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# Amazon Redshift

## API Reference

### API Version 2012-12-01



## Amazon Redshift: API Reference

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# Welcome

## Overview

This is an interface reference for Amazon Redshift. It contains documentation for one of the programming or command line interfaces you can use to manage Amazon Redshift clusters. Note that Amazon Redshift is asynchronous, which means that some interfaces may require techniques, such as polling or asynchronous callback handlers, to determine when a command has been applied. In this reference, the parameter descriptions indicate whether a change is applied immediately, on the next instance reboot, or during the next maintenance window. For a summary of the Amazon Redshift cluster management interfaces, go to [Using the Amazon Redshift Management Interfaces](#).

Amazon Redshift manages all the work of setting up, operating, and scaling a data warehouse: provisioning capacity, monitoring and backing up the cluster, and applying patches and upgrades to the Amazon Redshift engine. You can focus on using your data to acquire new insights for your business and customers.

If you are a first-time user of Amazon Redshift, we recommend that you begin by reading the [Amazon Redshift Getting Started Guide](#).

If you are a database developer, the [Amazon Redshift Database Developer Guide](#) explains how to design, build, query, and maintain the databases that make up your data warehouse.

This document was last published on November 19, 2018.

# Actions

The following actions are supported:

- [AcceptReservedNodeExchange](#) (p. 4)
- [AuthorizeClusterSecurityGroupIngress](#) (p. 6)
- [AuthorizeSnapshotAccess](#) (p. 9)
- [BatchDeleteClusterSnapshots](#) (p. 11)
- [BatchModifyClusterSnapshots](#) (p. 13)
- [CancelResize](#) (p. 15)
- [CopyClusterSnapshot](#) (p. 18)
- [CreateCluster](#) (p. 21)
- [CreateClusterParameterGroup](#) (p. 32)
- [CreateClusterSecurityGroup](#) (p. 35)
- [CreateClusterSnapshot](#) (p. 38)
- [CreateClusterSubnetGroup](#) (p. 41)
- [CreateEventSubscription](#) (p. 44)
- [CreateHsmClientCertificate](#) (p. 48)
- [CreateHsmConfiguration](#) (p. 50)
- [CreateSnapshotCopyGrant](#) (p. 53)
- [CreateSnapshotSchedule](#) (p. 55)
- [CreateTags](#) (p. 58)
- [DeleteCluster](#) (p. 60)
- [DeleteClusterParameterGroup](#) (p. 64)
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- [DeleteSnapshotCopyGrant](#) (p. 76)
- [DeleteSnapshotSchedule](#) (p. 77)
- [DeleteTags](#) (p. 78)
- [DescribeAccountAttributes](#) (p. 80)
- [DescribeClusterDbRevisions](#) (p. 81)
- [DescribeClusterParameterGroups](#) (p. 83)
- [DescribeClusterParameters](#) (p. 86)
- [DescribeClusters](#) (p. 90)
- [DescribeClusterSecurityGroups](#) (p. 94)
- [DescribeClusterSnapshots](#) (p. 98)
- [DescribeClusterSubnetGroups](#) (p. 103)
- [DescribeClusterTracks](#) (p. 106)
- [DescribeClusterVersions](#) (p. 108)
- [DescribeDefaultClusterParameters](#) (p. 111)

- [DescribeEventCategories](#) (p. 114)
- [DescribeEvents](#) (p. 115)
- [DescribeEventSubscriptions](#) (p. 119)
- [DescribeHsmClientCertificates](#) (p. 122)
- [DescribeHsmConfigurations](#) (p. 125)
- [DescribeLoggingStatus](#) (p. 128)
- [DescribeOrderableClusterOptions](#) (p. 130)
- [DescribeReservedNodeOfferings](#) (p. 134)
- [DescribeReservedNodes](#) (p. 137)
- [DescribeResize](#) (p. 140)
- [DescribeSnapshotCopyGrants](#) (p. 144)
- [DescribeSnapshotSchedules](#) (p. 147)
- [DescribeStorage](#) (p. 149)
- [DescribeTableRestoreStatus](#) (p. 150)
- [DescribeTags](#) (p. 152)
- [DisableLogging](#) (p. 155)
- [DisableSnapshotCopy](#) (p. 157)
- [EnableLogging](#) (p. 159)
- [EnableSnapshotCopy](#) (p. 162)
- [GetClusterCredentials](#) (p. 165)
- [GetReservedNodeExchangeOfferings](#) (p. 169)
- [ModifyCluster](#) (p. 171)
- [ModifyClusterDbRevision](#) (p. 180)
- [ModifyClusterIamRoles](#) (p. 182)
- [ModifyClusterMaintenance](#) (p. 185)
- [ModifyClusterParameterGroup](#) (p. 187)
- [ModifyClusterSnapshot](#) (p. 190)
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- [ModifySnapshotCopyRetentionPeriod](#) (p. 199)
- [ModifySnapshotSchedule](#) (p. 202)
- [PurchaseReservedNodeOffering](#) (p. 204)
- [RebootCluster](#) (p. 207)
- [ResetClusterParameterGroup](#) (p. 210)
- [ResizeCluster](#) (p. 213)
- [RestoreFromClusterSnapshot](#) (p. 216)
- [RestoreTableFromClusterSnapshot](#) (p. 225)
- [RevokeClusterSecurityGroupIngress](#) (p. 228)
- [RevokeSnapshotAccess](#) (p. 231)
- [RotateEncryptionKey](#) (p. 233)



# AcceptReservedNodeExchange

Exchanges a DC1 Reserved Node for a DC2 Reserved Node with no changes to the configuration (term, payment type, or number of nodes) and no additional costs.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ReservedNodeId**

A string representing the node identifier of the DC1 Reserved Node to be exchanged.

Type: String

Required: Yes

### **TargetReservedNodeOfferingId**

The unique identifier of the DC2 Reserved Node offering to be used for the exchange. You can obtain the value for the parameter by calling [GetReservedNodeExchangeOfferings \(p. 169\)](#)

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **ExchangedReservedNode**

Describes a reserved node. You can call the [DescribeReservedNodeOfferings \(p. 134\)](#) API to obtain the available reserved node offerings.

Type: [ReservedNode \(p. 288\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **DependentServiceUnavailableFault**

Your request cannot be completed because a dependent internal service is temporarily unavailable. Wait 30 to 60 seconds and try again.

HTTP Status Code: 400

### **InvalidReservedNodeState**

Indicates that the Reserved Node being exchanged is not in an active state.

HTTP Status Code: 400

### **ReservedNodeAlreadyExists**

User already has a reservation with the given identifier.

HTTP Status Code: 404

**ReservedNodeAlreadyMigrated**

Indicates that the reserved node has already been exchanged.

HTTP Status Code: 400

**ReservedNodeNotFound**

The specified reserved compute node not found.

HTTP Status Code: 404

**ReservedNodeOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## See Also

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

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

# AuthorizeClusterSecurityGroupIngress

Adds an inbound (ingress) rule to an Amazon Redshift security group. Depending on whether the application accessing your cluster is running on the Internet or an Amazon EC2 instance, you can authorize inbound access to either a Classless Interdomain Routing (CIDR)/Internet Protocol (IP) range or to an Amazon EC2 security group. You can add as many as 20 ingress rules to an Amazon Redshift security group.

If you authorize access to an Amazon EC2 security group, specify *EC2SecurityGroupName* and *EC2SecurityGroupOwnerId*. The Amazon EC2 security group and Amazon Redshift cluster must be in the same AWS Region.

If you authorize access to a CIDR/IP address range, specify *CIDRIP*. For an overview of CIDR blocks, see the Wikipedia article on [Classless Inter-Domain Routing](#).

You must also associate the security group with a cluster so that clients running on these IP addresses or the EC2 instance are authorized to connect to the cluster. For information about managing security groups, go to [Working with Security Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterSecurityGroupName**

The name of the security group to which the ingress rule is added.

Type: String

Required: Yes

### **CIDRIP**

The IP range to be added the Amazon Redshift security group.

Type: String

Required: No

### **EC2SecurityGroupName**

The EC2 security group to be added the Amazon Redshift security group.

Type: String

Required: No

### **EC2SecurityGroupOwnerId**

The AWS account number of the owner of the security group specified by the *EC2SecurityGroupName* parameter. The AWS Access Key ID is not an acceptable value.

Example: 111122223333

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **ClusterSecurityGroup**

Describes a security group.

Type: [ClusterSecurityGroup](#) (p. 255) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **AuthorizationAlreadyExists**

The specified CIDR block or EC2 security group is already authorized for the specified cluster security group.

HTTP Status Code: 400

### **AuthorizationQuotaExceeded**

The authorization quota for the cluster security group has been reached.

HTTP Status Code: 400

### **ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

### **InvalidClusterSecurityGroupState**

The state of the cluster security group is not available.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=AuthorizeClusterSecurityGroupIngress
&CIDRIP=10.24.34.0/24
&ClusterSecurityGroupName=example-security-group
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20150817/us-west-2/redshift/aws4_request
&X-Amz-Date=20150825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

### Sample Response

```
<AuthorizeClusterSecurityGroupIngressResponse xmlns="http://redshift.amazonaws.com/
doc/2012-12-01/">
```

```
<AuthorizeClusterSecurityGroupIngressResult>
  <ClusterSecurityGroup>
    <Tags/>
    <EC2SecurityGroups/>
    <IPRanges>
      <IPRange>
        <CIDRIP>10.24.34.0/24</CIDRIP>
        <Status>authorized</Status>
      </IPRange>
    </IPRanges>
    <Description>Example security group</Description>
    <ClusterSecurityGroupName>example-security-group</ClusterSecurityGroupName>
  </ClusterSecurityGroup>
</AuthorizeClusterSecurityGroupIngressResult>
<ResponseMetadata>
  <RequestId>534d1bce-46ac-11e5-b673-31d855cc98c6</RequestId>
</ResponseMetadata>
</AuthorizeClusterSecurityGroupIngressResponse>
```

## See Also

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

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

# AuthorizeSnapshotAccess

Authorizes the specified AWS customer account to restore the specified snapshot.

For more information about working with snapshots, go to [Amazon Redshift Snapshots](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **AccountWithRestoreAccess**

The identifier of the AWS customer account authorized to restore the specified snapshot.

To share a snapshot with AWS support, specify amazon-redshift-support.

Type: String

Required: Yes

### **SnapshotIdentifier**

The identifier of the snapshot the account is authorized to restore.

Type: String

Required: Yes

### **SnapshotClusterIdentifier**

The identifier of the cluster the snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than \* for the cluster name.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **Snapshot**

Describes a snapshot.

Type: [Snapshot](#) (p. 297) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **AuthorizationAlreadyExists**

The specified CIDR block or EC2 security group is already authorized for the specified cluster security group.

HTTP Status Code: 400

**AuthorizationQuotaExceeded**

The authorization quota for the cluster security group has been reached.

HTTP Status Code: 400

**ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

**DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

**InvalidClusterSnapshotState**

The specified cluster snapshot is not in the `available` state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

**LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

## See Also

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

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

# BatchDeleteClusterSnapshots

Deletes a set of cluster snapshots.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **Identifiers.DeleteClusterSnapshotMessage.N**

A list of identifiers for the snapshots that you want to delete.

Type: Array of [DeleteClusterSnapshotMessage](#) (p. 266) objects

Required: Yes

## Response Elements

The following elements are returned by the service.

### **Errors.SnapshotErrorMessage.N**

A list of any errors returned.

Type: Array of [SnapshotErrorMessage](#) (p. 303) objects

### **Resources.String.N**

A list of the snapshot identifiers that were deleted.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **BatchDeleteRequestSizeExceeded**

The maximum number for a batch delete of snapshots has been reached. The limit is 100.

HTTP Status Code: 400

## See Also

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

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



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

# BatchModifyClusterSnapshots

Modifies the settings for a list of snapshots.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SnapshotIdentifierList.String.N**

A list of snapshot identifiers you want to modify.

Type: Array of strings

Required: Yes

### **Force**

A boolean value indicating whether to override an exception if the retention period has passed.

Type: Boolean

Required: No

### **ManualSnapshotRetentionPeriod**

The number of days that a manual snapshot is retained. If you specify the value -1, the manual snapshot is retained indefinitely.

The number must be either -1 or an integer between 1 and 3,653.

If you decrease the manual snapshot retention period from its current value, existing manual snapshots that fall outside of the new retention period will return an error. If you want to suppress the errors and delete the snapshots, use the force option.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **Errors.SnapshotErrorMessage.N**

A list of any errors returned.

Type: Array of [SnapshotErrorMessage \(p. 303\)](#) objects

### **Resources.String.N**

A list of the snapshots that were modified.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

#### **BatchModifyClusterSnapshotsLimitExceededFault**

The maximum number for snapshot identifiers has been reached. The limit is 100.

HTTP Status Code: 400

#### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

## See Also

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

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

# CancelResize

Cancels a resize operation.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

The unique identifier for the cluster that you want to cancel a resize operation for.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **AvgResizeRateInMegaBytesPerSecond**

The average rate of the resize operation over the last few minutes, measured in megabytes per second. After the resize operation completes, this value shows the average rate of the entire resize operation.

Type: Double

### **ElapsedTimeInSeconds**

The amount of seconds that have elapsed since the resize operation began. After the resize operation completes, this value shows the total actual time, in seconds, for the resize operation.

Type: Long

### **EstimatedTimeToCompletionInSeconds**

The estimated time remaining, in seconds, until the resize operation is complete. This value is calculated based on the average resize rate and the estimated amount of data remaining to be processed. Once the resize operation is complete, this value will be 0.

Type: Long

### **ImportTablesCompleted.member.N**

The names of tables that have been completely imported .

Valid Values: List of table names.

Type: Array of strings

### **ImportTablesInProgress.member.N**

The names of tables that are being currently imported.

Valid Values: List of table names.

Type: Array of strings

**ImportTablesNotStarted.member.N**

The names of tables that have not been yet imported.

Valid Values: List of table names

Type: Array of strings

**Message**

An optional string to provide additional details about the resize action.

Type: String

**ProgressInMegaBytes**

While the resize operation is in progress, this value shows the current amount of data, in megabytes, that has been processed so far. When the resize operation is complete, this value shows the total amount of data, in megabytes, on the cluster, which may be more or less than `TotalResizeDataInMegaBytes` (the estimated total amount of data before resize).

Type: Long

**ResizeType**

An enum with possible values of `ClassicResize` and `ElasticResize`. These values describe the type of resize operation being performed.

Type: String

**Status**

The status of the resize operation.

Valid Values: `NONE` | `IN_PROGRESS` | `FAILED` | `SUCCEEDED` | `CANCELLING`

Type: String

**TargetClusterType**

The cluster type after the resize operation is complete.

Valid Values: `multi-node` | `single-node`

Type: String

**TargetEncryptionType**

The type of encryption for the cluster after the resize is complete.

Possible values are `KMS` and `None`. In the China region possible values are: `Legacy` and `None`.

Type: String

**TargetNodeType**

The node type that the cluster will have after the resize operation is complete.

Type: String

**TargetNumberOfNodes**

The number of nodes that the cluster will have after the resize operation is complete.

Type: Integer

**TotalResizeDataInMegaBytes**

The estimated total amount of data, in megabytes, on the cluster before the resize operation began.

Type: Long

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

### **ResizeNotFound**

A resize operation for the specified cluster is not found.

HTTP Status Code: 404

### **UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## See Also

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

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

# CopyClusterSnapshot

Copies the specified automated cluster snapshot to a new manual cluster snapshot. The source must be an automated snapshot and it must be in the available state.

When you delete a cluster, Amazon Redshift deletes any automated snapshots of the cluster. Also, when the retention period of the snapshot expires, Amazon Redshift automatically deletes it. If you want to keep an automated snapshot for a longer period, you can make a manual copy of the snapshot. Manual snapshots are retained until you delete them.

For more information about working with snapshots, go to [Amazon Redshift Snapshots](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### SourceSnapshotIdentifier

The identifier for the source snapshot.

Constraints:

- Must be the identifier for a valid automated snapshot whose state is `available`.

Type: String

Required: Yes

### TargetSnapshotIdentifier

The identifier given to the new manual snapshot.

Constraints:

- Cannot be null, empty, or blank.
- Must contain from 1 to 255 alphanumeric characters or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique for the AWS account that is making the request.

Type: String

Required: Yes

### ManualSnapshotRetentionPeriod

The number of days that a manual snapshot is retained. If the value is `-1`, the manual snapshot is retained indefinitely.

The value must be either `-1` or an integer between 1 and 3,653.

The default value is `-1`.

Type: Integer

Required: No

### **SourceSnapshotClusterIdentifier**

The identifier of the cluster the source snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than \* for the cluster name.

Constraints:

- Must be the identifier for a valid cluster.

Type: String

Required: No

## **Response Elements**

The following element is returned by the service.

### **Snapshot**

Describes a snapshot.

Type: [Snapshot \(p. 297\)](#) object

## **Errors**

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterSnapshotAlreadyExists**

The value specified as a snapshot identifier is already used by an existing snapshot.

HTTP Status Code: 400

### **ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

### **ClusterSnapshotQuotaExceeded**

The request would result in the user exceeding the allowed number of cluster snapshots.

HTTP Status Code: 400

### **InvalidClusterSnapshotState**

The specified cluster snapshot is not in the `available` state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400



## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=CopyClusterSnapshot
&SourceSnapshotIdentifier=cm:examplecluster-2013-01-22-19-27-58
&TargetSnapshotIdentifier=my-snapshot-456
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T014618Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<CopyClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CopyClusterSnapshotResult>
    <Snapshot>
      <Port>5439</Port>
      <SnapshotIdentifier>my-snapshot-456</SnapshotIdentifier>
      <Status>available</Status>
      <SnapshotType>manual</SnapshotType>
      <ClusterVersion>1.0</ClusterVersion>
      <SnapshotCreateTime>2013-01-22T19:27:58.931Z</SnapshotCreateTime>
      <NumberOfNodes>2</NumberOfNodes>
      <DBName>dev</DBName>
      <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
      <AvailabilityZone>us-east-1c</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster</ClusterIdentifier>
      <MasterUsername>adminuser</MasterUsername>
    </Snapshot>
  </CopyClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>aebb56f5-64fe-11e2-88c5-53eb05787dfb</RequestId>
  </ResponseMetadata>
</CopyClusterSnapshotResponse>
```

## See Also

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

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

# CreateCluster

Creates a new cluster.

To create a cluster in Virtual Private Cloud (VPC), you must provide a cluster subnet group name. The cluster subnet group identifies the subnets of your VPC that Amazon Redshift uses when creating the cluster. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

A unique identifier for the cluster. You use this identifier to refer to the cluster for any subsequent cluster operations such as deleting or modifying. The identifier also appears in the Amazon Redshift console.

Constraints:

- Must contain from 1 to 63 alphanumeric characters or hyphens.
- Alphabetic characters must be lowercase.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique for all clusters within an AWS account.

Example: `myexamplecluster`

Type: String

Required: Yes

### MasterUsername

The user name associated with the master user account for the cluster that is being created.

Constraints:

- Must be 1 - 128 alphanumeric characters. The user name can't be `PUBLIC`.
- First character must be a letter.
- Cannot be a reserved word. A list of reserved words can be found in [Reserved Words](#) in the Amazon Redshift Database Developer Guide.

Type: String

Required: Yes

### MasterUserPassword

The password associated with the master user account for the cluster that is being created.

Constraints:

- Must be between 8 and 64 characters in length.
- Must contain at least one uppercase letter.
- Must contain at least one lowercase letter.
- Must contain one number.

- Can be any printable ASCII character (ASCII code 33 to 126) except ' (single quote), " (double quote), \, /, @, or space.

Type: String

Required: Yes

### **NodeType**

The node type to be provisioned for the cluster. For information about node types, go to [Working with Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

Valid Values: `ds2.xlarge` | `ds2.8xlarge` | `ds2.xlarge` | `ds2.8xlarge` | `dc1.large` | `dc1.8xlarge` | `dc2.large` | `dc2.8xlarge`

Type: String

Required: Yes

### **AdditionalInfo**

Reserved.

Type: String

Required: No

### **AllowVersionUpgrade**

If `true`, major version upgrades can be applied during the maintenance window to the Amazon Redshift engine that is running on the cluster.

When a new major version of the Amazon Redshift engine is released, you can request that the service automatically apply upgrades during the maintenance window to the Amazon Redshift engine that is running on your cluster.

Default: `true`

Type: Boolean

Required: No

### **AutomatedSnapshotRetentionPeriod**

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with [CreateClusterSnapshot](#) (p. 38).

Default: 1

Constraints: Must be a value from 0 to 35.

Type: Integer

Required: No

### **AvailabilityZone**

The EC2 Availability Zone (AZ) in which you want Amazon Redshift to provision the cluster. For example, if you have several EC2 instances running in a specific Availability Zone, then you might want the cluster to be provisioned in the same zone in order to decrease network latency.

Default: A random, system-chosen Availability Zone in the region that is specified by the endpoint.

Example: `us-east-1d`

Constraint: The specified Availability Zone must be in the same region as the current endpoint.

Type: String

Required: No

**ClusterParameterGroupName**

The name of the parameter group to be associated with this cluster.

Default: The default Amazon Redshift cluster parameter group. For information about the default parameter group, go to [Working with Amazon Redshift Parameter Groups](#)

Constraints:

- Must be 1 to 255 alphanumeric characters or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

**ClusterSecurityGroups.ClusterSecurityGroupName.N**

A list of security groups to be associated with this cluster.

Default: The default cluster security group for Amazon Redshift.

Type: Array of strings

Required: No

**ClusterSubnetGroupName**

The name of a cluster subnet group to be associated with this cluster.

If this parameter is not provided the resulting cluster will be deployed outside virtual private cloud (VPC).

Type: String

Required: No

**ClusterType**

The type of the cluster. When cluster type is specified as

- `single-node`, the **NumberOfNodes** parameter is not required.
- `multi-node`, the **NumberOfNodes** parameter is required.

Valid Values: `multi-node` | `single-node`

Default: `multi-node`

Type: String

Required: No

**ClusterVersion**

The version of the Amazon Redshift engine software that you want to deploy on the cluster.

The version selected runs on all the nodes in the cluster.

Constraints: Only version 1.0 is currently available.

Example: 1.0

Type: String

Required: No

#### **DBName**

The name of the first database to be created when the cluster is created.

To create additional databases after the cluster is created, connect to the cluster with a SQL client and use SQL commands to create a database. For more information, go to [Create a Database](#) in the Amazon Redshift Database Developer Guide.

Default: dev

Constraints:

- Must contain 1 to 64 alphanumeric characters.
- Must contain only lowercase letters.
- Cannot be a word that is reserved by the service. A list of reserved words can be found in [Reserved Words](#) in the Amazon Redshift Database Developer Guide.

Type: String

Required: No

#### **ElasticIp**

The Elastic IP (EIP) address for the cluster.

Constraints: The cluster must be provisioned in EC2-VPC and publicly-accessible through an Internet gateway. For more information about provisioning clusters in EC2-VPC, go to [Supported Platforms to Launch Your Cluster](#) in the Amazon Redshift Cluster Management Guide.

Type: String

Required: No

#### **Encrypted**

If `true`, the data in the cluster is encrypted at rest.

Default: false

Type: Boolean

Required: No

#### **EnhancedVpcRouting**

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: false

Type: Boolean

Required: No

#### **HsmClientCertificateIdentifier**

Specifies the name of the HSM client certificate the Amazon Redshift cluster uses to retrieve the data encryption keys stored in an HSM.

Type: String

Required: No

#### **HsmConfigurationIdentifier**

Specifies the name of the HSM configuration that contains the information the Amazon Redshift cluster can use to retrieve and store keys in an HSM.

Type: String

Required: No

#### **IamRoles.IamRoleArn.N**

A list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services. You must supply the IAM roles in their Amazon Resource Name (ARN) format. You can supply up to 10 IAM roles in a single request.

A cluster can have up to 10 IAM roles associated with it at any time.

Type: Array of strings

Required: No

#### **KmsKeyId**

The AWS Key Management Service (KMS) key ID of the encryption key that you want to use to encrypt data in the cluster.

Type: String

Required: No

#### **MaintenanceTrackName**

An optional parameter for the name of the maintenance track for the cluster. If you don't provide a maintenance track name, the cluster is assigned to the `current` track.

Type: String

Required: No

#### **ManualSnapshotRetentionPeriod**

The default number of days to retain a manual snapshot. If the value is -1, the snapshot is retained indefinitely. This setting doesn't change the retention period of existing snapshots.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

#### **NumberOfNodes**

The number of compute nodes in the cluster. This parameter is required when the **ClusterType** parameter is specified as `multi-node`.

For information about determining how many nodes you need, go to [Working with Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

If you don't specify this parameter, you get a single-node cluster. When requesting a multi-node cluster, you must specify the number of nodes that you want in the cluster.

Default: 1

Constraints: Value must be at least 1 and no more than 100.

Type: Integer

Required: No

#### **Port**

The port number on which the cluster accepts incoming connections.

The cluster is accessible only via the JDBC and ODBC connection strings. Part of the connection string requires the port on which the cluster will listen for incoming connections.

Default: 5439

Valid Values: 1150–65535

Type: Integer

Required: No

#### **PreferredMaintenanceWindow**

The weekly time range (in UTC) during which automated cluster maintenance can occur.

Format: `ddd:hh24:mi-ddd:hh24:mi`

Default: A 30-minute window selected at random from an 8-hour block of time per region, occurring on a random day of the week. For more information about the time blocks for each region, see [Maintenance Windows](#) in Amazon Redshift Cluster Management Guide.

Valid Days: Mon | Tue | Wed | Thu | Fri | Sat | Sun

Constraints: Minimum 30-minute window.

Type: String

Required: No

#### **PubliclyAccessible**

If `true`, the cluster can be accessed from a public network.

Type: Boolean

Required: No

#### **SnapshotScheduleIdentifier**

A unique identifier for the snapshot schedule.

Type: String

Required: No

#### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of Virtual Private Cloud (VPC) security groups to be associated with the cluster.

Default: The default VPC security group is associated with the cluster.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterAlreadyExists**

The account already has a cluster with the given identifier.

HTTP Status Code: 400

**ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

**ClusterQuotaExceeded**

The request would exceed the allowed number of cluster instances for this account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

**ClusterSubnetGroupNotFoundFault**

The cluster subnet group name does not refer to an existing cluster subnet group.

HTTP Status Code: 400

**DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.



HTTP Status Code: 400

**HsmClientCertificateNotFoundFault**

There is no Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

**HsmConfigurationNotFoundFault**

There is no Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

**InsufficientClusterCapacity**

The number of nodes specified exceeds the allotted capacity of the cluster.

HTTP Status Code: 400

**InvalidClusterSubnetGroupStateFault**

The cluster subnet group cannot be deleted because it is in use.

HTTP Status Code: 400

**InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400

**InvalidElasticIpFault**

The Elastic IP (EIP) is invalid or cannot be found.

HTTP Status Code: 400

**InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is not valid, or not all of the subnets are in the same VPC.

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

**LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

#### **NumberOfNodesPerClusterLimitExceeded**

The operation would exceed the number of nodes allowed for a cluster.

HTTP Status Code: 400

#### **NumberOfNodesQuotaExceeded**

The operation would exceed the number of nodes allotted to the account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

#### **SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400

#### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

#### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## Examples

### Example

Create a non-VPC cluster.

#### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=CreateCluster
&ClusterIdentifier=examplecluster
&MasterUsername=masteruser
&MasterUserPassword=12345678Aa
&NumberOfNodes=2
&NodeType=ds2.xlarge
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T000028Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

#### Sample Response

```
<CreateClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterResult>
    <Cluster>
      <PendingModifiedValues>
        <MasterUserPassword>****</MasterUserPassword>
      </PendingModifiedValues>
```

```
<ClusterVersion>1.0</ClusterVersion>
<VpcSecurityGroups/>
<ClusterStatus>creating</ClusterStatus>
<NumberOfNodes>2</NumberOfNodes>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<PubliclyAccessible>true</PubliclyAccessible>
<Encrypted>false</Encrypted>
<EnhancedVpcRouting>false</EnhancedVpcRouting>
<DBName>dev</DBName>
<PreferredMaintenanceWindow>sun:10:30-sun:11:00</PreferredMaintenanceWindow>
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<ClusterSecurityGroups>
  <ClusterSecurityGroup>
    <Status>active</Status>
    <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
  </ClusterSecurityGroup>
</ClusterSecurityGroups>
<NodeType>ds2.xlarge</NodeType>
<ClusterIdentifier>examplecluster</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>masteruser</MasterUsername>
</Cluster>
</CreateClusterResult>
<ResponseMetadata>
  <RequestId>e69b1294-64ef-11e2-b07c-f7fbdd006c67</RequestId>
</ResponseMetadata>
</CreateClusterResponse>
```

## Example

Create cluster in virtual private cloud (VPC). This example request specifies a `ClusterSubnetGroupName` to identify the subnets that can be used when creating the cluster.

## Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=CreateCluster
&ClusterIdentifier=exampleclusterinvpc
&MasterUsername=master
&MasterUserPassword=1234abcdA
&NodeType=ds2.xlarge
&NumberOfNodes=2
&ClusterSubnetGroupName=mysubnetgroup1
  &Version=2012-12-01
  &x-amz-algorithm=AWS4-HMAC-SHA256
  &x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
  &x-amz-date=20130123T000028Z
  &x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<CreateClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterResult>
    <Cluster>
      <PendingModifiedValues>
        <MasterUserPassword>****</MasterUserPassword>
      </PendingModifiedValues>
```

```
<ClusterSubnetGroupName>mysubnetgroup1</ClusterSubnetGroupName>
<ClusterVersion>1.0</ClusterVersion>
<VpcSecurityGroups/>
<ClusterStatus>creating</ClusterStatus>
<NumberOfNodes>2</NumberOfNodes>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<PubliclyAccessible>false</PubliclyAccessible>
<Encrypted>false</Encrypted>
<EnhancedVpcRouting>false</EnhancedVpcRouting>
<DBName>dev</DBName>
<PreferredMaintenanceWindow>sat:08:30-sat:09:00</PreferredMaintenanceWindow>
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<VpcId>vpc-796a5913</VpcId>
<ClusterSecurityGroups/>
<NodeType>ds2.xlarge</NodeType>
<ClusterIdentifier>exampleclusterinvpc</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>master</MasterUsername>
</Cluster>
</CreateClusterResult>
<ResponseMetadata>
  <RequestId>fa337bb4-6a4d-11e2-a12a-cb8076a904bd</RequestId>
</ResponseMetadata>
</CreateClusterResponse>
```

## See Also

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

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

# CreateClusterParameterGroup

Creates an Amazon Redshift parameter group.

Creating parameter groups is independent of creating clusters. You can associate a cluster with a parameter group when you create the cluster. You can also associate an existing cluster with a parameter group after the cluster is created by using [ModifyCluster](#) (p. 171).

Parameters in the parameter group define specific behavior that applies to the databases you create on the cluster. For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### Description

A description of the parameter group.

Type: String

Required: Yes

### ParameterGroupFamily

The Amazon Redshift engine version to which the cluster parameter group applies. The cluster engine version determines the set of parameters.

To get a list of valid parameter group family names, you can call [DescribeClusterParameterGroups](#) (p. 83). By default, Amazon Redshift returns a list of all the parameter groups that are owned by your AWS account, including the default parameter groups for each Amazon Redshift engine version. The parameter group family names associated with the default parameter groups provide you the valid values. For example, a valid family name is "redshift-1.0".

Type: String

Required: Yes

### ParameterGroupName

The name of the cluster parameter group.

Constraints:

- Must be 1 to 255 alphanumeric characters or hyphens
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique withing your AWS account.

#### Note

This value is stored as a lower-case string.

Type: String

Required: Yes

### Tags.Tag.N

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

### **ClusterParameterGroup**

Describes a parameter group.

Type: [ClusterParameterGroup \(p. 251\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterParameterGroupAlreadyExists**

A cluster parameter group with the same name already exists.

HTTP Status Code: 400

### **ClusterParameterGroupQuotaExceeded**

The request would result in the user exceeding the allowed number of cluster parameter groups. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=CreateClusterParameterGroup  
&Description=description my parameter group  
&ParameterGroupFamily=redshift-1.0  
&ParameterGroupName=parametergroup1  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request  
&x-amz-date=20130123T002544Z
```

`&x-amz-signedheaders=content-type;host;x-amz-date`

## Sample Response

```
<CreateClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterParameterGroupResult>
    <ClusterParameterGroup>
      <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
      <Description>description my parameter group</Description>
      <ParameterGroupName>parametergroup1</ParameterGroupName>
    </ClusterParameterGroup>
  </CreateClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>6d6df847-64f3-11e2-bea9-49e0ce183f07</RequestId>
  </ResponseMetadata>
</CreateClusterParameterGroupResponse>
```

## See Also

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

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

# CreateClusterSecurityGroup

Creates a new Amazon Redshift security group. You use security groups to control access to non-VPC clusters.

For information about managing security groups, go to [Amazon Redshift Cluster Security Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterSecurityGroupName

The name for the security group. Amazon Redshift stores the value as a lowercase string.

Constraints:

- Must contain no more than 255 alphanumeric characters or hyphens.
- Must not be "Default".
- Must be unique for all security groups that are created by your AWS account.

Example: `examplesecuritygroup`

Type: String

Required: Yes

### Description

A description for the security group.

Type: String

Required: Yes

### Tags.Tag.N

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

### ClusterSecurityGroup

Describes a security group.

Type: [ClusterSecurityGroup \(p. 255\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).



### **ClusterSecurityGroupAlreadyExists**

A cluster security group with the same name already exists.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **QuotaExceeded.ClusterSecurityGroup**

The request would result in the user exceeding the allowed number of cluster security groups. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=CreateClusterSecurityGroup
&ClusterSecurityGroupName=securitygroup1
&Description=my security group
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T005817Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<CreateClusterSecurityGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterSecurityGroupResult>
    <ClusterSecurityGroup>
      <EC2SecurityGroups/>
      <IPRanges/>
      <Description>my security group</Description>
      <ClusterSecurityGroupName>securitygroup1</ClusterSecurityGroupName>
    </ClusterSecurityGroup>
  </CreateClusterSecurityGroupResult>
  <ResponseMetadata>
    <RequestId>f9ee270f-64f7-11e2-a8da-655adc216806</RequestId>
  </ResponseMetadata>
</CreateClusterSecurityGroupResponse>
```

## See Also

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

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

# CreateClusterSnapshot

Creates a manual snapshot of the specified cluster. The cluster must be in the `available` state.

For more information about working with snapshots, go to [Amazon Redshift Snapshots](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The cluster identifier for which you want a snapshot.

Type: String

Required: Yes

### SnapshotIdentifier

A unique identifier for the snapshot that you are requesting. This identifier must be unique for all snapshots within the AWS account.

Constraints:

- Cannot be null, empty, or blank
- Must contain from 1 to 255 alphanumeric characters or hyphens
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Example: `my-snapshot-id`

Type: String

Required: Yes

### ManualSnapshotRetentionPeriod

The number of days that a manual snapshot is retained. If the value is `-1`, the manual snapshot is retained indefinitely.

The value must be either `-1` or an integer between 1 and 3,653.

The default value is `-1`.

Type: Integer

Required: No

### Tags.Tag.N

A list of tag instances.

Type: Array of [Tag](#) (p. 312) objects

Required: No

## Response Elements

The following element is returned by the service.

### Snapshot

Describes a snapshot.

Type: [Snapshot \(p. 297\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### ClusterSnapshotAlreadyExists

The value specified as a snapshot identifier is already used by an existing snapshot.

HTTP Status Code: 400

### ClusterSnapshotQuotaExceeded

The request would result in the user exceeding the allowed number of cluster snapshots.

HTTP Status Code: 400

### InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

### InvalidRetentionPeriodFault

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

### InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

### TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=CreateClusterSnapshot  
&ClusterIdentifier=examplecluster
```

```
&SnapshotIdentifier=snapshot-1234
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T010824Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<CreateClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterSnapshotResult>
    <Snapshot>
      <Port>5439</Port>
      <SnapshotIdentifier>my-snapshot-123</SnapshotIdentifier>
      <Status>creating</Status>
      <SnapshotType>manual</SnapshotType>
      <ClusterVersion>1.0</ClusterVersion>
      <SnapshotCreateTime>2013-01-23T01:08:29.142Z</SnapshotCreateTime>
      <NumberOfNodes>2</NumberOfNodes>
      <DBName>dev</DBName>
      <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
      <AvailabilityZone>us-east-1c</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster</ClusterIdentifier>
      <MasterUsername>adminuser</MasterUsername>
    </Snapshot>
  </CreateClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>65baef14-64f9-11e2-bea9-49e0ce183f07</RequestId>
  </ResponseMetadata>
</CreateClusterSnapshotResponse>
```

## See Also

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

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

# CreateClusterSubnetGroup

Creates a new Amazon Redshift subnet group. You must provide a list of one or more subnets in your existing Amazon Virtual Private Cloud (Amazon VPC) when creating Amazon Redshift subnet group.

For information about subnet groups, go to [Amazon Redshift Cluster Subnet Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterSubnetGroupName**

The name for the subnet group. Amazon Redshift stores the value as a lowercase string.

Constraints:

- Must contain no more than 255 alphanumeric characters or hyphens.
- Must not be "Default".
- Must be unique for all subnet groups that are created by your AWS account.

Example: `examplesubnetgroup`

Type: String

Required: Yes

### **Description**

A description for the subnet group.

Type: String

Required: Yes

### **SubnetIds.SubnetIdentifier.N**

An array of VPC subnet IDs. A maximum of 20 subnets can be modified in a single request.

Type: Array of strings

Required: Yes

### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag](#) (p. 312) objects

Required: No

## Response Elements

The following element is returned by the service.

### **ClusterSubnetGroup**

Describes a subnet group.

Type: [ClusterSubnetGroup](#) (p. 259) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterSubnetGroupAlreadyExists**

A *ClusterSubnetGroupName* is already used by an existing cluster subnet group.

HTTP Status Code: 400

### **ClusterSubnetGroupQuotaExceeded**

The request would result in user exceeding the allowed number of cluster subnet groups. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **ClusterSubnetQuotaExceededFault**

The request would result in user exceeding the allowed number of subnets in a cluster subnet groups. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

### **InvalidSubnet**

The requested subnet is not valid, or not all of the subnets are in the same VPC.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## Example

### Sample Request

`https://redshift.us-east-1.amazonaws.com/`

```
?Action=CreateClusterSubnetGroup
&ClusterSubnetGroupName=mysubnetgroup1
&Description=My subnet group 1
&SubnetIds.member.1=subnet-756a591f
&SubnetIds.member.1=subnet-716a591b
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130129/us-east-1/redshift/aws4_request
&x-amz-date=20130129T192820Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<CreateClusterSubnetGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterSubnetGroupResult>
    <ClusterSubnetGroup>
      <VpcId>vpc-796a5913</VpcId>
      <Description>My subnet group 1</Description>
      <ClusterSubnetGroupName>mysubnetgroup1</ClusterSubnetGroupName>
      <SubnetGroupStatus>Complete</SubnetGroupStatus>
      <Subnets>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-756a591f</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1c</Name>
          </SubnetAvailabilityZone>
        </Subnet>
      </Subnets>
    </ClusterSubnetGroup>
  </CreateClusterSubnetGroupResult>
  <ResponseMetadata>
    <RequestId>0a60660f-6a4a-11e2-aad2-71d00c36728e</RequestId>
  </ResponseMetadata>
</CreateClusterSubnetGroupResponse>
```

## See Also

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

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



# CreateEventSubscription

Creates an Amazon Redshift event notification subscription. This action requires an ARN (Amazon Resource Name) of an Amazon SNS topic created by either the Amazon Redshift console, the Amazon SNS console, or the Amazon SNS API. To obtain an ARN with Amazon SNS, you must create a topic in Amazon SNS and subscribe to the topic. The ARN is displayed in the SNS console.

You can specify the source type, and lists of Amazon Redshift source IDs, event categories, and event severities. Notifications will be sent for all events you want that match those criteria. For example, you can specify source type = cluster, source ID = my-cluster-1 and mycluster2, event categories = Availability, Backup, and severity = ERROR. The subscription will only send notifications for those ERROR events in the Availability and Backup categories for the specified clusters.

If you specify both the source type and source IDs, such as source type = cluster and source identifier = my-cluster-1, notifications will be sent for all the cluster events for my-cluster-1. If you specify a source type but do not specify a source identifier, you will receive notice of the events for the objects of that type in your AWS account. If you do not specify either the SourceType nor the SourceIdentifier, you will be notified of events generated from all Amazon Redshift sources belonging to your AWS account. You must specify a source type if you specify a source ID.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### SnsTopicArn

The Amazon Resource Name (ARN) of the Amazon SNS topic used to transmit the event notifications. The ARN is created by Amazon SNS when you create a topic and subscribe to it.

Type: String

Required: Yes

### SubscriptionName

The name of the event subscription to be created.

Constraints:

- Cannot be null, empty, or blank.
- Must contain from 1 to 255 alphanumeric characters or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

### Enabled

A boolean value; set to `true` to activate the subscription, and set to `false` to create the subscription but not activate it.

Type: Boolean

Required: No

### EventCategories.EventCategory.N

Specifies the Amazon Redshift event categories to be published by the event notification subscription.

Values: configuration, management, monitoring, security

Type: Array of strings

Required: No

### **Severity**

Specifies the Amazon Redshift event severity to be published by the event notification subscription.

Values: ERROR, INFO

Type: String

Required: No

### **SourceIds.SourceId.N**

A list of one or more identifiers of Amazon Redshift source objects. All of the objects must be of the same type as was specified in the source type parameter. The event subscription will return only events generated by the specified objects. If not specified, then events are returned for all objects within the source type specified.

Example: my-cluster-1, my-cluster-2

Example: my-snapshot-20131010

Type: Array of strings

Required: No

### **SourceType**

The type of source that will be generating the events. For example, if you want to be notified of events generated by a cluster, you would set this parameter to cluster. If this value is not specified, events are returned for all Amazon Redshift objects in your AWS account. You must specify a source type in order to specify source IDs.

Valid values: cluster, cluster-parameter-group, cluster-security-group, and cluster-snapshot.

Type: String

Required: No

### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

## **Response Elements**

The following element is returned by the service.

### **EventSubscription**

Describes event subscriptions.

Type: [EventSubscription \(p. 274\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **EventSubscriptionQuotaExceeded**

The request would exceed the allowed number of event subscriptions for this account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **SNSInvalidTopic**

Amazon SNS has responded that there is a problem with the specified Amazon SNS topic.

HTTP Status Code: 400

### **SNSNoAuthorization**

You do not have permission to publish to the specified Amazon SNS topic.

HTTP Status Code: 400

### **SNSTopicArnNotFound**

An Amazon SNS topic with the specified Amazon Resource Name (ARN) does not exist.

HTTP Status Code: 404

### **SourceNotFound**

The specified Amazon Redshift event source could not be found.

HTTP Status Code: 404

### **SubscriptionAlreadyExist**

There is already an existing event notification subscription with the specified name.

HTTP Status Code: 400

### **SubscriptionCategoryNotFound**

The value specified for the event category was not one of the allowed values, or it specified a category that does not apply to the specified source type. The allowed values are Configuration, Management, Monitoring, and Security.

HTTP Status Code: 404

### **SubscriptionEventIdNotFound**

An Amazon Redshift event with the specified event ID does not exist.

HTTP Status Code: 404

### **SubscriptionSeverityNotFound**

The value specified for the event severity was not one of the allowed values, or it specified a severity that does not apply to the specified source type. The allowed values are ERROR and INFO.

HTTP Status Code: 404

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

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

# CreateHsmClientCertificate

Creates an HSM client certificate that an Amazon Redshift cluster will use to connect to the client's HSM in order to store and retrieve the keys used to encrypt the cluster databases.

The command returns a public key, which you must store in the HSM. In addition to creating the HSM certificate, you must create an Amazon Redshift HSM configuration that provides a cluster the information needed to store and use encryption keys in the HSM. For more information, go to [Hardware Security Modules](#) in the Amazon Redshift Cluster Management Guide.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **HsmClientCertificateIdentifier**

The identifier to be assigned to the new HSM client certificate that the cluster will use to connect to the HSM to use the database encryption keys.

Type: String

Required: Yes

### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag](#) (p. 312) objects

Required: No

## Response Elements

The following element is returned by the service.

### **HsmClientCertificate**

Returns information about an HSM client certificate. The certificate is stored in a secure Hardware Storage Module (HSM), and used by the Amazon Redshift cluster to encrypt data files.

Type: [HsmClientCertificate](#) (p. 276) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **HsmClientCertificateAlreadyExistsFault**

There is already an existing Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

### **HsmClientCertificateQuotaExceededFault**

The quota for HSM client certificates has been reached. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

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

# CreateHsmConfiguration

Creates an HSM configuration that contains the information required by an Amazon Redshift cluster to store and use database encryption keys in a Hardware Security Module (HSM). After creating the HSM configuration, you can specify it as a parameter when creating a cluster. The cluster will then store its encryption keys in the HSM.

In addition to creating an HSM configuration, you must also create an HSM client certificate. For more information, go to [Hardware Security Modules](#) in the Amazon Redshift Cluster Management Guide.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### Description

A text description of the HSM configuration to be created.

Type: String

Required: Yes

### HsmConfigurationIdentifier

The identifier to be assigned to the new Amazon Redshift HSM configuration.

Type: String

Required: Yes

### HsmIpAddress

The IP address that the Amazon Redshift cluster must use to access the HSM.

Type: String

Required: Yes

### HsmPartitionName

The name of the partition in the HSM where the Amazon Redshift clusters will store their database encryption keys.

Type: String

Required: Yes

### HsmPartitionPassword

The password required to access the HSM partition.

Type: String

Required: Yes

### HsmServerPublicCertificate

The HSMs public certificate file. When using Cloud HSM, the file name is server.pem.

Type: String

Required: Yes

### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

### **HsmConfiguration**

Returns information about an HSM configuration, which is an object that describes to Amazon Redshift clusters the information they require to connect to an HSM where they can store database encryption keys.

Type: [HsmConfiguration \(p. 277\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **HsmConfigurationAlreadyExistsFault**

There is already an existing Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

### **HsmConfigurationQuotaExceededFault**

The quota for HSM configurations has been reached. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

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



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

# CreateSnapshotCopyGrant

Creates a snapshot copy grant that permits Amazon Redshift to use a customer master key (CMK) from AWS Key Management Service (AWS KMS) to encrypt copied snapshots in a destination region.

For more information about managing snapshot copy grants, go to [Amazon Redshift Database Encryption](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **SnapshotCopyGrantName**

The name of the snapshot copy grant. This name must be unique in the region for the AWS account.

Constraints:

- Must contain from 1 to 63 alphanumeric characters or hyphens.
- Alphabetic characters must be lowercase.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique for all clusters within an AWS account.

Type: String

Required: Yes

### **KmsKeyId**

The unique identifier of the customer master key (CMK) to which to grant Amazon Redshift permission. If no key is specified, the default key is used.

Type: String

Required: No

### **Tags.Tag.N**

A list of tag instances.

Type: Array of [Tag](#) (p. 312) objects

Required: No

## Response Elements

The following element is returned by the service.

### **SnapshotCopyGrant**

The snapshot copy grant that grants Amazon Redshift permission to encrypt copied snapshots with the specified customer master key (CMK) from AWS KMS in the destination region.

For more information about managing snapshot copy grants, go to [Amazon Redshift Database Encryption](#) in the *Amazon Redshift Cluster Management Guide*.

Type: [SnapshotCopyGrant](#) (p. 302) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

### **SnapshotCopyGrantAlreadyExistsFault**

The snapshot copy grant can't be created because a grant with the same name already exists.

HTTP Status Code: 400

### **SnapshotCopyGrantQuotaExceededFault**

The AWS account has exceeded the maximum number of snapshot copy grants in this region.

HTTP Status Code: 400

### **TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

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

# CreateSnapshotSchedule

Creates a new snapshot schedule.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **DryRun**

Type: Boolean

Required: No

### **NextInvocations**

Type: Integer

Required: No

### **ScheduleDefinitions.ScheduleDefinition.N**

The definition of the snapshot schedule. The definition is made up of schedule expressions, for example "cron(30 12 \*)" or "rate(12 hours)".

Type: Array of strings

Required: No

### **ScheduleDescription**

The description of the snapshot schedule.

Type: String

Required: No

### **ScheduleIdentifier**

A unique identifier for a snapshot schedule. Only alphanumeric characters are allowed for the identifier.

Type: String

Required: No

### **Tags.Tag.N**

Type: Array of [Tag](#) (p. 312) objects

Required: No

## Response Elements

The following elements are returned by the service.

### **NextInvocations.SnapshotTime.N**

Type: Array of timestamps

**ScheduleDefinitions.ScheduleDefinition.N**

A list of ScheduleDefinitions

Type: Array of strings

**ScheduleDescription**

The description of the schedule.

Type: String

**ScheduleIdentifier**

A unique identifier for the schedule.

Type: String

**Tags.Tag.N**

An optional set of tags describing the schedule.

Type: Array of [Tag \(p. 312\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**InvalidSchedule**

The schedule you submitted isn't valid.

HTTP Status Code: 400

**ScheduleDefinitionTypeUnsupported**

The definition you submitted is not supported.

HTTP Status Code: 400

**SnapshotScheduleAlreadyExists**

The specified snapshot schedule already exists.

HTTP Status Code: 400

**SnapshotScheduleQuotaExceeded**

You have exceeded the quota of snapshot schedules.

HTTP Status Code: 400

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

- [AWS Command Line Interface](#)

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

# CreateTags

Adds one or more tags to a specified resource.

A resource can have up to 50 tags. If you try to create more than 50 tags for a resource, you will receive an error and the attempt will fail.

If you specify a key that already exists for the resource, the value for that key will be updated with the new value.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ResourceName

The Amazon Resource Name (ARN) to which you want to add the tag or tags. For example, `arn:aws:redshift:us-east-1:123456789:cluster:t1`.

Type: String

Required: Yes

### Tags.Tag.N

One or more name/value pairs to add as tags to the specified resource. Each tag name is passed in with the parameter `Key` and the corresponding value is passed in with the parameter `Value`. The `Key` and `Value` parameters are separated by a comma (,). Separate multiple tags with a space. For example, `--tags "Key"="owner", "Value"="admin" "Key"="environment", "Value"="test" "Key"="version", "Value"="1.0"`.

Type: Array of [Tag \(p. 312\)](#) objects

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

### ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

### TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## See Also

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

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



# DeleteCluster

Deletes a previously provisioned cluster. A successful response from the web service indicates that the request was received correctly. Use [DescribeClusters \(p. 90\)](#) to monitor the status of the deletion. The delete operation cannot be canceled or reverted once submitted. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

If you want to shut down the cluster and retain it for future use, set `SkipFinalClusterSnapshot` to `false` and specify a name for `FinalClusterSnapshotIdentifier`. You can later restore this snapshot to resume using the cluster. If a final cluster snapshot is requested, the status of the cluster will be "final-snapshot" while the snapshot is being taken, then it's "deleting" once Amazon Redshift begins deleting the cluster.

For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The identifier of the cluster to be deleted.

Constraints:

- Must contain lowercase characters.
- Must contain from 1 to 63 alphanumeric characters or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

### FinalClusterSnapshotIdentifier

The identifier of the final snapshot that is to be created immediately before deleting the cluster. If this parameter is provided, `SkipFinalClusterSnapshot` must be `false`.

Constraints:

- Must be 1 to 255 alphanumeric characters.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

### FinalClusterSnapshotRetentionPeriod

The number of days that a manual snapshot is retained. If the value is -1, the manual snapshot is retained indefinitely.

The value must be either -1 or an integer between 1 and 3,653.

The default value is -1.

Type: Integer

Required: No

### **SkipFinalClusterSnapshot**

Determines whether a final snapshot of the cluster is created before Amazon Redshift deletes the cluster. If `true`, a final cluster snapshot is not created. If `false`, a final cluster snapshot is created before the cluster is deleted.

#### **Note**

The *FinalClusterSnapshotIdentifier* parameter must be specified if *SkipFinalClusterSnapshot* is `false`.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **ClusterSnapshotAlreadyExists**

The value specified as a snapshot identifier is already used by an existing snapshot.

HTTP Status Code: 400

### **ClusterSnapshotQuotaExceeded**

The request would result in the user exceeding the allowed number of cluster snapshots.

HTTP Status Code: 400

### **InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DeleteCluster
&ClusterIdentifier=examplecluster2
&SkipFinalClusterSnapshot=true
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T022400Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DeleteClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DeleteClusterResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster2.cobbanlpccsn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>deleting</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>true</Encrypted>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>sun:10:30-sun:11:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <ClusterCreateTime>2013-01-23T00:11:32.804Z</ClusterCreateTime>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
      </ClusterSecurityGroups>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster2</ClusterIdentifier>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <MasterUsername>masteruser</MasterUsername>
    </Cluster>
  </DeleteClusterResult>
  <ResponseMetadata>
    <RequestId>f2e6b87e-6503-11e2-b343-393adc3f0a21</RequestId>
  </ResponseMetadata>
</DeleteClusterResponse>
```

```
</DeleteClusterResponse>
```

## See Also

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

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

# DeleteClusterParameterGroup

Deletes a specified Amazon Redshift parameter group.

**Note**

You cannot delete a parameter group if it is associated with a cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

**ParameterGroupName**

The name of the parameter group to be deleted.

Constraints:

- Must be the name of an existing cluster parameter group.
- Cannot delete a default cluster parameter group.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

**InvalidClusterParameterGroupState**

The cluster parameter group action can not be completed because another task is in progress that involves the parameter group. Wait a few moments and try the operation again.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DeleteClusterParameterGroup
&ParameterGroupName=parametergroup1
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T015410Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<DeleteClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>29674ca0-40da-11e2-b679-dba6cf515770</RequestId>
  </ResponseMetadata>
</DeleteClusterParameterGroupResponse>
```

## See Also

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

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

# DeleteClusterSecurityGroup

Deletes an Amazon Redshift security group.

## Note

You cannot delete a security group that is associated with any clusters. You cannot delete the default security group.

For information about managing security groups, go to [Amazon Redshift Cluster Security Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterSecurityGroupName

The name of the cluster security group to be deleted.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### ClusterSecurityGroupNotFound

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

### InvalidClusterSecurityGroupState

The state of the cluster security group is not available.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DeleteClusterSecurityGroup
&ClusterSecurityGroupName=securitygroup1
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T015926Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DeleteClusterSecurityGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
```

```
<ResponseMetadata>
  <RequestId>e54e05dc-40da-11e2-955f-313c36e9e01d</RequestId>
</ResponseMetadata>
</DeleteClusterSecurityGroupResponse>
```

## See Also

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

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



# DeleteClusterSnapshot

Deletes the specified manual snapshot. The snapshot must be in the `available` state, with no other users authorized to access the snapshot.

Unlike automated snapshots, manual snapshots are retained even after you delete your cluster. Amazon Redshift does not delete your manual snapshots. You must delete manual snapshot explicitly to avoid getting charged. If other accounts are authorized to access the snapshot, you must revoke all of the authorizations before you can delete the snapshot.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SnapshotIdentifier**

The unique identifier of the manual snapshot to be deleted.

Constraints: Must be the name of an existing snapshot that is in the `available`, `failed`, or `cancelled` state.

Type: String

Required: Yes

### **SnapshotClusterIdentifier**

The unique identifier of the cluster the snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than `*` for the cluster name.

Constraints: Must be the name of valid cluster.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **Snapshot**

Describes a snapshot.

Type: [Snapshot \(p. 297\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

### InvalidClusterSnapshotState

The specified cluster snapshot is not in the available state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=DeleteClusterSnapshot  
&SnapshotIdentifier=snapshot-1234  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request  
&x-amz-date=20121208T005225Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DeleteClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <DeleteClusterSnapshotResult>  
    <Snapshot>  
      <SnapshotCreateTime>2012-12-07T23:31:02.372Z</SnapshotCreateTime>  
      <Port>5439</Port>  
      <SnapshotIdentifier>snapshot-1234</SnapshotIdentifier>  
      <Status>deleted</Status>  
      <ClusterCreateTime>2012-12-06T23:09:01.475Z</ClusterCreateTime>  
      <SnapshotType>manual</SnapshotType>  
      <ClusterVersion>1.0</ClusterVersion>  
      <AvailabilityZone>us-east-1a</AvailabilityZone>  
      <ClusterIdentifier>examplecluster</ClusterIdentifier>  
      <MasterUsername>masteruser</MasterUsername>  
      <NodeType>ds2.xlarge</NodeType>  
      <DBName>mydb</DBName>  
      <NumberOfNodes>3</NumberOfNodes>  
    </Snapshot>  
  </DeleteClusterSnapshotResult>  
  <ResponseMetadata>  
    <RequestId>88a31de4-40d1-11e2-8a25-eb010998df4e</RequestId>  
  </ResponseMetadata>  
</DeleteClusterSnapshotResponse>
```

## See Also

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

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

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

# DeleteClusterSubnetGroup

Deletes the specified cluster subnet group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterSubnetGroupName

The name of the cluster subnet group name to be deleted.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### ClusterSubnetGroupNotFoundFault

The cluster subnet group name does not refer to an existing cluster subnet group.

HTTP Status Code: 400

### InvalidClusterSubnetGroupStateFault

The cluster subnet group cannot be deleted because it is in use.

HTTP Status Code: 400

### InvalidClusterSubnetStateFault

The state of the subnet is invalid.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DeleteClusterSubnetGroup
&ClusterSubnetGroupName=my-subnet-group-2
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130130/us-east-1/redshift/aws4_request
&x-amz-date=20130130T154635Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DeleteClusterSubnetGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
```

```
<ResponseMetadata>  
  <RequestId>3a63806b-6af4-11e2-b27b-4d850b1c672d</RequestId>  
</ResponseMetadata>  
</DeleteClusterSubnetGroupResponse>
```

## See Also

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

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

# DeleteEventSubscription

Deletes an Amazon Redshift event notification subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SubscriptionName**

The name of the Amazon Redshift event notification subscription to be deleted.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **InvalidSubscriptionStateFault**

The subscription request is invalid because it is a duplicate request. This subscription request is already in progress.

HTTP Status Code: 400

### **SubscriptionNotFound**

An Amazon Redshift event notification subscription with the specified name does not exist.

HTTP Status Code: 404

## See Also

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

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

# DeleteHsmClientCertificate

Deletes the specified HSM client certificate.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **HsmClientCertificateIdentifier**

The identifier of the HSM client certificate to be deleted.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **HsmClientCertificateNotFoundFault**

There is no Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

### **InvalidHsmClientCertificateStateFault**

The specified HSM client certificate is not in the available state, or it is still in use by one or more Amazon Redshift clusters.

HTTP Status Code: 400

## See Also

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

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

# DeleteHsmConfiguration

Deletes the specified Amazon Redshift HSM configuration.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **HsmConfigurationIdentifier**

The identifier of the Amazon Redshift HSM configuration to be deleted.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **HsmConfigurationNotFoundFault**

There is no Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

### **InvalidHsmConfigurationStateFault**

The specified HSM configuration is not in the `available` state, or it is still in use by one or more Amazon Redshift clusters.

HTTP Status Code: 400

## See Also

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

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



# DeleteSnapshotCopyGrant

Deletes the specified snapshot copy grant.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SnapshotCopyGrantName**

The name of the snapshot copy grant to delete.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **InvalidSnapshotCopyGrantStateFault**

The snapshot copy grant can't be deleted because it is used by one or more clusters.

HTTP Status Code: 400

### **SnapshotCopyGrantNotFoundFault**

The specified snapshot copy grant can't be found. Make sure that the name is typed correctly and that the grant exists in the destination region.

HTTP Status Code: 400

## See Also

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

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

# DeleteSnapshotSchedule

Deletes a snapshot schedule.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ScheduleIdentifier**

A unique identifier of the snapshot schedule to delete.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **InvalidClusterSnapshotScheduleState**

The cluster snapshot schedule state is not valid.

HTTP Status Code: 400

### **SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400

## See Also

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

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

# DeleteTags

Deletes a tag or tags from a resource. You must provide the ARN of the resource from which you want to delete the tag or tags.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ResourceName

The Amazon Resource Name (ARN) from which you want to remove the tag or tags. For example, `arn:aws:redshift:us-east-1:123456789:cluster:t1`.

Type: String

Required: Yes

### TagKeys.TagKey.N

The tag key that you want to delete.

Type: Array of strings

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

### ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

## See Also

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

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

- [AWS SDK for Ruby V2](#)

# DescribeAccountAttributes

Returns a list of attributes attached to an account

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **AttributeNames.AttributeName.N**

A list of attribute names.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **AccountAttributes.AccountAttribute.N**

A list of attributes assigned to an account.

Type: Array of [AccountAttribute \(p. 237\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

## See Also

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

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

# DescribeClusterDbRevisions

Returns an array of `ClusterDbRevision` objects.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

A unique identifier for a cluster whose `ClusterDbRevisions` you are requesting. This parameter is case sensitive. All clusters defined for an account are returned by default.

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point for returning a set of response records. When the results of a `DescribeClusterDbRevisions` request exceed the value specified in `MaxRecords`, Amazon Redshift returns a value in the `marker` field of the response. You can retrieve the next set of response records by providing the returned `marker` value in the `marker` parameter and retrying the request.

Constraints: You can specify either the `ClusterIdentifier` parameter, or the `marker` parameter, but not both.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in the `marker` field of the response. You can retrieve the next set of response records by providing the returned `marker` value in the `marker` parameter and retrying the request.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### ClusterDbRevisions.ClusterDbRevision.N

A list of revisions.

Type: Array of [ClusterDbRevision](#) (p. 248) objects

### Marker

A string representing the starting point for the next set of revisions. If a value is returned in a response, you can retrieve the next set of revisions by providing the value in the `marker` parameter and retrying the command. If the `marker` field is empty, all revisions have already been returned.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### InvalidClusterState

The specified cluster is not in the `available` state.

HTTP Status Code: 400

## See Also

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

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

# DescribeClusterParameterGroups

Returns a list of Amazon Redshift parameter groups, including parameter groups you created and the default parameter group. For each parameter group, the response includes the parameter group name, description, and parameter group family name. You can optionally specify a name to retrieve the description of a specific parameter group.

For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all parameter groups that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all parameter groups that have any combination of those values are returned.

If both tag keys and values are omitted from the request, parameter groups are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterParameterGroups \(p. 83\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### ParameterGroupName

The name of a specific parameter group for which to return details. By default, details about all parameter groups and the default parameter group are returned.

Type: String

Required: No



### **TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching cluster parameter groups that are associated with the specified key or keys. For example, suppose that you have parameter groups that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the parameter groups that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

### **TagValues.TagValue.N**

A tag value or values for which you want to return all matching cluster parameter groups that are associated with the specified tag value or values. For example, suppose that you have parameter groups that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the parameter groups that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

### **ParameterGroups.ClusterParameterGroup.N**

A list of [ClusterParameterGroup](#) (p. 251) instances. Each instance describes one cluster parameter group.

Type: Array of [ClusterParameterGroup](#) (p. 251) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeClusterParameterGroups
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T004002Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeClusterParameterGroupsResponse xmlns="http://redshift.amazonaws.com/
doc/2012-12-01/">
  <DescribeClusterParameterGroupsResult>
    <ParameterGroups>
      <ClusterParameterGroup>
        <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
        <Description>Default parameter group for redshift-1.0</Description>
        <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
      </ClusterParameterGroup>
      <ClusterParameterGroup>
        <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
        <Description>description my parameter group</Description>
        <ParameterGroupName>parametergroup1</ParameterGroupName>
      </ClusterParameterGroup>
    </ParameterGroups>
  </DescribeClusterParameterGroupsResult>
  <ResponseMetadata>
    <RequestId>6d28788b-64f5-11e2-b343-393adc3f0a21</RequestId>
  </ResponseMetadata>
</DescribeClusterParameterGroupsResponse>
```

## See Also

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

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

# DescribeClusterParameters

Returns a detailed list of parameters contained within the specified Amazon Redshift parameter group. For each parameter the response includes information such as parameter name, description, data type, value, whether the parameter value is modifiable, and so on.

You can specify *source* filter to retrieve parameters of only specific type. For example, to retrieve parameters that were modified by a user action such as from [ModifyClusterParameterGroup](#) (p. 187), you can specify *source* equal to *user*.

For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ParameterGroupName

The name of a cluster parameter group for which to return details.

Type: String

Required: Yes

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterParameters](#) (p. 86) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### Source

The parameter types to return. Specify *user* to show parameters that are different from the default. Similarly, specify *engine-default* to show parameters that are the same as the default parameter group.

Default: All parameter types returned.

Valid Values: `user` | `engine-default`

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

### Parameters.Parameter.N

A list of [Parameter](#) (p. 283) instances. Each instance lists the parameters of one cluster parameter group.

Type: Array of [Parameter](#) (p. 283) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### ClusterParameterGroupNotFound

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeClusterParameters
&ParameterGroupName=parametergroup1
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T010408Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeClusterParametersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterParametersResult>
    <Parameters>
```

```
<Parameter>
  <ParameterValue>ISO, MDY</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the display format for date and time values.</Description>
  <ParameterName>datestyle</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>0</ParameterValue>
  <DataType>integer</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the number of digits displayed for floating-point values</
Description>
  <AllowedValues>-15-2</AllowedValues>
  <ParameterName>extra_float_digits</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>default</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>This parameter applies a user-defined label to a group of queries that
are run during the same session.</Description>
  <ParameterName>query_group</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>>false</ParameterValue>
  <DataType>boolean</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>require ssl for all databaseconnections</Description>
  <AllowedValues>>true,false</AllowedValues>
  <ParameterName>require_ssl</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>$user, public</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the schema search order for names that are not schema-
qualified.</Description>
  <ParameterName>search_path</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>0</ParameterValue>
  <DataType>integer</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Aborts any statement that takes over the specified number of
milliseconds.</Description>
  <ParameterName>statement_timeout</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>[{"query_concurrency":5}]</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>wlm json configuration</Description>
  <ParameterName>wlm_json_configuration</ParameterName>
</Parameter>
</Parameters>
</DescribeClusterParametersResult>
<ResponseMetadata>
  <RequestId>2ba35df4-40d3-11e2-82cf-0b45b05c0221</RequestId>
```

```
</ResponseMetadata>  
</DescribeClusterParametersResponse>
```

## See Also

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

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

# DescribeClusters

Returns properties of provisioned clusters including general cluster properties, cluster database properties, maintenance and backup properties, and security and access properties. This operation supports pagination. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all clusters that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all clusters that have any combination of those values are returned.

If both tag keys and values are omitted from the request, clusters are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The unique identifier of a cluster whose properties you are requesting. This parameter is case sensitive.

The default is that all clusters defined for an account are returned.

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusters \(p. 90\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Constraints: You can specify either the **ClusterIdentifier** parameter or the **Marker** parameter, but not both.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching clusters that are associated with the specified key or keys. For example, suppose that you have clusters that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the clusters that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

**TagValues.TagValue.N**

A tag value or values for which you want to return all matching clusters that are associated with the specified tag value or values. For example, suppose that you have clusters that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the clusters that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**Clusters.Cluster.N**

A list of `Cluster` objects, where each object describes one cluster.

Type: Array of [Cluster \(p. 241\)](#) objects

**Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidTagFault**

The tag is invalid.



HTTP Status Code: 400

## Example

### Describing All Clusters

The following example shows a request that describes all clusters.

#### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=DescribeClusters  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request  
&x-amz-date=20130123T000452Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

#### Sample Response

```
<DescribeClustersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <DescribeClustersResult>  
    <Clusters>  
      <Cluster>  
        <PendingModifiedValues>  
          <MasterUserPassword>****</MasterUserPassword>  
        </PendingModifiedValues>  
        <ClusterVersion>1.0</ClusterVersion>  
        <VpcSecurityGroups/>  
        <ClusterStatus>creating</ClusterStatus>  
        <NumberOfNodes>2</NumberOfNodes>  
        <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>  
        <PubliclyAccessible>true</PubliclyAccessible>  
        <Encrypted>false</Encrypted>  
        <EnhancedVpcRouting>false</EnhancedVpcRouting>  
        <DBName>dev</DBName>  
        <PreferredMaintenanceWindow>sun:10:30-sun:11:00</PreferredMaintenanceWindow>  
        <ClusterParameterGroups>  
          <ClusterParameterGroup>  
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>  
            <ParameterGroupName>default.redshift-1.0</ParameterGroupName>  
          </ClusterParameterGroup>  
        </ClusterParameterGroups>  
        <ClusterSecurityGroups>  
          <ClusterSecurityGroup>  
            <Status>active</Status>  
            <ClusterSecurityGroupName>default</ClusterSecurityGroupName>  
          </ClusterSecurityGroup>  
        </ClusterSecurityGroups>  
        <AvailabilityZone>us-east-1a</AvailabilityZone>  
        <NodeType>ds2.xlarge</NodeType>  
        <ClusterIdentifier>examplecluster</ClusterIdentifier>  
        <AllowVersionUpgrade>true</AllowVersionUpgrade>  
        <MasterUsername>masteruser</MasterUsername>  
      </Cluster>  
    </Clusters>  
  </DescribeClustersResult>  
  <ResponseMetadata>  
    <RequestId>837d45d6-64f0-11e2-b07c-f7fbdd006c67</RequestId>  
  </ResponseMetadata>  
</DescribeClustersResponse>
```

```
</DescribeClustersResponse>
```

## See Also

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

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

# DescribeClusterSecurityGroups

Returns information about Amazon Redshift security groups. If the name of a security group is specified, the response will contain only information about only that security group.

For information about managing security groups, go to [Amazon Redshift Cluster Security Groups](#) in the *Amazon Redshift Cluster Management Guide*.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all security groups that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all security groups that have any combination of those values are returned.

If both tag keys and values are omitted from the request, security groups are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterSecurityGroupName

The name of a cluster security group for which you are requesting details. You can specify either the **Marker** parameter or a **ClusterSecurityGroupName** parameter, but not both.

Example: `securitygroup1`

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterSecurityGroups \(p. 94\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Constraints: You can specify either the **ClusterSecurityGroupName** parameter or the **Marker** parameter, but not both.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching cluster security groups that are associated with the specified key or keys. For example, suppose that you have security groups that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the security groups that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

**TagValues.TagValue.N**

A tag value or values for which you want to return all matching cluster security groups that are associated with the specified tag value or values. For example, suppose that you have security groups that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the security groups that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**ClusterSecurityGroups.ClusterSecurityGroup.N**

A list of [ClusterSecurityGroup \(p. 255\)](#) instances.

Type: Array of [ClusterSecurityGroup \(p. 255\)](#) objects

**Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=DescribeClusterSecurityGroups  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request  
&x-amz-date=20130123T010237Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeClusterSecurityGroupsResponse xmlns="http://redshift.amazonaws.com/  
doc/2012-12-01/">  
  <DescribeClusterSecurityGroupsResult>  
    <ClusterSecurityGroups>  
      <ClusterSecurityGroup>  
        <EC2SecurityGroups/>  
        <IPRanges>  
          <IPRange>  
            <CIDRIP>0.0.0.0/0</CIDRIP>  
            <Status>authorized</Status>  
          </IPRange>  
        </IPRanges>  
        <Description>default</Description>  
        <ClusterSecurityGroupName>default</ClusterSecurityGroupName>  
      </ClusterSecurityGroup>  
      <ClusterSecurityGroup>  
        <EC2SecurityGroups/>  
        <IPRanges/>  
        <Description>my security group</Description>  
        <ClusterSecurityGroupName>securitygroup1</ClusterSecurityGroupName>  
      </ClusterSecurityGroup>  
    </ClusterSecurityGroups>  
  </DescribeClusterSecurityGroupsResult>  
  <ResponseMetadata>  
    <RequestId>947a8305-64f8-11e2-bec0-17624ad140dd</RequestId>  
  </ResponseMetadata>  
</DescribeClusterSecurityGroupsResponse>
```

## See Also

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

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



# DescribeClusterSnapshots

Returns one or more snapshot objects, which contain metadata about your cluster snapshots. By default, this operation returns information about all snapshots of all clusters that are owned by your AWS customer account. No information is returned for snapshots owned by inactive AWS customer accounts.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all snapshots that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all snapshots that have any combination of those values are returned. Only snapshots that you own are returned in the response; shared snapshots are not returned with the tag key and tag value request parameters.

If both tag keys and values are omitted from the request, snapshots are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterExists

A value that indicates whether to return snapshots only for an existing cluster. Table-level restore can be performed only using a snapshot of an existing cluster, that is, a cluster that has not been deleted. If `ClusterExists` is set to `true`, `ClusterIdentifier` is required.

Type: Boolean

Required: No

### ClusterIdentifier

The identifier of the cluster for which information about snapshots is requested.

Type: String

Required: No

### EndTime

A time value that requests only snapshots created at or before the specified time. The time value is specified in ISO 8601 format. For more information about ISO 8601, go to the [ISO8601 Wikipedia page](#).

Example: `2012-07-16T18:00:00Z`

Type: Timestamp

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterSnapshots \(p. 98\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### **MaxRecords**

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### **OwnerAccount**

The AWS customer account used to create or copy the snapshot. Use this field to filter the results to snapshots owned by a particular account. To describe snapshots you own, either specify your AWS customer account, or do not specify the parameter.

Type: String

Required: No

### **SnapshotIdentifier**

The snapshot identifier of the snapshot about which to return information.

Type: String

Required: No

### **SnapshotType**

The type of snapshots for which you are requesting information. By default, snapshots of all types are returned.

Valid Values: `automated` | `manual`

Type: String

Required: No

### **SortingEntities.SnapshotSortingEntity.N**

Type: Array of [SnapshotSortingEntity](#) (p. 305) objects

Required: No

### **StartTime**

A value that requests only snapshots created at or after the specified time. The time value is specified in ISO 8601 format. For more information about ISO 8601, go to the [ISO8601 Wikipedia page](#).

Example: 2012-07-16T18:00:00Z

Type: Timestamp

Required: No

### **TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching cluster snapshots that are associated with the specified key or keys. For example, suppose that you have snapshots that are tagged with



keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the snapshots that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

#### **TagValues.TagValue.N**

A tag value or values for which you want to return all matching cluster snapshots that are associated with the specified tag value or values. For example, suppose that you have snapshots that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the snapshots that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

#### **Snapshots.Snapshot.N**

A list of [Snapshot \(p. 297\)](#) instances.

Type: Array of [Snapshot \(p. 297\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

#### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

#### **ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

#### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeClusterSnapshots
&ClusterIdentifier=examplecluster
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T011512Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeClusterSnapshotsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterSnapshotsResult>
    <Snapshots>
      <Snapshot>
        <Port>5439</Port>
        <SnapshotIdentifier>cm:examplecluster-2013-01-22-19-27-58</SnapshotIdentifier>
        <Status>available</Status>
        <SnapshotType>automated</SnapshotType>
        <ClusterVersion>1.0</ClusterVersion>
        <SnapshotCreateTime>2013-01-22T19:27:58.931Z</SnapshotCreateTime>
        <NumberOfNodes>2</NumberOfNodes>
        <DBName>dev</DBName>
        <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <NodeType>ds2.xlarge</NodeType>
        <ClusterIdentifier>examplecluster</ClusterIdentifier>
        <MasterUsername>adminuser</MasterUsername>
      </Snapshot>
      <Snapshot>
        <Port>5439</Port>
        <SnapshotIdentifier>my-snapshot-123</SnapshotIdentifier>
        <Status>available</Status>
        <SnapshotType>manual</SnapshotType>
        <ClusterVersion>1.0</ClusterVersion>
        <SnapshotCreateTime>2013-01-23T01:09:03.149Z</SnapshotCreateTime>
        <NumberOfNodes>2</NumberOfNodes>
        <DBName>dev</DBName>
        <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <NodeType>ds2.xlarge</NodeType>
        <ClusterIdentifier>examplecluster</ClusterIdentifier>
        <MasterUsername>adminuser</MasterUsername>
      </Snapshot>
    </Snapshots>
  </DescribeClusterSnapshotsResult>
  <ResponseMetadata>
    <RequestId>56a9daf4-64fa-11e2-a8da-655adc216806</RequestId>
  </ResponseMetadata>
</DescribeClusterSnapshotsResponse>
```

## See Also

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

- [AWS Command Line Interface](#)

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

# DescribeClusterSubnetGroups

Returns one or more cluster subnet group objects, which contain metadata about your cluster subnet groups. By default, this operation returns information about all cluster subnet groups that are defined in your AWS account.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all subnet groups that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all subnet groups that have any combination of those values are returned.

If both tag keys and values are omitted from the request, subnet groups are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterSubnetGroupName

The name of the cluster subnet group for which information is requested.

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterSubnetGroups](#) (p. 103) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### TagKeys.TagKey.N

A tag key or keys for which you want to return all matching cluster subnet groups that are associated with the specified key or keys. For example, suppose that you have subnet groups that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the subnet groups that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

**TagValues.TagValue.N**

A tag value or values for which you want to return all matching cluster subnet groups that are associated with the specified tag value or values. For example, suppose that you have subnet groups that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the subnet groups that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**ClusterSubnetGroups.ClusterSubnetGroup.N**

A list of [ClusterSubnetGroup \(p. 259\)](#) instances.

Type: Array of [ClusterSubnetGroup \(p. 259\)](#) objects

**Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterSubnetGroupNotFoundFault**

The cluster subnet group name does not refer to an existing cluster subnet group.

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
```

```
?Action=DescribeClusterSubnetGroups
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130130/us-east-1/redshift/aws4_request
&x-amz-date=20130130T153938Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<DescribeClusterSubnetGroupsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterSubnetGroupsResult>
    <ClusterSubnetGroups>
      <ClusterSubnetGroup>
        <VpcId>vpc-5d917a30</VpcId>
        <Description>my subnet group</Description>
        <ClusterSubnetGroupName>my-subnet-group</ClusterSubnetGroupName>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <Subnets>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-71c5091c</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-east-1a</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-78de1215</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-east-1a</Name>
            </SubnetAvailabilityZone>
          </Subnet>
        </Subnets>
      </ClusterSubnetGroup>
    </ClusterSubnetGroups>
  </DescribeClusterSubnetGroupsResult>
  <ResponseMetadata>
    <RequestId>42024b68-6af3-11e2-a726-6368a468fa67</RequestId>
  </ResponseMetadata>
</DescribeClusterSubnetGroupsResponse>
```

## See Also

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

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

# DescribeClusterTracks

Returns a list of all the available maintenance tracks.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### MaintenanceTrackName

The name of the maintenance track.

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a `DescribeClusterTracks` request exceed the value specified in `MaxRecords`, Amazon Redshift returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

An integer value for the maximum number of maintenance tracks to return.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### MaintenanceTracks.MaintenanceTrack.N

A list of maintenance tracks output by the `DescribeClusterTracks` operation.

Type: Array of [MaintenanceTrack \(p. 281\)](#) objects

### Marker

The starting point to return a set of response tracklist records. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400

### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## See Also

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

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



# DescribeClusterVersions

Returns descriptions of the available Amazon Redshift cluster versions. You can call this operation even before creating any clusters to learn more about the Amazon Redshift versions. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterParameterGroupFamily

The name of a specific cluster parameter group family to return details for.

Constraints:

- Must be 1 to 255 alphanumeric characters
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Type: String

Required: No

### ClusterVersion

The specific cluster version to return.

Example: 1.0

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeClusterVersions \(p. 108\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **ClusterVersions.ClusterVersion.N**

A list of `Version` elements.

Type: Array of [ClusterVersion](#) (p. 261) objects

### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=DescribeClusterVersions  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121207/us-east-1/redshift/aws4_request  
&x-amz-date=20121207T230708Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeClusterVersionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <DescribeClusterVersionsResult>  
    <ClusterVersions>  
      <ClusterVersion>  
        <ClusterParameterGroupFamily>redshift-1.0</ClusterParameterGroupFamily>  
        <Description>Initial release of redshift</Description>  
        <ClusterVersion>1.0</ClusterVersion>  
      </ClusterVersion>  
    </ClusterVersions>  
  </DescribeClusterVersionsResult>  
  <ResponseMetadata>  
    <RequestId>d39cd5e5-40c2-11e2-8a25-eb010998df4e</RequestId>  
  </ResponseMetadata>  
</DescribeClusterVersionsResponse>
```

## See Also

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

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

# DescribeDefaultClusterParameters

Returns a list of parameter settings for the specified parameter group family.

For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ParameterGroupFamily

The name of the cluster parameter group family.

Type: String

Required: Yes

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeDefaultClusterParameters \(p. 111\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

### DefaultClusterParameters

Describes the default cluster parameters for a parameter group family.

Type: [DefaultClusterParameters \(p. 264\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeDefaultClusterParameters
&ParameterGroupFamily=redshift-1.0
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121207/us-east-1/redshift/aws4_request
&x-amz-date=20121207T231708Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeDefaultClusterParametersResponse xmlns="http://redshift.amazonaws.com/
doc/2012-12-01/">
  <DescribeDefaultClusterParametersResult>
    <DefaultClusterParameters>
      <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
      <Parameters>
        <Parameter>
          <ParameterValue>ISO, MDY</ParameterValue>
          <DataType>string</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Sets the display format for date and time values.</Description>
          <ParameterName>datestyle</ParameterName>
        </Parameter>
        <Parameter>
          <ParameterValue>0</ParameterValue>
          <DataType>integer</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Sets the number of digits displayed for floating-point values</
Description>
          <AllowedValues>-15-2</AllowedValues>
          <ParameterName>extra_float_digits</ParameterName>
        </Parameter>
        <Parameter>
          <ParameterValue>default</ParameterValue>
          <DataType>string</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>This parameter applies a user-defined label to a group of queries
that are run during the same session..</Description>
          <ParameterName>query_group</ParameterName>
        </Parameter>
        <Parameter>
          <ParameterValue>>false</ParameterValue>
          <DataType>boolean</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>require ssl for all databaseconnections</Description>
          <AllowedValues>true, false</AllowedValues>
          <ParameterName>require_ssl</ParameterName>
```

```
</Parameter>
<Parameter>
  <ParameterValue>$user, public</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the schema search order for names that are not schema-
qualified.</Description>
  <ParameterName>search_path</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>0</ParameterValue>
  <DataType>integer</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Aborts any statement that takes over the specified number of
milliseconds.</Description>
  <ParameterName>statement_timeout</ParameterName>
</Parameter>
<Parameter>
  <ParameterValue>[{"query_concurrency":5}]</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>wlm json configuration</Description>
  <ParameterName>wlm_json_configuration</ParameterName>
</Parameter>
</Parameters>
</DefaultClusterParameters>
</DescribeDefaultClusterParametersResult>
<ResponseMetadata>
  <RequestId>396df00b-40c4-11e2-82cf-0b45b05c0221</RequestId>
</ResponseMetadata>
</DescribeDefaultClusterParametersResponse>
```

## See Also

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

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

# DescribeEventCategories

Displays a list of event categories for all event source types, or for a specified source type. For a list of the event categories and source types, go to [Amazon Redshift Event Notifications](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### SourceType

The source type, such as cluster or parameter group, to which the described event categories apply.

Valid values: cluster, cluster-snapshot, cluster-parameter-group, and cluster-security-group.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### EventCategoriesMapList.EventCategoriesMap.N

A list of event categories descriptions.

Type: Array of [EventCategoriesMap \(p. 272\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

## See Also

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

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

# DescribeEvents

Returns events related to clusters, security groups, snapshots, and parameter groups for the past 14 days. Events specific to a particular cluster, security group, snapshot or parameter group can be obtained by providing the name as a parameter. By default, the past hour of events are returned.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### Duration

The number of minutes prior to the time of the request for which to retrieve events. For example, if the request is sent at 18:00 and you specify a duration of 60, then only events which have occurred after 17:00 will be returned.

Default: 60

Type: Integer

Required: No

### EndTime

The end of the time interval for which to retrieve events, specified in ISO 8601 format. For more information about ISO 8601, go to the [ISO8601 Wikipedia page](#).

Example: 2009-07-08T18:00Z

Type: Timestamp

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeEvents \(p. 115\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No



### **SourceIdentifier**

The identifier of the event source for which events will be returned. If this parameter is not specified, then all sources are included in the response.

Constraints:

If *SourceIdentifier* is supplied, *SourceType* must also be provided.

- Specify a cluster identifier when *SourceType* is `cluster`.
- Specify a cluster security group name when *SourceType* is `cluster-security-group`.
- Specify a cluster parameter group name when *SourceType* is `cluster-parameter-group`.
- Specify a cluster snapshot identifier when *SourceType* is `cluster-snapshot`.

Type: String

Required: No

### **SourceType**

The event source to retrieve events for. If no value is specified, all events are returned.

Constraints:

If *SourceType* is supplied, *SourceIdentifier* must also be provided.

- Specify `cluster` when *SourceIdentifier* is a cluster identifier.
- Specify `cluster-security-group` when *SourceIdentifier* is a cluster security group name.
- Specify `cluster-parameter-group` when *SourceIdentifier* is a cluster parameter group name.
- Specify `cluster-snapshot` when *SourceIdentifier* is a cluster snapshot identifier.

Type: String

Valid Values: `cluster` | `cluster-parameter-group` | `cluster-security-group` | `cluster-snapshot`

Required: No

### **StartTime**

The beginning of the time interval to retrieve events for, specified in ISO 8601 format. For more information about ISO 8601, go to the [ISO8601 Wikipedia page](#).

Example: `2009-07-08T18:00Z`

Type: Timestamp

Required: No

## **Response Elements**

The following elements are returned by the service.

### **Events.Event.N**

A list of `Event` instances.

Type: Array of [Event \(p. 270\)](#) objects

### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned

marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeEvents
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121207/us-east-1/redshift/aws4_request
&x-amz-date=20121207T232427Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeEventsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeEventsResult>
    <Events>
      <Event>
        <Message>Cluster security group securitygroup1 has been updated. Changes need to be
        applied to all clusters using this cluster security group.</Message>
        <SourceType>cluster-security-group</SourceType>
        <Date>2012-12-07T23:05:02.660Z</Date>
        <SourceIdentifier>securitygroup1</SourceIdentifier>
      </Event>
    </Events>
  </DescribeEventsResult>
  <ResponseMetadata>
    <RequestId>3eeb9efe-40c5-11e2-816a-1bba29fad1f5</RequestId>
  </ResponseMetadata>
</DescribeEventsResponse>
```

## See Also

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

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



# DescribeEventSubscriptions

Lists descriptions of all the Amazon Redshift event notification subscriptions for a customer account. If you specify a subscription name, lists the description for that subscription.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all event notification subscriptions that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all subscriptions that have any combination of those values are returned.

If both tag keys and values are omitted from the request, subscriptions are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a `DescribeEventSubscriptions` request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### SubscriptionName

The name of the Amazon Redshift event notification subscription to be described.

Type: String

Required: No

### TagKeys.TagKey.N

A tag key or keys for which you want to return all matching event notification subscriptions that are associated with the specified key or keys. For example, suppose that you have subscriptions that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the subscriptions that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

**TagValues.TagValue.N**

A tag value or values for which you want to return all matching event notification subscriptions that are associated with the specified tag value or values. For example, suppose that you have subscriptions that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the subscriptions that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**EventSubscriptionsList.EventSubscription.N**

A list of event subscriptions.

Type: Array of [EventSubscription \(p. 274\)](#) objects

**Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**SubscriptionNotFound**

An Amazon Redshift event notification subscription with the specified name does not exist.

HTTP Status Code: 404

## See Also

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

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

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

# DescribeHsmClientCertificates

Returns information about the specified HSM client certificate. If no certificate ID is specified, returns information about all the HSM certificates owned by your AWS customer account.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all HSM client certificates that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all HSM client certificates that have any combination of those values are returned.

If both tag keys and values are omitted from the request, HSM client certificates are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **HsmClientCertificateIdentifier**

The identifier of a specific HSM client certificate for which you want information. If no identifier is specified, information is returned for all HSM client certificates owned by your AWS customer account.

Type: String

Required: No

### **Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeHsmClientCertificates](#) (p. 122) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### **MaxRecords**

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### **TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching HSM client certificates that are associated with the specified key or keys. For example, suppose that you have HSM client certificates that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in

the request, Amazon Redshift returns a response with the HSM client certificates that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

#### **TagValues.TagValue.N**

A tag value or values for which you want to return all matching HSM client certificates that are associated with the specified tag value or values. For example, suppose that you have HSM client certificates that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the HSM client certificates that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **HsmClientCertificates.HsmClientCertificate.N**

A list of the identifiers for one or more HSM client certificates used by Amazon Redshift clusters to store and retrieve database encryption keys in an HSM.

Type: Array of [HsmClientCertificate](#) (p. 276) objects

#### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

#### **HsmClientCertificateNotFoundFault**

There is no Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

#### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## See Also

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



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

# DescribeHsmConfigurations

Returns information about the specified Amazon Redshift HSM configuration. If no configuration ID is specified, returns information about all the HSM configurations owned by your AWS customer account.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all HSM connections that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all HSM connections that have any combination of those values are returned.

If both tag keys and values are omitted from the request, HSM connections are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **HsmConfigurationIdentifier**

The identifier of a specific Amazon Redshift HSM configuration to be described. If no identifier is specified, information is returned for all HSM configurations owned by your AWS customer account.

Type: String

Required: No

### **Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeHsmConfigurations \(p. 125\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### **MaxRecords**

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### **TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching HSM configurations that are associated with the specified key or keys. For example, suppose that you have HSM configurations that are tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with the HSM configurations that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

**TagValues.TagValue.N**

A tag value or values for which you want to return all matching HSM configurations that are associated with the specified tag value or values. For example, suppose that you have HSM configurations that are tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with the HSM configurations that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

**HsmConfigurations.HsmConfiguration.N**

A list of `HsmConfiguration` objects.

Type: Array of [HsmConfiguration \(p. 277\)](#) objects

**Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**HsmConfigurationNotFoundFault**

There is no Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

## See Also

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

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

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

# DescribeLoggingStatus

Describes whether information, such as queries and connection attempts, is being logged for the specified Amazon Redshift cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

The identifier of the cluster from which to get the logging status.

Example: `examplecluster`

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **BucketName**

The name of the S3 bucket where the log files are stored.

Type: String

### **LastFailureMessage**

The message indicating that logs failed to be delivered.

Type: String

### **LastFailureTime**

The last time when logs failed to be delivered.

Type: Timestamp

### **LastSuccessfulDeliveryTime**

The last time that logs were delivered.

Type: Timestamp

### **LoggingEnabled**

`true` if logging is on, `false` if logging is off.

Type: Boolean

### **S3KeyPrefix**

The prefix applied to the log file names.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

## See Also

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

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

# DescribeOrderableClusterOptions

Returns a list of orderable cluster options. Before you create a new cluster you can use this operation to find what options are available, such as the EC2 Availability Zones (AZ) in the specific AWS Region that you can specify, and the node types you can request. The node types differ by available storage, memory, CPU and price. With the cost involved you might want to obtain a list of cluster options in the specific region and specify values when creating a cluster. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterVersion

The version filter value. Specify this parameter to show only the available offerings matching the specified version.

Default: All versions.

Constraints: Must be one of the version returned from [DescribeClusterVersions](#) (p. 108).

Type: String

Required: No

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeOrderableClusterOptions](#) (p. 130) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### NodeType

The node type filter value. Specify this parameter to show only the available offerings matching the specified node type.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

### OrderableClusterOptions.OrderableClusterOption.N

An `OrderableClusterOption` structure containing information about orderable options for the cluster.

Type: Array of [OrderableClusterOption](#) (p. 282) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeOrderableClusterOptions
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121207/us-east-1/redshift/aws4_request
&x-amz-date=20121207T225314Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeOrderableClusterOptionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeOrderableClusterOptionsResult>
    <OrderableClusterOptions>
      <OrderableClusterOption>
        <ClusterVersion>1.0</ClusterVersion>
        <ClusterType>multi-node</ClusterType>
        <NodeType>ds2.8xlarge</NodeType>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-east-1a</Name>
            <SupportedPlatforms>
              <SupportedPlatform>
                <Name>EC2</Name>
                <Name>VPC</Name>
              </SupportedPlatform>
            </SupportedPlatform>
          </AvailabilityZone>
        </AvailabilityZones>
      </OrderableClusterOption>
    </OrderableClusterOptions>
  </DescribeOrderableClusterOptionsResult>
</DescribeOrderableClusterOptionsResponse>
```



```
    </SupportedPlatforms>
  </AvailabilityZone>
<AvailabilityZone>
  <Name>us-east-1c</Name>
  <SupportedPlatforms>
    <SupportedPlatform>
      <Name>EC2</Name>
      <Name>VPC</Name>
    </SupportedPlatform>
  </SupportedPlatforms>
</AvailabilityZone>
<AvailabilityZone>
  <Name>us-east-1d</Name>
  <SupportedPlatforms>
    <SupportedPlatform>
      <Name>EC2</Name>
      <Name>VPC</Name>
    </SupportedPlatform>
  </SupportedPlatforms>
</AvailabilityZone>
</AvailabilityZones>
</OrderableClusterOption>
<OrderableClusterOption>
  <ClusterVersion>1.0</ClusterVersion>
  <ClusterType>multi-node</ClusterType>
  <NodeType>ds2.xlarge</NodeType>
  <AvailabilityZones>
    <AvailabilityZone>
      <Name>us-east-1a</Name>
      <SupportedPlatforms>
        <SupportedPlatform>
          <Name>EC2</Name>
          <Name>VPC</Name>
        </SupportedPlatform>
      </SupportedPlatforms>
    </AvailabilityZone>
    <AvailabilityZone>
      <Name>us-east-1c</Name>
      <SupportedPlatforms>
        <SupportedPlatform>
          <Name>EC2</Name>
          <Name>VPC</Name>
        </SupportedPlatform>
      </SupportedPlatforms>
    </AvailabilityZone>
    <AvailabilityZone>
      <Name>us-east-1d</Name>
      <SupportedPlatforms>
        <SupportedPlatform>
          <Name>EC2</Name>
          <Name>VPC</Name>
        </SupportedPlatform>
      </SupportedPlatforms>
    </AvailabilityZone>
  </AvailabilityZones>
</OrderableClusterOption>
<OrderableClusterOption>
  <ClusterVersion>1.0</ClusterVersion>
  <ClusterType>single-node</ClusterType>
  <NodeType>ds2.xlarge</NodeType>
  <AvailabilityZones>
    <AvailabilityZone>
      <Name>us-east-1a</Name>
      <SupportedPlatforms>
        <SupportedPlatform>
          <Name>EC2</Name>
```

```
        <Name>VPC</Name>
      </SupportedPlatform>
    </SupportedPlatforms>
  </AvailabilityZone>
<AvailabilityZone>
  <Name>us-east-1c</Name>
  <SupportedPlatforms>
    <SupportedPlatform>
      <Name>EC2</Name>
      <Name>VPC</Name>
    </SupportedPlatform>
  </SupportedPlatforms>
</AvailabilityZone>
<AvailabilityZone>
  <Name>us-east-1d</Name>
  <SupportedPlatforms>
    <SupportedPlatform>
      <Name>EC2</Name>
      <Name>VPC</Name>
    </SupportedPlatform>
  </SupportedPlatforms>
</AvailabilityZone>
</AvailabilityZones>
</OrderableClusterOption>
</OrderableClusterOptions>
</DescribeOrderableClusterOptionsResult>
<ResponseMetadata>
  <RequestId>e37414cc-40c0-11e2-b6a0-df98b1a86860</RequestId>
</ResponseMetadata>
</DescribeOrderableClusterOptionsResponse>
```

## See Also

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

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

# DescribeReservedNodeOfferings

Returns a list of the available reserved node offerings by Amazon Redshift with their descriptions including the node type, the fixed and recurring costs of reserving the node and duration the node will be reserved for you. These descriptions help you determine which reserve node offering you want to purchase. You then use the unique offering ID in you call to [PurchaseReservedNodeOffering \(p. 204\)](#) to reserve one or more nodes for your Amazon Redshift cluster.

For more information about reserved node offerings, go to [Purchasing Reserved Nodes](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeReservedNodeOfferings \(p. 134\)](#) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### ReservedNodeOfferingId

The unique identifier for the offering.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned

marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

#### **ReservedNodeOfferings.ReservedNodeOffering.N**

A list of `ReservedNodeOffering` objects.

Type: Array of [ReservedNodeOffering \(p. 291\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

#### **DependentServiceUnavailableFault**

Your request cannot be completed because a dependent internal service is temporarily unavailable. Wait 30 to 60 seconds and try again.

HTTP Status Code: 400

#### **ReservedNodeOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

#### **UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeReservedNodeOfferings
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130117/us-east-1/redshift/aws4_request
&x-amz-date=20130117T232351Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeReservedNodeOfferingsResponse xmlns="http://redshift.amazonaws.com/
doc/2012-12-01/">
  <DescribeReservedNodeOfferingsResult>
    <ReservedNodeOfferings>
      <ReservedNodeOffering>
        <OfferingType>Heavy Utilization</OfferingType>
        <Duration>94608000</Duration>
        <RecurringCharges>
          <RecurringCharge>
```

```
        <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
        <RecurringChargeAmount>0.21</RecurringChargeAmount>
    </RecurringCharge>
</RecurringCharges>
<FixedPrice>12452.0</FixedPrice>
<ReservedNodeOfferingId>3a98bf7d-979a-49cc-b568-18f24315baf0</
ReservedNodeOfferingId>
    <UsagePrice>0.0</UsagePrice>
    <NodeType>ds2.8xlarge</NodeType>
    <ReservedNodeOfferingType>regular</ReservedNodeOfferingType>
</ReservedNodeOffering>
<ReservedNodeOffering>
    <OfferingType>Heavy Utilization</OfferingType>
    <Duration>31536000</Duration>
    <RecurringCharges>
        <RecurringCharge>
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
            <RecurringChargeAmount>0.09</RecurringChargeAmount>
        </RecurringCharge>
    </RecurringCharges>
    <FixedPrice>1815.0</FixedPrice>
    <ReservedNodeOfferingId>d586503b-289f-408b-955b-9c95005d6908</
ReservedNodeOfferingId>
    <UsagePrice>0.0</UsagePrice>
    <NodeType>ds2.xlarge</NodeType>
    <ReservedNodeOfferingType>upgradable</ReservedNodeOfferingType>
</ReservedNodeOffering>
</DescribeReservedNodeOfferingsResult>
<ResponseMetadata>
    <RequestId>f4a07e06-60fc-11e2-95d9-658e9466d117</RequestId>
</ResponseMetadata>
</DescribeReservedNodeOfferingsResponse>
```

## See Also

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

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

# DescribeReservedNodes

Returns the descriptions of the reserved nodes.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a [DescribeReservedNodes](#) (p. 137) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### ReservedNodeId

Identifier for the node reservation.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

### ReservedNodes.ReservedNode.N

The list of `ReservedNode` objects.

Type: Array of [ReservedNode](#) (p. 288) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **DependentServiceUnavailableFault**

Your request cannot be completed because a dependent internal service is temporarily unavailable. Wait 30 to 60 seconds and try again.

HTTP Status Code: 400

### **ReservedNodeNotFound**

The specified reserved compute node not found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=DescribeReservedNodes  
&Version=2012-12-01  
&x-amz-algorithm=AWS4-HMAC-SHA256  
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130125/us-east-1/redshift/aws4_request  
&x-amz-date=20130125T202355Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeReservedNodesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <DescribeReservedNodesResult>  
    <ReservedNodes>  
      <ReservedNode>  
        <StartTime>2013-01-22T18:46:48.600Z</StartTime>  
        <OfferingType>Medium Utilization</OfferingType>  
        <Duration>31536000</Duration>  
        <RecurringCharges/>  
        <FixedPrice>800.0</FixedPrice>  
        <UsagePrice>0.158</UsagePrice>  
        <State>payment-pending</State>  
        <NodeType>ds2.xlarge</NodeType>  
        <NodeCount>1</NodeCount>  
        <ReservedNodeOfferingType>regular</ReservedNodeOfferingType>  
        <ReservedNodeId>4357912c-9266-469d-beb0-0f1b775e1bc9</ReservedNodeId>  
      </ReservedNode>  
      <ReservedNode>  
        <StartTime>2013-01-22T20:09:16.630Z</StartTime>  
        <OfferingType>Heavy Utilization</OfferingType>  
        <Duration>94608000</Duration>  
        <RecurringCharges>  
          <RecurringCharge>  
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>  
            <RecurringChargeAmount>0.21</RecurringChargeAmount>  
          </RecurringCharge>  
        </RecurringCharges>  
      </ReservedNode>  
    </ReservedNodes>  
  </DescribeReservedNodesResult>  
</DescribeReservedNodesResponse>
```

```
</RecurringCharges>
<FixedPrice>12452.0</FixedPrice>
<UsagePrice>0.0</UsagePrice>
<State>payment-pending</State>
<NodeType>ds2.8xlarge</NodeType>
<NodeCount>2</NodeCount>
<ReservedNodeOfferingType>upgradable</ReservedNodeOfferingType>
<ReservedNodeId>93bbbca2-e88c-4b8b-a600-b64eaabf18a3</ReservedNodeId>
</ReservedNode>
<ReservedNode>
  <StartTime>2013-01-23T21:49:32.517Z</StartTime>
  <OfferingType>Medium Utilization</OfferingType>
  <Duration>31536000</Duration>
  <RecurringCharges/>
  <FixedPrice>800.0</FixedPrice>
  <UsagePrice>0.158</UsagePrice>
  <State>payment-pending</State>
  <NodeType>ds2.xlarge</NodeType>
  <NodeCount>1</NodeCount>
  <ReservedNodeOfferingType>upgradable</ReservedNodeOfferingType>
  <ReservedNodeId>bbcd9749-f2ea-4d01-9b1b-b576f618eb4e</ReservedNodeId>
</ReservedNode>
</ReservedNodes>
</DescribeReservedNodesResult>
<ResponseMetadata>
  <RequestId>24dc90c8-672d-11e2-b2e1-8f41f0379151</RequestId>
</ResponseMetadata>
</DescribeReservedNodesResponse>
```

## See Also

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

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



# DescribeResize

Returns information about the last resize operation for the specified cluster. If no resize operation has ever been initiated for the specified cluster, a `HTTP 404` error is returned. If a resize operation was initiated and completed, the status of the resize remains as `SUCCEEDED` until the next resize.

A resize operation can be requested using [ModifyCluster \(p. 171\)](#) and specifying a different number or type of nodes for the cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterIdentifier**

The unique identifier of a cluster whose resize progress you are requesting. This parameter is case-sensitive.

By default, resize operations for all clusters defined for an AWS account are returned.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **AvgResizeRateInMegaBytesPerSecond**

The average rate of the resize operation over the last few minutes, measured in megabytes per second. After the resize operation completes, this value shows the average rate of the entire resize operation.

Type: Double

### **ElapsedTimeInSeconds**

The amount of seconds that have elapsed since the resize operation began. After the resize operation completes, this value shows the total actual time, in seconds, for the resize operation.

Type: Long

### **EstimatedTimeToCompletionInSeconds**

The estimated time remaining, in seconds, until the resize operation is complete. This value is calculated based on the average resize rate and the estimated amount of data remaining to be processed. Once the resize operation is complete, this value will be 0.

Type: Long

### **ImportTablesCompleted.member.N**

The names of tables that have been completely imported .

Valid Values: List of table names.

Type: Array of strings

**ImportTablesInProgress.member.N**

The names of tables that are being currently imported.

Valid Values: List of table names.

Type: Array of strings

**ImportTablesNotStarted.member.N**

The names of tables that have not been yet imported.

Valid Values: List of table names

Type: Array of strings

**Message**

An optional string to provide additional details about the resize action.

Type: String

**ProgressInMegaBytes**

While the resize operation is in progress, this value shows the current amount of data, in megabytes, that has been processed so far. When the resize operation is complete, this value shows the total amount of data, in megabytes, on the cluster, which may be more or less than `TotalResizeDataInMegaBytes` (the estimated total amount of data before resize).

Type: Long

**ResizeType**

An enum with possible values of `ClassicResize` and `ElasticResize`. These values describe the type of resize operation being performed.

Type: String

**Status**

The status of the resize operation.

Valid Values: `NONE` | `IN_PROGRESS` | `FAILED` | `SUCCEEDED` | `CANCELLING`

Type: String

**TargetClusterType**

The cluster type after the resize operation is complete.

Valid Values: `multi-node` | `single-node`

Type: String

**TargetEncryptionType**

The type of encryption for the cluster after the resize is complete.

Possible values are `KMS` and `None`. In the China region possible values are: `Legacy` and `None`.

Type: String

**TargetNodeType**

The node type that the cluster will have after the resize operation is complete.

Type: String

### **TargetNumberOfNodes**

The number of nodes that the cluster will have after the resize operation is complete.

Type: Integer

### **TotalResizeDataInMegaBytes**

The estimated total amount of data, in megabytes, on the cluster before the resize operation began.

Type: Long

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **ResizeNotFound**

A resize operation for the specified cluster is not found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=DescribeResize
&ClusterIdentifier=examplecluster
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121207/us-east-1/redshift/aws4_request
&x-amz-date=20121207T232427Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<DescribeResizeResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeResizeResult>
    <TargetClusterType>multi-node</TargetClusterType>
    <Status>SUCCEEDED</Status>
    <AvgResizeRateInMegaBytesPerSecond>6.5263</AvgResizeRateInMegaBytesPerSecond>
    <ProgressInMegaBytes>66922</ProgressInMegaBytes>
    <EstimatedTimeToCompletionInSeconds>0</EstimatedTimeToCompletionInSeconds>
    <ImportTablesCompleted>
      <member>users</member>
      <member>venue</member>
      <member>sales</member>
      <member>listing</member>
      <member>event</member>
      <member>date</member>
      <member>category</member>
```

```
</ImportTablesCompleted>
<ElapsedTimeInSeconds>10254</ElapsedTimeInSeconds>
<TargetNodeType>ds2.xlarge</TargetNodeType>
<TargetNumberOfNodes>2</TargetNumberOfNodes>
</DescribeResizeResult>
<ResponseMetadata>
  <RequestId>a6d59c61-a162-11e2-b2bc-fb54c9d11e09</RequestId>
</ResponseMetadata>
</DescribeResizeResponse>
```

## See Also

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

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

# DescribeSnapshotCopyGrants

Returns a list of snapshot copy grants owned by the AWS account in the destination region.

For more information about managing snapshot copy grants, go to [Amazon Redshift Database Encryption](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a `DescribeSnapshotCopyGrant` request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Constraints: You can specify either the **SnapshotCopyGrantName** parameter or the **Marker** parameter, but not both.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

### SnapshotCopyGrantName

The name of the snapshot copy grant.

Type: String

Required: No

### TagKeys.TagKey.N

A tag key or keys for which you want to return all matching resources that are associated with the specified key or keys. For example, suppose that you have resources tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with all resources that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

### **TagValues.TagValue.N**

A tag value or values for which you want to return all matching resources that are associated with the specified value or values. For example, suppose that you have resources tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with all resources that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

### **Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a `DescribeSnapshotCopyGrant` request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Constraints: You can specify either the **SnapshotCopyGrantName** parameter or the **Marker** parameter, but not both.

Type: String

### **SnapshotCopyGrants.SnapshotCopyGrant.N**

The list of `SnapshotCopyGrant` objects.

Type: Array of [SnapshotCopyGrant](#) (p. 302) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **SnapshotCopyGrantNotFoundFault**

The specified snapshot copy grant can't be found. Make sure that the name is typed correctly and that the grant exists in the destination region.

HTTP Status Code: 400

## See Also

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

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

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

# DescribeSnapshotSchedules

Returns a list of snapshot schedules.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The unique identifier for the cluster whose snapshot schedules you want to view.

Type: String

Required: No

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `marker` parameter and retrying the command. If the `marker` field is empty, all response records have been retrieved for the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Type: Integer

Required: No

### ScheduleIdentifier

A unique identifier for a snapshot schedule.

Type: String

Required: No

### TagKeys.TagKey.N

The key value for a snapshot schedule tag.

Type: Array of strings

Required: No

### TagValues.TagValue.N

The value corresponding to the key of the snapshot schedule tag.

Type: Array of strings

Required: No



## Response Elements

The following elements are returned by the service.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `marker` parameter and retrying the command. If the `marker` field is empty, all response records have been retrieved for the request.

Type: String

### **SnapshotSchedules.SnapshotSchedule.N**

A list of SnapshotSchedules.

Type: Array of [SnapshotSchedule](#) (p. 304) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

## See Also

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

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

# DescribeStorage

Returns the total amount of snapshot usage and provisioned storage for a user in megabytes.

## Response Elements

The following elements are returned by the service.

### **TotalBackupSizeInMegaBytes**

The total amount of storage currently used for snapshots.

Type: Double

### **TotalProvisionedStorageInMegaBytes**

The total amount of storage currently provisioned.

Type: Double

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

## See Also

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

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

# DescribeTableRestoreStatus

Lists the status of one or more table restore requests made using the [RestoreTableFromClusterSnapshot \(p. 225\)](#) API action. If you don't specify a value for the `TableRestoreRequestId` parameter, then `DescribeTableRestoreStatus` returns the status of all table restore requests ordered by the date and time of the request in ascending order. Otherwise `DescribeTableRestoreStatus` returns the status of the table specified by `TableRestoreRequestId`.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The Amazon Redshift cluster that the table is being restored to.

Type: String

Required: No

### Marker

An optional pagination token provided by a previous `DescribeTableRestoreStatus` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by the `MaxRecords` parameter.

Type: String

Required: No

### MaxRecords

The maximum number of records to include in the response. If more records exist than the specified `MaxRecords` value, a pagination token called a marker is included in the response so that the remaining results can be retrieved.

Type: Integer

Required: No

### TableRestoreRequestId

The identifier of the table restore request to return status for. If you don't specify a `TableRestoreRequestId` value, then `DescribeTableRestoreStatus` returns the status of all in-progress table restore requests.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

A pagination token that can be used in a subsequent [DescribeTableRestoreStatus \(p. 150\)](#) request.

Type: String

**TableRestoreStatusDetails.TableRestoreStatus.N**

A list of status details for one or more table restore requests.

Type: Array of [TableRestoreStatus](#) (p. 309) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

**ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

**TableRestoreNotFoundFault**

The specified `TableRestoreRequestId` value was not found.

HTTP Status Code: 400

## See Also

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

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

## DescribeTags

Returns a list of tags. You can return tags from a specific resource by specifying an ARN, or you can return all tags for a given type of resource, such as clusters, snapshots, and so on.

The following are limitations for `DescribeTags`:

- You cannot specify an ARN and a resource-type value together in the same request.
- You cannot use the `MaxRecords` and `Marker` parameters together with the ARN parameter.
- The `MaxRecords` parameter can be a range from 10 to 50 results to return in a request.

If you specify both tag keys and tag values in the same request, Amazon Redshift returns all resources that match any combination of the specified keys and values. For example, if you have `owner` and `environment` for tag keys, and `admin` and `test` for tag values, all resources that have any combination of those values are returned.

If both tag keys and values are omitted from the request, resources are returned regardless of whether they have tag keys or values associated with them.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `marker` parameter and retrying the command. If the `marker` field is empty, all response records have been retrieved for the request.

Type: String

Required: No

### MaxRecords

The maximum number of response records to return in each call. If the number of remaining response records exceeds the specified `MaxRecords` value, a value is returned in a `marker` field of the response. You can retrieve the next set of records by retrying the command with the returned marker value.

Type: Integer

Required: No

### ResourceName

The Amazon Resource Name (ARN) for which you want to describe the tag or tags. For example, `arn:aws:redshift:us-east-1:123456789:cluster:t1`.

Type: String

Required: No

### ResourceType

The type of resource with which you want to view tags. Valid resource types are:

- Cluster

- CIDR/IP
- EC2 security group
- Snapshot
- Cluster security group
- Subnet group
- HSM connection
- HSM certificate
- Parameter group
- Snapshot copy grant

For more information about Amazon Redshift resource types and constructing ARNs, go to [Specifying Policy Elements: Actions, Effects, Resources, and Principals](#) in the Amazon Redshift Cluster Management Guide.

Type: String

Required: No

#### **TagKeys.TagKey.N**

A tag key or keys for which you want to return all matching resources that are associated with the specified key or keys. For example, suppose that you have resources tagged with keys called `owner` and `environment`. If you specify both of these tag keys in the request, Amazon Redshift returns a response with all resources that have either or both of these tag keys associated with them.

Type: Array of strings

Required: No

#### **TagValues.TagValue.N**

A tag value or values for which you want to return all matching resources that are associated with the specified value or values. For example, suppose that you have resources tagged with values called `admin` and `test`. If you specify both of these tag values in the request, Amazon Redshift returns a response with all resources that have either or both of these tag values associated with them.

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.

#### **Marker**

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

#### **TaggedResources.TaggedResource.N**

A list of tags with their associated resources.

Type: Array of [TaggedResource](#) (p. 313) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

### **ResourceNotFoundFault**

The resource could not be found.

HTTP Status Code: 404

## See Also

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

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

# DisableLogging

Stops logging information, such as queries and connection attempts, for the specified Amazon Redshift cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

The identifier of the cluster on which logging is to be stopped.

Example: `examplecluster`

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **BucketName**

The name of the S3 bucket where the log files are stored.

Type: String

### **LastFailureMessage**

The message indicating that logs failed to be delivered.

Type: String

### **LastFailureTime**

The last time when logs failed to be delivered.

Type: Timestamp

### **LastSuccessfulDeliveryTime**

The last time that logs were delivered.

Type: Timestamp

### **LoggingEnabled**

`true` if logging is on, `false` if logging is off.

Type: Boolean

### **S3KeyPrefix**

The prefix applied to the log file names.

Type: String



## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

## See Also

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

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

# DisableSnapshotCopy

Disables the automatic copying of snapshots from one region to another region for a specified cluster.

If your cluster and its snapshots are encrypted using a customer master key (CMK) from AWS KMS, use [DeleteSnapshotCopyGrant \(p. 76\)](#) to delete the grant that grants Amazon Redshift permission to the CMK in the destination region.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The unique identifier of the source cluster that you want to disable copying of snapshots to a destination region.

Constraints: Must be the valid name of an existing cluster that has cross-region snapshot copy enabled.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### Cluster

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

### SnapshotCopyAlreadyDisabledFault

The cluster already has cross-region snapshot copy disabled.

HTTP Status Code: 400

### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## See Also

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

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

# EnableLogging

Starts logging information, such as queries and connection attempts, for the specified Amazon Redshift cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **BucketName**

The name of an existing S3 bucket where the log files are to be stored.

Constraints:

- Must be in the same region as the cluster
- The cluster must have read bucket and put object permissions

Type: String

Required: Yes

### **ClusterIdentifier**

The identifier of the cluster on which logging is to be started.

Example: `examplecluster`

Type: String

Required: Yes

### **S3KeyPrefix**

The prefix applied to the log file names.

Constraints:

- Cannot exceed 512 characters
- Cannot contain spaces( ), double quotes ("), single quotes ('), a backslash (\), or control characters. The hexadecimal codes for invalid characters are:
  - x00 to x20
  - x22
  - x27
  - x5c
  - x7f or larger

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### **BucketName**

The name of the S3 bucket where the log files are stored.

Type: String

**LastFailureMessage**

The message indicating that logs failed to be delivered.

Type: String

**LastFailureTime**

The last time when logs failed to be delivered.

Type: Timestamp

**LastSuccessfulDeliveryTime**

The last time that logs were delivered.

Type: Timestamp

**LoggingEnabled**

true if logging is on, false if logging is off.

Type: Boolean

**S3KeyPrefix**

The prefix applied to the log file names.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**BucketNotFoundFault**

Could not find the specified S3 bucket.

HTTP Status Code: 400

**ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

**InsufficientS3BucketPolicyFault**

The cluster does not have read bucket or put object permissions on the S3 bucket specified when enabling logging.

HTTP Status Code: 400

**InvalidS3BucketNameFault**

The S3 bucket name is invalid. For more information about naming rules, go to [Bucket Restrictions and Limitations](#) in the Amazon Simple Storage Service (S3) Developer Guide.

HTTP Status Code: 400

**InvalidS3KeyPrefixFault**

The string specified for the logging S3 key prefix does not comply with the documented constraints.

HTTP Status Code: 400

## See Also

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

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

# EnableSnapshotCopy

Enables the automatic copy of snapshots from one region to another region for a specified cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The unique identifier of the source cluster to copy snapshots from.

Constraints: Must be the valid name of an existing cluster that does not already have cross-region snapshot copy enabled.

Type: String

Required: Yes

### DestinationRegion

The destination AWS Region that you want to copy snapshots to.

Constraints: Must be the name of a valid AWS Region. For more information, see [Regions and Endpoints](#) in the Amazon Web Services General Reference.

Type: String

Required: Yes

### ManualSnapshotRetentionPeriod

The number of days to retain newly copied snapshots in the destination AWS Region after they are copied from the source AWS Region. If the value is -1, the manual snapshot is retained indefinitely.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

### RetentionPeriod

The number of days to retain automated snapshots in the destination region after they are copied from the source region.

Default: 7.

Constraints: Must be at least 1 and no more than 35.

Type: Integer

Required: No

### SnapshotCopyGrantName

The name of the snapshot copy grant to use when snapshots of an AWS KMS-encrypted cluster are copied to the destination region.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster](#) (p. 241) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **CopyToRegionDisabledFault**

Cross-region snapshot copy was temporarily disabled. Try your request again.

HTTP Status Code: 400

### **DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

### **IncompatibleOrderableOptions**

The specified options are incompatible.

HTTP Status Code: 400

### **InvalidClusterState**

The specified cluster is not in the `available` state.

HTTP Status Code: 400

### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

### **LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

### **SnapshotCopyAlreadyEnabledFault**

The cluster already has cross-region snapshot copy enabled.

HTTP Status Code: 400



#### **SnapshotCopyGrantNotFoundFault**

The specified snapshot copy grant can't be found. Make sure that the name is typed correctly and that the grant exists in the destination region.

HTTP Status Code: 400

#### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

#### **UnknownSnapshotCopyRegionFault**

The specified region is incorrect or does not exist.

HTTP Status Code: 404

## See Also

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

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

# GetClusterCredentials

Returns a database user name and temporary password with temporary authorization to log on to an Amazon Redshift database. The action returns the database user name prefixed with `IAM:` if `AutoCreate` is `False` or `IAMA:` if `AutoCreate` is `True`. You can optionally specify one or more database user groups that the user will join at log on. By default, the temporary credentials expire in 900 seconds. You can optionally specify a duration between 900 seconds (15 minutes) and 3600 seconds (60 minutes). For more information, see [Using IAM Authentication to Generate Database User Credentials](#) in the Amazon Redshift Cluster Management Guide.

The AWS Identity and Access Management (IAM) user or role that executes `GetClusterCredentials` must have an IAM policy attached that allows access to all necessary actions and resources. For more information about permissions, see [Resource Policies for GetClusterCredentials](#) in the Amazon Redshift Cluster Management Guide.

If the `DbGroups` parameter is specified, the IAM policy must allow the `redshift:JoinGroup` action with access to the listed `dbgroups`.

In addition, if the `AutoCreate` parameter is set to `True`, then the policy must include the `redshift:CreateClusterUser` privilege.

If the `DbName` parameter is specified, the IAM policy must allow access to the resource `dbname` for the specified database name.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The unique identifier of the cluster that contains the database for which you are requesting credentials. This parameter is case sensitive.

Type: String

Required: Yes

### DbUser

The name of a database user. If a user name matching `DbUser` exists in the database, the temporary user credentials have the same permissions as the existing user. If `DbUser` doesn't exist in the database and `Autocreate` is `True`, a new user is created using the value for `DbUser` with `PUBLIC` permissions. If a database user matching the value for `DbUser` doesn't exist and `Autocreate` is `False`, then the command succeeds but the connection attempt will fail because the user doesn't exist in the database.

For more information, see [CREATE USER](#) in the Amazon Redshift Database Developer Guide.

Constraints:

- Must be 1 to 64 alphanumeric characters or hyphens. The user name can't be `PUBLIC`.
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in [Reserved Words](#) in the Amazon Redshift Database Developer Guide.

Type: String

Required: Yes

**AutoCreate**

Create a database user with the name specified for the user named in `DbUser` if one does not exist.

Type: Boolean

Required: No

**DbGroups.DbGroup.N**

A list of the names of existing database groups that the user named in `DbUser` will join for the current session, in addition to any group memberships for an existing user. If not specified, a new user is added only to PUBLIC.

Database group name constraints

- Must be 1 to 64 alphanumeric characters or hyphens
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in [Reserved Words](#) in the Amazon Redshift Database Developer Guide.

Type: Array of strings

Required: No

**DbName**

The name of a database that `DbUser` is authorized to log on to. If `DbName` is not specified, `DbUser` can log on to any existing database.

Constraints:

- Must be 1 to 64 alphanumeric characters or hyphens
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in [Reserved Words](#) in the Amazon Redshift Database Developer Guide.

Type: String

Required: No

**DurationSeconds**

The number of seconds until the returned temporary password expires.

Constraint: minimum 900, maximum 3600.

Default: 900

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DbPassword**

A temporary password that authorizes the user name returned by `DbUser` to log on to the database `DbName`.

Type: String

### **DbUser**

A database user name that is authorized to log on to the database `DbName` using the password `DbPassword`. If the specified `DbUser` exists in the database, the new user name has the same database privileges as the the user named in `DbUser`. By default, the user is added to PUBLIC. If the `DbGroups` parameter is specified, `DbUser` is added to the listed groups for any sessions created using these credentials.

Type: String

### **Expiration**

The date and time the password in `DbPassword` expires.

Type: Timestamp

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## Example

The following example shows a request to get cluster credentials.

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=GetClusterCredentials
&ClusterIdentifier=examplecluster
&DbUser=tempuser
&DbName=exampledb
&DurationSeconds=1800
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20160123/us-east-1/redshift/aws4_request
```

```
&x-amz-date=20160123T000452Z  
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<GetClusterCredentialsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <GetClusterCredentialsResults>  
    <DBUsername>IAM:tempuser</DBUsername>  
    <Expiration>2016-11-08T21:12:53Z</Expiration>  
    <DBPassword>EXAMPLEAbCdEf1234567890aBcDeFgHiJkLmNoPqRsTuVwXyZwXVPyJYBDm/  
ggX2Eeaq6P3==</DBPassword>  
  </GetClusterCredentialsResult>  
  <ResponseMetadata>  
    <RequestId>fa337bb4-6a4d-11e2-a12a-cb8076a904bd</RequestId>  
  </ResponseMetadata>  
</GetClusterCredentialsResponse>
```

## See Also

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

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

# GetReservedNodeExchangeOfferings

Returns an array of DC2 ReservedNodeOfferings that matches the payment type, term, and usage price of the given DC1 reserved node.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ReservedNodeId

A string representing the node identifier for the DC1 Reserved Node to be exchanged.

Type: String

Required: Yes

### Marker

A value that indicates the starting point for the next set of ReservedNodeOfferings.

Type: String

Required: No

### MaxRecords

An integer setting the maximum number of ReservedNodeOfferings to retrieve.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional parameter that specifies the starting point for returning a set of response records. When the results of a `GetReservedNodeExchangeOfferings` request exceed the value specified in `MaxRecords`, Amazon Redshift returns a value in the marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the marker parameter and retrying the request.

Type: String

### ReservedNodeOfferings.ReservedNodeOffering.N

Returns an array of [ReservedNodeOffering \(p. 291\)](#) objects.

Type: Array of [ReservedNodeOffering \(p. 291\)](#) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**DependentServiceUnavailableFault**

Your request cannot be completed because a dependent internal service is temporarily unavailable. Wait 30 to 60 seconds and try again.

HTTP Status Code: 400

**InvalidReservedNodeState**

Indicates that the Reserved Node being exchanged is not in an active state.

HTTP Status Code: 400

**ReservedNodeAlreadyMigrated**

Indicates that the reserved node has already been exchanged.

HTTP Status Code: 400

**ReservedNodeNotFound**

The specified reserved compute node not found.

HTTP Status Code: 404

**ReservedNodeOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## See Also

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

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

# ModifyCluster

Modifies the settings for a cluster. For example, you can add another security or parameter group, update the preferred maintenance window, or change the master user password. Resetting a cluster password or modifying the security groups associated with a cluster do not need a reboot. However, modifying a parameter group requires a reboot for parameters to take effect. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

You can also change node type and the number of nodes to scale up or down the cluster. When resizing a cluster, you must specify both the number of nodes and the node type even if one of the parameters does not change.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

The unique identifier of the cluster to be modified.

Example: `examplecluster`

Type: String

Required: Yes

### **AllowVersionUpgrade**

If `true`, major version upgrades will be applied automatically to the cluster during the maintenance window.

Default: `false`

Type: Boolean

Required: No

### **AutomatedSnapshotRetentionPeriod**

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with [CreateClusterSnapshot](#) (p. 38).

If you decrease the automated snapshot retention period from its current value, existing automated snapshots that fall outside of the new retention period will be immediately deleted.

Default: Uses existing setting.

Constraints: Must be a value from 0 to 35.

Type: Integer

Required: No

### **ClusterParameterGroupName**

The name of the cluster parameter group to apply to this cluster. This change is applied only after the cluster is rebooted. To reboot a cluster use [RebootCluster](#) (p. 207).

Default: Uses existing setting.



Constraints: The cluster parameter group must be in the same parameter group family that matches the cluster version.

Type: String

Required: No

**ClusterSecurityGroups.ClusterSecurityGroupName.N**

A list of cluster security groups to be authorized on this cluster. This change is asynchronously applied as soon as possible.

Security groups currently associated with the cluster, and not in the list of groups to apply, will be revoked from the cluster.

Constraints:

- Must be 1 to 255 alphanumeric characters or hyphens
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Type: Array of strings

Required: No

**ClusterType**

The new cluster type.

When you submit your cluster resize request, your existing cluster goes into a read-only mode. After Amazon Redshift provisions a new cluster based on your resize requirements, there will be outage for a period while the old cluster is deleted and your connection is switched to the new cluster. You can use [DescribeResize \(p. 140\)](#) to track the progress of the resize request.

Valid Values: `multi-node` | `single-node`

Type: String

Required: No

**ClusterVersion**

The new version number of the Amazon Redshift engine to upgrade to.

For major version upgrades, if a non-default cluster parameter group is currently in use, a new cluster parameter group in the cluster parameter group family for the new version must be specified. The new cluster parameter group can be the default for that cluster parameter group family. For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

Example: `1.0`

Type: String

Required: No

**ElasticIp**

The Elastic IP (EIP) address for the cluster.

Constraints: The cluster must be provisioned in EC2-VPC and publicly-accessible through an Internet gateway. For more information about provisioning clusters in EC2-VPC, go to [Supported Platforms to Launch Your Cluster](#) in the *Amazon Redshift Cluster Management Guide*.

Type: String

Required: No

### **Encrypted**

Indicates whether the cluster is encrypted. If the cluster is encrypted and you provide a value for the `KmsKeyId` parameter, we will encrypt the cluster with the provided `KmsKeyId`. If you don't provide a `KmsKeyId`, we will encrypt with the default key. In the China region we will use legacy encryption if you specify that the cluster is encrypted.

Type: Boolean

Required: No

### **EnhancedVpcRouting**

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: false

Type: Boolean

Required: No

### **HsmClientCertificateIdentifier**

Specifies the name of the HSM client certificate the Amazon Redshift cluster uses to retrieve the data encryption keys stored in an HSM.

Type: String

Required: No

### **HsmConfigurationIdentifier**

Specifies the name of the HSM configuration that contains the information the Amazon Redshift cluster can use to retrieve and store keys in an HSM.

Type: String

Required: No

### **KmsKeyId**

The AWS Key Management Service (KMS) key ID of the encryption key that you want to use to encrypt data in the cluster.

Type: String

Required: No

### **MaintenanceTrackName**

The name for the maintenance track that you want to assign for the cluster. This name change is asynchronous. The new track name stays in the `PendingModifiedValues` for the cluster until the next maintenance window. When the maintenance track changes, the cluster is switched to the latest cluster release available for the maintenance track. At this point, the maintenance track name is applied.

Type: String

Required: No

#### **ManualSnapshotRetentionPeriod**

The default for number of days that a newly created manual snapshot is retained. If the value is -1, the manual snapshot is retained indefinitely. This value doesn't retroactively change the retention periods of existing manual snapshots.

The value must be either -1 or an integer between 1 and 3,653.

The default value is -1.

Type: Integer

Required: No

#### **MasterUserPassword**

The new password for the cluster master user. This change is asynchronously applied as soon as possible. Between the time of the request and the completion of the request, the `MasterUserPassword` element exists in the `PendingModifiedValues` element of the operation response.

##### **Note**

Operations never return the password, so this operation provides a way to regain access to the master user account for a cluster if the password is lost.

Default: Uses existing setting.

Constraints:

- Must be between 8 and 64 characters in length.
- Must contain at least one uppercase letter.
- Must contain at least one lowercase letter.
- Must contain one number.
- Can be any printable ASCII character (ASCII code 33 to 126) except ' (single quote), " (double quote), \, /, @, or space.

Type: String

Required: No

#### **NewClusterIdentifier**

The new identifier for the cluster.

Constraints:

- Must contain from 1 to 63 alphanumeric characters or hyphens.
- Alphabetic characters must be lowercase.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique for all clusters within an AWS account.

Example: `examplecluster`

Type: String

Required: No

### **NodeType**

The new node type of the cluster. If you specify a new node type, you must also specify the number of nodes parameter.

When you submit your request to resize a cluster, Amazon Redshift sets access permissions for the cluster to read-only. After Amazon Redshift provisions a new cluster according to your resize requirements, there will be a temporary outage while the old cluster is deleted and your connection is switched to the new cluster. When the new connection is complete, the original access permissions for the cluster are restored. You can use [DescribeResize \(p. 140\)](#) to track the progress of the resize request.

Valid Values: `ds2.xlarge` | `ds2.8xlarge` | `dc1.large` | `dc1.8xlarge` | `dc2.large` | `dc2.8xlarge`

Type: String

Required: No

### **NumberOfNodes**

The new number of nodes of the cluster. If you specify a new number of nodes, you must also specify the node type parameter.

When you submit your request to resize a cluster, Amazon Redshift sets access permissions for the cluster to read-only. After Amazon Redshift provisions a new cluster according to your resize requirements, there will be a temporary outage while the old cluster is deleted and your connection is switched to the new cluster. When the new connection is complete, the original access permissions for the cluster are restored. You can use [DescribeResize \(p. 140\)](#) to track the progress of the resize request.

Valid Values: Integer greater than 0.

Type: Integer

Required: No

### **PreferredMaintenanceWindow**

The weekly time range (in UTC) during which system maintenance can occur, if necessary. If system maintenance is necessary during the window, it may result in an outage.

This maintenance window change is made immediately. If the new maintenance window indicates the current time, there must be at least 120 minutes between the current time and end of the window in order to ensure that pending changes are applied.

Default: Uses existing setting.

Format: `ddd:hh24:mi-ddd:hh24:mi`, for example `wed:07:30-wed:08:00`.

Valid Days: `Mon` | `Tue` | `Wed` | `Thu` | `Fri` | `Sat` | `Sun`

Constraints: Must be at least 30 minutes.

Type: String

Required: No

### **PubliclyAccessible**

If `true`, the cluster can be accessed from a public network. Only clusters in VPCs can be set to be publicly available.

Type: Boolean

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of virtual private cloud (VPC) security groups to be associated with the cluster. This change is asynchronously applied as soon as possible.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterAlreadyExists**

The account already has a cluster with the given identifier.

HTTP Status Code: 400

**ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

**ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

**ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

**DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

**HsmClientCertificateNotFoundFault**

There is no Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

**HsmConfigurationNotFoundFault**

There is no Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

**InsufficientClusterCapacity**

The number of nodes specified exceeds the allotted capacity of the cluster.

HTTP Status Code: 400

**InvalidClusterSecurityGroupState**

The state of the cluster security group is not available.

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

**InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400

**InvalidElasticIpFault**

The Elastic IP (EIP) is invalid or cannot be found.

HTTP Status Code: 400

**InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

**LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

**NumberOfNodesPerClusterLimitExceeded**

The operation would exceed the number of nodes allowed for a cluster.

HTTP Status Code: 400

**NumberOfNodesQuotaExceeded**

The operation would exceed the number of nodes allotted to the account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**TableLimitExceeded**

The number of tables in the cluster exceeds the limit for the requested new cluster node type.

HTTP Status Code: 400

### UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

### UnsupportedOptionFault

A request option was specified that is not supported.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=ModifyCluster
&AllowVersionUpgrade=true
&AutomatedSnapshotRetentionPeriod=2
&ClusterIdentifier=examplecluster
&ClusterParameterGroupName=parametergroup1
&PreferredMaintenanceWindow=wed:07:30-wed:08:00
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T022911Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<ModifyClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster.coqoarplqhsn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>available</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>2</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>wed:07:30-wed:08:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>applying</ParameterApplyStatus>
          <ParameterGroupName>parametergroup1</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
      </ClusterSecurityGroups>
    </Cluster>
  </ModifyClusterResult>
</ModifyClusterResponse>
```

```
</ClusterSecurityGroup>
</ClusterSecurityGroups>
<AvailabilityZone>us-east-1c</AvailabilityZone>
<NodeType>ds2.xlarge</NodeType>
<ClusterIdentifier>examplecluster</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>adminuser</MasterUsername>
</Cluster>
</ModifyClusterResult>
<ResponseMetadata>
  <RequestId>acbc43d5-6504-11e2-bea9-49e0ce183f07</RequestId>
</ResponseMetadata>
</ModifyClusterResponse>
```

## See Also

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

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



# ModifyClusterDbRevision

Modifies the database revision of a cluster. The database revision is a unique revision of the database running in a cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The unique identifier of a cluster whose database revision you want to modify.

Example: `examplecluster`

Type: String

Required: Yes

### RevisionTarget

The identifier of the database revision. You can retrieve this value from the response to the [DescribeClusterDbRevisions \(p. 81\)](#) request.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### Cluster

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### ClusterOnLatestRevision

Cluster is already on the latest database revision.

HTTP Status Code: 400

### InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

## See Also

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

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

# ModifyClusterIamRoles

Modifies the list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services.

A cluster can have up to 10 IAM roles associated at any time.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

The unique identifier of the cluster for which you want to associate or disassociate IAM roles.

Type: String

Required: Yes

### **AddIamRoles.IamRoleArn.N**

Zero or more IAM roles to associate with the cluster. The roles must be in their Amazon Resource Name (ARN) format. You can associate up to 10 IAM roles with a single cluster in a single request.

Type: Array of strings

Required: No

### **RemoveIamRoles.IamRoleArn.N**

Zero or more IAM roles in ARN format to disassociate from the cluster. You can disassociate up to 10 IAM roles from a single cluster in a single request.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster](#) (p. 241) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=ModifyClusterIamRoles
&ClusterIdentifier=my-redshift-cluster
&AddIamRoles.member.1=arn:aws:iam::123456789012:role/RedshiftCopyUnload
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20160208/us-east-1/redshift/aws4_request
&x-amz-date=20160208T022525Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<ModifyClusterIamRolesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterIamRolesResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster.cobaosmlqshn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>rebooting</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <DBName>dev</DBName>
      <IamRoles>
        <ClusterIamRole>
          <IamRoleArn>arn:aws:iam::123456789012:role/RedshiftCopyUnload</IamRoleArn>
          <ApplyStatus>adding</ApplyStatus>
        </ClusterIamRole>
      </IamRoles>
      <PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
      </ClusterSecurityGroups>
      <AvailabilityZone>us-east-1c</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
    </Cluster>
  </ModifyClusterIamRolesResult>
</ModifyClusterIamRolesResponse>
```

```
<ClusterIdentifier>examplecluster</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>adminuser</MasterUsername>
</Cluster>
</ModifyClusterIamRolesResult>
<ResponseMetadata>
  <RequestId>46e64043-40de-15b2-8a25-eb010998cc4e</RequestId>
</ResponseMetadata>
</ModifyClusterIamRolesResponse>
```

## See Also

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

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

# ModifyClusterMaintenance

Modifies the maintenance settings of a cluster. For example, you can defer a maintenance window. You can also update or cancel a deferment.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ClusterIdentifier**

A unique identifier for the cluster.

Type: String

Required: Yes

### **DeferMaintenance**

A boolean indicating whether to enable the deferred maintenance window.

Type: Boolean

Required: No

### **DeferMaintenanceDuration**

An integer indicating the duration of the maintenance window in days. If you specify a duration, you can't specify an end time. The duration must be 14 days or less.

Type: Integer

Required: No

### **DeferMaintenanceEndTime**

A timestamp indicating end time for the deferred maintenance window. If you specify an end time, you can't specify a duration.

Type: Timestamp

Required: No

### **DeferMaintenanceIdentifier**

A unique identifier for the deferred maintenance window.

Type: String

Required: No

### **DeferMaintenanceStartTime**

A timestamp indicating the start time for the deferred maintenance window.

Type: Timestamp

Required: No

## Response Elements

The following element is returned by the service.

### Cluster

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

## See Also

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

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

# ModifyClusterParameterGroup

Modifies the parameters of a parameter group.

For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ParameterGroupName**

The name of the parameter group to be modified.

Type: String

Required: Yes

### **Parameters.Parameter.N**

An array of parameters to be modified. A maximum of 20 parameters can be modified in a single request.

For each parameter to be modified, you must supply at least the parameter name and parameter value; other name-value pairs of the parameter are optional.

For the workload management (WLM) configuration, you must supply all the name-value pairs in the `wlm_json_configuration` parameter.

Type: Array of [Parameter \(p. 283\)](#) objects

Required: Yes

## Response Elements

The following elements are returned by the service.

### **ParameterGroupName**

The name of the cluster parameter group.

Type: String

### **ParameterGroupStatus**

The status of the parameter group. For example, if you made a change to a parameter group name-value pair, then the change could be pending a reboot of an associated cluster.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).



### ClusterParameterGroupNotFound

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

### InvalidClusterParameterGroupState

The cluster parameter group action can not be completed because another task is in progress that involves the parameter group. Wait a few moments and try the operation again.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=ModifyClusterParameterGroup
&ParameterGroupName=parametergroup1
&Parameters.member.1.ParameterName=extra_float_digits
&Parameters.member.1.ParameterValue=2
&Parameters.member.2.ParameterName=wlm_json_configuration
&Parameters.member.2.ParameterValue=[{"user_group":
["example_user_group1"], "query_group": ["example_query_group1"], "query_concurrency": 7},
{"query_concurrency": 5}]
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T022525Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<ModifyClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterParameterGroupResult>
    <ParameterGroupStatus>Your parameter group has been updated. Updates to dynamic
    parameters will be applied immediately. Updates to static parameters will be applied when
    you reboot the associated Clusters.</ParameterGroupStatus>
    <ParameterGroupName>parametergroup1</ParameterGroupName>
  </ModifyClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>86e64043-40de-11e2-8a25-eb010998df4e</RequestId>
  </ResponseMetadata>
</ModifyClusterParameterGroupResponse>
```

## See Also

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

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

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

# ModifyClusterSnapshot

Modifies the settings for a snapshot.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SnapshotIdentifier**

The identifier of the snapshot whose setting you want to modify.

Type: String

Required: Yes

### **Force**

A Boolean option to override an exception if the retention period has already passed.

Type: Boolean

Required: No

### **ManualSnapshotRetentionPeriod**

The number of days that a manual snapshot is retained. If the value is -1, the manual snapshot is retained indefinitely.

If the manual snapshot falls outside of the new retention period, you can specify the force option to immediately delete the snapshot.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

### **Snapshot**

Describes a snapshot.

Type: [Snapshot \(p. 297\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

### **InvalidClusterSnapshotState**

The specified cluster snapshot is not in the `available` state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either `-1` or an integer between `1` and `3,653`.

HTTP Status Code: 400

## See Also

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

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

# ModifyClusterSnapshotSchedule

Modifies a snapshot schedule for a cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterIdentifier**

A unique identifier for the cluster whose snapshot schedule you want to modify.

Type: String

Required: Yes

### **DisassociateSchedule**

A boolean to indicate whether to remove the association between the cluster and the schedule.

Type: Boolean

Required: No

### **ScheduleIdentifier**

A unique alphanumeric identifier for the schedule that you want to associate with the cluster.

Type: String

Required: No

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **InvalidClusterSnapshotScheduleState**

The cluster snapshot schedule state is not valid.

HTTP Status Code: 400

### **SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400

## See Also

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

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

# ModifyClusterSubnetGroup

Modifies a cluster subnet group to include the specified list of VPC subnets. The operation replaces the existing list of subnets with the new list of subnets.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterSubnetGroupName**

The name of the subnet group to be modified.

Type: String

Required: Yes

### **SubnetIds.SubnetIdentifier.N**

An array of VPC subnet IDs. A maximum of 20 subnets can be modified in a single request.

Type: Array of strings

Required: Yes

### **Description**

A text description of the subnet group to be modified.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **ClusterSubnetGroup**

Describes a subnet group.

Type: [ClusterSubnetGroup \(p. 259\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterSubnetGroupNotFoundFault**

The cluster subnet group name does not refer to an existing cluster subnet group.

HTTP Status Code: 400

### **ClusterSubnetQuotaExceededFault**

The request would result in user exceeding the allowed number of subnets in a cluster subnet groups. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is not valid, or not all of the subnets are in the same VPC.

HTTP Status Code: 400

**SubnetAlreadyInUse**

A specified subnet is already in use by another cluster.

HTTP Status Code: 400

**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## See Also

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

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



# ModifyEventSubscription

Modifies an existing Amazon Redshift event notification subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **SubscriptionName**

The name of the modified Amazon Redshift event notification subscription.

Type: String

Required: Yes

### **Enabled**

A Boolean value indicating if the subscription is enabled. `true` indicates the subscription is enabled

Type: Boolean

Required: No

### **EventCategories.EventCategory.N**

Specifies the Amazon Redshift event categories to be published by the event notification subscription.

Values: configuration, management, monitoring, security

Type: Array of strings

Required: No

### **Severity**

Specifies the Amazon Redshift event severity to be published by the event notification subscription.

Values: ERROR, INFO

Type: String

Required: No

### **SnsTopicArn**

The Amazon Resource Name (ARN) of the SNS topic to be used by the event notification subscription.

Type: String

Required: No

### **SourceIds.SourceId.N**

A list of one or more identifiers of Amazon Redshift source objects. All of the objects must be of the same type as was specified in the source type parameter. The event subscription will return only events generated by the specified objects. If not specified, then events are returned for all objects within the source type specified.

Example: my-cluster-1, my-cluster-2

Example: my-snapshot-20131010

Type: Array of strings

Required: No

### **SourceType**

The type of source that will be generating the events. For example, if you want to be notified of events generated by a cluster, you would set this parameter to cluster. If this value is not specified, events are returned for all Amazon Redshift objects in your AWS account. You must specify a source type in order to specify source IDs.

Valid values: cluster, cluster-parameter-group, cluster-security-group, and cluster-snapshot.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **EventSubscription**

Describes event subscriptions.

Type: [EventSubscription](#) (p. 274) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **InvalidSubscriptionStateFault**

The subscription request is invalid because it is a duplicate request. This subscription request is already in progress.

HTTP Status Code: 400

### **SNSInvalidTopic**

Amazon SNS has responded that there is a problem with the specified Amazon SNS topic.

HTTP Status Code: 400

### **SNSNoAuthorization**

You do not have permission to publish to the specified Amazon SNS topic.

HTTP Status Code: 400

### **SNSTopicArnNotFound**

An Amazon SNS topic with the specified Amazon Resource Name (ARN) does not exist.

HTTP Status Code: 404

### **SourceNotFound**

The specified Amazon Redshift event source could not be found.

HTTP Status Code: 404

**SubscriptionCategoryNotFound**

The value specified for the event category was not one of the allowed values, or it specified a category that does not apply to the specified source type. The allowed values are Configuration, Management, Monitoring, and Security.

HTTP Status Code: 404

**SubscriptionEventIdNotFound**

An Amazon Redshift event with the specified event ID does not exist.

HTTP Status Code: 404

**SubscriptionNotFound**

An Amazon Redshift event notification subscription with the specified name does not exist.

HTTP Status Code: 404

**SubscriptionSeverityNotFound**

The value specified for the event severity was not one of the allowed values, or it specified a severity that does not apply to the specified source type. The allowed values are ERROR and INFO.

HTTP Status Code: 404

## See Also

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

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

# ModifySnapshotCopyRetentionPeriod

Modifies the number of days to retain snapshots in the destination AWS Region after they are copied from the source AWS Region. By default, this operation only changes the retention period of copied automated snapshots. The retention periods for both new and existing copied automated snapshots are updated with the new retention period. You can set the manual option to change only the retention periods of copied manual snapshots. If you set this option, only newly copied manual snapshots have the new retention period.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The unique identifier of the cluster for which you want to change the retention period for either automated or manual snapshots that are copied to a destination AWS Region.

Constraints: Must be the valid name of an existing cluster that has cross-region snapshot copy enabled.

Type: String

Required: Yes

### RetentionPeriod

The number of days to retain automated snapshots in the destination AWS Region after they are copied from the source AWS Region.

By default, this only changes the retention period of copied automated snapshots.

If you decrease the retention period for automated snapshots that are copied to a destination AWS Region, Amazon Redshift deletes any existing automated snapshots that were copied to the destination AWS Region and that fall outside of the new retention period.

Constraints: Must be at least 1 and no more than 35 for automated snapshots.

If you specify the `manual` option, only newly copied manual snapshots will have the new retention period.

If you specify the value of -1 newly copied manual snapshots are retained indefinitely.

Constraints: The number of days must be either -1 or an integer between 1 and 3,653 for manual snapshots.

Type: Integer

Required: Yes

### Manual

Indicates whether to apply the snapshot retention period to newly copied manual snapshots instead of automated snapshots.

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster](#) (p. 241) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **InvalidClusterState**

The specified cluster is not in the `available` state.

HTTP Status Code: 400

### **InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.

The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

### **SnapshotCopyDisabledFault**

Cross-region snapshot copy was temporarily disabled. Try your request again.

HTTP Status Code: 400

### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## See Also

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

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

- [AWS SDK for Ruby V2](#)

# ModifySnapshotSchedule

Modifies a snapshot schedule. Any schedule associated with a cluster is modified asynchronously.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ScheduleDefinitions.ScheduleDefinition.N**

An updated list of schedule definitions. A schedule definition is made up of schedule expressions, for example, "cron(30 12 \*)" or "rate(12 hours)".

Type: Array of strings

Required: Yes

### **ScheduleIdentifier**

A unique alphanumeric identifier of the schedule to modify.

Type: String

Required: Yes

## Response Elements

The following elements are returned by the service.

### **NextInvocations.SnapshotTime.N**

Type: Array of timestamps

### **ScheduleDefinitions.ScheduleDefinition.N**

A list of ScheduleDefinitions

Type: Array of strings

### **ScheduleDescription**

The description of the schedule.

Type: String

### **ScheduleIdentifier**

A unique identifier for the schedule.

Type: String

### **Tags.Tag.N**

An optional set of tags describing the schedule.

Type: Array of [Tag](#) (p. 312) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 319).

### **InvalidSchedule**

The schedule you submitted isn't valid.

HTTP Status Code: 400

### **SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400

### **SnapshotScheduleUpdateInProgress**

The specified snapshot schedule is already being updated.

HTTP Status Code: 400

## See Also

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

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



# PurchaseReservedNodeOffering

Allows you to purchase reserved nodes. Amazon Redshift offers a predefined set of reserved node offerings. You can purchase one or more of the offerings. You can call the [DescribeReservedNodeOfferings \(p. 134\)](#) API to obtain the available reserved node offerings. You can call this API by providing a specific reserved node offering and the number of nodes you want to reserve.

For more information about reserved node offerings, go to [Purchasing Reserved Nodes](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ReservedNodeOfferingId**

The unique identifier of the reserved node offering you want to purchase.

Type: String

Required: Yes

### **NodeCount**

The number of reserved nodes that you want to purchase.

Default: 1

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

### **ReservedNode**

Describes a reserved node. You can call the [DescribeReservedNodeOfferings \(p. 134\)](#) API to obtain the available reserved node offerings.

Type: [ReservedNode \(p. 288\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ReservedNodeAlreadyExists**

User already has a reservation with the given identifier.

HTTP Status Code: 404

### **ReservedNodeOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

### ReservedNodeQuotaExceeded

Request would exceed the user's compute node quota. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### UnsupportedOperation

The requested operation isn't supported.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=PurchaseReservedNodeOffering
&ReservedNodeOfferingId=3a98bf7d-979a-49cc-b568-18f24315baf0
&NodeCount=2
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130117/us-east-1/redshift/aws4_request
&x-amz-date=20130117T232351Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<PurchaseReservedNodeOfferingResponse xmlns="http://redshift.amazonaws.com/
doc/2012-12-01/">
  <PurchaseReservedNodeOfferingResult>
    <ReservedNode>
      <StartTime>2013-01-18T21:42:44.402Z</StartTime>
      <OfferingType>Heavy Utilization</OfferingType>
      <Duration>94608000</Duration>
      <RecurringCharges>
        <RecurringCharge>
          <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
          <RecurringChargeAmount>0.21</RecurringChargeAmount>
        </RecurringCharge>
      </RecurringCharges>
      <FixedPrice>12452.0</FixedPrice>
      <UsagePrice>0.0</UsagePrice>
      <State>payment-pending</State>
      <NodeType>ds2.8xlarge</NodeType>
      <NodeCount>2</NodeCount>
      <ReservedNodeOfferingType>regular</ReservedNodeOfferingType>
      <ReservedNodeId>1ba8e2e3-dacf-48d9-841f-cc675182a8a6</ReservedNodeId>
    </ReservedNode>
  </PurchaseReservedNodeOfferingResult>
  <ResponseMetadata>
    <RequestId>fcb117cc-61b7-11e2-b6e9-87e586e4ca38</RequestId>
  </ResponseMetadata>
</PurchaseReservedNodeOfferingResponse>
```

## See Also

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

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

# RebootCluster

Reboots a cluster. This action is taken as soon as possible. It results in a momentary outage to the cluster, during which the cluster status is set to `rebooting`. A cluster event is created when the reboot is completed. Any pending cluster modifications (see [ModifyCluster \(p. 171\)](#)) are applied at this reboot. For more information about managing clusters, go to [Amazon Redshift Clusters](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterIdentifier**

The cluster identifier.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/  
?Action=RebootCluster
```

```
&ClusterIdentifier=examplecluster
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T021951Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

## Sample Response

```
<RebootClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RebootClusterResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster.cobaosmlqshn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>rebooting</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
      </ClusterSecurityGroups>
      <AvailabilityZone>us-east-1c</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster</ClusterIdentifier>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <MasterUsername>adminuser</MasterUsername>
    </Cluster>
  </RebootClusterResult>
  <ResponseMetadata>
    <RequestId>5edee79e-6503-11e2-9e70-918437dd236d</RequestId>
  </ResponseMetadata>
</RebootClusterResponse>
```

## See Also

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

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

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

# ResetClusterParameterGroup

Sets one or more parameters of the specified parameter group to their default values and sets the source values of the parameters to "engine-default". To reset the entire parameter group specify the *ResetAllParameters* parameter. For parameter changes to take effect you must reboot any associated clusters.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### **ParameterGroupName**

The name of the cluster parameter group to be reset.

Type: String

Required: Yes

### **Parameters.Parameter.N**

An array of names of parameters to be reset. If *ResetAllParameters* option is not used, then at least one parameter name must be supplied.

Constraints: A maximum of 20 parameters can be reset in a single request.

Type: Array of [Parameter](#) (p. 283) objects

Required: No

### **ResetAllParameters**

If `true`, all parameters in the specified parameter group will be reset to their default values.

Default: `true`

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **ParameterGroupName**

The name of the cluster parameter group.

Type: String

### **ParameterGroupStatus**

The status of the parameter group. For example, if you made a change to a parameter group name-value pair, then the change could be pending a reboot of an associated cluster.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

### **InvalidClusterParameterGroupState**

The cluster parameter group action can not be completed because another task is in progress that involves the parameter group. Wait a few moments and try the operation again.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=ResetClusterParameterGroup
&ParameterGroupName=parametergroup1
&Parameters.member.1.ParameterName=extra_float_digits
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T020847Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<ResetClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResetClusterParameterGroupResult>
    <ParameterGroupStatus>Your parameter group has been updated. Updates to dynamic
    parameters will be applied immediately. Updates to static parameters will be applied when
    you reboot the associated Clusters.</ParameterGroupStatus>
    <ParameterGroupName>parametergroup1</ParameterGroupName>
  </ResetClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>625d23c1-40dc-11e2-8a25-eb010998df4e</RequestId>
  </ResponseMetadata>
</ResetClusterParameterGroupResponse>
```

## See Also

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

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



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

# ResizeCluster

Changes the size of the cluster. You can change the cluster's type, or change the number or type of nodes. The default behavior is to use the elastic resize method. With an elastic resize, your cluster is available for read and write operations more quickly than with the classic resize method.

Elastic resize operations have the following restrictions:

- You can only resize clusters of the following types:
  - dc2.large
  - dc2.8xlarge
  - ds2.xlarge
  - ds2.8xlarge
- The type of nodes that you add must match the node type for the cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 317).

### ClusterIdentifier

The unique identifier for the cluster to resize.

Type: String

Required: Yes

### NumberOfNodes

The new number of nodes for the cluster.

Type: Integer

Required: Yes

### Classic

A boolean value indicating whether the resize operation is using the classic resize process. If you don't provide this parameter or set the value to `false`, the resize type is elastic.

Type: Boolean

Required: No

### ClusterType

The new cluster type for the specified cluster.

Type: String

Required: No

### NodeType

The new node type for the nodes you are adding.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### **InsufficientClusterCapacity**

The number of nodes specified exceeds the allotted capacity of the cluster.

HTTP Status Code: 400

### **InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

### **LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

### **NumberOfNodesPerClusterLimitExceeded**

The operation would exceed the number of nodes allowed for a cluster.

HTTP Status Code: 400

### **NumberOfNodesQuotaExceeded**

The operation would exceed the number of nodes allotted to the account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

### **UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

### **UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

### **UnsupportedOptionFault**

A request option was specified that is not supported.

HTTP Status Code: 400

## See Also

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

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

## RestoreFromClusterSnapshot

Creates a new cluster from a snapshot. By default, Amazon Redshift creates the resulting cluster with the same configuration as the original cluster from which the snapshot was created, except that the new cluster is created with the default cluster security and parameter groups. After Amazon Redshift creates the cluster, you can use the [ModifyCluster \(p. 171\)](#) API to associate a different security group and different parameter group with the restored cluster. If you are using a DS node type, you can also choose to change to another DS node type of the same size during restore.

If you restore a cluster into a VPC, you must provide a cluster subnet group where you want the cluster restored.

For more information about working with snapshots, go to [Amazon Redshift Snapshots](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The identifier of the cluster that will be created from restoring the snapshot.

Constraints:

- Must contain from 1 to 63 alphanumeric characters or hyphens.
- Alphabetic characters must be lowercase.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.
- Must be unique for all clusters within an AWS account.

Type: String

Required: Yes

### SnapshotIdentifier

The name of the snapshot from which to create the new cluster. This parameter isn't case sensitive.

Example: `my-snapshot-id`

Type: String

Required: Yes

### AdditionalInfo

Reserved.

Type: String

Required: No

### AllowVersionUpgrade

If `true`, major version upgrades can be applied during the maintenance window to the Amazon Redshift engine that is running on the cluster.

Default: `true`

Type: Boolean

Required: No

**AutomatedSnapshotRetentionPeriod**

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with [CreateClusterSnapshot \(p. 38\)](#).

Default: The value selected for the cluster from which the snapshot was taken.

Constraints: Must be a value from 0 to 35.

Type: Integer

Required: No

**AvailabilityZone**

The Amazon EC2 Availability Zone in which to restore the cluster.

Default: A random, system-chosen Availability Zone.

Example: `us-east-1a`

Type: String

Required: No

**ClusterParameterGroupName**

The name of the parameter group to be associated with this cluster.

Default: The default Amazon Redshift cluster parameter group. For information about the default parameter group, go to [Working with Amazon Redshift Parameter Groups](#).

Constraints:

- Must be 1 to 255 alphanumeric characters or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

**ClusterSecurityGroups.ClusterSecurityGroupName.N**

A list of security groups to be associated with this cluster.

Default: The default cluster security group for Amazon Redshift.

Cluster security groups only apply to clusters outside of VPCs.

Type: Array of strings

Required: No

**ClusterSubnetGroupName**

The name of the subnet group where you want to cluster restored.

A snapshot of cluster in VPC can be restored only in VPC. Therefore, you must provide subnet group name where you want the cluster restored.

Type: String

Required: No

**ElasticIp**

The elastic IP (EIP) address for the cluster.

Type: String

Required: No

**EnhancedVpcRouting**

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: `false`

Type: Boolean

Required: No

**HsmClientCertificateIdentifier**

Specifies the name of the HSM client certificate the Amazon Redshift cluster uses to retrieve the data encryption keys stored in an HSM.

Type: String

Required: No

**HsmConfigurationIdentifier**

Specifies the name of the HSM configuration that contains the information the Amazon Redshift cluster can use to retrieve and store keys in an HSM.

Type: String

Required: No

**IamRoles.IamRoleArn.N**

A list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services. You must supply the IAM roles in their Amazon Resource Name (ARN) format. You can supply up to 10 IAM roles in a single request.

A cluster can have up to 10 IAM roles associated at any time.

Type: Array of strings

Required: No

**KmsKeyId**

The AWS Key Management Service (KMS) key ID of the encryption key that you want to use to encrypt data in the cluster that you restore from a shared snapshot.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track for the restored cluster. When you take a snapshot, the snapshot inherits the `MaintenanceTrack` value from the cluster. The snapshot might be on a different

track than the cluster that was the source for the snapshot. For example, suppose that you take a snapshot of a cluster that is on the current track and then change the cluster to be on the trailing track. In this case, the snapshot and the source cluster are on different tracks.

Type: String

Required: No

#### **ManualSnapshotRetentionPeriod**

Type: Integer

Required: No

#### **NodeType**

The node type that the restored cluster will be provisioned with.

Default: The node type of the cluster from which the snapshot was taken. You can modify this if you are using any DS node type. In that case, you can choose to restore into another DS node type of the same size. For example, you can restore ds1.8xlarge into ds2.8xlarge, or ds1.xlarge into ds2.xlarge. If you have a DC instance type, you must restore into that same instance type and size. In other words, you can only restore a dc1.large instance type into another dc1.large instance type or dc2.large instance type. You can't restore dc1.8xlarge to dc2.8xlarge. First restore to a dc1.8xlarge cluster, then resize to a dc2.8xlarge cluster. For more information about node types, see [About Clusters and Nodes](#) in the *Amazon Redshift Cluster Management Guide*.

Type: String

Required: No

#### **OwnerAccount**

The AWS customer account used to create or copy the snapshot. Required if you are restoring a snapshot you do not own, optional if you own the snapshot.

Type: String

Required: No

#### **Port**

The port number on which the cluster accepts connections.

Default: The same port as the original cluster.

Constraints: Must be between 1115 and 65535.

Type: Integer

Required: No

#### **PreferredMaintenanceWindow**

The weekly time range (in UTC) during which automated cluster maintenance can occur.

Format: ddd:hh24:mi-ddd:hh24:mi

Default: The value selected for the cluster from which the snapshot was taken. For more information about the time blocks for each region, see [Maintenance Windows](#) in Amazon Redshift Cluster Management Guide.

Valid Days: Mon | Tue | Wed | Thu | Fri | Sat | Sun

Constraints: Minimum 30-minute window.



Type: String

Required: No

**PubliclyAccessible**

If `true`, the cluster can be accessed from a public network.

Type: Boolean

Required: No

**SnapshotClusterIdentifier**

The name of the cluster the source snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than \* for the cluster name.

Type: String

Required: No

**SnapshotScheduleIdentifier**

A unique identifier for the snapshot schedule.

Type: String

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of Virtual Private Cloud (VPC) security groups to be associated with the cluster.

Default: The default VPC security group is associated with the cluster.

VPC security groups only apply to clusters in VPCs.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**AccessToSnapshotDenied**

The owner of the specified snapshot has not authorized your account to access the snapshot.

HTTP Status Code: 400

**ClusterAlreadyExists**

The account already has a cluster with the given identifier.

HTTP Status Code: 400

**ClusterParameterGroupNotFound**

The parameter group name does not refer to an existing parameter group.

HTTP Status Code: 404

**ClusterQuotaExceeded**

The request would exceed the allowed number of cluster instances for this account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

**ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

**ClusterSubnetGroupNotFoundFault**

The cluster subnet group name does not refer to an existing cluster subnet group.

HTTP Status Code: 400

**DependentServiceRequestThrottlingFault**

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

**HsmClientCertificateNotFoundFault**

There is no Amazon Redshift HSM client certificate with the specified identifier.

HTTP Status Code: 400

**HsmConfigurationNotFoundFault**

There is no Amazon Redshift HSM configuration with the specified identifier.

HTTP Status Code: 400

**InsufficientClusterCapacity**

The number of nodes specified exceeds the allotted capacity of the cluster.

HTTP Status Code: 400

**InvalidClusterSnapshotState**

The specified cluster snapshot is not in the `available` state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

**InvalidClusterSubnetGroupStateFault**

The cluster subnet group cannot be deleted because it is in use.

HTTP Status Code: 400

**InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400

**InvalidElasticIpFault**

The Elastic IP (EIP) is invalid or cannot be found.

HTTP Status Code: 400

**InvalidRestore**

The restore is invalid.

HTTP Status Code: 406

**InvalidSubnet**

The requested subnet is not valid, or not all of the subnets are in the same VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

**LimitExceededFault**

The encryption key has exceeded its grant limit in AWS KMS.

HTTP Status Code: 400

**NumberOfNodesPerClusterLimitExceeded**

The operation would exceed the number of nodes allowed for a cluster.

HTTP Status Code: 400

**NumberOfNodesQuotaExceeded**

The operation would exceed the number of nodes allotted to the account. For information about increasing your quota, go to [Limits in Amazon Redshift](#) in the *Amazon Redshift Cluster Management Guide*.

HTTP Status Code: 400

**SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400

**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=RestoreFromClusterSnapshot
&ClusterIdentifier=examplecluster-restored
&SnapshotIdentifier=cm:examplecluster-2013-01-22-19-27-58
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T023350Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<RestoreFromClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RestoreFromClusterSnapshotResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <ClusterStatus>creating</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
      </ClusterSecurityGroups>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster-restored</ClusterIdentifier>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <MasterUsername>adminuser</MasterUsername>
    </Cluster>
  </RestoreFromClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>52a9aee8-6505-11e2-bec0-17624ad140dd</RequestId>
  </ResponseMetadata>
</RestoreFromClusterSnapshotResponse>
```

## See Also

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

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

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

# RestoreTableFromClusterSnapshot

Creates a new table from a table in an Amazon Redshift cluster snapshot. You must create the new table within the Amazon Redshift cluster that the snapshot was taken from.

You cannot use `RestoreTableFromClusterSnapshot` to restore a table with the same name as an existing table in an Amazon Redshift cluster. That is, you cannot overwrite an existing table in a cluster with a restored table. If you want to replace your original table with a new, restored table, then rename or drop your original table before you call `RestoreTableFromClusterSnapshot`. When you have renamed your original table, then you can pass the original name of the table as the `NewTableName` parameter value in the call to `RestoreTableFromClusterSnapshot`. This way, you can replace the original table with the table created from the snapshot.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterIdentifier**

The identifier of the Amazon Redshift cluster to restore the table to.

Type: String

Required: Yes

### **NewTableName**

The name of the table to create as a result of the current request.

Type: String

Required: Yes

### **SnapshotIdentifier**

The identifier of the snapshot to restore the table from. This snapshot must have been created from the Amazon Redshift cluster specified by the `ClusterIdentifier` parameter.

Type: String

Required: Yes

### **SourceDatabaseName**

The name of the source database that contains the table to restore from.

Type: String

Required: Yes

### **SourceTableName**

The name of the source table to restore from.

Type: String

Required: Yes

### **SourceSchemaName**

The name of the source schema that contains the table to restore from. If you do not specify a `SourceSchemaName` value, the default is `public`.

Type: String

Required: No

**TargetDatabaseName**

The name of the database to restore the table to.

Type: String

Required: No

**TargetSchemaName**

The name of the schema to restore the table to.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

**TableRestoreStatus**

Describes the status of a [RestoreTableFromClusterSnapshot \(p. 225\)](#) operation.

Type: [TableRestoreStatus \(p. 309\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

**ClusterNotFound**

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

**ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

**InProgressTableRestoreQuotaExceededFault**

You have exceeded the allowed number of table restore requests. Wait for your current table restore requests to complete before making a new request.

HTTP Status Code: 400

**InvalidClusterSnapshotState**

The specified cluster snapshot is not in the `available` state, or other accounts are authorized to access the snapshot.

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the `available` state.

HTTP Status Code: 400

**InvalidTableRestoreArgument**

The value specified for the `sourceDatabaseName`, `sourceSchemaName`, or `sourceTableName` parameter, or a combination of these, doesn't exist in the snapshot.

HTTP Status Code: 400

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

## See Also

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

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



# RevokeClusterSecurityGroupIngress

Revokes an ingress rule in an Amazon Redshift security group for a previously authorized IP range or Amazon EC2 security group. To add an ingress rule, see [AuthorizeClusterSecurityGroupIngress \(p. 6\)](#). For information about managing security groups, go to [Amazon Redshift Cluster Security Groups](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **ClusterSecurityGroupName**

The name of the security Group from which to revoke the ingress rule.

Type: String

Required: Yes

### **CIDRIP**

The IP range for which to revoke access. This range must be a valid Classless Inter-Domain Routing (CIDR) block of IP addresses. If `CIDRIP` is specified, `EC2SecurityGroupName` and `EC2SecurityGroupOwnerId` cannot be provided.

Type: String

Required: No

### **EC2SecurityGroupName**

The name of the EC2 Security Group whose access is to be revoked. If `EC2SecurityGroupName` is specified, `EC2SecurityGroupOwnerId` must also be provided and `CIDRIP` cannot be provided.

Type: String

Required: No

### **EC2SecurityGroupOwnerId**

The AWS account number of the owner of the security group specified in the `EC2SecurityGroupName` parameter. The AWS access key ID is not an acceptable value. If `EC2SecurityGroupOwnerId` is specified, `EC2SecurityGroupName` must also be provided. and `CIDRIP` cannot be provided.

Example: 111122223333

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **ClusterSecurityGroup**

Describes a security group.

Type: [ClusterSecurityGroup \(p. 255\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **AuthorizationNotFound**

The specified CIDR IP range or EC2 security group is not authorized for the specified cluster security group.

HTTP Status Code: 404

### **ClusterSecurityGroupNotFound**

The cluster security group name does not refer to an existing cluster security group.

HTTP Status Code: 404

### **InvalidClusterSecurityGroupState**

The state of the cluster security group is not available.

HTTP Status Code: 400

## Example

### Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=RevokeClusterSecurityGroupIngress
&ClusterSecurityGroupName=securitygroup1
&CIDRIP=192.168.40.3/32
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T021606Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

### Sample Response

```
<RevokeClusterSecurityGroupIngressResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RevokeClusterSecurityGroupIngressResult>
    <ClusterSecurityGroup>
      <EC2SecurityGroups/>
      <IPRanges/>
      <Description>my security group</Description>
      <ClusterSecurityGroupName>securitygroup1</ClusterSecurityGroupName>
    </ClusterSecurityGroup>
  </RevokeClusterSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>d8eff363-6502-11e2-a8da-655adc216806</RequestId>
  </ResponseMetadata>
</RevokeClusterSecurityGroupIngressResponse>
```

## See Also

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

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

# RevokeSnapshotAccess

Removes the ability of the specified AWS customer account to restore the specified snapshot. If the account is currently restoring the snapshot, the restore will run to completion.

For more information about working with snapshots, go to [Amazon Redshift Snapshots](#) in the *Amazon Redshift Cluster Management Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### **AccountWithRestoreAccess**

The identifier of the AWS customer account that can no longer restore the specified snapshot.

Type: String

Required: Yes

### **SnapshotIdentifier**

The identifier of the snapshot that the account can no longer access.

Type: String

Required: Yes

### **SnapshotClusterIdentifier**

The identifier of the cluster the snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than \* for the cluster name.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **Snapshot**

Describes a snapshot.

Type: [Snapshot \(p. 297\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### **AccessToSnapshotDenied**

The owner of the specified snapshot has not authorized your account to access the snapshot.

HTTP Status Code: 400

**AuthorizationNotFound**

The specified CIDR IP range or EC2 security group is not authorized for the specified cluster security group.

HTTP Status Code: 404

**ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.

HTTP Status Code: 404

## See Also

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

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

# RotateEncryptionKey

Rotates the encryption keys for a cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 317\)](#).

### ClusterIdentifier

The unique identifier of the cluster that you want to rotate the encryption keys for.

Constraints: Must be the name of valid cluster that has encryption enabled.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### Cluster

Describes a cluster.

Type: [Cluster \(p. 241\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 319\)](#).

### ClusterNotFound

The `ClusterIdentifier` parameter does not refer to an existing cluster.

HTTP Status Code: 404

### DependentServiceRequestThrottlingFault

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.

HTTP Status Code: 400

### InvalidClusterState

The specified cluster is not in the `available` state.

HTTP Status Code: 400

## See Also

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

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

# Data Types

The Amazon Redshift 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:

- [AccountAttribute](#) (p. 237)
- [AccountWithRestoreAccess](#) (p. 238)
- [AttributeValueTarget](#) (p. 239)
- [AvailabilityZone](#) (p. 240)
- [Cluster](#) (p. 241)
- [ClusterDbRevision](#) (p. 248)
- [ClusterIamRole](#) (p. 249)
- [ClusterNode](#) (p. 250)
- [ClusterParameterGroup](#) (p. 251)
- [ClusterParameterGroupStatus](#) (p. 252)
- [ClusterParameterStatus](#) (p. 253)
- [ClusterSecurityGroup](#) (p. 255)
- [ClusterSecurityGroupMembership](#) (p. 257)
- [ClusterSnapshotCopyStatus](#) (p. 258)
- [ClusterSubnetGroup](#) (p. 259)
- [ClusterVersion](#) (p. 261)
- [DataTransferProgress](#) (p. 262)
- [DefaultClusterParameters](#) (p. 264)
- [DeferredMaintenanceWindow](#) (p. 265)
- [DeleteClusterSnapshotMessage](#) (p. 266)
- [EC2SecurityGroup](#) (p. 267)
- [ElasticIpStatus](#) (p. 268)
- [Endpoint](#) (p. 269)
- [Event](#) (p. 270)
- [EventCategoriesMap](#) (p. 272)
- [EventInfoMap](#) (p. 273)
- [EventSubscription](#) (p. 274)
- [HsmClientCertificate](#) (p. 276)
- [HsmConfiguration](#) (p. 277)
- [HsmStatus](#) (p. 279)
- [IPRange](#) (p. 280)
- [MaintenanceTrack](#) (p. 281)
- [OrderableClusterOption](#) (p. 282)
- [Parameter](#) (p. 283)
- [PendingModifiedValues](#) (p. 285)



- [RecurringCharge](#) (p. 287)
- [ReservedNode](#) (p. 288)
- [ReservedNodeOffering](#) (p. 291)
- [ResizeInfo](#) (p. 293)
- [RestoreStatus](#) (p. 294)
- [RevisionTarget](#) (p. 296)
- [Snapshot](#) (p. 297)
- [SnapshotCopyGrant](#) (p. 302)
- [SnapshotErrorMessage](#) (p. 303)
- [SnapshotSchedule](#) (p. 304)
- [SnapshotSortingEntity](#) (p. 305)
- [Subnet](#) (p. 306)
- [SupportedOperation](#) (p. 307)
- [SupportedPlatform](#) (p. 308)
- [TableRestoreStatus](#) (p. 309)
- [Tag](#) (p. 312)
- [TaggedResource](#) (p. 313)
- [UpdateTarget](#) (p. 315)
- [VpcSecurityGroupMembership](#) (p. 316)

# AccountAttribute

A name value pair that describes an aspect of an account.

## Contents

### Note

In the following list, the required parameters are described first.

#### **AttributeName**

The name of the attribute.

Type: String

Required: No

#### **AttributeValues.AttributeValueTarget.N**

A list of attribute values.

Type: Array of [AttributeValueTarget](#) (p. 239) 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](#)
- [AWS SDK for Ruby V2](#)

# AccountWithRestoreAccess

Describes an AWS customer account authorized to restore a snapshot.

## Contents

### Note

In the following list, the required parameters are described first.

### AccountAlias

The identifier of an AWS support account authorized to restore a snapshot. For AWS support, the identifier is `amazon-redshift-support`.

Type: String

Required: No

### AccountId

The identifier of an AWS customer account authorized to restore a 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](#)
- [AWS SDK for Ruby V2](#)

# AttributeValueTarget

Describes an attribute value.

## Contents

### Note

In the following list, the required parameters are described first.

### 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](#)
- [AWS SDK for Ruby V2](#)

# AvailabilityZone

Describes an availability zone.

## Contents

### Note

In the following list, the required parameters are described first.

### Name

The name of the availability zone.

Type: String

Required: No

### SupportedPlatforms.SupportedPlatform.N

Type: Array of [SupportedPlatform \(p. 308\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# Cluster

Describes a cluster.

## Contents

### Note

In the following list, the required parameters are described first.

### **AllowVersionUpgrade**

A boolean value that, if `true`, indicates that major version upgrades will be applied automatically to the cluster during the maintenance window.

Type: Boolean

Required: No

### **AutomatedSnapshotRetentionPeriod**

The number of days that automatic cluster snapshots are retained.

Type: Integer

Required: No

### **AvailabilityZone**

The name of the Availability Zone in which the cluster is located.

Type: String

Required: No

### **ClusterCreateTime**

The date and time that the cluster was created.

Type: Timestamp

Required: No

### **ClusterIdentifier**

The unique identifier of the cluster.

Type: String

Required: No

### **ClusterNodes.member.N**

The nodes in the cluster.

Type: Array of [ClusterNode \(p. 250\)](#) objects

Required: No

### **ClusterParameterGroups.ClusterParameterGroup.N**

The list of cluster parameter groups that are associated with this cluster. Each parameter group in the list is returned with its status.

Type: Array of [ClusterParameterGroupStatus \(p. 252\)](#) objects

Required: No

**ClusterPublicKey**

The public key for the cluster.

Type: String

Required: No

**ClusterRevisionNumber**

The specific revision number of the database in the cluster.

Type: String

Required: No

**ClusterSecurityGroups.ClusterSecurityGroup.N**

A list of cluster security group that are associated with the cluster. Each security group is represented by an element that contains `ClusterSecurityGroup.Name` and `ClusterSecurityGroup.Status` subelements.

Cluster security groups are used when the cluster is not created in an Amazon Virtual Private Cloud (VPC). Clusters that are created in a VPC use VPC security groups, which are listed by the **VpcSecurityGroups** parameter.

Type: Array of [ClusterSecurityGroupMembership](#) (p. 257) objects

Required: No

**ClusterSnapshotCopyStatus**

A value that returns the destination region and retention period that are configured for cross-region snapshot copy.

Type: [ClusterSnapshotCopyStatus](#) (p. 258) object

Required: No

**ClusterStatus**

The current state of the cluster. Possible values are the following:

- available
- cancelling-resize
- creating
- deleting
- final-snapshot
- hardware-failure
- incompatible-hsm
- incompatible-network
- incompatible-parameters
- incompatible-restore
- modifying
- rebooting
- renaming
- resizing
- rotating-keys

- `storage-full`
- `updating-hsm`

Type: String

Required: No

**ClusterSubnetGroupName**

The name of the subnet group that is associated with the cluster. This parameter is valid only when the cluster is in a VPC.

Type: String

Required: No

**ClusterVersion**

The version ID of the Amazon Redshift engine that is running on the cluster.

Type: String

Required: No

**DataTransferProgress**

Describes the status of a cluster while it is in the process of resizing with an incremental resize.

Type: [DataTransferProgress](#) (p. 262) object

Required: No

**DBName**

The name of the initial database that was created when the cluster was created. This same name is returned for the life of the cluster. If an initial database was not specified, a database named `devdev` was created by default.

Type: String

Required: No

**DeferredMaintenanceWindows.DeferredMaintenanceWindow.N**

Describes a group of `DeferredMaintenanceWindow` objects.

Type: Array of [DeferredMaintenanceWindow](#) (p. 265) objects

Required: No

**ElasticIpStatus**

The status of the elastic IP (EIP) address.

Type: [ElasticIpStatus](#) (p. 268) object

Required: No

**ElasticResizeNumberOfNodeOptions**

The number of nodes that you can resize the cluster to with the elastic resize method.

Type: String

Required: No



**Encrypted**

A boolean value that, if `true`, indicates that data in the cluster is encrypted at rest.

Type: Boolean

Required: No

**Endpoint**

The connection endpoint.

Type: [Endpoint \(p. 269\)](#) object

Required: No

**EnhancedVpcRouting**

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: false

Type: Boolean

Required: No

**HsmStatus**

A value that reports whether the Amazon Redshift cluster has finished applying any hardware security module (HSM) settings changes specified in a modify cluster command.

Values: active, applying

Type: [HsmStatus \(p. 279\)](#) object

Required: No

**IamRoles.ClusterIamRole.N**

A list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services.

Type: Array of [ClusterIamRole \(p. 249\)](#) objects

Required: No

**KmsKeyId**

The AWS Key Management Service (AWS KMS) key ID of the encryption key used to encrypt data in the cluster.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track for the cluster.

Type: String

Required: No

### **ManualSnapshotRetentionPeriod**

The default number of days to retain a manual snapshot. If the value is -1, the snapshot is retained indefinitely. This setting doesn't change the retention period of existing snapshots.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

### **MasterUsername**

The master user name for the cluster. This name is used to connect to the database that is specified in the **DBName** parameter.

Type: String

Required: No

### **ModifyStatus**

The status of a modify operation, if any, initiated for the cluster.

Type: String

Required: No

### **NodeType**

The node type for the nodes in the cluster.

Type: String

Required: No

### **NumberOfNodes**

The number of compute nodes in the cluster.

Type: Integer

Required: No

### **PendingActions.member.N**

Cluster operations that are waiting to be started.

Type: Array of strings

Required: No

### **PendingModifiedValues**

A value that, if present, indicates that changes to the cluster are pending. Specific pending changes are identified by subelements.

Type: [PendingModifiedValues \(p. 285\)](#) object

Required: No

### **PreferredMaintenanceWindow**

The weekly time range, in Universal Coordinated Time (UTC), during which system maintenance can occur.

Type: String

Required: No

**PubliclyAccessible**

A boolean value that, if `true`, indicates that the cluster can be accessed from a public network.

Type: Boolean

Required: No

**ResizeInfo**

Returns the following:

- `AllowCancelResize`: a boolean value indicating if the resize operation can be cancelled.
- `ResizeType`: Returns `ClassicResize`

Type: [ResizeInfo \(p. 293\)](#) object

Required: No

**RestoreStatus**

A value that describes the status of a cluster restore action. This parameter returns null if the cluster was not created by restoring a snapshot.

Type: [RestoreStatus \(p. 294\)](#) object

Required: No

**SnapshotScheduleIdentifier**

A unique identifier for the cluster snapshot schedule.

Type: String

Required: No

**SnapshotScheduleState**

The current state of the cluster snapshot schedule.

Type: String

Valid Values: `MODIFYING` | `ACTIVE` | `FAILED`

Required: No

**Tags.Tag.N**

The list of tags for the cluster.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

**VpcId**

The identifier of the VPC the cluster is in, if the cluster is in a VPC.

Type: String

Required: No

**VpcSecurityGroups.VpcSecurityGroup.N**

A list of Amazon Virtual Private Cloud (Amazon VPC) security groups that are associated with the cluster. This parameter is returned only if the cluster is in a VPC.

Type: Array of [VpcSecurityGroupMembership](#) (p. 316) 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](#)
- [AWS SDK for Ruby V2](#)

# ClusterDbRevision

Describes a `ClusterDbRevision`.

## Contents

### Note

In the following list, the required parameters are described first.

#### **ClusterIdentifier**

The unique identifier of the cluster.

Type: String

Required: No

#### **CurrentDatabaseRevision**

A string representing the current cluster version.

Type: String

Required: No

#### **DatabaseRevisionReleaseDate**

The date on which the database revision was released.

Type: Timestamp

Required: No

#### **RevisionTargets.RevisionTarget.N**

A list of `RevisionTarget` objects, where each object describes the database revision that a cluster can be updated to.

Type: Array of [RevisionTarget](#) (p. 296) 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](#)
- [AWS SDK for Ruby V2](#)

# ClusterIamRole

An AWS Identity and Access Management (IAM) role that can be used by the associated Amazon Redshift cluster to access other AWS services.

## Contents

### Note

In the following list, the required parameters are described first.

### ApplyStatus

A value that describes the status of the IAM role's association with an Amazon Redshift cluster.

The following are possible statuses and descriptions.

- `in-sync`: The role is available for use by the cluster.
- `adding`: The role is in the process of being associated with the cluster.
- `removing`: The role is in the process of being disassociated with the cluster.

Type: String

Required: No

### IamRoleArn

The Amazon Resource Name (ARN) of the IAM role, for example, `arn:aws:iam::123456789012:role/RedshiftCopyUnload`.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# ClusterNode

The identifier of a node in a cluster.

## Contents

### Note

In the following list, the required parameters are described first.

### NodeRole

Whether the node is a leader node or a compute node.

Type: String

Required: No

### PrivateIPAddress

The private IP address of a node within a cluster.

Type: String

Required: No

### PublicIPAddress

The public IP address of a node within a cluster.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# ClusterParameterGroup

Describes a parameter group.

## Contents

### Note

In the following list, the required parameters are described first.

### Description

The description of the parameter group.

Type: String

Required: No

### ParameterGroupFamily

The name of the cluster parameter group family that this cluster parameter group is compatible with.

Type: String

Required: No

### ParameterGroupName

The name of the cluster parameter group.

Type: String

Required: No

### Tags.Tag.N

The list of tags for the cluster parameter group.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# ClusterParameterGroupStatus

Describes the status of a parameter group.

## Contents

### Note

In the following list, the required parameters are described first.

### ClusterParameterStatusList.member.N

The list of parameter statuses.

For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

Type: Array of [ClusterParameterStatus](#) (p. 253) objects

Required: No

### ParameterApplyStatus

The status of parameter updates.

Type: String

Required: No

### ParameterGroupName

The name of the cluster parameter 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](#)
- [AWS SDK for Ruby V2](#)

# ClusterParameterStatus

Describes the status of a parameter group.

## Contents

### Note

In the following list, the required parameters are described first.

### ParameterApplyErrorDescription

The error that prevented the parameter from being applied to the database.

Type: String

Required: No

### ParameterApplyStatus

The status of the parameter that indicates whether the parameter is in sync with the database, waiting for a cluster reboot, or encountered an error when being applied.

The following are possible statuses and descriptions.

- `in-sync`: The parameter value is in sync with the database.
- `pending-reboot`: The parameter value will be applied after the cluster reboots.
- `applying`: The parameter value is being applied to the database.
- `invalid-parameter`: Cannot apply the parameter value because it has an invalid value or syntax.
- `apply-deferred`: The parameter contains static property changes. The changes are deferred until the cluster reboots.
- `apply-error`: Cannot connect to the cluster. The parameter change will be applied after the cluster reboots.
- `unknown-error`: Cannot apply the parameter change right now. The change will be applied after the cluster reboots.

Type: String

Required: No

### ParameterName

The name of the parameter.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)



# ClusterSecurityGroup

Describes a security group.

## Contents

### Note

In the following list, the required parameters are described first.

#### ClusterSecurityGroupName

The name of the cluster security group to which the operation was applied.

Type: String

Required: No

#### Description

A description of the security group.

Type: String

Required: No

#### EC2SecurityGroups.EC2SecurityGroup.N

A list of EC2 security groups that are permitted to access clusters associated with this cluster security group.

Type: Array of [EC2SecurityGroup \(p. 267\)](#) objects

Required: No

#### IPRanges.IPRange.N

A list of IP ranges (CIDR blocks) that are permitted to access clusters associated with this cluster security group.

Type: Array of [IPRange \(p. 280\)](#) objects

Required: No

#### Tags.Tag.N

The list of tags for the cluster security group.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# ClusterSecurityGroupMembership

Describes a cluster security group.

## Contents

### Note

In the following list, the required parameters are described first.

### ClusterSecurityGroupName

The name of the cluster security group.

Type: String

Required: No

### Status

The status of the cluster 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](#)
- [AWS SDK for Ruby V2](#)

# ClusterSnapshotCopyStatus

Returns the destination region and retention period that are configured for cross-region snapshot copy.

## Contents

### Note

In the following list, the required parameters are described first.

### DestinationRegion

The destination region that snapshots are automatically copied to when cross-region snapshot copy is enabled.

Type: String

Required: No

### ManualSnapshotRetentionPeriod

The number of days that automated snapshots are retained in the destination region after they are copied from a source region. If the value is -1, the manual snapshot is retained indefinitely.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

### RetentionPeriod

The number of days that automated snapshots are retained in the destination region after they are copied from a source region.

Type: Long

Required: No

### SnapshotCopyGrantName

The name of the snapshot copy grant.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# ClusterSubnetGroup

Describes a subnet group.

## Contents

### Note

In the following list, the required parameters are described first.

### ClusterSubnetGroupName

The name of the cluster subnet group.

Type: String

Required: No

### Description

The description of the cluster subnet group.

Type: String

Required: No

### SubnetGroupStatus

The status of the cluster subnet group. Possible values are `Complete`, `Incomplete` and `Invalid`.

Type: String

Required: No

### Subnets.Subnet.N

A list of the VPC [Subnet \(p. 306\)](#) elements.

Type: Array of [Subnet \(p. 306\)](#) objects

Required: No

### Tags.Tag.N

The list of tags for the cluster subnet group.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

### VpcId

The VPC ID of the cluster subnet 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](#)
- [AWS SDK for Ruby V2](#)

# ClusterVersion

Describes a cluster version, including the parameter group family and description of the version.

## Contents

### Note

In the following list, the required parameters are described first.

### ClusterParameterGroupFamily

The name of the cluster parameter group family for the cluster.

Type: String

Required: No

### ClusterVersion

The version number used by the cluster.

Type: String

Required: No

### Description

The description of the cluster 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](#)
- [AWS SDK for Ruby V2](#)

# DataTransferProgress

Describes the status of a cluster while it is in the process of resizing with an incremental resize.

## Contents

### Note

In the following list, the required parameters are described first.

### CurrentRateInMegaBytesPerSecond

Describes the data transfer rate in MB's per second.

Type: Double

Required: No

### DataTransferredInMegaBytes

Describes the total amount of data that has been transfered in MB's.

Type: Long

Required: No

### ElapsedTimeInSeconds

Describes the number of seconds that have elapsed during the data transfer.

Type: Long

Required: No

### EstimatedTimeToCompletionInSeconds

Describes the estimated number of seconds remaining to complete the transfer.

Type: Long

Required: No

### Status

Describes the status of the cluster. While the transfer is in progress the status is `transferringdata`.

Type: String

Required: No

### TotalDataInMegaBytes

Describes the total amount of data to be transfered in megabytes.

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](#)
- [AWS SDK for Ruby V2](#)

# DefaultClusterParameters

Describes the default cluster parameters for a parameter group family.

## Contents

### Note

In the following list, the required parameters are described first.

### Marker

A value that indicates the starting point for the next set of response records in a subsequent request. If a value is returned in a response, you can retrieve the next set of records by providing this returned marker value in the `Marker` parameter and retrying the command. If the `Marker` field is empty, all response records have been retrieved for the request.

Type: String

Required: No

### ParameterGroupFamily

The name of the cluster parameter group family to which the engine default parameters apply.

Type: String

Required: No

### Parameters.Parameter.N

The list of cluster default parameters.

Type: Array of [Parameter](#) (p. 283) 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](#)
- [AWS SDK for Ruby V2](#)

# DeferredMaintenanceWindow

Describes a deferred maintenance window

## Contents

### Note

In the following list, the required parameters are described first.

### DeferMaintenanceEndTime

A timestamp for the end of the time period when we defer maintenance.

Type: Timestamp

Required: No

### DeferMaintenanceIdentifier

A unique identifier for the maintenance window.

Type: String

Required: No

### DeferMaintenanceStartTime

A timestamp for the beginning of the time period when we defer maintenance.

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](#)
- [AWS SDK for Ruby V2](#)

# DeleteClusterSnapshotMessage

## Contents

### Note

In the following list, the required parameters are described first.

### SnapshotIdentifier

The unique identifier of the manual snapshot to be deleted.

Constraints: Must be the name of an existing snapshot that is in the available, failed, or cancelled state.

Type: String

Required: Yes

### SnapshotClusterIdentifier

The unique identifier of the cluster the snapshot was created from. This parameter is required if your IAM user has a policy containing a snapshot resource element that specifies anything other than \* for the cluster name.

Constraints: Must be the name of valid cluster.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# EC2SecurityGroup

Describes an Amazon EC2 security group.

## Contents

### Note

In the following list, the required parameters are described first.

### **EC2SecurityGroupName**

The name of the EC2 Security Group.

Type: String

Required: No

### **EC2SecurityGroupOwnerId**

The AWS ID of the owner of the EC2 security group specified in the `EC2SecurityGroupName` field.

Type: String

Required: No

### **Status**

The status of the EC2 security group.

Type: String

Required: No

### **Tags.Tag.N**

The list of tags for the EC2 security group.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# ElasticIpStatus

Describes the status of the elastic IP (EIP) address.

## Contents

### Note

In the following list, the required parameters are described first.

### ElasticIp

The elastic IP (EIP) address for the cluster.

Type: String

Required: No

### Status

The status of the elastic IP (EIP) 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](#)
- [AWS SDK for Ruby V2](#)

# Endpoint

Describes a connection endpoint.

## Contents

### Note

In the following list, the required parameters are described first.

### Address

The DNS address of the Cluster.

Type: String

Required: No

### Port

The port that the database engine is listening on.

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](#)
- [AWS SDK for Ruby V2](#)

# Event

Describes an event.

## Contents

### Note

In the following list, the required parameters are described first.

### Date

The date and time of the event.

Type: Timestamp

Required: No

### EventCategories.EventCategory.N

A list of the event categories.

Values: Configuration, Management, Monitoring, Security

Type: Array of strings

Required: No

### EventId

The identifier of the event.

Type: String

Required: No

### Message

The text of this event.

Type: String

Required: No

### Severity

The severity of the event.

Values: ERROR, INFO

Type: String

Required: No

### SourceIdentifier

The identifier for the source of the event.

Type: String

Required: No

### SourceType

The source type for this event.

Type: String

Valid Values: `cluster` | `cluster-parameter-group` | `cluster-security-group` | `cluster-snapshot`

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# EventCategoriesMap

Describes event categories.

## Contents

### Note

In the following list, the required parameters are described first.

### Events.EventInfoMap.N

The events in the event category.

Type: Array of [EventInfoMap \(p. 273\)](#) objects

Required: No

### SourceType

The source type, such as cluster or cluster-snapshot, that the returned categories belong to.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# EventInfoMap

Describes event information.

## Contents

### Note

In the following list, the required parameters are described first.

### EventCategories.EventCategory.N

The category of an Amazon Redshift event.

Type: Array of strings

Required: No

### EventDescription

The description of an Amazon Redshift event.

Type: String

Required: No

### EventId

The identifier of an Amazon Redshift event.

Type: String

Required: No

### Severity

The severity of the event.

Values: ERROR, INFO

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# EventSubscription

Describes event subscriptions.

## Contents

### Note

In the following list, the required parameters are described first.

### CustomerAwsId

The AWS customer account associated with the Amazon Redshift event notification subscription.

Type: String

Required: No

### CustSubscriptionId

The name of the Amazon Redshift event notification subscription.

Type: String

Required: No

### Enabled

A boolean value indicating whether the subscription is enabled; `true` indicates that the subscription is enabled.

Type: Boolean

Required: No

### EventCategoriesList.EventCategory.N

The list of Amazon Redshift event categories specified in the event notification subscription.

Values: Configuration, Management, Monitoring, Security

Type: Array of strings

Required: No

### Severity

The event severity specified in the Amazon Redshift event notification subscription.

Values: ERROR, INFO

Type: String

Required: No

### SnsTopicArn

The Amazon Resource Name (ARN) of the Amazon SNS topic used by the event notification subscription.

Type: String

Required: No

**SourceIdsList.SourceId.N**

A list of the sources that publish events to the Amazon Redshift event notification subscription.

Type: Array of strings

Required: No

**SourceType**

The source type of the events returned the Amazon Redshift event notification, such as cluster, or cluster-snapshot.

Type: String

Required: No

**Status**

The status of the Amazon Redshift event notification subscription.

Constraints:

- Can be one of the following: active | no-permission | topic-not-exist
- The status "no-permission" indicates that Amazon Redshift no longer has permission to post to the Amazon SNS topic. The status "topic-not-exist" indicates that the topic was deleted after the subscription was created.

Type: String

Required: No

**SubscriptionCreationTime**

The date and time the Amazon Redshift event notification subscription was created.

Type: Timestamp

Required: No

**Tags.Tag.N**

The list of tags for the event subscription.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# HsmClientCertificate

Returns information about an HSM client certificate. The certificate is stored in a secure Hardware Storage Module (HSM), and used by the Amazon Redshift cluster to encrypt data files.

## Contents

### Note

In the following list, the required parameters are described first.

#### **HsmClientCertificateIdentifier**

The identifier of the HSM client certificate.

Type: String

Required: No

#### **HsmClientCertificatePublicKey**

The public key that the Amazon Redshift cluster will use to connect to the HSM. You must register the public key in the HSM.

Type: String

Required: No

#### **Tags.Tag.N**

The list of tags for the HSM client certificate.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# HsmConfiguration

Returns information about an HSM configuration, which is an object that describes to Amazon Redshift clusters the information they require to connect to an HSM where they can store database encryption keys.

## Contents

### Note

In the following list, the required parameters are described first.

### Description

A text description of the HSM configuration.

Type: String

Required: No

### HsmConfigurationIdentifier

The name of the Amazon Redshift HSM configuration.

Type: String

Required: No

### HsmIpAddress

The IP address that the Amazon Redshift cluster must use to access the HSM.

Type: String

Required: No

### HsmPartitionName

The name of the partition in the HSM where the Amazon Redshift clusters will store their database encryption keys.

Type: String

Required: No

### Tags.Tag.N

The list of tags for the HSM configuration.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# HsmStatus

Describes the status of changes to HSM settings.

## Contents

### Note

In the following list, the required parameters are described first.

### **HsmClientCertificateIdentifier**

Specifies the name of the HSM client certificate the Amazon Redshift cluster uses to retrieve the data encryption keys stored in an HSM.

Type: String

Required: No

### **HsmConfigurationIdentifier**

Specifies the name of the HSM configuration that contains the information the Amazon Redshift cluster can use to retrieve and store keys in an HSM.

Type: String

Required: No

### **Status**

Reports whether the Amazon Redshift cluster has finished applying any HSM settings changes specified in a modify cluster command.

Values: active, applying

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# IPRange

Describes an IP range used in a security group.

## Contents

### Note

In the following list, the required parameters are described first.

### CIDRIP

The IP range in Classless Inter-Domain Routing (CIDR) notation.

Type: String

Required: No

### Status

The status of the IP range, for example, "authorized".

Type: String

Required: No

### Tags.Tag.N

The list of tags for the IP range.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# MaintenanceTrack

Defines a maintenance track that determines which Amazon Redshift version to apply during a maintenance window. If the value for `MaintenanceTrack` is `current`, the cluster is updated to the most recently certified maintenance release. If the value is `trailing`, the cluster is updated to the previously certified maintenance release.

## Contents

### Note

In the following list, the required parameters are described first.

### DatabaseVersion

The version number for the cluster release.

Type: String

Required: No

### MaintenanceTrackName

The name of the maintenance track. Possible values are `current` and `trailing`.

Type: String

Required: No

### UpdateTargets.UpdateTarget.N

An array of [UpdateTarget \(p. 315\)](#) objects to update with the maintenance track.

Type: Array of [UpdateTarget \(p. 315\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# OrderableClusterOption

Describes an orderable cluster option.

## Contents

### Note

In the following list, the required parameters are described first.

### AvailabilityZones.AvailabilityZone.N

A list of availability zones for the orderable cluster.

Type: Array of [AvailabilityZone](#) (p. 240) objects

Required: No

### ClusterType

The cluster type, for example `multi-node`.

Type: String

Required: No

### ClusterVersion

The version of the orderable cluster.

Type: String

Required: No

### NodeType

The node type for the orderable cluster.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# Parameter

Describes a parameter in a cluster parameter group.

## Contents

### Note

In the following list, the required parameters are described first.

### AllowedValues

The valid range of values for the parameter.

Type: String

Required: No

### ApplyType

Specifies how to apply the WLM configuration parameter. Some properties can be applied dynamically, while other properties require that any associated clusters be rebooted for the configuration changes to be applied. For more information about parameters and parameter groups, go to [Amazon Redshift Parameter Groups](#) in the *Amazon Redshift Cluster Management Guide*.

Type: String

Valid Values: `static` | `dynamic`

Required: No

### DataType

The data type of the parameter.

Type: String

Required: No

### Description

A description of the parameter.

Type: String

Required: No

### IsModifiable

If `true`, the parameter can be modified. Some parameters have security or operational implications that prevent them from being changed.

Type: Boolean

Required: No

### MinimumEngineVersion

The earliest engine version to which the parameter can apply.

Type: String

Required: No



**ParameterName**

The name of the parameter.

Type: String

Required: No

**ParameterValue**

The value of the parameter.

Type: String

Required: No

**Source**

The source of the parameter value, such as "engine-default" or "user".

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# PendingModifiedValues

Describes cluster attributes that are in a pending state. A change to one or more the attributes was requested and is in progress or will be applied.

## Contents

### Note

In the following list, the required parameters are described first.

### AutomatedSnapshotRetentionPeriod

The pending or in-progress change of the automated snapshot retention period.

Type: Integer

Required: No

### ClusterIdentifier

The pending or in-progress change of the new identifier for the cluster.

Type: String

Required: No

### ClusterType

The pending or in-progress change of the cluster type.

Type: String

Required: No

### ClusterVersion

The pending or in-progress change of the service version.

Type: String

Required: No

### EncryptionType

The encryption type for a cluster. Possible values are: KMS and None. For the China region the possible values are None, and Legacy.

Type: String

Required: No

### EnhancedVpcRouting

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: `false`

Type: Boolean

Required: No

**MaintenanceTrackName**

The name of the maintenance track that the cluster will change to during the next maintenance window.

Type: String

Required: No

**MasterUserPassword**

The pending or in-progress change of the master user password for the cluster.

Type: String

Required: No

**NodeType**

The pending or in-progress change of the cluster's node type.

Type: String

Required: No

**NumberOfNodes**

The pending or in-progress change of the number of nodes in the cluster.

Type: Integer

Required: No

**PubliclyAccessible**

The pending or in-progress change of the ability to connect to the cluster from the public network.

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](#)
- [AWS SDK for Ruby V2](#)

# RecurringCharge

Describes a recurring charge.

## Contents

### Note

In the following list, the required parameters are described first.

### RecurringChargeAmount

The amount charged per the period of time specified by the recurring charge frequency.

Type: Double

Required: No

### RecurringChargeFrequency

The frequency at which the recurring charge amount is applied.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# ReservedNode

Describes a reserved node. You can call the [DescribeReservedNodeOfferings \(p. 134\)](#) API to obtain the available reserved node offerings.

## Contents

### Note

In the following list, the required parameters are described first.

### CurrencyCode

The currency code for the reserved cluster.

Type: String

Required: No

### Duration

The duration of the node reservation in seconds.

Type: Integer

Required: No

### FixedPrice

The fixed cost Amazon Redshift charges you for this reserved node.

Type: Double

Required: No

### NodeCount

The number of reserved compute nodes.

Type: Integer

Required: No

### NodeType

The node type of the reserved node.

Type: String

Required: No

### OfferingType

The anticipated utilization of the reserved node, as defined in the reserved node offering.

Type: String

Required: No

### RecurringCharges.RecurringCharge.N

The recurring charges for the reserved node.

Type: Array of [RecurringCharge \(p. 287\)](#) objects

Required: No

**ReservedNodeId**

The unique identifier for the reservation.

Type: String

Required: No

**ReservedNodeOfferingId**

The identifier for the reserved node offering.

Type: String

Required: No

**ReservedNodeOfferingType**

Type: String

Valid Values: `Regular` | `Upgradable`

Required: No

**StartTime**

The time the reservation started. You purchase a reserved node offering for a duration. This is the start time of that duration.

Type: Timestamp

Required: No

**State**

The state of the reserved compute node.

Possible Values:

- `pending-payment`-This reserved node has recently been purchased, and the sale has been approved, but payment has not yet been confirmed.
- `active`-This reserved node is owned by the caller and is available for use.
- `payment-failed`-Payment failed for the purchase attempt.
- `retired`-The reserved node is no longer available.
- `exchanging`-The owner is exchanging the reserved node for another reserved node.

Type: String

Required: No

**UsagePrice**

The hourly rate Amazon Redshift charges you for this reserved node.

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](#)
- [AWS SDK for Ruby V2](#)

# ReservedNodeOffering

Describes a reserved node offering.

## Contents

### Note

In the following list, the required parameters are described first.

### CurrencyCode

The currency code for the compute nodes offering.

Type: String

Required: No

### Duration

The duration, in seconds, for which the offering will reserve the node.

Type: Integer

Required: No

### FixedPrice

The upfront fixed charge you will pay to purchase the specific reserved node offering.

Type: Double

Required: No

### NodeType

The node type offered by the reserved node offering.

Type: String

Required: No

### OfferingType

The anticipated utilization of the reserved node, as defined in the reserved node offering.

Type: String

Required: No

### RecurringCharges.RecurringCharge.N

The charge to your account regardless of whether you are creating any clusters using the node offering. Recurring charges are only in effect for heavy-utilization reserved nodes.

Type: Array of [RecurringCharge](#) (p. 287) objects

Required: No

### ReservedNodeOfferingId

The offering identifier.

Type: String



Required: No

**ReservedNodeOfferingType**

Type: String

Valid Values: `Regular` | `Upgradable`

Required: No

**UsagePrice**

The rate you are charged for each hour the cluster that is using the offering is running.

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](#)
- [AWS SDK for Ruby V2](#)

# ResizeInfo

Describes a resize operation.

## Contents

### Note

In the following list, the required parameters are described first.

### AllowCancelResize

A boolean value indicating if the resize operation can be cancelled.

Type: Boolean

Required: No

### ResizeType

Returns the value `ClassicResize`.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# RestoreStatus

Describes the status of a cluster restore action. Returns null if the cluster was not created by restoring a snapshot.

## Contents

### Note

In the following list, the required parameters are described first.

### CurrentRestoreRateInMegaBytesPerSecond

The number of megabytes per second being transferred from the backup storage. Returns the average rate for a completed backup.

Type: Double

Required: No

### ElapsedTimeInSeconds

The amount of time an in-progress restore has been running, or the amount of time it took a completed restore to finish.

Type: Long

Required: No

### EstimatedTimeToCompletionInSeconds

The estimate of the time remaining before the restore will complete. Returns 0 for a completed restore.

Type: Long

Required: No

### ProgressInMegaBytes

The number of megabytes that have been transferred from snapshot storage.

Type: Long

Required: No

### SnapshotSizeInMegaBytes

The size of the set of snapshot data used to restore the cluster.

Type: Long

Required: No

### Status

The status of the restore action. Returns starting, restoring, completed, or failed.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# RevisionTarget

Describes a RevisionTarget.

## Contents

### Note

In the following list, the required parameters are described first.

### DatabaseRevision

A unique string that identifies the version to update the cluster to. You can use this value in [ModifyClusterDbRevision \(p. 180\)](#).

Type: String

Required: No

### DatabaseRevisionReleaseDate

The date on which the database revision was released.

Type: Timestamp

Required: No

### Description

A string that describes the changes and features that will be applied to the cluster when it is updated to the corresponding [ClusterDbRevision \(p. 248\)](#).

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# Snapshot

Describes a snapshot.

## Contents

### Note

In the following list, the required parameters are described first.

### **AccountsWithRestoreAccess.AccountWithRestoreAccess.N**

A list of the AWS customer accounts authorized to restore the snapshot. Returns `null` if no accounts are authorized. Visible only to the snapshot owner.

Type: Array of [AccountWithRestoreAccess \(p. 238\)](#) objects

Required: No

### **ActualIncrementalBackupSizeInMegaBytes**

The size of the incremental backup.

Type: Double

Required: No

### **AvailabilityZone**

The Availability Zone in which the cluster was created.

Type: String

Required: No

### **BackupProgressInMegaBytes**

The number of megabytes that have been transferred to the snapshot backup.

Type: Double

Required: No

### **ClusterCreateTime**

The time (UTC) when the cluster was originally created.

Type: Timestamp

Required: No

### **ClusterIdentifier**

The identifier of the cluster for which the snapshot was taken.

Type: String

Required: No

### **ClusterVersion**

The version ID of the Amazon Redshift engine that is running on the cluster.

Type: String

Required: No

**CurrentBackupRateInMegaBytesPerSecond**

The number of megabytes per second being transferred to the snapshot backup. Returns 0 for a completed backup.

Type: Double

Required: No

**DBName**

The name of the database that was created when the cluster was created.

Type: String

Required: No

**ElapsedTimeInSeconds**

The amount of time an in-progress snapshot backup has been running, or the amount of time it took a completed backup to finish.

Type: Long

Required: No

**Encrypted**

If `true`, the data in the snapshot is encrypted at rest.

Type: Boolean

Required: No

**EncryptedWithHSM**

A boolean that indicates whether the snapshot data is encrypted using the HSM keys of the source cluster. `true` indicates that the data is encrypted using HSM keys.

Type: Boolean

Required: No

**EnhancedVpcRouting**

An option that specifies whether to create the cluster with enhanced VPC routing enabled. To create a cluster that uses enhanced VPC routing, the cluster must be in a VPC. For more information, see [Enhanced VPC Routing](#) in the Amazon Redshift Cluster Management Guide.

If this option is `true`, enhanced VPC routing is enabled.

Default: `false`

Type: Boolean

Required: No

**EstimatedSecondsToCompletion**

The estimate of the time remaining before the snapshot backup will complete. Returns 0 for a completed backup.

Type: Long

Required: No

**KmsKeyId**

The AWS Key Management Service (KMS) key ID of the encryption key that was used to encrypt data in the cluster from which the snapshot was taken.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track for the snapshot.

Type: String

Required: No

**ManualSnapshotRemainingDays**

The number of days until a manual snapshot will pass its retention period.

Type: Integer

Required: No

**ManualSnapshotRetentionPeriod**

The number of days that a manual snapshot is retained. If the value is -1, the manual snapshot is retained indefinitely.

The value must be either -1 or an integer between 1 and 3,653.

Type: Integer

Required: No

**MasterUsername**

The master user name for the cluster.

Type: String

Required: No

**NodeType**

The node type of the nodes in the cluster.

Type: String

Required: No

**NumberOfNodes**

The number of nodes in the cluster.

Type: Integer

Required: No

**OwnerAccount**

For manual snapshots, the AWS customer account used to create or copy the snapshot. For automatic snapshots, the owner of the cluster. The owner can perform all snapshot actions, such as sharing a manual snapshot.

Type: String



Required: No

**Port**

The port that the cluster is listening on.

Type: Integer

Required: No

**RestorableNodeTypes.NodeType.N**

The list of node types that this cluster snapshot is able to restore into.

Type: Array of strings

Required: No

**SnapshotCreateTime**

The time (in UTC format) when Amazon Redshift began the snapshot. A snapshot contains a copy of the cluster data as of this exact time.

Type: Timestamp

Required: No

**SnapshotIdentifier**

The snapshot identifier that is provided in the request.

Type: String

Required: No

**SnapshotRetentionStartTime**

A timestamp representing the start of the retention period for the snapshot.

Type: Timestamp

Required: No

**SnapshotType**

The snapshot type. Snapshots created using [CreateClusterSnapshot \(p. 38\)](#) and [CopyClusterSnapshot \(p. 18\)](#) are of type "manual".

Type: String

Required: No

**SourceRegion**

The source region from which the snapshot was copied.

Type: String

Required: No

**Status**

The snapshot status. The value of the status depends on the API operation used:

- [CreateClusterSnapshot \(p. 38\)](#) and [CopyClusterSnapshot \(p. 18\)](#) returns status as "creating".
- [DescribeClusterSnapshots \(p. 98\)](#) returns status as "creating", "available", "final snapshot", or "failed".

- [DeleteClusterSnapshot \(p. 68\)](#) returns status as "deleted".

Type: String

Required: No

**Tags.Tag.N**

The list of tags for the cluster snapshot.

Type: Array of [Tag \(p. 312\)](#) objects

Required: No

**TotalBackupSizeInMegaBytes**

The size of the complete set of backup data that would be used to restore the cluster.

Type: Double

Required: No

**VpcId**

The VPC identifier of the cluster if the snapshot is from a cluster in a VPC. Otherwise, this field is not in the output.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# SnapshotCopyGrant

The snapshot copy grant that grants Amazon Redshift permission to encrypt copied snapshots with the specified customer master key (CMK) from AWS KMS in the destination region.

For more information about managing snapshot copy grants, go to [Amazon Redshift Database Encryption](#) in the *Amazon Redshift Cluster Management Guide*.

## Contents

### Note

In the following list, the required parameters are described first.

### KmsKeyId

The unique identifier of the customer master key (CMK) in AWS KMS to which Amazon Redshift is granted permission.

Type: String

Required: No

### SnapshotCopyGrantName

The name of the snapshot copy grant.

Type: String

Required: No

### Tags.Tag.N

A list of tag instances.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# SnapshotErrorMessage

Describes the errors returned by a snapshot.

## Contents

### Note

In the following list, the required parameters are described first.

### FailureCode

The failure code for the error.

Type: String

Required: No

### FailureReason

The text message describing the error.

Type: String

Required: No

### SnapshotClusterIdentifier

A unique identifier for the cluster.

Type: String

Required: No

### SnapshotIdentifier

A unique identifier for the snapshot returning 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](#)
- [AWS SDK for Ruby V2](#)

# SnapshotSchedule

Describes a snapshot schedule. You can set a regular interval for creating snapshots of a cluster. You can also schedule snapshots for specific dates.

## Contents

### Note

In the following list, the required parameters are described first.

### **NextInvocations.SnapshotTime.N**

Type: Array of timestamps

Required: No

### **ScheduleDefinitions.ScheduleDefinition.N**

A list of ScheduleDefinitions

Type: Array of strings

Required: No

### **ScheduleDescription**

The description of the schedule.

Type: String

Required: No

### **ScheduleIdentifier**

A unique identifier for the schedule.

Type: String

Required: No

### **Tags.Tag.N**

An optional set of tags describing the schedule.

Type: Array of [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)

# SnapshotSortingEntity

Describes a sorting entity

## Contents

### Note

In the following list, the required parameters are described first.

### Attribute

The category for sorting the snapshots.

Type: String

Valid Values: `SOURCE_TYPE` | `TOTAL_SIZE` | `CREATE_TIME`

Required: Yes

### SortOrder

The order for listing the attributes.

Type: String

Valid Values: `ASC` | `DESC`

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# Subnet

Describes a subnet.

## Contents

### Note

In the following list, the required parameters are described first.

### **SubnetAvailabilityZone**

Describes an availability zone.

Type: [AvailabilityZone \(p. 240\)](#) object

Required: No

### **SubnetIdentifier**

The identifier of the subnet.

Type: String

Required: No

### **SubnetStatus**

The status 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](#)
- [AWS SDK for Ruby V2](#)

# SupportedOperation

Describes the operations that are allowed on a maintenance track.

## Contents

### Note

In the following list, the required parameters are described first.

### OperationName

A list of the supported operations.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)



# SupportedPlatform

A list of supported platforms for orderable clusters.

## Contents

### Note

In the following list, the required parameters are described first.

### 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](#)
- [AWS SDK for Ruby V2](#)

# TableRestoreStatus

Describes the status of a [RestoreTableFromClusterSnapshot](#) (p. 225) operation.

## Contents

### Note

In the following list, the required parameters are described first.

### ClusterIdentifier

The identifier of the Amazon Redshift cluster that the table is being restored to.

Type: String

Required: No

### Message

A description of the status of the table restore request. Status values include SUCCEEDED, FAILED, CANCELED, PENDING, IN\_PROGRESS.

Type: String

Required: No

### NewTableName

The name of the table to create as a result of the table restore request.

Type: String

Required: No

### ProgressInMegaBytes

The amount of data restored to the new table so far, in megabytes (MB).

Type: Long

Required: No

### RequestTime

The time that the table restore request was made, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

### SnapshotIdentifier

The identifier of the snapshot that the table is being restored from.

Type: String

Required: No

### SourceDatabaseName

The name of the source database that contains the table being restored.

Type: String

Required: No

**SourceSchemaName**

The name of the source schema that contains the table being restored.

Type: String

Required: No

**SourceTableName**

The name of the source table being restored.

Type: String

Required: No

**Status**

A value that describes the current state of the table restore request.

Valid Values: SUCCEEDED, FAILED, CANCELED, PENDING, IN\_PROGRESS

Type: String

Valid Values: PENDING | IN\_PROGRESS | SUCCEEDED | FAILED | CANCELED

Required: No

**TableRestoreRequestId**

The unique identifier for the table restore request.

Type: String

Required: No

**TargetDatabaseName**

The name of the database to restore the table to.

Type: String

Required: No

**TargetSchemaName**

The name of the schema to restore the table to.

Type: String

Required: No

**TotalDataInMegaBytes**

The total amount of data to restore to the new table, in megabytes (MB).

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](#)
- [AWS SDK for Ruby V2](#)

# Tag

A tag consisting of a name/value pair for a resource.

## Contents

### Note

In the following list, the required parameters are described first.

### Key

The key, or name, for the resource tag.

Type: String

Required: No

### Value

The value for the resource tag.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# TaggedResource

A tag and its associated resource.

## Contents

### Note

In the following list, the required parameters are described first.

### ResourceName

The Amazon Resource Name (ARN) with which the tag is associated, for example:  
`arn:aws:redshift:us-east-1:123456789:cluster:t1`.

Type: String

Required: No

### ResourceType

The type of resource with which the tag is associated. Valid resource types are:

- Cluster
- CIDR/IP
- EC2 security group
- Snapshot
- Cluster security group
- Subnet group
- HSM connection
- HSM certificate
- Parameter group

For more information about Amazon Redshift resource types and constructing ARNs, go to [Constructing an Amazon Redshift Amazon Resource Name \(ARN\)](#) in the Amazon Redshift Cluster Management Guide.

Type: String

Required: No

### Tag

The tag for the resource.

Type: [Tag \(p. 312\)](#) 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](#)
- [AWS SDK for Ruby V2](#)



# UpdateTarget

A maintenance track that you can switch the current track to.

## Contents

### Note

In the following list, the required parameters are described first.

#### DatabaseVersion

The cluster version for the new maintenance track.

Type: String

Required: No

#### MaintenanceTrackName

The name of the new maintenance track.

Type: String

Required: No

#### SupportedOperations.SupportedOperation.N

A list of operations supported by the maintenance track.

Type: Array of [SupportedOperation](#) (p. 307) 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](#)
- [AWS SDK for Ruby V2](#)



# VpcSecurityGroupMembership

Describes the members of a VPC security group.

## Contents

### Note

In the following list, the required parameters are described first.

### Status

The status of the VPC security group.

Type: String

Required: No

### VpcSecurityGroupId

The identifier of the VPC 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](#)
- [AWS SDK for Ruby V2](#)

# Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see [Signature Version 4 Signing Process](#) in the *Amazon Web Services General Reference*.

## Action

The action to be performed.

Type: string

Required: Yes

## Version

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

## X-Amz-Algorithm

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

## X-Amz-Credential

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4\_request"). The value is expressed in the following format: `access_key/YYYYMMDD/region/service/aws4_request`.

For more information, see [Task 2: Create a String to Sign for Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

## X-Amz-Date

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'THHMMSS'Z'). For example, the following date time is a valid X-Amz-Date value: `20120325T120000Z`.

Condition: X-Amz-Date is optional for all requests; it can be used to override the date used for signing requests. If the Date header is specified in the ISO 8601 basic format, X-Amz-Date is

not required. When X-Amz-Date is used, it always overrides the value of the Date header. For more information, see [Handling Dates in Signature Version 4](#) in the *Amazon Web Services General Reference*.

Type: string

Required: Conditional

**X-Amz-Security-Token**

The temporary security token that was obtained through a call to AWS Security Token Service (AWS STS). For a list of services that support temporary security credentials from AWS Security Token Service, go to [AWS Services That Work with IAM](#) in the *IAM User Guide*.

Condition: If you're using temporary security credentials from the AWS Security Token Service, you must include the security token.

Type: string

Required: Conditional

**X-Amz-Signature**

Specifies the hex-encoded signature that was calculated from the string to sign and the derived signing key.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-SignedHeaders**

Specifies all the HTTP headers that were included as part of the canonical request. For more information about specifying signed headers, see [Task 1: Create a Canonical Request For Signature Version 4](#) in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

# Common Errors

This section lists the errors common to the API actions of all AWS services. For errors specific to an API action for this service, see the topic for that API action.

**AccessDeniedException**

You do not have sufficient access to perform this action.

HTTP Status Code: 400

**IncompleteSignature**

The request signature does not conform to AWS standards.

HTTP Status Code: 400

**InternalFailure**

The request processing has failed because of an unknown error, exception or failure.

HTTP Status Code: 500

**InvalidAction**

The action or operation requested is invalid. Verify that the action is typed correctly.

HTTP Status Code: 400

**InvalidClientTokenId**

The X.509 certificate or AWS access key ID provided does not exist in our records.

HTTP Status Code: 403

**InvalidParameterCombination**

Parameters that must not be used together were used together.

HTTP Status Code: 400

**InvalidParameterValue**

An invalid or out-of-range value was supplied for the input parameter.

HTTP Status Code: 400

**InvalidQueryParameter**

The AWS query string is malformed or does not adhere to AWS standards.

HTTP Status Code: 400

**MalformedQueryString**

The query string contains a syntax error.

HTTP Status Code: 404

**MissingAction**

The request is missing an action or a required parameter.

HTTP Status Code: 400

**MissingAuthenticationToken**

The request must contain either a valid (registered) AWS access key ID or X.509 certificate.

HTTP Status Code: 403

**MissingParameter**

A required parameter for the specified action is not supplied.

HTTP Status Code: 400

**OptInRequired**

The AWS access key ID needs a subscription for the service.

HTTP Status Code: 403

**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 pre-signed URLs), or the date stamp on the request is more than 15 minutes in the future.

HTTP Status Code: 400

**ServiceUnavailable**

The request has failed due to a temporary failure of the server.

HTTP Status Code: 503

**ThrottlingException**

The request was denied due to request throttling.

HTTP Status Code: 400

**ValidationError**

The input fails to satisfy the constraints specified by an AWS service.

HTTP Status Code: 400