The type of resource: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | route-table | route-table-association | security-group | subnet | subnet-cidr-block-association | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

Alternatively, use the `all-current` option to include all resource types that are currently within their opt-in period for longer IDs.

Type: String

Required: Yes

### UseLongIds

Indicates whether the resource should use longer IDs (17-character IDs)

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example sets the UseLongIds parameter to true for instances launched by the IAM role 'EC2Role'. Instances launched by the IAM role receive longer IDs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyIdentityFormat
&Resource=instance
&UseLongIds=true
&PrincipalArn=arn:aws:iam::123456789012:role/EC2Role
&AUTHPARAMS
```

#### Sample Response

```
<ModifyIdentityIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">"
  <requestId>92c1af09-cb4c-410e-8a96-EXAMPLE</requestId>
  <return>true</return>
</ModifyIdentityIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyIdFormat

Modifies the ID format for the specified resource on a per-Region basis. You can specify that resources should receive longer IDs (17-character IDs) when they are created.

This request can only be used to modify longer ID settings for resource types that are within the opt-in period. Resources currently in their opt-in period include: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | route-table | route-table-association | security-group | subnet | subnet-cidr-block-association | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

This setting applies to the IAM user who makes the request; it does not apply to the entire AWS account. By default, an IAM user defaults to the same settings as the root user. If you're using this action as the root user, then these settings apply to the entire account, unless an IAM user explicitly overrides these settings for themselves. For more information, see [Resource IDs](#) in the *Amazon Elastic Compute Cloud User Guide*.

Resources created with longer IDs are visible to all IAM roles and users, regardless of these settings and provided that they have permission to use the relevant `Describe` command for the resource type.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Resource

The type of resource: bundle | conversion-task | customer-gateway | dhcp-options | elastic-ip-allocation | elastic-ip-association | export-task | flow-log | image | import-task | internet-gateway | network-acl | network-acl-association | network-interface | network-interface-attachment | prefix-list | route-table | route-table-association | security-group | subnet | subnet-cidr-block-association | vpc | vpc-cidr-block-association | vpc-endpoint | vpc-peering-connection | vpn-connection | vpn-gateway.

Alternatively, use the `all-current` option to include all resource types that are currently within their opt-in period for longer IDs.

Type: String

Required: Yes

### UseLongIds

Indicate whether the resource should use longer IDs (17-character IDs).

Type: Boolean

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example sets the UseLongIds parameter to true for instances, so that instances you launch receive longer IDs.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyIdFormat
&Resource=instance
&UseLongIds=true
&AUTHPARAMS
```

#### Sample Response

```
<ModifyIdFormatResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>92c1af09-cb4c-410e-8a96-EXAMPLE</requestId>
  <return>true</return>
</ModifyIdFormatResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyImageAttribute

Modifies the specified attribute of the specified AMI. You can specify only one attribute at a time. You can use the `Attribute` parameter to specify the attribute or one of the following parameters: `Description` or `LaunchPermission`.

Images with an AWS Marketplace product code cannot be made public.

To enable the SrivNetSupport enhanced networking attribute of an image, enable SrivNetSupport on an instance and create an AMI from the instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The name of the attribute to modify.

Valid values: `description` | `launchPermission`

Type: String

Required: No

### Description

A new description for the AMI.

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

### LaunchPermission

A new launch permission for the AMI.

Type: [LaunchPermissionModifications \(p. 1729\)](#) object

Required: No

### OperationType

The operation type. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: String

Valid Values: add | remove

Required: No

#### **OrganizationalUnitArn.N**

The Amazon Resource Name (ARN) of an organizational unit (OU). This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

#### **OrganizationArn.N**

The Amazon Resource Name (ARN) of an organization. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

#### **ProductCode.N**

Not supported.

Type: Array of strings

Required: No

#### **UserGroup.N**

The user groups. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

#### **UserId.N**

The AWS account IDs. This parameter can be used only when the `Attribute` parameter is `launchPermission`.

Type: Array of strings

Required: No

#### **Value**

The value of the attribute being modified. This parameter can be used only when the `Attribute` parameter is `description`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example makes the AMI public (for example, so any AWS account can use it).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Add.1.Group=all
&AUTHPARAMS
```

#### Sample Response

```
<ModifyImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</ModifyImageAttributeResponse>
```

### Example 2

This example makes the AMI private (for example, so that only you as the owner can use it).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&LaunchPermission.Remove.1.Group=all
&AUTHPARAMS
```

### Example 3

This example grants launch permission to the AWS account with ID 111122223333.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
```

```
&ImageId=ami-61a54008
&LaunchPermission.Add.1.UserId=111122223333
&AUTHPARAMS
```

## Example 4

This example adds the `774F4FF8` product code to the `ami-61a54008` AMI.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&ProductCode.1=774F4FF8
&AUTHPARAMS
```

## Example 5

This example changes the description of the AMI to `New Description`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyImageAttribute
&ImageId=ami-61a54008
&Description.Value>New Description
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceAttribute

Modifies the specified attribute of the specified instance. You can specify only one attribute at a time.

**Note:** Using this action to change the security groups associated with an elastic network interface (ENI) attached to an instance in a VPC can result in an error if the instance has more than one ENI. To change the security groups associated with an ENI attached to an instance that has multiple ENIs, we recommend that you use the [ModifyNetworkInterfaceAttribute \(p. 1120\)](#) action.

To modify some attributes, the instance must be stopped. For more information, see [Modify a stopped instance](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The name of the attribute.

Type: String

Valid Values: `instanceType | kernel | ramdisk | userData | disableApiTermination | instanceInitiatedShutdownBehavior | rootDeviceName | blockDeviceMapping | productCodes | sourceDestCheck | groupSet | ebsOptimized | srivNetSupport | enaSupport | enclaveOptions`

Required: No

### BlockDeviceMapping.N

Modifies the `DeleteOnTermination` attribute for volumes that are currently attached. The volume must be owned by the caller. If no value is specified for `DeleteOnTermination`, the default is `true` and the volume is deleted when the instance is terminated.

To add instance store volumes to an Amazon EBS-backed instance, you must add them when you launch the instance. For more information, see [Update the block device mapping when launching an instance](#) in the *Amazon EC2 User Guide*.

Type: Array of [InstanceBlockDeviceMappingSpecification \(p. 1639\)](#) objects

Required: No

### DisableApiTermination

If the value is `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. You cannot use this parameter for Spot Instances.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Specifies whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: [AttributeValue \(p. 1381\)](#) object

Required: No

**EnaSupport**

Set to true to enable enhanced networking with ENA for the instance.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: [AttributeValue \(p. 1381\)](#) object

Required: No

**GroupId.N**

[EC2-VPC] Replaces the security groups of the instance with the specified security groups. You must specify at least one security group, even if it's just the default security group for the VPC. You must specify the security group ID, not the security group name.

Type: Array of strings

Required: No

**InstanceId**

The ID of the instance.

Type: String

Required: Yes

**InstanceInitiatedShutdownBehavior**

Specifies whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

**InstanceType**

Changes the instance type to the specified value. For more information, see [Instance types](#) in the *Amazon EC2 User Guide*. If the instance type is not valid, the error returned is `InvalidInstanceAttributeValue`.

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

**Kernel**

Changes the instance's kernel to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#).

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

#### Ramdisk

Changes the instance's RAM disk to the specified value. We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#).

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

#### SourceDestCheck

Enable or disable source/destination checks, which ensure that the instance is either the source or the destination of any traffic that it receives. If the value is `true`, source/destination checks are enabled; otherwise, they are disabled. The default value is `true`. You must disable source/destination checks if the instance runs services such as network address translation, routing, or firewalls.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

#### SriovNetSupport

Set to `simple` to enable enhanced networking with the Intel 82599 Virtual Function interface for the instance.

There is no way to disable enhanced networking with the Intel 82599 Virtual Function interface at this time.

This option is supported only for HVM instances. Specifying this option with a PV instance can make it unreachable.

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

#### UserData

Changes the instance's user data to the specified value. If you are using an AWS SDK or command line tool, base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide base64-encoded text.

Type: [BlobAttributeValue \(p. 1391\)](#) object

Required: No

#### Value

A new value for the attribute. Use only with the `kernel`, `ramdisk`, `userData`, `disableApiTermination`, or `instanceInitiatedShutdownBehavior` attribute.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

```
Type: String
return

Is true if the request succeeds, and an error otherwise.

Type: Boolean
```

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example changes the `instanceType` attribute of the specified instance. The instance must be in the stopped state.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&InstanceType.Value=m1.small
&AUTHPARAMS
```

### Example 2

This example changes the `enaSupport` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&EnaSupport.Value=true
&AUTHPARAMS
```

### Example 3

This example changes the `ebsOptimized` attribute of the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute
&InstanceId=i-1234567890abcdef0
&EbsOptimized.Value=true
&AUTHPARAMS
```

### Example 4

This example changes the `instanceInitiatedShutdownBehavior` attribute of the specified instance.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute  
&InstanceId=i-1234567890abcdef0  
&InstanceInitiatedShutdownBehavior.Value=terminate  
&AUTHPARAMS
```

## Example 5

This example changes the `disableApiTermination` attribute of the specified instance.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceAttribute  
&InstanceId=i-1234567890abcdef0  
&DisableApiTermination.Value=true  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceCapacityReservationAttributes

Modifies the Capacity Reservation settings for a stopped instance. Use this action to configure an instance to target a specific Capacity Reservation, run in any open Capacity Reservation with matching attributes, or run On-Demand Instance capacity.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CapacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: [CapacityReservationSpecification \(p. 1414\)](#) object

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **InstanceId**

The ID of the instance to be modified.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns true if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceCreditSpecification

Modifies the credit option for CPU usage on a running or stopped burstable performance instance. The credit options are standard and unlimited.

For more information, see [Burstable performance instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

A unique, case-sensitive token that you provide to ensure idempotency of your modification request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceCreditSpecification.N**

Information about the credit option for CPU usage.

Type: Array of [InstanceCreditSpecificationRequest \(p. 1643\)](#) objects

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successfulInstanceCreditSpecificationSet**

Information about the instances whose credit option for CPU usage was successfully modified.

Type: Array of [SuccessfulInstanceCreditSpecificationItem \(p. 2068\)](#) objects

### **unsuccessfulInstanceCreditSpecificationSet**

Information about the instances whose credit option for CPU usage was not modified.

Type: Array of [UnsuccessfulInstanceCreditSpecificationItem \(p. 2151\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This request modifies the credit option for CPU usage of the specified instance in the specified Region to unlimited. Valid credit options are standard and unlimited.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceCreditSpecification
&Region=us-east-1
&InstanceCreditSpecification.1.InstanceId=i-1234567890abcdef0
&InstanceCreditSpecification.1.CpuCredits=unlimited
&AUTHPARAMS
```

#### Sample Response

```
<ModifyInstanceCreditSpecificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>11111111-2222-3333-4444-5555EXAMPLE</requestId>
  <unsuccessfulInstanceCreditSpecificationSet/>
  <successfulInstanceCreditSpecificationSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
    </item>
  </successfulInstanceCreditSpecificationSet>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceEventStartTime

Modifies the start time for a scheduled Amazon EC2 instance event.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the event whose date and time you are modifying.

Type: String

Required: Yes

### InstanceId

The ID of the instance with the scheduled event.

Type: String

Required: Yes

### NotBefore

The new date and time when the event will take place.

Type: Timestamp

Required: Yes

## Response Elements

The following elements are returned by the service.

### event

Describes a scheduled event for an instance.

Type: [InstanceStatusEvent \(p. 1694\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The following example shows how to modify the event start time for the specified instance. The event ID is specified by the `InstanceId` parameter and the new date and time is specified by the `NotBefore` parameter.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceEventStartTime
&InstanceId=i-1234567890abcdef0
&InstanceEventId=instance-event-0abcdef1234567890
&NotBefore=2019-03-25T10:00:00.000
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceEventWindow

Modifies the specified event window.

You can define either a set of time ranges or a cron expression when modifying the event window, but not both.

To modify the targets associated with the event window, use the [AssociateInstanceEventWindow \(p. 76\)](#) and [DisassociateInstanceEventWindow \(p. 931\)](#) API.

If AWS has already scheduled an event, modifying an event window won't change the time of the scheduled event.

For more information, see [Define event windows for scheduled events](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CronExpression

The cron expression of the event window, for example, \* 0-4,20-23 \* \* 1,5.

Constraints:

- Only hour and day of the week values are supported.
- For day of the week values, you can specify either integers 0 through 6, or alternative single values SUN through SAT.
- The minute, month, and year must be specified by \*.
- The hour value must be one or a multiple range, for example, 0-4 or 0-4,20-23.
- Each hour range must be >= 2 hours, for example, 0-2 or 20-23.
- The event window must be >= 4 hours. The combined total time ranges in the event window must be >= 4 hours.

For more information about cron expressions, see [cron](#) on the *Wikipedia website*.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceEventWindowId

The ID of the event window.

Type: String

Required: Yes

#### Name

The name of the event window.

Type: String

Required: No

#### TimeRange.N

The time ranges of the event window.

Type: Array of [InstanceEventWindowTimeRangeRequest \(p. 1651\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### instanceEventWindow

Information about the event window.

Type: [InstanceEventWindow \(p. 1644\)](#) object

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstanceMetadataOptions

Modify the instance metadata parameters on a running or stopped instance. When you modify the parameters on a stopped instance, they are applied when the instance is started. When you modify the parameters on a running instance, the API responds with a state of "pending". After the parameter modifications are successfully applied to the instance, the state of the modifications changes from "pending" to "applied" in subsequent describe-instances API calls. For more information, see [Instance metadata and user data](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### HttpEndpoint

This parameter enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the existing state is maintained.

#### Note

If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### HttpProtocolIpv6

Enables or disables the IPv6 endpoint for the instance metadata service.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### HttpPutResponseHopLimit

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel. If no parameter is specified, the existing state is maintained.

Possible values: Integers from 1 to 64

Type: Integer

Required: No

### HttpTokens

The state of token usage for your instance metadata requests. If the parameter is not specified in the request, the default state is `optional`.

If the state is `optional`, you can choose to retrieve instance metadata with or without a signed token header on your request. If you retrieve the IAM role credentials without a token, the version 1.0 role credentials are returned. If you retrieve the IAM role credentials using a valid signed token, the version 2.0 role credentials are returned.

If the state is `required`, you must send a signed token header with any instance metadata retrieval requests. In this state, retrieving the IAM role credential always returns the version 2.0 credentials; the version 1.0 credentials are not available.

Type: String

Valid Values: `optional` | `required`

Required: No

#### **InstanceId**

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **InstanceId**

The ID of the instance.

Type: String

#### **instanceMetadataOptions**

The metadata options for the instance.

Type: [InstanceMetadataOptionsResponse \(p. 1661\)](#) object

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1: Turn on token requirement

The following example disables access to the instance metadata unless a signed token is used in the instance metadata request header. To turn on token requirement, specify `required` for `HttpTokens`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceMetadataOptions
&InstanceId=i-1234567890abcdef0
&HttpTokens=required
&AUTHPARAMS
```

## Sample Response

```
<ModifyInstanceMetadataOptions xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <MetadataOptions>
    <state>pending</state>
    <HttpTokens>required</HttpTokens>
    <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
    <HttpEndpoint>enabled</HttpEndpoint>
  </MetadataOptions>
</ModifyInstanceMetadataOptions>
```

## Example 2: Turn off access to instance metadata

The following example disables access to the instance metadata by changing the HTTP endpoint state to disabled. To turn off access to instance metadata, specify disabled for `HttpEndpoint`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstanceMetadataOptions
&InstanceId=i-1234567890abcdef0
&HttpEndpoint=disabled
&AUTHPARAMS
```

## Sample Response

```
<ModifyInstanceMetadataOptions xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instanceId>i-1234567890abcdef0</instanceId>
  <MetadataOptions>
    <state>pending</state>
    <HttpTokens>required</HttpTokens>
    <HttpPutResponseHopLimit>1</HttpPutResponseHopLimit>
    <HttpEndpoint>disabled</HttpEndpoint>
  </MetadataOptions>
</ModifyInstanceMetadataOptions>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyInstancePlacement

Modifies the placement attributes for a specified instance. You can do the following:

- Modify the affinity between an instance and a [Dedicated Host](#). When affinity is set to `host` and the instance is not associated with a specific Dedicated Host, the next time the instance is launched, it is automatically associated with the host on which it lands. If the instance is restarted or rebooted, this relationship persists.
- Change the Dedicated Host with which an instance is associated.
- Change the instance tenancy of an instance.
- Move an instance to or from a [placement group](#).

At least one attribute for affinity, host ID, tenancy, or placement group name must be specified in the request. Affinity and tenancy can be modified in the same request.

To modify the host ID, tenancy, placement group, or partition for an instance, the instance must be in the stopped state.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Affinity

The affinity setting for the instance.

Type: String

Valid Values: `default` | `host`

Required: No

### GroupName

The name of the placement group in which to place the instance. For spread placement groups, the instance must have a tenancy of `default`. For cluster and partition placement groups, the instance must have a tenancy of `default` or `dedicated`.

To remove an instance from a placement group, specify an empty string ("").

Type: String

Required: No

### HostId

The ID of the Dedicated Host with which to associate the instance.

Type: String

Required: No

### HostResourceGroupArn

The ARN of the host resource group in which to place the instance.

Type: String

Required: No

### **InstanceId**

The ID of the instance that you are modifying.

Type: String

Required: Yes

### **PartitionNumber**

The number of the partition in which to place the instance. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

### **Tenancy**

The tenancy for the instance.

#### **Note**

For T3 instances, you can't change the tenancy from dedicated to host, or from host to dedicated. Attempting to make one of these unsupported tenancy changes results in the `InvalidTenancy` error code.

Type: String

Valid Values: `dedicated` | `host`

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example modifies the affinity of instance `i-0b33i09` so that it always has affinity with host `h-00548908djdsgfs`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstancePlacement
&Affinity=host
&HostId=h-00548908djdsgfs
&InstanceId=i-0b33i09
&AUTHPARAMS
```

## Sample Response

```
<ModifyInstancePlacementResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <return>true</item>
</ModifyInstancePlacementResponse>
```

## Example 2

This example places instance i-01234567812345678 in the placement group MyPlacementGroup.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyInstancePlacement
&InstanceId=i-01234567812345678
&GroupName=MyPlacementGroup
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyLaunchTemplate

Modifies a launch template. You can specify which version of the launch template to set as the default version. When launching an instance, the default version applies when a launch template version is not specified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraint: Maximum 128 ASCII characters.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **LaunchTemplateId**

The ID of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Required: No

### **LaunchTemplateName**

The name of the launch template. You must specify either the launch template ID or launch template name in the request.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [ a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### **SetDefaultVersion**

The version number of the launch template to set as the default version.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### launchTemplate

Information about the launch template.

Type: [LaunchTemplate \(p. 1734\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example sets version 2 of launch template lt-0a20c965061f64abc as the default version.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyLaunchTemplate
&LaunchTemplateId=lt-0a20c965061f64abc
&SetDefaultVersion=2
&AUTHPARAMS
```

#### Sample Response

```
<ModifyLaunchTemplateResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>5b348ca5-bb13-4106-baf9-14d02example</requestId>
  <launchTemplate>
    <createTime>1970-01-01T00:00:00.000Z</createTime>
    <createdBy>arn:aws:iam::123456789012:root</createdBy>
    <defaultVersionNumber>2</defaultVersionNumber>
    <latestVersionNumber>4</latestVersionNumber>
    <launchTemplateId>lt-0a20c965061f64abc</launchTemplateId>
    <launchTemplateName>MyLaunchTemplate</launchTemplateName>
  </launchTemplate>
</ModifyLaunchTemplateResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyManagedPrefixList

Modifies the specified managed prefix list.

Adding or removing entries in a prefix list creates a new version of the prefix list. Changing the name of the prefix list does not affect the version.

If you specify a current version number that does not match the true current version number, the request fails.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AddEntry.N

One or more entries to add to the prefix list.

Type: Array of [AddPrefixListEntry \(p. 1358\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

### CurrentVersion

The current version of the prefix list.

Type: Long

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### MaxEntries

The maximum number of entries for the prefix list. You cannot modify the entries of a prefix list and modify the size of a prefix list at the same time.

If any of the resources that reference the prefix list cannot support the new maximum size, the modify operation fails. Check the state message for the IDs of the first ten resources that do not support the new maximum size.

Type: Integer

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: Yes

### **PrefixListName**

A name for the prefix list.

Type: String

Required: No

### **RemoveEntry.N**

One or more entries to remove from the prefix list.

Type: Array of [RemovePrefixListEntry \(p. 1913\)](#) objects

Array Members: Minimum number of 0 items. Maximum number of 100 items.

Required: No

## Response Elements

The following elements are returned by the service.

### **prefixList**

Information about the prefix list.

Type: [ManagedPrefixList \(p. 1806\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies the specified managed prefix list by adding another entry.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyManagedPrefixList
&PrefixListId=pl-0123123123123aabb
&CurrentVersion=1
&AddEntry.1.Cidr=10.1.0.0/16
&AddEntry.1.Description=Miami office
&AUTHPARAMS
```

#### Sample Response

```
<ModifyManagedPrefixListResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>602f3752-c348-4b14-81e2-example</requestId>
<prefixList>
    <addressFamily>IPv4</addressFamily>
    <maxEntries>10</maxEntries>
    <ownerId>123456789012</ownerId>
    <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
    <prefixListId>pl-0123123123123aabb</prefixListId>
    <prefixListName>tgw-attachments</prefixListName>
    <state>modify-in-progress</state>
    <version>1</version>
</prefixList>
</ModifyManagedPrefixListResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyNetworkInterfaceAttribute

Modifies the specified network interface attribute. You can specify only one attribute at a time. You can use this action to attach and detach security groups from an existing EC2 instance.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attachment

Information about the interface attachment. If modifying the 'delete on termination' attribute, you must specify the ID of the interface attachment.

Type: [NetworkInterfaceAttachmentChanges \(p. 1846\)](#) object

Required: No

### Description

A description for the network interface.

Type: [AttributeValue \(p. 1382\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

### SecurityGroupId.N

Changes the security groups for the network interface. The new set of groups you specify replaces the current set. You must specify at least one group, even if it's just the default security group in the VPC. You must specify the ID of the security group, not the name.

Type: Array of strings

Required: No

### SourceDestCheck

Enable or disable source/destination checks, which ensure that the instance is either the source or the destination of any traffic that it receives. If the value is `true`, source/destination checks are enabled; otherwise, they are disabled. The default value is `true`. You must disable source/destination checks if the instance runs services such as network address translation, routing, or firewalls.

Type: [AttributeValue \(p. 1381\)](#) object

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example sets source/destination checking to false for the specified network interface.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyNetworkInterfaceAttribute
&NetworkInterfaceId=eni-ffda3197
&SourceDestCheck.Value=false
&AUTHPARAMS
```

### Sample Response

```
<ModifyNetworkInterfaceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>657a4623-5620-4232-b03b-427e852d71cf</requestId>
  <return>true</return>
</ModifyNetworkInterfaceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyReservedInstances

Modifies the Availability Zone, instance count, instance type, or network platform (EC2-Classic or EC2-VPC) of your Reserved Instances. The Reserved Instances to be modified must be identical, except for Availability Zone, network platform, and instance type.

For more information, see [Modifying Reserved Instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

A unique, case-sensitive token you provide to ensure idempotency of your modification request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **ReservedInstancesConfigurationSetItemType.N**

The configuration settings for the Reserved Instances to modify.

Type: Array of [ReservedInstancesConfiguration \(p. 1938\)](#) objects

Required: Yes

### **ReservedInstancesId.N**

The IDs of the Reserved Instances to modify.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **reservedInstancesModificationId**

The ID for the modification.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example illustrates one usage of `ModifyReservedInstances`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyReservedInstances
&ClientToken=myClientToken
&ReservedInstancesConfigurationSetItemType.1.AvailabilityZone=us-east-1a
&ReservedInstancesConfigurationSetItemType.1.InstanceCount=1
&ReservedInstancesConfigurationSetItemType.1.Platform=EC2-VPC
&ReservedInstancesConfigurationSetItemType.1.InstanceType=m1.small
&ReservedInstancesId.1=d16f7a91-4d0f-4f19-9d7f-a74d26b1ccfa
&AUTHPARAMS
```

#### Sample Response

```
<ModifyReservedInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>bef729b6-0731-4489-8881-2258746ae163</requestId>
<reservedInstancesModificationId>rimod-3aae219d-3d63-47a9-a7e9-e764example</
reservedInstancesModificationId>
</ModifyReservedInstancesResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifySecurityGroupRules

Modifies the rules of a security group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### GroupId

The ID of the security group.

Type: String

Required: Yes

### SecurityGroupRule.N

Information about the security group properties to update.

Type: Array of [SecurityGroupRuleUpdate \(p. 2000\)](#) objects

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns true if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifySnapshotAttribute

Adds or removes permission settings for the specified snapshot. You may add or remove specified AWS account IDs from a snapshot's list of create volume permissions, but you cannot do both in a single operation. If you need to both add and remove account IDs for a snapshot, you must use multiple operations. You can make up to 500 modifications to a snapshot in a single operation.

Encrypted snapshots and snapshots with AWS Marketplace product codes cannot be made public. Snapshots encrypted with your default KMS key cannot be shared with other accounts.

For more information about modifying snapshot permissions, see [Share a snapshot in the Amazon Elastic Compute Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The snapshot attribute to modify. Only volume creation permissions can be modified.

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: No

### CreateVolumePermission

A JSON representation of the snapshot attribute modification.

Type: [CreateVolumePermissionModifications \(p. 1464\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### OperationType

The type of operation to perform to the attribute.

Type: String

Valid Values: `add` | `remove`

Required: No

### SnapshotId

The ID of the snapshot.

Type: String

Required: Yes

#### UserGroup.N

The group to modify for the snapshot.

Type: Array of strings

Required: No

#### UserId.N

The account ID to modify for the snapshot.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example makes the snap-1234567890abcdef0 snapshot public, and gives the account with ID 111122223333 permission to create volumes from the snapshot.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Add.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

#### Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</ModifySnapshotAttributeResponse>
```

## Example

This example makes the snap-1234567890abcdef0 snapshot public, and removes the account with ID 111122223333 from the list of users with permission to create volumes from the snapshot.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&CreateVolumePermission.Remove.1.UserId=111122223333
&CreateVolumePermission.Add.1.Group=all
&AUTHPARAMS
```

### Sample Response

```
<ModifySnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ModifySnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifySpotFleetRequest

Modifies the specified Spot Fleet request.

You can only modify a Spot Fleet request of type `maintain`.

While the Spot Fleet request is being modified, it is in the `modifying` state.

To scale up your Spot Fleet, increase its target capacity. The Spot Fleet launches the additional Spot Instances according to the allocation strategy for the Spot Fleet request. If the allocation strategy is `lowestPrice`, the Spot Fleet launches instances using the Spot Instance pool with the lowest price. If the allocation strategy is `diversified`, the Spot Fleet distributes the instances across the Spot Instance pools. If the allocation strategy is `capacityOptimized`, Spot Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching.

To scale down your Spot Fleet, decrease its target capacity. First, the Spot Fleet cancels any open requests that exceed the new target capacity. You can request that the Spot Fleet terminate Spot Instances until the size of the fleet no longer exceeds the new target capacity. If the allocation strategy is `lowestPrice`, the Spot Fleet terminates the instances with the highest price per unit. If the allocation strategy is `capacityOptimized`, the Spot Fleet terminates the instances in the Spot Instance pools that have the least available Spot Instance capacity. If the allocation strategy is `diversified`, the Spot Fleet terminates instances across the Spot Instance pools. Alternatively, you can request that the Spot Fleet keep the fleet at its current size, but not replace any Spot Instances that are interrupted or that you terminate manually.

If you are finished with your Spot Fleet for now, but will use it again later, you can set the target capacity to 0.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Context

Reserved.

Type: String

Required: No

### ExcessCapacityTerminationPolicy

Indicates whether running Spot Instances should be terminated if the target capacity of the Spot Fleet request is decreased below the current size of the Spot Fleet.

Type: String

Valid Values: `noTermination` | `default`

Required: No

### LaunchTemplateConfig.N

The launch template and overrides. You can only use this parameter if you specified a launch template (`LaunchTemplateConfigs`) in your Spot Fleet request. If you specified `LaunchSpecifications` in your Spot Fleet request, then omit this parameter.

Type: Array of [LaunchTemplateConfig \(p. 1741\)](#) objects

Required: No

**OnDemandTargetCapacity**

The number of On-Demand Instances in the fleet.

Type: Integer

Required: No

**SpotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: Yes

**TargetCapacity**

The size of the fleet.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifySubnetAttribute

Modifies a subnet attribute. You can only modify one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AssignIpv6AddressOnCreation

Specify `true` to indicate that network interfaces created in the specified subnet should be assigned an IPv6 address. This includes a network interface that's created when launching an instance into the subnet (the instance therefore receives an IPv6 address).

If you enable the IPv6 addressing feature for your subnet, your network interface or instance only receives an IPv6 address if it's created using version 2016-11-15 or later of the Amazon EC2 API.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### CustomerOwnedIpv4Pool

The customer-owned IPv4 address pool associated with the subnet.

You must set this value when you specify `true` for `MapCustomerOwnedIpOnLaunch`.

Type: String

Required: No

### EnableDns64

Indicates whether DNS queries made to the Amazon-provided DNS Resolver in this subnet should return synthetic IPv6 addresses for IPv4-only destinations.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### MapCustomerOwnedIpOnLaunch

Specify `true` to indicate that network interfaces attached to instances created in the specified subnet should be assigned a customer-owned IPv4 address.

When this value is `true`, you must specify the customer-owned IP pool using `CustomerOwnedIpv4Pool`.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### MapPublicIpOnLaunch

Specify `true` to indicate that network interfaces attached to instances created in the specified subnet should be assigned a public IPv4 address.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### **SubnetId**

The ID of the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example modifies the attribute for `subnet-1a2b3c4d` to specify that all instances launched into this subnet are assigned a public IPv4 address.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&MapPublicIpOnLaunch.Value=true
&AUTHPARAMS
```

#### Sample Response

```
<ModifySubnetAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>c500a0bc-ad14-46c2-b9c5-e24aexample</requestId>
  <return>true</return>
</ModifySubnetAttributeResponse>
```

### Example 2

This example modifies the attribute for `subnet-1a2b3c4d` to specify that all network interfaces created in this subnet (and therefore all instances launched into this subnet with a new network interface) are assigned an IPv6 address.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifySubnetAttribute
&SubnetId=subnet-1a2b3c4d
&AssignIpv6AddressOnCreation.Value=true
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTrafficMirrorFilterNetworkServices

Allows or restricts mirroring network services.

By default, Amazon DNS network services are not eligible for Traffic Mirror. Use `AddNetworkServices` to add network services to a Traffic Mirror filter. When a network service is added to the Traffic Mirror filter, all traffic related to that network service will be mirrored. When you no longer want to mirror network services, use `RemoveNetworkServices` to remove the network services from the Traffic Mirror filter.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AddNetworkService.N**

The network service, for example Amazon DNS, that you want to mirror.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **RemoveNetworkService.N**

The network service, for example Amazon DNS, that you no longer want to mirror.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

### **TrafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

**trafficMirrorFilter**

The Traffic Mirror filter that the network service is associated with.

Type: [TrafficMirrorFilter \(p. 2088\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTrafficMirrorFilterRule

Modifies the specified Traffic Mirror rule.

`DestinationCidrBlock` and `SourceCidrBlock` must both be an IPv4 range or an IPv6 range.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

The description to assign to the Traffic Mirror rule.

Type: String

Required: No

### DestinationCidrBlock

The destination CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: No

### DestinationPortRange

The destination ports that are associated with the Traffic Mirror rule.

Type: [TrafficMirrorPortRangeRequest \(p. 2093\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Protocol

The protocol, for example TCP, to assign to the Traffic Mirror rule.

Type: Integer

Required: No

### RemoveField.N

The properties that you want to remove from the Traffic Mirror filter rule.

When you remove a property from a Traffic Mirror filter rule, the property is set to the default.

Type: Array of strings

Valid Values: `destination-port-range` | `source-port-range` | `protocol` | `description`

Required: No

**RuleAction**

The action to assign to the rule.

Type: String

Valid Values: `accept` | `reject`

Required: No

**RuleNumber**

The number of the Traffic Mirror rule. This number must be unique for each Traffic Mirror rule in a given direction. The rules are processed in ascending order by rule number.

Type: Integer

Required: No

**SourceCidrBlock**

The source CIDR block to assign to the Traffic Mirror rule.

Type: String

Required: No

**SourcePortRange**

The port range to assign to the Traffic Mirror rule.

Type: [TrafficMirrorPortRangeRequest](#) (p. 2093) object

Required: No

**TrafficDirection**

The type of traffic to assign to the rule.

Type: String

Valid Values: `ingress` | `egress`

Required: No

**TrafficMirrorFilterRuleId**

The ID of the Traffic Mirror rule.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

### **trafficMirrorFilterRule**

Modifies a Traffic Mirror rule.

Type: [TrafficMirrorFilterRule \(p. 2090\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTrafficMirrorSession

Modifies a Traffic Mirror session.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

The description to assign to the Traffic Mirror session.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PacketLength

The number of bytes in each packet to mirror. These are bytes after the VXLAN header. To mirror a subset, set this to the length (in bytes) to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target. Do not specify this parameter when you want to mirror the entire packet.

Type: Integer

Required: No

### RemoveField.N

The properties that you want to remove from the Traffic Mirror session.

When you remove a property from a Traffic Mirror session, the property is set to the default.

Type: Array of strings

Valid Values: `packet-length` | `description` | `virtual-network-id`

Required: No

### SessionNumber

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: No

### TrafficMirrorFilterId

The ID of the Traffic Mirror filter.

Type: String

Required: No

**TrafficMirrorSessionId**

The ID of the Traffic Mirror session.

Type: String

Required: Yes

**TrafficMirrorTargetId**

The Traffic Mirror target. The target must be in the same VPC as the source, or have a VPC peering connection with the source.

Type: String

Required: No

**VirtualNetworkId**

The virtual network ID of the Traffic Mirror session.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**trafficMirrorSession**

Information about the Traffic Mirror session.

Type: [TrafficMirrorSession \(p. 2094\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTransitGateway

Modifies the specified transit gateway. When you modify a transit gateway, the modified options are applied to new transit gateway attachments only. Your existing transit gateway attachments are not modified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

The description for the transit gateway.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Options

The options to modify.

Type: [ModifyTransitGatewayOptions \(p. 1813\)](#) object

Required: No

### TransitGatewayId

The ID of the transit gateway.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGateway

Describes a transit gateway.

Type: [TransitGateway \(p. 2098\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTransitGatewayPrefixListReference

Modifies a reference (route) to a prefix list in a specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Blackhole**

Indicates whether to drop traffic that matches this route.

Type: Boolean

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

### **TransitGatewayAttachmentId**

The ID of the attachment to which traffic is routed.

Type: String

Required: No

### **TransitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### transitGatewayPrefixListReference

Information about the prefix list reference.

Type: [TransitGatewayPrefixListReference \(p. 2131\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies the prefix list reference in the specified route table by changing the attachment to which traffic is routed.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyTransitGatewayPrefixListReference
&TransitGatewayRouteTableId=tgw-rtb-0f98a0a5d09abcabc
&PrefixListId=pl-001122334455aabbc
&TransitGatewayAttachmentId=tgw-attach-11223344aabbc112
&AUTHPARAMS
```

#### Sample Response

```
<ModifyTransitGatewayPrefixListReferenceResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>bbbd3e523-3e5b-4d3b-b010-example</requestId>
  <transitGatewayPrefixListReference>
    <blackhole>false</blackhole>
    <prefixListId>pl-001122334455aabbc</prefixListId>
    <prefixListOwnerId>123456789012</prefixListOwnerId>
    <state>modifying</state>
    <transitGatewayAttachment>
      <resourceId>tgw-012233aabbc11223</resourceId>
      <resourceType>peering</resourceType>
      <transitGatewayAttachmentId>tgw-attach-11223344aabbc112</transitGatewayAttachmentId>
    </transitGatewayAttachment>
    <transitGatewayRouteTableId>tgw-rtb-0f98a0a5d09abcabc</transitGatewayRouteTableId>
  </transitGatewayPrefixListReference>
</ModifyTransitGatewayPrefixListReferenceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyTransitGatewayVpcAttachment

Modifies the specified VPC attachment.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AddSubnetIds.N

The IDs of one or more subnets to add. You can specify at most one subnet per Availability Zone.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Options

The new VPC attachment options.

Type: [ModifyTransitGatewayVpcAttachmentRequestOptions \(p. 1815\)](#) object

Required: No

### RemoveSubnetIds.N

The IDs of one or more subnets to remove.

Type: Array of strings

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### **transitGatewayVpcAttachment**

Information about the modified attachment.

Type: [TransitGatewayVpcAttachment \(p. 2143\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVolume

You can modify several parameters of an existing EBS volume, including volume size, volume type, and IOPS capacity. If your EBS volume is attached to a current-generation EC2 instance type, you might be able to apply these changes without stopping the instance or detaching the volume from it. For more information about modifying EBS volumes, see [Amazon EBS Elastic Volumes](#) (Linux instances) or [Amazon EBS Elastic Volumes](#) (Windows instances).

When you complete a resize operation on your volume, you need to extend the volume's file-system size to take advantage of the new storage capacity. For more information, see [Extend a Linux file system](#) or [Extend a Windows file system](#).

You can use CloudWatch Events to check the status of a modification to an EBS volume. For information about CloudWatch Events, see the [Amazon CloudWatch Events User Guide](#). You can also track the status of a modification using [DescribeVolumesModifications](#) (p. 842). For information about tracking status changes using either method, see [Monitor the progress of volume modifications](#).

With previous-generation instance types, resizing an EBS volume might require detaching and reattaching the volume or stopping and restarting the instance.

If you reach the maximum volume modification rate per volume limit, you must wait at least six hours before applying further modifications to the affected EBS volume.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters](#) (p. 2247).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Iops

The target IOPS rate of the volume. This parameter is valid only for `gp3`, `io1`, and `io2` volumes.

The following are the supported values for each volume type:

- `gp3`: 3,000-16,000 IOPS
- `io1`: 100-64,000 IOPS
- `io2`: 100-64,000 IOPS

Default: The existing value is retained if you keep the same volume type. If you change the volume type to `io1`, `io2`, or `gp3`, the default is 3,000.

Type: Integer

Required: No

### MultiAttachEnabled

Specifies whether to enable Amazon EBS Multi-Attach. If you enable Multi-Attach, you can attach the volume to up to 16 [Nitro-based instances](#) in the same Availability Zone. This parameter is supported with `io1` and `io2` volumes only. For more information, see [Amazon EBS Multi-Attach](#) in the [Amazon Elastic Compute Cloud User Guide](#).

Type: Boolean

Required: No

#### Size

The target size of the volume, in GiB. The target volume size must be greater than or equal to the existing size of the volume.

The following are the supported volumes sizes for each volume type:

- gp2 and gp3: 1-16,384
- io1 and io2: 4-16,384
- st1 and sc1: 125-16,384
- standard: 1-1,024

Default: The existing size is retained.

Type: Integer

Required: No

#### Throughput

The target throughput of the volume, in MiB/s. This parameter is valid only for gp3 volumes. The maximum value is 1,000.

Default: The existing value is retained if the source and target volume type is gp3. Otherwise, the default value is 125.

Valid Range: Minimum value of 125. Maximum value of 1000.

Type: Integer

Required: No

#### VolumeId

The ID of the volume.

Type: String

Required: Yes

#### VolumeType

The target EBS volume type of the volume. For more information, see [Amazon EBS volume types](#) in the *Amazon Elastic Compute Cloud User Guide*.

Default: The existing type is retained.

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

#### **volumeModification**

Information about the volume modification.

Type: [VolumeModification \(p. 2173\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Modify size, type, and IOPS provisioning of a volume

This example illustrates one usage of `ModifyVolume`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolume
&VolumeId=vol-1234567890EXAMPLE
&VolumeType=io1
&Iops=10000
&Size=200
&Version=2016-11-15
```

#### Sample Response

```
<ModifyVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <volumeModification>
    <targetIops>10000</targetIops>
    <originalIops>300</originalIops>
    <modificationState>modifying</modificationState>
    <targetSize>200</targetSize>
    <targetVolumeType>io1</targetVolumeType>
    <targetMultiAttachEnabled>false</targetMultiAttachEnabled>
    <volumeId>vol-1234567890EXAMPLE</volumeId>
    <progress>0</progress>
    <startTime>2017-01-19T23:58:04.922Z</startTime>
    <originalSize>100</originalSize>
    <originalVolumeType>gp2</originalVolumeType>
    <originalMultiAttachEnabled>false</originalMultiAttachEnabled>
  </volumeModification>
</ModifyVolumeResponse>
```

## Modify Multi-Attach support

This example illustrates one usage of `ModifyVolume`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolume
&VolumeId=vol-1234567890EXAMPLE
```

```
&MultiAttachEnabled=true  
&Version=2016-11-15
```

## Sample Response

```
<ModifyVolumeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">  
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>  
  <volumeModification>  
    <originalMultiAttachEnabled>false</originalMultiAttachEnabled>  
    <targetMultiAttachEnabled>true</targetMultiAttachEnabled>  
  </volumeModification>  
</ModifyVolumeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVolumeAttribute

Modifies a volume attribute.

By default, all I/O operations for the volume are suspended when the data on the volume is determined to be potentially inconsistent, to prevent undetectable, latent data corruption. The I/O access to the volume can be resumed by first enabling I/O access and then checking the data consistency on your volume.

You can change the default behavior to resume I/O operations. We recommend that you change this only for boot volumes or for volumes that are stateless or disposable.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AutoEnableIO**

Indicates whether the volume should be auto-enabled for I/O operations.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **VolumeId**

The ID of the volume.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies the attribute of the volume vol-1234567890abcdef0.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVolumeAttribute
&VolumeId=vol-1234567890abcdef0
&AutoEnableIO.Value=true
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVolumeAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>5jkdf074-37ed-4004-8671-a78ee82bf1cbEXAMPLE</requestId>
  <return>true</return>
</ModifyVolumeAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcAttribute

Modifies the specified attribute of the specified VPC.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **EnableDnsHostnames**

Indicates whether the instances launched in the VPC get DNS hostnames. If enabled, instances in the VPC get DNS hostnames; otherwise, they do not.

You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute. You can only enable DNS hostnames if you've enabled DNS support.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### **EnableDnsSupport**

Indicates whether the DNS resolution is supported for the VPC. If enabled, queries to the Amazon provided DNS server at the 169.254.169.253 IP address, or the reserved IP address at the base of the VPC network range "plus two" succeed. If disabled, the Amazon provided DNS service in the VPC that resolves public DNS hostnames to IP addresses is not enabled.

You cannot modify the DNS resolution and DNS hostnames attributes in the same request. Use separate requests for each attribute.

Type: [AttributeBooleanValue \(p. 1381\)](#) object

Required: No

### **VpcId**

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disables support for DNS hostnames in the specified VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcAttribute
&VpcId=vpc-1a2b3c4d
&EnableDnsHostnames.Value=false
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d742de94-5f3e-4c3d-b6d4-440ceexample</requestId>
  <return>true</return>
</ModifyVpcAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcEndpoint

Modifies attributes of a specified VPC endpoint. The attributes that you can modify depend on the type of VPC endpoint (interface, gateway, or Gateway Load Balancer). For more information, see [VPC Endpoints](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AddRouteTableId.N

(Gateway endpoint) One or more route tables IDs to associate with the endpoint.

Type: Array of strings

Required: No

### AddSecurityGroupId.N

(Interface endpoint) One or more security group IDs to associate with the network interface.

Type: Array of strings

Required: No

### AddSubnetId.N

(Interface and Gateway Load Balancer endpoints) One or more subnet IDs in which to serve the endpoint. For a Gateway Load Balancer endpoint, you can specify only one subnet.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PolicyDocument

(Interface and gateway endpoints) A policy to attach to the endpoint that controls access to the service. The policy must be in valid JSON format.

Type: String

Required: No

### PrivateDnsEnabled

(Interface endpoint) Indicates whether a private hosted zone is associated with the VPC.

Type: Boolean

Required: No

### **RemoveRouteTableId.N**

(Gateway endpoint) One or more route table IDs to disassociate from the endpoint.

Type: Array of strings

Required: No

### **RemoveSecurityGroupId.N**

(Interface endpoint) One or more security group IDs to disassociate from the network interface.

Type: Array of strings

Required: No

### **RemoveSubnetId.N**

(Interface endpoint) One or more subnets IDs in which to remove the endpoint.

Type: Array of strings

Required: No

### **ResetPolicy**

(Gateway endpoint) Specify `true` to reset the policy document to the default policy. The default policy allows full access to the service.

Type: Boolean

Required: No

### **VpcEndpointId**

The ID of the endpoint.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example modifies gateway endpoint `vpce-1a2b3c4d` by associating route table `rtb-aaa222bb` with the endpoint, and resetting the policy document.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-1a2b3c4d
&ResetPolicy=true
&AddRouteTableId.1=rtb-aaa222bb
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcEndpointResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <return>true</return>
  <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
</ModifyVpcEndpointResponse>
```

### Example 2

This example modifies interface endpoint `vpce-0fe5b17a0707d6fa5` by adding subnet `subnet-d6fcaa8d` to the endpoint.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpoint
&VpcEndpointId=vpce-0fe5b17a0707d6fa5
&AddSubnetId.1=subnet-d6fcaa8d
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcEndpointConnectionNotification

Modifies a connection notification for VPC endpoint or VPC endpoint service. You can change the SNS topic for the notification, or the events for which to be notified.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ConnectionEvents.N**

One or more events for the endpoint. Valid values are Accept, Connect, Delete, and Reject.

Type: Array of strings

Required: No

### **ConnectionNotificationArn**

The ARN for the SNS topic for the notification.

Type: String

Required: No

### **ConnectionNotificationId**

The ID of the notification.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Returns true if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The following example modifies notification `vpce-nfn-abccb952bc8af7123` by modifying the endpoint events and the SNS topic ARN.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointConnectionNotification
&ConnectionNotificationId=vpce-nfn-abccb952bc8af7123
&ConnectionNotificationArn=arn:aws:sns:us-east-1:123456789012:mytopic
&ConnectionEvents.1=Accept
&ConnectionEvents.2=Reject
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcEndpointConnectionNotificationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
    <return>true</return>
</ModifyVpcEndpointConnectionNotificationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcEndpointServiceConfiguration

Modifies the attributes of your VPC endpoint service configuration. You can change the Network Load Balancers or Gateway Load Balancers for your service, and you can specify whether acceptance is required for requests to connect to your endpoint service through an interface VPC endpoint.

If you set or modify the private DNS name, you must prove that you own the private DNS domain name. For more information, see [VPC Endpoint Service Private DNS Name Verification](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AcceptanceRequired

Indicates whether requests to create an endpoint to your service must be accepted.

Type: Boolean

Required: No

### AddGatewayLoadBalancerArn.N

The Amazon Resource Names (ARNs) of Gateway Load Balancers to add to your service configuration.

Type: Array of strings

Required: No

### AddNetworkLoadBalancerArn.N

The Amazon Resource Names (ARNs) of Network Load Balancers to add to your service configuration.

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PrivateDnsName

(Interface endpoint configuration) The private DNS name to assign to the endpoint service.

Type: String

Required: No

### RemoveGatewayLoadBalancerArn.N

The Amazon Resource Names (ARNs) of Gateway Load Balancers to remove from your service configuration.

Type: Array of strings

Required: No

**RemoveNetworkLoadBalancerArn.N**

The Amazon Resource Names (ARNs) of Network Load Balancers to remove from your service configuration.

Type: Array of strings

Required: No

**RemovePrivateDnsName**

(Interface endpoint configuration) Removes the private DNS name of the endpoint service.

Type: Boolean

Required: No

**ServiceId**

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies service configuration `vpce-svc-03d5ebb7d9579a2b3` to specify that acceptance is required for interface VPC endpoint connection requests to the service, and to assign a private DNS name to the endpoint service.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointServiceConfiguration
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&AcceptanceRequired=true
&PrivateDnsName=myexampleservice.com
&AUTHPARAMS
```

## Sample Response

```
<ModifyVpcEndpointServiceConfigurationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
    <return>true</return>
</ModifyVpcEndpointServiceConfigurationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcEndpointServicePermissions

Modifies the permissions for your [VPC endpoint service](#). You can add or remove permissions for service consumers (IAM users, IAM roles, and AWS accounts) to connect to your endpoint service.

If you grant permissions to all principals, the service is public. Any users who know the name of a public service can send a request to attach an endpoint. If the service does not require manual approval, attachments are automatically approved.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AddAllowedPrincipals.N

The Amazon Resource Names (ARN) of one or more principals. Permissions are granted to the principals in this list. To grant permissions to all principals, specify an asterisk (\*).

Type: Array of strings

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### RemoveAllowedPrincipals.N

The Amazon Resource Names (ARN) of one or more principals. Permissions are revoked for principals in this list.

Type: Array of strings

Required: No

### ServiceId

The ID of the service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

**return**

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example permits all principals in AWS account 123456789012 to connect to your endpoint service `vpce-svc-03d5ebb7d9579a2b3`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcEndpointServicePermissions
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&AddAllowedPrincipals.1=arn:aws:iam::123456789012:root
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcEndpointServicePermissionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>08d80840-f750-42db-a6f8-2cd32example</requestId>
    <return>true</return>
</ModifyVpcEndpointServicePermissionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcPeeringConnectionOptions

Modifies the VPC peering connection options on one side of a VPC peering connection. You can do the following:

- Enable/disable communication over the peering connection between an EC2-Classic instance that's linked to your VPC (using ClassicLink) and instances in the peer VPC.
- Enable/disable communication over the peering connection between instances in your VPC and an EC2-Classic instance that's linked to the peer VPC.
- Enable/disable the ability to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.

If the peered VPCs are in the same AWS account, you can enable DNS resolution for queries from the local VPC. This ensures that queries from the local VPC resolve to private IP addresses in the peer VPC. This option is not available if the peered VPCs are in different different AWS accounts or different Regions. For peered VPCs in different AWS accounts, each AWS account owner must initiate a separate request to modify the peering connection options. For inter-region peering connections, you must use the Region for the requester VPC to modify the requester VPC peering options and the Region for the accepter VPC to modify the accepter VPC peering options. To verify which VPCs are the accepter and the requester for a VPC peering connection, use the [DescribeVpcPeeringConnections \(p. 881\)](#) command.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AcceptorPeeringConnectionOptions

The VPC peering connection options for the accepter VPC.

Type: [PeeringConnectionOptionsRequest \(p. 1864\)](#) object

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RequesterPeeringConnectionOptions

The VPC peering connection options for the requester VPC.

Type: [PeeringConnectionOptionsRequest \(p. 1864\)](#) object

Required: No

### VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### accepterPeeringConnectionOptions

Information about the VPC peering connection options for the accepter VPC.

Type: [PeeringConnectionOptions \(p. 1863\)](#) object

### requesterPeeringConnectionOptions

Information about the VPC peering connection options for the requester VPC.

Type: [PeeringConnectionOptions \(p. 1863\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

In this example, you have an EC2-Classic instance linked to your VPC. You want to enable communication over the VPC peering connection to allow the linked EC2-Classic instance to communicate with instances in the peer VPC. You were the requester of the VPC peering connection, therefore you modify the requester VPC peering connection options.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&RequesterPeeringConnectionOptions.AllowEgressFromLocalClassicLinkToRemoteVpc=true
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>8d977c82-8aba-4cd1-81ca-example</requestId>
  <requesterPeeringConnectionOptions>
    <allowEgressFromLocalClassicLinkToRemoteVpc>true</
    allowEgressFromLocalClassicLinkToRemoteVpc>
  </requesterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
```

## Example

In this example, you want to enable communication from instances in your local VPC to any linked EC2-Classic instances in the peer VPC. You were the accepter of the VPC peering connection, therefore you modify the accepter VPC peering connection options.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AcceptorPeeringConnectionOptions.AllowEgressFromLocalVpcToRemoteClassicLink=true
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>f5131846-7920-4359-b565-example</requestId>
  <accepterPeeringConnectionOptions>
    <allowEgressFromLocalVpcToRemoteClassicLink>true</
allowEgressFromLocalVpcToRemoteClassicLink>
  </accepterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
```

## Example

In this example, you want the public DNS hostnames of your instances in your VPC to resolve to private IP addresses when queried from instances in the peer VPC. You were the accepter of the VPC peering connection, therefore you modify the accepter VPC peering connection options.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcPeeringConnectionOptions
&VpcPeeringConnectionId=pcx-1a2b3c4d
&AcceptorPeeringConnectionOptions.AllowDnsResolutionFromRemoteVpc=true
&AUTHPARAMS
```

### Sample Response

```
<ModifyVpcPeeringConnectionOptionsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>f5131846-7920-4359-b565-example</requestId>
  <accepterPeeringConnectionOptions>
    <allowDnsResolutionFromRemoteVpc>true</allowDnsResolutionFromRemoteVpc>
  </accepterPeeringConnectionOptions>
</ModifyVpcPeeringConnectionOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpcTenancy

Modifies the instance tenancy attribute of the specified VPC. You can change the instance tenancy attribute of a VPC to default only. You cannot change the instance tenancy attribute to dedicated.

After you modify the tenancy of the VPC, any new instances that you launch into the VPC have a tenancy of default, unless you specify otherwise during launch. The tenancy of any existing instances in the VPC is not affected.

For more information, see [Dedicated Instances](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### InstanceTenancy

The instance tenancy attribute for the VPC.

Type: String

Valid Values: default

Required: Yes

### VpcId

The ID of the VPC.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns true if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example modifies the tenancy of vpc-1a2b3c4d to default.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ModifyVpcTenancy
&VpcId=vpc-1a2b3c4d
&InstanceTenancy=default
&AUTHPARAMS
```

#### Sample Response

```
<ModifyVpcTenancyResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <return>true</return>
  <requestId>125acea6-ba5c-4c6e-8e17-example</requestId>
</ModifyVpcTenancyResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpnConnection

Modifies the customer gateway or the target gateway of an AWS Site-to-Site VPN connection. To modify the target gateway, the following migration options are available:

- An existing virtual private gateway to a new virtual private gateway
- An existing virtual private gateway to a transit gateway
- An existing transit gateway to a new transit gateway
- An existing transit gateway to a virtual private gateway

Before you perform the migration to the new gateway, you must configure the new gateway. Use [CreateVpnGateway \(p. 357\)](#) to create a virtual private gateway, or [CreateTransitGateway \(p. 300\)](#) to create a transit gateway.

This step is required when you migrate from a virtual private gateway with static routes to a transit gateway.

You must delete the static routes before you migrate to the new gateway.

Keep a copy of the static route before you delete it. You will need to add back these routes to the transit gateway after the VPN connection migration is complete.

After you migrate to the new gateway, you might need to modify your VPC route table. Use [CreateRoute \(p. 259\)](#) and [DeleteRoute \(p. 413\)](#) to make the changes described in [Update VPC route tables](#) in the *AWS Site-to-Site VPN User Guide*.

When the new gateway is a transit gateway, modify the transit gateway route table to allow traffic between the VPC and the AWS Site-to-Site VPN connection. Use [CreateTransitGatewayRoute \(p. 314\)](#) to add the routes.

If you deleted VPN static routes, you must add the static routes to the transit gateway route table.

After you perform this operation, the VPN endpoint's IP addresses on the AWS side and the tunnel options remain intact. Your AWS Site-to-Site VPN connection will be temporarily unavailable for a brief period while we provision the new endpoints.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CustomerGatewayId**

The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **TransitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

### **VpnConnectionId**

The ID of the VPN connection.

Type: String

Required: Yes

### **VpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **vpnConnection**

Describes a VPN connection.

Type: [VpnConnection \(p. 2202\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# ModifyVpnConnectionOptions

Modifies the connection options for your Site-to-Site VPN connection.

When you modify the VPN connection options, the VPN endpoint IP addresses on the AWS side do not change, and the tunnel options do not change. Your VPN connection will be temporarily unavailable for a brief period while the VPN connection is updated.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### LocalIpv4NetworkCidr

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: 0.0.0.0/0

Type: String

Required: No

### LocalIpv6NetworkCidr

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: ::/0

Type: String

Required: No

### RemoteIpv4NetworkCidr

The IPv4 CIDR on the AWS side of the VPN connection.

Default: 0.0.0.0/0

Type: String

Required: No

### RemoteIpv6NetworkCidr

The IPv6 CIDR on the AWS side of the VPN connection.

Default: ::/0

Type: String

Required: No

### **VpnConnectionId**

The ID of the Site-to-Site VPN connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **vpnConnection**

Describes a VPN connection.

Type: [VpnConnection \(p. 2202\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpnTunnelCertificate

Modifies the VPN tunnel endpoint certificate.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### VpnConnectionId

The ID of the AWS Site-to-Site VPN connection.

Type: String

Required: Yes

### VpnTunnelOutsideIpAddress

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpnConnection

Describes a VPN connection.

Type: [VpnConnection \(p. 2202\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpnTunnelOptions

Modifies the options for a VPN tunnel in an AWS Site-to-Site VPN connection. You can modify multiple options for a tunnel in a single request, but you can only modify one tunnel at a time. For more information, see [Site-to-Site VPN tunnel options for your Site-to-Site VPN connection](#) in the *AWS Site-to-Site VPN User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TunnelOptions

The tunnel options to modify.

Type: [ModifyVpnTunnelOptionsSpecification \(p. 1816\)](#) object

Required: Yes

### VpnConnectionId

The ID of the AWS Site-to-Site VPN connection.

Type: String

Required: Yes

### VpnTunnelOutsideIpAddress

The external IP address of the VPN tunnel.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### vpnConnection

Describes a VPN connection.

Type: [VpnConnection \(p. 2202\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# MonitorInstances

Enables detailed monitoring for a running instance. Otherwise, basic monitoring is enabled. For more information, see [Monitor your instances using CloudWatch](#) in the *Amazon EC2 User Guide*.

To disable detailed monitoring, see [UnmonitorInstances \(p. 1328\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId.N

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### instancesSet

The monitoring information.

Type: Array of [InstanceMonitoring \(p. 1663\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example enables detailed monitoring for the specified two instances.

## Sample Request

```
https://ec2.amazonaws.com/?Action=MonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

## Sample Response

```
<MonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <monitoring>
      <state>pending</state>
    </monitoring>
  </item>
  <item>
    <instanceId>i-0598c7d356eba48d7</instanceId>
    <monitoring>
      <state>pending</state>
    </monitoring>
  </item>
</instancesSet>
</MonitorInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## MoveAddressToVpc

Moves an Elastic IP address from the EC2-Classic platform to the EC2-VPC platform. The Elastic IP address must be allocated to your account for more than 24 hours, and it must not be associated with an instance. After the Elastic IP address is moved, it is no longer available for use in the EC2-Classic platform, unless you move it back using the [RestoreAddressToClassic \(p. 1269\)](#) request. You cannot move an Elastic IP address that was originally allocated for use in the EC2-VPC platform to the EC2-Classic platform.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### PublicIp

The Elastic IP address.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### allocationId

The allocation ID for the Elastic IP address.

Type: String

### requestId

The ID of the request.

Type: String

### status

The status of the move of the IP address.

Type: String

Valid Values: `MoveInProgress` | `InVpc` | `InClassic`

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example moves Elastic IP address 54.123.4.56 to the EC2-VPC platform.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=MoveAddressToVpc
&publicIp=54.123.4.56
&AUTHPARAMS
```

#### Sample Response

```
<MoveAddressToVpcResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
  <allocationId>eipalloc-1cfe1879</allocationId>
  <status>InVpc</status>
</MoveAddressToVpcResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ProvisionByoipCidr

Provisions an IPv4 or IPv6 address range for use with your AWS resources through bring your own IP addresses (BYOIP) and creates a corresponding address pool. After the address range is provisioned, it is ready to be advertised using [AdvertiseByoipCidr \(p. 42\)](#).

AWS verifies that you own the address range and are authorized to advertise it. You must ensure that the address range is registered to you and that you created an RPKI ROA to authorize Amazon ASNs 16509 and 14618 to advertise the address range. For more information, see [Bring your own IP addresses \(BYOIP\)](#) in the *Amazon Elastic Compute Cloud User Guide*.

Provisioning an address range is an asynchronous operation, so the call returns immediately, but the address range is not ready to use until its status changes from pending-provision to provisioned. To monitor the status of an address range, use [DescribeByoipCidrs \(p. 506\)](#). To allocate an Elastic IP address from your IPv4 address pool, use [AllocateAddress \(p. 44\)](#) with either the specific address from the address pool or the ID of the address pool.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Cidr

The public IPv4 or IPv6 address range, in CIDR notation. The most specific IPv4 prefix that you can specify is /24. The most specific IPv6 prefix you can specify is /56. The address range cannot overlap with another address range that you've brought to this or another Region.

Type: String

Required: Yes

### CidrAuthorizationContext

A signed document that proves that you are authorized to bring the specified IP address range to Amazon using BYOIP.

Type: [CidrAuthorizationContext \(p. 1421\)](#) object

Required: No

### Description

A description for the address range and the address pool.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### MultiRegion

Reserved.

Type: Boolean

Required: No

#### **PoolTagSpecification.N**

The tags to apply to the address pool.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **PubliclyAdvertisible**

(IPv6 only) Indicate whether the address range will be publicly advertised to the internet.

Default: true

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

#### **byoipCidr**

Information about the address range.

Type: [ByoipCidr \(p. 1397\)](#) object

#### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# PurchaseHostReservation

Purchase a reservation with configurations that match those of your Dedicated Host. You must have active Dedicated Hosts in your account before you purchase a reservation. This action results in the specified reservation being purchased and charged to your account.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **CurrencyCode**

The currency in which the `totalUpfrontPrice`, `LimitPrice`, and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### **HostIdSet.N**

The IDs of the Dedicated Hosts with which the reservation will be associated.

Type: Array of strings

Required: Yes

### **LimitPrice**

The specified limit is checked against the total upfront cost of the reservation (calculated as the offering's upfront cost multiplied by the host count). If the total upfront cost is greater than the specified price limit, the request fails. This is used to ensure that the purchase does not exceed the expected upfront cost of the purchase. At this time, the only supported currency is USD. For example, to indicate a limit price of USD 100, specify 100.00.

Type: String

Required: No

### **OfferingId**

The ID of the offering.

Type: String

Required: Yes

### **TagSpecification.N**

The tags to apply to the Dedicated Host Reservation during purchase.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

### **currencyCode**

The currency in which the `totalUpfrontPrice` and `totalHourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

### **purchase**

Describes the details of the purchase.

Type: Array of [Purchase \(p. 1906\)](#) objects

### **requestId**

The ID of the request.

Type: String

### **totalHourlyPrice**

The total hourly price of the reservation calculated per hour.

Type: String

### **totalUpfrontPrice**

The total amount charged to your account when you purchase the reservation.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example uses the same configuration information from [GetHostReservationPurchasePreview \(p. 997\)](#) to make the purchase and associate the offering with the specified Dedicated Host.

## Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseHostReservation
&OfferingId=hro-0eb3541dght849c2d
&HostIdSet=h-0fgr9ddb0ecd0a1cd
&AUTHPARAMS
```

## Sample Response

```
<PurchaseHostReservationResult xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-84c3-b40d-gtyk-a9983EXAMPLE</requestId>
    <purchase>
      <item>
        <duration>31536000</duration>
        <upfrontPrice>7453.000</upfrontPrice>
        <paymentOption>PartialUpfront</paymentOption>
        <instanceFamily>m4</instanceFamily>
        <hourlyPrice>0.850</hourlyPrice>
        <hostIdSet>
          <item>h-0fgr9ddb0ecd0a1cd</item>
        </hostIdSet>
      </item>
    </purchase>
    <totalHourlyPrice>0.850</totalHourlyPrice>
    <totalUpfrontPrice>7453.000</totalUpfrontPrice>
</PurchaseHostReservationResult>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# PurchaseReservedInstancesOffering

Purchases a Reserved Instance for use with your account. With Reserved Instances, you pay a lower hourly rate compared to On-Demand instance pricing.

Use [DescribeReservedInstancesOfferings \(p. 730\)](#) to get a list of Reserved Instance offerings that match your specifications. After you've purchased a Reserved Instance, you can check for your new Reserved Instance with [DescribeReservedInstances \(p. 719\)](#).

To queue a purchase for a future date and time, specify a purchase time. If you do not specify a purchase time, the default is the current time.

For more information, see [Reserved Instances](#) and [Reserved Instance Marketplace](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceCount

The number of Reserved Instances to purchase.

Type: Integer

Required: Yes

### LimitPrice

Specified for Reserved Instance Marketplace offerings to limit the total order and ensure that the Reserved Instances are not purchased at unexpected prices.

Type: [ReservedInstanceLimitPrice \(p. 1931\)](#) object

Required: No

### PurchaseTime

The time at which to purchase the Reserved Instance, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

Required: No

### ReservedInstancesOfferingId

The ID of the Reserved Instance offering to purchase.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### reservedInstancesId

The IDs of the purchased Reserved Instances. If your purchase crosses into a discounted pricing tier, the final Reserved Instances IDs might change. For more information, see [Crossing pricing tiers](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example uses a limit price to limit the total purchase order of Standard Reserved Instances from the Reserved Instance Marketplace.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
&LimitPrice.Amount=200
&InstanceCount=2
&AUTHPARAMS
```

#### Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

### Example 2

This example illustrates a purchase of a Reserved Instances offering.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=PurchaseReservedInstancesOffering
&ReservedInstancesOfferingId=4b2293b4-5813-4cc8-9ce3-1957fEXAMPLE
```

```
&InstanceCount=2
&AUTHPARAMS
```

## Sample Response

```
<PurchaseReservedInstancesOfferingResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <reservedInstancesId>e5a2ff3b-7d14-494f-90af-0b5d0EXAMPLE</reservedInstancesId>
</PurchaseReservedInstancesOfferingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# PurchaseScheduledInstances

Purchases the Scheduled Instances with the specified schedule.

Scheduled Instances enable you to purchase Amazon EC2 compute capacity by the hour for a one-year term. Before you can purchase a Scheduled Instance, you must call [DescribeScheduledInstanceAvailability \(p. 745\)](#) to check for available schedules and obtain a purchase token. After you purchase a Scheduled Instance, you must call [RunScheduledInstances \(p. 1297\)](#) during each scheduled time period.

After you purchase a Scheduled Instance, you can't cancel, modify, or resell your purchase.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **PurchaseRequest.N**

The purchase requests.

Type: Array of [PurchaseRequest \(p. 1908\)](#) objects

Array Members: Minimum number of 1 item.

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **scheduledInstanceSet**

Information about the Scheduled Instances.

Type: Array of [ScheduledInstance \(p. 1970\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## RebootInstances

Requests a reboot of the specified instances. This operation is asynchronous; it only queues a request to reboot the specified instances. The operation succeeds if the instances are valid and belong to you. Requests to reboot terminated instances are ignored.

If an instance does not cleanly shut down within a few minutes, Amazon EC2 performs a hard reboot.

For more information about troubleshooting, see [Troubleshoot an unreachable instance](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId.N

The instance IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example reboots two instances.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RebootInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

#### Sample Response

```
<RebootInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</RebootInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RegisterImage

Registers an AMI. When you're creating an AMI, this is the final step you must complete before you can launch an instance from the AMI. For more information about creating AMIs, see [Creating your own AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Note

For Amazon EBS-backed instances, [CreateImage \(p. 195\)](#) creates and registers the AMI in a single request, so you don't have to register the AMI yourself.

If needed, you can deregister an AMI at any time. Any modifications you make to an AMI backed by an instance store volume invalidates its registration. If you make changes to an image, deregister the previous image and register the new image.

## Register a snapshot of a root device volume

You can use `RegisterImage` to create an Amazon EBS-backed Linux AMI from a snapshot of a root device volume. You specify the snapshot using a block device mapping. You can't set the encryption state of the volume using the block device mapping. If the snapshot is encrypted, or encryption by default is enabled, the root volume of an instance launched from the AMI is encrypted.

For more information, see [Create a Linux AMI from a snapshot](#) and [Use encryption with Amazon EBS-backed AMIs](#) in the *Amazon Elastic Compute Cloud User Guide*.

## AWS Marketplace product codes

If any snapshots have AWS Marketplace product codes, they are copied to the new AMI.

Windows and some Linux distributions, such as Red Hat Enterprise Linux (RHEL) and SUSE Linux Enterprise Server (SLES), use the Amazon EC2 billing product code associated with an AMI to verify the subscription status for package updates. To create a new AMI for operating systems that require a billing product code, instead of registering the AMI, do the following to preserve the billing product code association:

1. Launch an instance from an existing AMI with that billing product code.
2. Customize the instance.
3. Create an AMI from the instance using [CreateImage \(p. 195\)](#).

If you purchase a Reserved Instance to apply to an On-Demand Instance that was launched from an AMI with a billing product code, make sure that the Reserved Instance has the matching billing product code. If you purchase a Reserved Instance without the matching billing product code, the Reserved Instance will not be applied to the On-Demand Instance. For information about how to obtain the platform details and billing information of an AMI, see [Understanding AMI billing](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Architecture

The architecture of the AMI.

Default: For Amazon EBS-backed AMIs, `i386`. For instance store-backed AMIs, the architecture specified in the manifest file.

Type: String

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

**BillingProduct.N**

The billing product codes. Your account must be authorized to specify billing product codes. Otherwise, you can use the AWS Marketplace to bill for the use of an AMI.

Type: Array of strings

Required: No

**BlockDeviceMapping.N**

The block device mapping entries.

If you specify an Amazon EBS volume using the ID of an Amazon EBS snapshot, you can't specify the encryption state of the volume.

If you create an AMI on an Outpost, then all backing snapshots must be on the same Outpost or in the Region of that Outpost. AMIs on an Outpost that include local snapshots can be used to launch instances on the same Outpost only. For more information, [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

**BootMode**

The boot mode of the AMI. For more information, see [Boot modes](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid Values: `legacy-bios` | `uefi`

Required: No

**Description**

A description for your AMI.

Type: String

Required: No

**DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EnaSupport**

Set to `true` to enable enhanced networking with ENA for the AMI and any instances that you launch from the AMI.

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: Boolean

Required: No

**ImageLocation**

The full path to your AMI manifest in Amazon S3 storage. The specified bucket must have the `aws-exec-read` canned access control list (ACL) to ensure that it can be accessed by Amazon EC2. For more information, see [Canned ACLs](#) in the *Amazon S3 Service Developer Guide*.

Type: String

Required: No

**KernelId**

The ID of the kernel.

Type: String

Required: No

**Name**

A name for your AMI.

Constraints: 3-128 alphanumeric characters, parentheses (()), square brackets ([]), spaces ( ), periods (.), slashes (/), dashes (-), single quotes ('), at-signs (@), or underscores(\_)

Type: String

Required: Yes

**RamdiskId**

The ID of the RAM disk.

Type: String

Required: No

**RootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: String

Required: No

**SriovNetSupport**

Set to `simple` to enable enhanced networking with the Intel 82599 Virtual Function interface for the AMI and any instances that you launch from the AMI.

There is no way to disable `sriovNetSupport` at this time.

This option is supported only for HVM AMIs. Specifying this option with a PV AMI can make instances launched from the AMI unreachable.

Type: String

Required: No

### **VirtualizationType**

The type of virtualization (hvm | paravirtual).

Default: paravirtual

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **imageId**

The ID of the newly registered AMI.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example registers the AMI specified in the `my-new-image.manifest.xml` manifest file, located in the bucket called `myawsbucket`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&ImageLocation=myawsbucket/my-new-image.manifest.xml
&AUTHPARAMS
```

#### Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

### Example 2

This example specifies a snapshot for the root device of an Amazon EBS-backed AMI.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&Name=MyImage
&AUTHPARAMS
```

## Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## Example 3

This example registers an AMI with a block device mapping for three Amazon EBS volumes. The first volume is the root device volume based on an Amazon EBS snapshot. The second volume is based on another snapshot. The third volume is an empty 100 GiB Amazon EBS volume.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterImage
&RootDeviceName=/dev/sda1
&BlockDeviceMapping.1.DeviceName=/dev/sda1
&BlockDeviceMapping.1.Ebs.SnapshotId=snap-1234567890abcdef0
&BlockDeviceMapping.2.DeviceName=/dev/sdb
&BlockDeviceMapping.2.Ebs.SnapshotId=snap-1234567890abcdef1
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&Name=MyImage
&AUTHPARAMS
```

## Sample Response

```
<RegisterImageResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <imageId>ami-1a2b3c4d</imageId>
</RegisterImageResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)

- [AWS SDK for Ruby V3](#)

# RegisterInstanceEventNotificationAttributes

Registers a set of tag keys to include in scheduled event notifications for your resources.

To remove tags, use [DeregisterInstanceEventNotificationAttributes \(p. 479\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceTagAttribute

Information about the tag keys to register.

Type: [RegisterInstanceTagAttributeRequest \(p. 1912\)](#) object

Required: No

## Response Elements

The following elements are returned by the service.

### instanceTagAttribute

The resulting set of tag keys.

Type: [InstanceTagNotificationAttribute \(p. 1698\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RegisterTransitGatewayMulticastGroupMembers

Registers members (network interfaces) with the transit gateway multicast group. A member is a network interface associated with a supported EC2 instance that receives multicast traffic. For information about supported instances, see [Multicast Consideration](#) in *Amazon VPC Transit Gateways*.

After you add the members, use [SearchTransitGatewayMulticastGroups](#) to verify that the members were added to the transit gateway multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### NetworkInterfaceIds.N

The group members' network interface IDs to register with the transit gateway multicast group.

Type: Array of strings

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### registeredMulticastGroupMembers

Information about the registered transit gateway multicast group members.

Type: [TransitGatewayMulticastRegisteredGroupMembers \(p. 2124\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example registers the network interface as a group member eni-0e246d3269EXAMPLE with the multicast domain tgw-mcast-domain-0c4905cef7EXAMPLE.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterTransitGatewayMulticastGroupMembers
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-0e246d3269EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<RegisterTransitGatewayMulticastGroupMembersResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>6f4167cd-0870-4858-8872-f1c34EXAMPLE</requestId>
  <registeredMulticastGroupMembers>
    <groupIpAddress>224.0.1.0</groupIpAddress>
    <registeredNetworkInterfaceIds>
      <item>eni-0e246d3269EXAMPLE</item>
    </registeredNetworkInterfaceIds>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
  </registeredMulticastGroupMembers>
</RegisterTransitGatewayMulticastGroupMembersResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RegisterTransitGatewayMulticastGroupSources

Registers sources (network interfaces) with the specified transit gateway multicast group.

A multicast source is a network interface attached to a supported instance that sends multicast traffic. For information about supported instances, see [Multicast Considerations in Amazon VPC Transit Gateways](#).

After you add the source, use [SearchTransitGatewayMulticastGroups](#) to verify that the source was added to the multicast group.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### NetworkInterfaceIds.N

The group sources' network interface IDs to register with the transit gateway multicast group.

Type: Array of strings

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### registeredMulticastGroupSources

Information about the transit gateway multicast group sources.

Type: [TransitGatewayMulticastRegisteredGroupSources \(p. 2125\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example registers the network interface as a group source eni-07f290fc3cEXAMPLE with the multicast domain tgw-mcast-domain-0c4905cef7EXAMPLE.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RegisterTransitGatewayMulticastGroupSources
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef7EXAMPLE
&NetworkInterfaceIds=eni-07f290fc3cEXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<RegisterTransitGatewayMulticastGroupSourcesResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
  <requestId>b66c84ed-eb8a-4e6d-8d79-2347fEXAMPLE</requestId>
  <registeredMulticastGroupSources>
    <groupIpAddress>224.0.1.0</groupIpAddress>
    <registeredNetworkInterfaceIds>
      <item>eni-07f290fc3cEXAMPLE</item>
    </registeredNetworkInterfaceIds>
    <transitGatewayMulticastDomainId>tgw-mcast-domain-0c4905cef7EXAMPLE</
transitGatewayMulticastDomainId>
  </registeredMulticastGroupSources>
</RegisterTransitGatewayMulticastGroupSourcesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)



# RejectTransitGatewayMulticastDomainAssociations

Rejects a request to associate cross-account subnets with a transit gateway multicast domain.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SubnetIds.N

The IDs of the subnets to associate with the transit gateway multicast domain.

Type: Array of strings

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway attachment.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### associations

Describes the multicast domain associations.

Type: [TransitGatewayMulticastDomainAssociations \(p. 2119\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RejectTransitGatewayPeeringAttachment

Rejects a transit gateway peering attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the transit gateway peering attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayPeeringAttachment

The transit gateway peering attachment.

Type: [TransitGatewayPeeringAttachment \(p. 2128\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example rejects the specified transit gateway peering attachment by specifying its attachment ID.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RejectTransitGatewayPeeringAttachment
&TransitGatewayAttachmentId=tgw-attach-12345678901abcd12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RejectTransitGatewayVpcAttachment

Rejects a request to attach a VPC to a transit gateway.

The VPC attachment must be in the `pendingAcceptance` state. Use [DescribeTransitGatewayVpcAttachments \(p. 830\)](#) to view your pending VPC attachment requests. Use [AcceptTransitGatewayVpcAttachment \(p. 36\)](#) to accept a VPC attachment request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### TransitGatewayAttachmentId

The ID of the attachment.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### transitGatewayVpcAttachment

Information about the attachment.

Type: [TransitGatewayVpcAttachment \(p. 2143\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RejectVpcEndpointConnections

Rejects one or more VPC endpoint connection requests to your VPC endpoint service.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ServiceId

The ID of the service.

Type: String

Required: Yes

### VpcEndpointId.N

The IDs of one or more VPC endpoints.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### unsuccessful

Information about the endpoints that were not rejected, if applicable.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example rejects the request for VPC endpoint `vpce-0c1308d7312217cd7` to connect to your service `vpce-svc-03d5ebb7d9579a2b3`.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RejectVpcEndpointConnections
&ServiceId=vpce-svc-03d5ebb7d9579a2b3
&VpcEndpointId.1=vpce-0c1308d7312217cd7
&AUTHPARAMS
```

#### Sample Response

```
<RejectVpcEndpointConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>986a2264-8a40-4da8-8f11-e8aaexample</requestId>
  <unsuccessful/>
</RejectVpcEndpointConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RejectVpcPeeringConnection

Rejects a VPC peering connection request. The VPC peering connection must be in the pending-acceptance state. Use the [DescribeVpcPeeringConnections \(p. 881\)](#) request to view your outstanding VPC peering connection requests. To delete an active VPC peering connection, or to delete a VPC peering connection request that you initiated, use [DeleteVpcPeeringConnection \(p. 467\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### VpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example rejects the specified VPC peering connection request.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RejectVpcPeeringConnection
&vpcPeeringConnectionId=pcx-1a2b3c4d
&AUTHPARAMS
```

## Sample Response

```
<RejectVpcPeeringConnectionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>7a62c49f-347e-4fc4-9331-6e8eEXAMPLE</requestId>
  <return>true</return>
</RejectVpcPeeringConnectionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReleaseAddress

Releases the specified Elastic IP address.

[EC2-Classic, default VPC] Releasing an Elastic IP address automatically disassociates it from any instance that it's associated with. To disassociate an Elastic IP address without releasing it, use [DisassociateAddress \(p. 923\)](#).

[Nondefault VPC] You must use [DisassociateAddress \(p. 923\)](#) to disassociate the Elastic IP address before you can release it. Otherwise, Amazon EC2 returns an error (`InvalidIPAddress.InUse`).

After releasing an Elastic IP address, it is released to the IP address pool. Be sure to update your DNS records and any servers or devices that communicate with the address. If you attempt to release an Elastic IP address that you already released, you'll get an `AuthFailure` error if the address is already allocated to another AWS account.

[EC2-VPC] After you release an Elastic IP address for use in a VPC, you might be able to recover it. For more information, see [AllocateAddress \(p. 44\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId

[EC2-VPC] The allocation ID. Required for EC2-VPC.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkBorderGroup

The set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

If you provide an incorrect network border group, you receive an `InvalidAddress.NotFound` error.

You cannot use a network border group with EC2 Classic. If you attempt this operation on EC2 classic, you receive an `InvalidParameterCombination` error.

Type: String

Required: No

### PublicIp

[EC2-Classic] The Elastic IP address. Required for EC2-Classic.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example for EC2-Classic

This example releases the specified Elastic IP address for EC2-Classic.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress  
&PublicIp=192.0.2.1  
&AUTHPARAMS
```

### Example for EC2-VPC

This example releases the specified Elastic IP address for EC2-VPC.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseAddress  
&AllocationId=eipalloc-5723d13e  
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## ReleaseHosts

When you no longer want to use an On-Demand Dedicated Host it can be released. On-Demand billing is stopped and the host goes into `released` state. The host ID of Dedicated Hosts that have been released can no longer be specified in another request, for example, to modify the host. You must stop or terminate all instances on a host before it can be released.

When Dedicated Hosts are released, it may take some time for them to stop counting toward your limit and you may receive capacity errors when trying to allocate new Dedicated Hosts. Wait a few minutes and then try again.

Released hosts still appear in a [DescribeHosts \(p. 579\)](#) response.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **HostId.N**

The IDs of the Dedicated Hosts to release.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **successful**

The IDs of the Dedicated Hosts that were successfully released.

Type: Array of strings

### **unsuccessful**

The IDs of the Dedicated Hosts that could not be released, including an error message.

Type: Array of [UnsuccessfulItem \(p. 2153\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This releases a Dedicated Host successfully.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

## Sample Response

```
<ReleaseHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <unsuccessful/>
  <successful>
    <item>h-00548908djdsgfs</item>
  </successful>
</ReleaseHostsResponse>
```

## Example

This request is unsuccessful.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ReleaseHosts
&HostId=h-00548908djdsgfs
&AUTHPARAMS
```

## Sample Response

```
<ReleaseHostsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>d4904fd9-82c2-4ea5-adfe-a9cc3EXAMPLE</requestId>
  <unsuccessful>
    <item>
      <error>
        <message>Dedicated host 'h-00548908djdsgfs' cannot be released as it is
occupied</message>
        <code>Client.InvalidHost.Occupied</code>
      </error>
      <resourceId>h-00548908djdsgfs</resourceId>
    </item>
  </unsuccessful>
  <successful/>
</ReleaseHostsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)

- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceIamInstanceProfileAssociation

Replaces an IAM instance profile for the specified running instance. You can use this action to change the IAM instance profile that's associated with an instance without having to disassociate the existing IAM instance profile first.

Use [DescribeIamInstanceProfileAssociations \(p. 583\)](#) to get the association ID.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId**

The ID of the existing IAM instance profile association.

Type: String

Required: Yes

### **IamInstanceProfile**

The IAM instance profile.

Type: [IamInstanceProfileSpecification \(p. 1601\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

### **iamInstanceProfileAssociation**

Information about the IAM instance profile association.

Type: [IamInstanceProfileAssociation \(p. 1600\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example replaces the IAM instance profile represented by the association `iip-assoc-060bae234aac2e7fa` with the IAM instance profile named `AdminProfile`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceIamInstanceProfileAssociation
&AssociationId=iip-assoc-060bae234aac2e7fa
&IamInstanceProfile.Name=AdminProfile
&AUTHPARAMS
```

## Sample Response

```
<ReplaceIamInstanceProfileAssociationResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>ba40aa4c-d788-4f24-8a34-example</requestId>
    <iamInstanceProfileAssociation>
        <associationId>iip-assoc-08049da59357d598c</associationId>
        <iamInstanceProfile>
            <arn>arn:aws:iam::123456789012:instance-profile/AdminRole</arn>
            <id>AIPAI5IVIHMFFYY2DKV5Y</id>
        </iamInstanceProfile>
        <instanceId>i-1234567890abcdef0</instanceId>
        <state>associating</state>
    </iamInstanceProfileAssociation>
</ReplaceIamInstanceProfileAssociationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceNetworkAclAssociation

Changes which network ACL a subnet is associated with. By default when you create a subnet, it's automatically associated with the default network ACL. For more information, see [Network ACLs](#) in the [Amazon Virtual Private Cloud User Guide](#).

This is an idempotent operation.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId**

The ID of the current association between the original network ACL and the subnet.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **NetworkAclId**

The ID of the new network ACL to associate with the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **newAssociationId**

The ID of the new association.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example starts with a network ACL associated with a subnet, and a corresponding association ID `aclassoc-e5b95c8c`. You want to associate a different network ACL (`acl-5fb85d36`) with the subnet. The result is a new association ID representing the new association.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclAssociation
&AssociationId=aclassoc-e5b95c8c
&NetworkAclId=acl-5fb85d36
&AUTHPARAMS
```

#### Sample Response

```
<ReplaceNetworkAclAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>aclassoc-17b85d7e</newAssociationId>
</ReplaceNetworkAclAssociationResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceNetworkAclEntry

Replaces an entry (rule) in a network ACL. For more information, see [Network ACLs in the Amazon Virtual Private Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrBlock

The IPv4 network range to allow or deny, in CIDR notation (for example 172.16.0.0/24).

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### Egress

Indicates whether to replace the egress rule.

Default: If no value is specified, we replace the ingress rule.

Type: Boolean

Required: Yes

### Icmp

ICMP protocol: The ICMP or ICMPv6 type and code. Required if specifying protocol 1 (ICMP) or protocol 58 (ICMPv6) with an IPv6 CIDR block.

Type: [IcmpTypeCode \(p. 1602\)](#) object

Required: No

### Ipv6CidrBlock

The IPv6 network range to allow or deny, in CIDR notation (for example 2001:bd8:1234:1a00::/64).

Type: String

Required: No

### NetworkAclId

The ID of the ACL.

Type: String

Required: Yes

### PortRange

TCP or UDP protocols: The range of ports the rule applies to. Required if specifying protocol 6 (TCP) or 17 (UDP).

Type: [PortRange \(p. 1885\)](#) object

Required: No

### Protocol

The protocol number. A value of "-1" means all protocols. If you specify "-1" or a protocol number other than "6" (TCP), "17" (UDP), or "1" (ICMP), traffic on all ports is allowed, regardless of any ports or ICMP types or codes that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv4 CIDR block, traffic for all ICMP types and codes allowed, regardless of any that you specify. If you specify protocol "58" (ICMPv6) and specify an IPv6 CIDR block, you must specify an ICMP type and code.

Type: String

Required: Yes

### RuleAction

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: allow | deny

Required: Yes

### RuleNumber

The rule number of the entry to replace.

Type: Integer

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example replaces the egress entry numbered 110 in the specified network ACL. The new rule denies egress traffic destined for any IPv4 address (0.0.0.0/0) on TCP port 139.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceNetworkAclEntry
&NetworkAclId=acl-2cb85d45
&RuleNumber=110
&Protocol="6"
&RuleAction=deny
&Egress=true
&CidrBlock=0.0.0.0/0
&PortRange.From=139
&PortRange.To=139
&AUTHPARAMS
```

#### Sample Response

```
<ReplaceNetworkAclEntryResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbbf89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ReplaceNetworkAclEntryResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceRoute

Replaces an existing route within a route table in a VPC. You must provide only one of the following: internet gateway, virtual private gateway, NAT instance, NAT gateway, VPC peering connection, network interface, egress-only internet gateway, or transit gateway.

For more information, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CarrierGatewayId**

[IPv4 traffic only] The ID of a carrier gateway.

Type: String

Required: No

### **CoreNetworkArn**

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

### **DestinationCidrBlock**

The IPv4 CIDR address block used for the destination match. The value that you provide must match the CIDR of an existing route in the table.

Type: String

Required: No

### **DestinationIpv6CidrBlock**

The IPv6 CIDR address block used for the destination match. The value that you provide must match the CIDR of an existing route in the table.

Type: String

Required: No

### **DestinationPrefixListId**

The ID of the prefix list for the route.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EgressOnlyInternetGatewayId**

[IPv6 traffic only] The ID of an egress-only internet gateway.

Type: String

Required: No

**GatewayId**

The ID of an internet gateway or virtual private gateway.

Type: String

Required: No

**InstanceId**

The ID of a NAT instance in your VPC.

Type: String

Required: No

**LocalGatewayId**

The ID of the local gateway.

Type: String

Required: No

**LocalTarget**

Specifies whether to reset the local route to its default target (local).

Type: Boolean

Required: No

**NatGatewayId**

[IPv4 traffic only] The ID of a NAT gateway.

Type: String

Required: No

**NetworkInterfaceId**

The ID of a network interface.

Type: String

Required: No

**RouteTableId**

The ID of the route table.

Type: String

Required: Yes

**TransitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**VpcEndpointId**

The ID of a VPC endpoint. Supported for Gateway Load Balancer endpoints only.

Type: String

Required: No

**VpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**requestId**

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example replaces a route in the specified route table. The new route matches the IPv4 CIDR 10.0.0.0/8 and sends the traffic to the virtual private gateway with the ID vgw-123456abcde123456.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-11223344556677889
&DestinationCidrBlock=10.0.0.0/8
&GatewayId=vgw-123456abcde123456
&AUTHPARAMS
```

#### Sample Response

```
<ReplaceRouteResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</ReplaceRouteResponse>
```

## Example 2

This examples resets the target for the default local route.

### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRoute
&RouteTableId=rtb-11223344556677889
&DestinationCidrBlock=10.0.0.0/16
&LocalTarget=true
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceRouteTableAssociation

Changes the route table associated with a given subnet, internet gateway, or virtual private gateway in a VPC. After the operation completes, the subnet or gateway uses the routes in the new route table. For more information about route tables, see [Route tables](#) in the *Amazon Virtual Private Cloud User Guide*.

You can also use this operation to change which table is the main route table in the VPC. Specify the main route table's association ID and the route table ID of the new main route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AssociationId**

The association ID.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **RouteTableId**

The ID of the new route table to associate with the subnet.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **associationState**

The state of the association.

Type: [RouteTableAssociationState \(p. 1965\)](#) object

### **newAssociationId**

The ID of the new association.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example starts with a route table associated with a subnet, and a corresponding association ID `rtbassoc-04ca27a6914a0b4f`. You want to associate a different route table (table `rtb-1a2b3c4d1a2b3c4d1`) to the subnet. The result is a new association ID representing the new association.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ReplaceRouteTableAssociation
&AssociationId=rtbassoc-04ca27a6914a0b4f
&RouteTableId=rtb-1a2b3c4d1a2b3c4d1
&AUTHPARAMS
```

#### Sample Response

```
<ReplaceRouteTableAssociationResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <newAssociationId>rtbassoc-11223344556677889</newAssociationId>
</ReplaceRouteTableAssociationResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReplaceTransitGatewayRoute

Replaces the specified route in the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Blackhole**

Indicates whether traffic matching this route is to be dropped.

Type: Boolean

Required: No

### **DestinationCidrBlock**

The CIDR range used for the destination match. Routing decisions are based on the most specific match.

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **TransitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

### **TransitGatewayRouteTableId**

The ID of the route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

**route**

Information about the modified route.

Type: [TransitGatewayRoute \(p. 2137\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ReportInstanceStatus

Submits feedback about the status of an instance. The instance must be in the `running` state. If your experience with the instance differs from the instance status returned by [DescribeInstanceStatus \(p. 630\)](#), use [ReportInstanceStatus \(p. 1245\)](#) to report your experience with the instance. Amazon EC2 collects this information to improve the accuracy of status checks.

Use of this action does not change the value returned by [DescribeInstanceStatus \(p. 630\)](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Description

Descriptive text about the health state of your instance.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### EndTime

The time at which the reported instance health state ended.

Type: Timestamp

Required: No

### InstanceId.N

The instances.

Type: Array of strings

Required: Yes

### ReasonCode.N

The reason codes that describe the health state of your instance.

- `instance-stuck-in-state`: My instance is stuck in a state.
- `unresponsive`: My instance is unresponsive.
- `not-accepting-credentials`: My instance is not accepting my credentials.
- `password-not-available`: A password is not available for my instance.
- `performance-network`: My instance is experiencing performance problems that I believe are network related.
- `performance-instance-store`: My instance is experiencing performance problems that I believe are related to the instance stores.

- **performance-ebs-volume**: My instance is experiencing performance problems that I believe are related to an EBS volume.
- **performance-other**: My instance is experiencing performance problems.
- **other**: [explain using the description parameter]

Type: Array of strings

Valid Values: `instance-stuck-in-state` | `unresponsive` | `not-accepting-credentials` | `password-not-available` | `performance-network` | `performance-instance-store` | `performance-ebs-volume` | `performance-other` | `other`

Required: Yes

#### **StartTime**

The time at which the reported instance health state began.

Type: Timestamp

Required: No

#### **Status**

The status of all instances listed.

Type: String

Valid Values: `ok` | `impaired`

Required: Yes

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example reports instance health state for two instances.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

## Example 2

This example reports instance health state for two instances with reason codes.

## Sample Request

```
https://ec2.amazonaws.com/?Action=ReportInstanceStatus
&Description=Description+of+my+issue.
&Status=impaired
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&ReasonCode.1=instance-performance-network
&ReasonCode.2=instance-performance-disk
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RequestSpotFleet

Creates a Spot Fleet request.

The Spot Fleet request specifies the total target capacity and the On-Demand target capacity. Amazon EC2 calculates the difference between the total capacity and On-Demand capacity, and launches the difference as Spot capacity.

You can submit a single request that includes multiple launch specifications that vary by instance type, AMI, Availability Zone, or subnet.

By default, the Spot Fleet requests Spot Instances in the Spot Instance pool where the price per unit is the lowest. Each launch specification can include its own instance weighting that reflects the value of the instance type to your application workload.

Alternatively, you can specify that the Spot Fleet distribute the target capacity across the Spot pools included in its launch specifications. By ensuring that the Spot Instances in your Spot Fleet are in different Spot pools, you can improve the availability of your fleet.

You can specify tags for the Spot Fleet request and instances launched by the fleet. You cannot tag other resource types in a Spot Fleet request because only the `spot-fleet-request` and `instance` resource types are supported.

For more information, see [Spot Fleet requests](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SpotFleetRequestConfig

The configuration for the Spot Fleet request.

Type: [SpotFleetRequestConfigData \(p. 2028\)](#) object

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### spotFleetRequestId

The ID of the Spot Fleet request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example creates a Spot Fleet request with two launch specifications.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotFleet
&SpotFleetRequestConfig.IamFleetRole=arn:aws:iam::123456789011:role/spot-fleet-role
&SpotFleetRequestConfig.TargetCapacity=5
&SpotFleetRequestConfig.LaunchSpecifications.1.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.1.InstanceType=m4.large
&SpotFleetRequestConfig.LaunchSpecifications.1.SubnetId=subnet-1a2b3c4d
&SpotFleetRequestConfig.LaunchSpecifications.2.ImageId=ami-1ecae776
&SpotFleetRequestConfig.LaunchSpecifications.2.InstanceType=m3.medium
&SpotFleetRequestConfig.LaunchSpecifications.2.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

### Sample Response

```
<RequestSpotFleetResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>60262cc5-2bd4-4c8d-98ed-example</requestId>
  <spotFleetRequestId>sfr-123f8fc2-cb31-425e-abcd-example2710</spotFleetRequestId>
</RequestSpotFleetResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RequestSpotInstances

Creates a Spot Instance request.

For more information, see [Spot Instance requests](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AvailabilityZoneGroup

The user-specified name for a logical grouping of requests.

When you specify an Availability Zone group in a Spot Instance request, all Spot Instances in the request are launched in the same Availability Zone. Instance proximity is maintained with this parameter, but the choice of Availability Zone is not. The group applies only to requests for Spot Instances of the same instance type. Any additional Spot Instance requests that are specified with the same Availability Zone group name are launched in that same Availability Zone, as long as at least one instance from the group is still active.

If there is no active instance running in the Availability Zone group that you specify for a new Spot Instance request (all instances are terminated, the request is expired, or the maximum price you specified falls below current Spot price), then Amazon EC2 launches the instance in any Availability Zone where the constraint can be met. Consequently, the subsequent set of Spot Instances could be placed in a different zone from the original request, even if you specified the same Availability Zone group.

Default: Instances are launched in any available Availability Zone.

Type: String

Required: No

### BlockDurationMinutes

Deprecated.

Type: Integer

Required: No

### ClientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to Ensure Idempotency](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**InstanceCount**

The maximum number of Spot Instances to launch.

Default: 1

Type: Integer

Required: No

**InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted. The default is terminate.

Type: String

Valid Values: hibernate | stop | terminate

Required: No

**LaunchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Default: Instances are launched and terminated individually

Type: String

Required: No

**LaunchSpecification**

The launch specification.

Type: [RequestSpotLaunchSpecification \(p. 1922\)](#) object

Required: No

**SpotPrice**

The maximum price per hour that you are willing to pay for a Spot Instance. The default is the On-Demand price.

Type: String

Required: No

**TagSpecification.N**

The key-value pair for tagging the Spot Instance request on creation. The value for ResourceType must be spot-instances-request, otherwise the Spot Instance request fails. To tag the Spot Instance request after it has been created, see [CreateTags](#).

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**Type**

The Spot Instance request type.

Default: one-time

Type: String

Valid Values: one-time | persistent

Required: No

#### **ValidFrom**

The start date of the request. If this is a one-time request, the request becomes active at this date and time and remains active until all instances launch, the request expires, or the request is canceled. If the request is persistent, the request becomes active at this date and time and remains active until it expires or is canceled.

The specified start date and time cannot be equal to the current date and time. You must specify a start date and time that occurs after the current date and time.

Type: Timestamp

Required: No

#### **ValidUntil**

The end date of the request, in UTC format (YYYY-MM-DDTHH:MM:SSZ).

- For a persistent request, the request remains active until the `ValidUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, the request remains active until all instances launch, the request is canceled, or the `ValidUntil` date and time is reached. By default, the request is valid for 7 days from the date the request was created.

Type: Timestamp

Required: No

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **spotInstanceRequestSet**

One or more Spot Instance requests.

Type: Array of [SpotInstanceRequest \(p. 2034\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example creates a one-time Spot Instance request for two instances. It does not include an Availability Zone or subnet, so Amazon EC2 selects an Availability Zone for you. If your account supports

EC2-VPC only, Amazon EC2 launches the instances in the default subnet of the selected Availability Zone. If your account supports EC2-Classic, Amazon EC2 launches the instances in EC2-Classic in the selected Availability Zone.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

## Example 2

The following example includes an Availability Zone. If your account supports EC2-VPC only, Amazon EC2 launches the instances in the default subnet of the specified Availability Zone. If your account support EC2-Classic, Amazon EC2 launches the instances in EC2-Classic in the specified Availability Zone.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.Placement.AvailabilityZone=us-west-2a
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

## Example 3

The following example includes a subnet. Amazon EC2 launches the instances in the specified subnet. You can specify security groups for EC2-Classic either by ID or by name. You must specify security groups for EC2-VPC by ID.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RequestSpotInstances
&InstanceCount=2
&Type=one-time
&LaunchSpecification.ImageId=ami-1a2b3c4d
&LaunchSpecification.KeyName=my-key-pair
&LaunchSpecification.SecurityGroupId.1=sg-1a2b3c4d
&LaunchSpecification.InstanceType=m3.medium
&LaunchSpecification.SubnetId=subnet-1a2b3c4d
&LaunchSpecification.IamInstanceProfile.Name=s3access
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetAddressAttribute

Resets the attribute of the specified IP address. For requirements, see [Using reverse DNS for email applications](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AllocationId

[EC2-VPC] The allocation ID.

Type: String

Required: Yes

### Attribute

The attribute of the IP address.

Type: String

Valid Values: domain-name

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### address

Information about the IP address.

Type: [AddressAttribute \(p. 1362\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetEbsDefaultKmsKeyId

Resets the default AWS KMS key for EBS encryption for your account in this Region to the AWS managed KMS key for EBS.

After resetting the default KMS key to the AWS managed KMS key, you can continue to encrypt by a customer managed KMS key by specifying it when you create the volume. For more information, see [Amazon EBS encryption](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Request Parameters

For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### kmsKeyId

The Amazon Resource Name (ARN) of the default KMS key for EBS encryption by default.

Type: String

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetFpgalmageAttribute

Resets the specified attribute of the specified Amazon FPGA Image (AFI) to its default value. You can only reset the load permission attribute.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The attribute.

Type: String

Valid Values: `loadPermission`

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FpgalmageId

The ID of the AFI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example resets the load permissions for the specified AFI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetFpgaImageAttribute
&FpgaImageId=afi-0d123e21abcc85abc
&Attribute=loadPermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetFpgaImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>ccb58a32-30ee-4f9b-831c-639example</requestId>
  <return>true</return>
</ResetFpgaImageAttributeResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetImageAttribute

Resets an attribute of an AMI to its default value.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The attribute to reset (currently you can only reset the launch permission attribute).

Type: String

Valid Values: `launchPermission`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ImageId

The ID of the AMI.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example resets the `launchPermission` attribute for the specified AMI.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetImageAttribute
&ImageId=ami-61a54008
&Attribute=launchPermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetImageAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetImageAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## ResetInstanceAttribute

Resets an attribute of an instance to its default value. To reset the `kernel` or `ramdisk`, the instance must be in a stopped state. To reset the `sourceDestCheck`, the instance can be either running or stopped.

The `sourceDestCheck` attribute controls whether source/destination checking is enabled. The default value is `true`, which means checking is enabled. This value must be `false` for a NAT instance to perform NAT. For more information, see [NAT Instances](#) in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The attribute to reset.

#### Important

You can only reset the following attributes: `kernel` | `ramdisk` | `sourceDestCheck`. To change an instance attribute, use [ModifyInstanceAttribute \(p. 1094\)](#).

Type: String

Valid Values: `instanceType` | `kernel` | `ramdisk` | `userData` | `disableApiTermination` | `instanceInitiatedShutdownBehavior` | `rootDeviceName` | `blockDeviceMapping` | `productCodes` | `sourceDestCheck` | `groupSet` | `ebsOptimized` | `sriovNetSupport` | `enaSupport` | `enclaveOptions`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

**return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example resets the sourceDestCheck attribute.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetInstanceAttribute
&InstanceId=i-1234567890abcdef0
&Attribute=sourceDestCheck
&AUTHPARAMS
```

#### Sample Response

```
<ResetInstanceAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetInstanceAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetNetworkInterfaceAttribute

Resets a network interface attribute. You can specify only one attribute at a time.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### NetworkInterfaceId

The ID of the network interface.

Type: String

Required: Yes

### SourceDestCheck

The source/destination checking attribute. Resets the value to `true`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# ResetSnapshotAttribute

Resets permission settings for the specified snapshot.

For more information about modifying snapshot permissions, see [Share a snapshot in the Amazon Elastic Compute Cloud User Guide](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Attribute

The attribute to reset. Currently, only the attribute for permission to create volumes can be reset.

Type: String

Valid Values: `productCodes` | `createVolumePermission`

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### SnapshotId

The ID of the snapshot.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is `true` if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example resets the permissions for `snap-1234567890abcdef0`, making it a private snapshot that can only be used by the account that created it.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=ResetSnapshotAttribute
&SnapshotId=snap-1234567890abcdef0
&Attribute=createVolumePermission
&AUTHPARAMS
```

#### Sample Response

```
<ResetSnapshotAttributeResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</ResetSnapshotAttributeResponse>
```

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## RestoreAddressToClassic

Restores an Elastic IP address that was previously moved to the EC2-VPC platform back to the EC2-Classic platform. You cannot move an Elastic IP address that was originally allocated for use in EC2-VPC. The Elastic IP address must not be associated with an instance or network interface.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

#### PublicIp

The Elastic IP address.

Type: String

Required: Yes

### Response Elements

The following elements are returned by the service.

#### publicIp

The Elastic IP address.

Type: String

#### requestId

The ID of the request.

Type: String

#### status

The move status for the IP address.

Type: String

Valid Values: MoveInProgress | InVpc | InClassic

### Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example restores Elastic IP address 54.123.45.67 to the EC2-Classic platform.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RestoreAddressToClassic
&publicIp=54.123.45.67
&AUTHPARAMS
```

#### Sample Response

```
<RestoreAddressToClassicResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
    <requestId>f7de5e98-491a-4c19-a92d-908d6EXAMPLE</requestId>
    <publicIp>54.123.45.67</publicIp>
    <status>MoveInProgress</status>
</RestoreAddressToClassicResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RestoreManagedPrefixListVersion

Restores the entries from a previous version of a managed prefix list to a new version of the prefix list.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **CurrentVersion**

The current version number for the prefix list.

Type: Long

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **PrefixListId**

The ID of the prefix list.

Type: String

Required: Yes

### **PreviousVersion**

The version to restore.

Type: Long

Required: Yes

## Response Elements

The following elements are returned by the service.

### **prefixList**

Information about the prefix list.

Type: [ManagedPrefixList \(p. 1806\)](#) object

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example restores the entries from version 1 of the specified prefix list.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RestoreManagedPrefixListVersion
&PrefixListId=pl-0123123123123aabb
&CurrentVersion=3
&PreviousVersion=1
&AUTHPARAMS
```

#### Sample Response

```
<RestoreManagedPrefixListVersionResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>aeb3fafe-8938-41a0-9747-example</requestId>
  <prefixList>
    <addressFamily>IPv4</addressFamily>
    <maxEntries>10</maxEntries>
    <ownerId>123456789012</ownerId>
    <prefixListArn>arn:aws:ec2:us-east-1:123456789012:prefix-list/
pl-0123123123123aabb</prefixListArn>
    <prefixListId>pl-0123123123123aabb</prefixListId>
    <prefixListName>tgw-attachments</prefixListName>
    <state>restore-in-progress</state>
    <version>3</version>
  </prefixList>
</RestoreManagedPrefixListVersionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RevokeClientVpnIngress

Removes an ingress authorization rule from a Client VPN endpoint.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AccessGroupId

The ID of the Active Directory group for which to revoke access.

Type: String

Required: No

### ClientVpnEndpointId

The ID of the Client VPN endpoint with which the authorization rule is associated.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### RevokeAllGroups

Indicates whether access should be revoked for all clients.

Type: Boolean

Required: No

### TargetNetworkCidr

The IPv4 address range, in CIDR notation, of the network for which access is being removed.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### status

The current state of the authorization rule.

Type: [ClientVpnAuthorizationRuleStatus \(p. 1433\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example removes an authorization rule from a Client VPN endpoint.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeClientVpnIngress
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&TargetNetworkCidr=10.0.0.0/16
&RevokeAllGroups=true
&AUTHPARAMS
```

### Sample Response

```
<RevokeClientVpnIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>691de4ea-32ef-447b-b4f8-d8463XAMPLE</requestId>
  <status>
    <code>revoking</code>
  </status>
</RevokeClientVpnIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RevokeSecurityGroupEgress

[VPC only] Removes the specified outbound (egress) rules from a security group for EC2-VPC. This action does not apply to security groups for use in EC2-Classic.

You can specify rules using either rule IDs or security group rule properties. If you use rule properties, the values that you specify (for example, ports) must match the existing rule's values exactly. Each rule has a protocol, from and to ports, and destination (CIDR range, security group, or prefix list). For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code. If the security group rule has a description, you do not need to specify the description to revoke the rule.

[Default VPC] If the values you specify do not match the existing rule's values, no error is returned, and the output describes the security group rules that were not revoked.

AWS recommends that you describe the security group to verify that the rules were removed.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrIp

Not supported. Use a set of IP permissions to specify the CIDR.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FromPort

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

### GroupId

The ID of the security group.

Type: String

Required: Yes

### IpPermissions.N

The sets of IP permissions. You can't specify a destination security group and a CIDR IP address range in the same set of permissions.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

#### **IpProtocol**

Not supported. Use a set of IP permissions to specify the protocol name or number.

Type: String

Required: No

#### **SecurityGroupId.N**

The IDs of the security group rules.

Type: Array of strings

Required: No

#### **SourceSecurityGroupName**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

#### **SourceSecurityGroupOwnerId**

Not supported. Use a set of IP permissions to specify a destination security group.

Type: String

Required: No

#### **ToPort**

Not supported. Use a set of IP permissions to specify the port.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

#### **requestId**

The ID of the request.

Type: String

#### **return**

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

#### **unknownIpPermissionSet**

The outbound rules that were unknown to the service. In some cases, `unknownIpPermissionSet` might be in a different format from the `request` parameter.

Type: Array of [IpPermission \(p. 1712\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example revokes the access that the specified security group has to the 205.192.0.0/16 and 205.159.0.0/16 IPv4 address ranges on TCP port 80.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.2.CidrIp=205.159.0.0/16
&AUTHPARAMS
```

### Example 2

This example revokes the access that the specified security group has to the security group with the ID sg-9a8d7f5c on TCP port 1433.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-1a2b3c4d
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=1433
&IpPermissions.1.ToPort=1433
&IpPermissions.1.Groups.1.GroupId=sg-9a8d7f5c
&AUTHPARAMS
```

### Example 3

This example revokes TCP port 22 access to the 203.0.113.4/32 address range for the security group sg-112233. The security group rule includes the description 'Access to office CT12'. Specifying the description to revoke the rule is optional, but if you do specify the description, it must match the existing rule's value exactly.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
```

```
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
&IpPermissions.1.IpRanges.1.Description=Access to office CT12
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RevokeSecurityGroupIngress

Removes the specified inbound (ingress) rules from a security group.

You can specify rules using either rule IDs or security group rule properties. If you use rule properties, the values that you specify (for example, ports) must match the existing rule's values exactly. Each rule has a protocol, from and to ports, and source (CIDR range, security group, or prefix list). For the TCP and UDP protocols, you must also specify the destination port or range of ports. For the ICMP protocol, you must also specify the ICMP type and code. If the security group rule has a description, you do not need to specify the description to revoke the rule.

[EC2-Classic, default VPC] If the values you specify do not match the existing rule's values, no error is returned, and the output describes the security group rules that were not revoked.

AWS recommends that you describe the security group to verify that the rules were removed.

Rule changes are propagated to instances within the security group as quickly as possible. However, a small delay might occur.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### CidrIp

The CIDR IP address range. You can't specify this parameter when specifying a source security group.

Type: String

Required: No

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### FromPort

The start of port range for the TCP and UDP protocols, or an ICMP type number. For the ICMP type number, use `-1` to specify all ICMP types.

Type: Integer

Required: No

### GroupId

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

### **GroupName**

[EC2-Classic, default VPC] The name of the security group. You must specify either the security group ID or the security group name in the request.

Type: String

Required: No

### **IpPermissions.N**

The sets of IP permissions. You can't specify a source security group and a CIDR IP address range in the same set of permissions.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

### **IpProtocol**

The IP protocol name (tcp, udp, icmp) or number (see [Protocol Numbers](#)). Use -1 to specify all.

Type: String

Required: No

### **SecurityGroupRuleId.N**

The IDs of the security group rules.

Type: Array of strings

Required: No

### **SourceSecurityGroupName**

[EC2-Classic, default VPC] The name of the source security group. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the start of the port range, the IP protocol, and the end of the port range. For EC2-VPC, the source security group must be in the same VPC. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

### **SourceSecurityGroupOwnerId**

[EC2-Classic] The AWS account ID of the source security group, if the source security group is in a different account. You can't specify this parameter in combination with the following parameters: the CIDR IP address range, the IP protocol, the start of the port range, and the end of the port range. To revoke a specific rule for an IP protocol and port range, use a set of IP permissions instead.

Type: String

Required: No

### **ToPort**

The end of port range for the TCP and UDP protocols, or an ICMP code number. For the ICMP code number, use -1 to specify all ICMP codes for the ICMP type.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

### unknownIpPermissionSet

The inbound rules that were unknown to the service. In some cases, `unknownIpPermissionSet` might be in a different format from the request parameter.

Type: Array of [IpPermission \(p. 1712\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example revokes TCP port 80 access from the `205.192.0.0/16` IPv4 address range for the security group named `websrv`. If the security group is for a VPC, specify the ID of the security group instead of the name.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&AUTHPARAMS
```

#### Sample Response

```
<RevokeSecurityGroupIngressResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<return>true</return>
</RevokeSecurityGroupIngressResponse>
```

### Example 2

[EC2-VPC] This example revokes TCP port 22 (SSH) access from IPv6 range `2001:db8:1234:1a00::/64`.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupName=websrv
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.Ipv6Ranges.1.CidrIpv6=2001:db8:1234:1a00::/64
&AUTHPARAMS
```

## Example 3

This example revokes TCP port 22 access from the 203.0.113.4/32 address range for the security group sg-112233. The security group rule includes the description 'Access from workstation 1a2b'. Specifying the description to revoke the rule is optional, but if you do specify the description, it must match the existing rule's value exactly.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RevokeSecurityGroupIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
&IpPermissions.1.IpRanges.1.Description=Access from workstation 1a2b
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RunInstances

Launches the specified number of instances using an AMI for which you have permissions.

You can specify a number of options, or leave the default options. The following rules apply:

- [EC2-VPC] If you don't specify a subnet ID, we choose a default subnet from your default VPC for you. If you don't have a default VPC, you must specify a subnet ID in the request.
- [EC2-Classic] If don't specify an Availability Zone, we choose one for you.
- Some instance types must be launched into a VPC. If you do not have a default VPC, or if you do not specify a subnet ID, the request fails. For more information, see [Instance types available only in a VPC](#).
- [EC2-VPC] All instances have a network interface with a primary private IPv4 address. If you don't specify this address, we choose one from the IPv4 range of your subnet.
- Not all instance types support IPv6 addresses. For more information, see [Instance types](#).
- If you don't specify a security group ID, we use the default security group. For more information, see [Security groups](#).
- If any of the AMIs have a product code attached for which the user has not subscribed, the request fails.

You can create a [launch template](#), which is a resource that contains the parameters to launch an instance. When you launch an instance using [RunInstances \(p. 1283\)](#), you can specify the launch template instead of specifying the launch parameters.

To ensure faster instance launches, break up large requests into smaller batches. For example, create five separate launch requests for 100 instances each instead of one launch request for 500 instances.

An instance is ready for you to use when it's in the `running` state. You can check the state of your instance using [DescribeInstances \(p. 620\)](#). You can tag instances and EBS volumes during launch, after launch, or both. For more information, see [CreateTags \(p. 288\)](#) and [Tagging your Amazon EC2 resources](#).

Linux instances have access to the public key of the key pair at boot. You can use this key to provide secure access to the instance. Amazon EC2 public images use this feature to provide secure access without passwords. For more information, see [Key pairs](#).

For troubleshooting, see [What to do if an instance immediately terminates](#), and [Troubleshooting connecting to your instance](#).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### AdditionalInfo

Reserved.

Type: String

Required: No

### BlockDeviceMapping.N

The block device mapping, which defines the EBS volumes and instance store volumes to attach to the instance at launch. For more information, see [Block device mappings](#) in the *Amazon EC2 User Guide*.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

#### **CapacityReservationSpecification**

Information about the Capacity Reservation targeting option. If you do not specify this parameter, the instance's Capacity Reservation preference defaults to open, which enables it to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).

Type: [CapacityReservationSpecification \(p. 1414\)](#) object

Required: No

#### **ClientToken**

Unique, case-sensitive identifier you provide to ensure the idempotency of the request. If you do not specify a client token, a randomly generated token is used for the request to ensure idempotency.

For more information, see [Ensuring Idempotency](#).

Constraints: Maximum 64 ASCII characters

Type: String

Required: No

#### **CpuOptions**

The CPU options for the instance. For more information, see [Optimize CPU options in the Amazon EC2 User Guide](#).

Type: [CpuOptionsRequest \(p. 1455\)](#) object

Required: No

#### **CreditSpecification**

The credit option for CPU usage of the burstable performance instance. Valid values are `standard` and `unlimited`. To change this attribute after launch, use [ModifyInstanceCreditSpecification](#). For more information, see [Burstable performance instances](#) in the *Amazon EC2 User Guide*.

Default: `standard` (T2 instances) or `unlimited` (T3/T3a instances)

For T3 instances with host tenancy, only `standard` is supported.

Type: [CreditSpecificationRequest \(p. 1466\)](#) object

Required: No

#### **DisableApiTermination**

If you set this parameter to `true`, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. To change this attribute after launch, use [ModifyInstanceAttribute](#). Alternatively, if you set `InstanceInitiatedShutdownBehavior` to `terminate`, you can terminate the instance by running the `shutdown` command from the instance.

Default: `false`

Type: Boolean

Required: No

#### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

**EbsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Default: `false`

Type: Boolean

Required: No

**ElasticGpuSpecification.N**

An elastic GPU to associate with the instance. An Elastic GPU is a GPU resource that you can attach to your Windows instance to accelerate the graphics performance of your applications. For more information, see [Amazon EC2 Elastic GPUs](#) in the *Amazon EC2 User Guide*.

Type: Array of [ElasticGpuSpecification](#) (p. 1514) objects

Required: No

**ElasticInferenceAccelerator.N**

An elastic inference accelerator to associate with the instance. Elastic inference accelerators are a resource you can attach to your Amazon EC2 instances to accelerate your Deep Learning (DL) inference workloads.

You cannot specify accelerators from different generations in the same request.

Type: Array of [ElasticInferenceAccelerator](#) (p. 1516) objects

Required: No

**EnclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see [What is AWS Nitro Enclaves?](#) in the *AWS Nitro Enclaves User Guide*.

You can't enable AWS Nitro Enclaves and hibernation on the same instance.

Type: [EnclaveOptionsRequest](#) (p. 1524) object

Required: No

**HibernationOptions**

Indicates whether an instance is enabled for hibernation. For more information, see [Hibernate your instance](#) in the *Amazon EC2 User Guide*.

You can't enable hibernation and AWS Nitro Enclaves on the same instance.

Type: [HibernationOptionsRequest](#) (p. 1586) object

Required: No

**IamInstanceProfile**

The name or Amazon Resource Name (ARN) of an IAM instance profile.

Type: [IamInstanceProfileSpecification](#) (p. 1601) object

Required: No

### ImageId

The ID of the AMI. An AMI ID is required to launch an instance and must be specified here or in a launch template.

Type: String

Required: No

### InstanceInitiatedShutdownBehavior

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Default: stop

Type: String

Valid Values: stop | terminate

Required: No

### InstanceMarketOptions

The market (purchasing) option for the instances.

Type: [InstanceMarketOptionsRequest \(p. 1658\)](#) object

Required: No

### InstanceType

The instance type. For more information, see [Instance types in the Amazon EC2 User Guide](#).

Default: m1.small

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge |

i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal |  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal |  
m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |  
m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large |  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge |  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge |  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge |  
m6g.8xlarge	m6g.12xlarge	m6g.16xlarge	m6gd.metal	m6gd.medium
m6gd.large	m6gd.xlarge	m6gd.2xlarge	m6gd.4xlarge	m6gd.8xlarge
m6gd.12xlarge	m6gd.16xlarge	m6i.large	m6i.xlarge	m6i.2xlarge
m6i.4xlarge	m6i.8xlarge	m6i.12xlarge	m6i.16xlarge	m6i.24xlarge
m6i.32xlarge	mac1.metal	x2gd.medium	x2gd.large	x2gd.xlarge
x2gd.2xlarge	x2gd.4xlarge	x2gd.8xlarge	x2gd.12xlarge	x2gd.16xlarge
x2gd.metal	vt1.3xlarge	vt1.6xlarge	vt1.24xlarge	g5.xlarge

| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

#### **Ipv6Address.N**

[EC2-VPC] The IPv6 addresses from the range of the subnet to associate with the primary network interface. You cannot specify this option and the option to assign a number of IPv6 addresses in the same request. You cannot specify this option if you've specified a minimum number of instances to launch.

You cannot specify this option and the network interfaces option in the same request.

Type: Array of [InstanceIpv6Address \(p. 1655\)](#) objects

Required: No

#### **Ipv6AddressCount**

[EC2-VPC] The number of IPv6 addresses to associate with the primary network interface. Amazon EC2 chooses the IPv6 addresses from the range of your subnet. You cannot specify this option and the option to assign specific IPv6 addresses in the same request. You can specify this option if you've specified a minimum number of instances to launch.

You cannot specify this option and the network interfaces option in the same request.

Type: Integer

Required: No

#### **KernelId**

The ID of the kernel.

##### **Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide*.

Type: String

Required: No

#### **KeyName**

The name of the key pair. You can create a key pair using [CreateKeyPair](#) or [ImportKeyPair](#).

##### **Important**

If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String

Required: No

#### **LaunchTemplate**

The launch template to use to launch the instances. Any parameters that you specify in [RunInstances \(p. 1283\)](#) override the same parameters in the launch template. You can specify either the name or ID of a launch template, but not both.

Type: [LaunchTemplateSpecification \(p. 1779\)](#) object

Required: No

### **LicenseSpecification.N**

The license configurations.

Type: Array of [LicenseConfigurationRequest \(p. 1789\)](#) objects

Required: No

### **MaxCount**

The maximum number of instances to launch. If you specify more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches the largest possible number of instances above **MinCount**.

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see [How many instances can I run in Amazon EC2](#) in the Amazon EC2 FAQ.

Type: Integer

Required: Yes

### **MetadataOptions**

The metadata options for the instance. For more information, see [Instance metadata and user data](#).

Type: [InstanceMetadataOptionsRequest \(p. 1659\)](#) object

Required: No

### **MinCount**

The minimum number of instances to launch. If you specify a minimum that is more instances than Amazon EC2 can launch in the target Availability Zone, Amazon EC2 launches no instances.

Constraints: Between 1 and the maximum number you're allowed for the specified instance type. For more information about the default limits, and how to request an increase, see [How many instances can I run in Amazon EC2](#) in the Amazon EC2 General FAQ.

Type: Integer

Required: Yes

### **Monitoring**

Specifies whether detailed monitoring is enabled for the instance.

Type: [RunInstancesMonitoringEnabled \(p. 1966\)](#) object

Required: No

### **NetworkInterface.N**

The network interfaces to associate with the instance. If you specify a network interface, you must specify any security groups and subnets as part of the network interface.

Type: Array of [InstanceNetworkInterfaceSpecification \(p. 1670\)](#) objects

Required: No

### **Placement**

The placement for the instance.

Type: [Placement \(p. 1878\)](#) object

Required: No

#### **PrivateIpAddress**

[EC2-VPC] The primary IPv4 address. You must specify a value from the IPv4 address range of the subnet.

Only one private IP address can be designated as primary. You can't specify this option if you've specified the option to designate a private IP address as the primary IP address in a network interface specification. You cannot specify this option if you're launching more than one instance in the request.

You cannot specify this option and the network interfaces option in the same request.

Type: String

Required: No

#### **RamdiskId**

The ID of the RAM disk to select. Some kernels require additional drivers at launch. Check the kernel requirements for information about whether you need to specify a RAM disk. To find kernel requirements, go to the AWS Resource Center and search for the kernel ID.

##### **Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [PV-GRUB](#) in the *Amazon EC2 User Guide*.

Type: String

Required: No

#### **SecurityGroup.N**

[EC2-Classic, default VPC] The names of the security groups. For a nondefault VPC, you must use security group IDs instead.

If you specify a network interface, you must specify any security groups as part of the network interface.

Default: Amazon EC2 uses the default security group.

Type: Array of strings

Required: No

#### **SecurityGroupId.N**

The IDs of the security groups. You can create a security group using [CreateSecurityGroup](#).

If you specify a network interface, you must specify any security groups as part of the network interface.

Type: Array of strings

Required: No

#### **SubnetId**

[EC2-VPC] The ID of the subnet to launch the instance into.

If you specify a network interface, you must specify any subnets as part of the network interface.

Type: String

Required: No

#### **TagSpecification.N**

The tags to apply to the resources during launch. You can only tag instances and volumes on launch. The specified tags are applied to all instances or volumes that are created during launch. To tag a resource after it has been created, see [CreateTags](#).

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

#### **UserData**

The user data to make available to the instance. For more information, see [Run commands on your Linux instance at launch](#) and [Run commands on your Windows instance at launch](#). If you are using a command line tool, base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide base64-encoded text. User data is limited to 16 KB.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **groupSet**

[EC2-Classic only] The security groups.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

#### **instancesSet**

The instances.

Type: Array of [Instance \(p. 1629\)](#) objects

#### **ownerId**

The ID of the AWS account that owns the reservation.

Type: String

#### **requesterId**

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

#### **requestId**

The ID of the request.

Type: String

#### **reservationId**

The ID of the reservation.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example launches three instances using the AMI with the ID ami-60a54009.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-60a54009
&MaxCount=3
&MinCount=1
&KeyName=my-key-pair
&Placement.AvailabilityZone=us-east-1d
&AUTHPARAMS
```

### Example 2

This example launches an m1.small instance into a subnet. Because no network interface is specified, a new network interface is created.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=m1.small
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&AUTHPARAMS
```

### Example 3

This example launches an m1.large instance into a subnet. The network interface specifies a primary private IPv4 address of 10.0.2.106 and two secondary private IPv4 addresses (10.0.2.107 and 10.0.2.108).

#### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-beb0cae
&InstanceType=m1.large
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.PrivateIpAddresses.1.Primary=true
&NetworkInterface.1.PrivateIpAddresses.1.PrivateIpAddress=10.0.2.106
&NetworkInterface.1.PrivateIpAddresses.2.Primary=false
&NetworkInterface.1.PrivateIpAddresses.2.PrivateIpAddress=10.0.2.107
```

```
&NetworkInterface.1.PrivateIpAddresses.3.Primary=false
&NetworkInterface.1.PrivateIpAddresses.3.PrivateIpAddress=10.0.2.108
&NetworkInterface.1.SubnetId=subnet-a61dafcf
&AUTHPARAMS
```

## Example 4

This example launches a Dedicated Instance into the specified subnet.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-2a1fec43
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-dea63cb7
&Placement.Tenancy=dedicated
&AUTHPARAMS
```

## Example 5

This request launches an instance into a nondefault subnet, and requests a public IPv4 address for a new network interface with the device index of 0.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&MaxCount=1
&MinCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.AssociatePublicIpAddress=true
&NetworkInterface.1.SubnetId=subnet-1a2b3c4d
&AUTHPARAMS
```

## Example 6

This request launches an m1.large instance with a block device mapping. There are two instance store volumes mapped to /dev/sdc and /dev/sdd, and a 100-GB EBS volume mapped to /dev/sdf. The EBS volume attached to the instance is encrypted by a customer managed CMK.

For more information about block device mappings, see [EbsBlockDevice \(p. 1500\)](#) and [Modifying block device mappings during launch](#).

For more information, see [Amazon EBS encryption](#).

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&InstanceType=m1.large
&BlockDeviceMapping.1.DeviceName=%2Fdev%2Fsdc
&BlockDeviceMapping.1.VirtualName=ephemeral0
&BlockDeviceMapping.2.DeviceName=%2Fdev%2Fsdd
&BlockDeviceMapping.2.VirtualName=ephemeral1
&BlockDeviceMapping.3.DeviceName=%2Fdev%2Fsdf
&BlockDeviceMapping.3.Ebs.DeleteOnTermination=false
```

```
&BlockDeviceMapping.3.Ebs.VolumeSize=100
&BlockDeviceMapping.3.Ebs.Encrypted=true
&BlockDeviceMapping.3.Ebs.KmsKeyId=arn%3Aaws%3Akms%3Aus-east-1%3A009400881653%3Akey
%2Fa48a521f-3aff-4b34-a159-376ac5d37812
&EbsOptimized=false
&MinCount=1
&MaxCount=1
&DisableApiTermination=false
&Monitoring.Enabled=false
&AUTHPARAMS
```

## Example 7

This request launches two instances and applies a tag with a key of `webserver` and a value of `production` to the instances. The request also applies a tag with a key of `cost-center` and a value of `cc123` to the volumes that are created (in this case, the root volume for each instance).

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&InstanceType=t2.large
&MaxCount=2
&MinCount=1
&KeyName=my-key-pair
&SubnetId=subnet-b2a249da
&TagSpecification.1.ResourceType=instance
&TagSpecification.1.Tag.1.Key=webserver
&TagSpecification.1.Tag.1.Value=production
&TagSpecification.2.ResourceType=volume
&TagSpecification.2.Tag.1.Key=cost-center
&TagSpecification.2.Tag.1.Value=cc123
&AUTHPARAMS
```

## Example 8

This request launches a `t2.micro` instance with the credit option for CPU usage set to `unlimited`.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&Count=1
&InstanceType=t2.micro
&KeyName=my-key-pair
&CreditSpecification.CpuCredits=unlimited
&AUTHPARAMS
```

## Example 9

This request launches an instance into the specified partition placement group but does not specify the partition.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&Count=1
```

```
&InstanceType=t3.large
&KeyName=my-key-pair
&Placement=HDFS-Group-A
&AUTHPARAMS
```

## Example 10

This request launches an instance into the specified partition placement group and into the specified partition.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-31814f58
&Count=1
&InstanceType=t3.large
&KeyName=my-key-pair
&Placement=HDFS-Group-A
&Partition=2
&AUTHPARAMS
```

## Example 11

This example launches a single instance of type c3.large with a metadata type requiring a secure token header for metadata retrieval requests.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&Count=1
&InstanceType=c3.large
&KeyName=MyKeyPair
&SecurityGroups=MySecurityGroup
&MetadataOptions.HttpTokens=required
&AUTHPARAMS
```

## Example 12

This example launches a single instance of type c3.large with instance metadata access turned off.

### Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&Count=1
&InstanceType=c3.large
&KeyName=MyKeyPair
&SecurityGroups=MySecurityGroup
&MetadataOptions.HttpEndpoint=disabled
&AUTHPARAMS
```

## Example 13

This example launches a single instance of type c3.large with a metadata type requiring a secure token header for metadata retrieval requests and a metadata hop limit of 3.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-1a2b3c4d
&Count=1
&InstanceType=c3.large
&KeyName=MyKeyPair
&SecurityGroups=MySecurityGroup
&MetadataOptions.HttpTokens=required
&MetadataOptions.HttpPutResponseHopLimit=3
&AUTHPARAMS
```

## Example 14

This example launches a single instance and assigns two security groups and an IPv6 address to the primary network interface.

## Sample Request

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-00112233445566aab
&InstanceType=t2.micro
&MinCount=1
&MaxCount=1
&NetworkInterface.1.DeviceIndex=0
&NetworkInterface.1.SecurityGroupId.1=sg-44445556666cccdd
&NetworkInterface.1.SecurityGroupId.2=sg-111122223333aaabb
&NetworkInterface.1.Ipv6Addresses.1.Ipv6Address=2001:db8:1234:1a00::123
&NetworkInterface.1.SubnetId=subnet-aabbccdd112233445
&AUTHPARAMS
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# RunScheduledInstances

Launches the specified Scheduled Instances.

Before you can launch a Scheduled Instance, you must purchase it and obtain an identifier using [PurchaseScheduledInstances \(p. 1197\)](#).

You must launch a Scheduled Instance during its scheduled time period. You can't stop or reboot a Scheduled Instance, but you can terminate it as needed. If you terminate a Scheduled Instance before the current scheduled time period ends, you can launch it again after a few minutes. For more information, see [Scheduled Instances](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that ensures the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceCount**

The number of instances.

Default: 1

Type: Integer

Required: No

### **LaunchSpecification**

The launch specification. You must match the instance type, Availability Zone, network, and platform of the schedule that you purchased.

Type: [ScheduledInstancesLaunchSpecification \(p. 1983\)](#) object

Required: Yes

### **ScheduledInstanceId**

The Scheduled Instance ID.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **instanceIdSet**

The IDs of the newly launched instances.

Type: Array of strings

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# SearchLocalGatewayRoutes

Searches for routes in the specified local gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### LocalGatewayRouteTableId

The ID of the local gateway route table.

Type: String

Required: Yes

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### nextToken

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

**requestId**

The ID of the request.

Type: String

**routeSet**

Information about the routes.

Type: Array of [LocalGatewayRoute \(p. 1795\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# SearchTransitGatewayMulticastGroups

Searches one or more transit gateway multicast groups and returns the group membership information.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `group-ip-address` - The IP address of the transit gateway multicast group.
- `is-group-member` - The resource is a group member. Valid values are `true` | `false`.
- `is-group-source` - The resource is a group source. Valid values are `true` | `false`.
- `member-type` - The member type. Valid values are `igmp` | `static`.
- `resource-id` - The ID of the resource.
- `resource-type` - The type of resource. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `tgw-peering`.
- `source-type` - The source type. Valid values are `igmp` | `static`.
- `subnet-id` - The ID of the subnet.
- `transit-gateway-attachment-id` - The id of the transit gateway attachment.

Type: Array of [Filter \(p. 1545\)](#) objects

Required: No

### MaxResults

The maximum number of results to return with a single call. To retrieve the remaining results, make another call with the returned `nextToken` value.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### NextToken

The token for the next page of results.

Type: String

Required: No

### TransitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **multicastGroups**

Information about the transit gateway multicast group.

Type: Array of [TransitGatewayMulticastGroup \(p. 2122\)](#) objects

### **nextToken**

The token to use to retrieve the next page of results. This value is `null` when there are no more results to return.

Type: String

### **requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example returns the group membership information for the specified multicast domain.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=SearchTransitGatewayMulticastGroups
&TransitGatewayMulticastDomainId=tgw-mcast-domain-0c4905cef79d6e597
&AUTHPARAMS
```

#### Sample Response

```
<SearchTransitGatewayMulticastGroupsResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
<requestId>19af1e8f-f80b-479d-9cf4-c7d19EXAMPLE</requestId>
<multicastGroups>
    <item>
        <groupIpAddress>224.0.1.0</groupIpAddress>
        <groupMember>true</groupMember>
        <groupSource>false</groupSource>
        <memberType>static</memberType>
        <networkInterfaceId>eni-07f290fc3cEXAMPLE</networkInterfaceId>
```

```
<subnetId>subnet-000de86e3bEXAMPLE</subnetId>
<transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
</item>
<item>
<groupIpAddress>224.0.1.0</groupIpAddress>
<groupMember>false</groupMember>
<groupSource>true</groupSource>
<networkInterfaceId>eni-0e246d32695012e81</networkInterfaceId>
<sourceType>static</sourceType>
<subnetId>subnet-000de86e3bEXAMPLE</subnetId>
<transitGatewayAttachmentId>tgw-attach-028c1dd0f8EXAMPLE</
transitGatewayAttachmentId>
</item>
</multicastGroups>
</SearchTransitGatewayMulticastGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# SearchTransitGatewayRoutes

Searches for routes in the specified transit gateway route table.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Filter.N

One or more filters. The possible values are:

- `attachment.transit-gateway-attachment-id` - The id of the transit gateway attachment.
- `attachment.resource-id` - The resource id of the transit gateway attachment.
- `attachment.resource-type` - The attachment resource type. Valid values are `vpc` | `vpn` | `direct-connect-gateway` | `peering` | `connect`.
- `prefix-list-id` - The ID of the prefix list.
- `route-search.exact-match` - The exact match of the specified filter.
- `route-search.longest-prefix-match` - The longest prefix that matches the route.
- `route-search.subnet-of-match` - The routes with a subnet that match the specified CIDR filter.
- `route-search.supernet-of-match` - The routes with a CIDR that encompass the CIDR filter. For example, if you have `10.0.1.0/29` and `10.0.1.0/31` routes in your route table and you specify `supernet-of-match` as `10.0.1.0/30`, then the result returns `10.0.1.0/29`.
- `state` - The state of the route (`active` | `blackhole`).
- `type` - The type of route (`propagated` | `static`).

Type: Array of [Filter \(p. 1545\)](#) objects

Required: Yes

### MaxResults

The maximum number of routes to return.

Type: Integer

Valid Range: Minimum value of 5. Maximum value of 1000.

Required: No

### TransitGatewayRouteTableId

The ID of the transit gateway route table.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **additionalRoutesAvailable**

Indicates whether there are additional routes available.

Type: Boolean

### **requestId**

The ID of the request.

Type: String

### **routeSet**

Information about the routes.

Type: Array of [TransitGatewayRoute \(p. 2137\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# SendDiagnosticInterrupt

Sends a diagnostic interrupt to the specified Amazon EC2 instance to trigger a *kernel panic* (on Linux instances), or a *blue screen/stop error* (on Windows instances). For instances based on Intel and AMD processors, the interrupt is received as a *non-maskable interrupt* (NMI).

In general, the operating system crashes and reboots when a kernel panic or stop error is triggered. The operating system can also be configured to perform diagnostic tasks, such as generating a memory dump file, loading a secondary kernel, or obtaining a call trace.

Before sending a diagnostic interrupt to your instance, ensure that its operating system is configured to perform the required diagnostic tasks.

For more information about configuring your operating system to generate a crash dump when a kernel panic or stop error occurs, see [Send a diagnostic interrupt \(for advanced users\)](#) (Linux instances) or [Send a diagnostic interrupt \(for advanced users\)](#) (Windows instances).

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example sends a diagnostic interrupt to the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=SendDiagnosticInterrupt
&InstanceId=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<SendDiagnosticInterruptResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</SendDiagnosticInterruptResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StartInstances

Starts an Amazon EBS-backed instance that you've previously stopped.

Instances that use Amazon EBS volumes as their root devices can be quickly stopped and started. When an instance is stopped, the compute resources are released and you are not billed for instance usage. However, your root partition Amazon EBS volume remains and continues to persist your data, and you are charged for Amazon EBS volume usage. You can restart your instance at any time. Every time you start your instance, Amazon EC2 charges a one-minute minimum for instance usage, and thereafter charges per second for instance usage.

Before stopping an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM.

Performing this operation on an instance that uses an instance store as its root device returns an error.

If you attempt to start a T3 instance with host tenancy and the `unlimited` CPU credit option, the request fails. The `unlimited` CPU credit option is not supported on Dedicated Hosts. Before you start the instance, either change its CPU credit option to standard, or change its tenancy to default or dedicated.

For more information, see [Stop and start your instance](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **AdditionalInfo**

Reserved.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **InstanceId.N**

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### instancesSet

Information about the started instances.

Type: Array of [InstanceStateChange \(p. 1690\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example starts the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=StartInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<StartInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <currentState>
      <code>0</code>
      <name>pending</name>
    </currentState>
    <previousState>
      <code>80</code>
      <name>stopped</name>
    </previousState>
  </item>
</instancesSet>
</StartInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StartNetworkInsightsAnalysis

Starts analyzing the specified path. If the path is reachable, the operation returns the shortest feasible path.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [How to ensure idempotency](#).

Type: String

Required: Yes

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is DryRunOperation. Otherwise, it is UnauthorizedOperation.

Type: Boolean

Required: No

### **FilterInArn.N**

The Amazon Resource Names (ARN) of the resources that the path must traverse.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **NetworkInsightsPathId**

The ID of the path.

Type: String

Required: Yes

### **TagSpecification.N**

The tags to apply.

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **networkInsightsAnalysis**

Information about the network insights analysis.

Type: [NetworkInsightsAnalysis \(p. 1834\)](#) object

**requestId**

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StartVpcEndpointServicePrivateDnsVerification

Initiates the verification process to prove that the service provider owns the private DNS name domain for the endpoint service.

The service provider must successfully perform the verification before the consumer can use the name to access the service.

Before the service provider runs this command, they must add a record to the DNS server. For more information, see [Adding a TXT Record to Your Domain's DNS Server](#) in the *Amazon VPC User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### ServiceId

The ID of the endpoint service.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, it returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# StopInstances

Stops an Amazon EBS-backed instance.

You can use the Stop action to hibernate an instance if the instance is [enabled for hibernation](#) and it meets the [hibernation prerequisites](#). For more information, see [Hibernate your instance](#) in the *Amazon EC2 User Guide*.

We don't charge usage for a stopped instance, or data transfer fees; however, your root partition Amazon EBS volume remains and continues to persist your data, and you are charged for Amazon EBS volume usage. Every time you start your instance, Amazon EC2 charges a one-minute minimum for instance usage, and thereafter charges per second for instance usage.

You can't stop or hibernate instance store-backed instances. You can't use the Stop action to hibernate Spot Instances, but you can specify that Amazon EC2 should hibernate Spot Instances when they are interrupted. For more information, see [Hibernating interrupted Spot Instances](#) in the *Amazon EC2 User Guide*.

When you stop or hibernate an instance, we shut it down. You can restart your instance at any time. Before stopping or hibernating an instance, make sure it is in a state from which it can be restarted. Stopping an instance does not preserve data stored in RAM, but hibernating an instance does preserve data stored in RAM. If an instance cannot hibernate successfully, a normal shutdown occurs.

Stopping and hibernating an instance is different to rebooting or terminating it. For example, when you stop or hibernate an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, the root device and any other devices attached during the instance launch are automatically deleted. For more information about the differences between rebooting, stopping, hibernating, and terminating instances, see [Instance lifecycle](#) in the *Amazon EC2 User Guide*.

When you stop an instance, we attempt to shut it down forcibly after a short while. If your instance appears stuck in the stopping state after a period of time, there may be an issue with the underlying host computer. For more information, see [Troubleshoot stopping your instance](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### Force

Forces the instances to stop. The instances do not have an opportunity to flush file system caches or file system metadata. If you use this option, you must perform file system check and repair procedures. This option is not recommended for Windows instances.

Default: `false`

Type: Boolean

Required: No

### Hibernate

Hibernates the instance if the instance was enabled for hibernation at launch. If the instance cannot hibernate successfully, a normal shutdown occurs. For more information, see [Hibernate your instance in the Amazon EC2 User Guide](#).

Default: `false`

Type: Boolean

Required: No

### InstanceId.N

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### instancesSet

Information about the stopped instances.

Type: Array of [InstanceStateChange \(p. 1690\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example stops the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=StopInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<StopInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <currentState>
      <code>64</code>
      <name>stopping</name>
    </currentState>
    <previousState>
      <code>16</code>
      <name>running</name>
    </previousState>
  </item>
</instancesSet>
</StopInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# TerminateClientVpnConnections

Terminates active Client VPN endpoint connections. This action can be used to terminate a specific client connection, or up to five connections established by a specific user.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **ClientVpnEndpointId**

The ID of the Client VPN endpoint to which the client is connected.

Type: String

Required: Yes

### **ConnectionId**

The ID of the client connection to be terminated.

Type: String

Required: No

### **DryRun**

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### **Username**

The name of the user who initiated the connection. Use this option to terminate all active connections for the specified user. This option can only be used if the user has established up to five connections.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **clientVpnEndpointId**

The ID of the Client VPN endpoint.

Type: String

### **connectionStatuses**

The current state of the client connections.

Type: Array of [TerminateConnectionStatus \(p. 2085\)](#) objects

#### **requestId**

The ID of the request.

Type: String

#### **username**

The user who established the terminated client connections.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example terminates a Client VPN endpoint connection.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateClientVpnConnections
&ClientVpnEndpointId=cvpn-endpoint-00c5d11fc4EXAMPLE
&ConnectionId=cvpn-connection-010b1282b7EXAMPLE
&AUTHPARAMS
```

#### Sample Response

```
<TerminateClientVpnConnectionsResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <clientVpnEndpointId>cvpn-endpoint-00c5d11fc4EXAMPLE</clientVpnEndpointId>
  <connectionStatuses>
    <Item>
      <connectionId>cvpn-connection-010b1282b7EXAMPLE</connectionId>
      <currentStatus>
        <code>terminating</code>
      </currentStatus>
      <previousStatus>
        <code>active</code>
      </previousStatus>
    </Item>
  </connectionStatuses>
  <requestId>00d80748-708d-40f7-8635-f34acEXAMPLE</requestId>
</TerminateClientVpnConnectionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## TerminateInstances

Shuts down the specified instances. This operation is idempotent; if you terminate an instance more than once, each call succeeds.

If you specify multiple instances and the request fails (for example, because of a single incorrect instance ID), none of the instances are terminated.

If you terminate multiple instances across multiple Availability Zones, and one or more of the specified instances are enabled for termination protection, the request fails with the following results:

- The specified instances that are in the same Availability Zone as the protected instance are not terminated.
- The specified instances that are in different Availability Zones, where no other specified instances are protected, are successfully terminated.

For example, say you have the following instances:

- Instance A: us-east-1a; Not protected
- Instance B: us-east-1a; Not protected
- Instance C: us-east-1b; Protected
- Instance D: us-east-1b; not protected

If you attempt to terminate all of these instances in the same request, the request reports failure with the following results:

- Instance A and Instance B are successfully terminated because none of the specified instances in us-east-1a are enabled for termination protection.
- Instance C and Instance D fail to terminate because at least one of the specified instances in us-east-1b (Instance C) is enabled for termination protection.

Terminated instances remain visible after termination (for approximately one hour).

By default, Amazon EC2 deletes all EBS volumes that were attached when the instance launched. Volumes attached after instance launch continue running.

You can stop, start, and terminate EBS-backed instances. You can only terminate instance store-backed instances. What happens to an instance differs if you stop it or terminate it. For example, when you stop an instance, the root device and any other devices attached to the instance persist. When you terminate an instance, any attached EBS volumes with the `DeleteOnTermination` block device mapping parameter set to `true` are automatically deleted. For more information about the differences between stopping and terminating instances, see [Instance lifecycle](#) in the *Amazon EC2 User Guide*.

For more information about troubleshooting, see [Troubleshooting terminating your instance](#) in the *Amazon EC2 User Guide*.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### InstanceId.N

The IDs of the instances.

Constraints: Up to 1000 instance IDs. We recommend breaking up this request into smaller batches.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

### instancesSet

Information about the terminated instances.

Type: Array of [InstanceStateChange \(p. 1690\)](#) objects

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example terminates the specified instance.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=TerminateInstances
&InstanceId.1=i-1234567890abcdef0
&AUTHPARAMS
```

#### Sample Response

```
<TerminateInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
```

```
<requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
<instancesSet>
  <item>
    <instanceId>i-1234567890abcdef0</instanceId>
    <currentState>
      <code>32</code>
      <name>shutting-down</name>
    </currentState>
    <previousState>
      <code>16</code>
      <name>running</name>
    </previousState>
  </item>
</instancesSet>
</TerminateInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UnassignIpv6Addresses

Unassigns one or more IPv6 addresses IPv4 Prefix Delegation prefixes from a network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Ipv6Addresses.N**

The IPv6 addresses to unassign from the network interface.

Type: Array of strings

Required: No

### **Ipv6Prefix.N**

One or more IPv6 prefixes to unassign from the network interface.

Type: Array of strings

Required: No

### **NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **networkInterfaceId**

The ID of the network interface.

Type: String

### **requestId**

The ID of the request.

Type: String

### **unassignedIpv6Addresses**

The IPv6 addresses that have been unassigned from the network interface.

Type: Array of strings

### **unassignedIpv6PrefixSet**

The IPv4 prefixes that have been unassigned from the network interface.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The following example unassigns two IPv6 addresses from the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignIpv6Addresses
&NetworkInterfaceId=eni-197d9972
&Ipv6Addresses.1=2001:db8:1234:1a00::123
&Ipv6Addresses.2=2001:db8:1234:1a00::456
&AUTHPARAMS
```

#### Sample Response

```
<UnassignIpv6AddressesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>94d446d7-fc8e-4918-94f9-example</requestId>
  <networkInterfaceId>eni-197d9972</networkInterfaceId>
  <unassignedIpv6Addresses>
    <item>2001:db8:1234:1a00::123</item>
    <item>2001:db8:1234:1a00::456</item>
  </unassignedIpv6Addresses>
</UnassignIpv6AddressesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UnassignPrivateIpAddresses

Unassigns one or more secondary private IP addresses, or IPv4 Prefix Delegation prefixes from a network interface.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### **Ipv4Prefix.N**

The IPv4 prefixes to unassign from the network interface.

Type: Array of strings

Required: No

### **NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: Yes

### **PrivateIpAddress.N**

The secondary private IP addresses to unassign from the network interface. You can specify this option multiple times to unassign more than one IP address.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **requestId**

The ID of the request.

Type: String

### **return**

Is true if the request succeeds, and an error otherwise.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

The following example unassigns two secondary private IP addresses from the specified network interface.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UnassignPrivateIpAddresses
&NetworkInterfaceId=eni-197d9972
&PrivateIpAddress.1=10.0.2.60
&PrivateIpAddress.2=10.0.2.65
&AUTHPARAMS
```

#### Sample Response

```
<UnassignPrivateIpAddresses xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbbf89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <return>true</return>
</UnassignPrivateIpAddresses>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

## UnmonitorInstances

Disables detailed monitoring for a running instance. For more information, see [Monitoring your instances and volumes](#) in the *Amazon EC2 User Guide*.

### Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

#### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

#### InstanceId.N

The IDs of the instances.

Type: Array of strings

Required: Yes

## Response Elements

The following elements are returned by the service.

#### instancesSet

The monitoring information.

Type: Array of [InstanceMonitoring \(p. 1663\)](#) objects

#### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example disables detailed monitoring for the specified instances.

## Sample Request

```
https://ec2.amazonaws.com/?Action=UnmonitorInstances
&InstanceId.1=i-1234567890abcdef0
&InstanceId.2=i-0598c7d356eba48d7
&AUTHPARAMS
```

## Sample Response

```
<UnmonitorInstancesResponse xmlns="http://ec2.amazonaws.com/doc/2016-11-15/">
  <requestId>59dbff89-35bd-4eac-99ed-be587EXAMPLE</requestId>
  <instancesSet>
    <item>
      <instanceId>i-1234567890abcdef0</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
    <item>
      <instanceId>i-0598c7d356eba48d7</instanceId>
      <monitoring>
        <state>disabled</state>
      </monitoring>
    </item>
  </instancesSet>
</UnmonitorInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateSecurityGroupRuleDescriptionsEgress

[VPC only] Updates the description of an egress (outbound) security group rule. You can replace an existing description, or add a description to a rule that did not have one previously. You can remove a description for a security group rule by omitting the description parameter in the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupId

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

### GroupName

[Default VPC] The name of the security group. You must specify either the security group ID or the security group name in the request.

Type: String

Required: No

### IpPermissions.N

The IP permissions for the security group rule. You must specify either the IP permissions or the description.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

### SecurityGroupRuleDescription.N

The description for the egress security group rules. You must specify either the description or the IP permissions.

Type: Array of [SecurityGroupRuleDescription \(p. 1997\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

### requestId

The ID of the request.

Type: String

### return

Returns `true` if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example

This example updates the description for the security group rule that allows outbound access over port 80 to the 205.192.0.0/16 IPv4 address range. The description 'Outbound HTTP access to server 2' replaces any existing description for the rule.

### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsEgress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=80
&IpPermissions.1.ToPort=80
&IpPermissions.1.IpRanges.1.CidrIp=205.192.0.0/16
&IpPermissions.1.IpRanges.1.Description=Outbound HTTP access to server 2
&AUTHPARAMS
```

### Sample Response

```
<UpdateSecurityGroupRuleDescriptionsEgressResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>1480cf25-4fbe-4168-aa9c-365example</requestId>
    <return>true</return>
</UpdateSecurityGroupRuleDescriptionsEgressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)

- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# UpdateSecurityGroupRuleDescriptionsIngress

Updates the description of an ingress (inbound) security group rule. You can replace an existing description, or add a description to a rule that did not have one previously. You can remove a description for a security group rule by omitting the description parameter in the request.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

### GroupId

The ID of the security group. You must specify either the security group ID or the security group name in the request. For security groups in a nondefault VPC, you must specify the security group ID.

Type: String

Required: No

### GroupName

[EC2-Classic, default VPC] The name of the security group. You must specify either the security group ID or the security group name in the request.

Type: String

Required: No

### IpPermissions.N

The IP permissions for the security group rule. You must specify either IP permissions or a description.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

### SecurityGroupRuleDescription.N

[VPC only] The description for the ingress security group rules. You must specify either a description or IP permissions.

Type: Array of [SecurityGroupRuleDescription \(p. 1997\)](#) objects

Required: No

## Response Elements

The following elements are returned by the service.

#### requestId

The ID of the request.

Type: String

#### return

Returns true if the request succeeds; otherwise, returns an error.

Type: Boolean

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## Examples

### Example 1

This example updates the description for the security group rule that allows inbound access over port 22 from the 203.0.113.0/16 IPv4 address range. The description 'SSH access from ABC office' replaces any existing description for the rule.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.0/16
&IpPermissions.1.IpRanges.1.Description=SSH access from ABC office
&AUTHPARAMS
```

#### Sample Response

```
<UpdateSecurityGroupRuleDescriptionsIngressResponse xmlns="http://ec2.amazonaws.com/
doc/2016-11-15/">
    <requestId>b4a57536-2e4a-4cbe-82f0-399example</requestId>
    <return>true</return>
</UpdateSecurityGroupRuleDescriptionsIngressResponse>
```

### Example 2

This example removes the description for the specified security group rule.

#### Sample Request

```
https://ec2.amazonaws.com/?Action=UpdateSecurityGroupRuleDescriptionsIngress
&GroupId=sg-112233
&IpPermissions.1.IpProtocol=tcp
&IpPermissions.1.FromPort=22
&IpPermissions.1.ToPort=22
&IpPermissions.1.IpRanges.1.CidrIp=203.0.113.4/32
```

&AUTHPARAMS

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# WithdrawByoipCidr

Stops advertising an address range that is provisioned as an address pool.

You can perform this operation at most once every 10 seconds, even if you specify different address ranges each time.

It can take a few minutes before traffic to the specified addresses stops routing to AWS because of BGP propagation delays.

## Request Parameters

The following parameters are for this specific action. For more information about required and optional parameters that are common to all actions, see [Common Query Parameters \(p. 2247\)](#).

### Cidr

The address range, in CIDR notation.

Type: String

Required: Yes

### DryRun

Checks whether you have the required permissions for the action, without actually making the request, and provides an error response. If you have the required permissions, the error response is `DryRunOperation`. Otherwise, it is `UnauthorizedOperation`.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### byoipCidr

Information about the address pool.

Type: [ByoipCidr \(p. 1397\)](#) object

### requestId

The ID of the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common client error codes \(p. 2251\)](#).

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS Command Line Interface](#)
- [AWS SDK for .NET](#)
- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for JavaScript](#)
- [AWS SDK for PHP V3](#)
- [AWS SDK for Python](#)
- [AWS SDK for Ruby V3](#)

# Data Types

The Amazon Elastic Compute Cloud API contains several data types that various actions use. This section describes each data type in detail.

## Note

The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- [AcceleratorCount \(p. 1351\)](#)
- [AcceleratorCountRequest \(p. 1352\)](#)
- [AcceleratorTotalMemoryMiB \(p. 1353\)](#)
- [AcceleratorTotalMemoryMiBRequest \(p. 1354\)](#)
- [AccountAttribute \(p. 1355\)](#)
- [AccountAttributeValue \(p. 1356\)](#)
- [ActiveInstance \(p. 1357\)](#)
- [AddPrefixListEntry \(p. 1358\)](#)
- [Address \(p. 1359\)](#)
- [AddressAttribute \(p. 1362\)](#)
- [AllowedPrincipal \(p. 1363\)](#)
- [AlternatePathHint \(p. 1364\)](#)
- [AnalysisAclRule \(p. 1365\)](#)
- [AnalysisComponent \(p. 1367\)](#)
- [AnalysisLoadBalancerListener \(p. 1368\)](#)
- [AnalysisLoadBalancerTarget \(p. 1369\)](#)
- [AnalysisPacketHeader \(p. 1370\)](#)
- [AnalysisRouteTableRoute \(p. 1372\)](#)
- [AnalysisSecurityGroupRule \(p. 1374\)](#)
- [AssignedPrivateIpAddress \(p. 1376\)](#)
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- [BlobAttributeValue \(p. 1391\)](#)
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# AcceleratorCount

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

## Contents

### **Max** (request), **max** (response)

The maximum number of accelerators. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum number of accelerators. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AcceleratorCountRequest

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance. To exclude accelerator-enabled instance types, set `Max` to 0.

## Contents

### Max

The maximum number of accelerators. To specify no maximum limit, omit this parameter. To exclude accelerator-enabled instance types, set `Max` to 0.

Type: Integer

Required: No

### Min

The minimum number of accelerators. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AcceleratorTotalMemoryMiB

The minimum and maximum amount of total accelerator memory, in MiB.

## Contents

### **Max** (request), **max** (response)

The maximum amount of accelerator memory, in MiB. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum amount of accelerator memory, in MiB. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AcceleratorTotalMemoryMiBRequest

The minimum and maximum amount of total accelerator memory, in MiB.

## Contents

### Max

The maximum amount of accelerator memory, in MiB. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

### Min

The minimum amount of accelerator memory, in MiB. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AccountAttribute

Describes an account attribute.

## Contents

### **attributeName**

The name of the account attribute.

Type: String

Required: No

### **attributeValueSet**

The values for the account attribute.

Type: Array of [AccountAttributeValue \(p. 1356\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AccountAttributeValue

Describes a value of an account attribute.

## Contents

### **attributeValue**

The value of the attribute.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ActiveInstance

Describes a running instance in a Spot Fleet.

## Contents

### instanceHealth

The health status of the instance. If the status of either the instance status check or the system status check is `impaired`, the health status of the instance is `unhealthy`. Otherwise, the health status is `healthy`.

Type: String

Valid Values: `healthy` | `unhealthy`

Required: No

### instanceId

The ID of the instance.

Type: String

Required: No

### instanceType

The instance type.

Type: String

Required: No

### spotInstanceRequestId

The ID of the Spot Instance request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AddPrefixListEntry

An entry for a prefix list.

## Contents

### Cidr

The CIDR block.

Type: String

Required: Yes

### Description

A description for the entry.

Constraints: Up to 255 characters in length.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Address

Describes an Elastic IP address, or a carrier IP address.

## Contents

### **allocationId**

The ID representing the allocation of the address for use with EC2-VPC.

Type: String

Required: No

### **associationId**

The ID representing the association of the address with an instance in a VPC.

Type: String

Required: No

### **carrierIp**

The carrier IP address associated. This option is only available for network interfaces which reside in a subnet in a Wavelength Zone (for example an EC2 instance).

Type: String

Required: No

### **customerOwnedIp**

The customer-owned IP address.

Type: String

Required: No

### **customerOwnedIpv4Pool**

The ID of the customer-owned address pool.

Type: String

Required: No

### **domain**

Indicates whether this Elastic IP address is for use with instances in EC2-Classic (`standard`) or instances in a VPC (`vpc`).

Type: String

Valid Values: `vpc` | `standard`

Required: No

### **instanceId**

The ID of the instance that the address is associated with (if any).

Type: String

Required: No

**networkBorderGroup**

The name of the unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**networkInterfaceOwnerId**

The ID of the AWS account that owns the network interface.

Type: String

Required: No

**privateIpAddress**

The private IP address associated with the Elastic IP address.

Type: String

Required: No

**publicIp**

The Elastic IP address.

Type: String

Required: No

**publicIpv4Pool**

The ID of an address pool.

Type: String

Required: No

**tagSet**

Any tags assigned to the Elastic IP address.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AddressAttribute

The attributes associated with an Elastic IP address.

## Contents

### **allocationId**

[EC2-VPC] The allocation ID.

Type: String

Required: No

### **ptrRecord**

The pointer (PTR) record for the IP address.

Type: String

Required: No

### **ptrRecordUpdate**

The updated PTR record for the IP address.

Type: [PtrUpdateStatus \(p. 1902\)](#) object

Required: No

### **publicIp**

The public IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AllowedPrincipal

Describes a principal.

## Contents

### **principal**

The Amazon Resource Name (ARN) of the principal.

Type: String

Required: No

### **principalType**

The type of principal.

Type: String

Valid Values: All | Service | OrganizationUnit | Account | User | Role

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AlternatePathHint

Describes an potential intermediate component of a feasible path.

## Contents

### **componentArn**

The Amazon Resource Name (ARN) of the component.

Type: String

Required: No

### **componentId**

The ID of the component.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisAclRule

Describes a network access control (ACL) rule.

## Contents

### **cidr**

The IPv4 address range, in CIDR notation.

Type: String

Required: No

### **egress**

Indicates whether the rule is an outbound rule.

Type: Boolean

Required: No

### **portRange**

The range of ports.

Type: [PortRange \(p. 1885\)](#) object

Required: No

### **protocol**

The protocol.

Type: String

Required: No

### **ruleAction**

Indicates whether to allow or deny traffic that matches the rule.

Type: String

Required: No

### **ruleNumber**

The rule number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# AnalysisComponent

Describes a path component.

## Contents

### arn

The Amazon Resource Name (ARN) of the component.

Type: String

Required: No

### id

The ID of the component.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisLoadBalancerListener

Describes a load balancer listener.

## Contents

### instancePort

[Classic Load Balancers] The back-end port for the listener.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

### loadBalancerPort

The port on which the load balancer is listening.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisLoadBalancerTarget

Describes a load balancer target.

## Contents

### address

The IP address.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### availabilityZone

The Availability Zone.

Type: String

Required: No

### instance

Information about the instance.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

### port

The port on which the target is listening.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisPacketHeader

Describes a header. Reflects any changes made by a component as traffic passes through. The fields of an inbound header are null except for the first component of a path.

## Contents

### **destinationAddressSet**

The destination addresses.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### **destinationPortRangeSet**

The destination port ranges.

Type: Array of [PortRange \(p. 1885\)](#) objects

Required: No

### **protocol**

The protocol.

Type: String

Required: No

### **sourceAddressSet**

The source addresses.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### **sourcePortRangeSet**

The source port ranges.

Type: Array of [PortRange \(p. 1885\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisRouteTableRoute

Describes a route table route.

## Contents

### **destinationCidr**

The destination IPv4 address, in CIDR notation.

Type: String

Required: No

### **destinationPrefixListId**

The prefix of the AWS service.

Type: String

Required: No

### **egressOnlyInternetGatewayId**

The ID of an egress-only internet gateway.

Type: String

Required: No

### **gatewayId**

The ID of the gateway, such as an internet gateway or virtual private gateway.

Type: String

Required: No

### **instanceId**

The ID of the instance, such as a NAT instance.

Type: String

Required: No

### **natGatewayId**

The ID of a NAT gateway.

Type: String

Required: No

### **networkInterfaceId**

The ID of a network interface.

Type: String

Required: No

### **origin**

Describes how the route was created. The following are possible values:

- `CreateRouteTable` - The route was automatically created when the route table was created.
- `CreateRoute` - The route was manually added to the route table.
- `EnableVgwRoutePropagation` - The route was propagated by route propagation.

Type: String

Required: No

**transitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AnalysisSecurityGroupRule

Describes a security group rule.

## Contents

### **cidr**

The IPv4 address range, in CIDR notation.

Type: String

Required: No

### **direction**

The direction. The following are possible values:

- egress
- ingress

Type: String

Required: No

### **portRange**

The port range.

Type: [PortRange \(p. 1885\)](#) object

Required: No

### **prefixListId**

The prefix list ID.

Type: String

Required: No

### **protocol**

The protocol name.

Type: String

Required: No

### **securityGroupId**

The security group ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AssignedPrivateIpAddress

Describes the private IP addresses assigned to a network interface.

## Contents

### privateIpAddress

The private IP address assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AssociatedRole

Information about the associated IAM roles.

## Contents

### **associatedRoleArn**

The ARN of the associated IAM role.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **certificateS3BucketName**

The name of the Amazon S3 bucket in which the Amazon S3 object is stored.

Type: String

Required: No

### **certificateS3ObjectKey**

The key of the Amazon S3 object key where the certificate, certificate chain, and encrypted private key bundle is stored. The object key is formatted as follows: `role_arn/certificate_arn`.

Type: String

Required: No

### **encryptionKmsKeyId**

The ID of the KMS customer master key (CMK) used to encrypt the private key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AssociatedTargetNetwork

Describes a target network that is associated with a Client VPN endpoint. A target network is a subnet in a VPC.

## Contents

### **networkId**

The ID of the subnet.

Type: String

Required: No

### **networkType**

The target network type.

Type: String

Valid Values: vpc

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AssociationStatus

Describes the state of a target network association.

## Contents

### code

The state of the target network association.

Type: String

Valid Values: associating | associated | association-failed | disassociating | disassociated

Required: No

### message

A message about the status of the target network association, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AthenalIntegration

Describes integration options for Amazon Athena.

## Contents

### **IntegrationResultS3DestinationArn**

The location in Amazon S3 to store the generated CloudFormation template.

Type: String

Required: Yes

### **PartitionEndDate**

The end date for the partition.

Type: Timestamp

Required: No

### **PartitionLoadFrequency**

The schedule for adding new partitions to the table.

Type: String

Valid Values: none | daily | weekly | monthly

Required: Yes

### **PartitionStartDate**

The start date for the partition.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AttributeBooleanValue

Describes a value for a resource attribute that is a Boolean value.

## Contents

**Value** (request), **value** (response)

The attribute value. The valid values are `true` or `false`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AttributeValue

Describes a value for a resource attribute that is a String.

## Contents

**Value** (request), **value** (response)

The attribute value. The value is case-sensitive.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AuthorizationRule

Information about an authorization rule.

## Contents

### **accessAll**

Indicates whether the authorization rule grants access to all clients.

Type: Boolean

Required: No

### **clientVpnEndpointId**

The ID of the Client VPN endpoint with which the authorization rule is associated.

Type: String

Required: No

### **description**

A brief description of the authorization rule.

Type: String

Required: No

### **destinationCidr**

The IPv4 address range, in CIDR notation, of the network to which the authorization rule applies.

Type: String

Required: No

### **groupId**

The ID of the Active Directory group to which the authorization rule grants access.

Type: String

Required: No

### **status**

The current state of the authorization rule.

Type: [ClientVpnAuthorizationRuleStatus \(p. 1433\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# AvailabilityZone

Describes Availability Zones, Local Zones, and Wavelength Zones.

## Contents

### **groupName**

For Availability Zones, this parameter has the same value as the Region name.

For Local Zones, the name of the associated group, for example `us-west-2-lax-1`.

For Wavelength Zones, the name of the associated group, for example `us-east-1-wl1-bos-wlz-1`.

Type: String

Required: No

### **messageSet**

Any messages about the Availability Zone, Local Zone, or Wavelength Zone.

Type: Array of [AvailabilityZoneMessage \(p. 1387\)](#) objects

Required: No

### **networkBorderGroup**

The name of the network border group.

Type: String

Required: No

### **optInStatus**

For Availability Zones, this parameter always has the value of `opt-in-not-required`.

For Local Zones and Wavelength Zones, this parameter is the opt-in status. The possible values are `opted-in`, and `not-opted-in`.

Type: String

Valid Values: `opt-in-not-required` | `opted-in` | `not-opted-in`

Required: No

### **parentZoneId**

The ID of the zone that handles some of the Local Zone or Wavelength Zone control plane operations, such as API calls.

Type: String

Required: No

### **parentZoneName**

The name of the zone that handles some of the Local Zone or Wavelength Zone control plane operations, such as API calls.

Type: String

Required: No

**regionName**

The name of the Region.

Type: String

Required: No

**zoneId**

The ID of the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

**zoneName**

The name of the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

**zoneState**

The state of the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Valid Values: `available` | `information` | `impaired` | `unavailable`

Required: No

**zoneType**

The type of zone. The valid values are `availability-zone`, `local-zone`, and `wavelength-zone`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AvailabilityZoneMessage

Describes a message about an Availability Zone, Local Zone, or Wavelength Zone.

## Contents

### message

The message about the Availability Zone, Local Zone, or Wavelength Zone.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# AvailableCapacity

The capacity information for instances that can be launched onto the Dedicated Host.

## Contents

### availableInstanceCapacity

The number of instances that can be launched onto the Dedicated Host depending on the host's available capacity. For Dedicated Hosts that support multiple instance types, this parameter represents the number of instances for each instance size that is supported on the host.

Type: Array of [InstanceCapacity \(p. 1640\)](#) objects

Required: No

### availableVCpus

The number of vCPUs available for launching instances onto the Dedicated Host.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# BaselineEbsBandwidthMbps

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see [Amazon EBS-optimized Instances](#) in the *Amazon EC2 User Guide*.

## Contents

### **Max** (request), **max** (response)

The maximum baseline bandwidth, in Mbps. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum baseline bandwidth, in Mbps. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# BaselineEbsBandwidthMbpsRequest

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see [Amazon EBS-optimized Instances](#) in the *Amazon EC2 User Guide*.

## Contents

### Max

The maximum baseline bandwidth, in Mbps. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

### Min

The minimum baseline bandwidth, in Mbps. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# BlobAttributeValue

Describes Base64-encoded binary data.

## Contents

### **Value**

The value of the data.

Type: Base64-encoded binary data

Required: No

# BlockDeviceMapping

Describes a block device mapping, which defines the EBS volumes and instance store volumes to attach to an instance at launch.

## Contents

### **DeviceName** (request), **deviceName** (response)

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

### **Ebs** (request), **ebs** (response)

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: [EbsBlockDevice](#) (p. 1500) object

Required: No

### **NoDevice** (request), **noDevice** (response)

To omit the device from the block device mapping, specify an empty string. When this property is specified, the device is removed from the block device mapping regardless of the assigned value.

Type: String

Required: No

### **VirtualName** (request), **virtualName** (response)

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

NVMe instance store volumes are automatically enumerated and assigned a device name. Including them in your block device mapping has no effect.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# BundleTask

Describes a bundle task.

## Contents

### **bundleId**

The ID of the bundle task.

Type: String

Required: No

### **error**

If the task fails, a description of the error.

Type: [BundleTaskError \(p. 1396\)](#) object

Required: No

### **instanceId**

The ID of the instance associated with this bundle task.

Type: String

Required: No

### **progress**

The level of task completion, as a percent (for example, 20%).

Type: String

Required: No

### **startTime**

The time this task started.

Type: Timestamp

Required: No

### **state**

The state of the task.

Type: String

Valid Values: pending | waiting-for-shutdown | bundling | storing | cancelling | complete | failed

Required: No

### **storage**

The Amazon S3 storage locations.

Type: [Storage \(p. 2056\)](#) object

Required: No

**updateTime**

The time of the most recent update for the task.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# BundleTaskError

Describes an error for [BundleInstance](#) (p. 118).

## Contents

### code

The error code.

Type: String

Required: No

### message

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ByoipCidr

Information about an address range that is provisioned for use with your AWS resources through bring your own IP addresses (BYOIP).

## Contents

### **cidr**

The address range, in CIDR notation.

Type: String

Required: No

### **description**

The description of the address range.

Type: String

Required: No

### **state**

The state of the address pool.

Type: String

Valid Values: advertised | deprovisioned | failed-deprovision | failed-provision | pending-deprovision | pending-provision | provisioned | provisioned-not-publicly-advertisible

Required: No

### **statusMessage**

Upon success, contains the ID of the address pool. Otherwise, contains an error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CancelCapacityReservationFleetError

Describes a Capacity Reservation Fleet cancellation error.

## Contents

### code

The error code.

Type: String

Required: No

### message

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CancelledSpotInstanceRequest

Describes a request to cancel a Spot Instance.

## Contents

### **spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

Required: No

### **state**

The state of the Spot Instance request.

Type: String

Valid Values: active | open | closed | cancelled | completed

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CancelSpotFleetRequestsError

Describes a Spot Fleet error.

## Contents

### code

The error code.

Type: String

Valid Values: fleetRequestIdDoesNotExist | fleetRequestIdMalformed | fleetRequestNotInCancellableState | unexpectedError

Required: No

### message

The description for the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CancelSpotFleetRequestsErrorItem

Describes a Spot Fleet request that was not successfully canceled.

## Contents

### **error**

The error.

Type: [CancelSpotFleetRequestsError \(p. 1400\)](#) object

Required: No

### **spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CancelSpotFleetRequestsSuccessItem

Describes a Spot Fleet request that was successfully canceled.

## Contents

### **currentSpotFleetRequestState**

The current state of the Spot Fleet request.

Type: String

Valid Values: submitted | active | cancelled | failed | cancelled\_running | cancelled\_terminating | modifying

Required: No

### **previousSpotFleetRequestState**

The previous state of the Spot Fleet request.

Type: String

Valid Values: submitted | active | cancelled | failed | cancelled\_running | cancelled\_terminating | modifying

Required: No

### **spotFleetRequestId**

The ID of the Spot Fleet request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservation

Describes a Capacity Reservation.

## Contents

### **availabilityZone**

The Availability Zone in which the capacity is reserved.

Type: String

Required: No

### **availabilityZoneId**

The Availability Zone ID of the Capacity Reservation.

Type: String

Required: No

### **availableInstanceCount**

The remaining capacity. Indicates the number of instances that can be launched in the Capacity Reservation.

Type: Integer

Required: No

### **capacityReservationArn**

The Amazon Resource Name (ARN) of the Capacity Reservation.

Type: String

Required: No

### **capacityReservationFleetId**

The ID of the Capacity Reservation Fleet to which the Capacity Reservation belongs. Only valid for Capacity Reservations that were created by a Capacity Reservation Fleet.

Type: String

Required: No

### **capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

### **createDate**

The date and time at which the Capacity Reservation was created.

Type: Timestamp

Required: No

**ebsOptimized**

Indicates whether the Capacity Reservation supports EBS-optimized instances. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS- optimized instance.

Type: Boolean

Required: No

**endDate**

The date and time at which the Capacity Reservation expires. When a Capacity Reservation expires, the reserved capacity is released and you can no longer launch instances into it. The Capacity Reservation's state changes to `expired` when it reaches its end date and time.

Type: Timestamp

Required: No

**endDateType**

Indicates the way in which the Capacity Reservation ends. A Capacity Reservation can have one of the following end types:

- `unlimited` - The Capacity Reservation remains active until you explicitly cancel it.
- `limited` - The Capacity Reservation expires automatically at a specified date and time.

Type: String

Valid Values: `unlimited` | `limited`

Required: No

**ephemeralStorage**

Indicates whether the Capacity Reservation supports instances with temporary, block-level storage.

Type: Boolean

Required: No

**instanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation accepts. The options include:

- `open` - The Capacity Reservation accepts all instances that have matching attributes (instance type, platform, and Availability Zone). Instances that have matching attributes launch into the Capacity Reservation automatically without specifying any additional parameters.
- `targeted` - The Capacity Reservation only accepts instances that have matching attributes (instance type, platform, and Availability Zone), and explicitly target the Capacity Reservation. This ensures that only permitted instances can use the reserved capacity.

Type: String

Valid Values: `open` | `targeted`

Required: No

**instancePlatform**

The type of operating system for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise

Required: No

**instanceType**

The type of instance for which the Capacity Reservation reserves capacity.

Type: String

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost on which the Capacity Reservation was created.

Type: String

Pattern: ^arn:aws([a-z-]+):outposts:[a-z\d-]+\d{12}:outpost/op-[a-f0-9]{17}\$

Required: No

**ownerId**

The ID of the AWS account that owns the Capacity Reservation.

Type: String

Required: No

**startDate**

The date and time at which the Capacity Reservation was started.

Type: Timestamp

Required: No

**state**

The current state of the Capacity Reservation. A Capacity Reservation can be in one of the following states:

- **active** - The Capacity Reservation is active and the capacity is available for your use.
- **expired** - The Capacity Reservation expired automatically at the date and time specified in your request. The reserved capacity is no longer available for your use.
- **cancelled** - The Capacity Reservation was cancelled. The reserved capacity is no longer available for your use.
- **pending** - The Capacity Reservation request was successful but the capacity provisioning is still pending.
- **failed** - The Capacity Reservation request has failed. A request might fail due to invalid request parameters, capacity constraints, or instance limit constraints. Failed requests are retained for 60 minutes.

Type: String

Valid Values: active | expired | cancelled | pending | failed

Required: No

**tagSet**

Any tags assigned to the Capacity Reservation.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

#### **tenancy**

Indicates the tenancy of the Capacity Reservation. A Capacity Reservation can have one of the following tenancy settings:

- **default** - The Capacity Reservation is created on hardware that is shared with other AWS accounts.
- **dedicated** - The Capacity Reservation is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: `default` | `dedicated`

Required: No

#### **totalInstanceCount**

The total number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationFleet

Information about a Capacity Reservation Fleet.

## Contents

### **allocationStrategy**

The strategy used by the Capacity Reservation Fleet to determine which of the specified instance types to use. For more information, see [Allocation strategy](#) in the Amazon EC2 User Guide.

Type: String

Required: No

### **capacityReservationFleetArn**

The ARN of the Capacity Reservation Fleet.

Type: String

Required: No

### **capacityReservationFleetId**

The ID of the Capacity Reservation Fleet.

Type: String

Required: No

### **createTime**

The date and time at which the Capacity Reservation Fleet was created.

Type: Timestamp

Required: No

### **endDate**

The date and time at which the Capacity Reservation Fleet expires.

Type: Timestamp

Required: No

### **instanceMatchCriteria**

Indicates the type of instance launches that the Capacity Reservation Fleet accepts. All Capacity Reservations in the Fleet inherit this instance matching criteria.

Currently, Capacity Reservation Fleets support open instance matching criteria only. This means that instances that have matching attributes (instance type, platform, and Availability Zone) run in the Capacity Reservations automatically. Instances do not need to explicitly target a Capacity Reservation Fleet to use its reserved capacity.

Type: String

Valid Values: `open`

Required: No

### **instanceTypeSpecificationSet**

Information about the instance types for which to reserve the capacity.

Type: Array of [FleetCapacityReservation \(p. 1546\)](#) objects

Required: No

### **state**

The state of the Capacity Reservation Fleet. Possible states include:

- submitted - The Capacity Reservation Fleet request has been submitted and Amazon Elastic Compute Cloud is preparing to create the Capacity Reservations.
- modifying - The Capacity Reservation Fleet is being modified. The Fleet remains in this state until the modification is complete.
- active - The Capacity Reservation Fleet has fulfilled its total target capacity and it is attempting to maintain this capacity. The Fleet remains in this state until it is modified or deleted.
- partially\_fulfilled - The Capacity Reservation Fleet has partially fulfilled its total target capacity. There is insufficient Amazon EC2 to fulfill the total target capacity. The Fleet is attempting to asynchronously fulfill its total target capacity.
- expiring - The Capacity Reservation Fleet has reached its end date and it is in the process of expiring. One or more of its Capacity reservations might still be active.
- expired - The Capacity Reservation Fleet has reached its end date. The Fleet and its Capacity Reservations are expired. The Fleet can't create new Capacity Reservations.
- cancelling - The Capacity Reservation Fleet is in the process of being cancelled. One or more of its Capacity reservations might still be active.
- cancelled - The Capacity Reservation Fleet has been manually cancelled. The Fleet and its Capacity Reservations are cancelled and the Fleet can't create new Capacity Reservations.
- failed - The Capacity Reservation Fleet failed to reserve capacity for the specified instance types.

Type: String

Valid Values: submitted | modifying | active | partially\_fulfilled | expiring | expired | cancelling | cancelled | failed

Required: No

### **tagSet**

The tags assigned to the Capacity Reservation Fleet.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **tenancy**

The tenancy of the Capacity Reservation Fleet. Tenancies include:

- default - The Capacity Reservation Fleet is created on hardware that is shared with other AWS accounts.
- dedicated - The Capacity Reservation Fleet is created on single-tenant hardware that is dedicated to a single AWS account.

Type: String

Valid Values: default

Required: No

### **totalFulfilledCapacity**

The capacity units that have been fulfilled.

Type: Double

Required: No

### **totalTargetCapacity**

The total number of capacity units for which the Capacity Reservation Fleet reserves capacity. For more information, see [Total target capacity](#) in the Amazon EC2 User Guide.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationFleetCancellationState

Describes a Capacity Reservation Fleet that was successfully cancelled.

## Contents

### **capacityReservationFleetId**

The ID of the Capacity Reservation Fleet that was successfully cancelled.

Type: String

Required: No

### **currentFleetState**

The current state of the Capacity Reservation Fleet.

Type: String

Valid Values: submitted | modifying | active | partially\_fulfilled | expiring | expired | cancelling | cancelled | failed

Required: No

### **previousFleetState**

The previous state of the Capacity Reservation Fleet.

Type: String

Valid Values: submitted | modifying | active | partially\_fulfilled | expiring | expired | cancelling | cancelled | failed

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationGroup

Describes a resource group to which a Capacity Reservation has been added.

## Contents

### groupArn

The ARN of the resource group.

Type: String

Required: No

### ownerId

The ID of the AWS account that owns the resource group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationOptions

Describes the strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

**Note**

This strategy can only be used if the EC2 Fleet is of type `instant`.

For more information about Capacity Reservations, see [On-Demand Capacity Reservations](#) in the *Amazon EC2 User Guide*. For examples of using Capacity Reservations in an EC2 Fleet, see [EC2 Fleet example configurations](#) in the *Amazon EC2 User Guide*.

## Contents

### **usageStrategy**

Indicates whether to use unused Capacity Reservations for fulfilling On-Demand capacity.

If you specify `use-capacity-reservations-first`, the fleet uses unused Capacity Reservations to fulfill On-Demand capacity up to the target On-Demand capacity. If multiple instance pools have unused Capacity Reservations, the On-Demand allocation strategy (`lowest-price` or `prioritized`) is applied. If the number of unused Capacity Reservations is less than the On-Demand target capacity, the remaining On-Demand target capacity is launched according to the On-Demand allocation strategy (`lowest-price` or `prioritized`).

If you do not specify a value, the fleet fulfills the On-Demand capacity according to the chosen On-Demand allocation strategy.

Type: String

Valid Values: `use-capacity-reservations-first`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationOptionsRequest

Describes the strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

## Note

This strategy can only be used if the EC2 Fleet is of type `instant`.

For more information about Capacity Reservations, see [On-Demand Capacity Reservations](#) in the *Amazon EC2 User Guide*. For examples of using Capacity Reservations in an EC2 Fleet, see [EC2 Fleet example configurations](#) in the *Amazon EC2 User Guide*.

## Contents

### UsageStrategy

Indicates whether to use unused Capacity Reservations for fulfilling On-Demand capacity.

If you specify `use-capacity-reservations-first`, the fleet uses unused Capacity Reservations to fulfill On-Demand capacity up to the target On-Demand capacity. If multiple instance pools have unused Capacity Reservations, the On-Demand allocation strategy (`lowest-price` or `prioritized`) is applied. If the number of unused Capacity Reservations is less than the On-Demand target capacity, the remaining On-Demand target capacity is launched according to the On-Demand allocation strategy (`lowest-price` or `prioritized`).

If you do not specify a value, the fleet fulfills the On-Demand capacity according to the chosen On-Demand allocation strategy.

Type: String

Valid Values: `use-capacity-reservations-first`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationSpecification

Describes an instance's Capacity Reservation targeting option. You can specify only one parameter at a time. If you specify `CapacityReservationPreference` and `CapacityReservationTarget`, the request fails.

Use the `CapacityReservationPreference` parameter to configure the instance to run as an On-Demand Instance or to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone). Use the `CapacityReservationTarget` parameter to explicitly target a specific Capacity Reservation or a Capacity Reservation group.

## Contents

### **CapacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- `open` - The instance can run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- `none` - The instance avoids running in a Capacity Reservation even if one is available. The instance runs as an On-Demand Instance.

Type: String

Valid Values: `open` | `none`

Required: No

### **CapacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: [CapacityReservationTarget \(p. 1416\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationSpecificationResponse

Describes the instance's Capacity Reservation targeting preferences. The action returns the `capacityReservationPreference` response element if the instance is configured to run in On-Demand capacity, or if it is configured to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone). The action returns the `capacityReservationTarget` response element if the instance explicitly targets a specific Capacity Reservation or Capacity Reservation group.

## Contents

### **capacityReservationPreference**

Describes the instance's Capacity Reservation preferences. Possible preferences include:

- `open` - The instance can run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- `none` - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: `open` | `none`

Required: No

### **capacityReservationTarget**

Information about the targeted Capacity Reservation or Capacity Reservation group.

Type: [CapacityReservationTargetResponse \(p. 1417\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationTarget

Describes a target Capacity Reservation or Capacity Reservation group.

## Contents

### **CapacityReservationId**

The ID of the Capacity Reservation in which to run the instance.

Type: String

Required: No

### **CapacityReservationResourceGroupArn**

The ARN of the Capacity Reservation resource group in which to run the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CapacityReservationTargetResponse

Describes a target Capacity Reservation or Capacity Reservation group.

## Contents

### **capacityReservationId**

The ID of the targeted Capacity Reservation.

Type: String

Required: No

### **capacityReservationResourceGroupArn**

The ARN of the targeted Capacity Reservation group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CarrierGateway

Describes a carrier gateway.

## Contents

### **carrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: No

### **ownerId**

The AWS account ID of the owner of the carrier gateway.

Type: String

Required: No

### **state**

The state of the carrier gateway.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

### **tagSet**

The tags assigned to the carrier gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **vpcId**

The ID of the VPC associated with the carrier gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CertificateAuthentication

Information about the client certificate used for authentication.

## Contents

### **clientRootCertificateChain**

The ARN of the client certificate.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CertificateAuthenticationRequest

Information about the client certificate to be used for authentication.

## Contents

### **ClientRootCertificateChainArn**

The ARN of the client certificate. The certificate must be signed by a certificate authority (CA) and it must be provisioned in AWS Certificate Manager (ACM).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CidrAuthorizationContext

Provides authorization for Amazon to bring a specific IP address range to a specific AWS account using bring your own IP addresses (BYOIP). For more information, see [Configuring your BYOIP address range](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Contents

### Message

The plain-text authorization message for the prefix and account.

Type: String

Required: Yes

### Signature

The signed authorization message for the prefix and account.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CidrBlock

Describes an IPv4 CIDR block.

## Contents

### cidrBlock

The IPv4 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClassicLinkDnsSupport

Describes the ClassicLink DNS support status of a VPC.

## Contents

### **classicLinkDnsSupported**

Indicates whether ClassicLink DNS support is enabled for the VPC.

Type: Boolean

Required: No

### **vpclId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClassicLinkInstance

Describes a linked EC2-Classic instance.

## Contents

### groupSet

A list of security groups.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

### instanceId

The ID of the instance.

Type: String

Required: No

### tagSet

Any tags assigned to the instance.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### vpcId

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClassicLoadBalancer

Describes a Classic Load Balancer.

## Contents

**Name** (request), **name** (response)

The name of the load balancer.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClassicLoadBalancersConfig

Describes the Classic Load Balancers to attach to a Spot Fleet. Spot Fleet registers the running Spot Instances with these Classic Load Balancers.

## Contents

**ClassicLoadBalancers** (request), **classicLoadBalancers** (response)

One or more Classic Load Balancers.

Type: Array of [ClassicLoadBalancer \(p. 1425\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientCertificateRevocationListStatus

Describes the state of a client certificate revocation list.

## Contents

### code

The state of the client certificate revocation list.

Type: String

Valid Values: pending | active

Required: No

### message

A message about the status of the client certificate revocation list, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientConnectOptions

The options for managing connection authorization for new client connections.

## Contents

### Enabled

Indicates whether client connect options are enabled. The default is `false` (not enabled).

Type: Boolean

Required: No

### LambdaFunctionArn

The Amazon Resource Name (ARN) of the Lambda function used for connection authorization.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientConnectResponseOptions

The options for managing connection authorization for new client connections.

## Contents

### **enabled**

Indicates whether client connect options are enabled.

Type: Boolean

Required: No

### **lambdaFunctionArn**

The Amazon Resource Name (ARN) of the Lambda function used for connection authorization.

Type: String

Required: No

### **status**

The status of any updates to the client connect options.

Type: [ClientVpnEndpointAttributeStatus \(p. 1441\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientData

Describes the client-specific data.

## Contents

### **Comment**

A user-defined comment about the disk upload.

Type: String

Required: No

### **UploadEnd**

The time that the disk upload ends.

Type: Timestamp

Required: No

### **UploadSize**

The size of the uploaded disk image, in GiB.

Type: Double

Required: No

### **UploadStart**

The time that the disk upload starts.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnAuthentication

Describes the authentication methods used by a Client VPN endpoint. For more information, see [Authentication](#) in the *AWS Client VPN Administrator Guide*.

## Contents

### **activeDirectory**

Information about the Active Directory, if applicable.

Type: [DirectoryServiceAuthentication \(p. 1486\)](#) object

Required: No

### **federatedAuthentication**

Information about the IAM SAML identity provider, if applicable.

Type: [FederatedAuthentication \(p. 1543\)](#) object

Required: No

### **mutualAuthentication**

Information about the authentication certificates, if applicable.

Type: [CertificateAuthentication \(p. 1419\)](#) object

Required: No

### **type**

The authentication type used.

Type: String

Valid Values: certificate-authentication | directory-service-authentication | federated-authentication

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnAuthenticationRequest

Describes the authentication method to be used by a Client VPN endpoint. For more information, see [Authentication](#) in the *AWS Client VPN Administrator Guide*.

## Contents

### ActiveDirectory

Information about the Active Directory to be used, if applicable. You must provide this information if **Type** is `directory-service-authentication`.

Type: [DirectoryServiceAuthenticationRequest \(p. 1487\)](#) object

Required: No

### FederatedAuthentication

Information about the IAM SAML identity provider to be used, if applicable. You must provide this information if **Type** is `federated-authentication`.

Type: [FederatedAuthenticationRequest \(p. 1544\)](#) object

Required: No

### MutualAuthentication

Information about the authentication certificates to be used, if applicable. You must provide this information if **Type** is `certificate-authentication`.

Type: [CertificateAuthenticationRequest \(p. 1420\)](#) object

Required: No

### Type

The type of client authentication to be used.

Type: String

Valid Values: `certificate-authentication` | `directory-service-authentication` | `federated-authentication`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnAuthorizationRuleStatus

Describes the state of an authorization rule.

## Contents

### code

The state of the authorization rule.

Type: String

Valid Values: `authorizing` | `active` | `failed` | `revoking`

Required: No

### message

A message about the status of the authorization rule, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnConnection

Describes a client connection.

## Contents

### **clientIp**

The IP address of the client.

Type: String

Required: No

### **clientVpnEndpointId**

The ID of the Client VPN endpoint to which the client is connected.

Type: String

Required: No

### **commonName**

The common name associated with the client. This is either the name of the client certificate, or the Active Directory user name.

Type: String

Required: No

### **connectionEndTime**

The date and time the client connection was terminated.

Type: String

Required: No

### **connectionEstablishedTime**

The date and time the client connection was established.

Type: String

Required: No

### **connectionId**

The ID of the client connection.

Type: String

Required: No

### **egressBytes**

The number of bytes received by the client.

Type: String

Required: No

**egressPackets**

The number of packets received by the client.

Type: String

Required: No

**ingressBytes**

The number of bytes sent by the client.

Type: String

Required: No

**ingressPackets**

The number of packets sent by the client.

Type: String

Required: No

**postureComplianceStatusSet**

The statuses returned by the client connect handler for posture compliance, if applicable.

Type: Array of strings

Required: No

**status**

The current state of the client connection.

Type: [ClientVpnConnectionStatus \(p. 1437\)](#) object

Required: No

**timestamp**

The current date and time.

Type: String

Required: No

**username**

The username of the client who established the client connection. This information is only provided if Active Directory client authentication is used.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# ClientVpnConnectionStatus

Describes the status of a client connection.

## Contents

### code

The state of the client connection.

Type: String

Valid Values: active | failed-to-terminate | terminating | terminated

Required: No

### message

A message about the status of the client connection, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnEndpoint

Describes a Client VPN endpoint.

## Contents

### associatedTargetNetwork

*This member has been deprecated.*

Information about the associated target networks. A target network is a subnet in a VPC.

Type: Array of [AssociatedTargetNetwork \(p. 1378\)](#) objects

Required: No

### authenticationOptions

Information about the authentication method used by the Client VPN endpoint.

Type: Array of [ClientVpnAuthentication \(p. 1431\)](#) objects

Required: No

### clientCidrBlock

The IPv4 address range, in CIDR notation, from which client IP addresses are assigned.

Type: String

Required: No

### clientConnectOptions

The options for managing connection authorization for new client connections.

Type: [ClientConnectResponseOptions \(p. 1429\)](#) object

Required: No

### clientVpnEndpointId

The ID of the Client VPN endpoint.

Type: String

Required: No

### connectionLogOptions

Information about the client connection logging options for the Client VPN endpoint.

Type: [ConnectionLogResponseOptions \(p. 1449\)](#) object

Required: No

### creationTime

The date and time the Client VPN endpoint was created.

Type: String

Required: No

**deletionTime**

The date and time the Client VPN endpoint was deleted, if applicable.

Type: String

Required: No

**description**

A brief description of the endpoint.

Type: String

Required: No

**dnsName**

The DNS name to be used by clients when connecting to the Client VPN endpoint.

Type: String

Required: No

**dnsServer**

Information about the DNS servers to be used for DNS resolution.

Type: Array of strings

Required: No

**securityGroupIdSet**

The IDs of the security groups for the target network.

Type: Array of strings

Required: No

**selfServicePortalUrl**

The URL of the self-service portal.

Type: String

Required: No

**serverCertificateArn**

The ARN of the server certificate.

Type: String

Required: No

**splitTunnel**

Indicates whether split-tunnel is enabled in the AWS Client VPN endpoint.

For information about split-tunnel VPN endpoints, see [Split-Tunnel AWS Client VPN endpoint](#) in the [AWS Client VPN Administrator Guide](#).

Type: Boolean

Required: No

**status**

The current state of the Client VPN endpoint.

Type: [ClientVpnEndpointStatus \(p. 1442\)](#) object

Required: No

**tagSet**

Any tags assigned to the Client VPN endpoint.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**transportProtocol**

The transport protocol used by the Client VPN endpoint.

Type: String

Valid Values: `tcp` | `udp`

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

**vpnPort**

The port number for the Client VPN endpoint.

Type: Integer

Required: No

**vpnProtocol**

The protocol used by the VPN session.

Type: String

Valid Values: `openvpn`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnEndpointAttributeStatus

Describes the status of the Client VPN endpoint attribute.

## Contents

### code

The status code.

Type: String

Valid Values: applying | applied

Required: No

### message

The status message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnEndpointStatus

Describes the state of a Client VPN endpoint.

## Contents

### code

The state of the Client VPN endpoint. Possible states include:

- pending-associate - The Client VPN endpoint has been created but no target networks have been associated. The Client VPN endpoint cannot accept connections.
- available - The Client VPN endpoint has been created and a target network has been associated. The Client VPN endpoint can accept connections.
- deleting - The Client VPN endpoint is being deleted. The Client VPN endpoint cannot accept connections.
- deleted - The Client VPN endpoint has been deleted. The Client VPN endpoint cannot accept connections.

Type: String

Valid Values: pending-associate | available | deleting | deleted

Required: No

### message

A message about the status of the Client VPN endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnRoute

Information about a Client VPN endpoint route.

## Contents

### **clientVpnEndpointId**

The ID of the Client VPN endpoint with which the route is associated.

Type: String

Required: No

### **description**

A brief description of the route.

Type: String

Required: No

### **destinationCidr**

The IPv4 address range, in CIDR notation, of the route destination.

Type: String

Required: No

### **origin**

Indicates how the route was associated with the Client VPN endpoint. `associate` indicates that the route was automatically added when the target network was associated with the Client VPN endpoint. `add-route` indicates that the route was manually added using the [CreateClientVpnRoute](#) action.

Type: String

Required: No

### **status**

The current state of the route.

Type: [ClientVpnRouteStatus \(p. 1445\)](#) object

Required: No

### **targetSubnet**

The ID of the subnet through which traffic is routed.

Type: String

Required: No

### **type**

The route type.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ClientVpnRouteStatus

Describes the state of a Client VPN endpoint route.

## Contents

### code

The state of the Client VPN endpoint route.

Type: String

Valid Values: `creating` | `active` | `failed` | `deleting`

Required: No

### message

A message about the status of the Client VPN endpoint route, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CoipAddressUsage

Describes address usage for a customer-owned address pool.

## Contents

### **allocationId**

The allocation ID of the address.

Type: String

Required: No

### **awsAccountId**

The AWS account ID.

Type: String

Required: No

### **awsService**

The AWS service.

Type: String

Required: No

### **colp**

The customer-owned IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CoipPool

Describes a customer-owned address pool.

## Contents

### **localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

### **poolArn**

The ARN of the address pool.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **poolCidrSet**

The address ranges of the address pool.

Type: Array of strings

Required: No

### **poolId**

The ID of the address pool.

Type: String

Required: No

### **tagSet**

The tags.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ConnectionLogOptions

Describes the client connection logging options for the Client VPN endpoint.

## Contents

### **CloudwatchLogGroup**

The name of the CloudWatch Logs log group. Required if connection logging is enabled.

Type: String

Required: No

### **CloudwatchLogStream**

The name of the CloudWatch Logs log stream to which the connection data is published.

Type: String

Required: No

### **Enabled**

Indicates whether connection logging is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ConnectionLogResponseOptions

Information about the client connection logging options for a Client VPN endpoint.

## Contents

### **CloudwatchLogGroup**

The name of the Amazon CloudWatch Logs log group to which connection logging data is published.

Type: String

Required: No

### **CloudwatchLogStream**

The name of the Amazon CloudWatch Logs log stream to which connection logging data is published.

Type: String

Required: No

### **Enabled**

Indicates whether client connection logging is enabled for the Client VPN endpoint.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ConnectionNotification

Describes a connection notification for a VPC endpoint or VPC endpoint service.

## Contents

### **connectionEvents**

The events for the notification. Valid values are `Accept`, `Connect`, `Delete`, and `Reject`.

Type: Array of strings

Required: No

### **connectionNotificationArn**

The ARN of the SNS topic for the notification.

Type: String

Required: No

### **connectionNotificationId**

The ID of the notification.

Type: String

Required: No

### **connectionNotificationState**

The state of the notification.

Type: String

Valid Values: `Enabled` | `Disabled`

Required: No

### **connectionNotificationType**

The type of notification.

Type: String

Valid Values: `Topic`

Required: No

### **serviceId**

The ID of the endpoint service.

Type: String

Required: No

### **vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ConversionTask

Describes a conversion task.

## Contents

### **conversionTaskId**

The ID of the conversion task.

Type: String

Required: No

### **expirationTime**

The time when the task expires. If the upload isn't complete before the expiration time, we automatically cancel the task.

Type: String

Required: No

### **importInstance**

If the task is for importing an instance, this contains information about the import instance task.

Type: [ImportInstanceTaskDetails \(p. 1622\)](#) object

Required: No

### **importVolume**

If the task is for importing a volume, this contains information about the import volume task.

Type: [ImportVolumeTaskDetails \(p. 1626\)](#) object

Required: No

### **state**

The state of the conversion task.

Type: String

Valid Values: active | cancelling | cancelled | completed

Required: No

### **statusMessage**

The status message related to the conversion task.

Type: String

Required: No

### **tagSet**

Any tags assigned to the task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CpuOptions

The CPU options for the instance.

## Contents

### **coreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

### **threadsPerCore**

The number of threads per CPU core.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CpuOptionsRequest

The CPU options for the instance. Both the core count and threads per core must be specified in the request.

## Contents

### CoreCount

The number of CPU cores for the instance.

Type: Integer

Required: No

### ThreadsPerCore

The number of threads per CPU core. To disable multithreading for the instance, specify a value of 1. Otherwise, specify the default value of 2.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateFleetError

Describes the instances that could not be launched by the fleet.

## Contents

### **errorCode**

The error code that indicates why the instance could not be launched. For more information about error codes, see [Error Codes](#).

Type: String

Required: No

### **errorMessage**

The error message that describes why the instance could not be launched. For more information about error messages, see [Error Codes](#).

Type: String

Required: No

### **launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: [LaunchTemplateAndOverridesResponse \(p. 1736\)](#) object

Required: No

### **lifecycle**

Indicates if the instance that could not be launched was a Spot Instance or On-Demand Instance.

Type: String

Valid Values: spot | on-demand

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateFleetInstance

Describes the instances that were launched by the fleet.

## Contents

### instanceIds

The IDs of the instances.

Type: Array of strings

Required: No

### instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |

c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

#### **launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: [LaunchTemplateAndOverridesResponse \(p. 1736\)](#) object

Required: No

### **lifecycle**

Indicates if the instance that was launched is a Spot Instance or On-Demand Instance.

Type: String

Valid Values: spot | on-demand

Required: No

### **platform**

The value is Windows for Windows instances. Otherwise, the value is blank.

Type: String

Valid Values: Windows

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayConnectRequestOptions

The options for a Connect attachment.

## Contents

### Protocol

The tunnel protocol.

Type: String

Valid Values: gre

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayMulticastDomainRequestOptions

The options for the transit gateway multicast domain.

## Contents

### **AutoAcceptSharedAssociations**

Indicates whether to automatically accept cross-account subnet associations that are associated with the transit gateway multicast domain.

Type: String

Valid Values: enable | disable

Required: No

### **Igmpv2Support**

Specify whether to enable Internet Group Management Protocol (IGMP) version 2 for the transit gateway multicast domain.

Type: String

Valid Values: enable | disable

Required: No

### **StaticSourcesSupport**

Specify whether to enable support for statically configuring multicast group sources for a domain.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateTransitGatewayVpcAttachmentRequestOptions

Describes the options for a VPC attachment.

## Contents

### ApplianceModeSupport

Enable or disable support for appliance mode. If enabled, a traffic flow between a source and destination uses the same Availability Zone for the VPC attachment for the lifetime of that flow. The default is disable.

Type: String

Valid Values: enable | disable

Required: No

### DnsSupport

Enable or disable DNS support. The default is enable.

Type: String

Valid Values: enable | disable

Required: No

### Ipv6Support

Enable or disable IPv6 support. The default is disable.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateVolumePermission

Describes the user or group to be added or removed from the list of create volume permissions for a volume.

## Contents

### **Group** (request), **group** (response)

The group to be added or removed. The possible value is `all`.

Type: String

Valid Values: `all`

Required: No

### **UserId** (request), **userId** (response)

The ID of the AWS account to be added or removed.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreateVolumePermissionModifications

Describes modifications to the list of create volume permissions for a volume.

## Contents

### Add

Adds the specified AWS account ID or group to the list.

Type: Array of [CreateVolumePermission \(p. 1463\)](#) objects

Required: No

### Remove

Removes the specified AWS account ID or group from the list.

Type: Array of [CreateVolumePermission \(p. 1463\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreditSpecification

Describes the credit option for CPU usage of a T2, T3, or T3a instance.

## Contents

### cpuCredits

The credit option for CPU usage of a T2, T3, or T3a instance. Valid values are `standard` and `unlimited`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CreditSpecificationRequest

The credit option for CPU usage of a T2, T3, or T3a instance.

## Contents

### CpuCredits

The credit option for CPU usage of a T2, T3, or T3a instance. Valid values are `standard` and `unlimited`.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# CustomerGateway

Describes a customer gateway.

## Contents

### **bgpAsn**

The customer gateway's Border Gateway Protocol (BGP) Autonomous System Number (ASN).

Type: String

Required: No

### **certificateArn**

The Amazon Resource Name (ARN) for the customer gateway certificate.

Type: String

Required: No

### **customerGatewayId**

The ID of the customer gateway.

Type: String

Required: No

### **deviceName**

The name of customer gateway device.

Type: String

Required: No

### **ipAddress**

The Internet-routable IP address of the customer gateway's outside interface.

Type: String

Required: No

### **state**

The current state of the customer gateway (`pending` | `available` | `deleting` | `deleted`).

Type: String

Required: No

### **tagSet**

Any tags assigned to the customer gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **type**

The type of VPN connection the customer gateway supports (`ipsec.1`).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteFleetError

Describes an EC2 Fleet error.

## Contents

### code

The error code.

Type: String

Valid Values: fleetIdDoesNotExist | fleetIdMalformed | fleetNotInDeletableState  
| unexpectedError

Required: No

### message

The description for the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteFleetErrorItem

Describes an EC2 Fleet that was not successfully deleted.

## Contents

### **error**

The error.

Type: [DeleteFleetError \(p. 1469\)](#) object

Required: No

### **fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteFleetSuccessItem

Describes an EC2 Fleet that was successfully deleted.

## Contents

### **currentFleetState**

The current state of the EC2 Fleet.

Type: String

Valid Values: submitted | active | deleted | failed | deleted\_running | deleted\_terminating | modifying

Required: No

### **fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

### **previousFleetState**

The previous state of the EC2 Fleet.

Type: String

Valid Values: submitted | active | deleted | failed | deleted\_running | deleted\_terminating | modifying

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteLaunchTemplateVersionsResponseErrorItem

Describes a launch template version that could not be deleted.

## Contents

### launchTemplateId

The ID of the launch template.

Type: String

Required: No

### launchTemplateName

The name of the launch template.

Type: String

Required: No

### responseError

Information about the error.

Type: [ResponseError \(p. 1951\)](#) object

Required: No

### versionNumber

The version number of the launch template.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteLaunchTemplateVersionsResponseSuccessItem

Describes a launch template version that was successfully deleted.

## Contents

### launchTemplateId

The ID of the launch template.

Type: String

Required: No

### launchTemplateName

The name of the launch template.

Type: String

Required: No

### versionNumber

The version number of the launch template.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeleteQueuedReservedInstancesError

Describes the error for a Reserved Instance whose queued purchase could not be deleted.

## Contents

### code

The error code.

Type: String

Valid Values: `reserved-instances-id-invalid` | `reserved-instances-not-in-queued-state` | `unexpected-error`

Required: No

### message

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DeregisterInstanceTagAttributeRequest

Information about the tag keys to deregister for the current Region. You can either specify individual tag keys or deregister all tag keys in the current Region. You must specify either `IncludeAllTagsOfInstance` or `InstanceTagKeys` in the request

## Contents

### **IncludeAllTagsOfInstance**

Indicates whether to deregister all tag keys in the current Region. Specify `false` to deregister all tag keys.

Type: Boolean

Required: No

### **InstanceTagKeys**

Information about the tag keys to deregister.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DescribeFastSnapshotRestoreSuccessItem

Describes fast snapshot restores for a snapshot.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **disabledTime**

The time at which fast snapshot restores entered the disabled state.

Type: Timestamp

Required: No

### **disablingTime**

The time at which fast snapshot restores entered the disabling state.

Type: Timestamp

Required: No

### **enabledTime**

The time at which fast snapshot restores entered the enabled state.

Type: Timestamp

Required: No

### **enablingTime**

The time at which fast snapshot restores entered the enabling state.

Type: Timestamp

Required: No

### **optimizingTime**

The time at which fast snapshot restores entered the optimizing state.

Type: Timestamp

Required: No

### **ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores.

Type: String

Valid Values: enabling | optimizing | enabled | disabling | disabled

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- Client.UserInitiated - The state successfully transitioned to enabling or disabling.
- Client.UserInitiated - Lifecycle state transition - The state successfully transitioned to optimizing, enabled, or disabled.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DescribeFleetError

Describes the instances that could not be launched by the fleet.

## Contents

### **errorCode**

The error code that indicates why the instance could not be launched. For more information about error codes, see [Error Codes](#).

Type: String

Required: No

### **errorMessage**

The error message that describes why the instance could not be launched. For more information about error messages, see [Error Codes](#).

Type: String

Required: No

### **launchTemplateAndOverrides**

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: [LaunchTemplateAndOverridesResponse \(p. 1736\)](#) object

Required: No

### **lifecycle**

Indicates if the instance that could not be launched was a Spot Instance or On-Demand Instance.

Type: String

Valid Values: spot | on-demand

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DescribeFleetsInstances

Describes the instances that were launched by the fleet.

## Contents

### instanceIds

The IDs of the instances.

Type: Array of strings

Required: No

### instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |

c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.meta |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

#### launchTemplateAndOverrides

The launch templates and overrides that were used for launching the instances. The values that you specify in the Overrides replace the values in the launch template.

Type: [LaunchTemplateAndOverridesResponse \(p. 1736\)](#) object

Required: No

### **lifecycle**

Indicates if the instance that was launched is a Spot Instance or On-Demand Instance.

Type: String

Valid Values: spot | on-demand

Required: No

### **platform**

The value is Windows for Windows instances. Otherwise, the value is blank.

Type: String

Valid Values: Windows

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DestinationOptionsRequest

Describes the destination options for a flow log.

## Contents

### FileFormat

The format for the flow log. The default is plain-text.

Type: String

Valid Values: plain-text | parquet

Required: No

### HiveCompatiblePartitions

Indicates whether to use Hive-compatible prefixes for flow logs stored in Amazon S3. The default is false.

Type: Boolean

Required: No

### PerHourPartition

Indicates whether to partition the flow log per hour. This reduces the cost and response time for queries. The default is false.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DestinationOptionsResponse

Describes the destination options for a flow log.

## Contents

### **fileFormat**

The format for the flow log.

Type: String

Valid Values: `plain-text` | `parquet`

Required: No

### **hiveCompatiblePartitions**

Indicates whether to use Hive-compatible prefixes for flow logs stored in Amazon S3.

Type: Boolean

Required: No

### **perHourPartition**

Indicates whether to partition the flow log per hour.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DhcpConfiguration

Describes a DHCP configuration option.

## Contents

### key

The name of a DHCP option.

Type: String

Required: No

### valueSet

One or more values for the DHCP option.

Type: Array of [AttributeValue \(p. 1382\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DhcpOptions

Describes a set of DHCP options.

## Contents

### **dhcpConfigurationSet**

One or more DHCP options in the set.

Type: Array of [DhcpConfiguration \(p. 1484\)](#) objects

Required: No

### **dhcpOptionsId**

The ID of the set of DHCP options.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the DHCP options set.

Type: String

Required: No

### **tagSet**

Any tags assigned to the DHCP options set.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DirectoryServiceAuthentication

Describes an Active Directory.

## Contents

### directoryId

The ID of the Active Directory used for authentication.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DirectoryServiceAuthenticationRequest

Describes the Active Directory to be used for client authentication.

## Contents

### DirectoryId

The ID of the Active Directory to be used for authentication.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DisableFastSnapshotRestoreErrorItem

Contains information about the errors that occurred when disabling fast snapshot restores.

## Contents

### **fastSnapshotRestoreStateErrorSet**

The errors.

Type: Array of [DisableFastSnapshotRestoreStateErrorItem \(p. 1490\)](#) objects

Required: No

### **snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DisableFastSnapshotRestoreStateError

Describes an error that occurred when disabling fast snapshot restores.

## Contents

### code

The error code.

Type: String

Required: No

### message

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DisableFastSnapshotRestoreStateErrorItem

Contains information about an error that occurred when disabling fast snapshot restores.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **error**

The error.

Type: [DisableFastSnapshotRestoreStateError \(p. 1489\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DisableFastSnapshotRestoreSuccessItem

Describes fast snapshot restores that were successfully disabled.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **disabledTime**

The time at which fast snapshot restores entered the disabled state.

Type: Timestamp

Required: No

### **disablingTime**

The time at which fast snapshot restores entered the disabling state.

Type: Timestamp

Required: No

### **enabledTime**

The time at which fast snapshot restores entered the enabled state.

Type: Timestamp

Required: No

### **enablingTime**

The time at which fast snapshot restores entered the enabling state.

Type: Timestamp

Required: No

### **optimizingTime**

The time at which fast snapshot restores entered the optimizing state.

Type: Timestamp

Required: No

### **ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores for the snapshot.

Type: String

Valid Values: enabling | optimizing | enabled | disabling | disabled

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- Client.UserInitiated - The state successfully transitioned to enabling or disabling.
- Client.UserInitiated - Lifecycle state transition - The state successfully transitioned to optimizing, enabled, or disabled.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DiskImage

Describes a disk image.

## Contents

### Description

A description of the disk image.

Type: String

Required: No

### Image

Information about the disk image.

Type: [DiskImageDetail \(p. 1495\)](#) object

Required: No

### Volume

Information about the volume.

Type: [VolumeDetail \(p. 2172\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DiskImageDescription

Describes a disk image.

## Contents

### **checksum**

The checksum computed for the disk image.

Type: String

Required: No

### **format**

The disk image format.

Type: String

Valid Values: VMDK | RAW | VHD

Required: No

### **importManifestUrl**

A presigned URL for the import manifest stored in Amazon S3. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

For information about the import manifest referenced by this API action, see [VM Import Manifest](#).

Type: String

Required: No

### **size**

The size of the disk image, in GiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DiskImageDetail

Describes a disk image.

## Contents

### Bytes

The size of the disk image, in GiB.

Type: Long

Required: Yes

### Format

The disk image format.

Type: String

Valid Values: VMDK | RAW | VHD

Required: Yes

### ImportManifestUrl

A presigned URL for the import manifest stored in Amazon S3 and presented here as an Amazon S3 presigned URL. For information about creating a presigned URL for an Amazon S3 object, read the "Query String Request Authentication Alternative" section of the [Authenticating REST Requests](#) topic in the *Amazon Simple Storage Service Developer Guide*.

For information about the import manifest referenced by this API action, see [VM Import Manifest](#).

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DiskImageVolumeDescription

Describes a disk image volume.

## Contents

### **id**

The volume identifier.

Type: String

Required: No

### **size**

The size of the volume, in GiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DiskInfo

Describes a disk.

## Contents

### count

The number of disks with this configuration.

Type: Integer

Required: No

### sizeInGB

The size of the disk in GB.

Type: Long

Required: No

### type

The type of disk.

Type: String

Valid Values: hdd | ssd

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DnsEntry

Describes a DNS entry.

## Contents

### **dnsName**

The DNS name.

Type: String

Required: No

### **hostedZoneId**

The ID of the private hosted zone.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# DnsServersOptionsModifyStructure

Information about the DNS server to be used.

## Contents

### CustomDnsServers

The IPv4 address range, in CIDR notation, of the DNS servers to be used. You can specify up to two DNS servers. Ensure that the DNS servers can be reached by the clients. The specified values overwrite the existing values.

Type: Array of strings

Required: No

### Enabled

Indicates whether DNS servers should be used. Specify `False` to delete the existing DNS servers.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EbsBlockDevice

Describes a block device for an EBS volume.

## Contents

**DeleteOnTermination** (request), **deleteOnTermination** (response)

Indicates whether the EBS volume is deleted on instance termination. For more information, see [Preserving Amazon EBS volumes on instance termination](#) in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**Encrypted** (request), **encrypted** (response)

Indicates whether the encryption state of an EBS volume is changed while being restored from a backing snapshot. The effect of setting the encryption state to `true` depends on the volume origin (new or from a snapshot), starting encryption state, ownership, and whether encryption by default is enabled. For more information, see [Amazon EBS encryption](#) in the *Amazon EC2 User Guide*.

In no case can you remove encryption from an encrypted volume.

Encrypted volumes can only be attached to instances that support Amazon EBS encryption. For more information, see [Supported instance types](#).

This parameter is not returned by [DescribeImageAttribute](#) (p. 594).

Type: Boolean

Required: No

**Iops** (request), **iops** (response)

The number of I/O operations per second (IOPS). For `gp3`, `io1`, and `io2` volumes, this represents the number of IOPS that are provisioned for the volume. For `gp2` volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- `gp3`: 3,000-16,000 IOPS
- `io1`: 100-64,000 IOPS
- `io2`: 100-64,000 IOPS

For `io1` and `io2` volumes, we guarantee 64,000 IOPS only for [Instances built on the Nitro System](#). Other instance families guarantee performance up to 32,000 IOPS.

This parameter is required for `io1` and `io2` volumes. The default for `gp3` volumes is 3,000 IOPS. This parameter is not supported for `gp2`, `st1`, `sc1`, or standard volumes.

Type: Integer

Required: No

**KmsKeyId** (request), **KmsKeyId** (response)

Identifier (key ID, key alias, ID ARN, or alias ARN) for a customer managed CMK under which the EBS volume is encrypted.

This parameter is only supported on `BlockDeviceMapping` objects called by [RunInstances](#), [RequestSpotFleet](#), and [RequestSpotInstances](#).

Type: String

Required: No

**OutpostArn** (request), **outpostArn** (response)

The ARN of the Outpost on which the snapshot is stored.

Type: String

Required: No

**SnapshotId** (request), **snapshotId** (response)

The ID of the snapshot.

Type: String

Required: No

**Throughput** (request), **throughput** (response)

The throughput that the volume supports, in MiB/s.

This parameter is valid only for gp3 volumes.

Valid Range: Minimum value of 125. Maximum value of 1000.

Type: Integer

Required: No

**VolumeSize** (request), **volumeSize** (response)

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. If you specify a snapshot, the default is the snapshot size. You can specify a volume size that is equal to or larger than the snapshot size.

The following are the supported volumes sizes for each volume type:

- gp2 and gp3: 1-16,384
- io1 and io2: 4-16,384
- st1 and sc1: 125-16,384
- standard: 1-1,024

Type: Integer

Required: No

**VolumeType** (request), **volumeType** (response)

The volume type. For more information, see [Amazon EBS volume types](#) in the *Amazon EC2 User Guide*. If the volume type is io1 or io2, you must specify the IOPS that the volume supports.

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EbsInfo

Describes the Amazon EBS features supported by the instance type.

## Contents

### ebsOptimizedInfo

Describes the optimized EBS performance for the instance type.

Type: [EbsOptimizedInfo \(p. 1506\)](#) object

Required: No

### ebsOptimizedSupport

Indicates whether the instance type is Amazon EBS-optimized. For more information, see [Amazon EBS-optimized instances](#) in *Amazon EC2 User Guide*.

Type: String

Valid Values: unsupported | supported | default

Required: No

### encryptionSupport

Indicates whether Amazon EBS encryption is supported.

Type: String

Valid Values: unsupported | supported

Required: No

### nvmeSupport

Indicates whether non-volatile memory express (NVMe) is supported.

Type: String

Valid Values: unsupported | supported | required

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EbsInstanceBlockDevice

Describes a parameter used to set up an EBS volume in a block device mapping.

## Contents

### **attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

### **deleteOnTermination**

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

### **status**

The attachment state.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

### **volumeId**

The ID of the EBS volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EbsInstanceBlockDeviceSpecification

Describes information used to set up an EBS volume specified in a block device mapping.

## Contents

### DeleteOnTermination

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

### VolumeId

The ID of the EBS volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EbsOptimizedInfo

Describes the optimized EBS performance for supported instance types.

## Contents

### **baselineBandwidthInMbps**

The baseline bandwidth performance for an EBS-optimized instance type, in Mbps.

Type: Integer

Required: No

### **baselineIops**

The baseline input/output storage operations per seconds for an EBS-optimized instance type.

Type: Integer

Required: No

### **baselineThroughputInMBps**

The baseline throughput performance for an EBS-optimized instance type, in MB/s.

Type: Double

Required: No

### **maximumBandwidthInMbps**

The maximum bandwidth performance for an EBS-optimized instance type, in Mbps.

Type: Integer

Required: No

### **maximumIops**

The maximum input/output storage operations per second for an EBS-optimized instance type.

Type: Integer

Required: No

### **maximumThroughputInMBps**

The maximum throughput performance for an EBS-optimized instance type, in MB/s.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# EfalInfo

Describes the Elastic Fabric Adapters for the instance type.

## Contents

### **maximumEfalInterfaces**

The maximum number of Elastic Fabric Adapters for the instance type.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EgressOnlyInternetGateway

Describes an egress-only internet gateway.

## Contents

### attachmentSet

Information about the attachment of the egress-only internet gateway.

Type: Array of [InternetGatewayAttachment \(p. 1711\)](#) objects

Required: No

### egressOnlyInternetGatewayId

The ID of the egress-only internet gateway.

Type: String

Required: No

### tagSet

The tags assigned to the egress-only internet gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticGpuAssociation

Describes the association between an instance and an Elastic Graphics accelerator.

## Contents

### **elasticGpuAssociationId**

The ID of the association.

Type: String

Required: No

### **elasticGpuAssociationState**

The state of the association between the instance and the Elastic Graphics accelerator.

Type: String

Required: No

### **elasticGpuAssociationTime**

The time the Elastic Graphics accelerator was associated with the instance.

Type: String

Required: No

### **elasticGpuId**

The ID of the Elastic Graphics accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticGpuHealth

Describes the status of an Elastic Graphics accelerator.

## Contents

### **status**

The health status.

Type: String

Valid Values: OK | IMPAIRED

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticGpus

Describes an Elastic Graphics accelerator.

## Contents

### **availabilityZone**

The Availability Zone in which the Elastic Graphics accelerator resides.

Type: String

Required: No

### **elasticGpuHealth**

The status of the Elastic Graphics accelerator.

Type: [ElasticGpuHealth \(p. 1511\)](#) object

Required: No

### **elasticGpuId**

The ID of the Elastic Graphics accelerator.

Type: String

Required: No

### **elasticGpuState**

The state of the Elastic Graphics accelerator.

Type: String

Valid Values: ATTACHED

Required: No

### **elasticGpuType**

The type of Elastic Graphics accelerator.

Type: String

Required: No

### **instanceId**

The ID of the instance to which the Elastic Graphics accelerator is attached.

Type: String

Required: No

### **tagSet**

The tags assigned to the Elastic Graphics accelerator.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticGpuSpecification

A specification for an Elastic Graphics accelerator.

## Contents

### Type

The type of Elastic Graphics accelerator. For more information about the values to specify for `Type`, see [Elastic Graphics Basics](#), specifically the Elastic Graphics accelerator column, in the *Amazon Elastic Compute Cloud User Guide for Windows Instances*.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticGpuSpecificationResponse

Describes an elastic GPU.

## Contents

### type

The elastic GPU type.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticInferenceAccelerator

Describes an elastic inference accelerator.

## Contents

### Count

The number of elastic inference accelerators to attach to the instance.

Default: 1

Type: Integer

Valid Range: Minimum value of 1.

Required: No

### Type

The type of elastic inference accelerator. The possible values are eia1.medium, eia1.large, eia1.xlarge, eia2.medium, eia2.large, and eia2.xlarge.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ElasticInferenceAcceleratorAssociation

Describes the association between an instance and an elastic inference accelerator.

## Contents

### **elasticInferenceAcceleratorArn**

The Amazon Resource Name (ARN) of the elastic inference accelerator.

Type: String

Required: No

### **elasticInferenceAcceleratorAssociationId**

The ID of the association.

Type: String

Required: No

### **elasticInferenceAcceleratorAssociationState**

The state of the elastic inference accelerator.

Type: String

Required: No

### **elasticInferenceAcceleratorAssociationTime**

The time at which the elastic inference accelerator is associated with an instance.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnableFastSnapshotRestoreErrorItem

Contains information about the errors that occurred when enabling fast snapshot restores.

## Contents

### **fastSnapshotRestoreStateErrorSet**

The errors.

Type: Array of [EnableFastSnapshotRestoreStateErrorItem](#) (p. 1520) objects

Required: No

### **snapshotId**

The ID of the snapshot.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnableFastSnapshotRestoreStateError

Describes an error that occurred when enabling fast snapshot restores.

## Contents

### code

The error code.

Type: String

Required: No

### message

The error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnableFastSnapshotRestoreStateErrorItem

Contains information about an error that occurred when enabling fast snapshot restores.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **error**

The error.

Type: [EnableFastSnapshotRestoreStateError \(p. 1519\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnableFastSnapshotRestoreSuccessItem

Describes fast snapshot restores that were successfully enabled.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **disabledTime**

The time at which fast snapshot restores entered the disabled state.

Type: Timestamp

Required: No

### **disablingTime**

The time at which fast snapshot restores entered the disabling state.

Type: Timestamp

Required: No

### **enabledTime**

The time at which fast snapshot restores entered the enabled state.

Type: Timestamp

Required: No

### **enablingTime**

The time at which fast snapshot restores entered the enabling state.

Type: Timestamp

Required: No

### **optimizingTime**

The time at which fast snapshot restores entered the optimizing state.

Type: Timestamp

Required: No

### **ownerAlias**

The AWS owner alias that enabled fast snapshot restores on the snapshot. This is intended for future use.

Type: String

Required: No

**ownerId**

The ID of the AWS account that enabled fast snapshot restores on the snapshot.

Type: String

Required: No

**snapshotId**

The ID of the snapshot.

Type: String

Required: No

**state**

The state of fast snapshot restores.

Type: String

Valid Values: enabling | optimizing | enabled | disabling | disabled

Required: No

**stateTransitionReason**

The reason for the state transition. The possible values are as follows:

- Client.UserInitiated - The state successfully transitioned to enabling or disabling.
- Client.UserInitiated - Lifecycle state transition - The state successfully transitioned to optimizing, enabled, or disabled.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnclaveOptions

Indicates whether the instance is enabled for AWS Nitro Enclaves.

## Contents

### enabled

If this parameter is set to `true`, the instance is enabled for AWS Nitro Enclaves; otherwise, it is not enabled for AWS Nitro Enclaves.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EnclaveOptionsRequest

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see [What is AWS Nitro Enclaves?](#) in the *AWS Nitro Enclaves User Guide*.

## Contents

### Enabled

To enable the instance for AWS Nitro Enclaves, set this parameter to `true`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# EventInformation

Describes an EC2 Fleet or Spot Fleet event.

## Contents

### eventDescription

The description of the event.

Type: String

Required: No

### eventSubType

The event.

**error** events:

- `iamFleetRoleInvalid` - The EC2 Fleet or Spot Fleet does not have the required permissions either to launch or terminate an instance.
- `allLaunchSpecsTemporarilyBlacklisted` - None of the configurations are valid, and several attempts to launch instances have failed. For more information, see the description of the event.
- `spotInstanceCountLimitExceeded` - You've reached the limit on the number of Spot Instances that you can launch.
- `spotFleetRequestConfigurationInvalid` - The configuration is not valid. For more information, see the description of the event.

**fleetRequestChange** events:

- `active` - The EC2 Fleet or Spot Fleet request has been validated and Amazon EC2 is attempting to maintain the target number of running instances.
- `cancelled` - The EC2 Fleet or Spot Fleet request is canceled and has no running instances. The EC2 Fleet or Spot Fleet will be deleted two days after its instances are terminated.
- `cancelled_running` - The EC2 Fleet or Spot Fleet request is canceled and does not launch additional instances. Its existing instances continue to run until they are interrupted or terminated. The request remains in this state until all instances are interrupted or terminated.
- `cancelled_terminating` - The EC2 Fleet or Spot Fleet request is canceled and its instances are terminating. The request remains in this state until all instances are terminated.
- `expired` - The EC2 Fleet or Spot Fleet request has expired. If the request was created with `TerminateInstancesWithExpiration` set, a subsequent `terminated` event indicates that the instances are terminated.
- `modify_in_progress` - The EC2 Fleet or Spot Fleet request is being modified. The request remains in this state until the modification is fully processed.
- `modify_succeeded` - The EC2 Fleet or Spot Fleet request was modified.
- `submitted` - The EC2 Fleet or Spot Fleet request is being evaluated and Amazon EC2 is preparing to launch the target number of instances.
- `progress` - The EC2 Fleet or Spot Fleet request is in the process of being fulfilled.

**instanceChange** events:

- `launched` - A new instance was launched.
- `terminated` - An instance was terminated by the user.
- `termination_notified` - An instance termination notification was sent when a Spot Instance was terminated by Amazon EC2 during scale-down, when the target capacity of the fleet was modified down, for example, from a target capacity of 4 to a target capacity of 3.

**Information events:**

- `fleetProgressHalted` - The price in every launch specification is not valid because it is below the Spot price (all the launch specifications have produced `launchSpecUnusable` events). A launch specification might become valid if the Spot price changes.
- `launchSpecTemporarilyBlacklisted` - The configuration is not valid and several attempts to launch instances have failed. For more information, see the description of the event.
- `launchSpecUnusable` - The price in a launch specification is not valid because it is below the Spot price.
- `registerWithLoadBalancersFailed` - An attempt to register instances with load balancers failed. For more information, see the description of the event.

Type: String

Required: No

**instanceId**

The ID of the instance. This information is available only for `instanceChange` events.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Explanation

Describes an explanation code for an unreachable path. For more information, see [Reachability Analyzer explanation codes](#).

## Contents

### acl

The network ACL.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

### aclRule

The network ACL rule.

Type: [AnalysisAclRule \(p. 1365\)](#) object

Required: No

### address

The IPv4 address, in CIDR notation.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### addressSet

The IPv4 addresses, in CIDR notation.

Type: Array of strings

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### attachedTo

The resource to which the component is attached.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

### availabilityZoneSet

The Availability Zones.

Type: Array of strings

Required: No

**cidrSet**

The CIDR ranges.

Type: Array of strings

Required: No

**classicLoadBalancerListener**

The listener for a Classic Load Balancer.

Type: [AnalysisLoadBalancerListener \(p. 1368\)](#) object

Required: No

**component**

The component.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**customerGateway**

The customer gateway.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**destination**

The destination.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**destinationVpc**

The destination VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**direction**

The direction. The following are possible values:

- egress
- ingress

Type: String

Required: No

**elasticLoadBalancerListener**

The load balancer listener.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**explanationCode**

The explanation code.

Type: String

Required: No

**ingressRouteTable**

The route table.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**internetGateway**

The internet gateway.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**loadBalancerArn**

The Amazon Resource Name (ARN) of the load balancer.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

**loadBalancerListenerPort**

The listener port of the load balancer.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**loadBalancerTarget**

The target.

Type: [AnalysisLoadBalancerTarget \(p. 1369\)](#) object

Required: No

**loadBalancerTargetGroup**

The target group.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**loadBalancerTargetGroupSet**

The target groups.

Type: Array of [AnalysisComponent \(p. 1367\)](#) objects

Required: No

**loadBalancerTargetPort**

The target port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**missingComponent**

The missing component.

Type: String

Required: No

**natGateway**

The NAT gateway.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**networkInterface**

The network interface.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**packetField**

The packet field.

Type: String

Required: No

**port**

The port.

Type: Integer

Valid Range: Minimum value of 1. Maximum value of 65535.

Required: No

**portRangeSet**

The port ranges.

Type: Array of [PortRange \(p. 1885\)](#) objects

Required: No

**prefixList**

The prefix list.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**protocolSet**

The protocols.

Type: Array of strings

Required: No

**routeTable**

The route table.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**routeTableRoute**

The route table route.

Type: [AnalysisRouteTableRoute \(p. 1372\)](#) object

Required: No

**securityGroup**

The security group.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**securityGroupRule**

The security group rule.

Type: [AnalysisSecurityGroupRule \(p. 1374\)](#) object

Required: No

**securityGroupSet**

The security groups.

Type: Array of [AnalysisComponent \(p. 1367\)](#) objects

Required: No

**sourceVpc**

The source VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**state**

The state.

Type: String

Required: No

**subnet**

The subnet.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**subnetRouteTable**

The route table for the subnet.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpc**

The component VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpcEndpoint**

The VPC endpoint.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpcPeeringConnection**

The VPC peering connection.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpnConnection**

The VPN connection.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpnGateway**

The VPN gateway.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportImageTask

Describes an export image task.

## Contents

### **description**

A description of the image being exported.

Type: String

Required: No

### **exportImageTaskId**

The ID of the export image task.

Type: String

Required: No

### **imageId**

The ID of the image.

Type: String

Required: No

### **progress**

The percent complete of the export image task.

Type: String

Required: No

### **s3ExportLocation**

Information about the destination Amazon S3 bucket.

Type: [ExportTaskS3Location \(p. 1537\)](#) object

Required: No

### **status**

The status of the export image task. The possible values are `active`, `completed`, `deleting`, and `deleted`.

Type: String

Required: No

### **statusMessage**

The status message for the export image task.

Type: String

Required: No

### tagSet

Any tags assigned to the export image task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportTask

Describes an export instance task.

## Contents

### **description**

A description of the resource being exported.

Type: String

Required: No

### **exportTaskId**

The ID of the export task.

Type: String

Required: No

### **exportToS3**

Information about the export task.

Type: [ExportToS3Task \(p. 1539\)](#) object

Required: No

### **instanceExport**

Information about the instance to export.

Type: [InstanceExportDetails \(p. 1652\)](#) object

Required: No

### **state**

The state of the export task.

Type: String

Valid Values: active | cancelling | cancelled | completed

Required: No

### **statusMessage**

The status message related to the export task.

Type: String

Required: No

### **tagSet**

The tags for the export task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportTaskS3Location

Describes the destination for an export image task.

## Contents

### s3Bucket

The destination Amazon S3 bucket.

Type: String

Required: No

### s3Prefix

The prefix (logical hierarchy) in the bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportTaskS3LocationRequest

Describes the destination for an export image task.

## Contents

### S3Bucket

The destination Amazon S3 bucket.

Type: String

Required: Yes

### S3Prefix

The prefix (logical hierarchy) in the bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportToS3Task

Describes the format and location for the export task.

## Contents

### **containerFormat**

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: ova

Required: No

### **diskImageFormat**

The format for the exported image.

Type: String

Valid Values: VMDK | RAW | VHD

Required: No

### **s3Bucket**

The Amazon S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ\_ACP permissions to the AWS account `vm-import-export@amazon.com`.

Type: String

Required: No

### **s3Key**

The encryption key for your S3 bucket.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ExportToS3TaskSpecification

Describes an export instance task.

## Contents

### ContainerFormat

The container format used to combine disk images with metadata (such as OVF). If absent, only the disk image is exported.

Type: String

Valid Values: ova

Required: No

### DiskImageFormat

The format for the exported image.

Type: String

Valid Values: VMDK | RAW | VHD

Required: No

### S3Bucket

The Amazon S3 bucket for the destination image. The destination bucket must exist and grant WRITE and READ\_ACP permissions to the AWS account `vm-import-export@amazon.com`.

Type: String

Required: No

### S3Prefix

The image is written to a single object in the Amazon S3 bucket at the S3 key `s3prefix + exportTaskId + '.' + diskImageFormat`.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FailedCapacityReservationFleetCancellationResult

Describes a Capacity Reservation Fleet that could not be cancelled.

## Contents

### **cancelCapacityReservationFleetError**

Information about the Capacity Reservation Fleet cancellation error.

Type: [CancelCapacityReservationFleetError \(p. 1398\)](#) object

Required: No

### **capacityReservationFleetId**

The ID of the Capacity Reservation Fleet that could not be cancelled.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FailedQueuedPurchaseDeletion

Describes a Reserved Instance whose queued purchase was not deleted.

## Contents

### **error**

The error.

Type: [DeleteQueuedReservedInstancesError \(p. 1474\)](#) object

Required: No

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FederatedAuthentication

Describes the IAM SAML identity providers used for federated authentication.

## Contents

### samlProviderArn

The Amazon Resource Name (ARN) of the IAM SAML identity provider.

Type: String

Required: No

### selfServiceSamlProviderArn

The Amazon Resource Name (ARN) of the IAM SAML identity provider for the self-service portal.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FederatedAuthenticationRequest

The IAM SAML identity provider used for federated authentication.

## Contents

### SAMLProviderArn

The Amazon Resource Name (ARN) of the IAM SAML identity provider.

Type: String

Required: No

### SelfServiceSAMLProviderArn

The Amazon Resource Name (ARN) of the IAM SAML identity provider for the self-service portal.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Filter

A filter name and value pair that is used to return a more specific list of results from a describe operation. Filters can be used to match a set of resources by specific criteria, such as tags, attributes, or IDs.

If you specify multiple filters, the filters are joined with an **AND**, and the request returns only results that match all of the specified filters.

The filters supported by a describe operation are documented with the describe operation. For example:

- [DescribeAvailabilityZones \(p. 499\)](#)
- [DescribeImages \(p. 597\)](#)
- [DescribeInstances \(p. 620\)](#)
- [DescribeKeyPairs \(p. 648\)](#)
- [DescribeSecurityGroups \(p. 755\)](#)
- [DescribeSnapshots \(p. 765\)](#)
- [DescribeSubnets \(p. 797\)](#)
- [DescribeTags \(p. 801\)](#)
- [DescribeVolumes \(p. 838\)](#)
- [DescribeVpcs \(p. 885\)](#)

## Contents

### Name

The name of the filter. Filter names are case-sensitive.

Type: String

Required: No

### Values

The filter values. Filter values are case-sensitive. If you specify multiple values for a filter, the values are joined with an **OR**, and the request returns all results that match any of the specified values.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetCapacityReservation

Information about a Capacity Reservation in a Capacity Reservation Fleet.

## Contents

### **availabilityZone**

The Availability Zone in which the Capacity Reservation reserves capacity.

Type: String

Required: No

### **availabilityZoneId**

The ID of the Availability Zone in which the Capacity Reservation reserves capacity.

Type: String

Required: No

### **capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

### **createDate**

The date and time at which the Capacity Reservation was created.

Type: Timestamp

Required: No

### **ebsOptimized**

Indicates whether the Capacity Reservation reserves capacity for EBS-optimized instance types.

Type: Boolean

Required: No

### **fulfilledCapacity**

The number of capacity units fulfilled by the Capacity Reservation. For more information, see [Total target capacity](#) in the Amazon EC2 User Guide.

Type: Double

Required: No

### **instancePlatform**

The type of operating system for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with

SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise

Required: No

**instanceType**

The instance type for which the Capacity Reservation reserves capacity.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal

| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**priority**

The priority of the instance type in the Capacity Reservation Fleet. For more information, see [Instance type priority](#) in the Amazon EC2 User Guide.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

**totalInstanceCount**

The total number of instances for which the Capacity Reservation reserves capacity.

Type: Integer

Required: No

**weight**

The weight of the instance type in the Capacity Reservation Fleet. For more information, see [Instance type weight](#) in the Amazon EC2 User Guide.

Type: Double

Valid Range: Minimum value of 0.001. Maximum value of 99.999.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetData

Describes an EC2 Fleet.

## Contents

### activityStatus

The progress of the EC2 Fleet. If there is an error, the status is `error`. After all requests are placed, the status is `pending_fulfillment`. If the size of the EC2 Fleet is equal to or greater than its target capacity, the status is `fulfilled`. If the size of the EC2 Fleet is decreased, the status is `pending_termination` while instances are terminating.

Type: String

Valid Values: `error` | `pending_fulfillment` | `pending_termination` | `fulfilled`

Required: No

### clientToken

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Constraints: Maximum 64 ASCII characters

Type: String

Required: No

### context

Reserved.

Type: String

Required: No

### createTime

The creation date and time of the EC2 Fleet.

Type: Timestamp

Required: No

### errorSet

Information about the instances that could not be launched by the fleet. Valid only when **Type** is set to `instant`.

Type: Array of [DescribeFleetError](#) (p. 1478) objects

Required: No

### excessCapacityTerminationPolicy

Indicates whether running instances should be terminated if the target capacity of the EC2 Fleet is decreased below the current size of the EC2 Fleet.

Type: String

Valid Values: `no-termination` | `termination`

Required: No

**fleetId**

The ID of the EC2 Fleet.

Type: String

Required: No

**fleetInstanceState**

Information about the instances that were launched by the fleet. Valid only when **Type** is set to `instant`.

Type: Array of [DescribeFleetsInstances \(p. 1479\)](#) objects

Required: No

**fleetState**

The state of the EC2 Fleet.

Type: String

Valid Values: `submitted` | `active` | `deleted` | `failed` | `deleted_running` | `deleted_terminating` | `modifying`

Required: No

**fulfilledCapacity**

The number of units fulfilled by this request compared to the set target capacity.

Type: Double

Required: No

**fulfilledOnDemandCapacity**

The number of units fulfilled by this request compared to the set target On-Demand capacity.

Type: Double

Required: No

**launchTemplateConfigs**

The launch template and overrides.

Type: Array of [FleetLaunchTemplateConfig \(p. 1554\)](#) objects

Required: No

**onDemandOptions**

The allocation strategy of On-Demand Instances in an EC2 Fleet.

Type: [OnDemandOptions \(p. 1855\)](#) object

Required: No

**replaceUnhealthyInstances**

Indicates whether EC2 Fleet should replace unhealthy Spot Instances. Supported only for fleets of type `maintain`. For more information, see [EC2 Fleet health checks](#) in the *Amazon EC2 User Guide*.

Type: Boolean

Required: No

**spotOptions**

The configuration of Spot Instances in an EC2 Fleet.

Type: [SpotOptions \(p. 2042\)](#) object

Required: No

**tagSet**

The tags for an EC2 Fleet resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**targetCapacitySpecification**

The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: [TargetCapacitySpecification \(p. 2074\)](#) object

Required: No

**terminateInstancesWithExpiration**

Indicates whether running instances should be terminated when the EC2 Fleet expires.

Type: Boolean

Required: No

**type**

The type of request. Indicates whether the EC2 Fleet only requests the target capacity, or also attempts to `Maintain` it. If you request a certain target capacity, EC2 Fleet only places the required requests; it does not attempt to replenish instances if capacity is diminished, and it does not submit requests in alternative capacity pools if capacity is unavailable. To maintain a certain target capacity, EC2 Fleet places the required requests to meet this target capacity. It also automatically replenishes any interrupted Spot Instances. Default: `Maintain`.

Type: String

Valid Values: `request` | `Maintain` | `instant`

Required: No

**validFrom**

The start date and time of the request, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). The default is to start fulfilling the request immediately.

Type: Timestamp

Required: No

**validUntil**

The end date and time of the request, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). At this point, no new instance requests are placed or able to fulfill the request. The default end date is 7 days from the current date.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateConfig

Describes a launch template and overrides.

## Contents

### **launchTemplateSpecification**

The launch template.

Type: [FleetLaunchTemplateSpecification \(p. 1564\)](#) object

Required: No

### **overrides**

Any parameters that you specify override the same parameters in the launch template.

Type: Array of [FleetLaunchTemplateOverrides \(p. 1556\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateConfigRequest

Describes a launch template and overrides.

## Contents

### LaunchTemplateSpecification

The launch template to use. You must specify either the launch template ID or launch template name in the request.

Type: [FleetLaunchTemplateSpecificationRequest \(p. 1565\)](#) object

Required: No

### Overrides

Any parameters that you specify override the same parameters in the launch template.

For fleets of type `request` and `maintain`, a maximum of 300 items is allowed across all launch templates.

Type: Array of [FleetLaunchTemplateOverridesRequest \(p. 1560\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateOverrides

Describes overrides for a launch template.

## Contents

### availabilityZone

The Availability Zone in which to launch the instances.

Type: String

Required: No

### instanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

#### Note

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirements \(p. 1675\)](#) object

Required: No

### instanceType

The instance type.

#### Note

If you specify `InstanceTypes`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `t1.micro` | `t2.nano` | `t2.micro` | `t2.small` | `t2.medium` | `t2.large` | `t2.xlarge` | `t2.2xlarge` | `t3.nano` | `t3.micro` | `t3.small` | `t3.medium` | `t3.large` | `t3.xlarge` | `t3.2xlarge` | `t3a.nano` | `t3a.micro` | `t3a.small` | `t3a.medium` | `t3a.large` | `t3a.xlarge` | `t3a.2xlarge` | `t4g.nano` | `t4g.micro` | `t4g.small` | `t4g.medium` | `t4g.large` | `t4g.xlarge` | `t4g.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m4.large` | `m4.xlarge` | `m4.2xlarge` | `m4.4xlarge` | `m4.10xlarge` | `m4.16xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `r4.large` | `r4.xlarge` | `r4.2xlarge` | `r4.4xlarge` | `r4.8xlarge` | `r4.16xlarge` | `r5.large` | `r5.xlarge` | `r5.2xlarge` | `r5.4xlarge` | `r5.8xlarge` | `r5.12xlarge` | `r5.16xlarge` | `r5.24xlarge` | `r5.metal` | `r5a.large` | `r5a.xlarge` | `r5a.2xlarge` | `r5a.4xlarge` | `r5a.8xlarge` | `r5a.12xlarge` | `r5a.16xlarge` | `r5a.24xlarge` | `r5b.large` | `r5b.xlarge` | `r5b.2xlarge` | `r5b.4xlarge` | `r5b.8xlarge` | `r5b.12xlarge` | `r5b.16xlarge` | `r5b.24xlarge` | `r5b.metal` | `r5d.large` | `r5d.xlarge` | `r5d.2xlarge` | `r5d.4xlarge` | `r5d.8xlarge` | `r5d.12xlarge` | `r5d.16xlarge` | `r5d.24xlarge` | `r5d.metal` | `r5ad.large` | `r5ad.xlarge` | `r5ad.2xlarge` | `r5ad.4xlarge` | `r5ad.8xlarge` | `r5ad.12xlarge` | `r5ad.16xlarge` | `r5ad.24xlarge` | `r6g.metal` | `r6g.medium` | `r6g.large` | `r6g.xlarge` | `r6g.2xlarge` | `r6g.4xlarge` | `r6g.8xlarge` | `r6g.12xlarge` | `r6g.16xlarge` | `r6gd.metal` | `r6gd.medium` | `r6gd.large` | `r6gd.xlarge` | `r6gd.2xlarge` | `r6gd.4xlarge` | `r6gd.8xlarge` | `r6gd.12xlarge` | `r6gd.16xlarge` | `x1.16xlarge` | `x1.32xlarge` | `x1e.xlarge` | `x1e.2xlarge` | `x1e.4xlarge` | `x1e.8xlarge` | `x1e.16xlarge` | `x1e.32xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `i3.large` | `i3.xlarge` | `i3.2xlarge` | `i3.4xlarge` | `i3.8xlarge` | `i3.16xlarge` | `i3.metal` | `i3en.large` | `i3en.xlarge` | `i3en.2xlarge` |

i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal |  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal |  
m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |  
m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large |  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge |  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge |  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge |  
m6g.8xlarge	m6g.12xlarge	m6g.16xlarge	m6gd.metal	m6gd.medium
m6gd.large	m6gd.xlarge	m6gd.2xlarge	m6gd.4xlarge	m6gd.8xlarge
m6gd.12xlarge	m6gd.16xlarge	m6i.large	m6i.xlarge	m6i.2xlarge
m6i.4xlarge	m6i.8xlarge	m6i.12xlarge	m6i.16xlarge	m6i.24xlarge
m6i.32xlarge	mac1.metal	x2gd.medium	x2gd.large	x2gd.xlarge
x2gd.2xlarge	x2gd.4xlarge	x2gd.8xlarge	x2gd.12xlarge	x2gd.16xlarge
x2gd.metal	vt1.3xlarge	vt1.6xlarge	vt1.24xlarge	g5.xlarge

| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**maxPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance.

Type: String

Required: No

**placement**

The location where the instance launched, if applicable.

Type: [PlacementResponse \(p. 1883\)](#) object

Required: No

**priority**

The priority for the launch template override. The highest priority is launched first.

If the On-Demand AllocationStrategy is set to prioritized, EC2 Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the Spot AllocationStrategy is set to capacity-optimized-prioritized, EC2 Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at 0. The lower the number, the higher the priority. If no number is set, the override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**subnetId**

The ID of the subnet in which to launch the instances.

Type: String

Required: No

**weightedCapacity**

The number of units provided by the specified instance type.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateOverridesRequest

Describes overrides for a launch template.

## Contents

### AvailabilityZone

The Availability Zone in which to launch the instances.

Type: String

Required: No

### InstanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

#### Note

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirementsRequest \(p. 1681\)](#) object

Required: No

### InstanceType

The instance type.

#### Note

If you specify `InstanceTypes`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `t1.micro` | `t2.nano` | `t2.micro` | `t2.small` | `t2.medium` | `t2.large` | `t2.xlarge` | `t2.2xlarge` | `t3.nano` | `t3.micro` | `t3.small` | `t3.medium` | `t3.large` | `t3.xlarge` | `t3.2xlarge` | `t3a.nano` | `t3a.micro` | `t3a.small` | `t3a.medium` | `t3a.large` | `t3a.xlarge` | `t3a.2xlarge` | `t4g.nano` | `t4g.micro` | `t4g.small` | `t4g.medium` | `t4g.large` | `t4g.xlarge` | `t4g.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m4.large` | `m4.xlarge` | `m4.2xlarge` | `m4.4xlarge` | `m4.10xlarge` | `m4.16xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `r4.large` | `r4.xlarge` | `r4.2xlarge` | `r4.4xlarge` | `r4.8xlarge` | `r4.16xlarge` | `r5.large` | `r5.xlarge` | `r5.2xlarge` | `r5.4xlarge` | `r5.8xlarge` | `r5.12xlarge` | `r5.16xlarge` | `r5.24xlarge` | `r5.metal` | `r5a.large` | `r5a.xlarge` | `r5a.2xlarge` | `r5a.4xlarge` | `r5a.8xlarge` | `r5a.12xlarge` | `r5a.16xlarge` | `r5a.24xlarge` | `r5b.large` | `r5b.xlarge` | `r5b.2xlarge` | `r5b.4xlarge` | `r5b.8xlarge` | `r5b.12xlarge` | `r5b.16xlarge` | `r5b.24xlarge` | `r5b.metal` | `r5d.large` | `r5d.xlarge` | `r5d.2xlarge` | `r5d.4xlarge` | `r5d.8xlarge` | `r5d.12xlarge` | `r5d.16xlarge` | `r5d.24xlarge` | `r5d.metal` | `r5ad.large` | `r5ad.xlarge` | `r5ad.2xlarge` | `r5ad.4xlarge` | `r5ad.8xlarge` | `r5ad.12xlarge` | `r5ad.16xlarge` | `r5ad.24xlarge` | `r6g.metal` | `r6g.medium` | `r6g.large` | `r6g.xlarge` | `r6g.2xlarge` | `r6g.4xlarge` | `r6g.8xlarge` | `r6g.12xlarge` | `r6g.16xlarge` | `r6gd.metal` | `r6gd.medium` | `r6gd.large` | `r6gd.xlarge` | `r6gd.2xlarge` | `r6gd.4xlarge` | `r6gd.8xlarge` | `r6gd.12xlarge` | `r6gd.16xlarge` | `x1.16xlarge` | `x1.32xlarge` | `x1e.xlarge` | `x1e.2xlarge` | `x1e.4xlarge` | `x1e.8xlarge` | `x1e.16xlarge` | `x1e.32xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `i3.large` | `i3.xlarge` | `i3.2xlarge` | `i3.4xlarge` | `i3.8xlarge` | `i3.16xlarge` | `i3.metal` | `i3en.large` | `i3en.xlarge` | `i3en.2xlarge` |

i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal |  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal |  
m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |  
m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large |  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge |  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge |  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge |  
m6g.8xlarge	m6g.12xlarge	m6g.16xlarge	m6gd.metal	m6gd.medium
m6gd.large	m6gd.xlarge	m6gd.2xlarge	m6gd.4xlarge	m6gd.8xlarge
m6gd.12xlarge	m6gd.16xlarge	m6i.large	m6i.xlarge	m6i.2xlarge
m6i.4xlarge	m6i.8xlarge	m6i.12xlarge	m6i.16xlarge	m6i.24xlarge
m6i.32xlarge	mac1.metal	x2gd.medium	x2gd.large	x2gd.xlarge
x2gd.2xlarge	x2gd.4xlarge	x2gd.8xlarge	x2gd.12xlarge	x2gd.16xlarge
x2gd.metal	vt1.3xlarge	vt1.6xlarge	vt1.24xlarge	g5.xlarge

| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**MaxPrice**

The maximum price per unit hour that you are willing to pay for a Spot Instance.

Type: String

Required: No

**Placement**

The location where the instance launched, if applicable.

Type: [Placement \(p. 1878\)](#) object

Required: No

**Priority**

The priority for the launch template override. The highest priority is launched first.

If the On-Demand AllocationStrategy is set to prioritized, EC2 Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the Spot AllocationStrategy is set to capacity-optimized-prioritized, EC2 Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at 0. The lower the number, the higher the priority. If no number is set, the launch template override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**SubnetId**

The IDs of the subnets in which to launch the instances. Separate multiple subnet IDs using commas (for example, subnet-1234abcdeexample1, subnet-0987cdef6example2). A request of type instant can have only one subnet ID.

Type: String

Required: No

**WeightedCapacity**

The number of units provided by the specified instance type.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateSpecification

Describes the Amazon EC2 launch template and the launch template version that can be used by a Spot Fleet request to configure Amazon EC2 instances. For information about launch templates, see [Launching an instance from a launch template](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Contents

### **LaunchTemplateId** (request), **launchTemplateId** (response)

The ID of the launch template. If you specify the template ID, you can't specify the template name.

Type: String

Required: No

### **LaunchTemplateName** (request), **launchTemplateName** (response)

The name of the launch template. If you specify the template name, you can't specify the template ID.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### **Version** (request), **version** (response)

The launch template version number, \$Latest, or \$Default. You must specify a value, otherwise the request fails.

If the value is \$Latest, Amazon EC2 uses the latest version of the launch template.

If the value is \$Default, Amazon EC2 uses the default version of the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetLaunchTemplateSpecificationRequest

Describes the Amazon EC2 launch template and the launch template version that can be used by an EC2 Fleet to configure Amazon EC2 instances. For information about launch templates, see [Launching an instance from a launch template](#) in the *Amazon EC2 User Guide*.

## Contents

### **LaunchTemplateId**

The ID of the launch template. If you specify the template ID, you can't specify the template name.

Type: String

Required: No

### **LaunchTemplateName**

The name of the launch template. If you specify the template name, you can't specify the template ID.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### **Version**

The launch template version number, \$Latest, or \$Default. You must specify a value, otherwise the request fails.

If the value is \$Latest, Amazon EC2 uses the latest version of the launch template.

If the value is \$Default, Amazon EC2 uses the default version of the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetSpotCapacityRebalance

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

## Contents

### **replacementStrategy**

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - EC2 Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. EC2 Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - EC2 Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch` | `launch-before-terminate`

Required: No

### **terminationDelay**

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Valid only when `replacementStrategy` is set to `launch-before-terminate`.

Valid values: Minimum value of 120 seconds. Maximum value of 7200 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetSpotCapacityRebalanceRequest

The Spot Instance replacement strategy to use when Amazon EC2 emits a rebalance notification signal that your Spot Instance is at an elevated risk of being interrupted. For more information, see [Capacity rebalancing](#) in the *Amazon EC2 User Guide*.

## Contents

### ReplacementStrategy

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - EC2 Fleet launches a replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. EC2 Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - EC2 Fleet launches a replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch` | `launch-before-terminate`

Required: No

### TerminationDelay

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Valid only when `ReplacementStrategy` is set to `launch-before-terminate`.

Valid values: Minimum value of 120 seconds. Maximum value of 7200 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetSpotMaintenanceStrategies

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

### capacityRebalance

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

Type: [FleetSpotCapacityRebalance \(p. 1566\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FleetSpotMaintenanceStrategiesRequest

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

### CapacityRebalance

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

Type: [FleetSpotCapacityRebalanceRequest \(p. 1567\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FlowLog

Describes a flow log.

## Contents

### **creationTime**

The date and time the flow log was created.

Type: Timestamp

Required: No

### **deliverLogsErrorMessage**

Information about the error that occurred. `Rate limited` indicates that CloudWatch Logs throttling has been applied for one or more network interfaces, or that you've reached the limit on the number of log groups that you can create. `Access error` indicates that the IAM role associated with the flow log does not have sufficient permissions to publish to CloudWatch Logs. `Unknown error` indicates an internal error.

Type: String

Required: No

### **deliverLogsPermissionArn**

The ARN of the IAM role that posts logs to CloudWatch Logs.

Type: String

Required: No

### **deliverLogsStatus**

The status of the logs delivery (`SUCCESS` | `FAILED`).

Type: String

Required: No

### **destinationOptions**

The destination options.

Type: [DestinationOptionsResponse \(p. 1483\)](#) object

Required: No

### **flowLogId**

The flow log ID.

Type: String

Required: No

### **flowLogStatus**

The status of the flow log (`ACTIVE`).

Type: String

Required: No

**logDestination**

The destination to which the flow log data is published. Flow log data can be published to an CloudWatch Logs log group or an Amazon S3 bucket. If the flow log publishes to CloudWatch Logs, this element indicates the Amazon Resource Name (ARN) of the CloudWatch Logs log group to which the data is published. If the flow log publishes to Amazon S3, this element indicates the ARN of the Amazon S3 bucket to which the data is published.

Type: String

Required: No

**logDestinationType**

The type of destination to which the flow log data is published. Flow log data can be published to CloudWatch Logs or Amazon S3.

Type: String

Valid Values: `cloud-watch-logs` | `s3`

Required: No

**logFormat**

The format of the flow log record.

Type: String

Required: No

**logGroupName**

The name of the flow log group.

Type: String

Required: No

**maxAggregationInterval**

The maximum interval of time, in seconds, during which a flow of packets is captured and aggregated into a flow log record.

When a network interface is attached to a [Nitro-based instance](#), the aggregation interval is always 60 seconds (1 minute) or less, regardless of the specified value.

Valid Values: `60` | `600`

Type: Integer

Required: No

**resourceId**

The ID of the resource on which the flow log was created.

Type: String

Required: No

**tagSet**

The tags for the flow log.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**trafficType**

The type of traffic captured for the flow log.

Type: String

Valid Values: ACCEPT | REJECT | ALL

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FpgaDeviceInfo

Describes the FPGA accelerator for the instance type.

## Contents

### **count**

The count of FPGA accelerators for the instance type.

Type: Integer

Required: No

### **manufacturer**

The manufacturer of the FPGA accelerator.

Type: String

Required: No

### **memoryInfo**

Describes the memory for the FPGA accelerator for the instance type.

Type: [FpgaDeviceMemoryInfo \(p. 1574\)](#) object

Required: No

### **name**

The name of the FPGA accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FpgaDeviceMemoryInfo

Describes the memory for the FPGA accelerator for the instance type.

## Contents

### **sizeInMiB**

The size of the memory available to the FPGA accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Fpgalmage

Describes an Amazon FPGA image (AFI).

## Contents

### **createTime**

The date and time the AFI was created.

Type: Timestamp

Required: No

### **dataRetentionSupport**

Indicates whether data retention support is enabled for the AFI.

Type: Boolean

Required: No

### **description**

The description of the AFI.

Type: String

Required: No

### **fpgalmageGlobalId**

The global FPGA image identifier (AGFI ID).

Type: String

Required: No

### **fpgalmageld**

The FPGA image identifier (AFI ID).

Type: String

Required: No

### **name**

The name of the AFI.

Type: String

Required: No

### **ownerAlias**

The alias of the AFI owner. Possible values include `self`, `amazon`, and `aws-marketplace`.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the AFI.

Type: String

Required: No

**pcid**

Information about the PCI bus.

Type: [Pcid \(p. 1861\)](#) object

Required: No

**productCodes**

The product codes for the AFI.

Type: Array of [ProductCode \(p. 1898\)](#) objects

Required: No

**public**

Indicates whether the AFI is public.

Type: Boolean

Required: No

**shellVersion**

The version of the AWS Shell that was used to create the bitstream.

Type: String

Required: No

**state**

Information about the state of the AFI.

Type: [FpgalmageState \(p. 1579\)](#) object

Required: No

**tags**

Any tags assigned to the AFI.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**updateTime**

The time of the most recent update to the AFI.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FpgalmageAttribute

Describes an Amazon FPGA image (AFI) attribute.

## Contents

### **description**

The description of the AFI.

Type: String

Required: No

### **fpgalmageld**

The ID of the AFI.

Type: String

Required: No

### **loadPermissions**

The load permissions.

Type: Array of [LoadPermission \(p. 1791\)](#) objects

Required: No

### **name**

The name of the AFI.

Type: String

Required: No

### **productCodes**

The product codes.

Type: Array of [ProductCode \(p. 1898\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FpgalmImageState

Describes the state of the bitstream generation process for an Amazon FPGA image (AFI).

## Contents

### code

The state. The following are the possible values:

- pending - AFI bitstream generation is in progress.
- available - The AFI is available for use.
- failed - AFI bitstream generation failed.
- unavailable - The AFI is no longer available for use.

Type: String

Valid Values: pending | failed | available | unavailable

Required: No

### message

If the state is failed, this is the error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# FpgaInfo

Describes the FPGAs for the instance type.

## Contents

### fpgas

Describes the FPGAs for the instance type.

Type: Array of [FpgaDeviceInfo \(p. 1573\)](#) objects

Required: No

### totalFpgaMemoryInMiB

The total memory of all FPGA accelerators for the instance type.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# GpuDeviceInfo

Describes the GPU accelerators for the instance type.

## Contents

### **count**

The number of GPUs for the instance type.

Type: Integer

Required: No

### **manufacturer**

The manufacturer of the GPU accelerator.

Type: String

Required: No

### **memoryInfo**

Describes the memory available to the GPU accelerator.

Type: [GpuDeviceMemoryInfo \(p. 1582\)](#) object

Required: No

### **name**

The name of the GPU accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# GpuDeviceMemoryInfo

Describes the memory available to the GPU accelerator.

## Contents

### **sizeInMiB**

The size of the memory available to the GPU accelerator, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# GpuInfo

Describes the GPU accelerators for the instance type.

## Contents

### gpus

Describes the GPU accelerators for the instance type.

Type: Array of [GpuDeviceInfo \(p. 1581\)](#) objects

Required: No

### totalGpuMemoryInMiB

The total size of the memory for the GPU accelerators for the instance type, in MiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# GroupIdentifier

Describes a security group.

## Contents

### **GroupId** (request), **groupId** (response)

The ID of the security group.

Type: String

Required: No

### **GroupName** (request), **groupName** (response)

The name of the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HibernationOptions

Indicates whether your instance is configured for hibernation. This parameter is valid only if the instance meets the [hibernation prerequisites](#). For more information, see [Hibernate your instance](#) in the *Amazon EC2 User Guide*.

## Contents

### configured

If this parameter is set to `true`, your instance is enabled for hibernation; otherwise, it is not enabled for hibernation.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HibernationOptionsRequest

Indicates whether your instance is configured for hibernation. This parameter is valid only if the instance meets the [hibernation prerequisites](#). For more information, see [Hibernate your instance](#) in the *Amazon EC2 User Guide*.

## Contents

### Configured

If you set this parameter to `true`, your instance is enabled for hibernation.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HistoryRecord

Describes an event in the history of the Spot Fleet request.

## Contents

### eventInformation

Information about the event.

Type: [EventInformation \(p. 1525\)](#) object

Required: No

### eventType

The event type.

- `error` - An error with the Spot Fleet request.
- `fleetRequestChange` - A change in the status or configuration of the Spot Fleet request.
- `instanceChange` - An instance was launched or terminated.
- `Information` - An informational event.

Type: String

Valid Values: `instanceChange` | `fleetRequestChange` | `error` | `information`

Required: No

### timestamp

The date and time of the event, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HistoryRecordEntry

Describes an event in the history of an EC2 Fleet.

## Contents

### **eventInformation**

Information about the event.

Type: [EventInformation \(p. 1525\)](#) object

Required: No

### **eventType**

The event type.

Type: String

Valid Values: `instance-change` | `fleet-change` | `service-error`

Required: No

### **timestamp**

The date and time of the event, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Host

Describes the properties of the Dedicated Host.

## Contents

### **allocationTime**

The time that the Dedicated Host was allocated.

Type: Timestamp

Required: No

### **allowsMultipleInstanceTypes**

Indicates whether the Dedicated Host supports multiple instance types of the same instance family. If the value is `on`, the Dedicated Host supports multiple instance types in the instance family. If the value is `off`, the Dedicated Host supports a single instance type only.

Type: String

Valid Values: `on` | `off`

Required: No

### **autoPlacement**

Whether auto-placement is on or off.

Type: String

Valid Values: `on` | `off`

Required: No

### **availabilityZone**

The Availability Zone of the Dedicated Host.

Type: String

Required: No

### **availabilityZoneId**

The ID of the Availability Zone in which the Dedicated Host is allocated.

Type: String

Required: No

### **availableCapacity**

Information about the instances running on the Dedicated Host.

Type: [AvailableCapacity](#) (p. 1388) object

Required: No

### **clientToken**

Unique, case-sensitive identifier that you provide to ensure the idempotency of the request. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

**hostId**

The ID of the Dedicated Host.

Type: String

Required: No

**hostProperties**

The hardware specifications of the Dedicated Host.

Type: [HostProperties \(p. 1595\)](#) object

Required: No

**hostRecovery**

Indicates whether host recovery is enabled or disabled for the Dedicated Host.

Type: String

Valid Values: on | off

Required: No

**hostReservationId**

The reservation ID of the Dedicated Host. This returns a null response if the Dedicated Host doesn't have an associated reservation.

Type: String

Required: No

**instances**

The IDs and instance type that are currently running on the Dedicated Host.

Type: Array of [HostInstance \(p. 1592\)](#) objects

Required: No

**memberOfServiceLinkedResourceGroup**

Indicates whether the Dedicated Host is in a host resource group. If **memberOfServiceLinkedResourceGroup** is true, the host is in a host resource group; otherwise, it is not.

Type: Boolean

Required: No

**ownerId**

The ID of the AWS account that owns the Dedicated Host.

Type: String

Required: No

**releaseTime**

The time that the Dedicated Host was released.

Type: Timestamp

Required: No

**state**

The Dedicated Host's state.

Type: String

Valid Values: `available` | `under-assessment` | `permanent-failure` | `released` | `released-permanent-failure` | `pending`

Required: No

**tagSet**

Any tags assigned to the Dedicated Host.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HostInstance

Describes an instance running on a Dedicated Host.

## Contents

### **instanceId**

The ID of instance that is running on the Dedicated Host.

Type: String

Required: No

### **instanceType**

The instance type (for example, `m3.medium`) of the running instance.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HostOffering

Details about the Dedicated Host Reservation offering.

## Contents

### **currencyCode**

The currency of the offering.

Type: String

Valid Values: USD

Required: No

### **duration**

The duration of the offering (in seconds).

Type: Integer

Required: No

### **hourlyPrice**

The hourly price of the offering.

Type: String

Required: No

### **instanceFamily**

The instance family of the offering.

Type: String

Required: No

### **offeringId**

The ID of the offering.

Type: String

Required: No

### **paymentOption**

The available payment option.

Type: String

Valid Values: AllUpfront | PartialUpfront | NoUpfront

Required: No

### **upfrontPrice**

The upfront price of the offering. Does not apply to No Upfront offerings.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HostProperties

Describes the properties of a Dedicated Host.

## Contents

### **cores**

The number of cores on the Dedicated Host.

Type: Integer

Required: No

### **instanceFamily**

The instance family supported by the Dedicated Host. For example, `m5`.

Type: String

Required: No

### **instanceType**

The instance type supported by the Dedicated Host. For example, `m5.large`. If the host supports multiple instance types, no **instanceType** is returned.

Type: String

Required: No

### **sockets**

The number of sockets on the Dedicated Host.

Type: Integer

Required: No

### **totalVCpus**

The total number of vCPUs on the Dedicated Host.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# HostReservation

Details about the Dedicated Host Reservation and associated Dedicated Hosts.

## Contents

### count

The number of Dedicated Hosts the reservation is associated with.

Type: Integer

Required: No

### currencyCode

The currency in which the `upfrontPrice` and `hourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### duration

The length of the reservation's term, specified in seconds. Can be 31536000 (1 year) | 94608000 (3 years).

Type: Integer

Required: No

### end

The date and time that the reservation ends.

Type: Timestamp

Required: No

### hostIdSet

The IDs of the Dedicated Hosts associated with the reservation.

Type: Array of strings

Required: No

### hostReservationId

The ID of the reservation that specifies the associated Dedicated Hosts.

Type: String

Required: No

### hourlyPrice

The hourly price of the reservation.

Type: String

Required: No

### **instanceFamily**

The instance family of the Dedicated Host Reservation. The instance family on the Dedicated Host must be the same in order for it to benefit from the reservation.

Type: String

Required: No

### **offeringId**

The ID of the reservation. This remains the same regardless of which Dedicated Hosts are associated with it.

Type: String

Required: No

### **paymentOption**

The payment option selected for this reservation.

Type: String

Valid Values: `AllUpfront` | `PartialUpfront` | `NoUpfront`

Required: No

### **start**

The date and time that the reservation started.

Type: Timestamp

Required: No

### **state**

The state of the reservation.

Type: String

Valid Values: `payment-pending` | `payment-failed` | `active` | `retired`

Required: No

### **tagSet**

Any tags assigned to the Dedicated Host Reservation.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **upfrontPrice**

The upfront price of the reservation.

Type: String

Required: No

## **See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IamInstanceProfile

Describes an IAM instance profile.

## Contents

### arn

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

### id

The ID of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IamInstanceProfileAssociation

Describes an association between an IAM instance profile and an instance.

## Contents

### **associationId**

The ID of the association.

Type: String

Required: No

### **iamInstanceProfile**

The IAM instance profile.

Type: [IamInstanceProfile \(p. 1599\)](#) object

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **state**

The state of the association.

Type: String

Valid Values: associating | associated | disassociating | disassociated

Required: No

### **timestamp**

The time the IAM instance profile was associated with the instance.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IamInstanceProfileSpecification

Describes an IAM instance profile.

## Contents

### **Arn** (request), **arn** (response)

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

### **Name** (request), **name** (response)

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IcmpTypeCode

Describes the ICMP type and code.

## Contents

### **Code** (request), **code** (response)

The ICMP code. A value of -1 means all codes for the specified ICMP type.

Type: Integer

Required: No

### **Type** (request), **type** (response)

The ICMP type. A value of -1 means all types.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IdFormat

Describes the ID format for a resource.

## Contents

### deadline

The date in UTC at which you are permanently switched over to using longer IDs. If a deadline is not yet available for this resource type, this field is not returned.

Type: Timestamp

Required: No

### resource

The type of resource.

Type: String

Required: No

### useLongIds

Indicates whether longer IDs (17-character IDs) are enabled for the resource.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

## IKEVersionsListValue

The internet key exchange (IKE) version permitted for the VPN tunnel.

### Contents

#### **value**

The IKE version.

Type: String

Required: No

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IKEVersionsRequestListValue

The IKE version that is permitted for the VPN tunnel.

## Contents

### **Value**

The IKE version.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Image

Describes an image.

## Contents

### **architecture**

The architecture of the image.

Type: String

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

### **blockDeviceMapping**

Any block device mapping entries.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

### **bootMode**

The boot mode of the image. For more information, see [Boot modes in the Amazon Elastic Compute Cloud User Guide](#).

Type: String

Valid Values: `legacy-bios` | `uefi`

Required: No

### **creationDate**

The date and time the image was created.

Type: String

Required: No

### **deprecationTime**

The date and time to deprecate the AMI, in UTC, in the following format: `YYYY-MM-DDTHH:MM:SSZ`. If you specified a value for seconds, Amazon EC2 rounds the seconds to the nearest minute.

Type: String

Required: No

### **description**

The description of the AMI that was provided during image creation.

Type: String

Required: No

### **enaSupport**

Specifies whether enhanced networking with ENA is enabled.

Type: Boolean

Required: No

**hypervisor**

The hypervisor type of the image.

Type: String

Valid Values: `ovm` | `xen`

Required: No

**imageId**

The ID of the AMI.

Type: String

Required: No

**imageLocation**

The location of the AMI.

Type: String

Required: No

**imageOwnerAlias**

The AWS account alias (for example, `amazon`, `self`) or the AWS account ID of the AMI owner.

Type: String

Required: No

**imageOwnerId**

The ID of the AWS account that owns the image.

Type: String

Required: No

**imageState**

The current state of the AMI. If the state is `available`, the image is successfully registered and can be used to launch an instance.

Type: String

Valid Values: `pending` | `available` | `invalid` | `deregistered` | `transient` | `failed` | `error`

Required: No

**imageType**

The type of image.

Type: String

Valid Values: `machine` | `kernel` | `ramdisk`

Required: No

**isPublic**

Indicates whether the image has public launch permissions. The value is `true` if this image has public launch permissions or `false` if it has only implicit and explicit launch permissions.

Type: Boolean

Required: No

**kernelId**

The kernel associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

**name**

The name of the AMI that was provided during image creation.

Type: String

Required: No

**platform**

This value is set to `windows` for Windows AMIs; otherwise, it is blank.

Type: String

Valid Values: `Windows`

Required: No

**platformDetails**

The platform details associated with the billing code of the AMI. For more information, see [Understanding AMI billing](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

**productCodes**

Any product codes associated with the AMI.

Type: Array of [ProductCode \(p. 1898\)](#) objects

Required: No

**ramdiskId**

The RAM disk associated with the image, if any. Only applicable for machine images.

Type: String

Required: No

**rootDeviceName**

The device name of the root device volume (for example, `/dev/sda1`).

Type: String

Required: No

### **rootDeviceType**

The type of root device used by the AMI. The AMI can use an Amazon EBS volume or an instance store volume.

Type: String

Valid Values: ebs | instance-store

Required: No

### **sriovNetSupport**

Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: String

Required: No

### **stateReason**

The reason for the state change.

Type: [StateReason \(p. 2055\)](#) object

Required: No

### **tagSet**

Any tags assigned to the image.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **usageOperation**

The operation of the Amazon EC2 instance and the billing code that is associated with the AMI. usageOperation corresponds to the [lineitem/Operation](#) column on your AWS Cost and Usage Report and in the [AWS Price List API](#). You can view these fields on the [Instances](#) or [AMIs](#) pages in the Amazon EC2 console, or in the responses that are returned by the [DescribeImages](#) command in the Amazon EC2 API, or the [describe-images](#) command in the AWS CLI.

Type: String

Required: No

### **virtualizationType**

The type of virtualization of the AMI.

Type: String

Valid Values: hvm | paravirtual

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImageDiskContainer

Describes the disk container object for an import image task.

## Contents

### Description

The description of the disk image.

Type: String

Required: No

### DeviceName

The block device mapping for the disk.

Type: String

Required: No

### Format

The format of the disk image being imported.

Valid values: OVA | VHD | VHDX | VMDK | RAW

Type: String

Required: No

### SnapshotId

The ID of the EBS snapshot to be used for importing the snapshot.

Type: String

Required: No

### Url

The URL to the Amazon S3-based disk image being imported. The URL can either be a https URL (<https://..>) or an Amazon S3 URL (<s3://..>)

Type: String

Required: No

### UserBucket

The S3 bucket for the disk image.

Type: [UserBucket \(p. 2155\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportImageLicenseConfigurationRequest

The request information of license configurations.

## Contents

### LicenseConfigurationArn

The ARN of a license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportImageLicenseConfigurationResponse

The response information for license configurations.

## Contents

### licenseConfigurationArn

The ARN of a license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportImageTask

Describes an import image task.

## Contents

### **architecture**

The architecture of the virtual machine.

Valid values: `i386` | `x86_64` | `arm64`

Type: String

Required: No

### **bootMode**

The boot mode of the virtual machine.

Type: String

Valid Values: `legacy-bios` | `uefi`

Required: No

### **description**

A description of the import task.

Type: String

Required: No

### **encrypted**

Indicates whether the image is encrypted.

Type: Boolean

Required: No

### **hypervisor**

The target hypervisor for the import task.

Valid values: `xen`

Type: String

Required: No

### **imageId**

The ID of the Amazon Machine Image (AMI) of the imported virtual machine.

Type: String

Required: No

### **importTaskId**

The ID of the import image task.

Type: String

Required: No

**kmsKeyId**

The identifier for the KMS key that was used to create the encrypted image.

Type: String

Required: No

**licenseSpecifications**

The ARNs of the license configurations that are associated with the import image task.

Type: Array of [ImportImageLicenseConfigurationResponse \(p. 1614\)](#) objects

Required: No

**licenseType**

The license type of the virtual machine.

Type: String

Required: No

**platform**

The description string for the import image task.

Type: String

Required: No

**progress**

The percentage of progress of the import image task.

Type: String

Required: No

**snapshotDetailSet**

Information about the snapshots.

Type: Array of [SnapshotDetail \(p. 2011\)](#) objects

Required: No

**status**

A brief status for the import image task.

Type: String

Required: No

**statusMessage**

A descriptive status message for the import image task.

Type: String

Required: No

### tagSet

The tags for the import image task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### usageOperation

The usage operation value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportInstanceLaunchSpecification

Describes the launch specification for VM import.

## Contents

### AdditionalInfo

Reserved.

Type: String

Required: No

### Architecture

The architecture of the instance.

Type: String

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

### GroupIds

The security group IDs.

Type: Array of strings

Required: No

### GroupNames

The security group names.

Type: Array of strings

Required: No

### InstanceInitiatedShutdownBehavior

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid Values: `stop` | `terminate`

Required: No

### InstanceType

The instance type. For more information about the instance types that you can import, see [Instance Types](#) in the VM Import/Export User Guide.

Type: String

Valid Values: `t1.micro` | `t2.nano` | `t2.micro` | `t2.small` | `t2.medium` | `t2.large` | `t2.xlarge` | `t2.2xlarge` | `t3.nano` | `t3.micro` | `t3.small` | `t3.medium` | `t3.large` | `t3.xlarge` | `t3.2xlarge` | `t3a.nano` | `t3a.micro` | `t3a.small` | `t3a.medium` | `t3a.large` | `t3a.xlarge` | `t3a.2xlarge` | `t4g.nano` | `t4g.micro` | `t4g.small` | `t4g.medium` | `t4g.large` | `t4g.xlarge` | `t4g.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m4.large` | `m4.xlarge` | `m4.2xlarge` | `m4.4xlarge` | `m4.10xlarge` | `m4.16xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` |

r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large |  
r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large |  
r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge |  
r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge |  
r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge |  
r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge |  
r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large |  
r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge |  
r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge |  
r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge |  
r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge |  
r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge |  
r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge |  
r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge |  
x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge |  
x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |  
i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge |  
i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge |  
i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal

```
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |
g5.24xlarge | g5.48xlarge
```

Required: No

## Monitoring

Indicates whether monitoring is enabled.

Type: Boolean

Required: No

## Placement

The placement information for the instance.

Type: [Placement \(p. 1878\)](#) object

Required: No

## PrivateIpAddress

[EC2-VPC] An available IP address from the IP address range of the subnet.

Type: String

Required: No

## SubnetId

[EC2-VPC] The ID of the subnet in which to launch the instance.

Type: String

Required: No

## UserData

The Base64-encoded user data to make available to the instance.

Type: [UserData \(p. 2157\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportInstanceTaskDetails

Describes an import instance task.

## Contents

### **description**

A description of the task.

Type: String

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **platform**

The instance operating system.

Type: String

Valid Values: Windows

Required: No

### **volumes**

The volumes.

Type: Array of [ImportInstanceVolumeDetailItem \(p. 1623\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportInstanceVolumeDetailItem

Describes an import volume task.

## Contents

### **availabilityZone**

The Availability Zone where the resulting instance will reside.

Type: String

Required: No

### **bytesConverted**

The number of bytes converted so far.

Type: Long

Required: No

### **description**

A description of the task.

Type: String

Required: No

### **image**

The image.

Type: [DiskImageDescription \(p. 1494\)](#) object

Required: No

### **status**

The status of the import of this particular disk image.

Type: String

Required: No

### **statusMessage**

The status information or errors related to the disk image.

Type: String

Required: No

### **volume**

The volume.

Type: [DiskImageVolumeDescription \(p. 1496\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportSnapshotTask

Describes an import snapshot task.

## Contents

### **description**

A description of the import snapshot task.

Type: String

Required: No

### **importTaskId**

The ID of the import snapshot task.

Type: String

Required: No

### **snapshotTaskDetail**

Describes an import snapshot task.

Type: [SnapshotTaskDetail \(p. 2016\)](#) object

Required: No

### **tagSet**

The tags for the import snapshot task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ImportVolumeTaskDetails

Describes an import volume task.

## Contents

### **availabilityZone**

The Availability Zone where the resulting volume will reside.

Type: String

Required: No

### **bytesConverted**

The number of bytes converted so far.

Type: Long

Required: No

### **description**

The description you provided when starting the import volume task.

Type: String

Required: No

### **image**

The image.

Type: [DiskImageDescription \(p. 1494\)](#) object

Required: No

### **volume**

The volume.

Type: [DiskImageVolumeDescription \(p. 1496\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InferenceAcceleratorInfo

Describes the Inference accelerators for the instance type.

## Contents

### accelerators

Describes the Inference accelerators for the instance type.

Type: Array of [InferenceDeviceInfo \(p. 1628\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InferenceDeviceInfo

Describes the Inference accelerators for the instance type.

## Contents

### **count**

The number of Inference accelerators for the instance type.

Type: Integer

Required: No

### **manufacturer**

The manufacturer of the Inference accelerator.

Type: String

Required: No

### **name**

The name of the Inference accelerator.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Instance

Describes an instance.

## Contents

### **amiLaunchIndex**

The AMI launch index, which can be used to find this instance in the launch group.

Type: Integer

Required: No

### **architecture**

The architecture of the image.

Type: String

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

### **blockDeviceMapping**

Any block device mapping entries for the instance.

Type: Array of [InstanceBlockDeviceMapping \(p. 1638\)](#) objects

Required: No

### **bootMode**

The boot mode of the instance. For more information, see [Boot modes](#) in the *Amazon EC2 User Guide*.

Type: String

Valid Values: `legacy-bios` | `uefi`

Required: No

### **capacityReservationId**

The ID of the Capacity Reservation.

Type: String

Required: No

### **capacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: [CapacityReservationSpecificationResponse \(p. 1415\)](#) object

Required: No

### **clientToken**

The idempotency token you provided when you launched the instance, if applicable.

Type: String

Required: No

**cpuOptions**

The CPU options for the instance.

Type: [CpuOptions \(p. 1454\)](#) object

Required: No

**dnsName**

(IPv4 only) The public DNS name assigned to the instance. This name is not available until the instance enters the `running` state. For EC2-VPC, this name is only available if you've enabled DNS hostnames for your VPC.

Type: String

Required: No

**ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Type: Boolean

Required: No

**elasticGpuAssociationSet**

The Elastic GPU associated with the instance.

Type: Array of [ElasticGpuAssociation \(p. 1510\)](#) objects

Required: No

**elasticInferenceAcceleratorAssociationSet**

The elastic inference accelerator associated with the instance.

Type: Array of [ElasticInferenceAcceleratorAssociation \(p. 1517\)](#) objects

Required: No

**enaSupport**

Specifies whether enhanced networking with ENA is enabled.

Type: Boolean

Required: No

**enclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves.

Type: [EnclaveOptions \(p. 1523\)](#) object

Required: No

**groupSet**

The security groups for the instance.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

**hibernationOptions**

Indicates whether the instance is enabled for hibernation.

Type: [HibernationOptions \(p. 1585\)](#) object

Required: No

**hypervisor**

The hypervisor type of the instance. The value `xen` is used for both Xen and Nitro hypervisors.

Type: String

Valid Values: `ovm` | `xen`

Required: No

**iamInstanceProfile**

The IAM instance profile associated with the instance, if applicable.

Type: [IamInstanceProfile \(p. 1599\)](#) object

Required: No

**imageId**

The ID of the AMI used to launch the instance.

Type: String

Required: No

**instanceId**

The ID of the instance.

Type: String

Required: No

**instanceLifecycle**

Indicates whether this is a Spot Instance or a Scheduled Instance.

Type: String

Valid Values: `spot` | `scheduled`

Required: No

**instanceState**

The current state of the instance.

Type: [InstanceState \(p. 1689\)](#) object

Required: No

### instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | r1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge

| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**ipAddress**

The public IPv4 address, or the Carrier IP address assigned to the instance, if applicable.

A Carrier IP address only applies to an instance launched in a subnet associated with a Wavelength Zone.

Type: String

Required: No

**kernelId**

The kernel associated with this instance, if applicable.

Type: String

Required: No

**keyName**

The name of the key pair, if this instance was launched with an associated key pair.

Type: String

Required: No

**launchTime**

The time the instance was launched.

Type: Timestamp

Required: No

**licenseSet**

The license configurations for the instance.

Type: Array of [LicenseConfiguration \(p. 1788\)](#) objects

Required: No

**metadataOptions**

The metadata options for the instance.

Type: [InstanceMetadataOptionsResponse \(p. 1661\)](#) object

Required: No

**monitoring**

The monitoring for the instance.

Type: [Monitoring \(p. 1820\)](#) object

Required: No

**networkInterfaceSet**

[EC2-VPC] The network interfaces for the instance.

Type: Array of [InstanceNetworkInterface \(p. 1664\)](#) objects

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**placement**

The location where the instance launched, if applicable.

Type: [Placement \(p. 1878\)](#) object

Required: No

**platform**

The value is Windows for Windows instances; otherwise blank.

Type: String

Valid Values: Windows

Required: No

**platformDetails**

The platform details value for the instance. For more information, see [AMI billing information fields](#) in the *Amazon EC2 User Guide*.

Type: String

Required: No

**privateDnsName**

(IPv4 only) The private DNS hostname assigned to the instance. This DNS hostname can only be used inside the Amazon EC2 network. This name is not available until the instance enters the running state.

[EC2-VPC] The Amazon-provided DNS server resolves Amazon-provided private DNS hostnames if you've enabled DNS resolution and DNS hostnames in your VPC. If you are not using the Amazon-provided DNS server in your VPC, your custom domain name servers must resolve the hostname as appropriate.

Type: String

Required: No

**privateIpAddress**

The private IPv4 address assigned to the instance.

Type: String

Required: No

**productCodes**

The product codes attached to this instance, if applicable.

Type: Array of [ProductCode \(p. 1898\)](#) objects

Required: No

**ramdiskId**

The RAM disk associated with this instance, if applicable.

Type: String

Required: No

**reason**

The reason for the most recent state transition. This might be an empty string.

Type: String

Required: No

**rootDeviceName**

The device name of the root device volume (for example, /dev/sda1).

Type: String

Required: No

**rootDeviceType**

The root device type used by the AMI. The AMI can use an EBS volume or an instance store volume.

Type: String

Valid Values: ebs | instance-store

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**spotInstanceRequestId**

If the request is a Spot Instance request, the ID of the request.

Type: String

Required: No

**sriovNetSupport**

Specifies whether enhanced networking with the Intel 82599 Virtual Function interface is enabled.

Type: String

Required: No

**stateReason**

The reason for the most recent state transition.

Type: [StateReason \(p. 2055\)](#) object

Required: No

**subnetId**

[EC2-VPC] The ID of the subnet in which the instance is running.

Type: String

Required: No

**tagSet**

Any tags assigned to the instance.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**usageOperation**

The usage operation value for the instance. For more information, see [AMI billing information fields in the Amazon EC2 User Guide](#).

Type: String

Required: No

**usageOperationUpdateTime**

The time that the usage operation was last updated.

Type: Timestamp

Required: No

**virtualizationType**

The virtualization type of the instance.

Type: String

Valid Values: hvm | paravirtual

Required: No

**vpcId**

[EC2-VPC] The ID of the VPC in which the instance is running.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceBlockDeviceMapping

Describes a block device mapping.

## Contents

### **deviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

### **ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDevice \(p. 1504\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceBlockDeviceMappingSpecification

Describes a block device mapping entry.

## Contents

### **DeviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

### **Ebs**

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: [EbsInstanceBlockDeviceSpecification \(p. 1505\)](#) object

Required: No

### **NoDevice**

suppress the specified device included in the block device mapping.

Type: String

Required: No

### **VirtualName**

The virtual device name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceCapacity

Information about the number of instances that can be launched onto the Dedicated Host.

## Contents

### **availableCapacity**

The number of instances that can be launched onto the Dedicated Host based on the host's available capacity.

Type: Integer

Required: No

### **instanceType**

The instance type supported by the Dedicated Host.

Type: String

Required: No

### **totalCapacity**

The total number of instances that can be launched onto the Dedicated Host if there are no instances running on it.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceCount

Describes a Reserved Instance listing state.

## Contents

### instanceCount

The number of listed Reserved Instances in the state specified by the state.

Type: Integer

Required: No

### state

The states of the listed Reserved Instances.

Type: String

Valid Values: available | sold | cancelled | pending

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceCreditSpecification

Describes the credit option for CPU usage of a burstable performance instance.

## Contents

### cpuCredits

The credit option for CPU usage of the instance. Valid values are `standard` and `unlimited`.

Type: String

Required: No

### instanceId

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceCreditSpecificationRequest

Describes the credit option for CPU usage of a burstable performance instance.

## Contents

### CpuCredits

The credit option for CPU usage of the instance. Valid values are `standard` and `unlimited`.

T3 instances with host tenancy do not support the `unlimited` CPU credit option.

Type: String

Required: No

### InstanceId

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindow

The event window.

## Contents

### **associationTarget**

The event window.

Type: [InstanceEventWindowAssociationTarget \(p. 1647\)](#) object

Required: No

### **cronExpression**

The cron expression defined for the event window.

Type: String

Required: No

### **instanceEventWindowId**

The ID of the event window.

Type: String

Required: No

### **name**

The name of the event window.

Type: String

Required: No

### **state**

The current state of the event window.

Type: String

Valid Values: `creating` | `deleting` | `active` | `deleted`

Required: No

### **tagSet**

The instance tags associated with the event window.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **timeRangeSet**

One or more time ranges defined for the event window.

Type: Array of [InstanceEventWindowTimeRange \(p. 1650\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowAssociationRequest

One or more targets associated with the specified event window. Only one *type* of target (instance ID, instance tag, or Dedicated Host ID) can be associated with an event window.

## Contents

### DedicatedHostIds

The IDs of the Dedicated Hosts to associate with the event window.

Type: Array of strings

Required: No

### InstanceIds

The IDs of the instances to associate with the event window. If the instance is on a Dedicated Host, you can't specify the Instance ID parameter; you must use the Dedicated Host ID parameter.

Type: Array of strings

Required: No

### InstanceTags

The instance tags to associate with the event window. Any instances associated with the tags will be associated with the event window.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowAssociationTarget

One or more targets associated with the event window.

## Contents

### **dedicatedHostIdSet**

The IDs of the Dedicated Hosts associated with the event window.

Type: Array of strings

Required: No

### **instanceIdSet**

The IDs of the instances associated with the event window.

Type: Array of strings

Required: No

### **tagSet**

The instance tags associated with the event window. Any instances associated with the tags will be associated with the event window.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowDisassociationRequest

The targets to disassociate from the specified event window.

## Contents

### DedicatedHostIds

The IDs of the Dedicated Hosts to disassociate from the event window.

Type: Array of strings

Required: No

### InstanceId

The IDs of the instances to disassociate from the event window.

Type: Array of strings

Required: No

### InstanceTags

The instance tags to disassociate from the event window. Any instances associated with the tags will be disassociated from the event window.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowStateChange

The state of the event window.

## Contents

### instanceEventWindowId

The ID of the event window.

Type: String

Required: No

### state

The current state of the event window.

Type: String

Valid Values: `creating` | `deleting` | `active` | `deleted`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowTimeRange

The start day and time and the end day and time of the time range, in UTC.

## Contents

### **endHour**

The hour when the time range ends.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

### **endWeekDay**

The day on which the time range ends.

Type: String

Valid Values: sunday | monday | tuesday | wednesday | thursday | friday | saturday

Required: No

### **startHour**

The hour when the time range begins.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

### **startWeekDay**

The day on which the time range begins.

Type: String

Valid Values: sunday | monday | tuesday | wednesday | thursday | friday | saturday

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceEventWindowTimeRangeRequest

The start day and time and the end day and time of the time range, in UTC.

## Contents

### **EndHour**

The hour when the time range ends.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

### **EndWeekDay**

The day on which the time range ends.

Type: String

Valid Values: sunday | monday | tuesday | wednesday | thursday | friday | saturday

Required: No

### **StartHour**

The hour when the time range begins.

Type: Integer

Valid Range: Minimum value of 0. Maximum value of 23.

Required: No

### **StartWeekDay**

The day on which the time range begins.

Type: String

Valid Values: sunday | monday | tuesday | wednesday | thursday | friday | saturday

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceExportDetails

Describes an instance to export.

## Contents

### instanceId

The ID of the resource being exported.

Type: String

Required: No

### targetEnvironment

The target virtualization environment.

Type: String

Valid Values: `citrix` | `vmware` | `microsoft`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceFamilyCreditSpecification

Describes the default credit option for CPU usage of a burstable performance instance family.

## Contents

### cpuCredits

The default credit option for CPU usage of the instance family. Valid values are `standard` and `unlimited`.

Type: String

Required: No

### instanceFamily

The instance family.

Type: String

Valid Values: `t2` | `t3` | `t3a` | `t4g`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceIpv4Prefix

Information about an IPv4 prefix.

## Contents

### ipv4Prefix

One or more IPv4 prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceIpv6Address

Describes an IPv6 address.

## Contents

**Ipv6Address** (request), **ipv6Address** (response)

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceIpv6AddressRequest

Describes an IPv6 address.

## Contents

### Ipv6Address

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceIpv6Prefix

Information about an IPv6 prefix.

## Contents

### ipv6Prefix

One or more IPv6 prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceMarketOptionsRequest

Describes the market (purchasing) option for the instances.

## Contents

### MarketType

The market type.

Type: String

Valid Values: spot

Required: No

### SpotOptions

The options for Spot Instances.

Type: [SpotMarketOptions \(p. 2040\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceMetadataOptionsRequest

The metadata options for the instance.

## Contents

### **HttpEndpoint**

Enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the default state is `enabled`.

If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### **HttpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### **HttpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Default: 1

Possible values: Integers from 1 to 64

Type: Integer

Required: No

### **HttpTokens**

The state of token usage for your instance metadata requests. If the parameter is not specified in the request, the default state is `optional`.

If the state is `optional`, you can choose to retrieve instance metadata with or without a signed token header on your request. If you retrieve the IAM role credentials without a token, the version 1.0 role credentials are returned. If you retrieve the IAM role credentials using a valid signed token, the version 2.0 role credentials are returned.

If the state is `required`, you must send a signed token header with any instance metadata retrieval requests. In this state, retrieving the IAM role credentials always returns the version 2.0 credentials; the version 1.0 credentials are not available.

Type: String

Valid Values: `optional` | `required`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceMetadataOptionsResponse

The metadata options for the instance.

## Contents

### **httpEndpoint**

Indicates whether the HTTP metadata endpoint on your instances is enabled or disabled.

Type: String

Valid Values: disabled | enabled

Required: No

### **httpProtocolIpv6**

Indicates whether the IPv6 endpoint for the instance metadata service is enabled or disabled.

Type: String

Valid Values: disabled | enabled

Required: No

### **httpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Default: 1

Possible values: Integers from 1 to 64

Type: Integer

Required: No

### **httpTokens**

The state of token usage for your instance metadata requests. If the parameter is not specified in the request, the default state is optional.

If the state is optional, you can choose to retrieve instance metadata with or without a signed token header on your request. If you retrieve the IAM role credentials without a token, the version 1.0 role credentials are returned. If you retrieve the IAM role credentials using a valid signed token, the version 2.0 role credentials are returned.

If the state is required, you must send a signed token header with any instance metadata retrieval requests. In this state, retrieving the IAM role credential always returns the version 2.0 credentials; the version 1.0 credentials are not available.

Type: String

Valid Values: optional | required

Required: No

### **state**

The state of the metadata option changes.

`pending` - The metadata options are being updated and the instance is not ready to process metadata traffic with the new selection.

`applied` - The metadata options have been successfully applied on the instance.

Type: String

Valid Values: `pending` | `applied`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceMonitoring

Describes the monitoring of an instance.

## Contents

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **monitoring**

The monitoring for the instance.

Type: [Monitoring \(p. 1820\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceNetworkInterface

Describes a network interface.

## Contents

### **association**

The association information for an Elastic IPv4 associated with the network interface.

Type: [InstanceNetworkInterfaceAssociation \(p. 1667\)](#) object

Required: No

### **attachment**

The network interface attachment.

Type: [InstanceNetworkInterfaceAttachment \(p. 1668\)](#) object

Required: No

### **description**

The description.

Type: String

Required: No

### **groupSet**

One or more security groups.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

### **interfaceType**

Describes the type of network interface.

Valid values: `interface` | `efa` | `trunk`

Type: String

Required: No

### **ipv4PrefixSet**

The IPv4 delegated prefixes that are assigned to the network interface.

Type: Array of [InstanceIpv4Prefix \(p. 1654\)](#) objects

Required: No

### **ipv6AddressesSet**

One or more IPv6 addresses associated with the network interface.

Type: Array of [InstanceIpv6Address \(p. 1655\)](#) objects

Required: No

**ipv6PrefixSet**

The IPv6 delegated prefixes that are assigned to the network interface.

Type: Array of [InstanceIpv6Prefix \(p. 1657\)](#) objects

Required: No

**macAddress**

The MAC address.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**ownerId**

The ID of the AWS account that created the network interface.

Type: String

Required: No

**privateDnsName**

The private DNS name.

Type: String

Required: No

**privateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**privateIpAddressesSet**

One or more private IPv4 addresses associated with the network interface.

Type: Array of [InstancePrivateIpAddress \(p. 1674\)](#) objects

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the network interface.

Type: String

Valid Values: available | associated | attaching | in-use | detaching

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceNetworkInterfaceAssociation

Describes association information for an Elastic IP address (IPv4).

## Contents

### **carrierIp**

The carrier IP address associated with the network interface.

Type: String

Required: No

### **customerOwnedIp**

The customer-owned IP address associated with the network interface.

Type: String

Required: No

### **ipOwnerId**

The ID of the owner of the Elastic IP address.

Type: String

Required: No

### **publicDnsName**

The public DNS name.

Type: String

Required: No

### **publicIp**

The public IP address or Elastic IP address bound to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceNetworkInterfaceAttachment

Describes a network interface attachment.

## Contents

### **attachmentId**

The ID of the network interface attachment.

Type: String

Required: No

### **attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

### **deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

### **deviceIndex**

The index of the device on the instance for the network interface attachment.

Type: Integer

Required: No

### **networkCardIndex**

The index of the network card.

Type: Integer

Required: No

### **status**

The attachment state.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceNetworkInterfaceSpecification

Describes a network interface.

## Contents

### **AssociateCarrierIpAddress** (request), **AssociateCarrierIpAddress** (response)

Indicates whether to assign a carrier IP address to the network interface.

You can only assign a carrier IP address to a network interface that is in a subnet in a Wavelength Zone. For more information about carrier IP addresses, see Carrier IP addresses in the AWS Wavelength Developer Guide.

Type: Boolean

Required: No

### **AssociatePublicIpAddress** (request), **associatePublicIpAddress** (response)

Indicates whether to assign a public IPv4 address to an instance you launch in a VPC. The public IP address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

Type: Boolean

Required: No

### **DeleteOnTermination** (request), **deleteOnTermination** (response)

If set to `true`, the interface is deleted when the instance is terminated. You can specify `true` only if creating a new network interface when launching an instance.

Type: Boolean

Required: No

### **Description** (request), **description** (response)

The description of the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

### **DeviceIndex** (request), **deviceIndex** (response)

The position of the network interface in the attachment order. A primary network interface has a device index of 0.

If you specify a network interface when launching an instance, you must specify the device index.

Type: Integer

Required: No

### **InterfaceType** (request), **InterfaceType** (response)

The type of network interface.

To create an Elastic Fabric Adapter (EFA), specify `eFa`. For more information, see [Elastic Fabric Adapter](#) in the *Amazon Elastic Compute Cloud User Guide*.

Valid values: interface | efa

Type: String

Required: No

**Ipv4Prefixes** (request), **Ipv4Prefix** (response)

One or more IPv4 delegated prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of [Ipv4PrefixSpecificationRequest \(p. 1716\)](#) objects

Required: No

**Ipv4PrefixCount** (request), **Ipv4PrefixCount** (response)

The number of IPv4 delegated prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv4Prefix` option.

Type: Integer

Required: No

**Ipv6AddressCount** (request), **ipv6AddressCount** (response)

A number of IPv6 addresses to assign to the network interface. Amazon EC2 chooses the IPv6 addresses from the range of the subnet. You cannot specify this option and the option to assign specific IPv6 addresses in the same request. You can specify this option if you've specified a minimum number of instances to launch.

Type: Integer

Required: No

**Ipv6Addresses** (request), **ipv6AddressesSet** (response)

One or more IPv6 addresses to assign to the network interface. You cannot specify this option and the option to assign a number of IPv6 addresses in the same request. You cannot specify this option if you've specified a minimum number of instances to launch.

Type: Array of [InstanceIpv6Address \(p. 1655\)](#) objects

Required: No

**Ipv6Prefixes** (request), **Ipv6Prefix** (response)

One or more IPv6 delegated prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of [Ipv6PrefixSpecificationRequest \(p. 1722\)](#) objects

Required: No

**Ipv6PrefixCount** (request), **Ipv6PrefixCount** (response)

The number of IPv6 delegated prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv6Prefix` option.

Type: Integer

Required: No

**NetworkCardIndex** (request), **NetworkCardIndex** (response)

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

If you are using [RequestSpotInstances](#) to create Spot Instances, omit this parameter because you can't specify the network card index when using this API. To specify the network card index, use [RunInstances](#).

Type: Integer

Required: No

**NetworkInterfaceId** (request), **networkInterfaceId** (response)

The ID of the network interface.

If you are creating a Spot Fleet, omit this parameter because you can't specify a network interface ID in a launch specification.

Type: String

Required: No

**PrivateIpAddress** (request), **privateIpAddress** (response)

The private IPv4 address of the network interface. Applies only if creating a network interface when launching an instance. You cannot specify this option if you're launching more than one instance in a [RunInstances](#) request.

Type: String

Required: No

**PrivateIpAddresses** (request), **privateIpAddressesSet** (response)

One or more private IPv4 addresses to assign to the network interface. Only one private IPv4 address can be designated as primary. You cannot specify this option if you're launching more than one instance in a [RunInstances](#) request.

Type: Array of [PrivateIpAddressSpecification](#) (p. 1896) objects

Required: No

**SecondaryPrivateIpAddressCount** (request), **secondaryPrivateIpAddressCount** (response)

The number of secondary private IPv4 addresses. You can't specify this option and specify more than one private IP address using the private IP addresses option. You cannot specify this option if you're launching more than one instance in a [RunInstances](#) request.

Type: Integer

Required: No

**Groups** (request), **SecurityGroupId** (response)

The IDs of the security groups for the network interface. Applies only if creating a network interface when launching an instance.

Type: Array of strings

Required: No

**SubnetId** (request), **subnetId** (response)

The ID of the subnet associated with the network interface. Applies only if creating a network interface when launching an instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstancePrivateIpAddress

Describes a private IPv4 address.

## Contents

### **association**

The association information for an Elastic IP address for the network interface.

Type: [InstanceNetworkInterfaceAssociation \(p. 1667\)](#) object

Required: No

### **primary**

Indicates whether this IPv4 address is the primary private IP address of the network interface.

Type: Boolean

Required: No

### **privateDnsName**

The private IPv4 DNS name.

Type: String

Required: No

### **privateIpAddress**

The private IPv4 address of the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

When you specify multiple parameters, you get instance types that satisfy all of the specified parameters. If you specify multiple values for a parameter, you get instance types that satisfy any of the specified values.

## Note

You must specify `VCpuCount` and `MemoryMiB`. All other parameters are optional. Any unspecified optional parameter is set to its default.

For more information, see [Attribute-based instance type selection for EC2 Fleet](#), [Attribute-based instance type selection for Spot Fleet](#), and [Spot placement score](#) in the *Amazon EC2 User Guide*.

## Contents

### **AcceleratorCount** (request), **acceleratorCount** (response)

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

To exclude accelerator-enabled instance types, set `Max` to 0.

Default: No minimum or maximum limits

Type: [AcceleratorCount \(p. 1351\)](#) object

Required: No

### **AcceleratorManufacturers** (request), **acceleratorManufacturerSet** (response)

Indicates whether instance types must have accelerators by specific manufacturers.

- For instance types with NVIDIA devices, specify `nvidia`.
- For instance types with AMD devices, specify `amd`.
- For instance types with AWS devices, specify `amazon-web-services`.
- For instance types with Xilinx devices, specify `xilinx`.

Default: Any manufacturer

Type: Array of strings

Valid Values: `nvidia` | `amd` | `amazon-web-services` | `xilinx`

Required: No

### **AcceleratorNames** (request), **acceleratorNameSet** (response)

The accelerators that must be on the instance type.

- For instance types with NVIDIA A100 GPUs, specify `a100`.
- For instance types with NVIDIA V100 GPUs, specify `v100`.
- For instance types with NVIDIA K80 GPUs, specify `k80`.
- For instance types with NVIDIA T4 GPUs, specify `t4`.
- For instance types with NVIDIA M60 GPUs, specify `m60`.
- For instance types with AMD Radeon Pro V520 GPUs, specify `radeon-pro-v520`.
- For instance types with Xilinx VU9P FPGAs, specify `vu9p`.

Default: Any accelerator

Type: Array of strings

Valid Values: a100 | v100 | k80 | t4 | m60 | radeon-pro-v520 | vu9p

Required: No

**AcceleratorTotalMemoryMiB** (request), **acceleratorTotalMemoryMiB** (response)

The minimum and maximum amount of total accelerator memory, in MiB.

Default: No minimum or maximum limits

Type: [AcceleratorTotalMemoryMiB \(p. 1353\)](#) object

Required: No

**AcceleratorTypes** (request), **acceleratorTypeSet** (response)

The accelerator types that must be on the instance type.

- For instance types with GPU accelerators, specify `gpu`.
- For instance types with FPGA accelerators, specify `fpga`.
- For instance types with inference accelerators, specify `inference`.

Default: Any accelerator type

Type: Array of strings

Valid Values: `gpu` | `fpga` | `inference`

Required: No

**BareMetal** (request), **bareMetal** (response)

Indicates whether bare metal instance types must be included, excluded, or required.

- To include bare metal instance types, specify `included`.
- To require only bare metal instance types, specify `required`.
- To exclude bare metal instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

**BaselineEbsBandwidthMbps** (request), **baselineEbsBandwidthMbps** (response)

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see [Amazon EBS-optimized instances](#) in the *Amazon EC2 User Guide*.

Default: No minimum or maximum limits

Type: [BaselineEbsBandwidthMbps \(p. 1389\)](#) object

Required: No

**BurstablePerformance** (request), **burstablePerformance** (response)

Indicates whether burstable performance T instance types are included, excluded, or required. For more information, see [Burstable performance instances](#).

- To include burstable performance instance types, specify `included`.
- To require only burstable performance instance types, specify `required`.
- To exclude burstable performance instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

**CpuManufacturers** (request), **cpuManufacturerSet** (response)

The CPU manufacturers to include.

- For instance types with Intel CPUs, specify `intel`.
- For instance types with AMD CPUs, specify `amd`.
- For instance types with AWS CPUs, specify `amazon-web-services`.

**Note**

Don't confuse the CPU manufacturer with the CPU architecture. Instances will be launched with a compatible CPU architecture based on the Amazon Machine Image (AMI) that you specify in your launch template.

Default: Any manufacturer

Type: Array of strings

Valid Values: `intel` | `amd` | `amazon-web-services`

Required: No

**ExcludedInstanceTypes** (request), **excludedInstanceTypeSet** (response)

The instance types to exclude. You can use strings with one or more wild cards, represented by an asterisk (\*), to exclude an instance type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`, Amazon EC2 will exclude the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will exclude all the M5a instance types, but not the M5n instance types.

Default: No excluded instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\"]+`

Required: No

**InstanceGenerations** (request), **instanceGenerationSet** (response)

Indicates whether current or previous generation instance types are included. The current generation instance types are recommended for use. Current generation instance types are typically the latest two to three generations in each instance family. For more information, see [Instance types](#) in the [Amazon EC2 User Guide](#).

For current generation instance types, specify `current`.

For previous generation instance types, specify `previous`.

Default: Current and previous generation instance types

Type: Array of strings

Valid Values: `current` | `previous`

Required: No

**LocalStorage** (request), **localStorage** (response)

Indicates whether instance types with instance store volumes are included, excluded, or required. For more information, [Amazon EC2 instance store](#) in the *Amazon EC2 User Guide*.

- To include instance types with instance store volumes, specify `included`.
- To require only instance types with instance store volumes, specify `required`.
- To exclude instance types with instance store volumes, specify `excluded`.

Default: `included`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

**LocalStorageTypes** (request), **localStorageTypeSet** (response)

The type of local storage that is required.

- For instance types with hard disk drive (HDD) storage, specify `hdd`.
- For instance types with solid state drive (SSD) storage, specify `sdd`.

Default: `hdd` and `sdd`

Type: Array of strings

Valid Values: `hdd` | `ssd`

Required: No

**MemoryGiBPerVCpu** (request), **memoryGiBPerVCpu** (response)

The minimum and maximum amount of memory per vCPU, in GiB.

Default: No minimum or maximum limits

Type: [MemoryGiBPerVCpu](#) (p. 1808) object

Required: No

**MemoryMiB** (request), **memoryMiB** (response)

The minimum and maximum amount of memory, in MiB.

Type: [MemoryMiB](#) (p. 1811) object

Required: No

**NetworkInterfaceCount** (request), **networkInterfaceCount** (response)

The minimum and maximum number of network interfaces.

Default: No minimum or maximum limits

Type: [NetworkInterfaceCount \(p. 1847\)](#) object

Required: No

**OnDemandMaxPricePercentageOverLowestPrice** (request),  
**onDemandMaxPricePercentageOverLowestPrice** (response)

The price protection threshold for On-Demand Instances. This is the maximum you'll pay for an On-Demand Instance, expressed as a percentage above the cheapest M, C, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it excludes instance types priced above your threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To turn off price protection, specify a high value, such as 999999.

This parameter is not supported for [GetSpotPlacementScores](#) and [GetInstanceTypesFromInstanceRequirements](#).

Default: 20

Type: Integer

Required: No

**RequireHibernateSupport** (request), **requireHibernateSupport** (response)

Indicates whether instance types must support hibernation for On-Demand Instances.

This parameter is not supported for [GetSpotPlacementScores](#).

Default: false

Type: Boolean

Required: No

**SpotMaxPricePercentageOverLowestPrice** (request), **spotMaxPricePercentageOverLowestPrice** (response)

The price protection threshold for Spot Instances. This is the maximum you'll pay for a Spot Instance, expressed as a percentage above the cheapest M, C, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it excludes instance types priced above your threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To turn off price protection, specify a high value, such as 999999.

This parameter is not supported for [GetSpotPlacementScores](#) and [GetInstanceTypesFromInstanceRequirements](#).

Default: 100

Type: Integer

Required: No

**TotalLocalStorageGB** (request), **totalLocalStorageGB** (response)

The minimum and maximum amount of total local storage, in GB.

Default: No minimum or maximum limits

Type: [TotalLocalStorageGB \(p. 2086\)](#) object

Required: No

**VcpuCount** (request), **vCpuCount** (response)

The minimum and maximum number of vCPUs.

Type: [VCpuCountRange \(p. 2162\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceRequirementsRequest

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

When you specify multiple parameters, you get instance types that satisfy all of the specified parameters. If you specify multiple values for a parameter, you get instance types that satisfy any of the specified values.

## Note

You must specify `VCpuCount` and `MemoryMiB`. All other parameters are optional. Any unspecified optional parameter is set to its default.

For more information, see [Attribute-based instance type selection for EC2 Fleet](#), [Attribute-based instance type selection for Spot Fleet](#), and [Spot placement score](#) in the *Amazon EC2 User Guide*.

## Contents

### AcceleratorCount

The minimum and maximum number of accelerators (GPUs, FPGAs, or AWS Inferentia chips) on an instance.

To exclude accelerator-enabled instance types, set `Max` to 0.

Default: No minimum or maximum limits

Type: [AcceleratorCountRequest \(p. 1352\)](#) object

Required: No

### AcceleratorManufacturers

Indicates whether instance types must have accelerators by specific manufacturers.

- For instance types with NVIDIA devices, specify `nvidia`.
- For instance types with AMD devices, specify `amd`.
- For instance types with AWS devices, specify `amazon-web-services`.
- For instance types with Xilinx devices, specify `xilinx`.

Default: Any manufacturer

Type: Array of strings

Valid Values: `nvidia` | `amd` | `amazon-web-services` | `xilinx`

Required: No

### AcceleratorNames

The accelerators that must be on the instance type.

- For instance types with NVIDIA A100 GPUs, specify `a100`.
- For instance types with NVIDIA V100 GPUs, specify `v100`.
- For instance types with NVIDIA K80 GPUs, specify `k80`.
- For instance types with NVIDIA T4 GPUs, specify `t4`.
- For instance types with NVIDIA M60 GPUs, specify `m60`.
- For instance types with AMD Radeon Pro V520 GPUs, specify `radeon-pro-v520`.
- For instance types with Xilinx VU9P FPGAs, specify `vu9p`.

Default: Any accelerator

Type: Array of strings

Valid Values: a100 | v100 | k80 | t4 | m60 | radeon-pro-v520 | vu9p

Required: No

#### **AcceleratorTotalMemoryMiB**

The minimum and maximum amount of total accelerator memory, in MiB.

Default: No minimum or maximum limits

Type: [AcceleratorTotalMemoryMiBRequest \(p. 1354\)](#) object

Required: No

#### **AcceleratorTypes**

The accelerator types that must be on the instance type.

- To include instance types with GPU hardware, specify `gpu`.
- To include instance types with FPGA hardware, specify `fpga`.
- To include instance types with inference hardware, specify `inference`.

Default: Any accelerator type

Type: Array of strings

Valid Values: `gpu` | `fpga` | `inference`

Required: No

#### **BareMetal**

Indicates whether bare metal instance types must be included, excluded, or required.

- To include bare metal instance types, specify `included`.
- To require only bare metal instance types, specify `required`.
- To exclude bare metal instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

#### **BaselineEbsBandwidthMbps**

The minimum and maximum baseline bandwidth to Amazon EBS, in Mbps. For more information, see [Amazon EBS-optimized instances](#) in the *Amazon EC2 User Guide*.

Default: No minimum or maximum limits

Type: [BaselineEbsBandwidthMbpsRequest \(p. 1390\)](#) object

Required: No

#### **BurstablePerformance**

Indicates whether burstable performance T instance types are included, excluded, or required. For more information, see [Burstable performance instances](#).

- To include burstable performance instance types, specify `included`.
- To require only burstable performance instance types, specify `required`.
- To exclude burstable performance instance types, specify `excluded`.

Default: `excluded`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

### CpuManufacturers

The CPU manufacturers to include.

- For instance types with Intel CPUs, specify `intel`.
- For instance types with AMD CPUs, specify `amd`.
- For instance types with AWS CPUs, specify `amazon-web-services`.

#### Note

Don't confuse the CPU manufacturer with the CPU architecture. Instances will be launched with a compatible CPU architecture based on the Amazon Machine Image (AMI) that you specify in your launch template.

Default: Any manufacturer

Type: Array of strings

Valid Values: `intel` | `amd` | `amazon-web-services`

Required: No

### ExcludedInstanceTypes

The instance types to exclude. You can use strings with one or more wild cards, represented by an asterisk (\*), to exclude an instance family, type, size, or generation. The following are examples: `m5.8xlarge`, `c5*.*`, `m5a.*`, `r*`, `*3*`.

For example, if you specify `c5*`, Amazon EC2 will exclude the entire C5 instance family, which includes all C5a and C5n instance types. If you specify `m5a.*`, Amazon EC2 will exclude all the M5a instance types, but not the M5n instance types.

Default: No excluded instance types

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 400 items.

Length Constraints: Minimum length of 1. Maximum length of 30.

Pattern: `[a-zA-Z0-9\.\"]+`

Required: No

### InstanceGenerations

Indicates whether current or previous generation instance types are included. The current generation instance types are recommended for use. Current generation instance types are typically the latest two to three generations in each instance family. For more information, see [Instance types](#) in the *Amazon EC2 User Guide*.

For current generation instance types, specify `current`.

For previous generation instance types, specify `previous`.

Default: Current and previous generation instance types

Type: Array of strings

Valid Values: `current` | `previous`

Required: No

#### **LocalStorage**

Indicates whether instance types with instance store volumes are included, excluded, or required. For more information, [Amazon EC2 instance store](#) in the *Amazon EC2 User Guide*.

- To include instance types with instance store volumes, specify `included`.
- To require only instance types with instance store volumes, specify `required`.
- To exclude instance types with instance store volumes, specify `excluded`.

Default: `included`

Type: String

Valid Values: `included` | `required` | `excluded`

Required: No

#### **LocalStorageTypes**

The type of local storage that is required.

- For instance types with hard disk drive (HDD) storage, specify `hdd`.
- For instance types with solid state drive (SSD) storage, specify `sdd`.

Default: `hdd` and `sdd`

Type: Array of strings

Valid Values: `hdd` | `ssd`

Required: No

#### **MemoryGiBPerVCpu**

The minimum and maximum amount of memory per vCPU, in GiB.

Default: No minimum or maximum limits

Type: [MemoryGiBPerVCpuRequest \(p. 1809\)](#) object

Required: No

#### **MemoryMiB**

The minimum and maximum amount of memory, in MiB.

Type: [MemoryMiBRequest \(p. 1812\)](#) object

Required: Yes

#### **NetworkInterfaceCount**

The minimum and maximum number of network interfaces.

Default: No minimum or maximum limits

Type: [NetworkInterfaceCountRequest \(p. 1848\)](#) object

Required: No

#### **OnDemandMaxPricePercentageOverLowestPrice**

The price protection threshold for On-Demand Instances. This is the maximum you'll pay for an On-Demand Instance, expressed as a percentage above the cheapest M, C, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it excludes instance types priced above your threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To turn off price protection, specify a high value, such as 999999.

This parameter is not supported for [GetSpotPlacementScores](#) and [GetInstanceTypesFromInstanceRequirements](#).

Default: 20

Type: Integer

Required: No

#### **RequireHibernateSupport**

Indicates whether instance types must support hibernation for On-Demand Instances.

This parameter is not supported for [GetSpotPlacementScores](#).

Default: false

Type: Boolean

Required: No

#### **SpotMaxPricePercentageOverLowestPrice**

The price protection threshold for Spot Instance. This is the maximum you'll pay for an Spot Instance, expressed as a percentage above the cheapest M, C, or R instance type with your specified attributes. When Amazon EC2 selects instance types with your attributes, it excludes instance types priced above your threshold.

The parameter accepts an integer, which Amazon EC2 interprets as a percentage.

To turn off price protection, specify a high value, such as 999999.

This parameter is not supported for [GetSpotPlacementScores](#) and [GetInstanceTypesFromInstanceRequirements](#).

Default: 100

Type: Integer

Required: No

#### **TotalLocalStorageGB**

The minimum and maximum amount of total local storage, in GB.

Default: No minimum or maximum limits

Type: [TotalLocalStorageGBRequest \(p. 2087\)](#) object

Required: No

### V CpuCount

The minimum and maximum number of vCPUs.

Type: [V CpuCountRangeRequest \(p. 2163\)](#) object

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceRequirementsWithMetadataRequest

The architecture type, virtualization type, and other attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

If you specify `InstanceRequirementsWithMetadataRequest`, you can't specify `InstanceTypes`.

## Contents

### ArchitectureTypes

The architecture type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 3 items.

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

### InstanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

Type: [InstanceRequirementsRequest \(p. 1681\)](#) object

Required: No

### VirtualizationTypes

The virtualization type.

Type: Array of strings

Array Members: Minimum number of 0 items. Maximum number of 2 items.

Valid Values: `hvm` | `paravirtual`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceSpecification

The instance details to specify which volumes should be snapshotted.

## Contents

### **ExcludeBootVolume**

Excludes the root volume from being snapshotted.

Type: Boolean

Required: No

### **InstanceId**

The instance to specify which volumes should be snapshotted.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceState

Describes the current state of an instance.

## Contents

### code

The state of the instance as a 16-bit unsigned integer.

The high byte is all of the bits between  $2^8$  and  $(2^{16})-1$ , which equals decimal values between 256 and 65,535. These numerical values are used for internal purposes and should be ignored.

The low byte is all of the bits between  $2^0$  and  $(2^8)-1$ , which equals decimal values between 0 and 255.

The valid values for instance-state-code will all be in the range of the low byte and they are:

- 0 : pending
- 16 : running
- 32 : shutting-down
- 48 : terminated
- 64 : stopping
- 80 : stopped

You can ignore the high byte value by zeroing out all of the bits above  $2^8$  or 256 in decimal.

Type: Integer

Required: No

### name

The current state of the instance.

Type: String

Valid Values: pending | running | shutting-down | terminated | stopping | stopped

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStateChange

Describes an instance state change.

## Contents

### **currentState**

The current state of the instance.

Type: [InstanceState \(p. 1689\)](#) object

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **previousState**

The previous state of the instance.

Type: [InstanceState \(p. 1689\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStatus

Describes the status of an instance.

## Contents

### **availabilityZone**

The Availability Zone of the instance.

Type: String

Required: No

### **eventsSet**

Any scheduled events associated with the instance.

Type: Array of [InstanceStateEvent \(p. 1694\)](#) objects

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **instanceState**

The intended state of the instance. [DescribeInstanceStatus \(p. 630\)](#) requires that an instance be in the running state.

Type: [InstanceState \(p. 1689\)](#) object

Required: No

### **instanceStatus**

Reports impaired functionality that stems from issues internal to the instance, such as impaired reachability.

Type: [InstanceStateSummary \(p. 1696\)](#) object

Required: No

### **outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

### **systemStatus**

Reports impaired functionality that stems from issues related to the systems that support an instance, such as hardware failures and network connectivity problems.

Type: [InstanceStateSummary \(p. 1696\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStatusDetails

Describes the instance status.

## Contents

### **impairedSince**

The time when a status check failed. For an instance that was launched and impaired, this is the time when the instance was launched.

Type: Timestamp

Required: No

### **name**

The type of instance status.

Type: String

Valid Values: `reachability`

Required: No

### **status**

The status.

Type: String

Valid Values: `passed` | `failed` | `insufficient-data` | `initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStatusEvent

Describes a scheduled event for an instance.

## Contents

### code

The event code.

Type: String

Valid Values: `instance-reboot` | `system-reboot` | `system-maintenance` | `instance-retirement` | `instance-stop`

Required: No

### description

A description of the event.

After a scheduled event is completed, it can still be described for up to a week. If the event has been completed, this description starts with the following text: [Completed].

Type: String

Required: No

### instanceEventId

The ID of the event.

Type: String

Required: No

### notAfter

The latest scheduled end time for the event.

Type: Timestamp

Required: No

### notBefore

The earliest scheduled start time for the event.

Type: Timestamp

Required: No

### notBeforeDeadline

The deadline for starting the event.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStatusSummary

Describes the status of an instance.

## Contents

### details

The system instance health or application instance health.

Type: Array of [InstanceStatusDetails \(p. 1693\)](#) objects

Required: No

### status

The status.

Type: String

Valid Values: `ok` | `impaired` | `insufficient-data` | `not-applicable` | `initializing`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceStorageInfo

Describes the instance store features that are supported by the instance type.

## Contents

### disks

Describes the disks that are available for the instance type.

Type: Array of [DiskInfo \(p. 1497\)](#) objects

Required: No

### encryptionSupport

Indicates whether data is encrypted at rest.

Type: String

Valid Values: `unsupported` | `required`

Required: No

### nvmeSupport

Indicates whether non-volatile memory express (NVMe) is supported.

Type: String

Valid Values: `unsupported` | `supported` | `required`

Required: No

### totalSizeInGB

The total size of the disks, in GB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceTagNotificationAttribute

Describes the registered tag keys for the current Region.

## Contents

### **includeAllTagsOfInstance**

Indicates whether all tag keys in the current Region are registered to appear in scheduled event notifications. `true` indicates that all tag keys in the current Region are registered.

Type: Boolean

Required: No

### **instanceTagKeySet**

The registered tag keys.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceTypeInfo

Describes the instance type.

## Contents

### **autoRecoverySupported**

Indicates whether auto recovery is supported.

Type: Boolean

Required: No

### **bareMetal**

Indicates whether the instance is a bare metal instance type.

Type: Boolean

Required: No

### **burstablePerformanceSupported**

Indicates whether the instance type is a burstable performance instance type.

Type: Boolean

Required: No

### **currentGeneration**

Indicates whether the instance type is current generation.

Type: Boolean

Required: No

### **dedicatedHostsSupported**

Indicates whether Dedicated Hosts are supported on the instance type.

Type: Boolean

Required: No

### **ebsInfo**

Describes the Amazon EBS settings for the instance type.

Type: [EbsInfo \(p. 1503\)](#) object

Required: No

### **fpgaInfo**

Describes the FPGA accelerator settings for the instance type.

Type: [FpgaInfo \(p. 1580\)](#) object

Required: No

**freeTierEligible**

Indicates whether the instance type is eligible for the free tier.

Type: Boolean

Required: No

**gpuInfo**

Describes the GPU accelerator settings for the instance type.

Type: [GpuInfo \(p. 1583\)](#) object

Required: No

**hibernationSupported**

Indicates whether On-Demand hibernation is supported.

Type: Boolean

Required: No

**hypervisor**

The hypervisor for the instance type.

Type: String

Valid Values: `nitro` | `xen`

Required: No

**inferenceAcceleratorInfo**

Describes the Inference accelerator settings for the instance type.

Type: [InferenceAcceleratorInfo \(p. 1627\)](#) object

Required: No

**instanceStorageInfo**

Describes the instance storage for the instance type.

Type: [InstanceStorageInfo \(p. 1697\)](#) object

Required: No

**instanceStorageSupported**

Indicates whether instance storage is supported.

Type: Boolean

Required: No

**instanceType**

The instance type. For more information, see [Instance types](#) in the *Amazon EC2 User Guide*.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge

| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

#### **memoryInfo**

Describes the memory for the instance type.

Type: [MemoryInfo \(p. 1810\)](#) object

Required: No

#### **networkInfo**

Describes the network settings for the instance type.

Type: [NetworkInfo \(p. 1832\)](#) object

Required: No

#### **placementGroupInfo**

Describes the placement group settings for the instance type.

Type: [PlacementGroupInfo \(p. 1882\)](#) object

Required: No

#### **processorInfo**

Describes the processor.

Type: [ProcessorInfo \(p. 1897\)](#) object

Required: No

### **supportedBootModes**

The supported boot modes. For more information, see [Boot modes](#) in the *Amazon EC2 User Guide*.

Type: Array of strings

Valid Values: legacy-bios | uefi

Required: No

### **supportedRootDeviceTypes**

The supported root device types.

Type: Array of strings

Valid Values: ebs | instance-store

Required: No

### **supportedUsageClasses**

Indicates whether the instance type is offered for spot or On-Demand.

Type: Array of strings

Valid Values: spot | on-demand

Required: No

### **supportedVirtualizationTypes**

The supported virtualization types.

Type: Array of strings

Valid Values: hvm | paravirtual

Required: No

### **vCpuInfo**

Describes the vCPU configurations for the instance type.

Type: [VCpuInfo \(p. 2164\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceTypeInfoFromInstanceRequirements

The list of instance types with the specified instance attributes.

## Contents

### instanceType

The matching instance type.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceTypeOffering

The instance types offered.

## Contents

### instanceType

The instance type. For more information, see [Instance types in the Amazon EC2 User Guide](#).

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | xle.xlarge | xle.2xlarge | xle.4xlarge | xle.8xlarge | xle.16xlarge | xle.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge

```
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |
m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge |
g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |
g5.24xlarge | g5.48xlarge
```

Required: No

**location**

The identifier for the location. This depends on the location type. For example, if the location type is `region`, the location is the Region code (for example, `us-east-2`.)

Type: String

Required: No

**locationType**

The location type.

Type: String

Valid Values: `region` | `availability-zone` | `availability-zone-id`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InstanceUsage

Information about the Capacity Reservation usage.

## Contents

### accountId

The ID of the AWS account that is making use of the Capacity Reservation.

Type: String

Required: No

### usedInstanceCount

The number of instances the AWS account currently has in the Capacity Reservation.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IntegrateServices

Describes service integrations with VPC Flow logs.

## Contents

### AthenaIntegrations

Information about the integration with Amazon Athena.

Type: Array of [AthenaIntegration \(p. 1380\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 10 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InternetGateway

Describes an internet gateway.

## Contents

### **attachmentSet**

Any VPCs attached to the internet gateway.

Type: Array of [InternetGatewayAttachment \(p. 1711\)](#) objects

Required: No

### **internetGatewayId**

The ID of the internet gateway.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the internet gateway.

Type: String

Required: No

### **tagSet**

Any tags assigned to the internet gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# InternetGatewayAttachment

Describes the attachment of a VPC to an internet gateway or an egress-only internet gateway.

## Contents

### **state**

The current state of the attachment. For an internet gateway, the state is available when attached to a VPC; otherwise, this value is not returned.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

### **vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IpPermission

Describes a set of permissions for a security group rule.

## Contents

### **FromPort** (request), **fromPort** (response)

The start of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 type number. A value of -1 indicates all ICMP/ICMPv6 types. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

### **UserIdGroupPairs** (request), **groups** (response)

The security group and AWS account ID pairs.

Type: Array of [UserIdGroupPair](#) (p. 2158) objects

Required: No

### **IpProtocol** (request), **ipProtocol** (response)

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see [Protocol Numbers](#)).

[VPC only] Use -1 to specify all protocols. When authorizing security group rules, specifying -1 or a protocol number other than `tcp`, `udp`, `icmp`, or `icmpv6` allows traffic on all ports, regardless of any port range you specify. For `tcp`, `udp`, and `icmp`, you must specify a port range. For `icmpv6`, the port range is optional; if you omit the port range, traffic for all types and codes is allowed.

Type: String

Required: No

### **IpRanges** (request), **ipRanges** (response)

The IPv4 ranges.

Type: Array of [IpRange](#) (p. 1714) objects

Required: No

### **Ipv6Ranges** (request), **ipv6Ranges** (response)

[VPC only] The IPv6 ranges.

Type: Array of [Ipv6Range](#) (p. 1724) objects

Required: No

### **PrefixListIds** (request), **prefixListIds** (response)

[VPC only] The prefix list IDs.

Type: Array of [PrefixListId](#) (p. 1889) objects

Required: No

### **ToPort** (request), **toPort** (response)

The end of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 code. A value of -1 indicates all ICMP/ICMPv6 codes. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# IpRange

Describes an IPv4 range.

## Contents

### **CidrIp** (request), **cidrIp** (response)

The IPv4 CIDR range. You can either specify a CIDR range or a source security group, not both. To specify a single IPv4 address, use the /32 prefix length.

Type: String

Required: No

### **Description** (request), **description** (response)

A description for the security group rule that references this IPv4 address range.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and .\_-:/()#@[]+=&{}!\$\*

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv4PrefixSpecification

Describes an IPv4 prefix.

## Contents

### ipv4Prefix

The IPv4 prefix. For information, see [Assigning prefixes to Amazon EC2 network interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv4PrefixSpecificationRequest

Describes the IPv4 prefix option for a network interface.

## Contents

**Ipv4Prefix** (request), **Ipv4Prefix** (response)

The IPv4 prefix. For information, see [Assigning prefixes to Amazon EC2 network interfaces](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv4PrefixSpecificationResponse

Information about the IPv4 delegated prefixes assigned to a network interface.

## Contents

### Ipv4Prefix

One or more IPv4 delegated prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6CidrAssociation

Describes an IPv6 CIDR block association.

## Contents

### **associatedResource**

The resource that's associated with the IPv6 CIDR block.

Type: String

Required: No

### **ipv6Cidr**

The IPv6 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6CidrBlock

Describes an IPv6 CIDR block.

## Contents

### Ipv6CidrBlock

The IPv6 CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6Pool

Describes an IPv6 address pool.

## Contents

### **description**

The description for the address pool.

Type: String

Required: No

### **poolCidrBlockSet**

The CIDR blocks for the address pool.

Type: Array of [PoolCidrBlock \(p. 1884\)](#) objects

Required: No

### **poolId**

The ID of the address pool.

Type: String

Required: No

### **tagSet**

Any tags for the address pool.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6PrefixSpecification

Describes the IPv6 prefix.

## Contents

### ipv6Prefix

The IPv6 prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6PrefixSpecificationRequest

Describes the IPv4 prefix option for a network interface.

## Contents

[Ipv6Prefix](#) (request), [Ipv6Prefix](#) (response)

The IPv6 prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6PrefixSpecificationResponse

Information about the IPv6 delegated prefixes assigned to a network interface.

## Contents

### ipv6Prefix

One or more IPv6 delegated prefixes assigned to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Ipv6Range

[EC2-VPC only] Describes an IPv6 range.

## Contents

**CidrIpv6** (request), **cidrIpv6** (response)

The IPv6 CIDR range. You can either specify a CIDR range or a source security group, not both. To specify a single IPv6 address, use the /128 prefix length.

Type: String

Required: No

**Description** (request), **description** (response)

A description for the security group rule that references this IPv6 address range.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and .\_-:/()#@[]+=&{}!\$\*

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# KeyPairInfo

Describes a key pair.

## Contents

### keyFingerprint

If you used [CreateKeyPair \(p. 207\)](#) to create the key pair:

- For RSA key pairs, the key fingerprint is the SHA-1 digest of the DER encoded private key.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with [OpenSSH 6.8](#).

If you used [ImportKeyPair \(p. 1049\)](#) to provide AWS the public key:

- For RSA key pairs, the key fingerprint is the MD5 public key fingerprint as specified in section 4 of RFC4716.
- For ED25519 key pairs, the key fingerprint is the base64-encoded SHA-256 digest, which is the default for OpenSSH, starting with [OpenSSH 6.8](#).

Type: String

Required: No

### keyName

The name of the key pair.

Type: String

Required: No

### keyPairId

The ID of the key pair.

Type: String

Required: No

### keyType

The type of key pair.

Type: String

Valid Values: `rsa` | `ed25519`

Required: No

### tagSet

Any tags applied to the key pair.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

## LastError

The last error that occurred for a VPC endpoint.

### Contents

#### code

The error code for the VPC endpoint error.

Type: String

Required: No

#### message

The error message for the VPC endpoint error.

Type: String

Required: No

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchPermission

Describes a launch permission.

## Contents

### **Group** (request), **group** (response)

The name of the group.

Type: String

Valid Values: all

Required: No

### **OrganizationalUnitArn** (request), **organizationalUnitArn** (response)

The Amazon Resource Name (ARN) of an organizational unit (OU).

Type: String

Required: No

### **OrganizationArn** (request), **organizationArn** (response)

The Amazon Resource Name (ARN) of an organization.

Type: String

Required: No

### **UserId** (request), **userId** (response)

The AWS account ID.

Constraints: Up to 10 000 account IDs can be specified in a single request.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchPermissionModifications

Describes a launch permission modification.

## Contents

### Add

The AWS account ID to add to the list of launch permissions for the AMI.

Type: Array of [LaunchPermission \(p. 1728\)](#) objects

Required: No

### Remove

The AWS account ID to remove from the list of launch permissions for the AMI.

Type: Array of [LaunchPermission \(p. 1728\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchSpecification

Describes the launch specification for an instance.

## Contents

### **addressingType**

Deprecated.

Type: String

Required: No

### **blockDeviceMapping**

One or more block device mapping entries.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

### **ebsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: `false`

Type: Boolean

Required: No

### **groupSet**

One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

### **iamInstanceProfile**

The IAM instance profile.

Type: [IamInstanceProfileSpecification \(p. 1601\)](#) object

Required: No

### **imageId**

The ID of the AMI.

Type: String

Required: No

### instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | r1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge

| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**kernelId**

The ID of the kernel.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No

**monitoring**

Describes the monitoring of an instance.

Type: [RunInstancesMonitoringEnabled \(p. 1966\)](#) object

Required: No

**networkInterfaceSet**

One or more network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.

Type: Array of [InstanceNetworkInterfaceSpecification \(p. 1670\)](#) objects

Required: No

**placement**

The placement information for the instance.

Type: [SpotPlacement \(p. 2046\)](#) object

Required: No

**ramdiskId**

The ID of the RAM disk.

Type: String

Required: No

**subnetId**

The ID of the subnet in which to launch the instance.

Type: String

Required: No

**userData**

The Base64-encoded user data for the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplate

Describes a launch template.

## Contents

### **createdBy**

The principal that created the launch template.

Type: String

Required: No

### **createTime**

The time launch template was created.

Type: Timestamp

Required: No

### **defaultVersionNumber**

The version number of the default version of the launch template.

Type: Long

Required: No

### **latestVersionNumber**

The version number of the latest version of the launch template.

Type: Long

Required: No

### **launchTemplateId**

The ID of the launch template.

Type: String

Required: No

### **launchTemplateName**

The name of the launch template.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [ a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### **tagSet**

The tags for the launch template.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateAndOverridesResponse

Describes a launch template and overrides.

## Contents

### launchTemplateSpecification

The launch template.

Type: [FleetLaunchTemplateSpecification \(p. 1564\)](#) object

Required: No

### overrides

Any parameters that you specify override the same parameters in the launch template.

Type: [FleetLaunchTemplateOverrides \(p. 1556\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateBlockDeviceMapping

Describes a block device mapping.

## Contents

### **deviceName**

The device name.

Type: String

Required: No

### **ebs**

Information about the block device for an EBS volume.

Type: [LaunchTemplateEbsBlockDevice \(p. 1744\)](#) object

Required: No

### **noDevice**

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

### **virtualName**

The virtual device name (ephemeralN).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateBlockDeviceMappingRequest

Describes a block device mapping.

## Contents

### DeviceName

The device name (for example, /dev/sdh or xvhd).

Type: String

Required: No

### Ebs

Parameters used to automatically set up EBS volumes when the instance is launched.

Type: [LaunchTemplateEbsBlockDeviceRequest \(p. 1746\)](#) object

Required: No

### NoDevice

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

### VirtualName

The virtual device name (ephemeralN). Instance store volumes are numbered starting from 0. An instance type with 2 available instance store volumes can specify mappings for ephemeral0 and ephemeral1. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateCapacityReservationSpecificationRequest

Describes an instance's Capacity Reservation targeting option. You can specify only one option at a time. Use the `CapacityReservationPreference` parameter to configure the instance to run in On-Demand capacity or to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone). Use the `CapacityReservationTarget` parameter to explicitly target a specific Capacity Reservation or a Capacity Reservation group.

## Contents

### **CapacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- `open` - The instance can run in any `open` Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- `none` - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: `open` | `none`

Required: No

### **CapacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: [CapacityReservationTarget \(p. 1416\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateCapacityReservationSpecificationResponse

Information about the Capacity Reservation targeting option.

## Contents

### **capacityReservationPreference**

Indicates the instance's Capacity Reservation preferences. Possible preferences include:

- open - The instance can run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).
- none - The instance avoids running in a Capacity Reservation even if one is available. The instance runs in On-Demand capacity.

Type: String

Valid Values: open | none

Required: No

### **capacityReservationTarget**

Information about the target Capacity Reservation or Capacity Reservation group.

Type: [CapacityReservationTargetResponse \(p. 1417\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateConfig

Describes a launch template and overrides.

## Contents

### **LaunchTemplateSpecification** (request), **launchTemplateSpecification** (response)

The launch template.

Type: [FleetLaunchTemplateSpecification](#) (p. 1564) object

Required: No

### **Overrides** (request), **overrides** (response)

Any parameters that you specify override the same parameters in the launch template.

Type: Array of [LaunchTemplateOverrides](#) (p. 1770) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateCpuOptions

The CPU options for the instance.

## Contents

### **coreCount**

The number of CPU cores for the instance.

Type: Integer

Required: No

### **threadsPerCore**

The number of threads per CPU core.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateCpuOptionsRequest

The CPU options for the instance. Both the core count and threads per core must be specified in the request.

## Contents

### CoreCount

The number of CPU cores for the instance.

Type: Integer

Required: No

### ThreadsPerCore

The number of threads per CPU core. To disable multithreading for the instance, specify a value of 1. Otherwise, specify the default value of 2.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateEbsBlockDevice

Describes a block device for an EBS volume.

## Contents

### **deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

### **encrypted**

Indicates whether the EBS volume is encrypted.

Type: Boolean

Required: No

### **iops**

The number of I/O operations per second (IOPS) that the volume supports.

Type: Integer

Required: No

### **kmsKeyId**

The ARN of the AWS Key Management Service (AWS KMS) CMK used for encryption.

Type: String

Required: No

### **snapshotId**

The ID of the snapshot.

Type: String

Required: No

### **throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

### **volumeSize**

The size of the volume, in GiB.

Type: Integer

Required: No

### **volumeType**

The volume type.

Type: String

Valid Values: `standard` | `io1` | `io2` | `gp2` | `sc1` | `st1` | `gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateEbsBlockDeviceRequest

The parameters for a block device for an EBS volume.

## Contents

### DeleteOnTermination

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

### Encrypted

Indicates whether the EBS volume is encrypted. Encrypted volumes can only be attached to instances that support Amazon EBS encryption. If you are creating a volume from a snapshot, you can't specify an encryption value.

Type: Boolean

Required: No

### Iops

The number of I/O operations per second (IOPS). For gp3, io1, and io2 volumes, this represents the number of IOPS that are provisioned for the volume. For gp2 volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

The following are the supported values for each volume type:

- gp3: 3,000-16,000 IOPS
- io1: 100-64,000 IOPS
- io2: 100-64,000 IOPS

For io1 and io2 volumes, we guarantee 64,000 IOPS only for [Instances built on the Nitro System](#). Other instance families guarantee performance up to 32,000 IOPS.

This parameter is supported for io1, io2, and gp3 volumes only. This parameter is not supported for gp2, st1, sc1, or standard volumes.

Type: Integer

Required: No

### KmsKeyId

The ARN of the symmetric AWS Key Management Service (AWS KMS) CMK used for encryption.

Type: String

Required: No

### SnapshotId

The ID of the snapshot.

Type: String

Required: No

### Throughput

The throughput to provision for a gp3 volume, with a maximum of 1,000 MiB/s.

Valid Range: Minimum value of 125. Maximum value of 1000.

Type: Integer

Required: No

### VolumeSize

The size of the volume, in GiBs. You must specify either a snapshot ID or a volume size. The following are the supported volumes sizes for each volume type:

- gp2 and gp3: 1-16,384
- io1 and io2: 4-16,384
- st1 and sc1: 125-16,384
- standard: 1-1,024

Type: Integer

Required: No

### VolumeType

The volume type. For more information, see [Amazon EBS volume types](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateElasticInferenceAccelerator

Describes an elastic inference accelerator.

## Contents

### Count

The number of elastic inference accelerators to attach to the instance.

Default: 1

Type: Integer

Valid Range: Minimum value of 1.

Required: No

### Type

The type of elastic inference accelerator. The possible values are eia1.medium, eia1.large, and eia1.xlarge.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateElasticInferenceAcceleratorResponse

Describes an elastic inference accelerator.

## Contents

### count

The number of elastic inference accelerators to attach to the instance.

Default: 1

Type: Integer

Required: No

### type

The type of elastic inference accelerator. The possible values are eia1.medium, eia1.large, and eia1.xlarge.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateEnclaveOptions

Indicates whether the instance is enabled for AWS Nitro Enclaves.

## Contents

### **enabled**

If this parameter is set to `true`, the instance is enabled for AWS Nitro Enclaves; otherwise, it is not enabled for AWS Nitro Enclaves.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateEnclaveOptionsRequest

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see [What is AWS Nitro Enclaves?](#) in the *AWS Nitro Enclaves User Guide*.

## Contents

### Enabled

To enable the instance for AWS Nitro Enclaves, set this parameter to `true`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateHibernationOptions

Indicates whether an instance is configured for hibernation.

## Contents

### configured

If this parameter is set to `true`, the instance is enabled for hibernation; otherwise, it is not enabled for hibernation.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateHibernationOptionsRequest

Indicates whether the instance is configured for hibernation. This parameter is valid only if the instance meets the [hibernation prerequisites](#).

## Contents

### Configured

If you set this parameter to `true`, the instance is enabled for hibernation.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateIamInstanceProfileSpecification

Describes an IAM instance profile.

## Contents

### arn

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

### name

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateIamInstanceProfileSpecificationRequest

An IAM instance profile.

## Contents

### Arn

The Amazon Resource Name (ARN) of the instance profile.

Type: String

Required: No

### Name

The name of the instance profile.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceMarketOptions

The market (purchasing) option for the instances.

## Contents

### **marketType**

The market type.

Type: String

Valid Values: spot

Required: No

### **spotOptions**

The options for Spot Instances.

Type: [LaunchTemplateSpotMarketOptions \(p. 1780\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceMarketOptionsRequest

The market (purchasing) option for the instances.

## Contents

### MarketType

The market type.

Type: String

Valid Values: spot

Required: No

### SpotOptions

The options for Spot Instances.

Type: [LaunchTemplateSpotMarketOptionsRequest \(p. 1782\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceMetadataOptions

The metadata options for the instance. For more information, see [Instance Metadata and User Data](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Contents

### httpEndpoint

This parameter enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the default state is enabled.

#### Note

If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### httpProtocolIpv6

Enables or disables the IPv6 endpoint for the instance metadata service.

Default: `disabled`

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### httpPutResponseHopLimit

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Default: 1

Possible values: Integers from 1 to 64

Type: Integer

Required: No

### httpTokens

The state of token usage for your instance metadata requests. If the parameter is not specified in the request, the default state is `optional`.

If the state is `optional`, you can choose to retrieve instance metadata with or without a signed token header on your request. If you retrieve the IAM role credentials without a token, the version 1.0 role credentials are returned. If you retrieve the IAM role credentials using a valid signed token, the version 2.0 role credentials are returned.

If the state is `required`, you must send a signed token header with any instance metadata retrieval requests. In this state, retrieving the IAM role credentials always returns the version 2.0 credentials; the version 1.0 credentials are not available.

Type: String

Valid Values: `optional` | `required`

Required: No

**state**

The state of the metadata option changes.

`pending` - The metadata options are being updated and the instance is not ready to process metadata traffic with the new selection.

`applied` - The metadata options have been successfully applied on the instance.

Type: String

Valid Values: `pending` | `applied`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceMetadataOptionsRequest

The metadata options for the instance. For more information, see [Instance Metadata and User Data](#) in the *Amazon Elastic Compute Cloud User Guide*.

## Contents

### **HttpEndpoint**

This parameter enables or disables the HTTP metadata endpoint on your instances. If the parameter is not specified, the default state is enabled.

#### **Note**

If you specify a value of `disabled`, you will not be able to access your instance metadata.

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### **HttpProtocolIpv6**

Enables or disables the IPv6 endpoint for the instance metadata service.

Default: `disabled`

Type: String

Valid Values: `disabled` | `enabled`

Required: No

### **HttpPutResponseHopLimit**

The desired HTTP PUT response hop limit for instance metadata requests. The larger the number, the further instance metadata requests can travel.

Default: 1

Possible values: Integers from 1 to 64

Type: Integer

Required: No

### **HttpTokens**

The state of token usage for your instance metadata requests. If the parameter is not specified in the request, the default state is `optional`.

If the state is `optional`, you can choose to retrieve instance metadata with or without a signed token header on your request. If you retrieve the IAM role credentials without a token, the version 1.0 role credentials are returned. If you retrieve the IAM role credentials using a valid signed token, the version 2.0 role credentials are returned.

If the state is `required`, you must send a signed token header with any instance metadata retrieval requests. In this state, retrieving the IAM role credentials always returns the version 2.0 credentials; the version 1.0 credentials are not available.

Type: String

Valid Values: `optional` | `required`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceNetworkInterfaceSpecification

Describes a network interface.

## Contents

### **associateCarrierIpAddress**

Indicates whether to associate a Carrier IP address with eth0 for a new network interface.

Use this option when you launch an instance in a Wavelength Zone and want to associate a Carrier IP address with the network interface. For more information about Carrier IP addresses, see [Carrier IP addresses](#) in the *AWS Wavelength Developer Guide*.

Type: Boolean

Required: No

### **associatePublicIpAddress**

Indicates whether to associate a public IPv4 address with eth0 for a new network interface.

Type: Boolean

Required: No

### **deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

### **description**

A description for the network interface.

Type: String

Required: No

### **deviceIndex**

The device index for the network interface attachment.

Type: Integer

Required: No

### **groupSet**

The IDs of one or more security groups.

Type: Array of strings

Required: No

### **interfaceType**

The type of network interface.

Type: String

Required: No

**ipv4PrefixCount**

The number of IPv4 prefixes that AWS automatically assigned to the network interface.

Type: Integer

Required: No

**ipv4PrefixSet**

One or more IPv4 prefixes assigned to the network interface.

Type: Array of [Ipv4PrefixSpecificationResponse \(p. 1717\)](#) objects

Required: No

**ipv6AddressCount**

The number of IPv6 addresses for the network interface.

Type: Integer

Required: No

**ipv6AddressesSet**

The IPv6 addresses for the network interface.

Type: Array of [InstanceIpv6Address \(p. 1655\)](#) objects

Required: No

**ipv6PrefixCount**

The number of IPv6 prefixes that AWS automatically assigned to the network interface.

Type: Integer

Required: No

**ipv6PrefixSet**

One or more IPv6 prefixes assigned to the network interface.

Type: Array of [Ipv6PrefixSpecificationResponse \(p. 1723\)](#) objects

Required: No

**networkCardIndex**

The index of the network card.

Type: Integer

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**privateIpAddress**

The primary private IPv4 address of the network interface.

Type: String

Required: No

**privateIpvAddressesSet**

One or more private IPv4 addresses.

Type: Array of [PrivateIpAddressSpecification \(p. 1896\)](#) objects

Required: No

**secondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses for the network interface.

Type: Integer

Required: No

**subnetId**

The ID of the subnet for the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateInstanceNetworkInterfaceSpecificationR

The parameters for a network interface.

## Contents

### AssociateCarrierIpAddress

Associates a Carrier IP address with eth0 for a new network interface.

Use this option when you launch an instance in a Wavelength Zone and want to associate a Carrier IP address with the network interface. For more information about Carrier IP addresses, see [Carrier IP addresses](#) in the *AWS Wavelength Developer Guide*.

Type: Boolean

Required: No

### AssociatePublicIpAddress

Associates a public IPv4 address with eth0 for a new network interface.

Type: Boolean

Required: No

### DeleteOnTermination

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

### Description

A description for the network interface.

Type: String

Required: No

### DeviceIndex

The device index for the network interface attachment.

Type: Integer

Required: No

### InterfaceType

The type of network interface. To create an Elastic Fabric Adapter (EFA), specify efa. For more information, see [Elastic Fabric Adapter](#) in the *Amazon Elastic Compute Cloud User Guide*.

If you are not creating an EFA, specify interface or omit this parameter.

Valid values: interface | efa

Type: String

Required: No

### **Ipv4Prefixes**

One or more IPv4 prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv4PrefixCount` option.

Type: Array of [Ipv4PrefixSpecificationRequest \(p. 1716\)](#) objects

Required: No

### **Ipv4PrefixCount**

The number of IPv4 prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv4Prefix` option.

Type: Integer

Required: No

### **Ipv6AddressCount**

The number of IPv6 addresses to assign to a network interface. Amazon EC2 automatically selects the IPv6 addresses from the subnet range. You can't use this option if specifying specific IPv6 addresses.

Type: Integer

Required: No

### **Ipv6Addresses**

One or more specific IPv6 addresses from the IPv6 CIDR block range of your subnet. You can't use this option if you're specifying a number of IPv6 addresses.

Type: Array of [InstanceIpv6AddressRequest \(p. 1656\)](#) objects

Required: No

### **Ipv6Prefixes**

One or more IPv6 prefixes to be assigned to the network interface. You cannot use this option if you use the `Ipv6PrefixCount` option.

Type: Array of [Ipv6PrefixSpecificationRequest \(p. 1722\)](#) objects

Required: No

### **Ipv6PrefixCount**

The number of IPv6 prefixes to be automatically assigned to the network interface. You cannot use this option if you use the `Ipv6Prefix` option.

Type: Integer

Required: No

### **NetworkCardIndex**

The index of the network card. Some instance types support multiple network cards. The primary network interface must be assigned to network card index 0. The default is network card index 0.

Type: Integer

Required: No

### **NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**PrivateIpvAddress**

The primary private IPv4 address of the network interface.

Type: String

Required: No

**PrivateIpvAddresses**

One or more private IPv4 addresses.

Type: Array of [PrivateIpAddressSpecification \(p. 1896\)](#) objects

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses to assign to a network interface.

Type: Integer

Required: No

**Groups**

The IDs of one or more security groups.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet for the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateLicenseConfiguration

Describes a license configuration.

## Contents

### licenseConfigurationArn

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateLicenseConfigurationRequest

Describes a license configuration.

## Contents

### LicenseConfigurationArn

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateOverrides

Describes overrides for a launch template.

## Contents

### AvailabilityZone (request), availabilityZone (response)

The Availability Zone in which to launch the instances.

Type: String

Required: No

### InstanceRequirements (request), instanceRequirements (response)

The instance requirements. When you specify instance requirements, Amazon EC2 will identify instance types with the provided requirements, and then use your On-Demand and Spot allocation strategies to launch instances from these instance types, in the same way as when you specify a list of instance types.

**Note**

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirements \(p. 1675\)](#) object

Required: No

### InstanceType (request), instanceType (response)

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |

hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal |  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal |  
m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge |  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large |  
m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge |  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge |  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge |  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium |  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge |  
m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge |  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge |  
m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge |  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge |  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**Priority** (request), **priority** (response)

The priority for the launch template override. The highest priority is launched first.

If `OnDemandAllocationStrategy` is set to `prioritized`, Spot Fleet uses priority to determine which launch template override to use first in fulfilling On-Demand capacity.

If the `SpotAllocationStrategy` is set to `capacityOptimizedPrioritized`, Spot Fleet uses priority on a best-effort basis to determine which launch template override to use in fulfilling Spot capacity, but optimizes for capacity first.

Valid values are whole numbers starting at 0. The lower the number, the higher the priority. If no number is set, the launch template override has the lowest priority. You can set the same priority for different launch template overrides.

Type: Double

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance.

Type: String

Required: No

**SubnetId** (request), **subnetId** (response)

The ID of the subnet in which to launch the instances.

Type: String

Required: No

**WeightedCapacity** (request), **weightedCapacity** (response)

The number of units provided by the specified instance type.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplatePlacement

Describes the placement of an instance.

## Contents

### **affinity**

The affinity setting for the instance on the Dedicated Host.

Type: String

Required: No

### **availabilityZone**

The Availability Zone of the instance.

Type: String

Required: No

### **groupName**

The name of the placement group for the instance.

Type: String

Required: No

### **hostId**

The ID of the Dedicated Host for the instance.

Type: String

Required: No

### **hostResourceGroupArn**

The ARN of the host resource group in which to launch the instances.

Type: String

Required: No

### **partitionNumber**

The number of the partition the instance should launch in. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

### **spreadDomain**

Reserved for future use.

Type: String

Required: No

### **tenancy**

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware.

Type: String

Valid Values: default | dedicated | host

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplatePlacementRequest

Describes the placement of an instance.

## Contents

### Affinity

The affinity setting for an instance on a Dedicated Host.

Type: String

Required: No

### AvailabilityZone

The Availability Zone for the instance.

Type: String

Required: No

### GroupName

The name of the placement group for the instance.

Type: String

Required: No

### HostId

The ID of the Dedicated Host for the instance.

Type: String

Required: No

### HostResourceGroupArn

The ARN of the host resource group in which to launch the instances. If you specify a host resource group ARN, omit the **Tenancy** parameter or set it to `host`.

Type: String

Required: No

### PartitionNumber

The number of the partition the instance should launch in. Valid only if the placement group strategy is set to `partition`.

Type: Integer

Required: No

### SpreadDomain

Reserved for future use.

Type: String

Required: No

### Tenancy

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware.

Type: String

Valid Values: default | dedicated | host

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplatesMonitoring

Describes the monitoring for the instance.

## Contents

### **enabled**

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplatesMonitoringRequest

Describes the monitoring for the instance.

## Contents

### Enabled

Specify `true` to enable detailed monitoring. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateSpecification

The launch template to use. You must specify either the launch template ID or launch template name in the request, but not both.

## Contents

### **LaunchTemplateId**

The ID of the launch template.

Type: String

Required: No

### **LaunchTemplateName**

The name of the launch template.

Type: String

Required: No

### **Version**

The version number of the launch template.

Default: The default version for the launch template.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateSpotMarketOptions

The options for Spot Instances.

## Contents

### **blockDurationMinutes**

The required duration for the Spot Instances (also known as Spot blocks), in minutes. This value must be a multiple of 60 (60, 120, 180, 240, 300, or 360).

Type: Integer

Required: No

### **instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Type: String

Valid Values: `hibernate` | `stop` | `terminate`

Required: No

### **maxPrice**

The maximum hourly price you're willing to pay for the Spot Instances.

Type: String

Required: No

### **spotInstanceType**

The Spot Instance request type.

Type: String

Valid Values: `one-time` | `persistent`

Required: No

### **validUntil**

The end date of the request. For a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# LaunchTemplateSpotMarketOptionsRequest

The options for Spot Instances.

## Contents

### **BlockDurationMinutes**

The required duration for the Spot Instances (also known as Spot blocks), in minutes. This value must be a multiple of 60 (60, 120, 180, 240, 300, or 360).

Type: Integer

Required: No

### **InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted. The default is terminate.

Type: String

Valid Values: hibernate | stop | terminate

Required: No

### **MaxPrice**

The maximum hourly price you're willing to pay for the Spot Instances.

Type: String

Required: No

### **SpotInstanceType**

The Spot Instance request type.

Type: String

Valid Values: one-time | persistent

Required: No

### **ValidUntil**

The end date of the request. For a one-time request, the request remains active until all instances launch, the request is canceled, or this date is reached. If the request is persistent, it remains active until it is canceled or this date and time is reached. The default end date is 7 days from the current date.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateTagSpecification

The tag specification for the launch template.

## Contents

### **resourceType**

The type of resource.

Type: String

Valid Values: capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | snapshot | spot-fleet-request | spot-instances-request | subnet | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-route-table | volume | vpc | vpc-endpoint | vpc-endpoint-service | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log

Required: No

### **tagSet**

The tags for the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateTagSpecificationRequest

The tags specification for the launch template.

## Contents

### ResourceType

The type of resource to tag. Currently, the resource types that support tagging on creation are instance and volume. To tag a resource after it has been created, see [CreateTags](#).

Type: String

Valid Values: capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | snapshot | spot-fleet-request | spot-instances-request | subnet | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-route-table | volume | vpc | vpc-endpoint | vpc-endpoint-service | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log

Required: No

### Tags

The tags to apply to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LaunchTemplateVersion

Describes a launch template version.

## Contents

### **createdBy**

The principal that created the version.

Type: String

Required: No

### **createTime**

The time the version was created.

Type: Timestamp

Required: No

### **defaultVersion**

Indicates whether the version is the default version.

Type: Boolean

Required: No

### **launchTemplateData**

Information about the launch template.

Type: [ResponseLaunchTemplateData \(p. 1952\)](#) object

Required: No

### **launchTemplateId**

The ID of the launch template.

Type: String

Required: No

### **launchTemplateName**

The name of the launch template.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 128.

Pattern: [ a-zA-Z0-9\(\)\.\-/\_]+

Required: No

### **versionDescription**

The description for the version.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 255.

Required: No

**versionNumber**

The version number.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LicenseConfiguration

Describes a license configuration.

## Contents

### licenseConfigurationArn

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LicenseConfigurationRequest

Describes a license configuration.

## Contents

### LicenseConfigurationArn

The Amazon Resource Name (ARN) of the license configuration.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LoadBalancersConfig

Describes the Classic Load Balancers and target groups to attach to a Spot Fleet request.

## Contents

**ClassicLoadBalancersConfig** (request), **classicLoadBalancersConfig** (response)

The Classic Load Balancers.

Type: [ClassicLoadBalancersConfig \(p. 1426\)](#) object

Required: No

**TargetGroupsConfig** (request), **targetGroupsConfig** (response)

The target groups.

Type: [TargetGroupsConfig \(p. 2081\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LoadPermission

Describes a load permission.

## Contents

### group

The name of the group.

Type: String

Valid Values: all

Required: No

### userId

The AWS account ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LoadPermissionModifications

Describes modifications to the load permissions of an Amazon FPGA image (AFI).

## Contents

### Add

The load permissions to add.

Type: Array of [LoadPermissionRequest \(p. 1793\)](#) objects

Required: No

### Remove

The load permissions to remove.

Type: Array of [LoadPermissionRequest \(p. 1793\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LoadPermissionRequest

Describes a load permission.

## Contents

### Group

The name of the group.

Type: String

Valid Values: all

Required: No

### UserId

The AWS account ID.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGateway

Describes a local gateway.

## Contents

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway.

Type: String

Required: No

### **state**

The state of the local gateway.

Type: String

Required: No

### **tagSet**

The tags assigned to the local gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayRoute

Describes a route for a local gateway route table.

## Contents

### **destinationCidrBlock**

The CIDR block used for destination matches.

Type: String

Required: No

### **localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

### **localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway route.

Type: String

Required: No

### **state**

The state of the route.

Type: String

Valid Values: pending | active | blackhole | deleting | deleted

Required: No

### **type**

The route type.

Type: String

Valid Values: `static` | `propagated`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayRouteTable

Describes a local gateway route table.

## Contents

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

### **outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway route table.

Type: String

Required: No

### **state**

The state of the local gateway route table.

Type: String

Required: No

### **tagSet**

The tags assigned to the local gateway route table.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayRouteTableVirtualInterfaceGroupAssociation

Describes an association between a local gateway route table and a virtual interface group.

## Contents

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table for the virtual interface group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

### **localGatewayRouteTableVirtualInterfaceGroupAssociationId**

The ID of the association.

Type: String

Required: No

### **localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway virtual interface group association.

Type: String

Required: No

### **state**

The state of the association.

Type: String

Required: No

### tagSet

The tags assigned to the association.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayRouteTableVpcAssociation

Describes an association between a local gateway route table and a VPC.

## Contents

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **localGatewayRouteTableArn**

The Amazon Resource Name (ARN) of the local gateway route table for the association.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **localGatewayRouteTableId**

The ID of the local gateway route table.

Type: String

Required: No

### **localGatewayRouteTableVpcAssociationId**

The ID of the association.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway route table for the association.

Type: String

Required: No

### **state**

The state of the association.

Type: String

Required: No

### **tagSet**

The tags assigned to the association.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **vpclId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayVirtualInterface

Describes a local gateway virtual interface.

## Contents

### **localAddress**

The local address.

Type: String

Required: No

### **localBgpAsn**

The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of the local gateway.

Type: Integer

Required: No

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **localGatewayVirtualInterfaceId**

The ID of the virtual interface.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway virtual interface.

Type: String

Required: No

### **peerAddress**

The peer address.

Type: String

Required: No

### **peerBgpAsn**

The peer BGP ASN.

Type: Integer

Required: No

### **tagSet**

The tags assigned to the virtual interface.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

#### vlan

The ID of the VLAN.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# LocalGatewayVirtualInterfaceGroup

Describes a local gateway virtual interface group.

## Contents

### **localGatewayId**

The ID of the local gateway.

Type: String

Required: No

### **localGatewayVirtualInterfaceGroupId**

The ID of the virtual interface group.

Type: String

Required: No

### **localGatewayVirtualInterfaceIdSet**

The IDs of the virtual interfaces.

Type: Array of strings

Required: No

### **ownerId**

The ID of the AWS account that owns the local gateway virtual interface group.

Type: String

Required: No

### **tagSet**

The tags assigned to the virtual interface group.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ManagedPrefixList

Describes a managed prefix list.

## Contents

### **addressFamily**

The IP address version.

Type: String

Required: No

### **maxEntries**

The maximum number of entries for the prefix list.

Type: Integer

Required: No

### **ownerId**

The ID of the owner of the prefix list.

Type: String

Required: No

### **prefixListArn**

The Amazon Resource Name (ARN) for the prefix list.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **prefixListId**

The ID of the prefix list.

Type: String

Required: No

### **prefixListName**

The name of the prefix list.

Type: String

Required: No

### **state**

The current state of the prefix list.

Type: String

Valid Values: `create-in-progress` | `create-complete` | `create-failed` | `modify-in-progress` | `modify-complete` | `modify-failed` | `restore-in-progress` | `restore-failed`

`complete | restore-failed | delete-in-progress | delete-complete | delete-failed`

Required: No

**stateMessage**

The state message.

Type: String

Required: No

**tagSet**

The tags for the prefix list.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**version**

The version of the prefix list.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MemoryGiBPerVCpu

The minimum and maximum amount of memory per vCPU, in GiB.

## Contents

### **Max** (request), **max** (response)

The maximum amount of memory per vCPU, in GiB. If this parameter is not specified, there is no maximum limit.

Type: Double

Required: No

### **Min** (request), **min** (response)

The minimum amount of memory per vCPU, in GiB. If this parameter is not specified, there is no minimum limit.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MemoryGiBPerVCpuRequest

The minimum and maximum amount of memory per vCPU, in GiB.

## Contents

### Max

The maximum amount of memory per vCPU, in GiB. To specify no maximum limit, omit this parameter.

Type: Double

Required: No

### Min

The minimum amount of memory per vCPU, in GiB. To specify no minimum limit, omit this parameter.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MemoryInfo

Describes the memory for the instance type.

## Contents

### **sizeInMiB**

The size of the memory, in MiB.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MemoryMiB

The minimum and maximum amount of memory, in MiB.

## Contents

### **Max** (request), **max** (response)

The maximum amount of memory, in MiB. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum amount of memory, in MiB. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MemoryMiBRequest

The minimum and maximum amount of memory, in MiB.

## Contents

### Max

The maximum amount of memory, in MiB. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

### Min

The minimum amount of memory, in MiB. To specify no minimum limit, specify 0.

Type: Integer

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ModifyTransitGatewayOptions

The transit gateway options.

## Contents

### AddTransitGatewayCidrBlocks

Adds IPv4 or IPv6 CIDR blocks for the transit gateway. Must be a size /24 CIDR block or larger for IPv4, or a size /64 CIDR block or larger for IPv6.

Type: Array of strings

Required: No

### AssociationDefaultRouteTableId

The ID of the default association route table.

Type: String

Required: No

### AutoAcceptSharedAttachments

Enable or disable automatic acceptance of attachment requests.

Type: String

Valid Values: enable | disable

Required: No

### DefaultRouteTableAssociation

Enable or disable automatic association with the default association route table.

Type: String

Valid Values: enable | disable

Required: No

### DefaultRouteTablePropagation

Enable or disable automatic propagation of routes to the default propagation route table.

Type: String

Valid Values: enable | disable

Required: No

### DnsSupport

Enable or disable DNS support.

Type: String

Valid Values: enable | disable

Required: No

### **PropagationDefaultRouteTableId**

The ID of the default propagation route table.

Type: String

Required: No

### **RemoveTransitGatewayCidrBlocks**

Removes CIDR blocks for the transit gateway.

Type: Array of strings

Required: No

### **VpnEcmpSupport**

Enable or disable Equal Cost Multipath Protocol support.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ModifyTransitGatewayVpcAttachmentRequestOptions

Describes the options for a VPC attachment.

## Contents

### ApplianceModeSupport

Enable or disable support for appliance mode. If enabled, a traffic flow between a source and destination uses the same Availability Zone for the VPC attachment for the lifetime of that flow. The default is disable.

Type: String

Valid Values: enable | disable

Required: No

### DnsSupport

Enable or disable DNS support. The default is enable.

Type: String

Valid Values: enable | disable

Required: No

### Ipv6Support

Enable or disable IPv6 support. The default is enable.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ModifyVpnTunnelOptionsSpecification

The AWS Site-to-Site VPN tunnel options to modify.

## Contents

### DPDTimeoutAction

The action to take after DPD timeout occurs. Specify `restart` to restart the IKE initiation. Specify `clear` to end the IKE session.

Valid Values: `clear` | `none` | `restart`

Default: `clear`

Type: String

Required: No

### DPDTimeoutSeconds

The number of seconds after which a DPD timeout occurs.

Constraints: A value between 0 and 30.

Default: 30

Type: Integer

Required: No

### IKEVersions

The IKE versions that are permitted for the VPN tunnel.

Valid values: `ikev1` | `ikev2`

Type: Array of [IKEVersionsRequestListValue \(p. 1605\)](#) objects

Required: No

### Phase1DHGroupNumbers

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: 2 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

Type: Array of [Phase1DHGroupNumbersRequestListValue \(p. 1867\)](#) objects

Required: No

### Phase1EncryptionAlgorithms

One or more encryption algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of [Phase1EncryptionAlgorithmsRequestListValue \(p. 1869\)](#) objects

Required: No

### **Phase1IntegrityAlgorithms**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of [Phase1IntegrityAlgorithmsRequestListValue \(p. 1871\)](#) objects

Required: No

### **Phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 28,800.

Default: 28800

Type: Integer

Required: No

### **Phase2DhGroupNumbers**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `2` | `5` | `14` | `15` | `16` | `17` | `18` | `19` | `20` | `21` | `22` | `23` | `24`

Type: Array of [Phase2DhGroupNumbersRequestListValue \(p. 1873\)](#) objects

Required: No

### **Phase2EncryptionAlgorithms**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of [Phase2EncryptionAlgorithmsRequestListValue \(p. 1875\)](#) objects

Required: No

### **Phase2IntegrityAlgorithms**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of [Phase2IntegrityAlgorithmsRequestListValue \(p. 1877\)](#) objects

Required: No

### **Phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 3,600. The value must be less than the value for `Phase1LifetimeSeconds`.

Default: 3600

Type: Integer

Required: No

**PreSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and the customer gateway.

Constraints: Allowed characters are alphanumeric characters, periods (.), and underscores (\_). Must be between 8 and 64 characters in length and cannot start with zero (0).

Type: String

Required: No

**RekeyFuzzPercentage**

The percentage of the rekey window (determined by `RekeyMarginTimeSeconds`) during which the rekey time is randomly selected.

Constraints: A value between 0 and 100.

Default: 100

Type: Integer

Required: No

**RekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey. The exact time of the rekey is randomly selected based on the value for `RekeyFuzzPercentage`.

Constraints: A value between 60 and half of `Phase2LifetimeSeconds`.

Default: 540

Type: Integer

Required: No

**ReplayWindowSize**

The number of packets in an IKE replay window.

Constraints: A value between 64 and 2048.

Default: 1024

Type: Integer

Required: No

**StartupAction**

The action to take when establishing the tunnel for the VPN connection. By default, your customer gateway device must initiate the IKE negotiation and bring up the tunnel. Specify `start` for AWS to initiate the IKE negotiation.

Valid Values: `add | start`

Default: `add`

Type: String

Required: No

**TunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same virtual private gateway.

Constraints: A size /30 CIDR block from the 169.254.0.0/16 range. The following CIDR blocks are reserved and cannot be used:

- 169.254.0.0/30
- 169.254.1.0/30
- 169.254.2.0/30
- 169.254.3.0/30
- 169.254.4.0/30
- 169.254.5.0/30
- 169.254.169.252/30

Type: String

Required: No

**TunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same transit gateway.

Constraints: A size /126 CIDR block from the local fd00::/8 range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Monitoring

Describes the monitoring of an instance.

## Contents

### state

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: String

Valid Values: disabled | disabling | enabled | pending

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# MovingAddressStatus

Describes the status of a moving Elastic IP address.

## Contents

### **moveStatus**

The status of the Elastic IP address that's being moved to the EC2-VPC platform, or restored to the EC2-Classic platform.

Type: String

Valid Values: `movingToVpc` | `restoringToClassic`

Required: No

### **publicIp**

The Elastic IP address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NatGateway

Describes a NAT gateway.

## Contents

### **connectivityType**

Indicates whether the NAT gateway supports public or private connectivity.

Type: String

Valid Values: `private` | `public`

Required: No

### **createTime**

The date and time the NAT gateway was created.

Type: Timestamp

Required: No

### **deleteTime**

The date and time the NAT gateway was deleted, if applicable.

Type: Timestamp

Required: No

### **failureCode**

If the NAT gateway could not be created, specifies the error code for the failure.

(`InsufficientFreeAddressesInSubnet` | `Gateway.NotAttached` |  
`InvalidAllocationID.NotFound` | `Resource.AlreadyAssociated` | `InternalError` |  
`InvalidSubnetID.NotFound`)

Type: String

Required: No

### **failureMessage**

If the NAT gateway could not be created, specifies the error message for the failure, that corresponds to the error code.

- For `InsufficientFreeAddressesInSubnet`: "Subnet has insufficient free addresses to create this NAT gateway"
- For `Gateway.NotAttached`: "Network vpc-xxxxxxxx has no Internet gateway attached"
- For `InvalidAllocationID.NotFound`: "Elastic IP address eipalloc-xxxxxxxx could not be associated with this NAT gateway"
- For `Resource.AlreadyAssociated`: "Elastic IP address eipalloc-xxxxxxxx is already associated"
- For `InternalError`: "Network interface eni-xxxxxxxx, created and used internally by this NAT gateway is in an invalid state. Please try again."
- For `InvalidSubnetID.NotFound`: "The specified subnet subnet-xxxxxxxx does not exist or could not be found."

Type: String

Required: No

**natGatewayAddressSet**

Information about the IP addresses and network interface associated with the NAT gateway.

Type: Array of [NatGatewayAddress \(p. 1825\)](#) objects

Required: No

**natGatewayId**

The ID of the NAT gateway.

Type: String

Required: No

**provisionedBandwidth**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: [ProvisionedBandwidth \(p. 1900\)](#) object

Required: No

**state**

The state of the NAT gateway.

- **pending:** The NAT gateway is being created and is not ready to process traffic.
- **failed:** The NAT gateway could not be created. Check the `failureCode` and `failureMessage` fields for the reason.
- **available:** The NAT gateway is able to process traffic. This status remains until you delete the NAT gateway, and does not indicate the health of the NAT gateway.
- **deleting:** The NAT gateway is in the process of being terminated and may still be processing traffic.
- **deleted:** The NAT gateway has been terminated and is no longer processing traffic.

Type: String

Valid Values: pending | failed | available | deleting | deleted

Required: No

**subnetId**

The ID of the subnet in which the NAT gateway is located.

Type: String

Required: No

**tagSet**

The tags for the NAT gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcId**

The ID of the VPC in which the NAT gateway is located.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NatGatewayAddress

Describes the IP addresses and network interface associated with a NAT gateway.

## Contents

### **allocationId**

[Public NAT gateway only] The allocation ID of the Elastic IP address that's associated with the NAT gateway.

Type: String

Required: No

### **networkInterfaceId**

The ID of the network interface associated with the NAT gateway.

Type: String

Required: No

### **privateIp**

The private IP address associated with the NAT gateway.

Type: String

Required: No

### **publicIp**

[Public NAT gateway only] The Elastic IP address associated with the NAT gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkAcl

Describes a network ACL.

## Contents

### **associationSet**

Any associations between the network ACL and one or more subnets

Type: Array of [NetworkAclAssociation \(p. 1828\)](#) objects

Required: No

### **default**

Indicates whether this is the default network ACL for the VPC.

Type: Boolean

Required: No

### **entrySet**

One or more entries (rules) in the network ACL.

Type: Array of [NetworkAclEntry \(p. 1829\)](#) objects

Required: No

### **networkAclId**

The ID of the network ACL.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the network ACL.

Type: String

Required: No

### **tagSet**

Any tags assigned to the network ACL.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **vpcId**

The ID of the VPC for the network ACL.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkAclAssociation

Describes an association between a network ACL and a subnet.

## Contents

### **networkAclAssociationId**

The ID of the association between a network ACL and a subnet.

Type: String

Required: No

### **networkAclId**

The ID of the network ACL.

Type: String

Required: No

### **subnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkAclEntry

Describes an entry in a network ACL.

## Contents

### **cidrBlock**

The IPv4 network range to allow or deny, in CIDR notation.

Type: String

Required: No

### **egress**

Indicates whether the rule is an egress rule (applied to traffic leaving the subnet).

Type: Boolean

Required: No

### **icmpTypeCode**

ICMP protocol: The ICMP type and code.

Type: [IcmpTypeCode \(p. 1602\)](#) object

Required: No

### **ipv6CidrBlock**

The IPv6 network range to allow or deny, in CIDR notation.

Type: String

Required: No

### **portRange**

TCP or UDP protocols: The range of ports the rule applies to.

Type: [PortRange \(p. 1885\)](#) object

Required: No

### **protocol**

The protocol number. A value of "-1" means all protocols.

Type: String

Required: No

### **ruleAction**

Indicates whether to allow or deny the traffic that matches the rule.

Type: String

Valid Values: `allow` | `deny`

Required: No

**ruleNumber**

The rule number for the entry. ACL entries are processed in ascending order by rule number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkCardInfo

Describes the network card support of the instance type.

## Contents

### **maximumNetworkInterfaces**

The maximum number of network interfaces for the network card.

Type: Integer

Required: No

### **networkCardIndex**

The index of the network card.

Type: Integer

Required: No

### **networkPerformance**

The network performance of the network card.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInfo

Describes the networking features of the instance type.

## Contents

### **defaultNetworkCardIndex**

The index of the default network card, starting at 0.

Type: Integer

Required: No

### **efaInfo**

Describes the Elastic Fabric Adapters for the instance type.

Type: [EfaInfo \(p. 1508\)](#) object

Required: No

### **efaSupported**

Indicates whether Elastic Fabric Adapter (EFA) is supported.

Type: Boolean

Required: No

### **enaSupport**

Indicates whether Elastic Network Adapter (ENA) is supported.

Type: String

Valid Values: `unsupported` | `supported` | `required`

Required: No

### **encryptionInTransitSupported**

Indicates whether the instance type automatically encrypts in-transit traffic between instances.

Type: Boolean

Required: No

### **ipv4AddressesPerInterface**

The maximum number of IPv4 addresses per network interface.

Type: Integer

Required: No

### **ipv6AddressesPerInterface**

The maximum number of IPv6 addresses per network interface.

Type: Integer

Required: No

### **ipv6Supported**

Indicates whether IPv6 is supported.

Type: Boolean

Required: No

### **maximumNetworkCards**

The maximum number of physical network cards that can be allocated to the instance.

Type: Integer

Required: No

### **maximumNetworkInterfaces**

The maximum number of network interfaces for the instance type.

Type: Integer

Required: No

### **networkCards**

Describes the network cards for the instance type.

Type: Array of [NetworkCardInfo \(p. 1831\)](#) objects

Required: No

### **networkPerformance**

The network performance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInsightsAnalysis

Describes a network insights analysis.

## Contents

### **alternatePathHintSet**

Potential intermediate components.

Type: Array of [AlternatePathHint \(p. 1364\)](#) objects

Required: No

### **explanationSet**

The explanations. For more information, see [Reachability Analyzer explanation codes](#).

Type: Array of [Explanation \(p. 1527\)](#) objects

Required: No

### **filterInArnSet**

The Amazon Resource Names (ARN) of the AWS resources that the path must traverse.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **forwardPathComponentSet**

The components in the path from source to destination.

Type: Array of [PathComponent \(p. 1859\)](#) objects

Required: No

### **networkInsightsAnalysisArn**

The Amazon Resource Name (ARN) of the network insights analysis.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **networkInsightsAnalysisId**

The ID of the network insights analysis.

Type: String

Required: No

### **networkInsightsPathId**

The ID of the path.

Type: String

Required: No

**networkPathFound**

Indicates whether the destination is reachable from the source.

Type: Boolean

Required: No

**returnPathComponentSet**

The components in the path from destination to source.

Type: Array of [PathComponent \(p. 1859\)](#) objects

Required: No

**startDate**

The time the analysis started.

Type: Timestamp

Required: No

**status**

The status of the network insights analysis.

Type: String

Valid Values: running | succeeded | failed

Required: No

**statusMessage**

The status message, if the status is failed.

Type: String

Required: No

**tagSet**

The tags.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInsightsPath

Describes a path.

## Contents

### **createdDate**

The time stamp when the path was created.

Type: Timestamp

Required: No

### **destination**

The AWS resource that is the destination of the path.

Type: String

Required: No

### **destinationIp**

The IP address of the AWS resource that is the destination of the path.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: ^([0-9]{1,3}.){3}[0-9]{1,3}\$

Required: No

### **destinationPort**

The destination port.

Type: Integer

Required: No

### **networkInsightsPathArn**

The Amazon Resource Name (ARN) of the path.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1283.

Required: No

### **networkInsightsPathId**

The ID of the path.

Type: String

Required: No

### **protocol**

The protocol.

Type: String

Valid Values: `tcp` | `udp`

Required: No

**source**

The AWS resource that is the source of the path.

Type: String

Required: No

**sourceip**

The IP address of the AWS resource that is the source of the path.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 15.

Pattern: `^([0-9]{1,3}.){3}[0-9]{1,3}$`

Required: No

**tagSet**

The tags associated with the path.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterface

Describes a network interface.

## Contents

### **association**

The association information for an Elastic IP address (IPv4) associated with the network interface.

Type: [NetworkInterfaceAssociation \(p. 1842\)](#) object

Required: No

### **attachment**

The network interface attachment.

Type: [NetworkInterfaceAttachment \(p. 1844\)](#) object

Required: No

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **denyAllIgwTraffic**

Indicates whether a network interface with an IPv6 address is unreachable from the public internet. If the value is true, inbound traffic from the internet is dropped and you cannot assign an elastic IP address to the network interface. The network interface is reachable from peered VPCs and resources connected through a transit gateway, including on-premises networks.

Type: Boolean

Required: No

### **description**

A description.

Type: String

Required: No

### **groupSet**

Any security groups for the network interface.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

### **interfaceType**

The type of network interface.

Type: String

Valid Values: `interface` | `natGateway` | `efa` | `trunk`

Required: No

**ipv4PrefixSet**

The IPv4 prefixes that are assigned to the network interface.

Type: Array of [Ipv4PrefixSpecification \(p. 1715\)](#) objects

Required: No

**ipv6AddressesSet**

The IPv6 addresses associated with the network interface.

Type: Array of [NetworkInterfaceIpv6Address \(p. 1849\)](#) objects

Required: No

**ipv6PrefixSet**

The IPv6 prefixes that are assigned to the network interface.

Type: Array of [Ipv6PrefixSpecification \(p. 1721\)](#) objects

Required: No

**macAddress**

The MAC address.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The AWS account ID of the owner of the network interface.

Type: String

Required: No

**privateDnsName**

The private DNS name.

Type: String

Required: No

**privateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**privateIpvAddressesSet**

The private IPv4 addresses associated with the network interface.

Type: Array of [NetworkInterfacePrivateIpAddress \(p. 1853\)](#) objects

Required: No

**requesterId**

The alias or AWS account ID of the principal or service that created the network interface.

Type: String

Required: No

**requesterManaged**

Indicates whether the network interface is being managed by AWS.

Type: Boolean

Required: No

**sourceDestCheck**

Indicates whether source/destination checking is enabled.

Type: Boolean

Required: No

**status**

The status of the network interface.

Type: String

Valid Values: available | associated | attaching | in-use | detaching

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**tagSet**

Any tags assigned to the network interface.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceAssociation

Describes association information for an Elastic IP address (IPv4 only), or a Carrier IP address (for a network interface which resides in a subnet in a Wavelength Zone).

## Contents

### **allocationId**

The allocation ID.

Type: String

Required: No

### **associationId**

The association ID.

Type: String

Required: No

### **carrierIp**

The carrier IP address associated with the network interface.

This option is only available when the network interface is in a subnet which is associated with a Wavelength Zone.

Type: String

Required: No

### **customerOwnedIp**

The customer-owned IP address associated with the network interface.

Type: String

Required: No

### **ipOwnerId**

The ID of the Elastic IP address owner.

Type: String

Required: No

### **publicDnsName**

The public DNS name.

Type: String

Required: No

### **publicIp**

The address of the Elastic IP address bound to the network interface.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceAttachment

Describes a network interface attachment.

## Contents

### **attachmentId**

The ID of the network interface attachment.

Type: String

Required: No

### **attachTime**

The timestamp indicating when the attachment initiated.

Type: Timestamp

Required: No

### **deleteOnTermination**

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

### **deviceIndex**

The device index of the network interface attachment on the instance.

Type: Integer

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **instanceOwnerId**

The AWS account ID of the owner of the instance.

Type: String

Required: No

### **networkCardIndex**

The index of the network card.

Type: Integer

Required: No

### **status**

The attachment state.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceAttachmentChanges

Describes an attachment change.

## Contents

### AttachmentId

The ID of the network interface attachment.

Type: String

Required: No

### DeleteOnTermination

Indicates whether the network interface is deleted when the instance is terminated.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceCount

The minimum and maximum number of network interfaces.

## Contents

### **Max** (request), **max** (response)

The maximum number of network interfaces. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum number of network interfaces. If this parameter is not specified, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceCountRequest

The minimum and maximum number of network interfaces.

## Contents

### Max

The maximum number of network interfaces. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

### Min

The minimum number of network interfaces. To specify no minimum limit, omit this parameter.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfaceIpv6Address

Describes an IPv6 address associated with a network interface.

## Contents

### ipv6Address

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfacePermission

Describes a permission for a network interface.

## Contents

### **awsAccountId**

The AWS account ID.

Type: String

Required: No

### **awsService**

The AWS service.

Type: String

Required: No

### **networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

### **networkInterfacePermissionId**

The ID of the network interface permission.

Type: String

Required: No

### **permission**

The type of permission.

Type: String

Valid Values: `INSTANCE-ATTACH` | `EIP-ASSOCIATE`

Required: No

### **permissionState**

Information about the state of the permission.

Type: [NetworkInterfacePermissionState \(p. 1852\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfacePermissionState

Describes the state of a network interface permission.

## Contents

### **state**

The state of the permission.

Type: String

Valid Values: pending | granted | revoking | revoked

Required: No

### **statusMessage**

A status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NetworkInterfacePrivateIpAddress

Describes the private IPv4 address of a network interface.

## Contents

### **association**

The association information for an Elastic IP address (IPv4) associated with the network interface.

Type: [NetworkInterfaceAssociation \(p. 1842\)](#) object

Required: No

### **primary**

Indicates whether this IPv4 address is the primary private IPv4 address of the network interface.

Type: Boolean

Required: No

### **privateDnsName**

The private DNS name.

Type: String

Required: No

### **privateIpAddress**

The private IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# NewDhcpConfiguration

## Contents

### Key

Type: String

Required: No

### Values

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# OnDemandOptions

Describes the configuration of On-Demand Instances in an EC2 Fleet.

## Contents

### **allocationStrategy**

The strategy that determines the order of the launch template overrides to use in fulfilling On-Demand capacity.

`lowest-price` - EC2 Fleet uses price to determine the order, launching the lowest price first.

`prioritized` - EC2 Fleet uses the priority that you assigned to each launch template override, launching the highest priority first.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price` | `prioritized`

Required: No

### **capacityReservationOptions**

The strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

Supported only for fleets of type `instant`.

Type: [CapacityReservationOptions \(p. 1412\)](#) object

Required: No

### **maxTotalPrice**

The maximum amount per hour for On-Demand Instances that you're willing to pay.

Type: String

Required: No

### **minTargetCapacity**

The minimum target capacity for On-Demand Instances in the fleet. If the minimum target capacity is not reached, the fleet launches no instances.

Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

### **singleAvailabilityZone**

Indicates that the fleet launches all On-Demand Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**singleInstanceType**

Indicates that the fleet uses a single instance type to launch all On-Demand Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# OnDemandOptionsRequest

Describes the configuration of On-Demand Instances in an EC2 Fleet.

## Contents

### AllocationStrategy

The strategy that determines the order of the launch template overrides to use in fulfilling On-Demand capacity.

`lowest-price` - EC2 Fleet uses price to determine the order, launching the lowest price first.

`prioritized` - EC2 Fleet uses the priority that you assigned to each launch template override, launching the highest priority first.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price` | `prioritized`

Required: No

### CapacityReservationOptions

The strategy for using unused Capacity Reservations for fulfilling On-Demand capacity.

Supported only for fleets of type `instant`.

Type: [CapacityReservationOptionsRequest \(p. 1413\)](#) object

Required: No

### MaxTotalPrice

The maximum amount per hour for On-Demand Instances that you're willing to pay.

Type: String

Required: No

### MinTargetCapacity

The minimum target capacity for On-Demand Instances in the fleet. If the minimum target capacity is not reached, the fleet launches no instances.

Supported only for fleets of type `instant`.

At least one of the following must be specified: `SingleAvailabilityZone` | `SingleInstanceType`

Type: Integer

Required: No

### SingleAvailabilityZone

Indicates that the fleet launches all On-Demand Instances into a single Availability Zone.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

**SingleInstanceType**

Indicates that the fleet uses a single instance type to launch all On-Demand Instances in the fleet.

Supported only for fleets of type `instant`.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PathComponent

Describes a path component.

## Contents

### aclRule

The network ACL rule.

Type: [AnalysisAclRule \(p. 1365\)](#) object

Required: No

### component

The component.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

### destinationVpc

The destination VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

### inboundHeader

The inbound header.

Type: [AnalysisPacketHeader \(p. 1370\)](#) object

Required: No

### outboundHeader

The outbound header.

Type: [AnalysisPacketHeader \(p. 1370\)](#) object

Required: No

### routeTableRoute

The route table route.

Type: [AnalysisRouteTableRoute \(p. 1372\)](#) object

Required: No

### securityGroupRule

The security group rule.

Type: [AnalysisSecurityGroupRule \(p. 1374\)](#) object

Required: No

### sequenceNumber

The sequence number.

Type: Integer

Required: No

**sourceVpc**

The source VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**subnet**

The subnet.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

**vpc**

The component VPC.

Type: [AnalysisComponent \(p. 1367\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

## Pcild

Describes the data that identifies an Amazon FPGA image (AFI) on the PCI bus.

## Contents

### DeviceId

The ID of the device.

Type: String

Required: No

### SubsystemId

The ID of the subsystem.

Type: String

Required: No

### SubsystemVendorId

The ID of the vendor for the subsystem.

Type: String

Required: No

### VendorId

The ID of the vendor.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PeeringAttachmentStatus

The status of the transit gateway peering attachment.

## Contents

### code

The status code.

Type: String

Required: No

### message

The status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PeeringConnectionOptions

Describes the VPC peering connection options.

## Contents

### **allowDnsResolutionFromRemoteVpc**

If true, the public DNS hostnames of instances in the specified VPC resolve to private IP addresses when queried from instances in the peer VPC.

Type: Boolean

Required: No

### **allowEgressFromLocalClassicLinkToRemoteVpc**

If true, enables outbound communication from an EC2-Classic instance that's linked to a local VPC using ClassicLink to instances in a peer VPC.

Type: Boolean

Required: No

### **allowEgressFromLocalVpcToRemoteClassicLink**

If true, enables outbound communication from instances in a local VPC to an EC2-Classic instance that's linked to a peer VPC using ClassicLink.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PeeringConnectionOptionsRequest

The VPC peering connection options.

## Contents

### **AllowDnsResolutionFromRemoteVpc**

If true, enables a local VPC to resolve public DNS hostnames to private IP addresses when queried from instances in the peer VPC.

Type: Boolean

Required: No

### **AllowEgressFromLocalClassicLinkToRemoteVpc**

If true, enables outbound communication from an EC2-Classic instance that's linked to a local VPC using ClassicLink to instances in a peer VPC.

Type: Boolean

Required: No

### **AllowEgressFromLocalVpcToRemoteClassicLink**

If true, enables outbound communication from instances in a local VPC to an EC2-Classic instance that's linked to a peer VPC using ClassicLink.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PeeringTgwInfo

Information about the transit gateway in the peering attachment.

## Contents

### **ownerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

### **region**

The Region of the transit gateway.

Type: String

Required: No

### **transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1DHGroupNumbersListValue

The Diffie-Hellmann group number for phase 1 IKE negotiations.

## Contents

### value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1DHGroupNumbersRequestListValue

Specifies a Diffie-Hellman group number for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### Value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1EncryptionAlgorithmsListValue

The encryption algorithm for phase 1 IKE negotiations.

## Contents

### **value**

The value for the encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1EncryptionAlgorithmsRequestListValue

Specifies the encryption algorithm for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### Value

The value for the encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1IntegrityAlgorithmsListValue

The integrity algorithm for phase 1 IKE negotiations.

## Contents

### **value**

The value for the integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase1IntegrityAlgorithmsRequestListValue

Specifies the integrity algorithm for the VPN tunnel for phase 1 IKE negotiations.

## Contents

### **Value**

The value for the integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2DHGroupNumbersListValue

The Diffie-Hellmann group number for phase 2 IKE negotiations.

## Contents

### value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2DHGroupNumbersRequestListValue

Specifies a Diffie-Hellman group number for the VPN tunnel for phase 2 IKE negotiations.

## Contents

### Value

The Diffie-Hellmann group number.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2EncryptionAlgorithmsListValue

The encryption algorithm for phase 2 IKE negotiations.

## Contents

### **value**

The encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2EncryptionAlgorithmsRequestListValue

Specifies the encryption algorithm for the VPN tunnel for phase 2 IKE negotiations.

## Contents

### Value

The encryption algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2IntegrityAlgorithmsListValue

The integrity algorithm for phase 2 IKE negotiations.

## Contents

### **value**

The integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Phase2IntegrityAlgorithmsRequestListValue

Specifies the integrity algorithm for the VPN tunnel for phase 2 IKE negotiations.

## Contents

### **Value**

The integrity algorithm.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Placement

Describes the placement of an instance.

## Contents

### **Affinity** (request), **affinity** (response)

The affinity setting for the instance on the Dedicated Host. This parameter is not supported for the [ImportInstance](#) command.

This parameter is not supported by [CreateFleet](#).

Type: String

Required: No

### **AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone of the instance.

If not specified, an Availability Zone will be automatically chosen for you based on the load balancing criteria for the Region.

This parameter is not supported by [CreateFleet](#).

Type: String

Required: No

### **GroupName** (request), **groupName** (response)

The name of the placement group the instance is in.

Type: String

Required: No

### **HostId** (request), **hostId** (response)

The ID of the Dedicated Host on which the instance resides. This parameter is not supported for the [ImportInstance](#) command.

This parameter is not supported by [CreateFleet](#).

Type: String

Required: No

### **HostResourceGroupArn** (request), **hostResourceGroupArn** (response)

The ARN of the host resource group in which to launch the instances. If you specify a host resource group ARN, omit the **Tenancy** parameter or set it to host.

This parameter is not supported by [CreateFleet](#).

Type: String

Required: No

### **PartitionNumber** (request), **partitionNumber** (response)

The number of the partition that the instance is in. Valid only if the placement group strategy is set to **partition**.

This parameter is not supported by [CreateFleet](#).

Type: Integer

Required: No

**SpreadDomain** (request), **spreadDomain** (response)

Reserved for future use.

This parameter is not supported by [CreateFleet](#).

Type: String

Required: No

**Tenancy** (request), **tenancy** (response)

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware. The host tenancy is not supported for the [ImportInstance](#) command.

This parameter is not supported by [CreateFleet](#).

T3 instances that use the unlimited CPU credit option do not support host tenancy.

Type: String

Valid Values: default | dedicated | host

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PlacementGroup

Describes a placement group.

## Contents

### groupId

The ID of the placement group.

Type: String

Required: No

### groupName

The name of the placement group.

Type: String

Required: No

### partitionCount

The number of partitions. Valid only if **strategy** is set to `partition`.

Type: Integer

Required: No

### state

The state of the placement group.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

### strategy

The placement strategy.

Type: String

Valid Values: `cluster` | `spread` | `partition`

Required: No

### tagSet

Any tags applied to the placement group.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PlacementGroupInfo

Describes the placement group support of the instance type.

## Contents

### **supportedStrategies**

The supported placement group types.

Type: Array of strings

Valid Values: `cluster` | `partition` | `spread`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PlacementResponse

Describes the placement of an instance.

## Contents

### groupName

The name of the placement group that the instance is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PoolCidrBlock

Describes a CIDR block for an address pool.

## Contents

### poolCidrBlock

The CIDR block.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PortRange

Describes a range of ports.

## Contents

### **From** (request), **from** (response)

The first port in the range.

Type: Integer

Required: No

### **To** (request), **to** (response)

The last port in the range.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrefixList

Describes prefixes for AWS services.

## Contents

### **cidrSet**

The IP address range of the AWS service.

Type: Array of strings

Required: No

### **prefixListId**

The ID of the prefix.

Type: String

Required: No

### **prefixListName**

The name of the prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrefixListAssociation

Describes the resource with which a prefix list is associated.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceOwner**

The owner of the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrefixListEntry

Describes a prefix list entry.

## Contents

### **cidr**

The CIDR block.

Type: String

Required: No

### **description**

The description.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrefixListId

Describes a prefix list ID.

## Contents

### Description (request), description (response)

A description for the security group rule that references this prefix list ID.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and .\_-:/()#@[]+=;{}!\$\*

Type: String

Required: No

### PrefixListId (request), prefixListId (response)

The ID of the prefix.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PriceSchedule

Describes the price for a Reserved Instance.

## Contents

### active

The current price schedule, as determined by the term remaining for the Reserved Instance in the listing.

A specific price schedule is always in effect, but only one price schedule can be active at any time. Take, for example, a Reserved Instance listing that has five months remaining in its term. When you specify price schedules for five months and two months, this means that schedule 1, covering the first three months of the remaining term, will be active during months 5, 4, and 3. Then schedule 2, covering the last two months of the term, will be active for months 2 and 1.

Type: Boolean

Required: No

### currencyCode

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### price

The fixed price for the term.

Type: Double

Required: No

### term

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PriceScheduleSpecification

Describes the price for a Reserved Instance.

## Contents

### CurrencyCode

The currency for transacting the Reserved Instance resale. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### Price

The fixed price for the term.

Type: Double

Required: No

### Term

The number of months remaining in the reservation. For example, 2 is the second to the last month before the capacity reservation expires.

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PricingDetail

Describes a Reserved Instance offering.

## Contents

### count

The number of reservations available for the price.

Type: Integer

Required: No

### price

The price per instance.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrincipalIdFormat

PrincipalIdFormat description

## Contents

### arn

PrincipalIdFormatARN description

Type: String

Required: No

### statusSet

PrincipalIdFormatStatuses description

Type: Array of [IdFormat \(p. 1603\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrivateDnsDetails

Information about the Private DNS name for interface endpoints.

## Contents

### **privateDnsName**

The private DNS name assigned to the VPC endpoint service.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrivateDnsNameConfiguration

Information about the private DNS name for the service endpoint. For more information about these parameters, see [VPC Endpoint Service Private DNS Name Verification](#) in the *Amazon Virtual Private Cloud User Guide*.

## Contents

### **name**

The name of the record subdomain the service provider needs to create. The service provider adds the `value` text to the `name`.

Type: String

Required: No

### **state**

The verification state of the VPC endpoint service.

>Consumers of the endpoint service can use the private name only when the state is `verified`.

Type: String

Valid Values: `pendingVerification` | `verified` | `failed`

Required: No

### **type**

The endpoint service verification type, for example TXT.

Type: String

Required: No

### **value**

The value the service provider adds to the private DNS name domain record before verification.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PrivateIpAddressSpecification

Describes a secondary private IPv4 address for a network interface.

## Contents

### **Primary** (request), **primary** (response)

Indicates whether the private IPv4 address is the primary private IPv4 address. Only one IPv4 address can be designated as primary.

Type: Boolean

Required: No

### **PrivateIpAddress** (request), **privateIpAddress** (response)

The private IPv4 addresses.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ProcessorInfo

Describes the processor used by the instance type.

## Contents

### **supportedArchitectures**

The architectures supported by the instance type.

Type: Array of strings

Valid Values: `i386` | `x86_64` | `arm64` | `x86_64_mac`

Required: No

### **sustainedClockSpeedInGhz**

The speed of the processor, in GHz.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ProductCode

Describes a product code.

## Contents

### **productCode**

The product code.

Type: String

Required: No

### **type**

The type of product code.

Type: String

Valid Values: devpay | marketplace

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PropagatingVgw

Describes a virtual private gateway propagating route.

## Contents

### gatewayId

The ID of the virtual private gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ProvisionedBandwidth

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

## Contents

### **provisioned**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: String

Required: No

### **provisionTime**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: Timestamp

Required: No

### **requested**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: String

Required: No

### **requestTime**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: Timestamp

Required: No

### **status**

Reserved. If you need to sustain traffic greater than the [documented limits](#), contact us through the [Support Center](#).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# PtrUpdateStatus

The status of an updated pointer (PTR) record for an Elastic IP address.

## Contents

### **reason**

The reason for the PTR record update.

Type: String

Required: No

### **status**

The status of the PTR record update.

Type: String

Required: No

### **value**

The value for the PTR record update.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PublicIpv4Pool

Describes an IPv4 address pool.

## Contents

### **description**

A description of the address pool.

Type: String

Required: No

### **networkBorderGroup**

The name of the location from which the address pool is advertised. A network border group is a unique set of Availability Zones or Local Zones from where AWS advertises public IP addresses.

Type: String

Required: No

### **poolAddressRangeSet**

The address ranges.

Type: Array of [PublicIpv4PoolRange \(p. 1905\)](#) objects

Required: No

### **poolId**

The ID of the address pool.

Type: String

Required: No

### **tagSet**

Any tags for the address pool.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **totalAddressCount**

The total number of addresses.

Type: Integer

Required: No

### **totalAvailableAddressCount**

The total number of available addresses.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PublicIpv4PoolRange

Describes an address range of an IPv4 address pool.

## Contents

### **addressCount**

The number of addresses in the range.

Type: Integer

Required: No

### **availableAddressCount**

The number of available addresses in the range.

Type: Integer

Required: No

### **firstAddress**

The first IP address in the range.

Type: String

Required: No

### **lastAddress**

The last IP address in the range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Purchase

Describes the result of the purchase.

## Contents

### **currencyCode**

The currency in which the `UpfrontPrice` and `HourlyPrice` amounts are specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### **duration**

The duration of the reservation's term in seconds.

Type: Integer

Required: No

### **hostIdSet**

The IDs of the Dedicated Hosts associated with the reservation.

Type: Array of strings

Required: No

### **hostReservationId**

The ID of the reservation.

Type: String

Required: No

### **hourlyPrice**

The hourly price of the reservation per hour.

Type: String

Required: No

### **instanceFamily**

The instance family on the Dedicated Host that the reservation can be associated with.

Type: String

Required: No

### **paymentOption**

The payment option for the reservation.

Type: String

Valid Values: AllUpfront | PartialUpfront | NoUpfront

Required: No

**upfrontPrice**

The upfront price of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# PurchaseRequest

Describes a request to purchase Scheduled Instances.

## Contents

### InstanceCount

The number of instances.

Type: Integer

Required: Yes

### PurchaseToken

The purchase token.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RecurringCharge

Describes a recurring charge.

## Contents

### **amount**

The amount of the recurring charge.

Type: Double

Required: No

### **frequency**

The frequency of the recurring charge.

Type: String

Valid Values: Hourly

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReferencedSecurityGroup

Describes the security group that is referenced in the security group rule.

## Contents

### groupId

The ID of the security group.

Type: String

Required: No

### peeringStatus

The status of a VPC peering connection, if applicable.

Type: String

Required: No

### userId

The AWS account ID.

Type: String

Required: No

### vpcId

The ID of the VPC.

Type: String

Required: No

### vpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Region

Describes a Region.

## Contents

### **optInStatus**

The Region opt-in status. The possible values are `opt-in-not-required`, `opted-in`, and `not-opted-in`.

Type: String

Required: No

### **regionEndpoint**

The Region service endpoint.

Type: String

Required: No

### **regionName**

The name of the Region.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RegisterInstanceTagAttributeRequest

Information about the tag keys to register for the current Region. You can either specify individual tag keys or register all tag keys in the current Region. You must specify either `IncludeAllTagsOfInstance` or `InstanceTagKeys` in the request

## Contents

### **IncludeAllTagsOfInstance**

Indicates whether to register all tag keys in the current Region. Specify `true` to register all tag keys.

Type: Boolean

Required: No

### **InstanceTagKeys**

The tag keys to register.

Type: Array of strings

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RemovePrefixListEntry

An entry for a prefix list.

## Contents

### Cidr

The CIDR block.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReplaceRootVolumeTask

Information about a root volume replacement task.

## Contents

### completeTime

The time the task completed.

Type: String

Required: No

### instanceId

The ID of the instance for which the root volume replacement task was created.

Type: String

Required: No

### replaceRootVolumeTaskId

The ID of the root volume replacement task.

Type: String

Required: No

### startTime

The time the task was started.

Type: String

Required: No

### tagSet

The tags assigned to the task.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### taskState

The state of the task. The task can be in one of the following states:

- pending - the replacement volume is being created.
- in-progress - the original volume is being detached and the replacement volume is being attached.
- succeeded - the replacement volume has been successfully attached to the instance and the instance is available.
- failing - the replacement task is in the process of failing.
- failed - the replacement task has failed but the original root volume is still attached.
- failing-detached - the replacement task is in the process of failing. The instance might have no root volume attached.
- failed-detached - the replacement task has failed and the instance has no root volume attached.

Type: String

Valid Values: pending | in-progress | failing | succeeded | failed | failed-detached

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RequestLaunchTemplateData

The information to include in the launch template.

## Contents

### BlockDeviceMappings

The block device mapping.

Type: Array of [LaunchTemplateBlockDeviceMappingRequest \(p. 1738\)](#) objects

Required: No

### CapacityReservationSpecification

The Capacity Reservation targeting option. If you do not specify this parameter, the instance's Capacity Reservation preference defaults to open, which enables it to run in any open Capacity Reservation that has matching attributes (instance type, platform, Availability Zone).

Type: [LaunchTemplateCapacityReservationSpecificationRequest \(p. 1739\)](#) object

Required: No

### CpuOptions

The CPU options for the instance. For more information, see [Optimizing CPU Options](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateCpuOptionsRequest \(p. 1743\)](#) object

Required: No

### CreditSpecification

The credit option for CPU usage of the instance. Valid for T2, T3, or T3a instances only.

Type: [CreditSpecificationRequest \(p. 1466\)](#) object

Required: No

### DisableApiTermination

If you set this parameter to true, you can't terminate the instance using the Amazon EC2 console, CLI, or API; otherwise, you can. To change this attribute after launch, use [ModifyInstanceAttribute](#). Alternatively, if you set `InstanceStateInitiatedShutdownBehavior` to terminate, you can terminate the instance by running the shutdown command from the instance.

Type: Boolean

Required: No

### EbsOptimized

Indicates whether the instance is optimized for Amazon EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal Amazon EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Type: Boolean

Required: No

### **ElasticGpuSpecifications**

An elastic GPU to associate with the instance.

Type: Array of [ElasticGpuSpecification \(p. 1514\)](#) objects

Required: No

### **ElasticInferenceAccelerators**

The elastic inference accelerator for the instance.

Type: Array of [LaunchTemplateElasticInferenceAccelerator \(p. 1748\)](#) objects

Required: No

### **EnclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves. For more information, see [What is AWS Nitro Enclaves?](#) in the *AWS Nitro Enclaves User Guide*.

You can't enable AWS Nitro Enclaves and hibernation on the same instance.

Type: [LaunchTemplateEnclaveOptionsRequest \(p. 1751\)](#) object

Required: No

### **HibernationOptions**

Indicates whether an instance is enabled for hibernation. This parameter is valid only if the instance meets the [hibernation prerequisites](#). For more information, see [Hibernate your instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateHibernationOptionsRequest \(p. 1753\)](#) object

Required: No

### **IamInstanceProfile**

The name or Amazon Resource Name (ARN) of an IAM instance profile.

Type: [LaunchTemplateIamInstanceProfileSpecificationRequest \(p. 1755\)](#) object

Required: No

### **ImageId**

The ID of the AMI.

Type: String

Required: No

### **InstanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Default: stop

Type: String

Valid Values: stop | terminate

Required: No

### **InstanceMarketOptions**

The market (purchasing) option for the instances.

Type: [LaunchTemplateInstanceMarketOptionsRequest \(p. 1757\)](#) object

Required: No

#### InstanceRequirements

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirementsRequest \(p. 1681\)](#) object

Required: No

#### InstanceType

The instance type. For more information, see [Instance Types in the Amazon Elastic Compute Cloud User Guide](#).

If you specify `InstanceTypes`, you can't specify `InstanceRequirements`.

Type: String

Valid Values: `t1.micro` | `t2.nano` | `t2.micro` | `t2.small` | `t2.medium` | `t2.large` | `t2.xlarge` | `t2.2xlarge` | `t3.nano` | `t3.micro` | `t3.small` | `t3.medium` | `t3.large` | `t3.xlarge` | `t3.2xlarge` | `t3a.nano` | `t3a.micro` | `t3a.small` | `t3a.medium` | `t3a.large` | `t3a.xlarge` | `t3a.2xlarge` | `t4g.nano` | `t4g.micro` | `t4g.small` | `t4g.medium` | `t4g.large` | `t4g.xlarge` | `t4g.2xlarge` | `m1.small` | `m1.medium` | `m1.large` | `m1.xlarge` | `m3.medium` | `m3.large` | `m3.xlarge` | `m3.2xlarge` | `m4.large` | `m4.xlarge` | `m4.2xlarge` | `m4.4xlarge` | `m4.10xlarge` | `m4.16xlarge` | `m2.xlarge` | `m2.2xlarge` | `m2.4xlarge` | `cr1.8xlarge` | `r3.large` | `r3.xlarge` | `r3.2xlarge` | `r3.4xlarge` | `r3.8xlarge` | `r4.large` | `r4.xlarge` | `r4.2xlarge` | `r4.4xlarge` | `r4.8xlarge` | `r4.16xlarge` | `r5.large` | `r5.xlarge` | `r5.2xlarge` | `r5.4xlarge` | `r5.8xlarge` | `r5.12xlarge` | `r5.16xlarge` | `r5.24xlarge` | `r5.metal` | `r5a.large` | `r5a.xlarge` | `r5a.2xlarge` | `r5a.4xlarge` | `r5a.8xlarge` | `r5a.12xlarge` | `r5a.16xlarge` | `r5a.24xlarge` | `r5b.large` | `r5b.xlarge` | `r5b.2xlarge` | `r5b.4xlarge` | `r5b.8xlarge` | `r5b.12xlarge` | `r5b.16xlarge` | `r5b.24xlarge` | `r5b.metal` | `r5d.large` | `r5d.xlarge` | `r5d.2xlarge` | `r5d.4xlarge` | `r5d.8xlarge` | `r5d.12xlarge` | `r5d.16xlarge` | `r5d.24xlarge` | `r5d.metal` | `r5ad.large` | `r5ad.xlarge` | `r5ad.2xlarge` | `r5ad.4xlarge` | `r5ad.8xlarge` | `r5ad.12xlarge` | `r5ad.16xlarge` | `r5ad.24xlarge` | `r6g.metal` | `r6g.medium` | `r6g.large` | `r6g.xlarge` | `r6g.2xlarge` | `r6g.4xlarge` | `r6g.8xlarge` | `r6g.12xlarge` | `r6g.16xlarge` | `r6gd.metal` | `r6gd.medium` | `r6gd.large` | `r6gd.xlarge` | `r6gd.2xlarge` | `r6gd.4xlarge` | `r6gd.8xlarge` | `r6gd.12xlarge` | `r6gd.16xlarge` | `x1.16xlarge` | `x1.32xlarge` | `x1e.xlarge` | `x1e.2xlarge` | `x1e.4xlarge` | `x1e.8xlarge` | `x1e.16xlarge` | `x1e.32xlarge` | `i2.xlarge` | `i2.2xlarge` | `i2.4xlarge` | `i2.8xlarge` | `i3.large` | `i3.xlarge` | `i3.2xlarge` | `i3.4xlarge` | `i3.8xlarge` | `i3.16xlarge` | `i3.metal` | `i3en.large` | `i3en.xlarge` | `i3en.2xlarge` | `i3en.3xlarge` | `i3en.6xlarge` | `i3en.12xlarge` | `i3en.24xlarge` | `i3en.metal` | `hi1.4xlarge` | `hs1.8xlarge` | `c1.medium` | `c1.xlarge` | `c3.large` | `c3.xlarge` | `c3.2xlarge` | `c3.4xlarge` | `c3.8xlarge` | `c4.large` | `c4.xlarge` | `c4.2xlarge` | `c4.4xlarge` | `c4.8xlarge` | `c5.large` | `c5.xlarge` | `c5.2xlarge` | `c5.4xlarge` | `c5.9xlarge` | `c5.12xlarge` | `c5.18xlarge` | `c5.24xlarge` | `c5.metal` | `c5a.large` | `c5a.xlarge` | `c5a.2xlarge` | `c5a.4xlarge` | `c5a.8xlarge` | `c5a.12xlarge` | `c5a.16xlarge` | `c5a.24xlarge` | `c5ad.large` | `c5ad.xlarge` | `c5ad.2xlarge` | `c5ad.4xlarge` | `c5ad.8xlarge` | `c5ad.12xlarge` | `c5ad.16xlarge` | `c5ad.24xlarge` | `c5d.large` | `c5d.xlarge` | `c5d.2xlarge` | `c5d.4xlarge` | `c5d.9xlarge` | `c5d.12xlarge` | `c5d.18xlarge` | `c5d.24xlarge` | `c5d.metal` | `c5n.large` | `c5n.xlarge` | `c5n.2xlarge` | `c5n.4xlarge` | `c5n.9xlarge` | `c5n.18xlarge` |

c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge

Required: No

**KernelId**

The ID of the kernel.

**Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [User Provided Kernels](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

#### KeyName

The name of the key pair. You can create a key pair using [CreateKeyPair](#) or [ImportKeyPair](#).

##### **Important**

If you do not specify a key pair, you can't connect to the instance unless you choose an AMI that is configured to allow users another way to log in.

Type: String

Required: No

#### LicenseSpecifications

The license configurations.

Type: Array of [LaunchTemplateLicenseConfigurationRequest](#) (p. 1769) objects

Required: No

#### MetadataOptions

The metadata options for the instance. For more information, see [Instance metadata and user data](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateInstanceMetadataOptionsRequest](#) (p. 1760) object

Required: No

#### Monitoring

The monitoring for the instance.

Type: [LaunchTemplatesMonitoringRequest](#) (p. 1778) object

Required: No

#### NetworkInterfaces

One or more network interfaces. If you specify a network interface, you must specify any security groups and subnets as part of the network interface.

Type: Array of [LaunchTemplateInstanceNetworkInterfaceSpecificationRequest](#) (p. 1765) objects

Required: No

#### Placement

The placement for the instance.

Type: [LaunchTemplatePlacementRequest](#) (p. 1775) object

Required: No

#### RamDiskId

The ID of the RAM disk.

##### **Important**

We recommend that you use PV-GRUB instead of kernels and RAM disks. For more information, see [User Provided Kernels](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

## SecurityGroups

[EC2-Classic, default VPC] One or more security group names. For a nondefault VPC, you must use security group IDs instead. You cannot specify both a security group ID and security name in the same request.

Type: Array of strings

Required: No

## SecurityGroupIds

One or more security group IDs. You can create a security group using [CreateSecurityGroup](#). You cannot specify both a security group ID and security name in the same request.

Type: Array of strings

Required: No

## TagSpecifications

The tags to apply to the resources during launch. You can only tag instances and volumes on launch. The specified tags are applied to all instances or volumes that are created during launch. To tag a resource after it has been created, see [CreateTags](#).

Type: Array of [LaunchTemplateTagSpecificationRequest](#) (p. 1785) objects

Required: No

## UserData

The user data to make available to the instance. You must provide base64-encoded text. User data is limited to 16 KB. For more information, see [Running Commands on Your Linux Instance at Launch \(Linux\)](#) or [Adding User Data \(Windows\)](#).

If you are creating the launch template for use with AWS Batch, the user data must be provided in the [MIME multi-part archive format](#). For more information, see [Amazon EC2 user data in launch templates](#) in the [AWS Batch User Guide](#).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RequestSpotLaunchSpecification

Describes the launch specification for an instance.

## Contents

### **AddressingType**

Deprecated.

Type: String

Required: No

### **BlockDeviceMappings**

One or more block device mapping entries. You can't specify both a snapshot ID and an encryption value. This is because only blank volumes can be encrypted on creation. If a snapshot is the basis for a volume, it is not blank and its encryption status is used for the volume encryption status.

Type: Array of [BlockDeviceMapping \(p. 1392\)](#) objects

Required: No

### **EbsOptimized**

Indicates whether the instance is optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: false

Type: Boolean

Required: No

### **IamInstanceProfile**

The IAM instance profile.

Type: [IamInstanceProfileSpecification \(p. 1601\)](#) object

Required: No

### **ImageId**

The ID of the AMI.

Type: String

Required: No

### **InstanceType**

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge

| m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge |  
r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large |  
r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large |  
| r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge |  
r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge |  
| r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge |  
| r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge |  
r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large |  
r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge |  
r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge |  
r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge |  
| r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge |  
r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge |  
| r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge |  
r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge |  
| x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge |  
| x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |  
i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge |  
| i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge |  
i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |

```
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |
g5.24xlarge | g5.48xlarge
```

Required: No

#### **KernelId**

The ID of the kernel.

Type: String

Required: No

#### **KeyName**

The name of the key pair.

Type: String

Required: No

#### **Monitoring**

Indicates whether basic or detailed monitoring is enabled for the instance.

Default: Disabled

Type: [RunInstancesMonitoringEnabled \(p. 1966\)](#) object

Required: No

#### **NetworkInterfaces**

One or more network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.

Type: Array of [InstanceNetworkInterfaceSpecification \(p. 1670\)](#) objects

Required: No

#### **Placement**

The placement information for the instance.

Type: [SpotPlacement \(p. 2046\)](#) object

Required: No

**RamdiskId**

The ID of the RAM disk.

Type: String

Required: No

**SecurityGroups**

One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.

Type: Array of strings

Required: No

**SecurityGroupIds**

One or more security group IDs.

Type: Array of strings

Required: No

**SubnetId**

The ID of the subnet in which to launch the instance.

Type: String

Required: No

**UserData**

The Base64-encoded user data for the instance. User data is limited to 16 KB.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Reservation

Describes a launch request for one or more instances, and includes owner, requester, and security group information that applies to all instances in the launch request.

## Contents

### groupSet

[EC2-Classic only] The security groups.

Type: Array of [GroupIdentifier \(p. 1584\)](#) objects

Required: No

### instancesSet

The instances.

Type: Array of [Instance \(p. 1629\)](#) objects

Required: No

### ownerId

The ID of the AWS account that owns the reservation.

Type: String

Required: No

### requesterId

The ID of the requester that launched the instances on your behalf (for example, AWS Management Console or Auto Scaling).

Type: String

Required: No

### reservationId

The ID of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservationFleetInstanceSpecification

Information about an instance type to use in a Capacity Reservation Fleet.

## Contents

### AvailabilityZone

The Availability Zone in which the Capacity Reservation Fleet reserves the capacity. A Capacity Reservation Fleet can't span Availability Zones. All instance type specifications that you specify for the Fleet must use the same Availability Zone.

Type: String

Required: No

### AvailabilityZoneId

The ID of the Availability Zone in which the Capacity Reservation Fleet reserves the capacity. A Capacity Reservation Fleet can't span Availability Zones. All instance type specifications that you specify for the Fleet must use the same Availability Zone.

Type: String

Required: No

### EbsOptimized

Indicates whether the Capacity Reservation Fleet supports EBS-optimized instances types. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using EBS-optimized instance types.

Type: Boolean

Required: No

### InstancePlatform

The type of operating system for which the Capacity Reservation Fleet reserves capacity.

Type: String

Valid Values: Linux/UNIX | Red Hat Enterprise Linux | SUSE Linux | Windows | Windows with SQL Server | Windows with SQL Server Enterprise | Windows with SQL Server Standard | Windows with SQL Server Web | Linux with SQL Server Standard | Linux with SQL Server Web | Linux with SQL Server Enterprise

Required: No

### InstanceType

The instance type for which the Capacity Reservation Fleet reserves capacity.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge |

r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large |  
r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large |  
r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge |  
r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge |  
r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge |  
r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge |  
r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large |  
r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge |  
r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge |  
r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge |  
r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge |  
r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge |  
r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge |  
r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge |  
x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge |  
x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge |  
i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge |  
i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge |  
i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal |  
hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge |  
c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |  
c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large |  
c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge |  
c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge |  
c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal |  
c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge |  
c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge |  
cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge |  
g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal |  
cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge |  
d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge |  
d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge |  
m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge |  
m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge |  
z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal

```
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge
```

Required: No

#### Priority

The priority to assign to the instance type. This value is used to determine which of the instance types specified for the Fleet should be prioritized for use. A lower value indicates a high priority. For more information, see [Instance type priority](#) in the Amazon EC2 User Guide.

Type: Integer

Valid Range: Minimum value of 0.

Required: No

#### Weight

The number of capacity units provided by the specified instance type. This value, together with the total target capacity that you specify for the Fleet determine the number of instances for which the Fleet reserves capacity. Both values are based on units that make sense for your workload. For more information, see [Total target capacity](#) in the Amazon EC2 User Guide.

Type: Double

Valid Range: Minimum value of 0.001. Maximum value of 99.999.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservationValue

The cost associated with the Reserved Instance.

## Contents

### **hourlyPrice**

The hourly rate of the reservation.

Type: String

Required: No

### **remainingTotalValue**

The balance of the total value (the sum of remainingUpfrontValue + hourlyPrice \* number of hours remaining).

Type: String

Required: No

### **remainingUpfrontValue**

The remaining upfront cost of the reservation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstanceLimitPrice

Describes the limit price of a Reserved Instance offering.

## Contents

### Amount

Used for Reserved Instance Marketplace offerings. Specifies the limit price on the total order (instanceCount \* price).

Type: Double

Required: No

### CurrencyCode

The currency in which the limitPrice amount is specified. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstanceReservationValue

The total value of the Convertible Reserved Instance.

## Contents

### **reservationValue**

The total value of the Convertible Reserved Instance that you are exchanging.

Type: [ReservationValue \(p. 1930\)](#) object

Required: No

### **reservedInstanceId**

The ID of the Convertible Reserved Instance that you are exchanging.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstances

Describes a Reserved Instance.

## Contents

### **availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

### **currencyCode**

The currency of the Reserved Instance. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### **duration**

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

### **end**

The time when the Reserved Instance expires.

Type: Timestamp

Required: No

### **fixedPrice**

The purchase price of the Reserved Instance.

Type: Float

Required: No

### **instanceCount**

The number of reservations purchased.

Type: Integer

Required: No

### **instanceTenancy**

The tenancy of the instance.

Type: String

Valid Values: default | dedicated | host

Required: No

#### instanceType

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | xle.xlarge | xle.2xlarge | xle.4xlarge | xle.8xlarge | xle.16xlarge | xle.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |

p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge

Required: No

**offeringClass**

The offering class of the Reserved Instance.

Type: String

Valid Values: standard | convertible

Required: No

**offeringType**

The Reserved Instance offering type.

Type: String

Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront

Required: No

**productDescription**

The Reserved Instance product platform description.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

**recurringCharges**

The recurring charge tag assigned to the resource.

Type: Array of [RecurringCharge \(p. 1909\)](#) objects

Required: No

**reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

**scope**

The scope of the Reserved Instance.

Type: String

Valid Values: Availability Zone | Region

Required: No

**start**

The date and time the Reserved Instance started.

Type: Timestamp

Required: No

**state**

The state of the Reserved Instance purchase.

Type: String

Valid Values: payment-pending | active | payment-failed | retired | queued | queued-deleted

Required: No

**tagSet**

Any tags assigned to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesConfiguration

Describes the configuration settings for the modified Reserved Instances.

## Contents

### AvailabilityZone (request), **availabilityZone** (response)

The Availability Zone for the modified Reserved Instances.

Type: String

Required: No

### InstanceCount (request), **instanceCount** (response)

The number of modified Reserved Instances.

#### Note

This is a required field for a request.

Type: Integer

Required: No

### InstanceType (request), **instanceType** (response)

The instance type for the modified Reserved Instances.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge |

c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge |  
c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large  
| c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge |  
c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge |  
c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge  
| c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge |  
c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large |  
c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge |  
c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge  
| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge |  
g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**Platform** (request), **platform** (response)

The network platform of the modified Reserved Instances, which is either EC2-Classic or EC2-VPC.

Type: String

Required: No

**Scope** (request), **scope** (response)

Whether the Reserved Instance is applied to instances in a Region or instances in a specific Availability Zone.

Type: String

Valid Values: Availability Zone | Region

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesId

Describes the ID of a Reserved Instance.

## Contents

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesListing

Describes a Reserved Instance listing.

## Contents

### **clientToken**

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **createDate**

The time the listing was created.

Type: Timestamp

Required: No

### **instanceCounts**

The number of instances in this state.

Type: Array of [InstanceCount \(p. 1641\)](#) objects

Required: No

### **priceSchedules**

The price of the Reserved Instance listing.

Type: Array of [PriceSchedule \(p. 1890\)](#) objects

Required: No

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

### **reservedInstancesListingId**

The ID of the Reserved Instance listing.

Type: String

Required: No

### **status**

The status of the Reserved Instance listing.

Type: String

Valid Values: active | pending | cancelled | closed

Required: No

**statusMessage**

The reason for the current status of the Reserved Instance listing. The response can be blank.

Type: String

Required: No

**tagSet**

Any tags assigned to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**updateDate**

The last modified timestamp of the listing.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesModification

Describes a Reserved Instance modification.

## Contents

### **clientToken**

A unique, case-sensitive key supplied by the client to ensure that the request is idempotent. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **createDate**

The time when the modification request was created.

Type: Timestamp

Required: No

### **effectiveDate**

The time for the modification to become effective.

Type: Timestamp

Required: No

### **modificationResultSet**

Contains target configurations along with their corresponding new Reserved Instance IDs.

Type: Array of [ReservedInstancesModificationResult \(p. 1946\)](#) objects

Required: No

### **reservedInstancesModificationId**

A unique ID for the Reserved Instance modification.

Type: String

Required: No

### **reservedInstancesSet**

The IDs of one or more Reserved Instances.

Type: Array of [ReservedInstancesId \(p. 1941\)](#) objects

Required: No

### **status**

The status of the Reserved Instances modification request.

Type: String

Required: No

**statusMessage**

The reason for the status.

Type: String

Required: No

**updateDate**

The time when the modification request was last updated.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesModificationResult

Describes the modification request/s.

## Contents

### **reservedInstancesId**

The ID for the Reserved Instances that were created as part of the modification request. This field is only available when the modification is fulfilled.

Type: String

Required: No

### **targetConfiguration**

The target Reserved Instances configurations supplied as part of the modification request.

Type: [ReservedInstancesConfiguration \(p. 1938\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ReservedInstancesOffering

Describes a Reserved Instance offering.

## Contents

### **availabilityZone**

The Availability Zone in which the Reserved Instance can be used.

Type: String

Required: No

### **currencyCode**

The currency of the Reserved Instance offering you are purchasing. It's specified using ISO 4217 standard currency codes. At this time, the only supported currency is USD.

Type: String

Valid Values: USD

Required: No

### **duration**

The duration of the Reserved Instance, in seconds.

Type: Long

Required: No

### **fixedPrice**

The purchase price of the Reserved Instance.

Type: Float

Required: No

### **instanceTenancy**

The tenancy of the instance.

Type: String

Valid Values: default | dedicated | host

Required: No

### **instanceType**

The instance type on which the Reserved Instance can be used.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large |

r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge | p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.meta | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.meta

```
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |
g5.24xlarge | g5.48xlarge
```

Required: No

#### **marketplace**

Indicates whether the offering is available through the Reserved Instance Marketplace (resale) or AWS. If it's a Reserved Instance Marketplace offering, this is true.

Type: Boolean

Required: No

#### **offeringClass**

If convertible it can be exchanged for Reserved Instances of the same or higher monetary value, with different configurations. If standard, it is not possible to perform an exchange.

Type: String

Valid Values: standard | convertible

Required: No

#### **offeringType**

The Reserved Instance offering type.

Type: String

Valid Values: Heavy Utilization | Medium Utilization | Light Utilization | No Upfront | Partial Upfront | All Upfront

Required: No

#### **pricingDetailsSet**

The pricing details of the Reserved Instance offering.

Type: Array of [PricingDetail \(p. 1892\)](#) objects

Required: No

#### **productDescription**

The Reserved Instance product platform description.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

**recurringCharges**

The recurring charge tag assigned to the resource.

Type: Array of [RecurringCharge \(p. 1909\)](#) objects

Required: No

**reservedInstancesOfferingId**

The ID of the Reserved Instance offering. This is the offering ID used in [GetReservedInstancesExchangeQuote \(p. 1013\)](#) to confirm that an exchange can be made.

Type: String

Required: No

**scope**

Whether the Reserved Instance is applied to instances in a Region or an Availability Zone.

Type: String

Valid Values: Availability Zone | Region

Required: No

**usagePrice**

The usage price of the Reserved Instance, per hour.

Type: Float

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ResponseError

Describes the error that's returned when you cannot delete a launch template version.

## Contents

### code

The error code.

Type: String

Valid Values: launchTemplateIdDoesNotExist | launchTemplateIdMalformed | launchTemplateNameDoesNotExist | launchTemplateNameMalformed | launchTemplateVersionDoesNotExist | unexpectedError

Required: No

### message

The error message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ResponseLaunchTemplateData

The information for a launch template.

## Contents

### **blockDeviceMappingSet**

The block device mappings.

Type: Array of [LaunchTemplateBlockDeviceMapping \(p. 1737\)](#) objects

Required: No

### **capacityReservationSpecification**

Information about the Capacity Reservation targeting option.

Type: [LaunchTemplateCapacityReservationSpecificationResponse \(p. 1740\)](#) object

Required: No

### **cpuOptions**

The CPU options for the instance. For more information, see [Optimizing CPU options](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateCpuOptions \(p. 1742\)](#) object

Required: No

### **creditSpecification**

The credit option for CPU usage of the instance.

Type: [CreditSpecification \(p. 1465\)](#) object

Required: No

### **disableApiTermination**

If set to `true`, indicates that the instance cannot be terminated using the Amazon EC2 console, command line tool, or API.

Type: Boolean

Required: No

### **ebsOptimized**

Indicates whether the instance is optimized for Amazon EBS I/O.

Type: Boolean

Required: No

### **elasticGpuSpecificationSet**

The elastic GPU specification.

Type: Array of [ElasticGpuSpecificationResponse \(p. 1515\)](#) objects

Required: No

**elasticInferenceAcceleratorSet**

The elastic inference accelerator for the instance.

Type: Array of [LaunchTemplateElasticInferenceAcceleratorResponse \(p. 1749\)](#) objects

Required: No

**enclaveOptions**

Indicates whether the instance is enabled for AWS Nitro Enclaves.

Type: [LaunchTemplateEnclaveOptions \(p. 1750\)](#) object

Required: No

**hibernationOptions**

Indicates whether an instance is configured for hibernation. For more information, see [Hibernate your instance](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateHibernationOptions \(p. 1752\)](#) object

Required: No

**iamInstanceProfile**

The IAM instance profile.

Type: [LaunchTemplateiamInstanceProfileSpecification \(p. 1754\)](#) object

Required: No

**imageId**

The ID of the AMI that was used to launch the instance.

Type: String

Required: No

**instanceInitiatedShutdownBehavior**

Indicates whether an instance stops or terminates when you initiate shutdown from the instance (using the operating system command for system shutdown).

Type: String

Valid Values: stop | terminate

Required: No

**instanceMarketOptions**

The market (purchasing) option for the instances.

Type: [LaunchTemplateInstanceMarketOptions \(p. 1756\)](#) object

Required: No

**instanceRequirements**

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with these attributes.

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirements \(p. 1675\)](#) object

Required: No

**instanceType**

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | xle.xlarge | xle.2xlarge | xle.4xlarge | xle.8xlarge | xle.16xlarge | xle.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge | c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large | c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge | c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge | c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge | cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge | g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge | g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge | g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal | cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |

p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge | d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge | d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge | d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge | f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge | m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge | m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge | m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge | m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal | m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge | m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge | m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal | h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge | z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal | u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge | u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal | a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal | m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge | m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large | m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge | m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge | r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge | r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge | r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge | r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge | m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge | m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium | m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge | m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge | m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge | m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge | x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge | x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge | g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge | g5.24xlarge | g5.48xlarge

Required: No

**kernelId**

The ID of the kernel, if applicable.

Type: String

Required: No

**keyName**

The name of the key pair.

Type: String

Required: No

**licenseSet**

The license configurations.

Type: Array of [LaunchTemplateLicenseConfiguration \(p. 1768\)](#) objects

Required: No

**metadataOptions**

The metadata options for the instance. For more information, see [Instance metadata and user data](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: [LaunchTemplateInstanceMetadataOptions \(p. 1758\)](#) object

Required: No

**monitoring**

The monitoring for the instance.

Type: [LaunchTemplatesMonitoring \(p. 1777\)](#) object

Required: No

**networkInterfaceSet**

The network interfaces.

Type: Array of [LaunchTemplateInstanceNetworkInterfaceSpecification \(p. 1762\)](#) objects

Required: No

**placement**

The placement of the instance.

Type: [LaunchTemplatePlacement \(p. 1773\)](#) object

Required: No

**ramDiskId**

The ID of the RAM disk, if applicable.

Type: String

Required: No

**securityGroupIdSet**

The security group IDs.

Type: Array of strings

Required: No

**securityGroupSet**

The security group names.

Type: Array of strings

Required: No

**tagSpecificationSet**

The tags.

Type: Array of [LaunchTemplateTagSpecification \(p. 1784\)](#) objects

Required: No

**userData**

The user data for the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Route

Describes a route in a route table.

## Contents

### **carrierGatewayId**

The ID of the carrier gateway.

Type: String

Required: No

### **coreNetworkArn**

The Amazon Resource Name (ARN) of the core network.

Type: String

Required: No

### **destinationCidrBlock**

The IPv4 CIDR block used for the destination match.

Type: String

Required: No

### **destinationIpv6CidrBlock**

The IPv6 CIDR block used for the destination match.

Type: String

Required: No

### **destinationPrefixListId**

The prefix of the AWS service.

Type: String

Required: No

### **egressOnlyInternetGatewayId**

The ID of the egress-only internet gateway.

Type: String

Required: No

### **gatewayId**

The ID of a gateway attached to your VPC.

Type: String

Required: No

### **instanceId**

The ID of a NAT instance in your VPC.

Type: String

Required: No

**instanceOwnerId**

The ID of AWS account that owns the instance.

Type: String

Required: No

**localGatewayId**

The ID of the local gateway.

Type: String

Required: No

**natGatewayId**

The ID of a NAT gateway.

Type: String

Required: No

**networkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**origin**

Describes how the route was created.

- `CreateRouteTable` - The route was automatically created when the route table was created.
- `CreateRoute` - The route was manually added to the route table.
- `EnableVgwRoutePropagation` - The route was propagated by route propagation.

Type: String

Valid Values: `CreateRouteTable` | `CreateRoute` | `EnableVgwRoutePropagation`

Required: No

**state**

The state of the route. The `blackhole` state indicates that the route's target isn't available (for example, the specified gateway isn't attached to the VPC, or the specified NAT instance has been terminated).

Type: String

Valid Values: `active` | `blackhole`

Required: No

**transitGatewayId**

The ID of a transit gateway.

Type: String

Required: No

**vpcPeeringConnectionId**

The ID of a VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RouteTable

Describes a route table.

## Contents

### **associationSet**

The associations between the route table and one or more subnets or a gateway.

Type: Array of [RouteTableAssociation \(p. 1963\)](#) objects

Required: No

### **ownerId**

The ID of the AWS account that owns the route table.

Type: String

Required: No

### **propagatingVgwSet**

Any virtual private gateway (VGW) propagating routes.

Type: Array of [PropagatingVgw \(p. 1899\)](#) objects

Required: No

### **routeSet**

The routes in the route table.

Type: Array of [Route \(p. 1958\)](#) objects

Required: No

### **routeTableId**

The ID of the route table.

Type: String

Required: No

### **tagSet**

Any tags assigned to the route table.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RouteTableAssociation

Describes an association between a route table and a subnet or gateway.

## Contents

### **associationState**

The state of the association.

Type: [RouteTableAssociationState \(p. 1965\)](#) object

Required: No

### **gatewayId**

The ID of the internet gateway or virtual private gateway.

Type: String

Required: No

### **main**

Indicates whether this is the main route table.

Type: Boolean

Required: No

### **routeTableAssociationId**

The ID of the association.

Type: String

Required: No

### **routeTableId**

The ID of the route table.

Type: String

Required: No

### **subnetId**

The ID of the subnet. A subnet ID is not returned for an implicit association.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# RouteTableAssociationState

Describes the state of an association between a route table and a subnet or gateway.

## Contents

### **state**

The state of the association.

Type: String

Valid Values: associating | associated | disassociating | disassociated | failed

Required: No

### **statusMessage**

The status message, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# RunInstancesMonitoringEnabled

Describes the monitoring of an instance.

## Contents

**Enabled** (request), **enabled** (response)

Indicates whether detailed monitoring is enabled. Otherwise, basic monitoring is enabled.

Type: Boolean

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# S3ObjectTag

The tags to apply to the AMI object that will be stored in the Amazon S3 bucket. For more information, see [Categorizing your storage using tags](#) in the *Amazon Simple Storage Service User Guide*.

## Contents

### Key

The key of the tag.

Constraints: Tag keys are case-sensitive and can be up to 128 Unicode characters in length. May not begin with aws::.

Type: String

Required: No

### Value

The value of the tag.

Constraints: Tag values are case-sensitive and can be up to 256 Unicode characters in length.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# S3Storage

Describes the storage parameters for Amazon S3 and Amazon S3 buckets for an instance store-backed AMI.

## Contents

### **AWSAccessKeyId** (request), **AWSAccessKeyId** (response)

The access key ID of the owner of the bucket. Before you specify a value for your access key ID, review and follow the guidance in [Best Practices for Managing AWS Access Keys](#).

Type: String

Required: No

### **Bucket** (request), **bucket** (response)

The bucket in which to store the AMI. You can specify a bucket that you already own or a new bucket that Amazon EC2 creates on your behalf. If you specify a bucket that belongs to someone else, Amazon EC2 returns an error.

Type: String

Required: No

### **Prefix** (request), **prefix** (response)

The beginning of the file name of the AMI.

Type: String

Required: No

### **UploadPolicy** (request), **uploadPolicy** (response)

An Amazon S3 upload policy that gives Amazon EC2 permission to upload items into Amazon S3 on your behalf.

Type: Base64-encoded binary data object

Required: No

### **UploadPolicySignature** (request), **uploadPolicySignature** (response)

The signature of the JSON document.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# ScheduledInstance

Describes a Scheduled Instance.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **createDate**

The date when the Scheduled Instance was purchased.

Type: Timestamp

Required: No

### **hourlyPrice**

The hourly price for a single instance.

Type: String

Required: No

### **instanceCount**

The number of instances.

Type: Integer

Required: No

### **instanceType**

The instance type.

Type: String

Required: No

### **networkPlatform**

The network platform (EC2-Classic or EC2-VPC).

Type: String

Required: No

### **nextSlotStartTime**

The time for the next schedule to start.

Type: Timestamp

Required: No

### **platform**

The platform (Linux/UNIX or Windows).

Type: String

Required: No

**previousSlotEndTime**

The time that the previous schedule ended or will end.

Type: Timestamp

Required: No

**recurrence**

The schedule recurrence.

Type: [ScheduledInstanceRecurrence \(p. 1975\)](#) object

Required: No

**scheduledInstanceId**

The Scheduled Instance ID.

Type: String

Required: No

**slotDurationInHours**

The number of hours in the schedule.

Type: Integer

Required: No

**termEndDate**

The end date for the Scheduled Instance.

Type: Timestamp

Required: No

**termStartDate**

The start date for the Scheduled Instance.

Type: Timestamp

Required: No

**totalScheduledInstanceHours**

The total number of hours for a single instance for the entire term.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstanceAvailability

Describes a schedule that is available for your Scheduled Instances.

## Contents

### **availabilityZone**

The Availability Zone.

Type: String

Required: No

### **availableInstanceCount**

The number of available instances.

Type: Integer

Required: No

### **firstSlotStartTime**

The time period for the first schedule to start.

Type: Timestamp

Required: No

### **hourlyPrice**

The hourly price for a single instance.

Type: String

Required: No

### **instanceType**

The instance type. You can specify one of the C3, C4, M4, or R3 instance types.

Type: String

Required: No

### **maxTermDurationInDays**

The maximum term. The only possible value is 365 days.

Type: Integer

Required: No

### **minTermDurationInDays**

The minimum term. The only possible value is 365 days.

Type: Integer

Required: No

### **networkPlatform**

The network platform (`EC2-Classic` or `EC2-VPC`).

Type: String

Required: No

**platform**

The platform (Linux/UNIX or Windows).

Type: String

Required: No

**purchaseToken**

The purchase token. This token expires in two hours.

Type: String

Required: No

**recurrence**

The schedule recurrence.

Type: [ScheduledInstanceRecurrence \(p. 1975\)](#) object

Required: No

**slotDurationInHours**

The number of hours in the schedule.

Type: Integer

Required: No

**totalScheduledInstanceId**

The total number of hours for a single instance for the entire term.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstanceRecurrence

Describes the recurring schedule for a Scheduled Instance.

## Contents

### **frequency**

The frequency (Daily, Weekly, or Monthly).

Type: String

Required: No

### **interval**

The interval quantity. The interval unit depends on the value of `frequency`. For example, every 2 weeks or every 2 months.

Type: Integer

Required: No

### **occurrenceDaySet**

The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday).

Type: Array of integers

Required: No

### **occurrenceRelativeToEnd**

Indicates whether the occurrence is relative to the end of the specified week or month.

Type: Boolean

Required: No

### **occurrenceUnit**

The unit for `occurrenceDaySet` (DayOfWeek or DayOfMonth).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstanceRecurrenceRequest

Describes the recurring schedule for a Scheduled Instance.

## Contents

### Frequency

The frequency (Daily, Weekly, or Monthly).

Type: String

Required: No

### Interval

The interval quantity. The interval unit depends on the value of Frequency. For example, every 2 weeks or every 2 months.

Type: Integer

Required: No

### OccurrenceDays

The days. For a monthly schedule, this is one or more days of the month (1-31). For a weekly schedule, this is one or more days of the week (1-7, where 1 is Sunday). You can't specify this value with a daily schedule. If the occurrence is relative to the end of the month, you can specify only a single day.

Type: Array of integers

Required: No

### OccurrenceRelativeToEnd

Indicates whether the occurrence is relative to the end of the specified week or month. You can't specify this value with a daily schedule.

Type: Boolean

Required: No

### OccurrenceUnit

The unit for OccurrenceDays (DayOfWeek or DayOfMonth). This value is required for a monthly schedule. You can't specify DayOfWeek with a weekly schedule. You can't specify this value with a daily schedule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)

- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesBlockDeviceMapping

Describes a block device mapping for a Scheduled Instance.

## Contents

### **DeviceName**

The device name (for example, `/dev/sdh` or `xvdh`).

Type: String

Required: No

### **Ebs**

Parameters used to set up EBS volumes automatically when the instance is launched.

Type: [ScheduledInstancesEbs \(p. 1979\)](#) object

Required: No

### **NoDevice**

To omit the device from the block device mapping, specify an empty string.

Type: String

Required: No

### **VirtualName**

The virtual device name (`ephemeralN`). Instance store volumes are numbered starting from 0. An instance type with two available instance store volumes can specify mappings for `ephemeral0` and `ephemeral1`. The number of available instance store volumes depends on the instance type. After you connect to the instance, you must mount the volume.

Constraints: For M3 instances, you must specify instance store volumes in the block device mapping for the instance. When you launch an M3 instance, we ignore any instance store volumes specified in the block device mapping for the AMI.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesEbs

Describes an EBS volume for a Scheduled Instance.

## Contents

### DeleteOnTermination

Indicates whether the volume is deleted on instance termination.

Type: Boolean

Required: No

### Encrypted

Indicates whether the volume is encrypted. You can attach encrypted volumes only to instances that support them.

Type: Boolean

Required: No

### Iops

The number of I/O operations per second (IOPS) to provision for an `io1` or `io2` volume, with a maximum ratio of 50 IOPS/GiB for `io1`, and 500 IOPS/GiB for `io2`. Range is 100 to 64,000 IOPS for volumes in most Regions. Maximum IOPS of 64,000 is guaranteed only on [instances built on the Nitro System](#). Other instance families guarantee performance up to 32,000 IOPS. For more information, see [Amazon EBS volume types](#) in the *Amazon EC2 User Guide*.

This parameter is valid only for Provisioned IOPS SSD (`io1` and `io2`) volumes.

Type: Integer

Required: No

### SnapshotId

The ID of the snapshot.

Type: String

Required: No

### VolumeSize

The size of the volume, in GiB.

Default: If you're creating the volume from a snapshot and don't specify a volume size, the default is the snapshot size.

Type: Integer

Required: No

### VolumeType

The volume type. `gp2` for General Purpose SSD, `io1` or `io2` for Provisioned IOPS SSD, Throughput Optimized HDD for `st1`, Cold HDD for `sc1`, or `standard` for Magnetic.

Default: `gp2`

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesIamInstanceProfile

Describes an IAM instance profile for a Scheduled Instance.

## Contents

### Arn

The Amazon Resource Name (ARN).

Type: String

Required: No

### Name

The name.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesIpv6Address

Describes an IPv6 address.

## Contents

### Ipv6Address

The IPv6 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesLaunchSpecification

Describes the launch specification for a Scheduled Instance.

If you are launching the Scheduled Instance in EC2-VPC, you must specify the ID of the subnet. You can specify the subnet using either `SubnetId` or `NetworkInterface`.

## Contents

### **BlockDeviceMappings**

The block device mapping entries.

Type: Array of [ScheduledInstancesBlockDeviceMapping \(p. 1978\)](#) objects

Required: No

### **EbsOptimized**

Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS-optimized instance.

Default: `false`

Type: Boolean

Required: No

### **IamInstanceProfile**

The IAM instance profile.

Type: [ScheduledInstancesIamInstanceProfile \(p. 1981\)](#) object

Required: No

### **ImageId**

The ID of the Amazon Machine Image (AMI).

Type: String

Required: Yes

### **InstanceType**

The instance type.

Type: String

Required: No

### **KernelId**

The ID of the kernel.

Type: String

Required: No

### **KeyName**

The name of the key pair.

Type: String

Required: No

### Monitoring

Enable or disable monitoring for the instances.

Type: [ScheduledInstancesMonitoring \(p. 1986\)](#) object

Required: No

### NetworkInterfaces

The network interfaces.

Type: Array of [ScheduledInstancesNetworkInterface \(p. 1987\)](#) objects

Required: No

### Placement

The placement information.

Type: [ScheduledInstancesPlacement \(p. 1989\)](#) object

Required: No

### RamdiskId

The ID of the RAM disk.

Type: String

Required: No

### SecurityGroupIds

The IDs of the security groups.

Type: Array of strings

Required: No

### SubnetId

The ID of the subnet in which to launch the instances.

Type: String

Required: No

### UserData

The base64-encoded MIME user data.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesMonitoring

Describes whether monitoring is enabled for a Scheduled Instance.

## Contents

### Enabled

Indicates whether monitoring is enabled.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesNetworkInterface

Describes a network interface for a Scheduled Instance.

## Contents

### **AssociatePublicIpAddress**

Indicates whether to assign a public IPv4 address to instances launched in a VPC. The public IPv4 address can only be assigned to a network interface for eth0, and can only be assigned to a new network interface, not an existing one. You cannot specify more than one network interface in the request. If launching into a default subnet, the default value is `true`.

Type: Boolean

Required: No

### **DeleteOnTermination**

Indicates whether to delete the interface when the instance is terminated.

Type: Boolean

Required: No

### **Description**

The description.

Type: String

Required: No

### **DeviceIndex**

The index of the device for the network interface attachment.

Type: Integer

Required: No

### **Groups**

The IDs of the security groups.

Type: Array of strings

Required: No

### **Ipv6Addresses**

The specific IPv6 addresses from the subnet range.

Type: Array of [ScheduledInstancesIpv6Address \(p. 1982\)](#) objects

Required: No

### **Ipv6AddressCount**

The number of IPv6 addresses to assign to the network interface. The IPv6 addresses are automatically selected from the subnet range.

Type: Integer

Required: No

**NetworkInterfaceId**

The ID of the network interface.

Type: String

Required: No

**PrivateIpAddress**

The IPv4 address of the network interface within the subnet.

Type: String

Required: No

**PrivateIpAddressConfigs**

The private IPv4 addresses.

Type: Array of [ScheduledInstancesPrivateIpAddressConfig \(p. 1990\)](#) objects

Required: No

**SecondaryPrivateIpAddressCount**

The number of secondary private IPv4 addresses.

Type: Integer

Required: No

**SubnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesPlacement

Describes the placement for a Scheduled Instance.

## Contents

### **AvailabilityZone**

The Availability Zone.

Type: String

Required: No

### **GroupName**

The name of the placement group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ScheduledInstancesPrivateIpAddressConfig

Describes a private IPv4 address for a Scheduled Instance.

## Contents

### Primary

Indicates whether this is a primary IPv4 address. Otherwise, this is a secondary IPv4 address.

Type: Boolean

Required: No

### PrivateIpAddress

The IPv4 address.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroup

Describes a security group.

## Contents

### groupDescription

A description of the security group.

Type: String

Required: No

### groupId

The ID of the security group.

Type: String

Required: No

### groupName

The name of the security group.

Type: String

Required: No

### ipPermissions

The inbound rules associated with the security group.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

### ipPermissionsEgress

[VPC only] The outbound rules associated with the security group.

Type: Array of [IpPermission \(p. 1712\)](#) objects

Required: No

### ownerId

The AWS account ID of the owner of the security group.

Type: String

Required: No

### tagSet

Any tags assigned to the security group.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### vpcId

[VPC only] The ID of the VPC for the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupIdentifier

Describes a security group.

## Contents

### groupId

The ID of the security group.

Type: String

Required: No

### groupName

The name of the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupReference

Describes a VPC with a security group that references your security group.

## Contents

### groupId

The ID of your security group.

Type: String

Required: No

### referencingVpcId

The ID of the VPC with the referencing security group.

Type: String

Required: No

### vpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupRule

Describes a security group rule.

## Contents

### **cidrlpv4**

The IPv4 CIDR range.

Type: String

Required: No

### **cidrlpv6**

The IPv6 CIDR range.

Type: String

Required: No

### **description**

The security group rule description.

Type: String

Required: No

### **fromPort**

The start of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 type. A value of -1 indicates all ICMP/ICMPv6 types. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

### **groupId**

The ID of the security group.

Type: String

Required: No

### **groupOwnerId**

The ID of the AWS account that owns the security group.

Type: String

Required: No

### **ipProtocol**

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see [Protocol Numbers](#)).

Use `-1` to specify all protocols.

Type: String

Required: No

**isEgress**

Indicates whether the security group rule is an outbound rule.

Type: Boolean

Required: No

**prefixListId**

The ID of the prefix list.

Type: String

Required: No

**referencedGroupInfo**

Describes the security group that is referenced in the rule.

Type: [ReferencedSecurityGroup \(p. 1910\)](#) object

Required: No

**securityGroupId**

The ID of the security group rule.

Type: String

Required: No

**tagSet**

The tags applied to the security group rule.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**toPort**

The end of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 code. A value of -1 indicates all ICMP/ICMPv6 codes. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupRuleDescription

Describes the description of a security group rule.

You can use this when you want to update the security group rule description for either an inbound or outbound rule.

## Contents

### Description

The description of the security group rule.

Type: String

Required: No

### SecurityGroupId

The ID of the security group rule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupRuleRequest

Describes a security group rule.

You must specify exactly one of the following parameters, based on the rule type:

- CidrIpv4
- CidrIpv6
- PrefixListId
- ReferencedGroupId

When you modify a rule, you cannot change the rule type. For example, if the rule uses an IPv4 address range, you must use `CidrIpv4` to specify a new IPv4 address range.

## Contents

### CidrIpv4

The IPv4 CIDR range. To specify a single IPv4 address, use the /32 prefix length.

Type: String

Required: No

### CidrIpv6

The IPv6 CIDR range. To specify a single IPv6 address, use the /128 prefix length.

Type: String

Required: No

### Description

The description of the security group rule.

Type: String

Required: No

### FromPort

The start of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 type. A value of -1 indicates all ICMP/ICMPv6 types. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

### IpProtocol

The IP protocol name (`tcp`, `udp`, `icmp`, `icmpv6`) or number (see [Protocol Numbers](#)).

Use -1 to specify all protocols.

Type: String

Required: No

### PrefixListId

The ID of the prefix list.

Type: String

Required: No

**ReferencedGroupId**

The ID of the security group that is referenced in the security group rule.

Type: String

Required: No

**ToPort**

The end of port range for the TCP and UDP protocols, or an ICMP/ICMPv6 code. A value of `-1` indicates all ICMP/ICMPv6 codes. If you specify all ICMP/ICMPv6 types, you must specify all codes.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SecurityGroupRuleUpdate

Describes an update to a security group rule.

## Contents

### SecurityGroupRule

Information about the security group rule.

Type: [SecurityGroupRuleRequest \(p. 1998\)](#) object

Required: No

### SecurityGroupId

The ID of the security group rule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ServiceConfiguration

Describes a service configuration for a VPC endpoint service.

## Contents

### **acceptanceRequired**

Indicates whether requests from other AWS accounts to create an endpoint to the service must first be accepted.

Type: Boolean

Required: No

### **availabilityZoneSet**

The Availability Zones in which the service is available.

Type: Array of strings

Required: No

### **baseEndpointDnsNameSet**

The DNS names for the service.

Type: Array of strings

Required: No

### **gatewayLoadBalancerArnSet**

The Amazon Resource Names (ARNs) of the Gateway Load Balancers for the service.

Type: Array of strings

Required: No

### **managesVpcEndpoints**

Indicates whether the service manages its VPC endpoints. Management of the service VPC endpoints using the VPC endpoint API is restricted.

Type: Boolean

Required: No

### **networkLoadBalancerArnSet**

The Amazon Resource Names (ARNs) of the Network Load Balancers for the service.

Type: Array of strings

Required: No

### **privateDnsName**

The private DNS name for the service.

Type: String

Required: No

### **privateDnsNameConfiguration**

Information about the endpoint service private DNS name configuration.

Type: [PrivateDnsNameConfiguration \(p. 1895\)](#) object

Required: No

### **serviceId**

The ID of the service.

Type: String

Required: No

### **serviceName**

The name of the service.

Type: String

Required: No

### **serviceState**

The service state.

Type: String

Valid Values: Pending | Available | Deleting | Deleted | Failed

Required: No

### **serviceType**

The type of service.

Type: Array of [ServiceTypeDetail \(p. 2005\)](#) objects

Required: No

### **tagSet**

Any tags assigned to the service.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ServiceDetail

Describes a VPC endpoint service.

## Contents

### **acceptanceRequired**

Indicates whether VPC endpoint connection requests to the service must be accepted by the service owner.

Type: Boolean

Required: No

### **availabilityZoneSet**

The Availability Zones in which the service is available.

Type: Array of strings

Required: No

### **baseEndpointDnsNameSet**

The DNS names for the service.

Type: Array of strings

Required: No

### **managesVpcEndpoints**

Indicates whether the service manages its VPC endpoints. Management of the service VPC endpoints using the VPC endpoint API is restricted.

Type: Boolean

Required: No

### **owner**

The AWS account ID of the service owner.

Type: String

Required: No

### **privateDnsName**

The private DNS name for the service.

Type: String

Required: No

### **privateDnsNameSet**

The private DNS names assigned to the VPC endpoint service.

Type: Array of [PrivateDnsDetails \(p. 1894\)](#) objects

Required: No

**privateDnsNameVerificationState**

The verification state of the VPC endpoint service.

Consumers of the endpoint service cannot use the private name when the state is not verified.

Type: String

Valid Values: pendingVerification | verified | failed

Required: No

**serviceId**

The ID of the endpoint service.

Type: String

Required: No

**serviceName**

The Amazon Resource Name (ARN) of the service.

Type: String

Required: No

**serviceType**

The type of service.

Type: Array of [ServiceTypeDetail \(p. 2005\)](#) objects

Required: No

**tagSet**

Any tags assigned to the service.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcEndpointPolicySupported**

Indicates whether the service supports endpoint policies.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ServiceTypeDetail

Describes the type of service for a VPC endpoint.

## Contents

### **serviceType**

The type of service.

Type: String

Valid Values: Interface | Gateway | GatewayLoadBalancer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SlotDateTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule. The time period must span less than one day.

## Contents

### EarliestTime

The earliest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: Yes

### LatestTime

The latest date and time, in UTC, for the Scheduled Instance to start. This value must be later than or equal to the earliest date and at most three months in the future.

Type: Timestamp

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SlotStartTimeRangeRequest

Describes the time period for a Scheduled Instance to start its first schedule.

## Contents

### EarliestTime

The earliest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: No

### LatestTime

The latest date and time, in UTC, for the Scheduled Instance to start.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Snapshot

Describes a snapshot.

## Contents

### **dataEncryptionKeyId**

The data encryption key identifier for the snapshot. This value is a unique identifier that corresponds to the data encryption key that was used to encrypt the original volume or snapshot copy. Because data encryption keys are inherited by volumes created from snapshots, and vice versa, if snapshots share the same data encryption key identifier, then they belong to the same volume/snapshot lineage. This parameter is only returned by [DescribeSnapshots \(p. 765\)](#).

Type: String

Required: No

### **description**

The description for the snapshot.

Type: String

Required: No

### **encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

### **kmsKeyId**

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) KMS key that was used to protect the volume encryption key for the parent volume.

Type: String

Required: No

### **outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

### **ownerAlias**

The AWS owner alias, from an Amazon-maintained list (`amazon`). This is not the user-configured AWS account alias set using the IAM console.

Type: String

Required: No

### **ownerId**

The ID of the AWS account that owns the EBS snapshot.

Type: String

Required: No

**progress**

The progress of the snapshot, as a percentage.

Type: String

Required: No

**snapshotId**

The ID of the snapshot. Each snapshot receives a unique identifier when it is created.

Type: String

Required: No

**startTime**

The time stamp when the snapshot was initiated.

Type: Timestamp

Required: No

**status**

The snapshot state.

Type: String

Valid Values: pending | completed | error

Required: No

**statusMessage**

Encrypted Amazon EBS snapshots are copied asynchronously. If a snapshot copy operation fails (for example, if the proper AWS Key Management Service (AWS KMS) permissions are not obtained) this field displays error state details to help you diagnose why the error occurred. This parameter is only returned by [DescribeSnapshots \(p. 765\)](#).

Type: String

Required: No

**tagSet**

Any tags assigned to the snapshot.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**volumeId**

The ID of the volume that was used to create the snapshot. Snapshots created by the [CopySnapshot \(p. 148\)](#) action have an arbitrary volume ID that should not be used for any purpose.

Type: String

Required: No

**volumeSize**

The size of the volume, in GiB.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SnapshotDetail

Describes the snapshot created from the imported disk.

## Contents

### **description**

A description for the snapshot.

Type: String

Required: No

### **deviceName**

The block device mapping for the snapshot.

Type: String

Required: No

### **diskImageSize**

The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

### **format**

The format of the disk image from which the snapshot is created.

Type: String

Required: No

### **progress**

The percentage of progress for the task.

Type: String

Required: No

### **snapshotId**

The snapshot ID of the disk being imported.

Type: String

Required: No

### **status**

A brief status of the snapshot creation.

Type: String

Required: No

### **statusMessage**

A detailed status message for the snapshot creation.

Type: String

Required: No

**url**

The URL used to access the disk image.

Type: String

Required: No

**userBucket**

The Amazon S3 bucket for the disk image.

Type: [UserBucketDetails \(p. 2156\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SnapshotDiskContainer

The disk container object for the import snapshot request.

## Contents

### Description

The description of the disk image being imported.

Type: String

Required: No

### Format

The format of the disk image being imported.

Valid values: VHD | VMDK | RAW

Type: String

Required: No

### Url

The URL to the Amazon S3-based disk image being imported. It can either be a https URL (<https://..>) or an Amazon S3 URL (<s3://..>).

Type: String

Required: No

### UserBucket

The Amazon S3 bucket for the disk image.

Type: [UserBucket \(p. 2155\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SnapshotInfo

Information about a snapshot.

## Contents

### **description**

Description specified by the CreateSnapshotRequest that has been applied to all snapshots.

Type: String

Required: No

### **encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

### **outpostArn**

The ARN of the Outpost on which the snapshot is stored. For more information, see [Amazon EBS local snapshots on Outposts](#) in the *Amazon Elastic Compute Cloud User Guide*.

Type: String

Required: No

### **ownerId**

Account id used when creating this snapshot.

Type: String

Required: No

### **progress**

Progress this snapshot has made towards completing.

Type: String

Required: No

### **snapshotId**

Snapshot id that can be used to describe this snapshot.

Type: String

Required: No

### **startTime**

Time this snapshot was started. This is the same for all snapshots initiated by the same request.

Type: Timestamp

Required: No

**state**

Current state of the snapshot.

Type: String

Valid Values: pending | completed | error

Required: No

**tagSet**

Tags associated with this snapshot.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**volumId**

Source volume from which this snapshot was created.

Type: String

Required: No

**volumeSize**

Size of the volume from which this snapshot was created.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SnapshotTaskDetail

Details about the import snapshot task.

## Contents

### **description**

The description of the snapshot.

Type: String

Required: No

### **diskImageSize**

The size of the disk in the snapshot, in GiB.

Type: Double

Required: No

### **encrypted**

Indicates whether the snapshot is encrypted.

Type: Boolean

Required: No

### **format**

The format of the disk image from which the snapshot is created.

Type: String

Required: No

### **kmsKeyId**

The identifier for the KMS key that was used to create the encrypted snapshot.

Type: String

Required: No

### **progress**

The percentage of completion for the import snapshot task.

Type: String

Required: No

### **snapshotId**

The snapshot ID of the disk being imported.

Type: String

Required: No

### **status**

A brief status for the import snapshot task.

Type: String

Required: No

**statusMessage**

A detailed status message for the import snapshot task.

Type: String

Required: No

**url**

The URL of the disk image from which the snapshot is created.

Type: String

Required: No

**userBucket**

The Amazon S3 bucket for the disk image.

Type: [UserBucketDetails \(p. 2156\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotCapacityRebalance

The Spot Instance replacement strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted. For more information, see [Capacity rebalancing](#) in the *Amazon EC2 User Guide for Linux Instances*.

## Contents

### **ReplacementStrategy** (request), **replacementStrategy** (response)

The replacement strategy to use. Only available for fleets of type `maintain`.

`launch` - Spot Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet. Spot Fleet does not terminate the instances that receive a rebalance notification. You can terminate the old instances, or you can leave them running. You are charged for all instances while they are running.

`launch-before-terminate` - Spot Fleet launches a new replacement Spot Instance when a rebalance notification is emitted for an existing Spot Instance in the fleet, and then, after a delay that you specify (in `TerminationDelay`), terminates the instances that received a rebalance notification.

Type: String

Valid Values: `launch` | `launch-before-terminate`

Required: No

### **TerminationDelay** (request), **terminationDelay** (response)

The amount of time (in seconds) that Amazon EC2 waits before terminating the old Spot Instance after launching a new replacement Spot Instance.

Valid only when `ReplacementStrategy` is set to `launch-before-terminate`.

Valid values: Minimum value of 120 seconds. Maximum value of 7200 seconds.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotDatafeedSubscription

Describes the data feed for a Spot Instance.

## Contents

### **bucket**

The name of the Amazon S3 bucket where the Spot Instance data feed is located.

Type: String

Required: No

### **fault**

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFault \(p. 2037\)](#) object

Required: No

### **ownerId**

The AWS account ID of the account.

Type: String

Required: No

### **prefix**

The prefix for the data feed files.

Type: String

Required: No

### **state**

The state of the Spot Instance data feed subscription.

Type: String

Valid Values: Active | Inactive

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotFleetLaunchSpecification

Describes the launch specification for one or more Spot Instances. If you include On-Demand capacity in your fleet request or want to specify an EFA network device, you can't use `SpotFleetLaunchSpecification`; you must use [LaunchTemplateConfig](#).

## Contents

### **AddressingType** (request), **addressingType** (response)

Deprecated.

Type: String

Required: No

### **BlockDeviceMappings** (request), **blockDeviceMapping** (response)

One or more block devices that are mapped to the Spot Instances. You can't specify both a snapshot ID and an encryption value. This is because only blank volumes can be encrypted on creation. If a snapshot is the basis for a volume, it is not blank and its encryption status is used for the volume encryption status.

Type: Array of [BlockDeviceMapping](#) (p. 1392) objects

Required: No

### **EbsOptimized** (request), **ebsOptimized** (response)

Indicates whether the instances are optimized for EBS I/O. This optimization provides dedicated throughput to Amazon EBS and an optimized configuration stack to provide optimal EBS I/O performance. This optimization isn't available with all instance types. Additional usage charges apply when using an EBS Optimized instance.

Default: false

Type: Boolean

Required: No

### **SecurityGroups** (request), **groupSet** (response)

One or more security groups. When requesting instances in a VPC, you must specify the IDs of the security groups. When requesting instances in EC2-Classic, you can specify the names or the IDs of the security groups.

Type: Array of [GroupIdentifier](#) (p. 1584) objects

Required: No

### **IamInstanceProfile** (request), **iamInstanceProfile** (response)

The IAM instance profile.

Type: [IamInstanceProfileSpecification](#) (p. 1601) object

Required: No

### **ImageId** (request), **imageId** (response)

The ID of the AMI.

Type: String

Required: No

**InstanceRequirements** (request), **instanceRequirements** (response)

The attributes for the instance types. When you specify instance attributes, Amazon EC2 will identify instance types with those attributes.

**Note**

If you specify `InstanceRequirements`, you can't specify `InstanceTypes`.

Type: [InstanceRequirements \(p. 1675\)](#) object

Required: No

**InstanceType** (request), **instanceType** (response)

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge | c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal | c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |

c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**KernelId** (request), **kernelId** (response)

The ID of the kernel.

Type: String

Required: No

**KeyName** (request), **keyName** (response)

The name of the key pair.

Type: String

Required: No

**Monitoring** (request), **monitoring** (response)

Enable or disable monitoring for the instances.

Type: [SpotFleetMonitoring](#) (p. 2025) object

Required: No

**NetworkInterfaces** (request), **networkInterfaceSet** (response)

One or more network interfaces. If you specify a network interface, you must specify subnet IDs and security group IDs using the network interface.

**Note**

`SpotFleetLaunchSpecification` currently does not support Elastic Fabric Adapter (EFA). To specify an EFA, you must use [LaunchTemplateConfig](#).

Type: Array of [InstanceNetworkInterfaceSpecification](#) (p. 1670) objects

Required: No

**Placement** (request), **placement** (response)

The placement information.

Type: [SpotPlacement](#) (p. 2046) object

Required: No

**RamdiskId** (request), **ramdiskId** (response)

The ID of the RAM disk. Some kernels require additional drivers at launch. Check the kernel requirements for information about whether you need to specify a RAM disk. To find kernel requirements, refer to the AWS Resource Center and search for the kernel ID.

Type: String

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance. If this value is not specified, the default is the Spot price specified for the fleet. To determine the Spot price per unit hour, divide the Spot price by the value of `WeightedCapacity`.

Type: String

Required: No

**SubnetId** (request), **subnetId** (response)

The IDs of the subnets in which to launch the instances. To specify multiple subnets, separate them using commas; for example, "subnet-1234abcdeexample1, subnet-0987cdef6example2".

Type: String

Required: No

**TagSpecifications** (request), **tagSpecificationSet** (response)

The tags to apply during creation.

Type: Array of [SpotFleetTagSpecification](#) (p. 2033) objects

Required: No

**UserData (request), userData (response)**

The Base64-encoded user data that instances use when starting up.

Type: String

Required: No

**WeightedCapacity (request), weightedCapacity (response)**

The number of units provided by the specified instance type. These are the same units that you chose to set the target capacity in terms of instances, or a performance characteristic such as vCPUs, memory, or I/O.

If the target capacity divided by this value is not a whole number, Amazon EC2 rounds the number of instances to the next whole number. If this value is not specified, the default is 1.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotFleetMonitoring

Describes whether monitoring is enabled.

## Contents

**Enabled** (request), **enabled** (response)

Enables monitoring for the instance.

Default: `false`

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotFleetRequestConfig

Describes a Spot Fleet request.

## Contents

### activityStatus

The progress of the Spot Fleet request. If there is an error, the status is `error`. After all requests are placed, the status is `pending_fulfillment`. If the size of the fleet is equal to or greater than its target capacity, the status is `fulfilled`. If the size of the fleet is decreased, the status is `pending_termination` while Spot Instances are terminating.

Type: String

Valid Values: `error` | `pending_fulfillment` | `pending_termination` | `fulfilled`

Required: No

### createTime

The creation date and time of the request.

Type: Timestamp

Required: No

### spotFleetRequestConfig

The configuration of the Spot Fleet request.

Type: [SpotFleetRequestConfigData \(p. 2028\)](#) object

Required: No

### spotFleetRequestId

The ID of the Spot Fleet request.

Type: String

Required: No

### spotFleetRequestState

The state of the Spot Fleet request.

Type: String

Valid Values: `submitted` | `active` | `cancelled` | `failed` | `cancelled_running` | `cancelled_terminating` | `modifying`

Required: No

### tagSet

The tags for a Spot Fleet resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotFleetRequestConfigData

Describes the configuration of a Spot Fleet request.

## Contents

### **AllocationStrategy** (request), **allocationStrategy** (response)

Indicates how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the Spot Fleet request.

If the allocation strategy is `lowestPrice`, Spot Fleet launches instances from the Spot Instance pools with the lowest price. This is the default allocation strategy.

If the allocation strategy is `diversified`, Spot Fleet launches instances from all the Spot Instance pools that you specify.

If the allocation strategy is `capacityOptimized` (recommended), Spot Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching. To give certain instance types a higher chance of launching first, use `capacityOptimizedPrioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacityOptimizedPrioritized` is supported only if your Spot Fleet uses a launch template. Note that if the `OnDemandAllocationStrategy` is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

Type: String

Valid Values: `lowestPrice` | `diversified` | `capacityOptimized` | `capacityOptimizedPrioritized`

Required: No

### **ClientToken** (request), **clientToken** (response)

A unique, case-sensitive identifier that you provide to ensure the idempotency of your listings. This helps to avoid duplicate listings. For more information, see [Ensuring Idempotency](#).

Type: String

Required: No

### **Context** (request), **context** (response)

Reserved.

Type: String

Required: No

### **ExcessCapacityTerminationPolicy** (request), **excessCapacityTerminationPolicy** (response)

Indicates whether running Spot Instances should be terminated if you decrease the target capacity of the Spot Fleet request below the current size of the Spot Fleet.

Type: String

Valid Values: `noTermination` | `default`

Required: No

**FulfilledCapacity** (request), **fulfilledCapacity** (response)

The number of units fulfilled by this request compared to the set target capacity. You cannot set this value.

Type: Double

Required: No

**IamFleetRole** (request), **iamFleetRole** (response)

The Amazon Resource Name (ARN) of an AWS Identity and Access Management (IAM) role that grants the Spot Fleet the permission to request, launch, terminate, and tag instances on your behalf. For more information, see [Spot Fleet prerequisites](#) in the *Amazon EC2 User Guide for Linux Instances*. Spot Fleet can terminate Spot Instances on your behalf when you cancel its Spot Fleet request using [CancelSpotFleetRequests](#) or when the Spot Fleet request expires, if you set `TerminateInstancesWithExpiration`.

Type: String

Required: Yes

**InstanceInterruptionBehavior** (request), **instanceInterruptionBehavior** (response)

The behavior when a Spot Instance is interrupted. The default is `terminate`.

Type: String

Valid Values: `hibernate` | `stop` | `terminate`

Required: No

**InstancePoolsToUseCount** (request), **instancePoolsToUseCount** (response)

The number of Spot pools across which to allocate your target Spot capacity. Valid only when **Spot AllocationStrategy** is set to `lowest-price`. Spot Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that Spot Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, Spot Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**LaunchSpecifications** (request), **launchSpecifications** (response)

The launch specifications for the Spot Fleet request. If you specify `LaunchSpecifications`, you can't specify `LaunchTemplateConfigs`. If you include On-Demand capacity in your request, you must use `LaunchTemplateConfigs`.

Type: Array of [SpotFleetLaunchSpecification](#) (p. 2020) objects

Required: No

**LaunchTemplateConfigs** (request), **launchTemplateConfigs** (response)

The launch template and overrides. If you specify `LaunchTemplateConfigs`, you can't specify `LaunchSpecifications`. If you include On-Demand capacity in your request, you must use `LaunchTemplateConfigs`.

Type: Array of [LaunchTemplateConfig \(p. 1741\)](#) objects

Required: No

**LoadBalancersConfig (request), loadBalancersConfig (response)**

One or more Classic Load Balancers and target groups to attach to the Spot Fleet request. Spot Fleet registers the running Spot Instances with the specified Classic Load Balancers and target groups.

With Network Load Balancers, Spot Fleet cannot register instances that have the following instance types: C1, CC1, CC2, CG1, CG2, CR1, CS1, G1, G2, HI1, HS1, M1, M2, M3, and T1.

Type: [LoadBalancersConfig \(p. 1790\)](#) object

Required: No

**OnDemandAllocationStrategy (request), onDemandAllocationStrategy (response)**

The order of the launch template overrides to use in fulfilling On-Demand capacity. If you specify `lowestPrice`, Spot Fleet uses price to determine the order, launching the lowest price first. If you specify `prioritized`, Spot Fleet uses the priority that you assign to each Spot Fleet launch template override, launching the highest priority first. If you do not specify a value, Spot Fleet defaults to `lowestPrice`.

Type: String

Valid Values: `lowestPrice` | `prioritized`

Required: No

**OnDemandFulfilledCapacity (request), onDemandFulfilledCapacity (response)**

The number of On-Demand units fulfilled by this request compared to the set target On-Demand capacity.

Type: Double

Required: No

**OnDemandMaxTotalPrice (request), onDemandMaxTotalPrice (response)**

The maximum amount per hour for On-Demand Instances that you're willing to pay. You can use the `onDemandMaxTotalPrice` parameter, the `spotMaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, Spot Fleet will launch instances until it reaches the maximum amount you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity.

Type: String

Required: No

**OnDemandTargetCapacity (request), onDemandTargetCapacity (response)**

The number of On-Demand units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: Integer

Required: No

**ReplaceUnhealthyInstances (request), replaceUnhealthyInstances (response)**

Indicates whether Spot Fleet should replace unhealthy instances.

Type: Boolean

Required: No

**SpotMaintenanceStrategies** (request), **spotMaintenanceStrategies** (response)

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

Type: [SpotMaintenanceStrategies \(p. 2039\)](#) object

Required: No

**SpotMaxTotalPrice** (request), **spotMaxTotalPrice** (response)

The maximum amount per hour for Spot Instances that you're willing to pay. You can use the `spotdMaxTotalPrice` parameter, the `onDemandMaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, Spot Fleet will launch instances until it reaches the maximum amount you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity.

Type: String

Required: No

**SpotPrice** (request), **spotPrice** (response)

The maximum price per unit hour that you are willing to pay for a Spot Instance. The default is the On-Demand price.

Type: String

Required: No

**TagSpecifications** (request), **TagSpecification** (response)

The key-value pair for tagging the Spot Fleet request on creation. The value for `ResourceType` must be `spot-fleet-request`, otherwise the Spot Fleet request fails. To tag instances at launch, specify the tags in the [launch template](#) (valid only if you use `LaunchTemplateConfigs`) or in the [SpotFleetTagSpecification](#) (valid only if you use `LaunchSpecifications`). For information about tagging after launch, see [Tagging Your Resources](#).

Type: Array of [TagSpecification \(p. 2073\)](#) objects

Required: No

**TargetCapacity** (request), **targetCapacity** (response)

The number of units to request for the Spot Fleet. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

Type: Integer

Required: Yes

**TargetCapacityUnitType** (request), **targetCapacityUnitType** (response)

The unit for the target capacity.

Default: `units` (translates to number of instances)

Type: String

Valid Values: `vcpu` | `memory-mib` | `units`

Required: No

**TerminateInstancesWithExpiration** (request), **terminateInstancesWithExpiration** (response)

Indicates whether running Spot Instances are terminated when the Spot Fleet request expires.

Type: Boolean

Required: No

**Type** (request), **type** (response)

The type of request. Indicates whether the Spot Fleet only requests the target capacity or also attempts to maintain it. When this value is `request`, the Spot Fleet only places the required requests. It does not attempt to replenish Spot Instances if capacity is diminished, nor does it submit requests in alternative Spot pools if capacity is not available. When this value is `maintain`, the Spot Fleet maintains the target capacity. The Spot Fleet places the required requests to meet capacity and automatically replenishes any interrupted instances. Default: `maintain`. `instant` is listed but is not used by Spot Fleet.

Type: String

Valid Values: `request` | `maintain` | `instant`

Required: No

**ValidFrom** (request), **validFrom** (response)

The start date and time of the request, in UTC format (YYYY-MM-DDTHH:MM:SSZ). By default, Amazon EC2 starts fulfilling the request immediately.

Type: Timestamp

Required: No

**ValidUntil** (request), **validUntil** (response)

The end date and time of the request, in UTC format (YYYY-MM-DDTHH:MM:SSZ). After the end date and time, no new Spot Instance requests are placed or able to fulfill the request. If no value is specified, the Spot Fleet request remains until you cancel it.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotFleetTagSpecification

The tags for a Spot Fleet resource.

## Contents

### **ResourceType** (request), **resourceType** (response)

The type of resource. Currently, the only resource type that is supported is `instance`. To tag the Spot Fleet request on creation, use the `TagSpecifications` parameter in [SpotFleetRequestConfigData](#).

Type: String

Valid Values: `capacity-reservation` | `client-vpn-endpoint` | `customer-gateway` | `carrier-gateway` | `dedicated-host` | `dhcp-options` | `egress-only-internet-gateway` | `elastic-ip` | `elastic-gpu` | `export-image-task` | `export-instance-task` | `fleet` | `fpga-image` | `host-reservation` | `image` | `import-image-task` | `import-snapshot-task` | `instance` | `instance-event-window` | `internet-gateway` | `ipv4pool-ec2` | `ipv6pool-ec2` | `key-pair` | `launch-template` | `local-gateway` | `local-gateway-route-table` | `local-gateway-virtual-interface` | `local-gateway-virtual-interface-group` | `local-gateway-route-table-vpc-association` | `local-gateway-route-table-virtual-interface-group-association` | `natgateway` | `network-acl` | `network-interface` | `network-insights-analysis` | `network-insights-path` | `placement-group` | `prefix-list` | `replace-root-volume-task` | `reserved-instances` | `route-table` | `security-group` | `security-group-rule` | `snapshot` | `spot-fleet-request` | `spot-instances-request` | `subnet` | `traffic-mirror-filter` | `traffic-mirror-session` | `traffic-mirror-target` | `transit-gateway` | `transit-gateway-attachment` | `transit-gateway-connect-peer` | `transit-gateway-multicast-domain` | `transit-gateway-route-table` | `volume` | `vpc` | `vpc-endpoint` | `vpc-endpoint-service` | `vpc-peering-connection` | `vpn-connection` | `vpn-gateway` | `vpc-flow-log`

Required: No

### **Tags** (request), **tag** (response)

The tags.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotInstanceRequest

Describes a Spot Instance request.

## Contents

### **actualBlockHourlyPrice**

Deprecated.

Type: String

Required: No

### **availabilityZoneGroup**

The Availability Zone group. If you specify the same Availability Zone group for all Spot Instance requests, all Spot Instances are launched in the same Availability Zone.

Type: String

Required: No

### **blockDurationMinutes**

Deprecated.

Type: Integer

Required: No

### **createTime**

The date and time when the Spot Instance request was created, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: No

### **fault**

The fault codes for the Spot Instance request, if any.

Type: [SpotInstanceStateFault \(p. 2037\)](#) object

Required: No

### **instanceId**

The instance ID, if an instance has been launched to fulfill the Spot Instance request.

Type: String

Required: No

### **instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Type: String

Valid Values: hibernate | stop | terminate

Required: No

**launchedAvailabilityZone**

The Availability Zone in which the request is launched.

Type: String

Required: No

**launchGroup**

The instance launch group. Launch groups are Spot Instances that launch together and terminate together.

Type: String

Required: No

**launchSpecification**

Additional information for launching instances.

Type: [LaunchSpecification \(p. 1730\)](#) object

Required: No

**productDescription**

The product description associated with the Spot Instance.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

**spotInstanceRequestId**

The ID of the Spot Instance request.

Type: String

Required: No

**spotPrice**

The maximum price per hour that you are willing to pay for a Spot Instance.

Type: String

Required: No

**state**

The state of the Spot Instance request. Spot status information helps track your Spot Instance requests. For more information, see [Spot status](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Valid Values: open | active | closed | cancelled | failed

Required: No

**status**

The status code and status message describing the Spot Instance request.

Type: [SpotInstanceState \(p. 2038\)](#) object

Required: No

**tagSet**

Any tags assigned to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**type**

The Spot Instance request type.

Type: String

Valid Values: `one-time` | `persistent`

Required: No

**validFrom**

The start date of the request, in UTC format (for example, `YYYY-MM-DDTHH:MM:SSZ`). The request becomes active at this date and time.

Type: Timestamp

Required: No

**validUntil**

The end date of the request, in UTC format (`YYYY-MM-DDTHH:MM:SSZ`).

- For a persistent request, the request remains active until the `validUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, the request remains active until all instances launch, the request is canceled, or the `validUntil` date and time is reached. By default, the request is valid for 7 days from the date the request was created.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotInstanceStateFault

Describes a Spot Instance state change.

## Contents

### code

The reason code for the Spot Instance state change.

Type: String

Required: No

### message

The message for the Spot Instance state change.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotInstanceState

Describes the status of a Spot Instance request.

## Contents

### code

The status code. For a list of status codes, see [Spot status codes](#) in the *Amazon EC2 User Guide for Linux Instances*.

Type: String

Required: No

### message

The description for the status code.

Type: String

Required: No

### updateTime

The date and time of the most recent status update, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotMaintenanceStrategies

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

## Contents

### **CapacityRebalance** (request), **capacityRebalance** (response)

The strategy to use when Amazon EC2 emits a signal that your Spot Instance is at an elevated risk of being interrupted.

Type: [SpotCapacityRebalance \(p. 2018\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotMarketOptions

The options for Spot Instances.

## Contents

### **BlockDurationMinutes**

Deprecated.

Type: Integer

Required: No

### **InstanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted. The default is `terminate`.

Type: String

Valid Values: `hibernate` | `stop` | `terminate`

Required: No

### **MaxPrice**

The maximum hourly price you're willing to pay for the Spot Instances. The default is the On-Demand price.

Type: String

Required: No

### **SpotInstanceType**

The Spot Instance request type. For [RunInstances](#), persistent Spot Instance requests are only supported when the instance interruption behavior is either `hibernate` or `stop`.

Type: String

Valid Values: `one-time` | `persistent`

Required: No

### **ValidUntil**

The end date of the request, in UTC format (`YYYY-MM-DDTHH:MM:SSZ`). Supported only for persistent requests.

- For a persistent request, the request remains active until the `ValidUntil` date and time is reached. Otherwise, the request remains active until you cancel it.
- For a one-time request, `ValidUntil` is not supported. The request remains active until all instances launch or you cancel the request.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotOptions

Describes the configuration of Spot Instances in an EC2 Fleet.

## Contents

### **allocationStrategy**

The strategy that determines how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the EC2 Fleet.

`lowest-price` - EC2 Fleet launches instances from the Spot Instance pools with the lowest price.

`diversified` - EC2 Fleet launches instances from all of the Spot Instance pools that you specify.

`capacity-optimized (recommended)` - EC2 Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching. To give certain instance types a higher chance of launching first, use `capacity-optimized-prioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacity-optimized-prioritized` is supported only if your fleet uses a launch template. Note that if the On-Demand AllocationStrategy is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price` | `diversified` | `capacity-optimized` | `capacity-optimized-prioritized`

Required: No

### **instanceInterruptionBehavior**

The behavior when a Spot Instance is interrupted.

Default: `terminate`

Type: String

Valid Values: `hibernate` | `stop` | `terminate`

Required: No

### **instancePoolsToUseCount**

The number of Spot pools across which to allocate your target Spot capacity. Supported only when `AllocationStrategy` is set to `lowest-price`. EC2 Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that EC2 Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, EC2 Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**maintenanceStrategies**

The strategies for managing your workloads on your Spot Instances that will be interrupted.  
Currently only the capacity rebalance strategy is available.

Type: [FleetSpotMaintenanceStrategies \(p. 1568\)](#) object

Required: No

**maxTotalPrice**

The maximum amount per hour for Spot Instances that you're willing to pay.

Type: String

Required: No

**minTargetCapacity**

The minimum target capacity for Spot Instances in the fleet. If the minimum target capacity is not reached, the fleet launches no instances.

Supported only for fleets of type instant.

At least one of the following must be specified: SingleAvailabilityZone |  
SingleInstanceType

Type: Integer

Required: No

**singleAvailabilityZone**

Indicates that the fleet launches all Spot Instances into a single Availability Zone.

Supported only for fleets of type instant.

Type: Boolean

Required: No

**singleInstanceType**

Indicates that the fleet uses a single instance type to launch all Spot Instances in the fleet.

Supported only for fleets of type instant.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotOptionsRequest

Describes the configuration of Spot Instances in an EC2 Fleet request.

## Contents

### AllocationStrategy

The strategy that determines how to allocate the target Spot Instance capacity across the Spot Instance pools specified by the EC2 Fleet.

`lowest-price` - EC2 Fleet launches instances from the Spot Instance pools with the lowest price.

`diversified` - EC2 Fleet launches instances from all of the Spot Instance pools that you specify.

`capacity-optimized` (recommended) - EC2 Fleet launches instances from Spot Instance pools with optimal capacity for the number of instances that are launching. To give certain instance types a higher chance of launching first, use `capacity-optimized-prioritized`. Set a priority for each instance type by using the `Priority` parameter for `LaunchTemplateOverrides`. You can assign the same priority to different `LaunchTemplateOverrides`. EC2 implements the priorities on a best-effort basis, but optimizes for capacity first. `capacity-optimized-prioritized` is supported only if your fleet uses a launch template. Note that if the On-Demand `AllocationStrategy` is set to `prioritized`, the same priority is applied when fulfilling On-Demand capacity.

Default: `lowest-price`

Type: String

Valid Values: `lowest-price` | `diversified` | `capacity-optimized` | `capacity-optimized-prioritized`

Required: No

### InstanceInterruptionBehavior

The behavior when a Spot Instance is interrupted.

Default: `terminate`

Type: String

Valid Values: `hibernate` | `stop` | `terminate`

Required: No

### InstancePoolsToUseCount

The number of Spot pools across which to allocate your target Spot capacity. Supported only when `SpotAllocationStrategy` is set to `lowest-price`. EC2 Fleet selects the cheapest Spot pools and evenly allocates your target Spot capacity across the number of Spot pools that you specify.

Note that EC2 Fleet attempts to draw Spot Instances from the number of pools that you specify on a best effort basis. If a pool runs out of Spot capacity before fulfilling your target capacity, EC2 Fleet will continue to fulfill your request by drawing from the next cheapest pool. To ensure that your target capacity is met, you might receive Spot Instances from more than the number of pools that you specified. Similarly, if most of the pools have no Spot capacity, you might receive your full target capacity from fewer than the number of pools that you specified.

Type: Integer

Required: No

**MaintenanceStrategies**

The strategies for managing your Spot Instances that are at an elevated risk of being interrupted.

Type: [FleetSpotMaintenanceStrategiesRequest \(p. 1569\)](#) object

Required: No

**MaxTotalPrice**

The maximum amount per hour for Spot Instances that you're willing to pay.

Type: String

Required: No

**MinTargetCapacity**

The minimum target capacity for Spot Instances in the fleet. If the minimum target capacity is not reached, the fleet launches no instances.

Supported only for fleets of type instant.

At least one of the following must be specified: SingleAvailabilityZone | SingleInstanceType

Type: Integer

Required: No

**SingleAvailabilityZone**

Indicates that the fleet launches all Spot Instances into a single Availability Zone.

Supported only for fleets of type instant.

Type: Boolean

Required: No

**SingleInstanceType**

Indicates that the fleet uses a single instance type to launch all Spot Instances in the fleet.

Supported only for fleets of type instant.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotPlacement

Describes Spot Instance placement.

## Contents

### **AvailabilityZone** (request), **availabilityZone** (response)

The Availability Zone.

[Spot Fleet only] To specify multiple Availability Zones, separate them using commas; for example, "us-west-2a, us-west-2b".

Type: String

Required: No

### **GroupName** (request), **groupName** (response)

The name of the placement group.

Type: String

Required: No

### **Tenancy** (request), **tenancy** (response)

The tenancy of the instance (if the instance is running in a VPC). An instance with a tenancy of dedicated runs on single-tenant hardware. The host tenancy is not supported for Spot Instances.

Type: String

Valid Values: default | dedicated | host

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotPlacementScore

The Spot placement score for this Region or Availability Zone. The score is calculated based on the assumption that the capacity-optimized allocation strategy is used and that all of the Availability Zones in the Region can be used.

## Contents

### **availabilityZoneId**

The Availability Zone.

Type: String

Required: No

### **region**

The Region.

Type: String

Required: No

### **score**

The placement score, on a scale from 1 to 10. A score of 10 indicates that your Spot request is highly likely to succeed in this Region or Availability Zone. A score of 1 indicates that your Spot request is not likely to succeed.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SpotPrice

Describes the maximum price per hour that you are willing to pay for a Spot Instance.

## Contents

### availabilityZone

The Availability Zone.

Type: String

Required: No

### instanceType

The instance type.

Type: String

Valid Values: t1.micro | t2.nano | t2.micro | t2.small | t2.medium | t2.large | t2.xlarge | t2.2xlarge | t3.nano | t3.micro | t3.small | t3.medium | t3.large | t3.xlarge | t3.2xlarge | t3a.nano | t3a.micro | t3a.small | t3a.medium | t3a.large | t3a.xlarge | t3a.2xlarge | t4g.nano | t4g.micro | t4g.small | t4g.medium | t4g.large | t4g.xlarge | t4g.2xlarge | m1.small | m1.medium | m1.large | m1.xlarge | m3.medium | m3.large | m3.xlarge | m3.2xlarge | m4.large | m4.xlarge | m4.2xlarge | m4.4xlarge | m4.10xlarge | m4.16xlarge | m2.xlarge | m2.2xlarge | m2.4xlarge | cr1.8xlarge | r3.large | r3.xlarge | r3.2xlarge | r3.4xlarge | r3.8xlarge | r4.large | r4.xlarge | r4.2xlarge | r4.4xlarge | r4.8xlarge | r4.16xlarge | r5.large | r5.xlarge | r5.2xlarge | r5.4xlarge | r5.8xlarge | r5.12xlarge | r5.16xlarge | r5.24xlarge | r5.metal | r5a.large | r5a.xlarge | r5a.2xlarge | r5a.4xlarge | r5a.8xlarge | r5a.12xlarge | r5a.16xlarge | r5a.24xlarge | r5b.large | r5b.xlarge | r5b.2xlarge | r5b.4xlarge | r5b.8xlarge | r5b.12xlarge | r5b.16xlarge | r5b.24xlarge | r5b.metal | r5d.large | r5d.xlarge | r5d.2xlarge | r5d.4xlarge | r5d.8xlarge | r5d.12xlarge | r5d.16xlarge | r5d.24xlarge | r5d.metal | r5ad.large | r5ad.xlarge | r5ad.2xlarge | r5ad.4xlarge | r5ad.8xlarge | r5ad.12xlarge | r5ad.16xlarge | r5ad.24xlarge | r6g.metal | r6g.medium | r6g.large | r6g.xlarge | r6g.2xlarge | r6g.4xlarge | r6g.8xlarge | r6g.12xlarge | r6g.16xlarge | r6gd.metal | r6gd.medium | r6gd.large | r6gd.xlarge | r6gd.2xlarge | r6gd.4xlarge | r6gd.8xlarge | r6gd.12xlarge | r6gd.16xlarge | x1.16xlarge | x1.32xlarge | x1e.xlarge | x1e.2xlarge | x1e.4xlarge | x1e.8xlarge | x1e.16xlarge | x1e.32xlarge | i2.xlarge | i2.2xlarge | i2.4xlarge | i2.8xlarge | i3.large | i3.xlarge | i3.2xlarge | i3.4xlarge | i3.8xlarge | i3.16xlarge | i3.metal | i3en.large | i3en.xlarge | i3en.2xlarge | i3en.3xlarge | i3en.6xlarge | i3en.12xlarge | i3en.24xlarge | i3en.metal | hi1.4xlarge | hs1.8xlarge | c1.medium | c1.xlarge | c3.large | c3.xlarge | c3.2xlarge | c3.4xlarge | c3.8xlarge | c4.large | c4.xlarge | c4.2xlarge | c4.4xlarge | c4.8xlarge | c5.large | c5.xlarge | c5.2xlarge | c5.4xlarge | c5.9xlarge | c5.12xlarge | c5.18xlarge | c5.24xlarge | c5.metal | c5a.large | c5a.xlarge | c5a.2xlarge | c5a.4xlarge | c5a.8xlarge | c5a.12xlarge | c5a.16xlarge | c5a.24xlarge | c5ad.large | c5ad.xlarge | c5ad.2xlarge | c5ad.4xlarge | c5ad.8xlarge | c5ad.12xlarge | c5ad.16xlarge | c5ad.24xlarge | c5d.large | c5d.xlarge | c5d.2xlarge | c5d.4xlarge | c5d.9xlarge | c5d.12xlarge | c5d.18xlarge | c5d.24xlarge | c5d.metal | c5n.large | c5n.xlarge | c5n.2xlarge | c5n.4xlarge | c5n.9xlarge | c5n.18xlarge | c5n.metal | c6g.metal | c6g.medium | c6g.large | c6g.xlarge | c6g.2xlarge

| c6g.4xlarge | c6g.8xlarge | c6g.12xlarge | c6g.16xlarge | c6gd.metal  
| c6gd.medium | c6gd.large | c6gd.xlarge | c6gd.2xlarge | c6gd.4xlarge |  
c6gd.8xlarge | c6gd.12xlarge | c6gd.16xlarge | c6gn.medium | c6gn.large |  
c6gn.xlarge | c6gn.2xlarge | c6gn.4xlarge | c6gn.8xlarge | c6gn.12xlarge  
| c6gn.16xlarge | c6i.large | c6i.xlarge | c6i.2xlarge | c6i.4xlarge |  
c6i.8xlarge | c6i.12xlarge | c6i.16xlarge | c6i.24xlarge | c6i.32xlarge  
| cc1.4xlarge | cc2.8xlarge | g2.2xlarge | g2.8xlarge | g3.4xlarge |  
g3.8xlarge | g3.16xlarge | g3s.xlarge | g4ad.xlarge | g4ad.2xlarge |  
g4ad.4xlarge | g4ad.8xlarge | g4ad.16xlarge | g4dn.xlarge | g4dn.2xlarge  
| g4dn.4xlarge | g4dn.8xlarge | g4dn.12xlarge | g4dn.16xlarge | g4dn.metal  
| cg1.4xlarge | p2.xlarge | p2.8xlarge | p2.16xlarge | p3.2xlarge |  
p3.8xlarge | p3.16xlarge | p3dn.24xlarge | p4d.24xlarge | d2.xlarge |  
d2.2xlarge | d2.4xlarge | d2.8xlarge | d3.xlarge | d3.2xlarge | d3.4xlarge  
| d3.8xlarge | d3en.xlarge | d3en.2xlarge | d3en.4xlarge | d3en.6xlarge  
| d3en.8xlarge | d3en.12xlarge | dl1.24xlarge | f1.2xlarge | f1.4xlarge |  
f1.16xlarge | m5.large | m5.xlarge | m5.2xlarge | m5.4xlarge | m5.8xlarge |  
m5.12xlarge | m5.16xlarge | m5.24xlarge | m5.metal | m5a.large | m5a.xlarge  
| m5a.2xlarge | m5a.4xlarge | m5a.8xlarge | m5a.12xlarge | m5a.16xlarge  
| m5a.24xlarge | m5d.large | m5d.xlarge | m5d.2xlarge | m5d.4xlarge |  
m5d.8xlarge | m5d.12xlarge | m5d.16xlarge | m5d.24xlarge | m5d.metal |  
m5ad.large | m5ad.xlarge | m5ad.2xlarge | m5ad.4xlarge | m5ad.8xlarge |  
m5ad.12xlarge | m5ad.16xlarge | m5ad.24xlarge | m5zn.large | m5zn.xlarge |  
m5zn.2xlarge | m5zn.3xlarge | m5zn.6xlarge | m5zn.12xlarge | m5zn.metal |  
h1.2xlarge | h1.4xlarge | h1.8xlarge | h1.16xlarge | z1d.large | z1d.xlarge  
| z1d.2xlarge | z1d.3xlarge | z1d.6xlarge | z1d.12xlarge | z1d.metal |  
u-6tb1.56xlarge | u-6tb1.112xlarge | u-9tb1.112xlarge | u-12tb1.112xlarge |  
u-6tb1.metal | u-9tb1.metal | u-12tb1.metal | u-18tb1.metal | u-24tb1.metal  
| a1.medium | a1.large | a1.xlarge | a1.2xlarge | a1.4xlarge | a1.metal  
| m5dn.large | m5dn.xlarge | m5dn.2xlarge | m5dn.4xlarge | m5dn.8xlarge  
| m5dn.12xlarge | m5dn.16xlarge | m5dn.24xlarge | m5dn.metal | m5n.large  
| m5n.xlarge | m5n.2xlarge | m5n.4xlarge | m5n.8xlarge | m5n.12xlarge  
| m5n.16xlarge | m5n.24xlarge | m5n.metal | r5dn.large | r5dn.xlarge |  
r5dn.2xlarge | r5dn.4xlarge | r5dn.8xlarge | r5dn.12xlarge | r5dn.16xlarge  
| r5dn.24xlarge | r5dn.metal | r5n.large | r5n.xlarge | r5n.2xlarge |  
r5n.4xlarge | r5n.8xlarge | r5n.12xlarge | r5n.16xlarge | r5n.24xlarge |  
r5n.metal | inf1.xlarge | inf1.2xlarge | inf1.6xlarge | inf1.24xlarge |  
m6g.metal | m6g.medium | m6g.large | m6g.xlarge | m6g.2xlarge | m6g.4xlarge  
| m6g.8xlarge | m6g.12xlarge | m6g.16xlarge | m6gd.metal | m6gd.medium  
| m6gd.large | m6gd.xlarge | m6gd.2xlarge | m6gd.4xlarge | m6gd.8xlarge  
| m6gd.12xlarge | m6gd.16xlarge | m6i.large | m6i.xlarge | m6i.2xlarge  
| m6i.4xlarge | m6i.8xlarge | m6i.12xlarge | m6i.16xlarge | m6i.24xlarge  
| m6i.32xlarge | mac1.metal | x2gd.medium | x2gd.large | x2gd.xlarge |  
x2gd.2xlarge | x2gd.4xlarge | x2gd.8xlarge | x2gd.12xlarge | x2gd.16xlarge  
| x2gd.metal | vt1.3xlarge | vt1.6xlarge | vt1.24xlarge | g5.xlarge  
| g5.2xlarge | g5.4xlarge | g5.8xlarge | g5.12xlarge | g5.16xlarge |  
g5.24xlarge | g5.48xlarge

Required: No

**productDescription**

A general description of the AMI.

Type: String

Valid Values: Linux/UNIX | Linux/UNIX (Amazon VPC) | Windows | Windows (Amazon VPC)

Required: No

**spotPrice**

The maximum price per hour that you are willing to pay for a Spot Instance.

Type: String

Required: No

**timestamp**

The date and time the request was created, in UTC format (for example, YYYY-MM-DDTHH:MM:SSZ).

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# StaleIpPermission

Describes a stale rule in a security group.

## Contents

### **fromPort**

The start of the port range for the TCP and UDP protocols, or an ICMP type number. A value of `-1` indicates all ICMP types.

Type: Integer

Required: No

### **groups**

The security group pairs. Returns the ID of the referenced security group and VPC, and the ID and status of the VPC peering connection.

Type: Array of [UserIdGroupPair \(p. 2158\)](#) objects

Required: No

### **ipProtocol**

The IP protocol name (for `tcp`, `udp`, and `icmp`) or number (see [Protocol Numbers](#)).

Type: String

Required: No

### **ipRanges**

The IP ranges. Not applicable for stale security group rules.

Type: Array of strings

Required: No

### **prefixListIds**

The prefix list IDs. Not applicable for stale security group rules.

Type: Array of strings

Required: No

### **toPort**

The end of the port range for the TCP and UDP protocols, or an ICMP type number. A value of `-1` indicates all ICMP types.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# StaleSecurityGroup

Describes a stale security group (a security group that contains stale rules).

## Contents

### **description**

The description of the security group.

Type: String

Required: No

### **groupId**

The ID of the security group.

Type: String

Required: No

### **groupName**

The name of the security group.

Type: String

Required: No

### **staleIpPermissions**

Information about the stale inbound rules in the security group.

Type: Array of [StaleIpPermission \(p. 2051\)](#) objects

Required: No

### **staleIpPermissionsEgress**

Information about the stale outbound rules in the security group.

Type: Array of [StaleIpPermission \(p. 2051\)](#) objects

Required: No

### **vpcId**

The ID of the VPC for the security group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# StateReason

Describes a state change.

## Contents

### code

The reason code for the state change.

Type: String

Required: No

### message

The message for the state change.

- `Server.InsufficientInstanceCapacity`: There was insufficient capacity available to satisfy the launch request.
- `Server.InternalError`: An internal error caused the instance to terminate during launch.
- `Server.ScheduledStop`: The instance was stopped due to a scheduled retirement.
- `Server.SpotInstanceShutdown`: The instance was stopped because the number of Spot requests with a maximum price equal to or higher than the Spot price exceeded available capacity or because of an increase in the Spot price.
- `Server.SpotInstanceTermination`: The instance was terminated because the number of Spot requests with a maximum price equal to or higher than the Spot price exceeded available capacity or because of an increase in the Spot price.
- `Client.InstanceInitiatedShutdown`: The instance was shut down using the `shutdown -h` command from the instance.
- `Client.InstanceTerminated`: The instance was terminated or rebooted during AMI creation.
- `Client.InternalError`: A client error caused the instance to terminate during launch.
- `Client.InvalidSnapshot.NotFound`: The specified snapshot was not found.
- `Client.UserInitiatedHibernate`: Hibernation was initiated on the instance.
- `Client.UserInitiatedShutdown`: The instance was shut down using the Amazon EC2 API.
- `Client.VolumeLimitExceeded`: The limit on the number of EBS volumes or total storage was exceeded. Decrease usage or request an increase in your account limits.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Storage

Describes the storage location for an instance store-backed AMI.

## Contents

### **S3** (request), **S3** (response)

An Amazon S3 storage location.

Type: [S3Storage \(p. 1968\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# StorageLocation

Describes a storage location in Amazon S3.

## Contents

### Bucket

The name of the S3 bucket.

Type: String

Required: No

### Key

The key.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# StoreImageTaskResult

The information about the AMI store task, including the progress of the task.

## Contents

### **amid**

The ID of the AMI that is being stored.

Type: String

Required: No

### **bucket**

The name of the Amazon S3 bucket that contains the stored AMI object.

Type: String

Required: No

### **progressPercentage**

The progress of the task as a percentage.

Type: Integer

Required: No

### **s3objectKey**

The name of the stored AMI object in the bucket.

Type: String

Required: No

### **storeTaskFailureReason**

If the tasks fails, the reason for the failure is returned. If the task succeeds, null is returned.

Type: String

Required: No

### **storeTaskState**

The state of the store task (InProgress, Completed, or Failed).

Type: String

Required: No

### **taskStartTime**

The time the task started.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Subnet

Describes a subnet.

## Contents

### **assignIpv6AddressOnCreation**

Indicates whether a network interface created in this subnet (including a network interface created by [RunInstances \(p. 1283\)](#)) receives an IPv6 address.

Type: Boolean

Required: No

### **availabilityZone**

The Availability Zone of the subnet.

Type: String

Required: No

### **availabilityZoneId**

The AZ ID of the subnet.

Type: String

Required: No

### **availableIpAddressCount**

The number of unused private IPv4 addresses in the subnet. The IPv4 addresses for any stopped instances are considered unavailable.

Type: Integer

Required: No

### **cidrBlock**

The IPv4 CIDR block assigned to the subnet.

Type: String

Required: No

### **customerOwnedIpv4Pool**

The customer-owned IPv4 address pool associated with the subnet.

Type: String

Required: No

### **defaultForAz**

Indicates whether this is the default subnet for the Availability Zone.

Type: Boolean

Required: No

**enableDns64**

Indicates whether DNS queries made to the Amazon-provided DNS Resolver in this subnet should return synthetic IPv6 addresses for IPv4-only destinations.

Type: Boolean

Required: No

**ipv6CidrBlockAssociationSet**

Information about the IPv6 CIDR blocks associated with the subnet.

Type: Array of [SubnetIpv6CidrBlockAssociation \(p. 2067\)](#) objects

Required: No

**mapCustomerOwnedIpOnLaunch**

Indicates whether a network interface created in this subnet (including a network interface created by [RunInstances \(p. 1283\)](#)) receives a customer-owned IPv4 address.

Type: Boolean

Required: No

**mapPublicIpOnLaunch**

Indicates whether instances launched in this subnet receive a public IPv4 address.

Type: Boolean

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**ownerId**

The ID of the AWS account that owns the subnet.

Type: String

Required: No

**state**

The current state of the subnet.

Type: String

Valid Values: pending | available

Required: No

**subnetArn**

The Amazon Resource Name (ARN) of the subnet.

Type: String

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**tagSet**

Any tags assigned to the subnet.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcId**

The ID of the VPC the subnet is in.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SubnetAssociation

Describes the subnet association with the transit gateway multicast domain.

## Contents

### **state**

The state of the subnet association.

Type: String

Valid Values: pendingAcceptance | associating | associated | disassociating | disassociated | rejected | failed

Required: No

### **subnetId**

The ID of the subnet.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SubnetCidrBlockState

Describes the state of a CIDR block.

## Contents

### **state**

The state of a CIDR block.

Type: String

Valid Values: associating | associated | disassociating | disassociated | failing | failed

Required: No

### **statusMessage**

A message about the status of the CIDR block, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SubnetCidrReservation

Describes a subnet CIDR reservation.

## Contents

### **cidr**

The CIDR that has been reserved.

Type: String

Required: No

### **description**

The description assigned to the subnet CIDR reservation.

Type: String

Required: No

### **ownerId**

The ID of the account that owns the subnet CIDR reservation.

Type: String

Required: No

### **reservationType**

The type of reservation.

Type: String

Valid Values: `prefix` | `explicit`

Required: No

### **subnetCidrReservationId**

The ID of the subnet CIDR reservation.

Type: String

Required: No

### **subnetId**

The ID of the subnet.

Type: String

Required: No

### **tagSet**

The tags assigned to the subnet CIDR reservation.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SubnetIpv6CidrBlockAssociation

Describes an IPv6 CIDR block associated with a subnet.

## Contents

### **associationId**

The association ID for the CIDR block.

Type: String

Required: No

### **ipv6CidrBlock**

The IPv6 CIDR block.

Type: String

Required: No

### **ipv6CidrBlockState**

Information about the state of the CIDR block.

Type: [SubnetCidrBlockState \(p. 2064\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SuccessfulInstanceCreditSpecificationItem

Describes the burstable performance instance whose credit option for CPU usage was successfully modified.

## Contents

### instanceId

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# SuccessfulQueuedPurchaseDeletion

Describes a Reserved Instance whose queued purchase was successfully deleted.

## Contents

### **reservedInstancesId**

The ID of the Reserved Instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Tag

Describes a tag.

## Contents

### **Key** (request), **key** (response)

The key of the tag.

Constraints: Tag keys are case-sensitive and accept a maximum of 127 Unicode characters. May not begin with aws::.

Type: String

Required: No

### **Value** (request), **value** (response)

The value of the tag.

Constraints: Tag values are case-sensitive and accept a maximum of 255 Unicode characters.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TagDescription

Describes a tag.

## Contents

### key

The tag key.

Type: String

Required: No

### resourceId

The ID of the resource.

Type: String

Required: No

### resourceType

The resource type.

Type: String

Valid Values: capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | snapshot | spot-fleet-request | spot-instances-request | subnet | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-route-table | volume | vpc | vpc-endpoint | vpc-endpoint-service | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log

Required: No

### value

The tag value.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TagSpecification

The tags to apply to a resource when the resource is being created.

## Contents

### **ResourceType** (request), **resourceType** (response)

The type of resource to tag on creation.

Type: String

Valid Values: capacity-reservation | client-vpn-endpoint | customer-gateway | carrier-gateway | dedicated-host | dhcp-options | egress-only-internet-gateway | elastic-ip | elastic-gpu | export-image-task | export-instance-task | fleet | fpga-image | host-reservation | image | import-image-task | import-snapshot-task | instance | instance-event-window | internet-gateway | ipv4pool-ec2 | ipv6pool-ec2 | key-pair | launch-template | local-gateway | local-gateway-route-table | local-gateway-virtual-interface | local-gateway-virtual-interface-group | local-gateway-route-table-vpc-association | local-gateway-route-table-virtual-interface-group-association | natgateway | network-acl | network-interface | network-insights-analysis | network-insights-path | placement-group | prefix-list | replace-root-volume-task | reserved-instances | route-table | security-group | security-group-rule | snapshot | spot-fleet-request | spot-instances-request | subnet | traffic-mirror-filter | traffic-mirror-session | traffic-mirror-target | transit-gateway | transit-gateway-attachment | transit-gateway-connect-peer | transit-gateway-multicast-domain | transit-gateway-route-table | volume | vpc | vpc-endpoint | vpc-endpoint-service | vpc-peering-connection | vpn-connection | vpn-gateway | vpc-flow-log

Required: No

### **Tags** (request), **Tag** (response)

The tags to apply to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetCapacitySpecification

The number of units to request. You can choose to set the target capacity in terms of instances or a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

You can use the On-Demand Instance `MaxTotalPrice` parameter, the Spot Instance `MaxTotalPrice`, or both to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, EC2 Fleet will launch instances until it reaches the maximum amount that you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity. The `MaxTotalPrice` parameters are located in [OnDemandOptions](#) and [SpotOptions](#).

## Contents

### **defaultTargetCapacityType**

The default `TotalTargetCapacity`, which is either `Spot` or `On-Demand`.

Type: String

Valid Values: `spot` | `on-demand`

Required: No

### **onDemandTargetCapacity**

The number of On-Demand units to request. If you specify a target capacity for Spot units, you cannot specify a target capacity for On-Demand units.

Type: Integer

Required: No

### **spotTargetCapacity**

The maximum number of Spot units to launch. If you specify a target capacity for On-Demand units, you cannot specify a target capacity for Spot units.

Type: Integer

Required: No

### **targetCapacityUnitType**

The unit for the target capacity.

Default: `units` (translates to number of instances)

Type: String

Valid Values: `vcpu` | `memory-mib` | `units`

Required: No

### **totalTargetCapacity**

The number of units to request, filled using `DefaultTargetCapacityType`.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetCapacitySpecificationRequest

The number of units to request. You can choose to set the target capacity as the number of instances. Or you can set the target capacity to a performance characteristic that is important to your application workload, such as vCPUs, memory, or I/O. If the request type is `maintain`, you can specify a target capacity of 0 and add capacity later.

You can use the On-Demand Instance `MaxTotalPrice` parameter, the Spot Instance `MaxTotalPrice` parameter, or both parameters to ensure that your fleet cost does not exceed your budget. If you set a maximum price per hour for the On-Demand Instances and Spot Instances in your request, EC2 Fleet will launch instances until it reaches the maximum amount that you're willing to pay. When the maximum amount you're willing to pay is reached, the fleet stops launching instances even if it hasn't met the target capacity. The `MaxTotalPrice` parameters are located in [OnDemandOptionsRequest](#) and [SpotOptionsRequest](#).

## Contents

### **DefaultTargetCapacityType**

The default `TotalTargetCapacity`, which is either `Spot` or `On-Demand`.

Type: String

Valid Values: `spot` | `on-demand`

Required: No

### **OnDemandTargetCapacity**

The number of On-Demand units to request.

Type: Integer

Required: No

### **SpotTargetCapacity**

The number of Spot units to request.

Type: Integer

Required: No

### **TargetCapacityUnitType**

The unit for the target capacity.

Default: `units` (translates to number of instances)

Type: String

Valid Values: `vcpu` | `memory-mib` | `units`

Required: No

### **TotalTargetCapacity**

The number of units to request, filled using `DefaultTargetCapacityType`.

Type: Integer

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetConfiguration

Information about the Convertible Reserved Instance offering.

## Contents

### **instanceCount**

The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request

Type: Integer

Required: No

### **offeringId**

The ID of the Convertible Reserved Instance offering.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetConfigurationRequest

Details about the target configuration.

## Contents

### InstanceCount

The number of instances the Convertible Reserved Instance offering can be applied to. This parameter is reserved and cannot be specified in a request

Type: Integer

Required: No

### OfferingId

The Convertible Reserved Instance offering ID.

Type: String

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetGroup

Describes a load balancer target group.

## Contents

### **Arn** (request), **arn** (response)

The Amazon Resource Name (ARN) of the target group.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetGroupsConfig

Describes the target groups to attach to a Spot Fleet. Spot Fleet registers the running Spot Instances with these target groups.

## Contents

**TargetGroups** (request), **targetGroups** (response)

One or more target groups.

Type: Array of [TargetGroup \(p. 2080\)](#) objects

Array Members: Minimum number of 1 item. Maximum number of 5 items.

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TargetNetwork

Describes a target network associated with a Client VPN endpoint.

## Contents

### **associationId**

The ID of the association.

Type: String

Required: No

### **clientVpnEndpointId**

The ID of the Client VPN endpoint with which the target network is associated.

Type: String

Required: No

### **securityGroups**

The IDs of the security groups applied to the target network association.

Type: Array of strings

Required: No

### **status**

The current state of the target network association.

Type: [AssociationStatus \(p. 1379\)](#) object

Required: No

### **targetNetworkId**

The ID of the subnet specified as the target network.

Type: String

Required: No

### **vpcId**

The ID of the VPC in which the target network (subnet) is located.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# TargetReservationValue

The total value of the new Convertible Reserved Instances.

## Contents

### **reservationValue**

The total value of the Convertible Reserved Instances that make up the exchange. This is the sum of the list value, remaining upfront price, and additional upfront cost of the exchange.

Type: [ReservationValue \(p. 1930\)](#) object

Required: No

### **targetConfiguration**

The configuration of the Convertible Reserved Instances that make up the exchange.

Type: [TargetConfiguration \(p. 2078\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TerminateConnectionStatus

Information about a terminated Client VPN endpoint client connection.

## Contents

### **connectionId**

The ID of the client connection.

Type: String

Required: No

### **currentStatus**

A message about the status of the client connection, if applicable.

Type: [ClientVpnConnectionStatus \(p. 1437\)](#) object

Required: No

### **previousStatus**

The state of the client connection.

Type: [ClientVpnConnectionStatus \(p. 1437\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TotalLocalStorageGB

The minimum and maximum amount of total local storage, in GB.

## Contents

### **Max** (request), **max** (response)

The maximum amount of total local storage, in GB. If this parameter is not specified, there is no maximum limit.

Type: Double

Required: No

### **Min** (request), **min** (response)

The minimum amount of total local storage, in GB. If this parameter is not specified, there is no minimum limit.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TotalLocalStorageGBRequest

The minimum and maximum amount of total local storage, in GB.

## Contents

### Max

The maximum amount of total local storage, in GB. To specify no maximum limit, omit this parameter.

Type: Double

Required: No

### Min

The minimum amount of total local storage, in GB. To specify no minimum limit, omit this parameter.

Type: Double

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorFilter

Describes the Traffic Mirror filter.

## Contents

### **description**

The description of the Traffic Mirror filter.

Type: String

Required: No

### **egressFilterRuleSet**

Information about the egress rules that are associated with the Traffic Mirror filter.

Type: Array of [TrafficMirrorFilterRule \(p. 2090\)](#) objects

Required: No

### **ingressFilterRuleSet**

Information about the ingress rules that are associated with the Traffic Mirror filter.

Type: Array of [TrafficMirrorFilterRule \(p. 2090\)](#) objects

Required: No

### **networkServiceSet**

The network service traffic that is associated with the Traffic Mirror filter.

Type: Array of strings

Valid Values: `amazon-dns`

Required: No

### **tagSet**

The tags assigned to the Traffic Mirror filter.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **trafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorFilterRule

Describes the Traffic Mirror rule.

## Contents

### **description**

The description of the Traffic Mirror rule.

Type: String

Required: No

### **destinationCidrBlock**

The destination CIDR block assigned to the Traffic Mirror rule.

Type: String

Required: No

### **destinationPortRange**

The destination port range assigned to the Traffic Mirror rule.

Type: [TrafficMirrorPortRange \(p. 2092\)](#) object

Required: No

### **protocol**

The protocol assigned to the Traffic Mirror rule.

Type: Integer

Required: No

### **ruleAction**

The action assigned to the Traffic Mirror rule.

Type: String

Valid Values: accept | reject

Required: No

### **ruleNumber**

The rule number of the Traffic Mirror rule.

Type: Integer

Required: No

### **sourceCidrBlock**

The source CIDR block assigned to the Traffic Mirror rule.

Type: String

Required: No

**sourcePortRange**

The source port range assigned to the Traffic Mirror rule.

Type: [TrafficMirrorPortRange \(p. 2092\)](#) object

Required: No

**trafficDirection**

The traffic direction assigned to the Traffic Mirror rule.

Type: String

Valid Values: `ingress` | `egress`

Required: No

**trafficMirrorFilterId**

The ID of the Traffic Mirror filter that the rule is associated with.

Type: String

Required: No

**trafficMirrorFilterRuleId**

The ID of the Traffic Mirror rule.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorPortRange

Describes the Traffic Mirror port range.

## Contents

### **fromPort**

The start of the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

### **toPort**

The end of the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorPortRangeRequest

Information about the Traffic Mirror filter rule port range.

## Contents

### **FromPort**

The first port in the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

### **ToPort**

The last port in the Traffic Mirror port range. This applies to the TCP and UDP protocols.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorSession

Describes a Traffic Mirror session.

## Contents

### **description**

The description of the Traffic Mirror session.

Type: String

Required: No

### **networkInterfaceId**

The ID of the Traffic Mirror session's network interface.

Type: String

Required: No

### **ownerId**

The ID of the account that owns the Traffic Mirror session.

Type: String

Required: No

### **packetLength**

The number of bytes in each packet to mirror. These are the bytes after the VXLAN header. To mirror a subset, set this to the length (in bytes) to mirror. For example, if you set this value to 100, then the first 100 bytes that meet the filter criteria are copied to the target. Do not specify this parameter when you want to mirror the entire packet

Type: Integer

Required: No

### **sessionNumber**

The session number determines the order in which sessions are evaluated when an interface is used by multiple sessions. The first session with a matching filter is the one that mirrors the packets.

Valid values are 1-32766.

Type: Integer

Required: No

### **tagSet**

The tags assigned to the Traffic Mirror session.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **trafficMirrorFilterId**

The ID of the Traffic Mirror filter.

Type: String

Required: No

**trafficMirrorSessionId**

The ID for the Traffic Mirror session.

Type: String

Required: No

**trafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: No

**virtualNetworkId**

The virtual network ID associated with the Traffic Mirror session.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrafficMirrorTarget

Describes a Traffic Mirror target.

## Contents

### **description**

Information about the Traffic Mirror target.

Type: String

Required: No

### **networkInterfaceId**

The network interface ID that is attached to the target.

Type: String

Required: No

### **networkLoadBalancerArn**

The Amazon Resource Name (ARN) of the Network Load Balancer.

Type: String

Required: No

### **ownerId**

The ID of the account that owns the Traffic Mirror target.

Type: String

Required: No

### **tagSet**

The tags assigned to the Traffic Mirror target.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **trafficMirrorTargetId**

The ID of the Traffic Mirror target.

Type: String

Required: No

### **type**

The type of Traffic Mirror target.

Type: String

Valid Values: `network-interface` | `network-load-balancer`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGateway

Describes a transit gateway.

## Contents

### **creationTime**

The creation time.

Type: Timestamp

Required: No

### **description**

The description of the transit gateway.

Type: String

Required: No

### **options**

The transit gateway options.

Type: [TransitGatewayOptions \(p. 2126\)](#) object

Required: No

### **ownerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

### **state**

The state of the transit gateway.

Type: String

Valid Values: pending | available | modifying | deleting | deleted

Required: No

### **tagSet**

The tags for the transit gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayArn**

The Amazon Resource Name (ARN) of the transit gateway.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayAssociation

Describes an association between a resource attachment and a transit gateway route table.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **state**

The state of the association.

Type: String

Valid Values: `associating` | `associated` | `disassociating` | `disassociated`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

### **transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# TransitGatewayAttachment

Describes an attachment between a resource and a transit gateway.

## Contents

### **association**

The association.

Type: [TransitGatewayAttachmentAssociation \(p. 2104\)](#) object

Required: No

### **creationTime**

The creation time.

Type: Timestamp

Required: No

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceOwnerId**

The ID of the AWS account that owns the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **state**

The attachment state. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating` | `initiatingRequest` | `pendingAcceptance` | `rollingBack` | `pending` | `available` | `modifying` | `deleting` | `deleted` | `failed` | `rejected` | `rejecting` | `failing`

Required: No

### **tagSet**

The tags for the attachment.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

**transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**transitGatewayOwnerId**

The ID of the AWS account that owns the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayAttachmentAssociation

Describes an association.

## Contents

### state

The state of the association.

Type: String

Valid Values: associating | associated | disassociating | disassociated

Required: No

### transitGatewayRouteTableId

The ID of the route table for the transit gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayAttachmentBgpConfiguration

The BGP configuration information.

## Contents

### **bgpStatus**

The BGP status.

Type: String

Valid Values: up | down

Required: No

### **peerAddress**

The interior BGP peer IP address for the appliance.

Type: String

Required: No

### **peerAsn**

The peer Autonomous System Number (ASN).

Type: Long

Required: No

### **transitGatewayAddress**

The interior BGP peer IP address for the transit gateway.

Type: String

Required: No

### **transitGatewayAsn**

The transit gateway Autonomous System Number (ASN).

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayAttachmentPropagation

Describes a propagation route table.

## Contents

### **state**

The state of the propagation route table.

Type: String

Valid Values: enabling | enabled | disabling | disabled

Required: No

### **transitGatewayRouteTableId**

The ID of the propagation route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayConnect

Describes a transit gateway Connect attachment.

## Contents

### **creationTime**

The creation time.

Type: [Timestamp](#)

Required: No

### **options**

The Connect attachment options.

Type: [TransitGatewayConnectOptions \(p. 2109\)](#) object

Required: No

### **state**

The state of the attachment.

Type: [String](#)

Valid Values: initiating | initiatingRequest | pendingAcceptance | rollingBack | pending | available | modifying | deleting | deleted | failed | rejected | rejecting | failing

Required: No

### **tagSet**

The tags for the attachment.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayAttachmentId**

The ID of the Connect attachment.

Type: [String](#)

Required: No

### **transitGatewayId**

The ID of the transit gateway.

Type: [String](#)

Required: No

### **transportTransitGatewayAttachmentId**

The ID of the attachment from which the Connect attachment was created.

Type: [String](#)

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayConnectOptions

Describes the Connect attachment options.

## Contents

### protocol

The tunnel protocol.

Type: String

Valid Values: `gre`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayConnectPeer

Describes a transit gateway Connect peer.

## Contents

### **connectPeerConfiguration**

The Connect peer details.

Type: [TransitGatewayConnectPeerConfiguration \(p. 2112\)](#) object

Required: No

### **creationTime**

The creation time.

Type: Timestamp

Required: No

### **state**

The state of the Connect peer.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

### **tagSet**

The tags for the Connect peer.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayAttachmentId**

The ID of the Connect attachment.

Type: String

Required: No

### **transitGatewayConnectPeerId**

The ID of the Connect peer.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayConnectPeerConfiguration

Describes the Connect peer details.

## Contents

### **bgpConfigurations**

The BGP configuration details.

Type: Array of [TransitGatewayAttachmentBgpConfiguration \(p. 2105\)](#) objects

Required: No

### **insideCidrBlocks**

The range of interior BGP peer IP addresses.

Type: Array of strings

Required: No

### **peerAddress**

The Connect peer IP address on the appliance side of the tunnel.

Type: String

Required: No

### **protocol**

The tunnel protocol.

Type: String

Valid Values: `gre`

Required: No

### **transitGatewayAddress**

The Connect peer IP address on the transit gateway side of the tunnel.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayConnectRequestBgpOptions

The BGP options for the Connect attachment.

## Contents

### PeerAsn

The peer Autonomous System Number (ASN).

Type: Long

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDeregisteredGroupMembers

Describes the deregistered transit gateway multicast group members.

## Contents

### deregisteredNetworkInterfaceIds

The network interface IDs of the deregistered members.

Type: Array of strings

Required: No

### groupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### transitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDeregisteredGroupSources

Describes the deregistered transit gateway multicast group sources.

## Contents

### deregisteredNetworkInterfaceIds

The network interface IDs of the non-registered members.

Type: Array of strings

Required: No

### groupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### transitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDomain

Describes the transit gateway multicast domain.

## Contents

### **creationTime**

The time the transit gateway multicast domain was created.

Type: Timestamp

Required: No

### **options**

The options for the transit gateway multicast domain.

Type: [TransitGatewayMulticastDomainOptions \(p. 2121\)](#) object

Required: No

### **ownerId**

The ID of the AWS account that owns the transit gateway multicast domain.

Type: String

Required: No

### **state**

The state of the transit gateway multicast domain.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

### **tagSet**

The tags for the transit gateway multicast domain.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

### **transitGatewayMulticastDomainArn**

The Amazon Resource Name (ARN) of the transit gateway multicast domain.

Type: String

Required: No

### **transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDomainAssociation

Describes the resources associated with the transit gateway multicast domain.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceOwnerId**

The ID of the AWS account that owns the transit gateway multicast domain association resource.

Type: String

Required: No

### **resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **subnet**

The subnet associated with the transit gateway multicast domain.

Type: [SubnetAssociation \(p. 2063\)](#) object

Required: No

### **transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDomainAssociations

Describes the multicast domain associations.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceOwnerId**

The ID of the AWS account that owns the resource.

Type: String

Required: No

### **resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **subnets**

The subnets associated with the multicast domain.

Type: Array of [SubnetAssociation \(p. 2063\)](#) objects

Required: No

### **transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

### **transitGatewayMulticastDomainId**

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastDomainOptions

Describes the options for a transit gateway multicast domain.

## Contents

### **autoAcceptSharedAssociations**

Indicates whether to automatically cross-account subnet associations that are associated with the transit gateway multicast domain.

Type: String

Valid Values: enable | disable

Required: No

### **igmpv2Support**

Indicates whether Internet Group Management Protocol (IGMP) version 2 is turned on for the transit gateway multicast domain.

Type: String

Valid Values: enable | disable

Required: No

### **staticSourcesSupport**

Indicates whether support for statically configuring transit gateway multicast group sources is turned on.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastGroup

Describes the transit gateway multicast group resources.

## Contents

### **groupIpAddress**

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### **groupMember**

Indicates that the resource is a transit gateway multicast group member.

Type: Boolean

Required: No

### **groupSource**

Indicates that the resource is a transit gateway multicast group member.

Type: Boolean

Required: No

### **memberType**

The member type (for example, static).

Type: String

Valid Values: static | igmp

Required: No

### **networkInterfaceId**

The ID of the transit gateway attachment.

Type: String

Required: No

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceOwnerId**

The ID of the AWS account that owns the transit gateway multicast domain group resource.

Type: String

Required: No

**resourceType**

The type of resource, for example a VPC attachment.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

**sourceType**

The source type.

Type: String

Valid Values: `static` | `igmp`

Required: No

**subnetId**

The ID of the subnet.

Type: String

Required: No

**transitGatewayAttachmentId**

The ID of the transit gateway attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastRegisteredGroupMembers

Describes the registered transit gateway multicast group members.

## Contents

### groupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### registeredNetworkInterfaceIds

The ID of the registered network interfaces.

Type: Array of strings

Required: No

### transitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayMulticastRegisteredGroupSources

Describes the members registered with the transit gateway multicast group.

## Contents

### groupIpAddress

The IP address assigned to the transit gateway multicast group.

Type: String

Required: No

### registeredNetworkInterfaceIds

The IDs of the network interfaces members registered with the transit gateway multicast group.

Type: Array of strings

Required: No

### transitGatewayMulticastDomainId

The ID of the transit gateway multicast domain.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayOptions

Describes the options for a transit gateway.

## Contents

### **amazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. The range is 64512 to 65534 for 16-bit ASNs and 4200000000 to 4294967294 for 32-bit ASNs.

Type: Long

Required: No

### **associationDefaultRouteTableId**

The ID of the default association route table.

Type: String

Required: No

### **autoAcceptSharedAttachments**

Indicates whether attachment requests are automatically accepted.

Type: String

Valid Values: enable | disable

Required: No

### **defaultRouteTableAssociation**

Indicates whether resource attachments are automatically associated with the default association route table.

Type: String

Valid Values: enable | disable

Required: No

### **defaultRouteTablePropagation**

Indicates whether resource attachments automatically propagate routes to the default propagation route table.

Type: String

Valid Values: enable | disable

Required: No

### **dnsSupport**

Indicates whether DNS support is enabled.

Type: String

Valid Values: enable | disable

Required: No

**multicastSupport**

Indicates whether multicast is enabled on the transit gateway

Type: String

Valid Values: enable | disable

Required: No

**propagationDefaultRouteTableId**

The ID of the default propagation route table.

Type: String

Required: No

**transitGatewayCidrBlocks**

The transit gateway CIDR blocks.

Type: Array of strings

Required: No

**vpnEcmpSupport**

Indicates whether Equal Cost Multipath Protocol support is enabled.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayPeeringAttachment

Describes the transit gateway peering attachment.

## Contents

### accepterTgwInfo

Information about the accepter transit gateway.

Type: [PeeringTgwInfo \(p. 1865\)](#) object

Required: No

### creationTime

The time the transit gateway peering attachment was created.

Type: Timestamp

Required: No

### requesterTgwInfo

Information about the requester transit gateway.

Type: [PeeringTgwInfo \(p. 1865\)](#) object

Required: No

### state

The state of the transit gateway peering attachment. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating` | `initiatingRequest` | `pendingAcceptance` | `rollingBack` | `pending` | `available` | `modifying` | `deleting` | `deleted` | `failed` | `rejected` | `rejecting` | `failing`

Required: No

### status

The status of the transit gateway peering attachment.

Type: [PeeringAttachmentStatus \(p. 1862\)](#) object

Required: No

### tagSet

The tags for the transit gateway peering attachment.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### transitGatewayAttachmentId

The ID of the transit gateway peering attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayPrefixListAttachment

Describes a transit gateway prefix list attachment.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayPrefixListReference

Describes a prefix list reference.

## Contents

### **blackhole**

Indicates whether traffic that matches this route is dropped.

Type: Boolean

Required: No

### **prefixListId**

The ID of the prefix list.

Type: String

Required: No

### **prefixListOwnerId**

The ID of the prefix list owner.

Type: String

Required: No

### **state**

The state of the prefix list reference.

Type: String

Valid Values: pending | available | modifying | deleting

Required: No

### **transitGatewayAttachment**

Information about the transit gateway attachment.

Type: [TransitGatewayPrefixListAttachment \(p. 2130\)](#) object

Required: No

### **transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayPropagation

Describes route propagation.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **state**

The state.

Type: String

Valid Values: `enabling` | `enabled` | `disabling` | `disabled`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

### **transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)



# TransitGatewayRequestOptions

Describes the options for a transit gateway.

## Contents

### **AmazonSideAsn**

A private Autonomous System Number (ASN) for the Amazon side of a BGP session. The range is 64512 to 65534 for 16-bit ASNs and 4200000000 to 4294967294 for 32-bit ASNs. The default is 64512.

Type: Long

Required: No

### **AutoAcceptSharedAttachments**

Enable or disable automatic acceptance of attachment requests. Disabled by default.

Type: String

Valid Values: enable | disable

Required: No

### **DefaultRouteTableAssociation**

Enable or disable automatic association with the default association route table. Enabled by default.

Type: String

Valid Values: enable | disable

Required: No

### **DefaultRouteTablePropagation**

Enable or disable automatic propagation of routes to the default propagation route table. Enabled by default.

Type: String

Valid Values: enable | disable

Required: No

### **DnsSupport**

Enable or disable DNS support. Enabled by default.

Type: String

Valid Values: enable | disable

Required: No

### **MulticastSupport**

Indicates whether multicast is enabled on the transit gateway

Type: String

Valid Values: enable | disable

Required: No

#### **TransitGatewayCidrBlocks**

One or more IPv4 or IPv6 CIDR blocks for the transit gateway. Must be a size /24 CIDR block or larger for IPv4, or a size /64 CIDR block or larger for IPv6.

Type: Array of strings

Required: No

#### **VpnEcmpSupport**

Enable or disable Equal Cost Multipath Protocol support. Enabled by default.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayRoute

Describes a route for a transit gateway route table.

## Contents

### **destinationCidrBlock**

The CIDR block used for destination matches.

Type: String

Required: No

### **prefixListId**

The ID of the prefix list used for destination matches.

Type: String

Required: No

### **state**

The state of the route.

Type: String

Valid Values: pending | active | blackhole | deleting | deleted

Required: No

### **transitGatewayAttachments**

The attachments.

Type: Array of [TransitGatewayRouteAttachment \(p. 2138\)](#) objects

Required: No

### **type**

The route type.

Type: String

Valid Values: static | propagated

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayRouteAttachment

Describes a route attachment.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayRouteTable

Describes a transit gateway route table.

## Contents

### **creationTime**

The creation time.

Type: Timestamp

Required: No

### **defaultAssociationRouteTable**

Indicates whether this is the default association route table for the transit gateway.

Type: Boolean

Required: No

### **defaultPropagationRouteTable**

Indicates whether this is the default propagation route table for the transit gateway.

Type: Boolean

Required: No

### **state**

The state of the transit gateway route table.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

### **tagSet**

Any tags assigned to the route table.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

### **transitGatewayRouteTableId**

The ID of the transit gateway route table.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayRouteTableAssociation

Describes an association between a route table and a resource attachment.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The resource type. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **state**

The state of the association.

Type: String

Valid Values: `associating` | `associated` | `disassociating` | `disassociated`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayRouteTablePropagation

Describes a route table propagation.

## Contents

### **resourceId**

The ID of the resource.

Type: String

Required: No

### **resourceType**

The type of resource. Note that the `tgw-peering` resource type has been deprecated.

Type: String

Valid Values: `vpc` | `vpn` | `direct-connect-gateway` | `connect` | `peering` | `tgw-peering`

Required: No

### **state**

The state of the resource.

Type: String

Valid Values: `enabling` | `enabled` | `disabling` | `disabled`

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayVpcAttachment

Describes a VPC attachment.

## Contents

### **creationTime**

The creation time.

Type: Timestamp

Required: No

### **options**

The VPC attachment options.

Type: [TransitGatewayVpcAttachmentOptions \(p. 2145\)](#) object

Required: No

### **state**

The state of the VPC attachment. Note that the `initiating` state has been deprecated.

Type: String

Valid Values: `initiating` | `initiatingRequest` | `pendingAcceptance` | `rollingBack` | `pending` | `available` | `modifying` | `deleting` | `deleted` | `failed` | `rejected` | `rejecting` | `failing`

Required: No

### **subnetIds**

The IDs of the subnets.

Type: Array of strings

Required: No

### **tagSet**

The tags for the VPC attachment.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **transitGatewayAttachmentId**

The ID of the attachment.

Type: String

Required: No

### **transitGatewayId**

The ID of the transit gateway.

Type: String

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

**vpcOwnerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TransitGatewayVpcAttachmentOptions

Describes the VPC attachment options.

## Contents

### applianceModeSupport

Indicates whether appliance mode support is enabled.

Type: String

Valid Values: enable | disable

Required: No

### dnsSupport

Indicates whether DNS support is enabled.

Type: String

Valid Values: enable | disable

Required: No

### ipv6Support

Indicates whether IPv6 support is disabled.

Type: String

Valid Values: enable | disable

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TrunkInterfaceAssociation

## Note

Currently available in **limited preview only**. If you are interested in using this feature, contact your account manager.

Information about an association between a branch network interface with a trunk network interface.

## Contents

### associationId

The ID of the association.

Type: String

Required: No

### branchInterfaceId

The ID of the branch network interface.

Type: String

Required: No

### greKey

The application key when you use the GRE protocol.

Type: Integer

Required: No

### interfaceProtocol

The interface protocol. Valid values are `VLAN` and `GRE`.

Type: String

Valid Values: `VLAN` | `GRE`

Required: No

### tagSet

The tags for the trunk interface association.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### trunkInterfaceId

The ID of the trunk network interface.

Type: String

Required: No

### vlanId

The ID of the VLAN when you use the VLAN protocol.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# TunnelOption

The VPN tunnel options.

## Contents

### **dpdTimeoutAction**

The action to take after a DPD timeout occurs.

Type: String

Required: No

### **dpdTimeoutSeconds**

The number of seconds after which a DPD timeout occurs.

Type: Integer

Required: No

### **ikeVersionSet**

The IKE versions that are permitted for the VPN tunnel.

Type: Array of [IKEVersionsListValue \(p. 1604\)](#) objects

Required: No

### **outsideIpAddress**

The external IP address of the VPN tunnel.

Type: String

Required: No

### **phase1DHGroupNumberSet**

The permitted Diffie-Hellman group numbers for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of [Phase1DHGroupNumbersListValue \(p. 1866\)](#) objects

Required: No

### **phase1EncryptionAlgorithmSet**

The permitted encryption algorithms for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of [Phase1EncryptionAlgorithmsListValue \(p. 1868\)](#) objects

Required: No

### **phase1IntegrityAlgorithmSet**

The permitted integrity algorithms for the VPN tunnel for phase 1 IKE negotiations.

Type: Array of [Phase1IntegrityAlgorithmsListValue \(p. 1870\)](#) objects

Required: No

### **phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Type: Integer

Required: No

**phase2DHGroupNumberSet**

The permitted Diffie-Hellman group numbers for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of [Phase2DHGroupNumbersListValue \(p. 1872\)](#) objects

Required: No

**phase2EncryptionAlgorithmSet**

The permitted encryption algorithms for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of [Phase2EncryptionAlgorithmsListValue \(p. 1874\)](#) objects

Required: No

**phase2IntegrityAlgorithmSet**

The permitted integrity algorithms for the VPN tunnel for phase 2 IKE negotiations.

Type: Array of [Phase2IntegrityAlgorithmsListValue \(p. 1876\)](#) objects

Required: No

**phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Type: Integer

Required: No

**preSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and the customer gateway.

Type: String

Required: No

**rekeyFuzzPercentage**

The percentage of the rekey window determined by `RekeyMarginTimeSeconds` during which the rekey time is randomly selected.

Type: Integer

Required: No

**rekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey.

Type: Integer

Required: No

**replayWindowSize**

The number of packets in an IKE replay window.

Type: Integer

Required: No

**startupAction**

The action to take when establishing the VPN tunnels for a VPN connection.

Type: String

Required: No

**tunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel.

Type: String

Required: No

**tunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UnsuccessfulInstanceCreditSpecificationItem

Describes the burstable performance instance whose credit option for CPU usage was not modified.

## Contents

### **error**

The applicable error for the burstable performance instance whose credit option for CPU usage was not modified.

Type: [UnsuccessfulInstanceCreditSpecificationItemError \(p. 2152\)](#) object

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UnsuccessfulInstanceCreditSpecificationItemError

Information about the error for the burstable performance instance whose credit option for CPU usage was not modified.

## Contents

### code

The error code.

Type: String

Valid Values: `InvalidInstanceID.Malformed` | `InvalidInstanceID.NotFound` | `IncorrectInstanceState` | `InstanceCreditSpecification.NotSupported`

Required: No

### message

The applicable error message.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UnsuccessfullItem

Information about items that were not successfully processed in a batch call.

## Contents

### **error**

Information about the error.

Type: [UnsuccessfullItemError \(p. 2154\)](#) object

Required: No

### **resourceId**

The ID of the resource.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UnsuccessfullItemError

Information about the error that occurred. For more information about errors, see [Error codes](#).

## Contents

### code

The error code.

Type: String

Required: No

### message

The error message accompanying the error code.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UserBucket

Describes the Amazon S3 bucket for the disk image.

## Contents

### S3Bucket

The name of the Amazon S3 bucket where the disk image is located.

Type: String

Required: No

### S3Key

The file name of the disk image.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UserBucketDetails

Describes the Amazon S3 bucket for the disk image.

## Contents

### s3Bucket

The Amazon S3 bucket from which the disk image was created.

Type: String

Required: No

### s3Key

The file name of the disk image.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UserData

Describes the user data for an instance.

## Contents

### Data

The user data. If you are using an AWS SDK or command line tool, Base64-encoding is performed for you, and you can load the text from a file. Otherwise, you must provide Base64-encoded text.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# UserIdGroupPair

Describes a security group and AWS account ID pair.

## Contents

### Description (request), description (response)

A description for the security group rule that references this user ID group pair.

Constraints: Up to 255 characters in length. Allowed characters are a-z, A-Z, 0-9, spaces, and .\_-:/()#@[]+=;{}!\$\*

Type: String

Required: No

### GroupId (request), groupId (response)

The ID of the security group.

Type: String

Required: No

### GroupName (request), groupName (response)

The name of the security group. In a request, use this parameter for a security group in EC2-Classic or a default VPC only. For a security group in a nondefault VPC, use the security group ID.

For a referenced security group in another VPC, this value is not returned if the referenced security group is deleted.

Type: String

Required: No

### PeeringStatus (request), peeringStatus (response)

The status of a VPC peering connection, if applicable.

Type: String

Required: No

### UserId (request), userId (response)

The ID of an AWS account.

For a referenced security group in another VPC, the account ID of the referenced security group is returned in the response. If the referenced security group is deleted, this value is not returned.

[EC2-Classic] Required when adding or removing rules that reference a security group in another AWS account.

Type: String

Required: No

### VpcId (request), vpcId (response)

The ID of the VPC for the referenced security group, if applicable.

Type: String

Required: No

**VpcPeeringConnectionId** (request), **vpcPeeringConnectionId** (response)

The ID of the VPC peering connection, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ValidationError

The error code and error message that is returned for a parameter or parameter combination that is not valid when a new launch template or new version of a launch template is created.

## Contents

### code

The error code that indicates why the parameter or parameter combination is not valid. For more information about error codes, see [Error Codes](#).

Type: String

Required: No

### message

The error message that describes why the parameter or parameter combination is not valid. For more information about error messages, see [Error Codes](#).

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# ValidationWarning

The error codes and error messages that are returned for the parameters or parameter combinations that are not valid when a new launch template or new version of a launch template is created.

## Contents

### errorSet

The error codes and error messages.

Type: Array of [ValidationError \(p. 2160\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VCpuCountRange

The minimum and maximum number of vCPUs.

## Contents

### **Max** (request), **max** (response)

The maximum number of vCPUs. If this parameter is not specified, there is no maximum limit.

Type: Integer

Required: No

### **Min** (request), **min** (response)

The minimum number of vCPUs. If the value is 0, there is no minimum limit.

Type: Integer

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VCpuCountRangeRequest

The minimum and maximum number of vCPUs.

## Contents

### Max

The maximum number of vCPUs. To specify no maximum limit, omit this parameter.

Type: Integer

Required: No

### Min

The minimum number of vCPUs. To specify no minimum limit, specify 0.

Type: Integer

Required: Yes

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VCpuInfo

Describes the vCPU configurations for the instance type.

## Contents

### **defaultCores**

The default number of cores for the instance type.

Type: Integer

Required: No

### **defaultThreadsPerCore**

The default number of threads per core for the instance type.

Type: Integer

Required: No

### **defaultVCpus**

The default number of vCPUs for the instance type.

Type: Integer

Required: No

### **validCores**

The valid number of cores that can be configured for the instance type.

Type: Array of integers

Required: No

### **validThreadsPerCore**

The valid number of threads per core that can be configured for the instance type.

Type: Array of integers

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VgwTelemetry

Describes telemetry for a VPN tunnel.

## Contents

### **acceptedRouteCount**

The number of accepted routes.

Type: Integer

Required: No

### **certificateArn**

The Amazon Resource Name (ARN) of the VPN tunnel endpoint certificate.

Type: String

Required: No

### **lastStatusChange**

The date and time of the last change in status.

Type: Timestamp

Required: No

### **outsideIpAddress**

The Internet-routable IP address of the virtual private gateway's outside interface.

Type: String

Required: No

### **status**

The status of the VPN tunnel.

Type: String

Valid Values: UP | DOWN

Required: No

### **statusMessage**

If an error occurs, a description of the error.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Volume

Describes a volume.

## Contents

### **attachmentSet**

Information about the volume attachments.

Type: Array of [VolumeAttachment \(p. 2170\)](#) objects

Required: No

### **availabilityZone**

The Availability Zone for the volume.

Type: String

Required: No

### **createTime**

The time stamp when volume creation was initiated.

Type: Timestamp

Required: No

### **encrypted**

Indicates whether the volume is encrypted.

Type: Boolean

Required: No

### **fastRestored**

Indicates whether the volume was created using fast snapshot restore.

Type: Boolean

Required: No

### **iops**

The number of I/O operations per second (IOPS). For gp3, io1, and io2 volumes, this represents the number of IOPS that are provisioned for the volume. For gp2 volumes, this represents the baseline performance of the volume and the rate at which the volume accumulates I/O credits for bursting.

Type: Integer

Required: No

### **kmsKeyId**

The Amazon Resource Name (ARN) of the AWS Key Management Service (AWS KMS) KMS key that was used to protect the volume encryption key for the volume.

Type: String

Required: No

**multiAttachEnabled**

Indicates whether Amazon EBS Multi-Attach is enabled.

Type: Boolean

Required: No

**outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

**size**

The size of the volume, in GiBs.

Type: Integer

Required: No

**snapshotId**

The snapshot from which the volume was created, if applicable.

Type: String

Required: No

**status**

The volume state.

Type: String

Valid Values: `creating` | `available` | `in-use` | `deleting` | `deleted` | `error`

Required: No

**tagSet**

Any tags assigned to the volume.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**throughput**

The throughput that the volume supports, in MiB/s.

Type: Integer

Required: No

**volumId**

The ID of the volume.

Type: String

Required: No

**volumeType**

The volume type.

Type: String

Valid Values: `standard` | `io1` | `io2` | `gp2` | `sc1` | `st1` | `gp3`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeAttachment

Describes volume attachment details.

## Contents

### **attachTime**

The time stamp when the attachment initiated.

Type: Timestamp

Required: No

### **deleteOnTermination**

Indicates whether the EBS volume is deleted on instance termination.

Type: Boolean

Required: No

### **device**

The device name.

Type: String

Required: No

### **instanceId**

The ID of the instance.

Type: String

Required: No

### **status**

The attachment state of the volume.

Type: String

Valid Values: attaching | attached | detaching | detached | busy

Required: No

### **volumeId**

The ID of the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

## VolumeDetail

Describes an EBS volume.

### Contents

#### Size

The size of the volume, in GiB.

Type: Long

Required: Yes

### See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeModification

Describes the modification status of an EBS volume.

If the volume has never been modified, some element values will be null.

## Contents

### **endTime**

The modification completion or failure time.

Type: Timestamp

Required: No

### **modificationState**

The current modification state. The modification state is null for unmodified volumes.

Type: String

Valid Values: modifying | optimizing | completed | failed

Required: No

### **originalIops**

The original IOPS rate of the volume.

Type: Integer

Required: No

### **originalMultiAttachEnabled**

The original setting for Amazon EBS Multi-Attach.

Type: Boolean

Required: No

### **originalSize**

The original size of the volume, in GiB.

Type: Integer

Required: No

### **originalThroughput**

The original throughput of the volume, in MiB/s.

Type: Integer

Required: No

### **originalVolumeType**

The original EBS volume type of the volume.

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

**progress**

The modification progress, from 0 to 100 percent complete.

Type: Long

Required: No

**startTime**

The modification start time.

Type: Timestamp

Required: No

**statusMessage**

A status message about the modification progress or failure.

Type: String

Required: No

**targetIops**

The target IOPS rate of the volume.

Type: Integer

Required: No

**targetMultiAttachEnabled**

The target setting for Amazon EBS Multi-Attach.

Type: Boolean

Required: No

**targetSize**

The target size of the volume, in GiB.

Type: Integer

Required: No

**targetThroughput**

The target throughput of the volume, in MiB/s.

Type: Integer

Required: No

**targetVolumeType**

The target EBS volume type of the volume.

Type: String

Valid Values: standard | io1 | io2 | gp2 | sc1 | st1 | gp3

Required: No

**volumeid**

The ID of the volume.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeStatusAction

Describes a volume status operation code.

## Contents

### code

The code identifying the operation, for example, enable-volume-io.

Type: String

Required: No

### description

A description of the operation.

Type: String

Required: No

### eventId

The ID of the event associated with this operation.

Type: String

Required: No

### eventType

The event type associated with this operation.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeStatusAttachmentStatus

Information about the instances to which the volume is attached.

## Contents

### instanceId

The ID of the attached instance.

Type: String

Required: No

### ioPerformance

The maximum IOPS supported by the attached instance.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeStatusDetails

Describes a volume status.

## Contents

### **name**

The name of the volume status.

Type: String

Valid Values: `io-enabled` | `io-performance`

Required: No

### **status**

The intended status of the volume status.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeStatusEvent

Describes a volume status event.

## Contents

### **description**

A description of the event.

Type: String

Required: No

### **eventId**

The ID of this event.

Type: String

Required: No

### **eventType**

The type of this event.

Type: String

Required: No

### **instanceId**

The ID of the instance associated with the event.

Type: String

Required: No

### **notAfter**

The latest end time of the event.

Type: Timestamp

Required: No

### **notBefore**

The earliest start time of the event.

Type: Timestamp

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)

- [AWS SDK for Ruby V3](#)

# VolumeStatusInfo

Describes the status of a volume.

## Contents

### details

The details of the volume status.

Type: Array of [VolumeStatusDetails \(p. 2178\)](#) objects

Required: No

### status

The status of the volume.

Type: String

Valid Values: `ok` | `impaired` | `insufficient-data`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VolumeStatusItem

Describes the volume status.

## Contents

### **actionsSet**

The details of the operation.

Type: Array of [VolumeStatusAction \(p. 2176\)](#) objects

Required: No

### **attachmentStatuses**

Information about the instances to which the volume is attached.

Type: Array of [VolumeStatusAttachmentStatus \(p. 2177\)](#) objects

Required: No

### **availabilityZone**

The Availability Zone of the volume.

Type: String

Required: No

### **eventsSet**

A list of events associated with the volume.

Type: Array of [VolumeStatusEvent \(p. 2179\)](#) objects

Required: No

### **outpostArn**

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

### **volumeId**

The volume ID.

Type: String

Required: No

### **volumeStatus**

The volume status.

Type: [VolumeStatusInfo \(p. 2181\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Vpc

Describes a VPC.

## Contents

### **cidrBlock**

The primary IPv4 CIDR block for the VPC.

Type: String

Required: No

### **cidrBlockAssociationSet**

Information about the IPv4 CIDR blocks associated with the VPC.

Type: Array of [VpcCidrBlockAssociation \(p. 2187\)](#) objects

Required: No

### **dhcpOptionsId**

The ID of the set of DHCP options you've associated with the VPC.

Type: String

Required: No

### **instanceTenancy**

The allowed tenancy of instances launched into the VPC.

Type: String

Valid Values: default | dedicated | host

Required: No

### **ipv6CidrBlockAssociationSet**

Information about the IPv6 CIDR blocks associated with the VPC.

Type: Array of [VpcIpv6CidrBlockAssociation \(p. 2195\)](#) objects

Required: No

### **isDefault**

Indicates whether the VPC is the default VPC.

Type: Boolean

Required: No

### **ownerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

**state**

The current state of the VPC.

Type: String

Valid Values: pending | available

Required: No

**tagSet**

Any tags assigned to the VPC.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcAttachment

Describes an attachment between a virtual private gateway and a VPC.

## Contents

### **state**

The current state of the attachment.

Type: String

Valid Values: attaching | attached | detaching | detached

Required: No

### **vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcCidrBlockAssociation

Describes an IPv4 CIDR block associated with a VPC.

## Contents

### **associationId**

The association ID for the IPv4 CIDR block.

Type: String

Required: No

### **cidrBlock**

The IPv4 CIDR block.

Type: String

Required: No

### **cidrBlockState**

Information about the state of the CIDR block.

Type: [VpcCidrBlockState \(p. 2188\)](#) object

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcCidrBlockState

Describes the state of a CIDR block.

## Contents

### state

The state of the CIDR block.

Type: String

Valid Values: associating | associated | disassociating | disassociated | failing | failed

Required: No

### statusMessage

A message about the status of the CIDR block, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcClassicLink

Describes whether a VPC is enabled for ClassicLink.

## Contents

### **classicLinkEnabled**

Indicates whether the VPC is enabled for ClassicLink.

Type: Boolean

Required: No

### **tagSet**

Any tags assigned to the VPC.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **vpclId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcEndpoint

Describes a VPC endpoint.

## Contents

### **creationTimestamp**

The date and time that the VPC endpoint was created.

Type: Timestamp

Required: No

### **dnsEntrySet**

(Interface endpoint) The DNS entries for the endpoint.

Type: Array of [DnsEntry \(p. 1498\)](#) objects

Required: No

### **groupSet**

(Interface endpoint) Information about the security groups that are associated with the network interface.

Type: Array of [SecurityGroupIdentifier \(p. 1993\)](#) objects

Required: No

### **lastError**

The last error that occurred for VPC endpoint.

Type: [LastError \(p. 1727\)](#) object

Required: No

### **networkInterfaceIdSet**

(Interface endpoint) One or more network interfaces for the endpoint.

Type: Array of strings

Required: No

### **ownerId**

The ID of the AWS account that owns the VPC endpoint.

Type: String

Required: No

### **policyDocument**

The policy document associated with the endpoint, if applicable.

Type: String

Required: No

**privateDnsEnabled**

(Interface endpoint) Indicates whether the VPC is associated with a private hosted zone.

Type: Boolean

Required: No

**requesterManaged**

Indicates whether the VPC endpoint is being managed by its service.

Type: Boolean

Required: No

**routeTableIdSet**

(Gateway endpoint) One or more route tables associated with the endpoint.

Type: Array of strings

Required: No

**serviceName**

The name of the service to which the endpoint is associated.

Type: String

Required: No

**state**

The state of the VPC endpoint.

Type: String

Valid Values: PendingAcceptance | Pending | Available | Deleting | Deleted | Rejected | Failed | Expired

Required: No

**subnetIdSet**

(Interface endpoint) One or more subnets in which the endpoint is located.

Type: Array of strings

Required: No

**tagSet**

Any tags assigned to the VPC endpoint.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

**vpcEndpointType**

The type of endpoint.

Type: String

Valid Values: Interface | Gateway | GatewayLoadBalancer

Required: No

**vpcId**

The ID of the VPC to which the endpoint is associated.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcEndpointConnection

Describes a VPC endpoint connection to a service.

## Contents

### **creationTimestamp**

The date and time that the VPC endpoint was created.

Type: Timestamp

Required: No

### **dnsEntrySet**

The DNS entries for the VPC endpoint.

Type: Array of [DnsEntry \(p. 1498\)](#) objects

Required: No

### **gatewayLoadBalancerArnSet**

The Amazon Resource Names (ARNs) of the Gateway Load Balancers for the service.

Type: Array of strings

Required: No

### **networkLoadBalancerArnSet**

The Amazon Resource Names (ARNs) of the network load balancers for the service.

Type: Array of strings

Required: No

### **serviceId**

The ID of the service to which the endpoint is connected.

Type: String

Required: No

### **vpcEndpointId**

The ID of the VPC endpoint.

Type: String

Required: No

### **vpcEndpointOwner**

The ID of the AWS account that owns the VPC endpoint.

Type: String

Required: No

### **vpcEndpointState**

The state of the VPC endpoint.

Type: String

Valid Values: PendingAcceptance | Pending | Available | Deleting | Deleted | Rejected | Failed | Expired

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcIpv6CidrBlockAssociation

Describes an IPv6 CIDR block associated with a VPC.

## Contents

### **associationId**

The association ID for the IPv6 CIDR block.

Type: String

Required: No

### **ipv6CidrBlock**

The IPv6 CIDR block.

Type: String

Required: No

### **ipv6CidrBlockState**

Information about the state of the CIDR block.

Type: [VpcCidrBlockState \(p. 2188\)](#) object

Required: No

### **ipv6Pool**

The ID of the IPv6 address pool from which the IPv6 CIDR block is allocated.

Type: String

Required: No

### **networkBorderGroup**

The name of the unique set of Availability Zones, Local Zones, or Wavelength Zones from which AWS advertises IP addresses, for example, us-east-1-wl1-bos-wlz-1.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcPeeringConnection

Describes a VPC peering connection.

## Contents

### accepterVpcInfo

Information about the accepter VPC. CIDR block information is only returned when describing an active VPC peering connection.

Type: [VpcPeeringConnectionVpcInfo \(p. 2200\)](#) object

Required: No

### expirationTime

The time that an unaccepted VPC peering connection will expire.

Type: Timestamp

Required: No

### requesterVpcInfo

Information about the requester VPC. CIDR block information is only returned when describing an active VPC peering connection.

Type: [VpcPeeringConnectionVpcInfo \(p. 2200\)](#) object

Required: No

### status

The status of the VPC peering connection.

Type: [VpcPeeringConnectionStateReason \(p. 2199\)](#) object

Required: No

### tagSet

Any tags assigned to the resource.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### vpcPeeringConnectionId

The ID of the VPC peering connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcPeeringConnectionOptionsDescription

Describes the VPC peering connection options.

## Contents

### **allowDnsResolutionFromRemoteVpc**

Indicates whether a local VPC can resolve public DNS hostnames to private IP addresses when queried from instances in a peer VPC.

Type: Boolean

Required: No

### **allowEgressFromLocalClassicLinkToRemoteVpc**

Indicates whether a local ClassicLink connection can communicate with the peer VPC over the VPC peering connection.

Type: Boolean

Required: No

### **allowEgressFromLocalVpcToRemoteClassicLink**

Indicates whether a local VPC can communicate with a ClassicLink connection in the peer VPC over the VPC peering connection.

Type: Boolean

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcPeeringConnectionStateReason

Describes the status of a VPC peering connection.

## Contents

### code

The status of the VPC peering connection.

Type: String

Valid Values: initiating-request | pending-acceptance | active | deleted | rejected | failed | expired | provisioning | deleting

Required: No

### message

A message that provides more information about the status, if applicable.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpcPeeringConnectionVpcInfo

Describes a VPC in a VPC peering connection.

## Contents

### **cidrBlock**

The IPv4 CIDR block for the VPC.

Type: String

Required: No

### **cidrBlockSet**

Information about the IPv4 CIDR blocks for the VPC.

Type: Array of [CidrBlock \(p. 1422\)](#) objects

Required: No

### **ipv6CidrBlockSet**

The IPv6 CIDR block for the VPC.

Type: Array of [Ipv6CidrBlock \(p. 1719\)](#) objects

Required: No

### **ownerId**

The ID of the AWS account that owns the VPC.

Type: String

Required: No

### **peeringOptions**

Information about the VPC peering connection options for the accepter or requester VPC.

Type: [VpcPeeringConnectionOptionsDescription \(p. 2198\)](#) object

Required: No

### **region**

The Region in which the VPC is located.

Type: String

Required: No

### **vpcId**

The ID of the VPC.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnConnection

Describes a VPN connection.

## Contents

### category

The category of the VPN connection. A value of `VPN` indicates an AWS VPN connection. A value of `VPN-Classic` indicates an AWS Classic VPN connection.

Type: String

Required: No

### coreNetworkArn

The ARN of the core network.

Type: String

Required: No

### coreNetworkAttachmentArn

The ARN of the core network attachment.

Type: String

Required: No

### customerGatewayConfiguration

The configuration information for the VPN connection's customer gateway (in the native XML format). This element is always present in the [CreateVpnConnection \(p. 351\)](#) response; however, it's present in the [DescribeVpnConnections \(p. 889\)](#) response only if the VPN connection is in the pending or available state.

Type: String

Required: No

### customerGatewayId

The ID of the customer gateway at your end of the VPN connection.

Type: String

Required: No

### gatewayAssociationState

The current state of the gateway association.

Type: String

Required: No

### options

The VPN connection options.

Type: [VpnConnectionOptions \(p. 2206\)](#) object

Required: No

**routes**

The static routes associated with the VPN connection.

Type: Array of [VpnStaticRoute \(p. 2212\)](#) objects

Required: No

**state**

The current state of the VPN connection.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

**tagSet**

Any tags assigned to the VPN connection.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

**transitGatewayId**

The ID of the transit gateway associated with the VPN connection.

Type: String

Required: No

**type**

The type of VPN connection.

Type: String

Valid Values: ipsec.1

Required: No

**vgwTelemetry**

Information about the VPN tunnel.

Type: Array of [VgwTelemetry \(p. 2165\)](#) objects

Required: No

**vpnConnectionId**

The ID of the VPN connection.

Type: String

Required: No

**vpnGatewayId**

The ID of the virtual private gateway at the AWS side of the VPN connection.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnConnectionDeviceType

List of customer gateway devices that have a sample configuration file available for use. You can also see the list of device types with sample configuration files available under [Your customer gateway device](#) in the [AWS Site-to-Site VPN User Guide](#).

## Contents

### **platform**

Customer gateway device platform.

Type: String

Required: No

### **software**

Customer gateway device software version.

Type: String

Required: No

### **vendor**

Customer gateway device vendor.

Type: String

Required: No

### **vpnConnectionDeviceTypeId**

Customer gateway device identifier.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnConnectionOptions

Describes VPN connection options.

## Contents

### **enableAcceleration**

Indicates whether acceleration is enabled for the VPN connection.

Type: Boolean

Required: No

### **localIpv4NetworkCidr**

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Type: String

Required: No

### **localIpv6NetworkCidr**

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Type: String

Required: No

### **remoteIpv4NetworkCidr**

The IPv4 CIDR on the AWS side of the VPN connection.

Type: String

Required: No

### **remoteIpv6NetworkCidr**

The IPv6 CIDR on the AWS side of the VPN connection.

Type: String

Required: No

### **staticRoutesOnly**

Indicates whether the VPN connection uses static routes only. Static routes must be used for devices that don't support BGP.

Type: Boolean

Required: No

### **tunnelInsideIpVersion**

Indicates whether the VPN tunnels process IPv4 or IPv6 traffic.

Type: String

Valid Values: `ipv4` | `ipv6`

Required: No

**tunnelOptionSet**

Indicates the VPN tunnel options.

Type: Array of [TunnelOption \(p. 2148\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnConnectionOptionsSpecification

Describes VPN connection options.

## Contents

### **EnableAcceleration**

Indicate whether to enable acceleration for the VPN connection.

Default: `false`

Type: Boolean

Required: No

### **LocalIpv4NetworkCidr**

The IPv4 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

### **LocalIpv6NetworkCidr**

The IPv6 CIDR on the customer gateway (on-premises) side of the VPN connection.

Default: `::/0`

Type: String

Required: No

### **RemoteIpv4NetworkCidr**

The IPv4 CIDR on the AWS side of the VPN connection.

Default: `0.0.0.0/0`

Type: String

Required: No

### **RemoteIpv6NetworkCidr**

The IPv6 CIDR on the AWS side of the VPN connection.

Default: `::/0`

Type: String

Required: No

### **StaticRoutesOnly**

Indicate whether the VPN connection uses static routes only. If you are creating a VPN connection for a device that does not support BGP, you must specify `true`. Use [CreateVpnConnectionRoute](#) (p. 355) to create a static route.

Default: `false`

Type: Boolean

Required: No

**TunnelInsideIPVersion**

Indicate whether the VPN tunnels process IPv4 or IPv6 traffic.

Default: ipv4

Type: String

Valid Values: ipv4 | ipv6

Required: No

**TunnelOptions**

The tunnel options for the VPN connection.

Type: Array of [VpnTunnelOptionsSpecification \(p. 2213\)](#) objects

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnGateway

Describes a virtual private gateway.

## Contents

### **amazonSideAsn**

The private Autonomous System Number (ASN) for the Amazon side of a BGP session.

Type: Long

Required: No

### **attachments**

Any VPCs attached to the virtual private gateway.

Type: Array of [VpcAttachment \(p. 2186\)](#) objects

Required: No

### **availabilityZone**

The Availability Zone where the virtual private gateway was created, if applicable. This field may be empty or not returned.

Type: String

Required: No

### **state**

The current state of the virtual private gateway.

Type: String

Valid Values: pending | available | deleting | deleted

Required: No

### **tagSet**

Any tags assigned to the virtual private gateway.

Type: Array of [Tag \(p. 2070\)](#) objects

Required: No

### **type**

The type of VPN connection the virtual private gateway supports.

Type: String

Valid Values: ipsec.1

Required: No

### **vpnGatewayId**

The ID of the virtual private gateway.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnStaticRoute

Describes a static route for a VPN connection.

## Contents

### **destinationCidrBlock**

The CIDR block associated with the local subnet of the customer data center.

Type: String

Required: No

### **source**

Indicates how the routes were provided.

Type: String

Valid Values: `Static`

Required: No

### **state**

The current state of the static route.

Type: String

Valid Values: `pending` | `available` | `deleting` | `deleted`

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# VpnTunnelOptionsSpecification

The tunnel options for a single VPN tunnel.

## Contents

### DPDTimeoutAction

The action to take after DPD timeout occurs. Specify `restart` to restart the IKE initiation. Specify `clear` to end the IKE session.

Valid Values: `clear` | `none` | `restart`

Default: `clear`

Type: String

Required: No

### DPDTimeoutSeconds

The number of seconds after which a DPD timeout occurs.

Constraints: A value between 0 and 30.

Default: 30

Type: Integer

Required: No

### IKEVersions

The IKE versions that are permitted for the VPN tunnel.

Valid values: `ikev1` | `ikev2`

Type: Array of [IKEVersionsRequestListValue \(p. 1605\)](#) objects

Required: No

### Phase1DHGroupNumbers

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: 2 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24

Type: Array of [Phase1DHGroupNumbersRequestListValue \(p. 1867\)](#) objects

Required: No

### Phase1EncryptionAlgorithms

One or more encryption algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of [Phase1EncryptionAlgorithmsRequestListValue \(p. 1869\)](#) objects

Required: No

### **Phase1IntegrityAlgorithms**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 1 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of [Phase1IntegrityAlgorithmsRequestListValue \(p. 1871\)](#) objects

Required: No

### **Phase1LifetimeSeconds**

The lifetime for phase 1 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 28,800.

Default: 28800

Type: Integer

Required: No

### **Phase2DhGroupNumbers**

One or more Diffie-Hellman group numbers that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `2` | `5` | `14` | `15` | `16` | `17` | `18` | `19` | `20` | `21` | `22` | `23` | `24`

Type: Array of [Phase2DhGroupNumbersRequestListValue \(p. 1873\)](#) objects

Required: No

### **Phase2EncryptionAlgorithms**

One or more encryption algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `AES128` | `AES256` | `AES128-GCM-16` | `AES256-GCM-16`

Type: Array of [Phase2EncryptionAlgorithmsRequestListValue \(p. 1875\)](#) objects

Required: No

### **Phase2IntegrityAlgorithms**

One or more integrity algorithms that are permitted for the VPN tunnel for phase 2 IKE negotiations.

Valid values: `SHA1` | `SHA2-256` | `SHA2-384` | `SHA2-512`

Type: Array of [Phase2IntegrityAlgorithmsRequestListValue \(p. 1877\)](#) objects

Required: No

### **Phase2LifetimeSeconds**

The lifetime for phase 2 of the IKE negotiation, in seconds.

Constraints: A value between 900 and 3,600. The value must be less than the value for `Phase1LifetimeSeconds`.

Default: 3600

Type: Integer

Required: No

**PreSharedKey**

The pre-shared key (PSK) to establish initial authentication between the virtual private gateway and customer gateway.

Constraints: Allowed characters are alphanumeric characters, periods (.), and underscores (\_). Must be between 8 and 64 characters in length and cannot start with zero (0).

Type: String

Required: No

**RekeyFuzzPercentage**

The percentage of the rekey window (determined by `RekeyMarginTimeSeconds`) during which the rekey time is randomly selected.

Constraints: A value between 0 and 100.

Default: 100

Type: Integer

Required: No

**RekeyMarginTimeSeconds**

The margin time, in seconds, before the phase 2 lifetime expires, during which the AWS side of the VPN connection performs an IKE rekey. The exact time of the rekey is randomly selected based on the value for `RekeyFuzzPercentage`.

Constraints: A value between 60 and half of `Phase2LifetimeSeconds`.

Default: 540

Type: Integer

Required: No

**ReplayWindowSize**

The number of packets in an IKE replay window.

Constraints: A value between 64 and 2048.

Default: 1024

Type: Integer

Required: No

**StartupAction**

The action to take when establishing the tunnel for the VPN connection. By default, your customer gateway device must initiate the IKE negotiation and bring up the tunnel. Specify `start` for AWS to initiate the IKE negotiation.

Valid Values: `add | start`

Default: `add`

Type: String

Required: No

**TunnelInsideCidr**

The range of inside IPv4 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same virtual private gateway.

Constraints: A size /30 CIDR block from the 169.254.0.0/16 range. The following CIDR blocks are reserved and cannot be used:

- 169.254.0.0/30
- 169.254.1.0/30
- 169.254.2.0/30
- 169.254.3.0/30
- 169.254.4.0/30
- 169.254.5.0/30
- 169.254.169.252/30

Type: String

Required: No

**TunnelInsideIpv6Cidr**

The range of inside IPv6 addresses for the tunnel. Any specified CIDR blocks must be unique across all VPN connections that use the same transit gateway.

Constraints: A size /126 CIDR block from the local fd00::/8 range.

Type: String

Required: No

## See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java V2](#)
- [AWS SDK for Ruby V3](#)

# Making requests to the Amazon EC2 API

We provide the Query API for Amazon EC2, as well as software development kits (SDK) for AWS that enable you to access Amazon EC2 from your preferred programming language.

To monitor the calls made to the Amazon EC2 API for your account, including calls made by the AWS Management Console, command line tools, and other services, use AWS CloudTrail. For more information, see the [AWS CloudTrail User Guide](#).

## Contents

- [Required knowledge \(p. 2217\)](#)
- [Available APIs for Amazon EC2 \(p. 2217\)](#)
- [Query requests for Amazon EC2 \(p. 2218\)](#)
- [Request throttling for the Amazon EC2 API \(p. 2223\)](#)
- [Troubleshooting API request errors \(p. 2228\)](#)
- [Ensuring idempotency \(p. 2230\)](#)
- [SOAP requests \(p. 2234\)](#)
- [Cross-origin resource sharing support and Amazon EC2 \(p. 2234\)](#)
- [Logging Amazon EC2, Amazon EBS, and Amazon VPC API calls using AWS CloudTrail \(p. 2236\)](#)
- [Monitoring API requests using Amazon CloudWatch \(p. 2238\)](#)
- [VM Import Manifest \(p. 2241\)](#)

## Required knowledge

If you plan to access Amazon EC2 through an API, you should be familiar with the following:

- XML
- Web services
- HTTP requests
- One or more programming languages, such as Java, PHP, Perl, Python, Ruby, C#, or C++.

## Available APIs for Amazon EC2

The Amazon EC2 Query API provides HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`.

AWS provides libraries, sample code, tutorials, and other resources for software developers who prefer to build applications using language-specific APIs instead of submitting a request over HTTP or HTTPS. These libraries provide basic functions that automatically take care of tasks such as cryptographically signing your requests, retrying requests, and handling error responses, so that it is easier for you to get started.

For more information about the AWS SDKs, see [AWS SDKs and Tools](#).

# Query requests for Amazon EC2

Query requests are HTTP or HTTPS requests that use the HTTP verb GET or POST and a Query parameter named `Action`. For each Amazon EC2 API action, you can choose whether to use GET or POST. Regardless of which verb you choose, the same data is sent and received. For a list of Amazon EC2 API actions, see [Actions](#).

## Contents

- [Structure of a GET request \(p. 2218\)](#)
- [Query parameters \(p. 2219\)](#)
- [Query API authentication \(p. 2220\)](#)
- [Query response structures \(p. 2220\)](#)
- [Pagination \(p. 2221\)](#)
- [Amazon EC2 service endpoints \(p. 2221\)](#)

## Structure of a GET request

The Amazon EC2 documentation presents the GET requests as URLs, which can be used directly in a browser.

### Note

Because the GET requests are URLs, you must URL encode the parameter values. In the Amazon EC2 documentation, we leave the example GET requests unencoded to make them easier to read.

The request consists of the following:

- **Endpoint:** The URL that serves as the entry point for the web service. For more information, see [Amazon EC2 service endpoints \(p. 2221\)](#).
- **Action:** The action that you want to perform; for example, use `RunInstances` to launch an instance.
- **Parameters:** Any parameters for the action; each parameter is separated by an ampersand (&).
- **Version:** The API version to use. For the Amazon EC2 API, the version is 2016-11-15.
- **Authorization parameters:** The authorization parameters that AWS uses to ensure the validity and authenticity of the request. Amazon EC2 supports Signature Version 2 and Signature Version 4; for more information, see [Signature Version 2 Signing Process](#) and [Signature Version 4 Signing Process](#) in the [AWS General Reference](#).

The following optional parameters can be included in your request:

- **DryRun:** Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns `DryRunOperation`; otherwise, it returns `UnauthorizedOperation`.
- **SecurityToken:** The temporary security token obtained through a call to AWS Security Token Service.

For more information about common parameters for API requests, see [Common query parameters \(p. 2247\)](#).

The following is an example request that launches instances:

```
https://ec2.amazonaws.com/?  
Action=RunInstances&ImageId=ami-2bb65342&MaxCount=3&MinCount=1&Placement.AvailabilityZone=us-  
east-1a&Monitoring.Enabled=true&Version=2016-11-15&X-Amz-Algorithm=AWS4-HMAC-  
SHA256&X-Amz-Credential=AKIDEXAMPLE%2F20130813%2Fus-east-1%2Fec2%2Faws4_request&X-
```

```
Amz-Date=20130813T150206Z&X-Amz-SignedHeaders=content-type%3Bhost%3Bx-amz-date&X-Amz-Signature=525d1a96c69b5549dd78dbbec8efe264102288b83ba87b7d58d4b76b71f59fd2Content-type: application/jsonhost:ec2.amazonaws.com
```

To make these example requests even easier to read, AWS documentation may present them in the following format:

```
https://ec2.amazonaws.com/?Action=RunInstances&ImageId=ami-2bb65342&MaxCount=3&MinCount=1&Placement.AvailabilityZone=us-east-1a&Monitoring.Enabled=true&Version=2016-11-15&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIOSFODNN7EXAMPLEus-east-1%2Fec2%2Faws4_request&X-Amz-Date=20130813T150206Z&X-Amz-SignedHeaders=content-type%3Bhost%3Bx-amz-date&X-Amz-Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84example54174deb456cContent-type: application/jsonhost:ec2.amazonaws.com
```

The first line specifies the endpoint of the request. After the endpoint is a question mark (?), which separates the endpoint from the parameters. For more information about Amazon EC2 endpoints, see [Amazon EC2 service endpoints \(p. 2221\)](#).

The Action parameter indicates the action to perform. For a complete list of actions, see [Actions](#). The remaining lines specify additional parameters for the request.

In the example Query requests we present in the Amazon EC2 API documentation, we omit the headers, [common required parameters \(p. 2247\)](#), and authentication parameters to make it easier for you to focus on the parameters for the action. We replace them with the &AUTHPARAMS literal string to remind you that you must include these parameters in your request; for example:

```
https://ec2.amazonaws.com/?Action=RunInstances&ImageId=ami-2bb65342&MaxCount=3&MinCount=1&Placement.AvailabilityZone=us-east-1a&Monitoring.Enabled=true&AUTHPARAMS
```

**Important**

Before you specify your access key ID for the `AWSAccessKeyId` or `Credential` parameter, review and follow the guidance in [Best practices for Managing AWS access keys](#).

## Query parameters

Each Query request must include required common parameters to handle authentication and selection of an action.

Some operations take lists of parameters. These lists are specified using the `param.n` notation, where *n* is an integer starting from 1.

The following example adds multiple devices to a block device mapping using a list of `BlockDeviceMapping` parameters.

```
http://ec2.amazonaws.com/?Action=RunInstances&ImageId.1=ami-72aa081b
```

```
...
&BlockDeviceMapping.1.DeviceName=/dev/sdj
&BlockDeviceMapping.1.Ebs.NoDevice=true
&BlockDeviceMapping.2.DeviceName=/dev/sdh
&BlockDeviceMapping.2.Ebs.VolumeSize=300
&BlockDeviceMapping.3.DeviceName=/dev/sdc
&BlockDeviceMapping.3.VirtualName=ephemeral1
&AUTHPARAMS
```

## Query API authentication

You can send Query requests over either the HTTP or HTTPS protocol.

Regardless of which protocol you use, you must include a signature in every Query request. Amazon EC2 supports Signature Version 2 and Signature Version 4. For more information, see [Signature Version 2 Signing Process](#) and [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Signature Version 4 requests allow you to specify all the authorization parameters in a single header, for example:

```
Content-Type: application/x-www-form-urlencoded; charset=UTF-8
X-Amz-Date: 20130813T150211Z
Host: ec2.amazonaws.com
Authorization: AWS4-HMAC-SHA256 Credential=AKIDEXAMPLE/20130813/us-
east-1/ec2/aws4_request, SignedHeaders=content-type;host;x-amz-date,
Signature=ced6826de92d2bdeed8f846f0bf508e8559e98e4b0194b84example54174deb456c

http://ec2.amazonaws.com/?Action=RunInstances
ImageId=ami-2bb65342
&MaxCount=3
&MinCount=1
&Monitoring.Enabled=true
&Placement.AvailabilityZone=us-east-1a
&Version=2016-11-15
```

## Query response structures

In response to a Query request, the service returns an XML data structure that conforms to an XML schema defined for Amazon EC2. The structure of an XML response is specific to the associated request. In general, the response data types are named according to the operation performed and whether the data type is a container (can have children). Examples of containers include `groupSet` for security groups and `keySet` for key pairs (see the example that follows). Item elements are children of containers, and their contents vary according to the container's role.

Every successful response includes a request ID in a `requestId` element, and every unsuccessful response includes a request ID in a `RequestId` element. The value is a unique string that AWS assigns. If you ever have issues with a particular request, AWS will ask for the request ID to help troubleshoot the issue. The following shows an example response.

## Pagination

For actions that can return a long list of items, the Amazon EC2 API includes parameters to support pagination: `MaxResults`, `NextToken` (input), and `nextToken` (output). With pagination, you specify a size for `MaxResults` and then each call returns 0 to `MaxResults` items and sets `nextToken`. If there are additional items to iterate, `nextToken` is non-null and you can specify its value in the `NextToken` parameter of a subsequent call to get the next set of items. With pagination, you continue to call the action until `nextToken` is null, even if you receive less than `MaxResults` items, including zero items.

We recommend that you use pagination when using describe actions that can potentially return a large number of results, such as `DescribeInstances`. Using pagination bounds the number of items returned and the time it takes for these calls to return.

## Amazon EC2 service endpoints

An endpoint is a URL that serves as an entry point for an AWS web service. Amazon EC2 supports the following endpoint types:

- IPv4 endpoints
- Dual-stack endpoints that support both IPv4 and IPv6
- FIPS endpoints

When you make a request, you can specify the endpoint and Region to use. If you do not specify an endpoint, the IPv4 endpoint is used by default. To use a different endpoint type, you must specify it in your request. For examples of how to do this, see [Specifying endpoints \(p. 2222\)](#).

For more information about Regions, see [Regions and Availability Zones in the Amazon EC2 User Guide for Linux Instances](#). For a list of endpoints for Amazon EC2, see [Regions and Endpoints](#) in the [Amazon Web Services General Reference](#).

### Topics

- [IPv4 endpoints \(p. 2221\)](#)
- [Dual-stack \(IPv4 and IPv6\) endpoints \(p. 2222\)](#)
- [Specifying endpoints \(p. 2222\)](#)

For more information about FIPS endpoints see, [FIPS endpoints in the Amazon Web Services General Reference](#).

## IPv4 endpoints

IPv4 endpoints support IPv4 traffic only. IPv4 endpoints are available for all Regions.

If you specify the general endpoint, `ec2.amazonaws.com`, we use the endpoint for `us-east-1`. To use a different Region, specify its associated endpoint. For example, if you specify `ec2.us-east-2.amazonaws.com` as the endpoint, we direct your request to the `us-east-2` endpoint.

IPv4 endpoint names use the following naming convention:

- `service.region.amazonaws.com`

For example, the IPv4 endpoint name for the `eu-west-1` Region is `ec2.eu-west-1.amazonaws.com`. For a list of endpoints for Amazon EC2, see [Regions and Endpoints](#) in the [Amazon Web Services General Reference](#).

## Dual-stack (IPv4 and IPv6) endpoints

Dual-stack endpoints support both IPv4 and IPv6 traffic. Dual-stack endpoints are available for in the following Regions only:

- `us-east-1`—US East (Northern Virginia)
- `us-east-2`—US East (Ohio)
- `us-west-2`—US West (Oregon)
- `eu-west-1`—Europe (Ireland)
- `ap-south-1`—Asia Pacific (Mumbai)
- `sa-east-1`—South America (São Paulo)

When you make a request to a dual-stack endpoint, the endpoint URL resolves to an IPv6 or an IPv4 address, depending on the protocol used by your network and client.

Amazon EC2 supports only regional dual-stack endpoints, which means that you must specify the Region as part of the endpoint name. Dual-stack endpoint names use the following naming convention:

- `api.service.region.aws`

For example, the dual-stack endpoint name for the `eu-west-1` Region is `api.ec2.eu-west-1.aws`. For a list of endpoints for Amazon EC2, see [Regions and Endpoints](#) in the *Amazon Web Services General Reference*.

## Specifying endpoints

This section provides some examples of how to specify an endpoint when making a request.

### AWS CLI

The following examples show how to specify an endpoint for the `us-east-2` Region using the AWS CLI.

- **Dual-stack**

```
aws ec2 describe-regions --region us-east-2 --endpoint-url https://api.ec2.us-east-2.aws
```

- **IPv4**

```
aws ec2 describe-regions --region us-east-2 --endpoint-url https://ec2.us-east-2.amazonaws.com
```

### AWS SDK for Java 2.x

The following examples show how to specify an endpoint for the `us-east-2` Region using the AWS SDK for Java 2.x.

- **Dual-stack**

```
Ec2Client client = Ec2Client.builder()
    .region(Region.US_EAST_2)
    .endpointOverride(URI.create("https://api.ec2.us-east-2.aws"))
```

```
.build();
```

- **IPv4**

```
Ec2Client client = Ec2Client.builder()
    .region(Region.US_EAST_2)
    .endpointOverride(URI.create("https://ec2.us-east-2.amazonaws.com"))
    .build();
```

## AWS SDK for Java 1.x

The following examples show how to specify an endpoint for the `eu-west-1` Region using the AWS SDK for Java 1.x.

- **Dual-stack**

```
AmazonEC2 s3 = AmazonEC2ClientBuilder.standard()
    .withEndpointConfiguration(new EndpointConfiguration(
        "https://api.ec2.eu-west-1.aws",
        "eu-west-1"))
    .build();
```

- **IPv4**

```
AmazonEC2 s3 = AmazonEC2ClientBuilder.standard()
    .withEndpointConfiguration(new EndpointConfiguration(
        "https://ec2.eu-west-1.amazonaws.com",
        "eu-west-1"))
    .build();
```

## AWS SDK for Go

The following examples show how to specify an endpoint for the `us-east-1` Region using the AWS SDK for Go.

- **Dual-stack**

```
sess := session.Must(session.NewSession())
svc := ec2.New(sess, &aws.Config{
    Region: aws.String(endpoints.UsEast1RegionID),
    Endpoint: aws.String("https://api.ec2.us-east-1.aws")
})
```

- **IPv4**

```
sess := session.Must(session.NewSession())
svc := ec2.New(sess, &aws.Config{
    Region: aws.String(endpoints.UsEast1RegionID),
    Endpoint: aws.String("https://ec2.us-east-1.amazonaws.com")
})
```

# Request throttling for the Amazon EC2 API

Amazon EC2 throttles EC2 API requests for each AWS account on a per-Region basis. We do this to help the performance of the service, and to ensure fair usage for all Amazon EC2 customers. Throttling

ensures that calls to the Amazon EC2 API do not exceed the maximum allowed API request limits. API calls are subject to the request limits whether they originate from:

- A third-party application
- A command line tool
- The Amazon EC2 console

If you exceed an API throttling limit, you get the `RequestLimitExceeded` error code. For more information, see [Query API request rate \(p. 2228\)](#).

#### Contents

- [How throttling Is applied \(p. 2224\)](#)
- [Throttling limits \(p. 2225\)](#)
- [Monitoring API throttling \(p. 2227\)](#)
- [Adjusting API throttling limits \(p. 2227\)](#)

## How throttling Is applied

Amazon EC2 uses the [token bucket algorithm](#) to implement API throttling. With this algorithm, your account has a *bucket* that holds a specific number of *tokens*. The number of tokens in the bucket represents your throttling limit at any given second.

Amazon EC2 implements two types of API throttling:

#### Topics

- [Request rate limiting \(p. 2224\)](#)
- [Resource rate limiting \(p. 2225\)](#)

## Request rate limiting

With request rate limiting, you are throttled on the number of API requests you make. Each request that you make removes one token from the bucket. For example, the bucket size for *non-mutating (Describe\*)* API actions is 100 tokens, so you can make up to 100 `Describe*` requests in one second. If you exceed 100 requests in a second, you are throttled and the remaining requests within that second fail.

Buckets automatically refill at a set rate. If the bucket is below its maximum capacity, a set number of tokens is added back to it every second until it reaches its maximum capacity. If the bucket is full when refill tokens arrive, they are discarded. The bucket cannot hold more than its maximum number of tokens. For example, the bucket size for *non-mutating (Describe\*)* API actions is 100 tokens, and the refill rate is 20 tokens per second. If you make 100 `Describe*` API requests in a second, the bucket is immediately reduced to zero (0) tokens. The bucket is then refilled by 20 tokens every second, until it reaches its maximum capacity of 100 tokens. This means that the previously empty bucket reaches its maximum capacity after 5 seconds.

You do not need to wait for the bucket to be completely full before you can make API requests. You can use tokens as they are added to the bucket. If you immediately use the refill tokens, the bucket does not reach its maximum capacity. For example, the bucket size for *console non-mutating actions* is 100 tokens, and the refill rate is 10 tokens per second. If you deplete the bucket by making 100 API requests in a second, you can continue to make 10 API requests per second. The bucket can refill to the maximum capacity only if you make fewer than 10 API requests per second.

For more information about the request token bucket sizes and refill rates, see [Request token bucket sizes and refill rates \(p. 2225\)](#).

## Resource rate limiting

Some API actions, such as `RunInstances` and `TerminateInstances`, use resource rate limiting in addition to request rate limiting. These API actions have a separate resource token bucket that depletes based on the number of resources that are impacted by the request. Like request token buckets, resource token buckets have a bucket maximum that allows you to burst, and a refill rate that allows you to sustain a steady rate of requests for as long as needed.

For example, the resource token bucket size for `RunInstances` is 1000 tokens, and the refill rate is two tokens per second. Therefore, you can immediately launch 1000 instances, using any number of API requests, such as one request for 1000 instances or four requests for 250 instances. After the resource token bucket is empty, you can launch up to two instances every second, using either one request for two instances or two requests for one instance.

For more information, see [Resource token bucket sizes and refill rates \(p. 2227\)](#).

## Throttling limits

The following sections describe the request token bucket and resource token bucket sizes and refill rates.

### Topics

- [Request token bucket sizes and refill rates \(p. 2225\)](#)
- [Resource token bucket sizes and refill rates \(p. 2227\)](#)

## Request token bucket sizes and refill rates

For request rate limiting purposes, API actions are grouped into the following categories:

- **Non-mutating actions** — API actions that retrieve data about resources. This category generally includes all `Describe*` actions, such as `DescribeRouteTables`, `DescribeImages`, and `DescribeHosts`. These API actions typically have the highest API throttling limits.
- **Unfiltered and unpaginated non-mutating actions** — A specific subset of non-mutating API actions that, when called without specifying either `pagination` or a `filter`, use tokens from a smaller token bucket. It is recommended that you make use of pagination and filtering so that tokens are deducted from the standard (larger) token bucket.
- **Mutating actions** — API actions that create, modify, or delete resources. This category generally includes all API actions that are not categorized as *non-mutating actions*, such as `CreateVolume`, `ModifyHosts`, and `DeleteSnapshot`. These actions have a lower throttling limit than non-mutating API calls.
- **Resource-intensive actions** — Mutating API actions that take the most time and consume the most resources to complete. These actions have an even lower throttling limit than *mutating actions*. They are throttled separately from other *mutating actions*.
- **Console non-mutating actions** — Non-mutating API actions that are called from the Amazon EC2 console. These API actions are throttled separately from other non-mutating API actions.
- **Uncategorized actions** — These API actions receive their own token bucket sizes and refill rates, even though by definition they fit in one of the other categories.

The following table shows the request token bucket sizes and refill rates for all AWS Regions.

API action category	Actions	Bucket maximum capacity	Bucket refill rate
Non-mutating actions	• <code>Describe*</code>	100	20

API action category	Actions	Bucket maximum capacity	Bucket refill rate
	<ul style="list-style-type: none"> <li>• Get*</li> </ul>		
Unfiltered and unpaginated non-mutating actions	<ul style="list-style-type: none"> <li>• <code>DescribeInstances</code></li> <li>• <code>DescribeNetworkInterfaces</code></li> <li>• <code>DescribeVolumes</code></li> <li>• <code>DescribeInstanceStatus</code></li> <li>• <code>DescribeSnapshots</code></li> <li>• <code>DescribeSecurityGroups</code></li> <li>• <code>DescribeSpotInstanceRequests</code></li> </ul>	50	10
Mutating actions	API actions that are not categorized as <i>non-mutating actions</i> .	200	5
Resource-intensive actions	<ul style="list-style-type: none"> <li>• <code>AuthorizeSecurityGroupIngress</code></li> <li>• <code>CancelSpotInstanceRequests</code></li> <li>• <code>CreateKeyPair</code></li> <li>• <code>RequestSpotInstances</code></li> <li>• <code>RevokeSecurityGroupIngress</code></li> <li>• <code>CreateVpcPeeringConnection</code></li> <li>• <code>AcceptVpcPeeringConnection</code></li> <li>• <code>RejectVpcPeeringConnection</code></li> <li>• <code>DeleteVpcPeeringConnection</code></li> </ul>	50	5
Console non-mutating actions	<ul style="list-style-type: none"> <li>• <code>Describe*</code></li> <li>• Get*</li> </ul>	100	10
Uncategorized actions	<code>RunInstances</code>	5	2
	<code>StartInstances</code>	5	2
	<code>CreateVpcEndpoint</code>	4	0.3
	<code>ModifyVpcEndpoint</code>	4	0.3
	<code>DeleteVpcEndpoints</code>	4	0.3
	<code>AcceptVpcEndpointConnections</code>	10	1
	<code>RejectVpcEndpointConnections</code>	10	1
	<code>CreateVpcEndpointServiceConfiguration</code>	10	1
	<code>ModifyVpcEndpointServiceConfiguration</code>	10	1
	<code>DeleteVpcEndpointServiceConfigurations</code>	10	1
	<code>CreateDefaultVpc</code>	1	1
	<code>CreateDefaultSubnet</code>	1	1
	<code>MoveAddressToVpc</code>	1	1
	<code>RestoreAddressToClassic</code>	1	1

API action category	Actions	Bucket maximum capacity	Bucket refill rate
	DescribeMovingAddresses	1	1
	AdvertiseByoipCidr	1	0.1
	ProvisionByoipCidr	1	0.1
	DescribeByoipCidrs	1	0.5
	DeprovisionByoipCidr	1	0.1
	WithdrawByoipCidr	1	0.1
	DescribeReservedInstancesOfferings	10	10
	PurchaseReservedInstancesOffering	5	5
	DescribeSpotFleetRequests	50	3
	DescribeSpotFleetInstances	100	5
	DescribeSpotFleetRequestHistory	100	5
	AssociateEnclaveCertificateIamRole	10	1
	DisassociateEnclaveCertificateIamRole	10	1
	GetAssociatedEnclaveCertificateIamRoles	10	1

## Resource token bucket sizes and refill rates

The following table lists the resource token bucket sizes and refill rates for API actions that apply resource rate limiting.

API action	Bucket maximum capacity	Bucket refill rate
RunInstances	1000	2
TerminateInstances	1000	20
StartInstances	1000	2
StopInstances	1000	20

## Monitoring API throttling

You can use Amazon CloudWatch to monitor your Amazon EC2 API calls and to collect and track metrics around API throttling. You can also create an alarm to warn you when you are close to reaching the API throttling limits. For more information, see [Monitoring API requests using Amazon CloudWatch \(p. 2238\)](#).

## Adjusting API throttling limits

You can request an increase for API throttling limits for your AWS account. To request a limit adjustment, contact the [AWS Support Center](#).

# Troubleshooting API request errors

In the Amazon EC2 Query API, errors codes are indicated as being either client or server. Client errors usually occur because there is a problem with the structure, content, or validity of the request. Server errors usually indicate a server-side issue.

For more information about API error codes, see [Error Codes](#).

## Contents

- [Query API request rate \(p. 2228\)](#)
- [Eventual consistency \(p. 2229\)](#)
- [Unauthorized operation \(p. 2230\)](#)

## Query API request rate

We throttle Amazon EC2 API requests for each AWS account on a per-Region basis to help the performance of the service. We ensure that all calls to the Amazon EC2 API (whether they originate from an application, calls to a command line interface, or the Amazon EC2 console) don't exceed the maximum allowed API request rate. The maximum API request rate may vary across Regions. Note that API requests made by IAM users are attributed to the underlying AWS account.

The Amazon EC2 API actions are divided into the following categories:

- Describe actions, such as `DescribeInstances` and `DescribeVolumes`. These requests simply retrieve cached data, so they have the highest request limit.
- Modify actions, such as `RunInstances` and `CreateVolumes`. These requests create or modify resources, so they have a lower request limit than describe calls.
- The `CreateKeyPair`, `AuthorizeSecurityGroupIngress`, and `RevokeSecurityGroupIngress` actions. These requests take the most time and resource to complete, so they have the lowest request limit.

If an API request exceeds the API request rate for its category, the request returns the `RequestLimitExceeded` error code. To prevent this error, ensure that your application doesn't retry API requests at a high rate. You can do this by using care when polling and by using exponential backoff retries.

## Polling

Your application might need to call an API repeatedly to check for an update in status. Before you start polling, give the request time to potentially complete. When you begin polling, use an appropriate sleep interval between successive requests. For best results, use an increasing sleep interval.

Alternatively, you can use Amazon CloudWatch Events to notify you of the status of some resources; for example, you can use the **EC2 Instance State-change Notification** event to notify you of a state change for an instance. For more information, see the [Amazon CloudWatch Events User Guide](#).

## Retries or batch processing

Your application might need to retry an API request after it fails, or to process multiple resources (for example, all your volumes). To lower the rate of API requests, use an appropriate sleep interval between successive requests. For best results, use an increasing or variable sleep interval.

## Calculating the sleep interval

When you have to poll or retry an API request, we recommend using an exponential backoff algorithm to calculate the sleep interval between API calls. The idea behind exponential backoff is to use progressively longer waits between retries for consecutive error responses. For more information, and implementation examples of this algorithm, see [Error Retries and Exponential Backoff in AWS](#).

## Eventual consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that the result of an API command you run that affects your Amazon EC2 resources might not be immediately visible to all subsequent commands you run. You should keep this in mind when you carry out an API command that immediately follows a previous API command.

Eventual consistency can affect the way you manage your resources. For example, if you run a command to create a resource, it will eventually be visible to other commands. This means that if you run a command to modify or describe the resource that you just created, its ID might not have propagated throughout the system, and you will get an error responding that the resource does not exist.

To manage eventual consistency, you can do the following:

- Confirm the state of the resource before you run a command to modify it. Run the appropriate `Describe` command using an exponential backoff algorithm to ensure that you allow enough time for the previous command to propagate through the system. To do this, run the `Describe` command repeatedly, starting with a couple of seconds of wait time, and increasing gradually up to five minutes of wait time.
- Add wait time between subsequent commands, even if a `Describe` command returns an accurate response. Apply an exponential backoff algorithm starting with a couple of seconds of wait time, and increase gradually up to about five minutes of wait time.

### Eventual consistency error examples

The following are examples of error codes you may encounter as a result of eventual consistency.

- `InvalidInstanceID.NotFound`

If you successfully run the `RunInstances` command, and then immediately run another command using the instance ID that was provided in the response of `RunInstances`, it may return an `InvalidInstanceID.NotFound` error. This does not mean the instance does not exist.

Some specific commands that may be affected are:

- `DescribeInstances`: To confirm the actual state of the instance, run this command using an exponential backoff algorithm.
- `TerminateInstances`: To confirm the state of the instance, first run the `DescribeInstances` command using an exponential backoff algorithm.

#### Important

If you get an `InvalidInstanceID.NotFound` error after running `TerminateInstances`, this does not mean that the instance is or will be terminated. Your instance could still be running. This is why it is important to first confirm the instance's state using `DescribeInstances`.

- `InvalidGroup.NotFound`

If you successfully run the `CreateSecurityGroup` command, and then immediately run another command using the security group ID that was provided in the response of `CreateSecurityGroup`, it may return an `InvalidGroup.NotFound` error. To confirm the state of the security group, run the `DescribeSecurityGroups` command using an exponential backoff algorithm.

- `InstanceLimitExceeded`

You have requested more instances than your current instance limit allows for the specified instance type. You could reach this limit unexpectedly if you are launching and terminating instances rapidly, as terminated instances count toward your instance limit for a while after they've been terminated.

## Unauthorized operation

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API, unless they've been explicitly granted permission through IAM policies. If an IAM user attempts to perform an action for which permission has not been granted, the request returns the following error: `Client.UnauthorizedOperation`.

This error may occur when a policy is unintentionally restrictive. For example, to allow an IAM user to launch instances into a specific subnet, you need to grant permissions for the following resources by specifying their ARNs in your IAM policy: instances, volumes, AMIs, the specific subnet, network interfaces, key pairs, and security groups. If you omit the permission for volumes, for example, the user is only able to launch an instance from an instance store-backed AMI, as they do not have permission to create the root EBS volume for an EBS-backed instance.

For more information about creating IAM policies for Amazon EC2, see [IAM Policies for Amazon EC2](#) in the *Amazon EC2 User Guide for Linux Instances*.

Currently, not all API actions support resource-level permissions; we'll add support for more in the future. For more information about which ARNs you can use with which Amazon EC2 API actions, see [Granting IAM Users Required Permissions for Amazon EC2 Resources](#).

## Ensuring idempotency

When you make a mutating API request, the request typically returns a result before the operation's asynchronous workflows have completed. Operations might also time out or encounter other server issues before they complete, even though the request has already returned a result. This could make it difficult to determine whether the request succeeded or not, and could lead to multiple retries to ensure that the operation completes successfully. However, if the original request and the subsequent retries are successful, the operation is completed multiple times. This means that you might create more resources than you intended.

*Idempotency* ensures that an API request completes no more than one time. With an idempotent request, if the original request completes successfully, any subsequent retries complete successfully without performing any further actions. However, the result might contain updated information, such as the current creation status.

### Contents

- [Idempotency in Amazon EC2 \(p. 2230\)](#)
- [RunInstances idempotency \(p. 2232\)](#)
- [Examples \(p. 2232\)](#)
- [Retry recommendations for idempotent requests \(p. 2234\)](#)

## Idempotency in Amazon EC2

The following API actions are idempotent by default, and do not require additional configuration. The corresponding AWS CLI commands also support idempotency by default.

## Idempotent by default

- AssociateAddress
- CreateVpnConnection
- DisassociateAddress
- ReplaceNetworkAclAssociation
- TerminateInstances

The following API actions optionally support idempotency using a *client token*. The corresponding AWS CLI commands also support idempotency using a client token. A client token is a unique, case-sensitive string of up to 64 ASCII characters. To make an idempotent API request using one of these actions, specify a client token in the request. You should not reuse the same client token for other API requests. If you retry a request that completed successfully using the same client token and the same parameters, the retry succeeds without performing any further actions. If you retry a successful request using the same client token, but one or more of the parameters are different, other than the Region or Availability Zone, the retry fails with an `IdempotentParameterMismatch` error.

## Idempotent using a client token

- AllocateHosts
- CopyImage
- CreateEgressOnlyInternetGateway
- CreateFlowLogs
- CreateFpgalmage
- CreateNatGateway
- CreateNetworkInterface
- CreateReservedInstancesListing
- CreateRoute
- CreateVolume
- CreateVpcEndpoint
- ImportImage
- ImportSnapshot
- ModifyReservedInstances
- PurchaseHostReservation
- PurchaseScheduledInstances
- RequestSpotFleet
- RequestSpotInstances
- RunInstances
- RunScheduledInstances

## Types of idempotency

- Regional – Requests are idempotent in each Region. However, you can use the same request, including the same client token, in a different Region.
- Zonal – Requests are idempotent in each Availability Zone in a Region. For example, if you specify the same client token in two calls to `AllocateHosts` in the same Region, the calls succeed if they specify different values for the `AvailabilityZone` parameter.

## RunInstances idempotency

The [RunInstances](#) API action uses both Regional and zonal idempotency.

The type of idempotency that is used depends on how you specify the Availability Zone in your RunInstances API request. The request uses **zonal idempotency** in the following cases:

- If you explicitly specify an Availability Zone using the **AvailabilityZone** parameter in the **Placement** data type
- If you implicitly specify an Availability Zone using the **SubnetId** parameter

If you do not explicitly or implicitly specify an Availability Zone, the request uses **Regional idempotency**.

### Zonal idempotency

Zonal idempotency ensures that a RunInstances API request is idempotent in each Availability Zone in a Region. This ensures that a request with the same client token can complete only once within each Availability Zone in a Region. However, the same client token can be used to launch instances in other Availability Zones in the Region.

For example, if you send an idempotent request to launch an instance in the `us-east-1a` Availability Zone, and then use the same client token in a request in the `us-east-1b` Availability Zone, we launch instances in each of those Availability Zones. If one or more of the parameters are different, subsequent retries with the same client token in those Availability Zones either return successfully without performing any further actions or fail with an `IdempotentParameterMismatch` error.

### Regional idempotency

Regional idempotency ensures that a RunInstances API request is idempotent in a Region. This ensures that a request with the same client token can complete only once within a Region. However, the exact same request, with the same client token, can be used to launch instances in a different Region.

For example, if you send an idempotent request to launch an instance in the `us-east-1` Region, and then use the same client token in a request in the `eu-west-1` Region, we launch instances in each of those Regions. If one or more of the parameters are different, subsequent retries with the same client token in those Regions either return successfully without performing any further actions or fail with an `IdempotentParameterMismatch` error.

#### Tip

If one of the Availability Zones in the requested Region is not available, RunInstances requests that use regional idempotency could fail. To leverage the Availability Zone features offered by the AWS infrastructure, we recommend that you use zonal idempotency when launching instances. RunInstances requests that use zonal idempotency and target an available Availability Zone succeed even if another Availability Zone in the requested Region is not available.

## Examples

### AWS CLI command examples

To make an AWS CLI command idempotent, add the `--client-token` option.

#### Example 1: Idempotency

The following [allocate-hosts](#) command uses idempotency as it includes a client token.

```
aws ec2 allocate-hosts --instance-type m5.large --availability-zone eu-west-1a --auto-placement on --quantity 1 --client-token 550e8400-e29b-41d4-a716-446655440000
```

### Example 2: run-instances regional idempotency

The following [run-instances](#) command uses regional idempotency as it includes a client token but does not explicitly or implicitly specify an Availability Zone.

```
aws ec2 run-instances --image-id ami-b232d0db --count 1 --key-name my-key-pair --client-token 550e8400-e29b-41d4-a716-446655440000
```

### Example 3: run-instances zonal idempotency

The following [run-instances](#) command uses zonal idempotency as it includes a client token and an explicitly specified Availability Zone.

```
aws ec2 run-instances --placement "AvailabilityZone=us-east-1a" --image-id ami-b232d0db --count 1 --key-name my-key-pair --client-token 550e8400-e29b-41d4-a716-446655440000
```

## API request examples

To make an API request idempotent, add the `ClientToken` parameter.

### Example 1: Idempotency

The following [AllocateHosts](#) API request uses idempotency as it includes a client token.

```
https://ec2.amazonaws.com/?Action=AllocateHosts
&AvailabilityZone=us-east-1b
&InstanceType=m5.large
&Quantity=1
&AutoPlacement=off
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

### Example 2: RunInstances regional idempotency

The following [RunInstances](#) API request uses regional idempotency as it includes a client token but does not explicitly or implicitly specify an Availability Zone.

```
https://ec2.amazonaws.com/?Action=RunInstances
&ImageId=ami-3ac33653
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

### Example 3: RunInstances zonal idempotency

The following [RunInstances](#) API request uses zonal idempotency as it includes a client token and an explicitly specified Availability Zone.

```
https://ec2.amazonaws.com/?Action=RunInstances
&Placement.AvailabilityZone=us-east-1d
&ImageId=ami-3ac33653
&MaxCount=1
&MinCount=1
&KeyName=my-key-pair
&ClientToken=550e8400-e29b-41d4-a716-446655440000
&AUTHPARAMS
```

## Retry recommendations for idempotent requests

The following table shows some common responses that you might get for idempotent API requests, and provides retry recommendations.

Response	Recommendation	Comments
200 (OK)	Do not retry	The original request completed successfully. Any subsequent retries return successfully.
400-series response codes ( <a href="#">client errors</a> )	Do not retry	<p>There is a problem with the request, from among the following:</p> <ul style="list-style-type: none"><li>• It includes a parameter or parameter combination that is not valid.</li><li>• It uses an action or resource for which you do not have permissions.</li><li>• It uses a resource that is in the process of changing states.</li></ul> <p>If the request involves a resource that is in the process of changing states, retrying the request could possibly succeed.</p>
500-series response codes ( <a href="#">server errors</a> )	Retry	The error is caused by an AWS server-side issue and is generally transient. Repeat the request with an appropriate backoff strategy.

## SOAP requests

We have deprecated the SOAP API for Amazon EC2. As of 1 December 2015, we no longer support SOAP requests for any version of the API. If you use a SOAP request you receive the following response:

```
Client.UnsupportedProtocol: SOAP is no longer supported.
```

Similarly, the AWS Software Development Kits (SDKs) no longer support SOAP requests for any version of the API.

We recommend that you use the Query API for Amazon EC2, or the AWS SDKs. For more information, see [Making requests to the Amazon EC2 API \(p. 2217\)](#).

## Cross-origin resource sharing support and Amazon EC2

The Amazon EC2 API supports cross-origin resource sharing (CORS). CORS defines a way for client web applications that are loaded in one domain to interact with resources in a different domain. For more information, go to the [Cross-Origin Resource Sharing W3C Recommendation](#). With CORS support for Amazon EC2, you can build rich client-side web applications that leverage the Amazon EC2 API. For example, suppose you are hosting a web site, `mywebsite.example.com`, and you want to use

JavaScript on your web pages to make requests to the Amazon EC2 API. Normally, a browser blocks JavaScript from allowing these requests, but with CORS, you are able to make cross-origin Amazon EC2 API calls from `mywebsite.example.com`.

CORS is already enabled for the Amazon EC2 API, and is ready for you to use. You do not need to perform any additional configuration steps to start using this feature. There is no change to the way that you make calls to the Amazon EC2 API; they must still be signed with valid AWS credentials to ensure that AWS can authenticate the requester. For more information, see [Signing AWS API requests](#) in the [Amazon Web Services General Reference](#).

The implementation of CORS in the Amazon EC2 API is standardized. Your application can send a simple request to the Amazon EC2 API, or, depending on the content of the request, a preflight request followed by an actual request. Amazon EC2 allows the request from any origin.

For more information about CORS and examples of how it works, go to the following article on the Mozilla Developer Network: [HTTP access control \(CORS\)](#).

## Simple requests

The following are the criteria that define a simple or actual request:

- Requests only use the `GET` or `POST` HTTP methods. If the `POST` method is used, then `Content-Type` can only be one of the following: `application/x-www-form-urlencoded`, `multipart/form-data`, or `text/plain`.
- Requests do not set custom headers, such as `x-Other-Header`.

Amazon EC2 allows the request from any origin. Any `GET` or `POST` request that attempts to use browser credentials by setting the `Access-Control-Allow-Credentials` value to `true` (where `XMLHttpRequest.withCredentials = true`) will fail.

The following information describes the request headers to Amazon EC2:

### Simple request header values

- **Origin:** Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.

The following information describes the response headers that Amazon EC2 returns (or does not return) after a simple or actual request:

### Simple response header values

- **Access-Control-Allow-Origin:** Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a `*` value. Therefore, Amazon EC2 allows any cross-domain origin, and never allows browser credentials, such as cookies.
- **Access-Control-Allow-Credentials:** Indicates whether browser credentials can be used to make the actual request. This is never returned. Therefore, the browser should interpret the value as `Access-Control-Allow-Credentials: false`.

## Preflight requests

If the content of your request meets the criteria below, then your request is checked for whether the actual request should be sent. A preflight request first sends an HTTP request to the resource (in this case, Amazon EC2) using the `OPTIONS` method.

The following are the criteria that define a preflight request:

- Requests use HTTP methods other than `GET` or `POST`. However, if the `POST` method is used, then the `Content-Type` is not one of the following: `application/x-www-form-urlencoded`, `multipart/form-data`, or `text/plain`.
- Requests set custom headers; for example, `x-Other-Header`.

The Amazon EC2 CORS implementation allows any headers, and allows any origin in the actual request.

The following information describes the request headers for a preflight request to Amazon EC2:

#### Preflight request header values

- `Origin`: Specifies the domain that would like access to the resource (in this case, the resource is Amazon EC2). This is inserted by the browser in a cross-origin request.
- `Access-Control-Request-Method`: The HTTP method to be used in the actual request from the browser.
- `Access-Control-Request-Headers`: The custom headers to be sent in the actual cross-origin request.

The following information is about the response headers that Amazon EC2 returns (or does not return) after a preflight request:

#### Preflight response header values

- `Access-Control-Allow-Origin`: Specifies the domain that can access the resource (in this case, the resource is Amazon EC2). This is always returned with a `*` value. Therefore, Amazon EC2 allows any cross-domain origin, and never allows browser credentials, such as cookies.
- `Access-Control-Allow-Credentials`: Indicates whether browser credentials can be used to make the actual request. This is never returned by Amazon EC2. Therefore, the browser should interpret the value as `Access-Control-Allow-Credentials: false`.
- `Access-Control-Expose-Headers`: Allows headers to be exposed to the browser. This is never returned by Amazon EC2. Therefore, no return headers from Amazon EC2 can be read by the requesting domain.
- `Access-Control-Max-Age`: Specifies how long preflight request results can be cached. The value is set to 1800 seconds (30 minutes).
- `Access-Control-Allow-Methods`: Indicates which methods are allowed when making an actual request. The following methods are allowed: `GET`, `POST`, `OPTIONS`, `DELETE`, and `PUT`. This also depends on how you are calling the Amazon EC2 API; for example, by using the Query API, or by using REST.
- `Access-Control-Allow-Headers`: Indicates which headers can be used in the actual request. Amazon EC2 accepts any headers in preflight requests. If the HTTP headers are not relevant in the actual request, they are ignored.

## Logging Amazon EC2, Amazon EBS, and Amazon VPC API calls using AWS CloudTrail

Amazon EC2, Amazon EBS, and Amazon VPC are integrated with AWS CloudTrail, a service that provides a record of actions taken by a user, role, or an AWS service in Amazon EC2, Amazon EBS, and Amazon VPC. CloudTrail captures all API calls for Amazon EC2, Amazon EBS, and Amazon VPC as events,

including calls from the console and from code calls to the APIs. If you create a trail, you can enable continuous delivery of CloudTrail events to an Amazon S3 bucket, including events for Amazon EC2, Amazon EBS, and Amazon VPC. If you don't configure a trail, you can still view the most recent events in the CloudTrail console in **Event history**. Using the information collected by CloudTrail, you can determine the request that was made to Amazon EC2, Amazon EBS, and Amazon VPC, the IP address from which the request was made, who made the request, when it was made, and additional details.

To learn more about CloudTrail, see the [AWS CloudTrail User Guide](#).

## Amazon EC2, Amazon EBS, and Amazon VPC information in CloudTrail

CloudTrail is enabled on your AWS account when you create the account. When activity occurs in Amazon EC2, Amazon EBS, and Amazon VPC, that activity is recorded in a CloudTrail event along with other AWS service events in **Event history**. You can view, search, and download recent events in your AWS account. For more information, see [Viewing Events with CloudTrail Event History](#).

For an ongoing record of events in your AWS account, including events for Amazon EC2, Amazon EBS, and Amazon VPC, create a trail. A trail enables CloudTrail to deliver log files to an Amazon S3 bucket. By default, when you create a trail in the console, the trail applies to all Regions. The trail logs events from all Regions in the AWS partition and delivers the log files to the Amazon S3 bucket that you specify. Additionally, you can configure other AWS services to further analyze and act upon the event data collected in CloudTrail logs. For more information, see:

- [Overview for Creating a Trail](#)
- [CloudTrail Supported Services and Integrations](#)
- [Configuring Amazon SNS Notifications for CloudTrail](#)
- [Receiving CloudTrail Log Files from Multiple Regions](#) and [Receiving CloudTrail Log Files from Multiple Accounts](#)

All Amazon EC2, Amazon EBS, and Amazon VPC actions are logged by CloudTrail and are documented in the [Amazon EC2 API Reference](#). For example, calls to the [RunInstances](#), [DescribeInstances](#), or [CreateImage](#) actions generate entries in the CloudTrail log files.

Every event or log entry contains information about who generated the request. The identity information helps you determine the following:

- Whether the request was made with root or IAM user credentials.
- Whether the request was made with temporary security credentials for a role or federated user.
- Whether the request was made by another AWS service.

For more information, see the [CloudTrail userIdentity Element](#).

## Understanding Amazon EC2, Amazon EBS, and Amazon VPC log file entries

A trail is a configuration that enables delivery of events as log files to an Amazon S3 bucket that you specify. CloudTrail log files contain one or more log entries. An event represents a single request from any source and includes information about the requested action, the date and time of the action, request parameters, and so on. CloudTrail log files are not an ordered stack trace of the public API calls, so they do not appear in any specific order.

The following log file record shows that a user terminated an instance.

```
{  
    "Records": [  
        {  
            "eventVersion": "1.03",  
            "userIdentity": {  
                "type": "Root",  
                "principalId": "123456789012",  
                "arn": "arn:aws:iam::123456789012:root",  
                "accountId": "123456789012",  
                "accessKeyId": "AKIAIOSFODNN7EXAMPLE",  
                "userName": "user"  
            },  
            "eventTime": "2016-05-20T08:27:45Z",  
            "eventSource": "ec2.amazonaws.com",  
            "eventName": "TerminateInstances",  
            "awsRegion": "us-west-2",  
            "sourceIPAddress": "198.51.100.1",  
            "userAgent": "aws-cli/1.10.10 Python/2.7.9 Windows/7botocore/1.4.1",  
            "requestParameters": {  
                "instancesSet": {  
                    "items": [{  
                        "instanceId": "i-1a2b3c4d"  
                    }]  
                }  
            },  
            "responseElements": {  
                "instancesSet": {  
                    "items": [{  
                        "instanceId": "i-1a2b3c4d",  
                        "currentState": {  
                            "code": 32,  
                            "name": "shutting-down"  
                        },  
                        "previousState": {  
                            "code": 16,  
                            "name": "running"  
                        }  
                    }]  
                }  
            },  
            "requestID": "be112233-1ba5-4ae0-8e2b-1c302EXAMPLE",  
            "eventID": "6e12345-2a4e-417c-aa78-7594fEXAMPLE",  
            "eventType": "AwsApiCall",  
            "recipientAccountId": "123456789012"  
        }  
    ]  
}
```

## Monitoring API requests using Amazon CloudWatch

### Important

This is an opt-in feature. To enable this feature for your AWS account, contact [AWS Support](#).

You can monitor Amazon EC2 API requests using Amazon CloudWatch, which collects raw data and processes it into readable, near real-time metrics. These metrics provide a simple way to track the usage and outcomes of the Amazon EC2 API operations over time. This information gives you a better perspective on how your web applications are performing, and enables you to identify and diagnose a

variety of issues. You can also set alarms that watch for certain thresholds, and send notifications or take specific actions when those thresholds are met.

For more information about CloudWatch, see the [Amazon CloudWatch User Guide](#).

### Topics

- [Amazon EC2 API metrics and dimensions \(p. 2239\)](#)
- [Metric data retention \(p. 2240\)](#)
- [Monitoring requests made on your behalf \(p. 2240\)](#)
- [Billing \(p. 2240\)](#)
- [Working with Amazon CloudWatch \(p. 2240\)](#)

## Amazon EC2 API metrics and dimensions

### Metrics

The Amazon EC2 API metrics are contained in the `AWS/EC2/API` namespace. The following tables list the metrics available for Amazon EC2 API requests.

Metric	Description
<code>ClientErrors</code>	<p>The number of failed API requests caused by client errors.</p> <p>These errors are usually caused by something the client did, such as specifying an incorrect or invalid parameter in the request, or using an action or resource on behalf of a user that does not have permission to use the action or resource.</p> <p>Unit: Count</p>
<code>RequestLimitExceeded</code>	<p>The number of times the maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account.</p> <p>Amazon EC2 API requests are throttled to help maintain the performance of the service. If your requests have been throttled, you get the <code>Client.RequestLimitExceeded</code> error.</p> <p>Unit: Count</p>
<code>ServerErrors</code>	<p>The number of failed API requests caused by internal server errors.</p> <p>These errors are usually caused by an AWS server-side error, exception, or failure.</p> <p>Unit: Count</p>
<code>SuccessfulCalls</code>	<p>The number of successful API requests.</p> <p>Unit: Count</p>

## Dimensions

The Amazon EC2 metric data can be filtered across all EC2 API actions. For more information about dimensions, see [Amazon CloudWatch concepts](#).

## Metric data retention

Amazon EC2 API metrics are sent to CloudWatch at 1-minute intervals. CloudWatch retains metric data as follows:

- Data points with a period of 60 seconds (1 minute) are available for 15 days.
- Data points with a period of 300 seconds (5 minutes) are available for 63 days.
- Data points with a period of 3600 seconds (1 hour) are available for 455 days (15 months).

## Monitoring requests made on your behalf

API requests made by AWS services on your behalf, such as requests made service-linked roles, do not count toward your API throttling limits and they do not send metrics to Amazon CloudWatch for your account. These requests cannot be monitored using CloudWatch.

API requests made on your behalf by third-party service providers do count toward your API throttling limits and they do send metrics to Amazon CloudWatch for your account. These requests can be monitored using CloudWatch.

## Billing

Standard CloudWatch pricing and charges apply. No additional charges are applied for using the Amazon EC2 API metrics. For more information, see [Amazon CloudWatch Pricing](#).

## Working with Amazon CloudWatch

### Contents

- [Viewing CloudWatch metrics \(p. 2240\)](#)
- [Creating CloudWatch alarms \(p. 2241\)](#)

## Viewing CloudWatch metrics

You can view Amazon EC2 API metrics using the CloudWatch console and the command line tools.

### To view metrics using the CloudWatch console

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Metrics**.
3. Under **All metrics**, choose the AWS/EC2/API metric namespace.
4. To view the metrics, select the metric dimension.

### To view metrics using the command line tools

Use one of the following commands:

- [list-metrics \(AWS CLI\)](#)

```
aws cloudwatch list-metrics --namespace "AWS/EC2/API"
```

- [Get-CWMetricList \(AWS Tools for Windows PowerShell\)](#)

```
Get-CWMetricList -Namespace "AWS/EC2/API"
```

## Creating CloudWatch alarms

You can create a CloudWatch alarm that sends an Amazon SNS message when the alarm changes state. An alarm watches a single metric over a time period that you specify. It sends a notification to an SNS topic based on the value of the metric relative to a given threshold over a number of time periods.

For example, you can create an alarm that monitors the number of `DescribeInstances` API requests that fail due to server-side errors. The following alarm sends an email notification when the number of `DescribeInstances` API request failures reach a threshold of 10 server-side errors during a 5-minute period.

### To create an alarm for Amazon EC2 `DescribeInstances` API request server errors

1. Open the CloudWatch console at <https://console.aws.amazon.com/cloudwatch/>.
2. In the navigation pane, choose **Alarms**, **Create Alarm**.
3. Choose **EC2/API Metrics**.
4. Select the **DescribeInstances** API operation and the **ServerErrors** metric and choose **Next**.
5. Configure the alarm as follows, and choose **Create Alarm** when you are done:
  - a. Under **Alarm Threshold**, enter a name and description for your alarm.
  - b. For **Whenever**, choose **>=**, enter 10, and then enter 1 for the consecutive periods.
  - c. Under **Actions**, select an existing notification list or choose **New list**.
  - d. Under **Alarm Preview**, select a period of **5 minutes** and specify a statistic of **Sum**.

For more information, see [Creating Amazon CloudWatch alarms](#) in the *Amazon CloudWatch User Guide*.

## VM Import Manifest

The import manifest is an XML file created by the `ec2-import-instance` CLI command and consumed by the Amazon EC2 API operations `ImportInstance` or `ImportVolume`, or by the `ec2-import-volume` CLI command. The manifest allows a virtual machine image to be broken into small parts for transfer and then reassembled at the destination, with support for retrying failed partial transfers. This file is generally created, consumed, and destroyed by the Amazon EC2 tools without user intervention.

In some exceptional situations, developers may wish to construct a manifest manually or programmatically, making it possible to bypass certain API operations while still providing a manifest for other operations that require the file as a parameter value.

This topic documents the structure of the manifest and provides a sample file.

### Note

Direct manipulation of the manifest departs from the standard workflow of the Amazon EC2 API and CLI. In general, we recommend that you follow the procedures in [Importing and Exporting Instances](#) when importing VM images.

## Manifest Schema

The schema below describes the format of the manifest. Documentation for the schema elements is presented inline.

```

<?xml version="1.0" encoding="UTF-8"?>
<xss:schema xmlns:xss="http://www.w3.org/2001/XMLSchema">
    <xss:element name="manifest">
        <xss:complexType>
            <xss:sequence>
                <xss:element name="version" type="xs:string">
                    <xss:annotation>
                        <xss:documentation> Version designator for the manifest file,
                        </xss:documentation>
                    </xss:annotation>
                </xss:element>
                <xss:element name="file-format" type="xs:string">
                    <xss:annotation>
                        <xss:documentation> File format of volume to be imported, with value
RAW,
                        VHD, or VMDK. </xss:documentation>
                    </xss:annotation>
                </xss:element>
                <xss:element name="importer" type="Importer">
                    <xss:annotation>
                        <xss:documentation> Complex type describing the software that
created the
                        manifest. </xss:documentation>
                    </xss:annotation>
                </xss:element>
                <xss:element name="self-destruct-url" type="xs:anyURI">
                    <xss:annotation>
                        <xss:documentation> Signed URL used to delete the stored manifest
file.
                        </xss:documentation>
                    </xss:annotation>
                </xss:element>
                <xss:element name="import" type="Import">
                    <xss:annotation>
                        <xss:documentation> Complex type describing the size and chunking of
the
                        volume file. </xss:documentation>
                    </xss:annotation>
                </xss:element>
            </xss:sequence>
        </xss:complexType>
    </xss:element>

    <xss:complexType name="Importer">
        <xss:sequence>
            <xss:element name="name" type="xs:string">
                <xss:annotation>
                    <xss:documentation> Name of the software that created the manifest.
                    </xss:documentation>
                </xss:annotation>
            </xss:element>
            <xss:element name="version" type="xs:string">
                <xss:annotation>
                    <xss:documentation> Version of the software that created the manifest.
                    </xss:documentation>
                </xss:annotation>
            </xss:element>
            <xss:element name="release" type="xs:string">
                <xss:annotation>

```

```

<xs:documentation> Release number of the software that created the
manifest.
</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>

<xs:complexType name="Import">
<xs:sequence>
<xs:element name="size" type="xs:long">
<xs:annotation>
<xs:documentation> Exact size of the file to be imported (bytes on
disk).
</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="volume-size" type="xs:long">
<xs:annotation>
<xs:documentation> Rounded size in gigabytes of volume to be imported.
</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="parts" type="Parts">
<xs:annotation>
<xs:documentation> Complex type describing and counting the parts into
which the
file is split. </xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>

<xs:complexType name="Parts">
<xs:sequence>
<xs:element minOccurs="1" maxOccurs="unbounded" name="part" type="Part">
<xs:annotation>
<xs:documentation> Definition of a particular part. Any number of parts
may be
defined. </xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
<xs:attribute name="count" type="xs:int">
<xs:annotation>
<xs:documentation> Total count of the parts. </xs:documentation>
</xs:annotation>
</xs:attribute>
</xs:complexType>

<xs:complexType name="Part">
<xs:sequence>
<xs:element name="byte-range" type="ByteRange">
<xs:annotation>
<xs:documentation> Complex type defining the starting and ending byte
count of a
part. </xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="key" type="xs:string">
<xs:annotation>
<xs:documentation> The S3 object name of the part. </xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="head-url" type="xs:anyURI">
<xs:annotation>
```

```

object
    <xs:documentation> Signed URLs for issuing a HEAD request on the S3
        containing this part. </xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="get-url" type="xs:anyURI">
    <xs:annotation>
        <xs:documentation> Signed URLs for issuing a GET request on the S3
object
        containing this part. </xs:documentation>
    </xs:annotation>
</xs:element>
<xs:element name="delete-url" minOccurs="0" type="xs:anyURI">
    <xs:annotation>
        <xs:documentation> Signed URLs for issuing a DELETE request on the S3
object
        containing this part. </xs:documentation>
    </xs:annotation>
</xs:element>
</xs:sequence>
<xs:attribute name="index" type="xs:int">
    <xs:annotation>
        <xs:documentation> Index number of this part. </xs:documentation>
    </xs:annotation>
</xs:attribute>
</xs:complexType>

<xs:complexType name="ByteRange">
    <xs:attribute name="start" type="xs:long">
        <xs:annotation>
            <xs:documentation> Offset of a part's first byte in the disk image.
            </xs:documentation>
        </xs:annotation>
    </xs:attribute>
    <xs:attribute name="end" type="xs:long">
        <xs:annotation>
            <xs:documentation> Offset of a part's last byte in the disk image.
            </xs:documentation>
        </xs:annotation>
    </xs:attribute>
</xs:complexType>
</xs:schema>
```

## Examples

This first example of a manifest describes a volume image with two parts. The files containing the parts are on a local system and must be uploaded to Amazon S3.

```

<manifest>
    <version>2010-11-15</version>
    <file-format>VMDK</file-format>
    <importer>
        <name>ec2-upload-disk-image</name>
        <version>1.0.0</version>
        <release>2010-11-15</release>
    </importer>
    <self-destruct-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdkmanifest.xml?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=m%2B1%2FkuKuvfEeD
%2Fya%2B0TrgeiH%2FLM%3D</self-destruct-url>
    <import>
        <size>12595200</size>
        <volume-size>1</volume-size>
```

```

<parts count="2">
    <part index="0">
        <byte-range end="10485759" start="0"/>
        <key>d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-
disk.vmdk.part0</key>
        <head-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=2yqS2VGYXGmqcbu
%2FrQEn8FGIKaI%3D</head-url>
        <get-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=nEv18VhFoEuIjJFRkAYB2IWKRtY
%3D</get-url>
        <delete-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part0?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=CX19zc4Eys8BN
%2FXsoepk%2Bi3i4No%3D</delete-url>
    </part>
    <part index="1">
        <byte-range end="12595199" start="10485760"/>
        <key>d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-
disk.vmdk.part1</key>
        <head-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=3b%2F8ky92L8g
%2BBBf15Ou194VnR4Js%3D</head-url>
        <get-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=W
%2FxagI5ChmfqggY8WwyDJ3Rgviw%3D</get-url>
        <delete-url>https://example-disk-part-bucket.s3.amazonaws.com/
d6e1ca17-72f6-4ab0-b2c8-d7ba8186cb23/cirros-0.3.2-x86_64-disk.vmdk.part1?
AWSAccessKeyId=AKIAIOSFODNN7EXAMPLE&Expires=1416618486&Signature=08FH3QPwkIcNURnNpt9DIvvhQ0I
%3D</delete-url>
    </part>
</parts>
</import>
</manifest>

```

The second example describes a volume image with a single part that has already been uploaded to Amazon S3.

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<manifest>
    <version>2010-11-15</version>
    <file-format>VMDK</file-format>
    <importer>
        <name>Linux_RHEL_59_64.vmdk</name>
        <version>1.0.0</version>
        <release>2010-11-15</release>
    </importer>
    <self-destruct-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/
Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-
Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&X-
Amz-Date=20151119T234529Z&X-Amz-Expires=604800&X-Amz-
Signature=4dbf803f2e52fb6a876d3b6377803af42ec11155b37366ab4fcfa56691672807&X-Amz-
SignedHeaders=Host</self-destruct-url>
    <import>
        <size>994433536</size>
        <volume-size>1</volume-size>
        <parts count="1">
            <part index="0">
                <byte-range end="994433536" start="0"/>
                <key>Linux_RHEL_59_64.vmdk</key>

```

```
<head-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20151119T234529Z&X-Amz-Expires=604800&X-Amz-Signature=4c3a7bdf3ef8fa53a5585fc67747c81eaf65bf09f3768998a575dabf5dfda2e&X-Amz-SignedHeaders=Host</head-url>
<get-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20151119T234529Z&X-Amz-Expires=604800&X-Amz-Signature=329d6abb673e4ce11c0aa602f34f62fb8ced703e8ae6c04f24c16e79d7699e52&X-Amz-SignedHeaders=Host</get-url>
<delete-url>https://example-disk-part-bucket.s3.ap-northeast-2.amazonaws.com/Linux_RHEL_59_64.vmdk?X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAJ26ZRPZDGYJT4KAQFEXAMPLE%2Fap-northeast-2%2Fs3%2Faws4_request&X-Amz-Date=20151119T234529Z&X-Amz-Expires=604800&X-Amz-Signature=4dbf803f2e52fb6a876d3b63778033af42ec11155b37366ab4fc56691672807&X-Amz-SignedHeaders=Host</delete-url>
</part>
</parts>
</import>
</manifest>
```

# Common query parameters

Most Amazon EC2 API actions support the parameters described in the following tables. The common parameters vary depending on whether you're using Signature Version 2 or Signature Version 4 to sign your requests.

For more information about using the Query API for Amazon EC2, see [Making requests to the Amazon EC2 API \(p. 2217\)](#).

## Topics

- [Common query parameters for Signature Version 2 \(p. 2247\)](#)
- [Common query parameters for Signature Version 4 \(p. 2248\)](#)

## Common query parameters for Signature Version 2

For more information about Signature Version 2, see [Signature Version 2 Signing Process](#) in the *Amazon Web Services General Reference*.

Name	Description	Required
Action	The action to perform.  Example: <code>RunInstances</code>	Yes
Version	The API version to use.	Yes
AWSAccessKeyId	The access key ID for the request sender. This identifies the account which will be charged for usage of the service. The account that's associated with the access key ID must be signed up for Amazon EC2, or the request isn't accepted.  Example: <code>AKIAIOSFODNN7EXAMPLE</code>	Yes
Expires	The date and time at which the signature included in the request expires, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see <a href="#">ISO 8601</a> .  Example: <code>2006-07-07T15:04:56Z</code>	Conditional. Requests must include either Timestamp or Expires, but cannot contain both.
Timestamp	The date and time at which the request is signed, in the format YYYY-MM-DDThh:mm:ssZ. For more information, see <a href="#">ISO 8601</a> .  Example: <code>2006-07-07T15:04:56Z</code>	Conditional. Requests must include either

Name	Description	Required
		Timestamp or Expires, but cannot contain both.
Signature	The request signature.  Example: Qnp14Qk/7tINHzfXCiT7VEXAMPLE	Yes
SignatureMethod	The hash algorithm you use to create the request signature. Valid values: HmacSHA256   HmacSHA1.  Example: HmacSHA256	Yes
SignatureVersion	The signature version you use to sign the request. Set this value to 2.  Example: 2	Yes
DryRun	Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns DryRunOperation; otherwise, it returns UnauthorizedOperation.	No
SecurityToken	The temporary security token obtained through a call to AWS Security Token Service.  Example: AQoEXAMPLEH4aoAH0gNCAPyJxz4B1CFFxWNE1OPTgk5TthT +FvwqnKwRcOIfRh3c/L	No

Parameter values must be URL-encoded. This is true for any Query parameter passed to Amazon EC2 and is typically necessary in the `Signature` parameter. Some clients do this automatically, but this is not the norm.

## Common query parameters for Signature Version 4

For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

Name	Description	Required
Action	The action to perform.  Example: RunInstances	Yes
Version	The API version to use.	Yes
X-Amz-Algorithm	The hash algorithm you use to create the request signature.  Example: AWS4-HMAC-SHA256	Yes

Name	Description	Required
X-Amz-Credential	<p>The credential scope for the request, in the format <code>access-key-ID/YYYYMMDD/region/service/aws4_request</code></p> <p>Example: AKIDEXAMPLE/20140707/us-east-1/ec2/aws4_request</p>	Yes
X-Amz-Date	<p>The date and time at which the request is signed, in the format YYYYMMDDThmmssZ. The date must match the date that's included in the credential scope for the X-Amz-Credential parameter, or the date used in an Authorization header (see the note below the table).</p> <p>Example: 20140707T150456Z</p>	Yes
X-Amz-SignedHeaders	<p>The headers you are including as part of the request. At a minimum, you must include the host header. If you include an x-amz-date header in your request, you must include it in the list of signed headers.</p> <p>Example: content-type;host;user-agent</p>	Yes
X-Amz-Signature	<p>A signature derived from your secret access key.</p> <p>Example: ced6826de92d2bdeed8f846f0bf508e8559example</p>	Yes
X-Amz-Security-Token	<p>The temporary security token obtained through a call to AWS Security Token Service.</p> <p>Example: AQoEXAMPLEH4aoAH0gNCAPyJxz4B1CFFxWNE1OPTgk5TthT+FvwqnKwRcOIfRh3c/L</p>	No
DryRun	<p>Checks whether you have the required permissions for the action, without actually making the request. If you have the required permissions, the request returns DryRunOperation; otherwise, it returns UnauthorizedOperation.</p>	No

#### Note

The X-Amz-Algorithm, X-Amz-Credential, X-Amz-SignedHeaders, and X-Amz-Signature parameters can either be specified as separate parameters in the query string, or their values can be included in a single Authorization header. For more information, see [Adding Signing Information to the Authorization Header](#) in the *Amazon Web Services General Reference*.

# Granting IAM users required permissions for Amazon EC2 resources

By default, AWS Identity and Access Management (IAM) users don't have permission to create or modify Amazon EC2 resources, or perform tasks using the Amazon EC2 API. To allow IAM users to create or modify resources and perform tasks, you must create IAM policies that grant IAM users permissions for the specific resources and API actions they'll need to use, and then attach those policies to the IAM users or groups that require those permissions.

When you make an API request, the parameters that you specify in the request determine which resources an IAM user must have permission to use. If the user doesn't have the required permissions, the request fails. For example, if you use `RunInstances` to launch an instance in a subnet (by specifying the `SubnetId` parameter), an IAM user must have permission to use the VPC.

*Resource-level permissions* refers to the ability to specify which resources users are allowed to perform actions on. Amazon EC2 has partial support for resource-level permissions. This means that for certain Amazon EC2 actions, you can control when users are allowed to use those actions based on conditions that have to be fulfilled, or specific resources that users are allowed to use. For example, you can grant users permission to launch instances, but only of a specific type, and only using a specific AMI.

For more information about the resources that are created or modified by the Amazon EC2 actions, and the ARNs and Amazon EC2 condition keys that you can use in an IAM policy statement, see [Actions, Resources, and Condition Keys for Amazon EC2](#) in the *IAM User Guide*.

For more information and for example policies, see [IAM Policies for Amazon EC2](#) in the *Amazon EC2 User Guide*.

# Error codes for the Amazon EC2 API

Amazon EC2 has two types of error codes:

- **Client errors.** These errors are usually caused by something the client did, such as specifying an incorrect or invalid parameter in the request, or using an action or resource on behalf of a user that doesn't have permission to use the action or resource. These errors are accompanied by a 400-series HTTP response code.
- **Server errors.** These errors are usually caused by an AWS server-side issue. These errors are accompanied by a 500-series HTTP response code.

## Contents

- [Common client error codes \(p. 2251\)](#)
- [Client error codes for specific actions \(p. 2253\)](#)
- [Server error codes \(p. 2280\)](#)
- [Example error response \(p. 2281\)](#)
- [Eventual consistency \(p. 2281\)](#)

## Common client error codes

This section lists the client error codes that all Amazon EC2 API actions can return.

Error code	Description
AuthFailure	The provided credentials could not be validated. You may not be authorized to carry out the request; for example, associating an Elastic IP address that is not yours, or trying to use an AMI for which you do not have permissions. Ensure that your account is authorized to use the Amazon EC2 service, that your credit card details are correct, and that you are using the correct access keys.
Blocked	Your account is currently blocked. Contact <a href="mailto:aws-verification@amazon.com">aws-verification@amazon.com</a> if you have questions.
DryRunOperation	The user has the required permissions, so the request would have succeeded, but the <code>DryRun</code> parameter was used.
IdempotentParameterMismatch	The request uses the same client token as a previous, but non-identical request. Do not reuse a client token with different requests, unless the requests are identical.
IncompleteSignature	The request signature does not conform to AWS standards.
InvalidAction	The action or operation requested is not valid. Verify that the action is typed correctly.
InvalidCharacter	A specified character is invalid.

Error code	Description
<code>InvalidClientTokenId</code>	The X.509 certificate or AWS access key ID provided does not exist in our records.
<code>InvalidPaginationToken</code>	The specified pagination token is not valid or is expired.
<code>InvalidParameter</code>	A parameter specified in a request is not valid, is unsupported, or cannot be used. The returned message provides an explanation of the error value. For example, if you are launching an instance, you can't specify a security group and subnet that are in different VPCs.
<code>InvalidParameterCombination</code>	Indicates an incorrect combination of parameters, or a missing parameter. For example, trying to terminate an instance without specifying the instance ID.
<code>InvalidParameterValue</code>	A value specified in a parameter is not valid, is unsupported, or cannot be used. Ensure that you specify a resource by using its full ID. The returned message provides an explanation of the error value.
<code>InvalidQueryParameter</code>	The AWS query string is malformed or does not adhere to AWS standards.
<code>MalformedQueryString</code>	The query string contains a syntax error.
<code>MissingAction</code>	The request is missing an action or a required parameter.
<code>MissingAuthenticationToken</code>	The request must contain either a valid (registered) AWS access key ID or X.509 certificate.
<code>MissingParameter</code>	The request is missing a required parameter. Ensure that you have supplied all the required parameters for the request; for example, the resource ID.
<code>OptInRequired</code>	You are not authorized to use the requested service. Ensure that you have subscribed to the service you are trying to use. If you are new to AWS, your account might take some time to be activated while your credit card details are being verified.
<code>PendingVerification</code>	Your account is pending verification. Until the verification process is complete, you may not be able to carry out requests with this account. If you have questions, contact <a href="#">AWS Support</a> .

Error code	Description
RequestExpired	The request reached the service more than 15 minutes after the date stamp on the request or more than 15 minutes after the request expiration date (such as for presigned URLs), or the date stamp on the request is more than 15 minutes in the future. If you're using temporary security credentials, this error can also occur if the credentials have expired. For more information, see <a href="#">Temporary Security Credentials</a> in the <i>IAM User Guide</i> .
UnauthorizedOperation	You are not authorized to perform this operation. Check your IAM policies, and ensure that you are using the correct access keys. For more information, see <a href="#">Controlling Access</a> . If the returned message is encoded, you can decode it using the <code>DecodeAuthorizationMessage</code> action. For more information, see <a href="#">DecodeAuthorizationMessage</a> in the <i>AWS Security Token Service API Reference</i> .
UnknownParameter	An unknown or unrecognized parameter was supplied. Requests that could cause this error include supplying a misspelled parameter or a parameter that is not supported for the specified API version.
UnsupportedInstanceAttribute	The specified attribute cannot be modified.
UnsupportedOperation	The specified request includes an unsupported operation. For example, you can't stop an instance that's instance store-backed. Or you might be trying to launch an instance type that is not supported by the specified AMI. The returned message provides details of the unsupported operation.
UnsupportedProtocol	SOAP has been deprecated and is no longer supported. For more information, see <a href="#">SOAP Requests</a> .
ValidationError	The input fails to satisfy the constraints specified by an AWS service.

## Client error codes for specific actions

This section lists client errors that are specific to certain Amazon EC2 API actions.

Error code	Description
ActiveVpcPeeringConnectionPerVpcLimitExceeded	You've reached the limit on the number of active VPC peering connections you can have for the specified VPC.
AddressLimitExceeded	You've reached the limit on the number of Elastic IP addresses that you can allocate.  For more information, see <a href="#">Elastic IP Address Limit</a> . If you need additional Elastic IP addresses, complete

Error code	Description
	the <a href="#">Amazon EC2 Elastic IP Address Request Form</a> . If you need additional Elastic IP addresses for your VPCs, complete the <a href="#">Amazon VPC Limits form</a> .
AsnConflict	The Autonomous System Numbers (ASNs) of the specified customer gateway and the specified virtual private gateway are the same.
AttachmentLimitExceeded	You've reached the limit on the number of Amazon EBS volumes or network interfaces that can be attached to a single instance.
BootForVolumeTypeUnsupported	The specified volume type cannot be used as a boot volume. For more information, see <a href="#">Amazon EBS Volume Types</a> .
BundlingInProgress	The specified instance already has a bundling task in progress.
CannotDelete	You cannot delete the 'default' security group in your VPC, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a> .
ClientVpnAuthorizationRuleLimitExceeded	You've reached the limit on the number of authorization rules that can be added to a single Client VPN endpoint.
ClientVpnCertificateRevocationListLimitExceeded	You've reached the limit on the number of client certificate revocation lists that can be added to a single Client VPN endpoint.
ClientVpnEndpointAssociationExists	The specified target network is already associated with the Client VPN endpoint.
ClientVpnEndpointLimitExceeded	You've reached the limit on the number of Client VPN endpoints that you can create.
ClientVpnRouteLimitExceeded	You've reached the limit on the number of routes that can be added to a single Client VPN endpoint.
ClientVpnTerminateConnectionsLimitExceeded	The number of client connections you're attempting to terminate exceeds the limit.
CidrConflict	You cannot enable a VPC for ClassicLink or extend a VPC peering connection to use the ClassicLink connection of a peer VPC if the VPC has routing that conflicts with the EC2-Classic private IP address range.
ConcurrentCreateImageNoRebootLimitExceeded	The maximum number of concurrent CreateImage requests for the instance has been reached. Wait for the current CreateImage requests to complete, and then retry your request.

Error code	Description
ConcurrentSnapshotLimitExceeded	You've reached the limit on the number of concurrent snapshots you can create on the specified volume. Wait until the 'pending' requests have completed, and check that you do not have snapshots that are in an incomplete state, such as 'error', which count against your concurrent snapshot limit.
ConcurrentTagAccess	You can't run simultaneous commands to modify a tag for a specific resource. Allow sufficient wait time for the previous request to complete, then retry your request. For more information, see <a href="#">Error Retries and Exponential Backoff in AWS</a> .
CreditSpecificationUpdateInProgress	The default credit specification for the instance family is currently being updated. It takes about five minutes to complete. For more information, see <a href="#">Setting the Default Credit Specification for the Account</a> .
CustomerGatewayLimitExceeded	You've reached the limit on the number of customer gateways you can create for the AWS Region. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on your customer gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .
CustomerKeyHasBeenRevoked	The customer master key cannot be accessed. For more information, see <a href="#">Amazon EBS Encryption</a> .
DeleteConversionTaskError	The conversion task cannot be canceled.
DefaultSubnetAlreadyExistsInAvailabilityZone	A <b>default</b> subnet already exists in the specified Availability Zone. You can have only one default subnet per Availability Zone.
DefaultVpcAlreadyExists	A default VPC already exists in the AWS Region. You can only have one default VPC per Region.
DefaultVpcDoesNotExist	There is no default VPC in which to carry out the request. If you've deleted your default VPC, you can create a new one. For more information, see <a href="#">Creating a Default VPC</a> .
DependencyViolation	The specified object has dependent resources. A number of resources in a VPC may have dependent resources, which prevent you from deleting or detaching them. Remove the dependencies first, then retry your request. For example, this error occurs if you try to delete a security group in a VPC that is in use by another security group.
DisallowedForDedicatedTenancyNetwork	Dedicated tenancy VPCs cannot be used with ClassicLink. If you want to allow your dedicated tenancy VPC to be enabled for ClassicLink, contact <a href="#">AWS Support</a> .

Error code	Description
DiskImageSizeTooLarge	The disk image exceeds the allowed limit (for instance or volume import).
DuplicateSubnetsInSameZone	For an interface VPC endpoint, you can specify only one subnet per Availability Zone.
EIPMigratedToVpc	The Elastic IP address has been migrated to EC2-VPC, and cannot be used in EC2-Classic.
EncryptedVolumesNotSupported	Encrypted Amazon EBS volumes may only be attached to instances that support Amazon EBS encryption. For more information, see <a href="#">Amazon EBS encryption</a> in the <i>Amazon EC2 User Guide for Linux Instances</i> .
ExistingVpcEndpointConnections	You cannot delete a VPC endpoint service configuration or change the load balancers for the endpoint service if there are endpoints attached to the service.
FleetNotInModifiableState	The Spot Fleet request must be in the <code>active</code> state in order to modify it. For more information, see <a href="#">Modifying a Spot Fleet Request</a> .
FlowLogAlreadyExists	A flow log with the specified configuration already exists.
FlowLogsLimitExceeded	You've reached the limit on the number of flow logs you can create. For more information, see <a href="#">Amazon VPC Limits</a> .
FilterLimitExceeded	The request uses too many filters or too many filter values.
Gateway.NotAttached	An internet gateway is not attached to a VPC. If you are trying to detach an internet gateway, ensure that you specify the correct VPC. If you are trying to associate an Elastic IP address with a network interface or an instance, ensure that an internet gateway is attached to the relevant VPC.
HostAlreadyCoveredByReservation	The specified Dedicated Host is already covered by a reservation.
HostLimitExceeded	You've reached the limit on the number of Dedicated Hosts that you can allocate. For more information, see <a href="#">Dedicated Hosts</a> .
IdempotentInstanceTerminated	The request to launch an instance uses the same client token as a previous request for which the instance has been terminated.
InaccessibleStorageLocation	The specified Amazon S3 URL cannot be accessed. Check the access permissions for the URL.

Error code	Description
<code>IncorrectInstanceState</code>	The instance is in an incorrect state for the requested action. For example, some instance attributes, such as user data, can only be modified if the instance is in a 'stopped' state.  If you are associating an Elastic IP address with a network interface, ensure that the instance that the interface is attached to is not in the 'pending' state.
<code>IncorrectModificationState</code>	A new modification action on an EBS Elastic Volume cannot occur because the volume is currently being modified.
<code>IncorrectState</code>	The resource is in an incorrect state for the request. This error can occur if you are trying to attach a volume that is still being created. Ensure that the volume is in the 'available' state. If you are creating a snapshot, ensure that the previous request to create a snapshot on the same volume has completed. If you are deleting a virtual private gateway, ensure that it's detached from the VPC.
<code>IncompatibleHostRequirements</code>	There are no available or compatible Dedicated Hosts available on which to launch or start the instance.
<code>InstanceAlreadyLinked</code>	The EC2-Classic instance you are trying to link is already linked to another VPC. You cannot link an EC2-Classic instance to more than one VPC at a time.
<code>InstanceCreditSpecification.NotSupported</code>	The specified instance does not use CPU credits for CPU usage; only T2 instances use CPU credits for CPU usage.
<code>InstanceLimitExceeded</code>	You've reached the limit on the number of instances you can run concurrently. This error can occur if you are launching an instance or if you are creating a Capacity Reservation. Capacity Reservations count towards your On-Demand Instance limits. If your request fails due to limit constraints, increase your On-Demand Instance limit for the required instance type and try again. For more information, see <a href="#">How many instances can I run in Amazon EC2</a> . If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a> .
<code>InsufficientCapacityOnHost</code>	There is not enough capacity on the Dedicated Host to launch or start the instance.
<code>InsufficientFreeAddressesInSubnet</code>	The specified subnet does not contain enough free private IP addresses to fulfill your request. Use the <a href="#">DescribeSubnets</a> request to view how many IP addresses are available (unused) in your subnet. IP addresses associated with stopped instances are considered unavailable.

Error code	Description
<code>InsufficientReservedInstancesCapacity</code>	There is insufficient capacity for the requested Reserved Instances.
<code>InterfaceInUseByTrafficMirrorSession</code>	The Traffic Mirror source that you are trying to create uses an interface that is already associated with a session. An interface can only be associated with a session, or with a target, but not both.
<code>InterfaceInUseByTrafficMirrorTarget</code>	The Traffic Mirror source that you are trying to create uses an interface that is already associated with a target. An interface can only be associated with a session, or with a target, but not both. If the interface is associated with a target, it cannot be associated with another target.
<code>InternetGatewayLimitExceeded</code>	You've reached the limit on the number of internet gateways that you can create. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on the internet gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .
<code>InvalidAddress.Locked</code>	The specified Elastic IP address cannot be released from your account. A reverse DNS record may be associated with the Elastic IP address. To unlock the address, contact <a href="#">AWS Support</a> .
<code>InvalidAddress.Malformed</code>	The specified IP address is not valid. Ensure that you provide the address in the form <code>xx.xx.xx.xx</code> ; for example, <code>55.123.45.67</code>
<code>InvalidAddress.NotFound</code>	The specified Elastic IP address that you are describing cannot be found. Ensure that you specify the AWS Region in which the IP address is located, if it's not in the default Region.
<code>InvalidAddressID.NotFound</code>	The specified allocation ID for the Elastic IP address you are trying to release cannot be found. Ensure that you specify the AWS Region in which the IP address is located, if it's not in the default Region.
<code>InvalidAffinity</code>	The specified affinity value is not valid.
<code>InvalidAllocationID.NotFound</code>	The specified allocation ID you are trying to describe or associate does not exist. Ensure that you specify the AWS Region in which the IP address is located, if it's not in the default Region.
<code>InvalidAMIAtributeItemValue</code>	The value of an item added to, or removed from, an image attribute is not valid. If you are specifying a <code>userId</code> , check that it is in the form of an AWS account ID, without hyphens.
<code>InvalidAMIID.Malformed</code>	The specified AMI ID is malformed. Ensure that you provide the full AMI ID, in the form <code>ami-xxxxxxx</code> .

Error code	Description
<code>InvalidAMIID.NotFound</code>	The specified AMI does not exist. Check the AMI ID, and ensure that you specify the AWS Region in which the AMI is located, if it's not in the default Region. This error may also occur if you specified an incorrect kernel ID when launching an instance.
<code>InvalidAMIID.Unavailable</code>	The specified AMI has been deregistered and is no longer available, or is not in a state from which you can launch an instance or modify attributes.
<code>InvalidAMIName.Duplicate</code>	The specified AMI name is already in use by another AMI. If you have recently deregistered an AMI with the same name, allow enough time for the change to propagate through the system, and retry your request.
<code>InvalidAMIName.Malformed</code>	AMI names must be between 3 and 128 characters long, and may only contain letters, numbers, and the following special characters: '-', '_', ':', '/', '(', and ')'.
<code>InvalidAssociationID.NotFound</code>	The specified association ID (for an Elastic IP address, a route table, or network ACL) does not exist. Ensure that you specify the AWS Region in which the association ID is located, if it's not in the default Region.
<code>InvalidAttachment.NotFound</code>	Indicates an attempt to detach a volume from an instance to which it is not attached.
<code>InvalidAttachmentID.NotFound</code>	The specified network interface attachment does not exist.
<code>InvalidAutoPlacement</code>	The specified value for auto-placement is not valid.
<code>InvalidAvailabilityZone</code>	The specified Availability Zone is not valid.
<code>InvalidBlockDeviceMapping</code>	A block device mapping parameter is not valid. The returned message indicates the incorrect value.
<code>InvalidBundleID.NotFound</code>	The specified bundle task ID cannot be found. Ensure that you specify the AWS Region in which the bundle task is located, if it's not in the default Region.
<code>InvalidCidr.InUse</code>	The specified inside tunnel CIDR is already in use by another VPN tunnel for the virtual private gateway.
<code>InvalidClientToken</code>	The specified client token is not valid. For more information, see <a href="#">Idempotency in Amazon EC2 (p. 2230)</a> .
<code>InvalidClientVpnAssociationIdNotFound</code>	The specified target network association cannot be found.
<code>InvalidClientVpnConnection.IdNotFound</code>	The specified Client VPN endpoint cannot be found.
<code>InvalidClientVpnConnection.UserNotFound</code>	The specified user does not have an active connection to the specified Client VPN endpoint.

Error code	Description
InvalidClientVpnDuplicateAssociation	The specified target network has already been associated with the Client VPN endpoint.
InvalidClientVpnDuplicateAuthorization	The specified authorization has already been added to the Client VPN endpoint.
InvalidClientVpnDuplicateRoute	The specified route has already been added to the Client VPN endpoint.
InvalidClientVpnEndpointAuthorization	The specified authorization rule cannot be found.
InvalidClientVpnRouteNotFound	The specified route cannot be found.
InvalidClientVpnSubnetId.DifferentAccount	The specified subnet belongs to a different account.
InvalidClientVpnSubnetId.DuplicateAz	You have already associated a subnet from this Availability Zone with the Client VPN endpoint.
InvalidClientVpnSubnetId.NotFound	The specified subnet cannot be found in the VPN with which the Client VPN endpoint is associated.
InvalidClientVpnSubnetId.OverlappingCidr	The specified target network's CIDR range overlaps with the Client VPN endpoint's client CIDR range.
InvalidClientVpnActiveAssociationNotFound	You cannot perform this action on the Client VPN endpoint while it is in the pending-association state.
InvalidClientVpnEndpointId.NotFound	The specified Client VPN Endpoint cannot be found.
InvalidConversionTaskId	The specified conversion task ID (for instance or volume import) is not valid.
InvalidConversionTaskId.Malformed	The specified conversion task ID (for instance or volume import) is malformed. Ensure that you've specified the ID in the form import-i-xxxxxxx.
InvalidCpuCredits.Malformed	The specified CpuCredit value is invalid. Valid values are standard and unlimited.
InvalidCustomerGateway.DuplicateIpAddress	There is a conflict among the specified gateway IP addresses. Each VPN connection in an AWS Region must be created with a unique customer gateway IP address (across all AWS accounts). For more information, see <a href="#">Your Customer Gateway</a> in the <a href="#">AWS Site-to-Site VPN Network Administrator Guide</a> .
InvalidCustomerGatewayId.Malformed	The specified customer gateway ID is malformed, or cannot be found. Specify the ID in the form cgw-xxxxxxx, and ensure that you specify the AWS Region in which the customer gateway is located, if it's not in the default Region.
InvalidCustomerGatewayID.NotFound	The specified customer gateway ID cannot be found. Ensure that you specify the AWS Region in which the customer gateway is located, if it's not in the default Region.

Error code	Description
<code>InvalidCustomerGatewayState</code>	The customer gateway is not in the available state, and therefore cannot be used.
<code>InvalidDevice.InUse</code>	The device to which you are trying to attach (for example, <code>/dev/sdh</code> ) is already in use on the instance.
<code>InvalidDhcpOptionID.NotFound</code>	The specified DHCP options set does not exist. Ensure that you specify the AWS Region in which the DHCP options set is located, if it's not in the default Region.
<code>InvalidDhcpOptionsID.NotFound</code>	The specified DHCP options set does not exist. Ensure that you specify the AWS Region in which the DHCP options set is located, if it's not in the default Region.
<code>InvalidDhcpOptionsId.Malformed</code>	The specified DHCP options set ID is malformed. Ensure that you provide the full DHCP options set ID in the request, in the form <code>dopt-xxxxxxx</code> .
<code>InvalidExportTaskID.NotFound</code>	The specified export task ID cannot be found.
<code>InvalidFilter</code>	The specified filter is not valid.
<code>InvalidFlowLogId.NotFound</code>	The specified flow log does not exist. Ensure that you have indicated the AWS Region in which the flow log is located, if it's not in the default Region.
<code>InvalidFormat</code>	The specified disk format (for the instance or volume import) is not valid.
<code>InvalidFpgaImageID.Malformed</code>	The specified Amazon FPGA image (AFI) ID is malformed. Ensure that you provide the full AFI ID in the request, in the form <code>afi-xxxxxxxxxxxxxx</code> .
<code>InvalidFpgaImageID.NotFound</code>	The specified Amazon FPGA image (AFI) ID does not exist. Ensure that you specify the AWS Region in which the AFI is located, if it's not in the default Region.
<code>InvalidGatewayID.NotFound</code>	The specified gateway does not exist.
<code>InvalidGroup.Duplicate</code>	You cannot create a security group with the same name as an existing security group in the same VPC, or the same AWS Region (EC2-Classic).
<code>InvalidGroupId.Malformed</code>	The specified security group ID is malformed. Ensure that you provide the full security group ID in the request, in the form <code>sg-xxxxxx</code> .
<code>InvalidGroup.InUse</code>	The specified security group can't be deleted because it's in use by another security group. You can remove dependencies by modifying or deleting rules in the affected security groups.

Error code	Description
InvalidGroup.NotFound	<p>The specified security group does not exist.</p> <p>This error can occur because the ID of a recently created security group has not propagated through the system. For more information, see <a href="#">Eventual consistency (p. 2229)</a>.</p> <p>You can't specify a security group that is in a different AWS Region or VPC than the request.</p>
InvalidGroup.Reserved	The name 'default' is reserved, and cannot be used to create a new security group. You also cannot delete the default EC2-Classic security group, but you can change its rules. For more information, see <a href="#">Amazon EC2 Security Groups</a> .
InvalidHostConfiguration	The specified Dedicated Host configuration is not supported.
InvalidHostId	The specified Dedicated Host ID is not valid.
InvalidHostID.Malformed	The specified Dedicated Host ID is not formed correctly. Ensure that you provide the full ID in the form h-xxxxxxxxxxxxxx.
InvalidHostId.Malformed	The specified Dedicated Host ID is not formed correctly. Ensure that you provide the full ID in the form h-xxxxxxxxxxxxxx.
InvalidHostID.NotFound	The specified Dedicated Host ID does not exist. Ensure that you specify the AWS Region in which the Dedicated Host is located, if it's not in the default Region.
InvalidHostId.NotFound	The specified Dedicated Host ID does not exist. Ensure that you specify the region in which the Dedicated Host is located, if it's not in the default region.
InvalidHostReservationId.Malformed	The specified Dedicated Host Reservation ID is not formed correctly. Ensure that you provide the full ID in the form hr-xxxxxxxxxxxxxx.
InvalidHostReservationOfferingId.Malformed	The specified Dedicated Host Reservation offering is not formed correctly. Ensure that you provide the full ID in the form hro-xxxxxxxxxxxxxx.
InvalidHostState	The Dedicated Host must be in the available state to complete the operation.
InvalidIamInstanceProfileArn.Malformed	The specified IAM instance profile ARN is not valid. For more information about valid ARN formats, see <a href="#">Amazon Resource Names (ARNs)</a> .

Error code	Description
<code>InvalidID</code>	<p>The specified ID for the resource you are trying to tag is not valid. Ensure that you provide the full resource ID; for example, ami-2bb65342 for an AMI.</p> <p>If you're using the command line tools on a Windows system, you might need to use quotation marks for the key-value pair; for example, "Name=TestTag".</p>
<code>InvalidInput</code>	<p>An input parameter in the request is not valid. For example, you may have specified an incorrect Reserved Instance listing ID in the request or the Reserved Instance you tried to list cannot be sold in the Reserved Instances Marketplace (for example, if it has a scope of Region, or is a Convertible Reserved Instance).</p>
<code>InvalidInstanceAttributeValue</code>	<p>The specified instance attribute value is not valid. This error is most commonly encountered when trying to set the <code>InstanceType</code>/<code>--instance-type</code> attribute to an unrecognized value.</p>
<code>InvalidInstanceCreditSpecification.Duplicate</code>	<p>If you are modifying the credit option for CPU usage for T2 instances, the request may not contain duplicate instance IDs.</p>
<code>InvalidInstanceFamily</code>	<p>The instance family is not supported for this request. For example, the instance family for the Dedicated Host Reservation offering is different from the instance family of the Dedicated Hosts. Or, you can only modify the default credit specification for burstable performance instance families (T2, T3, and T3a). For more information, see <a href="#">Setting the Default Credit Specification for the Account</a>.</p>
<code>InvalidInstanceID</code>	<p>This error occurs when trying to associate an IP address with an instance in EC2-Classic that is not in the <code>running</code> state. This error can also occur when trying to perform an operation on an instance that has multiple network interfaces.</p> <p>A network interface can have individual attributes; therefore, you may need to specify the network interface ID as part of the request, or use a different request. For example, each network interface in an instance can have a source/destination check flag. To modify this attribute, modify the network interface attribute, and not the instance attribute.</p> <p>To create a route in a route table, provide a specific network interface ID as part of the request.</p>
<code>InvalidInstanceID.Malformed</code>	<p>The specified instance ID is malformed. Ensure that you provide the full instance ID in the request, in the form <code>i-xxxxxxxx</code> or <code>i-xxxxxxxxxxxxxxxxxxxx</code>.</p>

Error code	Description
<code>InvalidInstanceID.NotFound</code>	The specified instance does not exist. Ensure that you have indicated the AWS Region in which the instance is located, if it's not in the default Region. This error may occur because the ID of a recently created instance has not propagated through the system. For more information, see <a href="#">Eventual consistency (p. 2229)</a> .
<code>InvalidInstanceID.NotLinkable</code>	The specified instance cannot be linked to the specified VPC. Ensure that the instance is an EC2-Classic instance. This error may also occur if the instance was recently launched, and its ID has not yet propagated through the system. Wait a few minutes, or wait until the instance is in the <code>running</code> state, and then try again.
<code>InvalidInstanceState</code>	The instance is not in an appropriate state to complete the request. If you're modifying the instance placement, the instance must be in the <code>stopped</code> state.
<code>InvalidInstanceType</code>	The instance type is not supported for this request. For example, you can only bundle instance store-backed Windows instances.
<code>InvalidInterfaceIpAddressLimitExceeded</code>	The number of private IP addresses for a specified network interface exceeds the limit for the type of instance you are trying to launch. For more information about the maximum number of private IP addresses per elastic network interface, see <a href="#">Private IP addresses per Elastic Network Interface</a> .
<code>InvalidInternetGatewayId.Malformed</code>	The specified internet gateway ID is malformed. Ensure that you provide the full ID in the request, in the form <code>igw-xxxxxxxx</code> .
<code>InvalidInternetGatewayID.NotFound</code>	The specified internet gateway does not exist. Ensure that you specify the AWS Region in which the internet gateway is located, if it's not in the default Region.
<code>InvalidIPAddress.InUse</code>	The specified IP address is already in use. If you are trying to release an address, you must first disassociate it from the instance.
<code>InvalidKernelId.Malformed</code>	The specified kernel ID is not valid. Ensure that you specify the kernel ID in the form <code>aki-xxxxxxxx</code> .
<code>InvalidKey.Format</code>	The key pair is not specified in a valid OpenSSH public key format.
<code>InvalidKeyValuePair.Duplicate</code>	The key pair name already exists in that AWS Region. If you are creating or importing a key pair, ensure that you use a unique name.
<code>InvalidKeyValuePair.Format</code>	The format of the public key you are attempting to import is not valid.

Error code	Description
<code>InvalidKeyPair.NotFound</code>	The specified key pair name does not exist. Ensure that you specify the AWS Region in which the key pair is located, if it's not in the default Region.
<code>InvalidCapacityReservationIdMalformed</code>	The ID for the Capacity Reservation is malformed. Ensure that you specify the Capacity Reservation ID in the form cr-xxxxxxxxxxxxxx.
<code>InvalidCapacityReservationIdNotFound</code>	The specified Capacity Reservation ID does not exist.
<code>InvalidLaunchTemplateId.Malformed</code>	The ID for the launch template is malformed. Ensure that you specify the launch template ID in the form lt-xxxxxxxxxxxxxx.
<code>InvalidLaunchTemplateId.NotFound</code>	The specified launch template ID does not exist. Ensure that you specify the AWS Region in which the launch template is located.
<code>InvalidLaunchTemplateId.VersionNotFound</code>	The specified launch template version does not exist.
<code>InvalidLaunchTemplateName.AlreadyExists</code>	The specified launch template name is already in use.
<code>InvalidLaunchTemplateName.Malformed</code>	The specified launch template name is invalid. A launch template name must be between 3 and 128 characters, and may contain letters, numbers, and the following characters: '-', '_', '.', '/', '(', and ')'.
<code>InvalidLaunchTemplateName.NotFound</code>	The specified launch template name does not exist. Check the spelling of the name and ensure that you specify the AWS Region in which the launch template is located. Launch template names are case-sensitive.
<code>InvalidManifest</code>	The specified AMI has an unparsable manifest, or you may not have access to the location of the manifest file in Amazon S3.
<code>InvalidMaxResults</code>	The specified value for MaxResults is not valid.
<code>InvalidNatGatewayID.NotFound</code>	The specified NAT gateway ID does not exist. Ensure that you specify the AWS Region in which the NAT gateway is located, if it's not in the default Region.
<code>InvalidNetworkAclEntry.NotFound</code>	The specified network ACL entry does not exist.
<code>InvalidNetworkAclId.Malformed</code>	The specified network ACL ID is malformed. Ensure that you provide the ID in the form acl-xxxxxx.
<code>InvalidNetworkAclId.NotFound</code>	The specified network ACL does not exist. Ensure that you specify the AWS Region in which the network ACL is located, if it's not in the default Region.

Error code	Description
InvalidNetworkLoadBalancerArn.Malformed	The specified Network Load Balancer ARN is malformed. Ensure that you specify the ARN in the form <code>arn:aws:elasticloadbalancing:region:account-id:loadbalancer/net/load-balancer-name/load-balancer-id</code> .
InvalidNetworkLoadBalancerArn.NotFound	The specified Network Load Balancer ARN does not exist.
InvalidNetworkInterfaceAttachmentId.Malformed	The ID for the network interface attachment is malformed. Ensure that you use the attachment ID rather than the network interface ID, in the form <code>eni-attach-xxxxxx</code> .
InvalidNetworkInterface.InUse	The specified interface is currently in use and cannot be deleted or attached to another instance. Ensure that you have detached the network interface first. If a network interface is in use, you may also receive the <code>InvalidParameterValue</code> error.
InvalidNetworkInterfaceId.Malformed	The specified network interface ID is malformed. Ensure that you specify the network interface ID in the form <code>eni-xxxxxx</code> .
InvalidNetworkInterfaceID.NotFound	The specified network interface does not exist. Ensure that you specify the AWS Region in which the network interface is located, if it's not in the default Region.
InvalidNextToken	The specified <code>NextToken</code> is not valid.
InvalidOption.Conflict	A VPN connection between the virtual private gateway and the customer gateway already exists.
InvalidPermission.Duplicate	The specified inbound or outbound rule already exists for that security group.
InvalidPermission.Malformed	The specified security group rule is malformed. If you are specifying an IP address range, ensure that you use CIDR notation; for example, <code>203.0.113.0/24</code> .
InvalidPermission.NotFound	The specified rule does not exist in this security group.
InvalidPlacementGroup.Duplicate	The specified placement group already exists in that AWS Region.
InvalidPlacementGroup.InUse	The specified placement group is in use. If you are trying to delete a placement group, ensure that its instances have been terminated.
InvalidPlacementGroup.Unknown	The specified placement group cannot be found. Ensure that you specify the AWS Region in which the placement group is located, if it's not in the default Region.

Error code	Description
InvalidPolicyDocument	The specified policy document is not a valid JSON policy document.
InvalidPrefixListId.Malformed	The specified prefix list ID is malformed. Ensure that you provide the ID in the form pl-xxxxxxx.
InvalidPrefixListId.NotFound	The specified prefix list ID does not exist. Ensure that you have indicated the AWS Region for the service, if it's not in the default Region.
InvalidProductInfo	(AWS Marketplace) The product code is not valid.
InvalidPurchaseToken.Expired	The specified purchase token has expired.
InvalidPurchaseToken.Malformed	The specified purchase token is not valid.
InvalidQuantity	The specified quantity of Dedicated Hosts is not valid.
InvalidRamDiskId.Malformed	The specified RAM disk ID is not valid. Ensure that you specify the RAM disk ID in the form ari-xxxxxxx.
InvalidRegion	The specified AWS Region is not valid. For copying a snapshot or image, specify the source Region using its Region code, for example, us-west-2.
InvalidRequest	The request is not valid. The returned message provides details about the nature of the error.
InvalidReservationID.Malformed	The specified reservation ID is not valid.
InvalidReservationID.NotFound	The specified reservation does not exist.
InvalidReservedInstancesId	The specified Reserved Instance does not exist.
InvalidReservedInstancesOfferingId	The specified Reserved Instances offering does not exist.
InvalidResourceType.Unknown	The specified resource type is not supported or is not valid. To view resource types that support longer IDs, use <a href="#">DescribeIdFormat</a> .
InvalidRoute.InvalidState	The specified route is not valid.
InvalidRoute.Malformed	The specified route is not valid. If you are deleting a route in a VPN connection, ensure that you've entered the value for the CIDR block correctly.
InvalidRoute.NotFound	The specified route does not exist in the specified route table. Ensure that you indicate the exact CIDR range for the route in the request. This error can also occur if you've specified a route table ID in the request that does not exist.
InvalidRouteTableId.Malformed	The specified route table ID is malformed. Ensure that you specify the route table ID in the form rtb-xxxxxxx.

Error code	Description
<code>InvalidRouteTableID.NotFound</code>	The specified route table does not exist. Ensure that you specify the AWS Region in which the route table is located, if it's not in the default Region.
<code>InvalidScheduledInstance</code>	The specified Scheduled Instance does not exist.
<code>InvalidSecurityGroupId.Malformed</code>	The specified security group ID is not valid. Ensure that you specify the security group ID in the form sg-xxxxxxxx.
<code>InvalidSecurityGroupID.NotFound</code>	The specified security group does not exist. If you are creating a network interface, ensure that you specify a VPC security group, and not an EC2-Classic security group.
<code>InvalidSecurity.RequestHasExpired</code>	The difference between the request timestamp and the AWS server time is greater than 5 minutes. Ensure that your system clock is accurate and configured to use the correct time zone.
<code>InvalidServiceName</code>	The name of the service is not valid. To get a list of available service names, use <a href="#">DescribeVpcEndpointServices</a> .
<code>InvalidSnapshotID.Malformed</code>	The snapshot ID is not valid.
<code>InvalidSnapshot.InUse</code>	The snapshot that you are trying to delete is in use by one or more AMIs.
<code>InvalidSnapshot.NotFound</code>	The specified snapshot does not exist. Ensure that you specify the AWS Region in which the snapshot is located, if it's not in the default Region.
<code>InvalidSpotDatafeed.NotFound</code>	You have no data feed for Spot Instances.
<code>InvalidSpotFleetRequestConfig</code>	The Spot Fleet request configuration is not valid. Ensure that you provide valid values for all of the configuration parameters; for example, a valid AMI ID. Limits apply on the target capacity and the number of launch specifications per Spot Fleet request. For more information, see <a href="#">Spot Fleet Limits</a> .
<code>InvalidSpotFleetRequestId.Malformed</code>	The specified Spot Fleet request ID is malformed. Ensure that you specify the Spot Fleet request ID in the form sfr- followed by 36 characters, including hyphens; for example, sfr-123f8fc2-11aa-22bb-33cc-example12710.
<code>InvalidSpotFleetRequestId.NotFound</code>	The specified Spot Fleet request ID does not exist. Ensure that you specify the AWS Region in which the Spot Fleet request is located, if it's not in the default Region.
<code>InvalidSpotInstanceRequestId.Malformed</code>	The specified Spot Instance request ID is not valid. Ensure that you specify the Spot Instance request ID in the form sir-xxxxxxxx.

Error code	Description
<code>InvalidSpotInstanceRequestID.NotFound</code>	The specified Spot Instance request ID does not exist. Ensure that you specify the AWS Region in which the Spot Instance request is located, if it's not in the default Region.
<code>InvalidState</code>	The specified resource is not in the correct state for the request; for example, if you are trying to enable monitoring on a recently terminated instance, or if you are trying to create a snapshot when a previous identical request has not yet completed.
<code>InvalidStateTransition</code>	The specified VPC peering connection is not in the correct state for the request. For example, you may be trying to accept a VPC peering request that has failed, or that was rejected.
<code>InvalidSubnet</code>	The specified subnet ID is not valid or does not exist.
<code>InvalidSubnet.Conflict</code>	The specified CIDR block conflicts with that of another subnet in your VPC.
<code>InvalidSubnetID.Malformed</code>	The specified subnet ID is malformed. Ensure that you specify the ID in the form subnet-xxxxxxx
<code>InvalidSubnetID.NotFound</code>	The specified subnet does not exist. Ensure that you have indicated the AWS Region in which the subnet is located, if it's not in the default Region.
<code>InvalidSubnet.Range</code>	The CIDR block you've specified for the subnet is not valid. The allowed block size is between a /28 netmask and /16 netmask.
<code>InvalidTagKey.Malformed</code>	The specified tag key is not valid. Tag keys cannot be empty or null, and cannot start with aws::.
<code>InvalidTargetArn.Unknown</code>	The specified ARN for the IAM user, IAM role, or root user is not valid or does not exist.
<code>InvalidTenancy</code>	The tenancy of the instance or VPC is not supported for the requested action. For example, you cannot modify the tenancy of an instance or VPC that has a tenancy attribute of default.
<code>InvalidTime</code>	The specified timestamp is not valid.
<code>InvalidTrafficMirrorFilterNotFound</code>	The specified Traffic Mirror filter does not exist.
<code>InvalidTrafficMirrorFilterRuleNotFound</code>	The specified Traffic Mirror filter rule does not exist.
<code>InvalidTrafficMirrorSessionNotFound</code>	The specified Traffic Mirror session does not exist.
<code>InvalidTrafficMirrorTargetNoFound</code>	The specified Traffic Mirror target does not exist.

Error code	Description
<code>InvalidUserID.Malformed</code>	The specified user or owner is not valid. If you are performing a <a href="#">DescribeImages</a> request, you must specify a valid value for the <code>owner</code> or <code>executableBy</code> parameters, such as an AWS account ID. If you are performing a <a href="#">DescribeSnapshots</a> request, you must specify a valid value for the <code>owner</code> or <code>restorableBy</code> parameters.
<code>InvalidVolumeID.Duplicate</code>	The Amazon EBS volume already exists.
<code>InvalidVolumeID.Malformed</code>	The specified volume ID is not valid. Check the letter-number combination carefully.
<code>InvalidVolumeID.ZoneMismatch</code>	The specified volume and instance are in different Availability Zones.
<code>InvalidVolume.NotFound</code>	The specified volume does not exist. Ensure that you have indicated the AWS Region in which the volume is located, if it's not in the default Region. Ensure that you are using the correct access credentials.
<code>InvalidVolume.ZoneMismatch</code>	The specified volume is not in the same Availability Zone as the specified instance. You can only attach an Amazon EBS volume to an instance if they are in the same Availability Zone.
<code>InvalidVpcEndpointId.Malformed</code>	The specified VPC endpoint ID is malformed. Use the full VPC endpoint ID in the request, in the form <code>vpce-xxxxxxx</code> .
<code>InvalidVpcEndpoint.NotFound</code>	The specified VPC endpoint does not exist. If you are performing a bulk request that is partially successful or unsuccessful, the response includes a list of the unsuccessful items. If the request succeeds, the list is empty.
<code>InvalidVpcEndpointId.NotFound</code>	The specified VPC endpoint does not exist. If you are performing a bulk request that is partially successful or unsuccessful, the response includes a list of the unsuccessful items. If the request succeeds, the list is empty.
<code>InvalidVpcEndpointService.NotFound</code>	The specified VPC endpoint service does not exist. If you are performing a bulk request that is partially successful or unsuccessful, the response includes a list of the unsuccessful items. If the request succeeds, the list is empty.
<code>InvalidVpcEndpointServiceId.NotFound</code>	The specified VPC endpoint service does not exist. If you are performing a bulk request that is partially successful or unsuccessful, the response includes a list of the unsuccessful items. If the request succeeds, the list is empty.
<code>InvalidVpcEndpointType</code>	The specified VPC endpoint type is not valid. Valid values are <code>Interface</code> and <code>Gateway</code> .

Error code	Description
<code>InvalidVpcID.Malformed</code>	The specified VPC ID is malformed. Ensure that you've specified the ID in the form <code>vpc-xxxxxxxx</code> .
<code>InvalidVpcID.NotFound</code>	The specified VPC does not exist. Ensure that you have indicated the AWS Region in which the VPC is located, if it's not in the default Region.
<code>InvalidVpcPeeringConnectionId.Malformed</code>	The specified VPC peering connection ID is malformed. Ensure that you provide the ID in the form <code>pcx-xxxxxxxx</code> .
<code>InvalidVpcPeeringConnectionID.NotFound</code>	The specified VPC peering connection ID does not exist. Ensure that you have indicated the AWS Region in which the VPC peering connection is located, if it's not in the default Region.
<code>InvalidVpcPeeringConnectionState.DnsHostnamesDisabled</code>	DNS hostname resolution for the VPC peering connection, DNS hostname support must be enabled for the VPCs.
<code>InvalidVpcRange</code>	The specified CIDR block range is not valid. The block range must be between a /28 netmask and /16 netmask. For more information, see <a href="#">Your VPC and Subnets</a> .
<code>InvalidVpcState</code>	The specified VPC already has a virtual private gateway attached to it.
<code>InvalidVpnConnectionID</code>	The specified VPN connection ID cannot be found. Ensure that you have indicated the AWS Region in which the VPN connection ID is located, if it's not in the default Region.
<code>InvalidVpnConnectionID.NotFound</code>	The specified VPN connection ID does not exist. Ensure that you have indicated the AWS Region in which the VPN connection ID is located, if it's not in the default Region.
<code>InvalidVpnConnection.InvalidState</code>	The VPN connection must be in the <code>available</code> state to complete the request.
<code>InvalidVpnConnection.InvalidType</code>	The specified VPN connection does not support static routes.
<code>InvalidVpnGatewayAttachment.NotFound</code>	An attachment between the specified virtual private gateway and specified VPC does not exist. This error can also occur if you've specified an incorrect VPC ID in the request.
<code>InvalidVpnGatewayID.NotFound</code>	The specified virtual private gateway does not exist. Ensure that you have indicated the AWS Region in which the virtual private gateway is located, if it's not in the default Region.
<code>InvalidVpnGatewayState</code>	The virtual private gateway is not in an <code>available</code> state.

Error code	Description
<code>InvalidZone.NotFound</code>	The specified Availability Zone does not exist, or is not available for you to use. Use the <a href="#">DescribeAvailabilityZones</a> request to list the Availability Zones that are currently available to you. Ensure that you have indicated the AWS Region for the Availability Zone in the request, if it's not in the default Region. Specify the full name of the Availability Zone: for example, us-east-1a.
<code>KeyPairLimitExceeded</code>	You've reached the limit on the number of key pairs that you can have in this AWS Region. For more information, see <a href="#">Amazon EC2 Key Pairs</a> .
<code>LegacySecurityGroup</code>	Any VPC created using an API version older than 2011-01-01 may have the 2009-07-15-default security group. You must delete this security group before you can attach an internet gateway to the VPC.
<code>LimitPriceExceeded</code>	The cost of the total order is greater than the specified limit price (instance count * price).
<code>LogDestinationNotFoundException</code>	The specified Amazon S3 bucket does not exist. Ensure that you have specified the ARN for an existing Amazon S3 bucket, and that the ARN is in the correct format.
<code>LogDestinationPermissionIssue</code>	You do not have sufficient permissions to publish flow logs to the specific Amazon S3 bucket.
<code>MaxConfigLimitExceededException</code>	You've exceeded your maximum allowed Spot placement configurations. You can retry configurations that you used within the last 24 hours, or wait for 24 hours before specifying a new configuration. For more information, see <a href="#">Spot placement score</a> .
<code>MaxIOPSLimitExceeded</code>	You've reached the limit on your IOPS usage for that AWS Region. To increase your volume limit, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
<code>MaxScheduledInstanceCapacityExceeded</code>	You've attempted to launch more instances than you purchased.
<code>MaxSpotFleetRequestCountExceeded</code>	You've reached one or both of these limits: the total number of Spot Fleet requests that you can make, or the total number of instances in all Spot Fleets for the AWS Region (the target capacity). For more information, see <a href="#">Fleet quotas</a> .
<code>MaxSpotInstanceCountExceeded</code>	You've reached the limit on the number of Spot Instances that you can launch. The limit depends on the instance type. For more information, see <a href="#">How many instances can I run in Amazon EC2</a> . If you need additional instances, complete the <a href="#">Amazon EC2 Instance Request Form</a> .

Error code	Description
MaxTemplateLimitExceeded	You've reached the limit on the number of launch templates you can create. For more information, see <a href="#">Launch Template Restrictions</a> .
MaxTemplateVersionLimitExceeded	You've reached the limit on the number of launch template versions you can create. For more information, see <a href="#">Launch Template Restrictions</a> .
MissingInput	An input parameter is missing.
NatGatewayLimitExceeded	You've reached the limit on the number of NAT gateways that you can create. For more information, see <a href="#">Amazon VPC Limits</a> .
NatGatewayMalformed	The specified NAT gateway ID is not formed correctly. Ensure that you specify the NAT gateway ID in the form nat-xxxxxxxxxxxxxx.
NatGatewayNotFound	The specified NAT gateway does not exist. Ensure that you have indicated the AWS Region in which the NAT gateway is located, if it's not in the default Region.
NetworkAclEntryAlreadyExists	The specified rule number already exists in this network ACL.
NetworkAclEntryLimitExceeded	You've reached the limit on the number of rules that you can add to the network ACL. For more information, see <a href="#">Amazon VPC Limits</a> .
NetworkAclLimitExceeded	You've reached the limit on the number of network ACLs that you can create for the specified VPC. For more information, see <a href="#">Amazon VPC Limits</a> . To request an increase on your network ACL limit, complete the <a href="#">Amazon VPC Limits form</a> .
NetworkInterfaceLimitExceeded	You've reached the limit on the number of network interfaces that you can create. For more information, see <a href="#">Amazon VPC Limits</a> .
NetworkInterfaceNotFoundException	The specified network interface does not exist.
NetworkInterfaceNotSupportedException	The network interface is not supported for Traffic Mirror.
NetworkLoadBalancerNotFoundException	The specified Network Load Balancer does not exist.
NlbInUseByTrafficMirrorTargetException	The Network Load Balancer is already configured as a Traffic Mirror target.
NonEBSInstance	The specified instance does not support Amazon EBS. Restart the instance and try again, to ensure that the code is run on an instance with updated code.
NoSuchVersion	The specified API version does not exist.

Error code	Description
NotExportable	The specified instance cannot be exported. You can only export certain instances. For more information, see <a href="#">Considerations When Using VM Export</a> .
OperationNotPermitted	The specified operation is not allowed. This error can occur for a number of reasons; for example, you might be trying to terminate an instance that has termination protection enabled, or trying to detach the primary network interface (eth0) from an instance.
OutstandingVpcPeeringConnectionLimitExceeded	You've reached the limit on the number of VPC peering connection requests that you can create for the specified VPC.
PendingSnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots that you can have in the pending state.
PendingVpcPeeringConnectionLimitExceeded	You've reached the limit on the number of pending VPC peering connections that you can have.
PlacementGroupLimitExceeded	You've reached the limit on the number of placement groups that you can have.
PrivateIpAddressLimitExceeded	You've reached the limit on the number of private IP addresses that you can assign to the specified network interface for that type of instance. For more information about the maximum number of private IP addresses per elastic network interface, see <a href="#">Private IP addresses per ENI</a> .
RequestResourceCountExceeded	<p>Details in your Spot request exceed the numbers allowed by the Spot service in one of the following ways, depending on the action that generated the error:</p> <ul style="list-style-type: none"> <li>—If you get this error when you submitted a request for Spot Instances, check the number of Spot Instances specified in your request. The number shouldn't exceed the 3,000 maximum allowed per request. Resend your Spot Instance request and specify a number less than 3,000. If your account's regional Spot request limit is greater than 3,000 instances, you can access these instances by submitting multiple smaller requests.</li> <li>—If you get this error when you sent Describe Spot Instance requests, check the number of requests for Spot Instance data, the amount of data you requested, and how often you sent the request. The frequency with which you requested the data combined with the amount of data exceeds the levels allowed by the Spot service. Try again and submit fewer large Describe requests over longer intervals.</li> </ul>

Error code	Description
ReservedInstancesCountExceeded	You've reached the limit for the number of Reserved Instances.
ReservedInstancesLimitExceeded	Your current quota does not allow you to purchase the required number of Reserved Instances.
ReservedInstancesUnavailable	The requested Reserved Instances are not available.
Resource.AlreadyAssigned	The specified private IP address is already assigned to a resource. Unassign the private IP first, or use a different private IP address.
Resource.AlreadyAssociated	The specified resource is already in use. For example, in EC2-VPC, you cannot associate an Elastic IP address with an instance if it's already associated with another instance. You also cannot attach an internet gateway to more than one VPC at a time.
ResourceCountExceeded	You have exceeded the number of resources allowed for this request; for example, if you try to launch more instances than AWS allows in a single request. This limit is separate from your individual resource limit. If you get this error, break up your request into smaller requests; for example, if you are launching 15 instances, try launching 5 instances in 3 separate requests.
ResourceCountLimitExceeded	You have exceeded a resource limit for creating routes.
ResourceLimitExceeded	You have exceeded an Amazon EC2 resource limit. For example, you might have too many snapshot copies in progress.
RouteAlreadyExists	A route for the specified CIDR block already exists in this route table.
RouteLimitExceeded	You've reached the limit on the number of routes that you can add to a route table.
RouteTableLimitExceeded	You've reached the limit on the number of route tables that you can create for the specified VPC. For more information about route table limits, see <a href="#">Amazon VPC Limits</a> .
RulesPerSecurityGroupLimitExceeded	You've reached the limit on the number of rules that you can add to a security group. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Security Group Rules</a> .
ScheduledInstanceLimitExceeded	You've reached the limit on the number of Scheduled Instances that you can purchase.
ScheduledInstanceParameterMismatch	The launch specification does not match the details for the Scheduled Instance.
ScheduledInstanceSlotNotOpen	You can launch a Scheduled Instance only during its scheduled time periods.

Error code	Description
ScheduledInstanceSlotUnavailable	The requested Scheduled Instance is no longer available during this scheduled time period.
SecurityGroupLimitExceeded	You've reached the limit on the number of security groups that you can create, or that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Creating Your Own Security Groups</a> .
SecurityGroupsPerInstanceLimitExceeded	You've reached the limit on the number of security groups that you can assign to an instance. The limit depends on whether you are using EC2-Classic or EC2-VPC. For more information, see <a href="#">Amazon EC2 Security Groups</a> .
SecurityGroupsPerInterfaceLimitExceeded	You've reached the limit on the number of security groups you can associate with the specified network interface. For more information, see <a href="#">Amazon VPC Limits</a> .
SignatureDoesNotMatch	The request signature that Amazon has does not match the signature that you provided. Check your AWS access keys and signing method.
SnapshotCopyUnsupported.InterRegion	Inter-region snapshot copy is not supported for this AWS Region.
SnapshotCreationPerVolumeRateExceeded	The rate limit for creating concurrent snapshots of an EBS volume has been exceeded. Wait at least 15 seconds between concurrent volume snapshots.
SnapshotLimitExceeded	You've reached the limit on the number of Amazon EBS snapshots that you can create. To request an increase on your snapshot limit, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
SubnetLimitExceeded	You've reached the limit on the number of subnets that you can create for the specified VPC. For more information about subnet limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your subnet limit, complete the <a href="#">Amazon VPC Limits form</a> .
TagLimitExceeded	You've reached the limit on the number of tags that you can assign to the specified resource. For more information, see <a href="#">Tag restrictions</a> .
TargetCapacityLimitException	The value for targetCapacity exceeds your limit on the amount of Spot placement target capacity you can explore. Reduce the targetCapacity value, and try again. For more information, see <a href="#">Spot placement score</a> .
TrafficMirrorFilterInUse	The Traffic Mirror filter cannot be deleted because a Traffic Mirror session is currently using it.
TrafficMirrorSessionsPerInterfaceLimitExceeded	The allowed number of Traffic Mirror sessions for the specified network interface has been exceeded.

Error code	Description
TrafficMirrorSessionsPerTargetLimitExceeded	The maximum number of Traffic Mirror sessions for the specified Traffic Mirror target has been exceeded.
TrafficMirrorSourcesPerTargetLimitExceeded	The maximum number of Traffic Mirror sources for the specified Traffic Mirror target has been exceeded.
TrafficMirrorTargetInUseException	The Traffic Mirror target cannot be deleted because a Traffic Mirror session is currently using it.
TrafficMirrorFilterLimitExceeded	The maximum number of Traffic Mirror filters has been exceeded.
TrafficMirrorFilterRuleLimitExceeded	The maximum number of Traffic Mirror filter rules has been exceeded.
TrafficMirrorSessionLimitExceeded	The maximum number of Traffic Mirror sessions has been exceeded.
TrafficMirrorTargetLimitExceeded	The maximum number of Traffic Mirror targets has been exceeded.
TrafficMirrorFilterRuleAlreadyExists	The Traffic Mirror filter rule already exists.
UnavailableHostRequirements	There are no valid Dedicated Hosts available on which you can launch an instance.
UnknownPrincipalType.Unsupported	The principal type is not supported. The principal must be an IAM user, IAM role, or the root user for the AWS account.
UnknownVolumeType	The specified volume type is unsupported. The supported volume types are gp2, io1, st1, sc1, and standard.
Unsupported	The specified request is unsupported. For example, you might be trying to launch an instance in an Availability Zone that currently has constraints on that instance type. The returned message provides details of the unsupported request.
UnsupportedException	Capacity Reservations are not supported for this Region.
UnsupportedHibernationConfiguration	The instance could not be launched because one or more parameter values do not meet the prerequisites for enabling hibernation. For more information, see <a href="#">Hibernation Prerequisites</a> . Alternatively, the instance could not be hibernated because it is not enabled for hibernation.
UnsupportedHostConfiguration	The specified Dedicated Host configuration is unsupported. For more information about supported configurations, see <a href="#">Dedicated Hosts</a> .
UnsupportedInstanceTypeOnHost	The instance type is not supported on the Dedicated Host. For more information about supported instance types, see <a href="#">Amazon EC2 Dedicated Hosts Pricing</a> .

Error code	Description
UnsupportedTenancy	The specified tenancy is unsupported. You can change the tenancy of a VPC to default only.
UpdateLimitExceeded	The default credit specification for an instance family can be modified only once in a rolling 5-minute period, and up to four times in a rolling 24-hour period. For more information, see <a href="#">Setting the Default Credit Specification for the Account</a> .
VolumeInUse	The specified Amazon EBS volume is attached to an instance. Ensure that the specified volume is in an 'available' state.
VolumeIOPSLimit	The maximum IOPS limit for the volume has been reached. For more information, see <a href="#">Amazon EBS Volume Types</a> .
VolumeLimitExceeded	You've reached the limit on your Amazon EBS volume storage. To request an increase, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> .
VolumeModificationSizeLimitExceeded	You've reached the limit on your Amazon EBS volume modification storage in this Region. To request an increase, complete the <a href="#">Amazon EC2 EBS Volume Limit Form</a> , or wait for the current volume modifications to complete and then retry your request.
VolumeTypeNotAvailableInZone	The specified Availability Zone does not support Provisioned IOPS SSD volumes. Try launching your instance in a different Availability Zone, or don't specify a zone in the request. If you're creating a volume, try specifying a different Availability Zone in the request.
VpcCidrConflict	You cannot enable a VPC for ClassicLink if the VPC has routing that conflicts with the EC2-Classic private IP address range of 10/8; for example, if your VPC's route table points to 10.0.0.0/16 for a VPC peering connection. This excludes local routes for VPCs in the 10.0.0.0/16 and 10.1.0.0/16 IP address ranges. For more information, see <a href="#">Routing for Classic Link</a> .
VpcIdNotSpecified	You have no default VPC in which to carry out the request. Specify a VPC or subnet ID or, in the case of security groups, specify the ID and not the security group name. To create a new default VPC, contact <a href="#">AWS Support</a> .
VpcEndpointLimitExceeded	You've reached the limit on the number of VPC endpoints that you can create in the AWS Region. For more information about VPC limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPC limit, complete the <a href="#">Amazon VPC Limits form</a> .

Error code	Description
VpcLimitExceeded	You've reached the limit on the number of VPCs that you can create in the AWS Region. For more information about VPC limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPC limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpcPeeringConnectionAlreadyExists	A VPC peering connection between the VPCs already exists.
VpcPeeringConnectionsPerVpcLimitExceeded	You've reached the limit on the number of VPC peering connections that you can have per VPC. For more information, see <a href="#">Amazon VPC Limits</a> .
VPCResourceNotSpecified	The specified resource can be used only in a VPC; for example, T2 instances. Ensure that you have a VPC in your account, and then specify a subnet ID or network interface ID in the request.
VpnConnectionLimitExceeded	You've reached the limit on the number of VPN connections that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your VPN connection limit, complete the <a href="#">Amazon VPC Limits form</a> .
VpnGatewayAttachmentLimitExceeded	You've reached the limit on the number of VPCs that can be attached to the specified virtual private gateway.
VpnGatewayLimitExceeded	You've reached the limit on the number of virtual private gateways that you can create. For more information about limits, see <a href="#">Amazon VPC Limits</a> . To request an increase on your virtual private gateway limit, complete the <a href="#">Amazon VPC Limits form</a> .
ZonesMismatched	The Availability Zone for the instance does not match that of the Dedicated Host.

## Common causes of client errors

There are a number of reasons that you might encounter an error while performing a request. Some errors can be prevented or easily solved by following these guidelines:

- **Specify the region:** Some resources can't be shared between AWS Regions. If you are specifying a resource that's located in a Region other than the default Region (us-east-1), specify its Region in the request. If the resource cannot be found, you get the following error: `Client.InvalidResource.NotFound`; for example, `Client.InvalidInstanceID.NotFound`.
- **Allow for eventual consistency:** Some errors are caused because a previous request has not yet propagated thorough the system. For more information, see [Eventual consistency \(p. 2229\)](#).
- **Use a sleep interval between request rates:** Amazon EC2 API requests are throttled to help maintain the performance of the service. If your requests have been throttled, you get the following error: `Client.RequestLimitExceeded`. For more information, see [Query API request rate \(p. 2228\)](#).
- **Use the full ID of the resource:** When specifying a resource, ensure that you use its full ID, and not its user-supplied name or description. For example, when specifying a security group in a request, use its ID in the form sg-xxxxxxx.

- **Check your services:** Ensure that you have signed up for all the services you are attempting to use. You can check which services you're signed up for by going to the **My Account** section of the [AWS home page](#).
- **Check your permissions:** Ensure that you have the required permissions to carry out the request. If you are not authorized, you get the following error: `Client.UnauthorizedOperation`. For more information, see [Controlling Access](#) in the *Amazon EC2 User Guide for Linux Instances*.
- **Check your VPC:** Some resources cannot be shared between VPCs; for example, security groups.
- **Check your credentials:** Ensure that you provide your access keys when you are making requests; that you have entered the credentials correctly; and, if you have more than one account, that you are using the correct credentials for a particular account. If the provided credentials are incorrect, you may get the following error: `Client.AuthFailure`.

## Server error codes

This section lists server error codes that can be returned.

Error code	Description
<code>InsufficientAddressCapacity</code>	Not enough available addresses to satisfy your minimum request. Reduce the number of addresses you are requesting or wait for additional capacity to become available.
<code>InsufficientCapacity</code>	There is not enough capacity to fulfill your import instance request. You can wait for additional capacity to become available.
<code>InsufficientInstanceCapacity</code>	There is not enough capacity to fulfill your request. This error can occur if you launch a new instance, restart a stopped instance, create a new Capacity Reservation, or modify an existing Capacity Reservation. Reduce the number of instances in your request, or wait for additional capacity to become available. You can also try launching an instance by selecting different instance types (which you can resize at a later stage). The returned message might also give specific guidance about how to solve the problem.
<code>InsufficientHostCapacity</code>	There is not enough capacity to fulfill your Dedicated Host request. Reduce the number of Dedicated Hosts in your request, or wait for additional capacity to become available.
<code>InsufficientReservedInstanceCapacity</code>	Not enough available Reserved Instances to satisfy your minimum request. Reduce the number of Reserved Instances in your request or wait for additional capacity to become available.
<code>InsufficientVolumeCapacity</code>	There is not enough capacity to fulfill your EBS volume provision request. You can try to provision a different volume type, EBS volume in a different availability zone, or you can wait for additional capacity to become available.

Error code	Description
InternalError	An internal error has occurred. Retry your request, but if the problem persists, contact us with details by posting a message on the <a href="#">AWS forums</a> .
InternalFailure	The request processing has failed because of an unknown error, exception, or failure.
RequestLimitExceeded	The maximum request rate permitted by the Amazon EC2 APIs has been exceeded for your account. For best results, use an increasing or variable sleep interval between requests. For more information, see <a href="#">Query API request rate (p. 2228)</a> .
ServiceUnavailable	The request has failed due to a temporary failure of the server.
Unavailable	The server is overloaded and can't handle the request.

## Example error response

The following shows the structure of a request error response.

```
<Response>
  <Errors>
    <Error>
      <Code>Error code text</Code>
      <Message>Error message</Message>
    </Error>
  </Errors>
  <RequestID>request ID</RequestID>
</Response>
```

The following shows an example of an error response.

```
<Response>
  <Errors>
    <Error>
      <Code>InvalidInstanceID.NotFound</Code>
      <Message>The instance ID 'i-1a2b3c4d' does not exist</Message>
    </Error>
  </Errors>
  <RequestID>ea966190-f9aa-478e-9ede-example</RequestID>
</Response>
```

## Eventual consistency

The Amazon EC2 API follows an eventual consistency model, due to the distributed nature of the system supporting the API. This means that when you run an API command, the result may not be immediately visible to subsequent API commands, which can result in an error.

For more information about eventual consistency and how to manage it, see [Eventual consistency \(p. 2229\)](#).