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# Amazon Relational Database Service

## API Reference

**API Version 2014-10-31**



## **Amazon Relational Database Service: API Reference**

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# Welcome

Amazon Relational Database Service (Amazon RDS) is a web service that makes it easier to set up, operate, and scale a relational database in the cloud. It provides cost-efficient, resizable capacity for an industry-standard relational database and manages common database administration tasks, freeing up developers to focus on what makes their applications and businesses unique.

Amazon RDS gives you access to the capabilities of a MySQL, MariaDB, PostgreSQL, Microsoft SQL Server, Oracle, or Amazon Aurora database server. These capabilities mean that the code, applications, and tools you already use today with your existing databases work with Amazon RDS without modification. Amazon RDS automatically backs up your database and maintains the database software that powers your DB instance. Amazon RDS is flexible: you can scale your DB instance's compute resources and storage capacity to meet your application's demand. As with all Amazon Web Services, there are no up-front investments, and you pay only for the resources you use.

This interface reference for Amazon RDS contains documentation for a programming or command line interface you can use to manage Amazon RDS. Note that Amazon RDS is asynchronous, which means that some interfaces might require techniques such as polling or callback functions to determine when a command has been applied. In this reference, the parameter descriptions indicate whether a command is applied immediately, on the next instance reboot, or during the maintenance window. The reference structure is as follows, and we list following some related topics from the user guide.

## Amazon RDS API Reference

- For the alphabetical list of API actions, see [API Actions](#).
- For the alphabetical list of data types, see [Data Types](#).
- For a list of common query parameters, see [Common Parameters](#).
- For descriptions of the error codes, see [Common Errors](#).

## Amazon RDS User Guide

- For a summary of the Amazon RDS interfaces, see [Available RDS Interfaces](#).
- For more information about how to use the Query API, see [Using the Query API](#).

This document was last published on May 9, 2018.



# Actions

The following actions are supported:

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- [AddSourceIdentifierToSubscription](#) (p. 7)
- [AddTagsToResource](#) (p. 10)
- [ApplyPendingMaintenanceAction](#) (p. 12)
- [AuthorizeDBSecurityGroupIngress](#) (p. 15)
- [BacktrackDBCluster](#) (p. 19)
- [CopyDBClusterParameterGroup](#) (p. 22)
- [CopyDBClusterSnapshot](#) (p. 25)
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- [StopDBInstance](#) (p. 364)

# AddRoleToDBCluster

Associates an Identity and Access Management (IAM) role from an Aurora DB cluster. For more information, see [Authorizing Amazon Aurora to Access Other AWS Services On Your Behalf](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

The name of the DB cluster to associate the IAM role with.

Type: String

Required: Yes

### **RoleArn**

The Amazon Resource Name (ARN) of the IAM role to associate with the Aurora DB cluster, for example `arn:aws:iam::123456789012:role/AuroraAccessRole`.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterRoleAlreadyExists**

The specified IAM role Amazon Resource Name (ARN) is already associated with the specified DB cluster.

HTTP Status Code: 400

### **DBClusterRoleQuotaExceeded**

You have exceeded the maximum number of IAM roles that can be associated with the specified DB cluster.

HTTP Status Code: 400

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=AddRoleToDBCluster
&DBClusterIdentifier=sample-cluster
&RoleArn=arn%3Aaws%3Aiam%3A%3A123456789012%3Arole%2Fsample-role
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20161012/us-east-1/rds/aws4_request
&X-Amz-Date=20161012T204524Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=d73c069210f98e5377851fa4c4ab2fdd53e8bd5d5f02f4f8ef15d4daa5b04567
```

### Sample Response

```
<AddRoleToDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>ccccbdb6-90bc-11e6-8533-cd6447e421f8</RequestId>
  </ResponseMetadata>
</AddRoleToDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# AddSourceIdentifierToSubscription

Adds a source identifier to an existing RDS event notification subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### SourceIdentifier

The identifier of the event source to be added.

Constraints:

- If the source type is a DB instance, then a `DBInstanceIdentifier` must be supplied.
- If the source type is a DB security group, a `DBSecurityGroupName` must be supplied.
- If the source type is a DB parameter group, a `DBParameterGroupName` must be supplied.
- If the source type is a DB snapshot, a `DBSnapshotIdentifier` must be supplied.

Type: String

Required: Yes

### SubscriptionName

The name of the RDS event notification subscription you want to add a source identifier to.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### EventSubscription

Contains the results of a successful invocation of the [DescribeEventSubscriptions \(p. 198\)](#) action.

Type: [EventSubscription \(p. 424\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### SourceNotFound

The requested source could not be found.

HTTP Status Code: 404

### SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=AddSourceIdentifierToSubscription
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceIdentifier=mysqlpdb
&SubscriptionName=EventSubscription04
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140422/us-east-1/rds/aws4_request
&X-Amz-Date=20140422T230442Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=347d5e788e809cd06c50214b12750a3c39716bf65b239bb6f7ee8ff5374e2df9
```

### Sample Response

```
<AddSourceIdentifierToSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <AddSourceIdentifierToSubscriptionResult>
    <EventSubscription>
      <SourceType>db-instance</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#####</CustomerAwsId>
      <Status>modifying</Status>
      <SourceIdsList>
        <SourceId>mysqlpdb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-22 23:03:19.776</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>EventSubscription04</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:803#####:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </AddSourceIdentifierToSubscriptionResult>
  <ResponseMetadata>
    <RequestId>6c05f0b0-bf71-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</AddSourceIdentifierToSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# AddTagsToResource

Adds metadata tags to an Amazon RDS resource. These tags can also be used with cost allocation reporting to track cost associated with Amazon RDS resources, or used in a Condition statement in an IAM policy for Amazon RDS.

For an overview on tagging Amazon RDS resources, see [Tagging Amazon RDS Resources](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### ResourceName

The Amazon RDS resource that the tags are added to. This value is an Amazon Resource Name (ARN). For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Type: String

Required: Yes

### Tags.Tag.N

The tags to be assigned to the Amazon RDS resource.

Type: Array of [Tag \(p. 464\)](#) objects

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBClusterNotFoundFault

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### DBInstanceNotFound

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### DBSnapshotNotFound

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
```

```
?Action=AddTagsToResource
&ResourceName=arn%3Aaws%3Aards%3Aus-west-2%3A123456789012%3Adb%3Asample
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Tags.member.1.Key=InstanceType
&Tags.member.1.Value=Development
&Tags.member.2.Key=Owner
&Tags.member.2.Value=Admin123
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T173915Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=90a257aa949fab364b7db0964a255986922f933f2e55e7b582ce6f9ccca2a4e0
```

## Sample Response

```
<AddTagsToResourceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>fd9cd844-79d8-11e6-956c-915ad715fa2f</RequestId>
  </ResponseMetadata>
</AddTagsToResourceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ApplyPendingMaintenanceAction

Applies a pending maintenance action to a resource (for example, to a DB instance).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### ApplyAction

The pending maintenance action to apply to this resource.

Valid values: `system-update`, `db-upgrade`

Type: String

Required: Yes

### OptInType

A value that specifies the type of opt-in request, or undoes an opt-in request. An opt-in request of type `immediate` can't be undone.

Valid values:

- `immediate` - Apply the maintenance action immediately.
- `next-maintenance` - Apply the maintenance action during the next maintenance window for the resource.
- `undo-opt-in` - Cancel any existing `next-maintenance` opt-in requests.

Type: String

Required: Yes

### ResourceIdentifier

The RDS Amazon Resource Name (ARN) of the resource that the pending maintenance action applies to. For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### ResourcePendingMaintenanceActions

Describes the pending maintenance actions for a resource.

Type: [ResourcePendingMaintenanceActions \(p. 461\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=ApplyPendingMaintenanceAction
&ResourceIdentifier=arn:aws:rds:us-east-1:123456781234:db:my-instance
&ApplyAction=system-update
&OptInType=immediate
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20141216/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

### Sample Response

```
<ApplyPendingMaintenanceActionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ApplyPendingMaintenanceActionResult>
    <ResourcePendingMaintenanceActions>
      <ResourceIdentifier>arn:aws:rds:us-east-1:123456781234:db:my-instance</
ResourceIdentifier>
      <PendingMaintenanceActionDetails>
        <PendingMaintenanceAction>
          <Action>system-update</Action>
          <OptInStatus>immediate</OptInStatus>
        </PendingMaintenanceAction>
      </PendingMaintenanceActionDetails>
    </ResourcePendingMaintenanceActions>
  </ApplyPendingMaintenanceActionResult>
  <ResponseMetadata>
    <RequestId>dcfe0682-870c-11e4-9833-b3ad657ea9da</RequestId>
  </ResponseMetadata>
</ApplyPendingMaintenanceActionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# AuthorizeDBSecurityGroupIngress

Enables ingress to a DBSecurityGroup using one of two forms of authorization. First, EC2 or VPC security groups can be added to the DBSecurityGroup if the application using the database is running on EC2 or VPC instances. Second, IP ranges are available if the application accessing your database is running on the Internet. Required parameters for this API are one of CIDR range, EC2SecurityGroupId for VPC, or (EC2SecurityGroupOwnerId and either EC2SecurityGroupName or EC2SecurityGroupId for non-VPC).

## Note

You can't authorize ingress from an EC2 security group in one AWS Region to an Amazon RDS DB instance in another. You can't authorize ingress from a VPC security group in one VPC to an Amazon RDS DB instance in another.

For an overview of CIDR ranges, go to the [Wikipedia Tutorial](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### CIDRIP

The IP range to authorize.

Type: String

Required: No

### DBSecurityGroupName

The name of the DB security group to add authorization to.

Type: String

Required: Yes

### EC2SecurityGroupId

Id of the EC2 security group to authorize. For VPC DB security groups, EC2SecurityGroupId must be provided. Otherwise, EC2SecurityGroupOwnerId and either EC2SecurityGroupName or EC2SecurityGroupId must be provided.

Type: String

Required: No

### EC2SecurityGroupName

Name of the EC2 security group to authorize. For VPC DB security groups, EC2SecurityGroupId must be provided. Otherwise, EC2SecurityGroupOwnerId and either EC2SecurityGroupName or EC2SecurityGroupId must be provided.

Type: String

Required: No

### EC2SecurityGroupOwnerId

AWS account number of the owner of the EC2 security group specified in the EC2SecurityGroupName parameter. The AWS Access Key ID is not an acceptable value. For VPC DB security groups, EC2SecurityGroupId must be provided. Otherwise,

`EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBSecurityGroup**

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the [DescribeDBSecurityGroups \(p. 173\)](#) action.

Type: [DBSecurityGroup \(p. 404\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationAlreadyExists**

The specified CIDRIP or Amazon EC2 security group is already authorized for the specified DB security group.

HTTP Status Code: 400

### **AuthorizationQuotaExceeded**

The DB security group authorization quota has been reached.

HTTP Status Code: 400

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **InvalidDBSecurityGroupState**

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=AuthorizeDBSecurityGroupIngress  
&CIDRIP=54.241.217.9%2F32
```

```
&DBSecurityGroupName=default
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T154632Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7803146e430626f47b0da058921cdb9f2ab7ffd881bd99fc859f2f635e4472bd
```

## Sample Response

```
<AuthorizedDBSecurityGroupIngressResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <AuthorizedDBSecurityGroupIngressResult>
    <DBSecurityGroup>
      <EC2SecurityGroups>
        <EC2SecurityGroup>
          <Status>authorized</Status>
          <EC2SecurityGroupName>elasticbeanstalk-windows</EC2SecurityGroupName>
          <EC2SecurityGroupOwnerId>803#####</EC2SecurityGroupOwnerId>
          <EC2SecurityGroupId>sg-7f476617</EC2SecurityGroupId>
        </EC2SecurityGroup>
      </EC2SecurityGroups>
      <DBSecurityGroupDescription>default</DBSecurityGroupDescription>
      <IPRanges>
        <IPRange>
          <CIDRIP>192.0.0.0/24</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>190.0.1.0/29</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>190.0.2.0/29</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>10.0.0.0/8</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
      </IPRanges>
      <OwnerId>803#####</OwnerId>
      <DBSecurityGroupName>default</DBSecurityGroupName>
    </DBSecurityGroup>
  </AuthorizedDBSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>6176b5f8-bfed-11d3-f92b-31fa5e8dbc99</RequestId>
  </ResponseMetadata>
</AuthorizedDBSecurityGroupIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# BacktrackDBCluster

Backtracks a DB cluster to a specific time, without creating a new DB cluster.

For more information on backtracking, see [Backtracking an Aurora DB Cluster](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### BacktrackTo

The timestamp of the time to backtrack the DB cluster to, specified in ISO 8601 format. For more information about ISO 8601, see the [ISO8601 Wikipedia page](#).

#### Note

If the specified time is not a consistent time for the DB cluster, Aurora automatically chooses the nearest possible consistent time for the DB cluster.

Constraints:

- Must contain a valid ISO 8601 timestamp.
- Cannot contain a timestamp set in the future.

Example: 2017-07-08T18:00Z

Type: Timestamp

Required: Yes

### DBClusterIdentifier

The DB cluster identifier of the DB cluster to be backtracked. This parameter is stored as a lowercase string.

Constraints:

- 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.

Example: my-cluster1

Type: String

Required: Yes

### Force

A value that, if specified, forces the DB cluster to backtrack when binary logging is enabled. Otherwise, an error occurs when binary logging is enabled.

Type: Boolean

Required: No

### UseEarliestTimeOnPointInTimeUnavailable

If *BacktrackTo* is set to a timestamp earlier than the earliest backtrack time, this value backtracks the DB cluster to the earliest possible backtrack time. Otherwise, an error occurs.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### **BacktrackedFrom**

The timestamp of the time from which the DB cluster was backtracked.

Type: Timestamp

### **BacktrackIdentifier**

Contains the backtrack identifier.

Type: String

### **BacktrackRequestCreationTime**

The timestamp of the time at which the backtrack was requested.

Type: Timestamp

### **BacktrackTo**

The timestamp of the time to which the DB cluster was backtracked.

Type: Timestamp

### **DBClusterIdentifier**

Contains a user-supplied DB cluster identifier. This identifier is the unique key that identifies a DB cluster.

Type: String

### **Status**

The status of the backtrack. This property returns one of the following values:

- `applying` - The backtrack is currently being applied to or rolled back from the DB cluster.
- `completed` - The backtrack has successfully been applied to or rolled back from the DB cluster.
- `failed` - An error occurred while the backtrack was applied to or rolled back from the DB cluster.
- `pending` - The backtrack is currently pending application to or rollback from the DB cluster.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid 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](#)

# CopyDBClusterParameterGroup

Copies the specified DB cluster parameter group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### SourceDBClusterParameterGroupIdentifier

The identifier or Amazon Resource Name (ARN) for the source DB cluster parameter group. For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Constraints:

- Must specify a valid DB cluster parameter group.
- If the source DB cluster parameter group is in the same AWS Region as the copy, specify a valid DB parameter group identifier, for example `my-db-cluster-param-group`, or a valid ARN.
- If the source DB parameter group is in a different AWS Region than the copy, specify a valid DB cluster parameter group ARN, for example `arn:aws:rds:us-east-1:123456789012:cluster-pg:custom-cluster-group1`.

Type: String

Required: Yes

### Tags.Tag.N

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

### TargetDBClusterParameterGroupDescription

A description for the copied DB cluster parameter group.

Type: String

Required: Yes

### TargetDBClusterParameterGroupIdentifier

The identifier for the copied DB cluster parameter group.

Constraints:

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

Example: `my-cluster-param-group1`

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBClusterParameterGroup**

Contains the details of an Amazon RDS DB cluster parameter group.

This data type is used as a response element in the [DescribeDBClusterParameterGroups](#) (p. 136) action.

Type: [DBClusterParameterGroup](#) (p. 384) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBParameterGroupAlreadyExists**

A DB parameter group with the same name exists.

HTTP Status Code: 400

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **DBParameterGroupQuotaExceeded**

The request would result in the user exceeding the allowed number of DB parameter groups.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CopyDBClusterParameterGroup
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBClusterParameterGroupIdentifier=arn%3Aaws%3Aards%3Aus-
east-1%3A815981987263%3Acluster-pg%3Amy-cluster-pg
&TargetDBParameterGroupIdentifier=new-cluster-pg
&TargetDBParameterGroupDescription=New%20cluster%20group
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160705/us-east-1/rds/aws4_request
&X-Amz-Date=20160705T143101Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

### Sample Response

```
<CopyDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterParameterGroupResult>
    <DBClusterParameterGroup>
      <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
      <Description>New cluster group</Description>
      <DBClusterParameterGroupName>new-cluster-pg</DBClusterParameterGroupName>
    </DBClusterParameterGroup>
  </CreateDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>ae81a963-cd9d-11e4-8b88-8351746a4c92</RequestId>
  </ResponseMetadata>
</CopyDBClusterParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CopyDBClusterSnapshot

Copies a snapshot of a DB cluster.

To copy a DB cluster snapshot from a shared manual DB cluster snapshot, `SourceDBClusterSnapshotIdentifier` must be the Amazon Resource Name (ARN) of the shared DB cluster snapshot.

You can copy an encrypted DB cluster snapshot from another AWS Region. In that case, the AWS Region where you call the `CopyDBClusterSnapshot` action is the destination AWS Region for the encrypted DB cluster snapshot to be copied to. To copy an encrypted DB cluster snapshot from another AWS Region, you must provide the following values:

- `KmsKeyId` - The AWS Key Management System (AWS KMS) key identifier for the key to use to encrypt the copy of the DB cluster snapshot in the destination AWS Region.
- `PreSignedUrl` - A URL that contains a Signature Version 4 signed request for the `CopyDBClusterSnapshot` action to be called in the source AWS Region where the DB cluster snapshot is copied from. The pre-signed URL must be a valid request for the `CopyDBClusterSnapshot` API action that can be executed in the source AWS Region that contains the encrypted DB cluster snapshot to be copied.

The pre-signed URL request must contain the following parameter values:

- `KmsKeyId` - The KMS key identifier for the key to use to encrypt the copy of the DB cluster snapshot in the destination AWS Region. This is the same identifier for both the `CopyDBClusterSnapshot` action that is called in the destination AWS Region, and the action contained in the pre-signed URL.
- `DestinationRegion` - The name of the AWS Region that the DB cluster snapshot will be created in.
- `SourceDBClusterSnapshotIdentifier` - The DB cluster snapshot identifier for the encrypted DB cluster snapshot to be copied. This identifier must be in the Amazon Resource Name (ARN) format for the source AWS Region. For example, if you are copying an encrypted DB cluster snapshot from the us-west-2 AWS Region, then your `SourceDBClusterSnapshotIdentifier` looks like the following example: `arn:aws:rds:us-west-2:123456789012:cluster-snapshot:aurora-cluster1-snapshot-20161115`.

To learn how to generate a Signature Version 4 signed request, see [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) and [Signature Version 4 Signing Process](#).

- `TargetDBClusterSnapshotIdentifier` - The identifier for the new copy of the DB cluster snapshot in the destination AWS Region.
- `SourceDBClusterSnapshotIdentifier` - The DB cluster snapshot identifier for the encrypted DB cluster snapshot to be copied. This identifier must be in the ARN format for the source AWS Region and is the same value as the `SourceDBClusterSnapshotIdentifier` in the pre-signed URL.

To cancel the copy operation once it is in progress, delete the target DB cluster snapshot identified by `TargetDBClusterSnapshotIdentifier` while that DB cluster snapshot is in "copying" status.

For more information on copying encrypted DB cluster snapshots from one AWS Region to another, see [Copying a DB Cluster Snapshot in the Same Account, Either in the Same Region or Across Regions](#) in the Amazon RDS User Guide.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).



### CopyTags

True to copy all tags from the source DB cluster snapshot to the target DB cluster snapshot, and otherwise false. The default is false.

Type: Boolean

Required: No

### KmsKeyId

The AWS KMS key ID for an encrypted DB cluster snapshot. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

If you copy an encrypted DB cluster snapshot from your AWS account, you can specify a value for `KmsKeyId` to encrypt the copy with a new KMS encryption key. If you don't specify a value for `KmsKeyId`, then the copy of the DB cluster snapshot is encrypted with the same KMS key as the source DB cluster snapshot.

If you copy an encrypted DB cluster snapshot that is shared from another AWS account, then you must specify a value for `KmsKeyId`.

To copy an encrypted DB cluster snapshot to another AWS Region, you must set `KmsKeyId` to the KMS key ID you want to use to encrypt the copy of the DB cluster snapshot in the destination AWS Region. KMS encryption keys are specific to the AWS Region that they are created in, and you can't use encryption keys from one AWS Region in another AWS Region.

If you copy an unencrypted DB cluster snapshot and specify a value for the `KmsKeyId` parameter, an error is returned.

Type: String

Required: No

### PreSignedUrl

The URL that contains a Signature Version 4 signed request for the `CopyDBClusterSnapshot` API action in the AWS Region that contains the source DB cluster snapshot to copy. The `PreSignedUrl` parameter must be used when copying an encrypted DB cluster snapshot from another AWS Region.

The pre-signed URL must be a valid request for the `CopyDBClusterSnapshot` API action that can be executed in the source AWS Region that contains the encrypted DB cluster snapshot to be copied. The pre-signed URL request must contain the following parameter values:

- `KmsKeyId` - The AWS KMS key identifier for the key to use to encrypt the copy of the DB cluster snapshot in the destination AWS Region. This is the same identifier for both the `CopyDBClusterSnapshot` action that is called in the destination AWS Region, and the action contained in the pre-signed URL.
- `DestinationRegion` - The name of the AWS Region that the DB cluster snapshot will be created in.
- `SourceDBClusterSnapshotIdentifier` - The DB cluster snapshot identifier for the encrypted DB cluster snapshot to be copied. This identifier must be in the Amazon Resource Name (ARN) format for the source AWS Region. For example, if you are copying an encrypted DB cluster snapshot from the us-west-2 AWS Region, then your `SourceDBClusterSnapshotIdentifier` looks like the following example: `arn:aws:rds:us-west-2:123456789012:cluster-snapshot:aurora-cluster1-snapshot-20161115`.

To learn how to generate a Signature Version 4 signed request, see [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) and [Signature Version 4 Signing Process](#).

Type: String

Required: No

### **SourceDBClusterSnapshotIdentifier**

The identifier of the DB cluster snapshot to copy. This parameter is not case-sensitive.

You can't copy an encrypted, shared DB cluster snapshot from one AWS Region to another.

Constraints:

- Must specify a valid system snapshot in the "available" state.
- If the source snapshot is in the same AWS Region as the copy, specify a valid DB snapshot identifier.
- If the source snapshot is in a different AWS Region than the copy, specify a valid DB cluster snapshot ARN. For more information, go to [Copying a DB Snapshot or DB Cluster Snapshot](#).

Example: `my-cluster-snapshot1`

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

### **TargetDBClusterSnapshotIdentifier**

The identifier of the new DB cluster snapshot to create from the source DB cluster snapshot. This parameter is not case-sensitive.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster-snapshot2`

Type: String

Required: Yes

## **Response Elements**

The following element is returned by the service.

### **DBClusterSnapshot**

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the [DescribeDBClusterSnapshots \(p. 149\)](#) action.

Type: [DBClusterSnapshot \(p. 386\)](#) object

## **Errors**

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

#### **DBClusterSnapshotAlreadyExistsFault**

The user already has a DB cluster snapshot with the given identifier.

HTTP Status Code: 400

#### **DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

#### **InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

#### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

#### **KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

#### **SnapshotQuotaExceeded**

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=CopyDBClusterSnapshot
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBClusterSnapshotIdentifier=rds%3Asample-cluster-2016-09-14-10-38
&TargetDBClusterSnapshotIdentifier=cluster-snapshot-copy-1
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160914/us-west-2/rds/aws4_request
&X-Amz-Date=20160914T164919Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=4503d6112f2ab5332d7d1871cba6b97ddcc9748d3d4da0cb2c219ace80cfd384
```

### Sample Response

```
<CopyDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CopyDBClusterSnapshotResult>
    <DBClusterSnapshot>
      <MasterUsername>mymasteruser</MasterUsername>
      <AllocatedStorage>1</AllocatedStorage>
      <SnapshotType>>manual</SnapshotType>
      <AvailabilityZones>
```

```
<AvailabilityZone>us-west-2a</AvailabilityZone>
<AvailabilityZone>us-west-2b</AvailabilityZone>
<AvailabilityZone>us-west-2c</AvailabilityZone>
</AvailabilityZones>
<StorageEncrypted>>false</StorageEncrypted>
<Engine>aurora</Engine>
<Port>0</Port>
<LicenseModel>aurora</LicenseModel>
<SnapshotCreateTime>2016-09-14T10:38:05.616Z</SnapshotCreateTime>
<PercentProgress>100</PercentProgress>
<VpcId>vpc-e97e7d8d</VpcId>
<DBClusterSnapshotIdentifier>cluster-snapshot-copy-1</DBClusterSnapshotIdentifier>
<DBClusterSnapshotArn>arn:aws:rds:us-west-2:123456789012:cluster-snapshot:cluster-
snapshot-copy-1</DBClusterSnapshotArn>
<DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
<ClusterCreateTime>2016-09-13T16:57:52.695Z</ClusterCreateTime>
<Status>available</Status>
</DBClusterSnapshot>
</CopyDBClusterSnapshotResult>
<ResponseMetadata>
  <RequestId>2e861f29-7a9b-11e6-94c8-21ac69ee8f8c</RequestId>
</ResponseMetadata>
</CopyDBClusterSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CopyDBParameterGroup

Copies the specified DB parameter group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### SourceDBParameterGroupIdentifier

The identifier or ARN for the source DB parameter group. For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Constraints:

- Must specify a valid DB parameter group.
- Must specify a valid DB parameter group identifier, for example `my-db-param-group`, or a valid ARN.

Type: String

Required: Yes

### Tags.Tag.N

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

### TargetDBParameterGroupDescription

A description for the copied DB parameter group.

Type: String

Required: Yes

### TargetDBParameterGroupIdentifier

The identifier for the copied DB parameter group.

Constraints:

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

Example: `my-db-parameter-group`

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### DBParameterGroup

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the [DescribeDBParameterGroups \(p. 166\)](#) action.

Type: [DBParameterGroup \(p. 402\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBParameterGroupAlreadyExists

A DB parameter group with the same name exists.

HTTP Status Code: 400

### DBParameterGroupNotFound

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### DBParameterGroupQuotaExceeded

The request would result in the user exceeding the allowed number of DB parameter groups.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CopyDBParameterGroup
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBParameterGroupIdentifier=arn%3Aaws%3Aards%3Aus-west-2%3A815981987263%3pg%3Amy-
remote-param-group
&TargetDBParameterGroupIdentifier=new-local-param-group
&TargetDBParameterGroupDescription=description
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
&X-Amz-Date=20140429T175351Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

### Sample Response

```
<CopyDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CopyDBParameterGroupResult>
    <DBParameterGroup>
      <DBParameterGroupFamily>mysql5.6</DBParameterGroupFamily>
      <Description>description</Description>
```

```
<DBParameterGroupName>new-local-param-group</DBParameterGroupName>
</DBParameterGroup>
</CopyDBParameterGroupResult>
<ResponseMetadata>
  <RequestId>2928d60e-beb6-11d3-8e5c-3ccda5460c46</RequestId>
</ResponseMetadata>
</CopyDBParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CopyDBSnapshot

Copies the specified DB snapshot. The source DB snapshot must be in the "available" state.

You can copy a snapshot from one AWS Region to another. In that case, the AWS Region where you call the `CopyDBSnapshot` action is the destination AWS Region for the DB snapshot copy.

For more information about copying snapshots, see [Copying a DB Snapshot](#) in the Amazon RDS User Guide.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **CopyTags**

True to copy all tags from the source DB snapshot to the target DB snapshot, and otherwise false. The default is false.

Type: Boolean

Required: No

### **KmsKeyId**

The AWS KMS key ID for an encrypted DB snapshot. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

If you copy an encrypted DB snapshot from your AWS account, you can specify a value for this parameter to encrypt the copy with a new KMS encryption key. If you don't specify a value for this parameter, then the copy of the DB snapshot is encrypted with the same KMS key as the source DB snapshot.

If you copy an encrypted DB snapshot that is shared from another AWS account, then you must specify a value for this parameter.

If you specify this parameter when you copy an unencrypted snapshot, the copy is encrypted.

If you copy an encrypted snapshot to a different AWS Region, then you must specify a KMS key for the destination AWS Region. KMS encryption keys are specific to the AWS Region that they are created in, and you can't use encryption keys from one AWS Region in another AWS Region.

Type: String

Required: No

### **OptionGroupName**

The name of an option group to associate with the copy of the snapshot.

Specify this option if you are copying a snapshot from one AWS Region to another, and your DB instance uses a nondefault option group. If your source DB instance uses Transparent Data Encryption for Oracle or Microsoft SQL Server, you must specify this option when copying across AWS Regions. For more information, see [Option Group Considerations](#).

Type: String

Required: No



## PreSignedUrl

The URL that contains a Signature Version 4 signed request for the `CopyDBSnapshot` API action in the source AWS Region that contains the source DB snapshot to copy.

You must specify this parameter when you copy an encrypted DB snapshot from another AWS Region by using the Amazon RDS API. You can specify the `--source-region` option instead of this parameter when you copy an encrypted DB snapshot from another AWS Region by using the AWS CLI.

The presigned URL must be a valid request for the `CopyDBSnapshot` API action that can be executed in the source AWS Region that contains the encrypted DB snapshot to be copied. The presigned URL request must contain the following parameter values:

- `DestinationRegion` - The AWS Region that the encrypted DB snapshot is copied to. This AWS Region is the same one where the `CopyDBSnapshot` action is called that contains this presigned URL.

For example, if you copy an encrypted DB snapshot from the `us-west-2` AWS Region to the `us-east-1` AWS Region, then you call the `CopyDBSnapshot` action in the `us-east-1` AWS Region and provide a presigned URL that contains a call to the `CopyDBSnapshot` action in the `us-west-2` AWS Region. For this example, the `DestinationRegion` in the presigned URL must be set to the `us-east-1` AWS Region.

- `KmsKeyId` - The AWS KMS key identifier for the key to use to encrypt the copy of the DB snapshot in the destination AWS Region. This is the same identifier for both the `CopyDBSnapshot` action that is called in the destination AWS Region, and the action contained in the presigned URL.
- `SourceDBSnapshotIdentifier` - The DB snapshot identifier for the encrypted snapshot to be copied. This identifier must be in the Amazon Resource Name (ARN) format for the source AWS Region. For example, if you are copying an encrypted DB snapshot from the `us-west-2` AWS Region, then your `SourceDBSnapshotIdentifier` looks like the following example: `arn:aws:rds:us-west-2:123456789012:snapshot:mysql-instance1-snapshot-20161115`.

To learn how to generate a Signature Version 4 signed request, see [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) and [Signature Version 4 Signing Process](#).

Type: String

Required: No

## SourceDBSnapshotIdentifier

The identifier for the source DB snapshot.

If the source snapshot is in the same AWS Region as the copy, specify a valid DB snapshot identifier. For example, you might specify `rds:mysql-instance1-snapshot-20130805`.

If the source snapshot is in a different AWS Region than the copy, specify a valid DB snapshot ARN. For example, you might specify `arn:aws:rds:us-west-2:123456789012:snapshot:mysql-instance1-snapshot-20130805`.

If you are copying from a shared manual DB snapshot, this parameter must be the Amazon Resource Name (ARN) of the shared DB snapshot.

If you are copying an encrypted snapshot this parameter must be in the ARN format for the source AWS Region, and must match the `SourceDBSnapshotIdentifier` in the `PreSignedUrl` parameter.

Constraints:

- Must specify a valid system snapshot in the "available" state.

Example: `rds:mydb-2012-04-02-00-01`

Example: `arn:aws:rds:us-west-2:123456789012:snapshot:mysql-instance1-snapshot-20130805`

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

#### **TargetDBSnapshotIdentifier**

The identifier for the copy of the snapshot.

Constraints:

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

Example: `my-db-snapshot`

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

#### **DBSnapshot**

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the [DescribeDBSnapshots \(p. 178\)](#) action.

Type: [DBSnapshot \(p. 407\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

#### **DBSnapshotAlreadyExists**

*DBSnapshotIdentifier* is already used by an existing snapshot.

HTTP Status Code: 400

#### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

#### **InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

#### **KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

#### **SnapshotQuotaExceeded**

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CopyDBSnapshot
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBSnapshotIdentifier=arn%3Aaws%3Aards%3Aus-east-1%3A815981987263%3Asnapshot%3Aards
%3Amysql-2014-04-27-08-15
&TargetDBSnapshotIdentifier=mysql-arn
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
&X-Amz-Date=20140429T175351Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

### Sample Response

```
<CopyDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CopyDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Engine>mysql</Engine>
      <Status>available</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBInstanceIdentifier>mysql-arn</DBInstanceIdentifier>
      <DBSnapshotIdentifier>mysql-arn</DBSnapshotIdentifier>
      <SnapshotCreateTime>2014-04-27T08:16:05.356Z</SnapshotCreateTime>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>awsmasteruser</MasterUsername>
    </DBSnapshot>
  </CopyDBSnapshotResult>
</CopyDBSnapshotResponse>
```

```
</CopyDBSnapshotResult>
<ResponseMetadata>
  <RequestId>2928d60e-beb6-11d3-8e5c-3ccda5460c46</RequestId>
</ResponseMetadata>
</CopyDBSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CopyOptionGroup

Copies the specified option group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### SourceOptionGroupIdentifier

The identifier or ARN for the source option group. For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Constraints:

- Must specify a valid option group.
- If the source option group is in the same AWS Region as the copy, specify a valid option group identifier, for example `my-option-group`, or a valid ARN.
- If the source option group is in a different AWS Region than the copy, specify a valid option group ARN, for example `arn:aws:rds:us-west-2:123456789012:og:special-options`.

Type: String

Required: Yes

### Tags.Tag.N

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

### TargetOptionGroupDescription

The description for the copied option group.

Type: String

Required: Yes

### TargetOptionGroupIdentifier

The identifier for the copied option group.

Constraints:

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

Example: `my-option-group`

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### OptionGroup

Type: [OptionGroup](#) (p. 432) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### OptionGroupAlreadyExistsFault

The option group you are trying to create already exists.

HTTP Status Code: 400

### OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

### OptionGroupQuotaExceededFault

The quota of 20 option groups was exceeded for this AWS account.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CopyOptionGroup
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceOptionGroupIdentifier=arn%3Aaws%3Aards%3Aus-west-2%3A815981987263%3og%3Amy-remote-
option-group
&TargetOptionGroupDescription=New%20option%20group
&TargetOptionGroupIdentifier=new-local-option-group
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
&X-Amz-Date=20140429T175351Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

### Sample Response

```
<CopyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CopyOptionGroupResult>
    <OptionGroup>
      <OptionGroupName>new-local-option-group</OptionGroupName>
```

```
<MajorEngineVersion>5.6</MajorEngineVersion>
<AllowsVpcAndNonVpcInstanceMemberships>>false</AllowsVpcAndNonVpcInstanceMemberships>
<EngineName>mysql</EngineName>
<OptionGroupDescription>description</OptionGroupDescription>
<Options>
  <Option>
    <Port>11211</Port>
    <OptionName>MEMCACHED</OptionName>
    <OptionDescription>InnoDB Memcached for MySQL</OptionDescription>
    <Persistent>>false</Persistent>
    <OptionSettings>
      <OptionSetting>
        <DataType>BOOLEAN</DataType>
        <IsModifiable>>true</IsModifiable>
        <IsCollection>>false</IsCollection>
        <Description>If enabled when there is no more memory to store items,
memcached will return an error rather than evicting items.</Description>
        <Name>ERROR_ON_MEMORY_EXHAUSTED</Name>
        <Value>0</Value>
        <ApplyType>STATIC</ApplyType>
        <AllowedValues>0,1</AllowedValues>
        <DefaultValue>0</DefaultValue>
      </OptionSetting>
      <OptionSetting>
        <DataType>INTEGER</DataType>
        <IsModifiable>>true</IsModifiable>
        <IsCollection>>false</IsCollection>
        <Description>The backlog queue configures how many network connections can be
waiting to be processed by memcached</Description>
        <Name>BACKLOG_QUEUE_LIMIT</Name>
        <Value>1024</Value>
        <ApplyType>STATIC</ApplyType>
        <AllowedValues>1-2048</AllowedValues>
        <DefaultValue>1024</DefaultValue>
      </OptionSetting>
    </OptionSettings>
  </VpcSecurityGroupMemberships>
  <Permanent>>false</Permanent>
  <DBSecurityGroupMemberships>
    <DBSecurityGroup>
      <Status>authorized</Status>
      <DBSecurityGroupName>default</DBSecurityGroupName>
    </DBSecurityGroup>
  </DBSecurityGroupMemberships>
</Option>
</Options>
</OptionGroup>
</CopyOptionGroupResult>
<ResponseMetadata>
  <RequestId>2928d60e-beb6-11d3-8e5c-3ccda5460c46</RequestId>
</ResponseMetadata>
</CopyOptionGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# CreateDBCluster

Creates a new Amazon Aurora DB cluster.

You can use the `ReplicationSourceIdentifier` parameter to create the DB cluster as a Read Replica of another DB cluster or Amazon RDS MySQL DB instance. For cross-region replication where the DB cluster identified by `ReplicationSourceIdentifier` is encrypted, you must also specify the `PreSignedUrl` parameter.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **AvailabilityZones.AvailabilityZone.N**

A list of EC2 Availability Zones that instances in the DB cluster can be created in. For information on AWS Regions and Availability Zones, see [Regions and Availability Zones](#).

Type: Array of strings

Required: No

### **BacktrackWindow**

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

### **BackupRetentionPeriod**

The number of days for which automated backups are retained. You must specify a minimum value of 1.

Default: 1

Constraints:

- Must be a value from 1 to 35

Type: Integer

Required: No

### **CharacterSetName**

A value that indicates that the DB cluster should be associated with the specified CharacterSet.

Type: String

Required: No

**DatabaseName**

The name for your database of up to 64 alpha-numeric characters. If you do not provide a name, Amazon RDS will not create a database in the DB cluster you are creating.

Type: String

Required: No

**DBClusterIdentifier**

The DB cluster identifier. This parameter is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster1`

Type: String

Required: Yes

**DBClusterParameterGroupName**

The name of the DB cluster parameter group to associate with this DB cluster. If this argument is omitted, `default.aurora5.6` is used.

Constraints:

- If supplied, must match the name of an existing `DBClusterParameterGroup`.

Type: String

Required: No

**DBSubnetGroupName**

A DB subnet group to associate with this DB cluster.

Constraints: Must match the name of an existing `DBSubnetGroup`. Must not be default.

Example: `mySubnetgroup`

Type: String

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: `false`

Type: Boolean

Required: No

**Engine**

The name of the database engine to be used for this DB cluster.

Valid Values: `aurora` (for MySQL 5.6-compatible Aurora), `aurora-mysql` (for MySQL 5.7-compatible Aurora), and `aurora-postgresql`

Type: String

Required: Yes

### **EngineVersion**

The version number of the database engine to use.

#### **Aurora MySQL**

Example: `5.6.10a`, `5.7.12`

#### **Aurora PostgreSQL**

Example: `9.6.3`

Type: String

Required: No

### **KmsKeyId**

The AWS KMS key identifier for an encrypted DB cluster.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are creating a DB cluster with the same AWS account that owns the KMS encryption key used to encrypt the new DB cluster, then you can use the KMS key alias instead of the ARN for the KMS encryption key.

If an encryption key is not specified in `KmsKeyId`:

- If `ReplicationSourceIdentifier` identifies an encrypted source, then Amazon RDS will use the encryption key used to encrypt the source. Otherwise, Amazon RDS will use your default encryption key.
- If the `StorageEncrypted` parameter is true and `ReplicationSourceIdentifier` is not specified, then Amazon RDS will use your default encryption key.

AWS KMS creates the default encryption key for your AWS account. Your AWS account has a different default encryption key for each AWS Region.

If you create a Read Replica of an encrypted DB cluster in another AWS Region, you must set `KmsKeyId` to a KMS key ID that is valid in the destination AWS Region. This key is used to encrypt the Read Replica in that AWS Region.

Type: String

Required: No

### **MasterUsername**

The name of the master user for the DB cluster.

Constraints:

- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

Type: String

Required: No

### **MasterUserPassword**

The password for the master database user. This password can contain any printable ASCII character except `"/`, `""`, or `@`.

Constraints: Must contain from 8 to 41 characters.

Type: String

Required: No

### **OptionGroupName**

A value that indicates that the DB cluster should be associated with the specified option group.

Permanent options can't be removed from an option group. The option group can't be removed from a DB cluster once it is associated with a DB cluster.

Type: String

Required: No

### **Port**

The port number on which the instances in the DB cluster accept connections.

Default: 3306 if engine is set as aurora or 5432 if set to aurora-postgresql.

Type: Integer

Required: No

### **PreferredBackupWindow**

The daily time range during which automated backups are created if automated backups are enabled using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

### **PreferredMaintenanceWindow**

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

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

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region, occurring on a random day of the week. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.

Constraints: Minimum 30-minute window.

Type: String

Required: No

**PreSignedUrl**

A URL that contains a Signature Version 4 signed request for the `CreateDBCluster` action to be called in the source AWS Region where the DB cluster is replicated from. You only need to specify `PreSignedUrl` when you are performing cross-region replication from an encrypted DB cluster.

The pre-signed URL must be a valid request for the `CreateDBCluster` API action that can be executed in the source AWS Region that contains the encrypted DB cluster to be copied.

The pre-signed URL request must contain the following parameter values:

- `KmsKeyId` - The AWS KMS key identifier for the key to use to encrypt the copy of the DB cluster in the destination AWS Region. This should refer to the same KMS key for both the `CreateDBCluster` action that is called in the destination AWS Region, and the action contained in the pre-signed URL.
- `DestinationRegion` - The name of the AWS Region that Aurora Read Replica will be created in.
- `ReplicationSourceIdentifier` - The DB cluster identifier for the encrypted DB cluster to be copied. This identifier must be in the Amazon Resource Name (ARN) format for the source AWS Region. For example, if you are copying an encrypted DB cluster from the us-west-2 AWS Region, then your `ReplicationSourceIdentifier` would look like Example: `arn:aws:rds:us-west-2:123456789012:cluster:aurora-cluster1`.

To learn how to generate a Signature Version 4 signed request, see [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) and [Signature Version 4 Signing Process](#).

Type: String

Required: No

**ReplicationSourceIdentifier**

The Amazon Resource Name (ARN) of the source DB instance or DB cluster if this DB cluster is created as a Read Replica.

Type: String

Required: No

**StorageEncrypted**

Specifies whether the DB cluster is encrypted.

Type: Boolean

Required: No

**Tags.Tag.N**

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of EC2 VPC security groups to associate with this DB cluster.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterAlreadyExistsFault**

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterParameterGroupNotFound**

*DBClusterParameterGroupName* doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

### **DBClusterQuotaExceededFault**

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**InsufficientStorageClusterCapacity**

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

**InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

**InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

**InvalidDBSubnetGroupStateFault**

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=CreateDBCluster  
&DBClusterIdentifier=sample-cluster  
&Engine=aurora  
  &MasterUserPassword=<password>  
&MasterUsername=myawsuser  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4
```

```
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150927/us-east-1/rds/aws4_request
&X-Amz-Date=20150927T164851Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6a8f4bd6a98f649c75ea04a6b3929ecc75ac09739588391cd7250f5280e716db
```

## Sample Response

```
<CreateDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>default</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster.cluster-ctrayan0ryng.us-east-1.rds.amazonaws.com</Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <AvailabilityZones>
        <AvailabilityZone>us-east-1a</AvailabilityZone>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <AvailabilityZone>us-east-1e</AvailabilityZone>
      </AvailabilityZones>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
      <DBClusterMembers/>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBCluster>
  </CreateDBClusterResult>
  <ResponseMetadata>
    <RequestId>46d2b228-7681-11e5-3e8b-9b2c0d5d51a9</RequestId>
  </ResponseMetadata>
</CreateDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBClusterParameterGroup

Creates a new DB cluster parameter group.

Parameters in a DB cluster parameter group apply to all of the instances in a DB cluster.

A DB cluster parameter group is initially created with the default parameters for the database engine used by instances in the DB cluster. To provide custom values for any of the parameters, you must modify the group after creating it using [ModifyDBClusterParameterGroup](#) (p. 246). Once you've created a DB cluster parameter group, you need to associate it with your DB cluster using [ModifyDBCluster](#) (p. 240). When you associate a new DB cluster parameter group with a running DB cluster, you need to reboot the DB instances in the DB cluster without failover for the new DB cluster parameter group and associated settings to take effect.

## Important

After you create a DB cluster parameter group, you should wait at least 5 minutes before creating your first DB cluster that uses that DB cluster parameter group as the default parameter group. This allows Amazon RDS to fully complete the create action before the DB cluster parameter group is used as the default for a new DB cluster. This is especially important for parameters that are critical when creating the default database for a DB cluster, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the [Amazon RDS console](#) or the [DescribeDBClusterParameters](#) (p. 139) command to verify that your DB cluster parameter group has been created or modified.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

- Must match the name of an existing DBClusterParameterGroup.

#### Note

This value is stored as a lowercase string.

Type: String

Required: Yes

### DBParameterGroupFamily

The DB cluster parameter group family name. A DB cluster parameter group can be associated with one and only one DB cluster parameter group family, and can be applied only to a DB cluster running a database engine and engine version compatible with that DB cluster parameter group family.

#### Aurora MySQL

Example: `aurora5.6`, `aurora-mysql5.7`

#### Aurora PostgreSQL

Example: `aurora-postgresql9.6`

Type: String

Required: Yes

**Description**

The description for the DB cluster parameter group.

Type: String

Required: Yes

**Tags.Tag.N**

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

**DBClusterParameterGroup**

Contains the details of an Amazon RDS DB cluster parameter group.

This data type is used as a response element in the [DescribeDBClusterParameterGroups \(p. 136\)](#) action.

Type: [DBClusterParameterGroup \(p. 384\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

**DBParameterGroupAlreadyExists**

A DB parameter group with the same name exists.

HTTP Status Code: 400

**DBParameterGroupQuotaExceeded**

The request would result in the user exceeding the allowed number of DB parameter groups.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=CreateDBClusterParameterGroup  
&DBClusterParameterGroupName=samplegroup
```

```
&DBParameterGroupFamily=aurora5.6
&Description=Sample%20group
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
&X-Amz-Date=20150318T183624Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=86d521a3a117a033df0aa381fde0cd8a5ab5c7ab87a29aa9154438c3790ba611
```

## Sample Response

```
<CreateDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterParameterGroupResult>
    <DBClusterParameterGroup>
      <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
      <Description>Sample group</Description>
      <DBClusterParameterGroupName>samplegroup</DBClusterParameterGroupName>
    </DBClusterParameterGroup>
  </CreateDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>ae81a963-cd9d-11e4-8b88-8351746a4c92</RequestId>
  </ResponseMetadata>
</CreateDBClusterParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBClusterSnapshot

Creates a snapshot of a DB cluster. For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

The identifier of the DB cluster to create a snapshot for. This parameter is not case-sensitive.

Constraints:

- Must match the identifier of an existing DBCluster.

Example: `my-cluster1`

Type: String

Required: Yes

### **DBClusterSnapshotIdentifier**

The identifier of the DB cluster snapshot. This parameter is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster1-snapshot1`

Type: String

Required: Yes

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

The tags to be assigned to the DB cluster snapshot.

Type: Array of [Tag](#) (p. 464) objects

Required: No

## Response Elements

The following element is returned by the service.

### **DBClusterSnapshot**

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the [DescribeDBClusterSnapshots](#) (p. 149) action.

Type: [DBClusterSnapshot](#) (p. 386) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterSnapshotAlreadyExistsFault**

The user already has a DB cluster snapshot with the given identifier.

HTTP Status Code: 400

### **InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

### **SnapshotQuotaExceeded**

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBClusterSnapshot
&DBClusterIdentifier=sample-cluster
&DBClusterSnapshotIdentifier=sample-cluster-snapshot
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
&X-Amz-Date=20150318T205321Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9573ced573a41cdec8e2ef1d9b5235a141f97ae30b4469fc9b0f16149399c4bf
```

### Sample Response

```
<CreateDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterSnapshotResult>
    <DBClusterSnapshot>
      <Port>0</Port>
```

```
<Engine>aurora</Engine>
<Status>creating</Status>
<SnapshotType>manual</SnapshotType>
<LicenseModel>aurora</LicenseModel>
<DBClusterSnapshotIdentifier>sample-cluster-snapshot</DBClusterSnapshotIdentifier>
<SnapshotCreateTime>2015-03-18T20:53:22.523Z</SnapshotCreateTime>
<DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
<VpcId>vpc-3faffe54</VpcId>
<ClusterCreateTime>2015-03-06T22:11:13.826Z</ClusterCreateTime>
<PercentProgress>0</PercentProgress>
<AllocatedStorage>1</AllocatedStorage>
<MasterUsername>awsuser</MasterUsername>
</DBClusterSnapshot>
</CreateDBClusterSnapshotResult>
<ResponseMetadata>
  <RequestId>d070d0d2-cea0-11e4-8c88-8351226c8c92</RequestId>
</ResponseMetadata>
</CreateDBClusterSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBInstance

Creates a new DB instance.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### AllocatedStorage

The amount of storage (in gibibytes) to allocate for the DB instance.

Type: Integer

#### Amazon Aurora

Not applicable. Aurora cluster volumes automatically grow as the amount of data in your database increases, though you are only charged for the space that you use in an Aurora cluster volume.

#### MySQL

Constraints to the amount of storage for each storage type are the following:

- General Purpose (SSD) storage (gp2): Must be an integer from 20 to 16384.
- Provisioned IOPS storage (io1): Must be an integer from 100 to 16384.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

#### MariaDB

Constraints to the amount of storage for each storage type are the following:

- General Purpose (SSD) storage (gp2): Must be an integer from 20 to 16384.
- Provisioned IOPS storage (io1): Must be an integer from 100 to 16384.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

#### PostgreSQL

Constraints to the amount of storage for each storage type are the following:

- General Purpose (SSD) storage (gp2): Must be an integer from 20 to 16384.
- Provisioned IOPS storage (io1): Must be an integer from 100 to 16384.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

#### Oracle

Constraints to the amount of storage for each storage type are the following:

- General Purpose (SSD) storage (gp2): Must be an integer from 20 to 16384.
- Provisioned IOPS storage (io1): Must be an integer from 100 to 16384.
- Magnetic storage (standard): Must be an integer from 10 to 3072.

#### SQL Server

Constraints to the amount of storage for each storage type are the following:

- General Purpose (SSD) storage (gp2):
  - Enterprise and Standard editions: Must be an integer from 200 to 16384.
  - Web and Express editions: Must be an integer from 20 to 16384.



- Provisioned IOPS storage (io1):
  - Enterprise and Standard editions: Must be an integer from 200 to 16384.
  - Web and Express editions: Must be an integer from 100 to 16384.
- Magnetic storage (standard):
  - Enterprise and Standard editions: Must be an integer from 200 to 1024.
  - Web and Express editions: Must be an integer from 20 to 1024.

Type: Integer

Required: No

#### **AutoMinorVersionUpgrade**

Indicates that minor engine upgrades are applied automatically to the DB instance during the maintenance window.

Default: `true`

Type: Boolean

Required: No

#### **AvailabilityZone**

The EC2 Availability Zone that the DB instance is created in. For information on AWS Regions and Availability Zones, see [Regions and Availability Zones](#).

Default: A random, system-chosen Availability Zone in the endpoint's AWS Region.

Example: `us-east-1d`

Constraint: The `AvailabilityZone` parameter can't be specified if the `MultiAZ` parameter is set to `true`. The specified Availability Zone must be in the same AWS Region as the current endpoint.

Type: String

Required: No

#### **BackupRetentionPeriod**

The number of days for which automated backups are retained. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

#### **Amazon Aurora**

Not applicable. The retention period for automated backups is managed by the DB cluster. For more information, see [CreateDBCluster](#) (p. 42).

Default: 1

Constraints:

- Must be a value from 0 to 35
- Cannot be set to 0 if the DB instance is a source to Read Replicas

Type: Integer

Required: No

#### **CharacterSetName**

For supported engines, indicates that the DB instance should be associated with the specified `CharacterSet`.

### **Amazon Aurora**

Not applicable. The character set is managed by the DB cluster. For more information, see [CreateDBCluster \(p. 42\)](#).

Type: String

Required: No

### **CopyTagsToSnapshot**

True to copy all tags from the DB instance to snapshots of the DB instance, and otherwise false. The default is false.

Type: Boolean

Required: No

### **DBClusterIdentifier**

The identifier of the DB cluster that the instance will belong to.

For information on creating a DB cluster, see [CreateDBCluster \(p. 42\)](#).

Type: String

Type: String

Required: No

### **DBInstanceClass**

The compute and memory capacity of the DB instance, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

Type: String

Required: Yes

### **DBInstanceIdentifier**

The DB instance identifier. This parameter is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `mydbinstance`

Type: String

Required: Yes

### **DBName**

The meaning of this parameter differs according to the database engine you use.

Type: String

### **MySQL**

The name of the database to create when the DB instance is created. If this parameter is not specified, no database is created in the DB instance.

Constraints:

- Must contain 1 to 64 letters or numbers.
- Cannot be a word reserved by the specified database engine

#### **MariaDB**

The name of the database to create when the DB instance is created. If this parameter is not specified, no database is created in the DB instance.

Constraints:

- Must contain 1 to 64 letters or numbers.
- Cannot be a word reserved by the specified database engine

#### **PostgreSQL**

The name of the database to create when the DB instance is created. If this parameter is not specified, the default "postgres" database is created in the DB instance.

Constraints:

- Must contain 1 to 63 letters, numbers, or underscores.
- Must begin with a letter or an underscore. Subsequent characters can be letters, underscores, or digits (0-9).
- Cannot be a word reserved by the specified database engine

#### **Oracle**

The Oracle System ID (SID) of the created DB instance. If you specify `null`, the default value `ORCL` is used. You can't specify the string `NULL`, or any other reserved word, for `DBName`.

Default: `ORCL`

Constraints:

- Cannot be longer than 8 characters

#### **SQL Server**

Not applicable. Must be null.

#### **Amazon Aurora**

The name of the database to create when the primary instance of the DB cluster is created. If this parameter is not specified, no database is created in the DB instance.

Constraints:

- Must contain 1 to 64 letters or numbers.
- Cannot be a word reserved by the specified database engine

Type: String

Required: No

#### **DBParameterGroupName**

The name of the DB parameter group to associate with this DB instance. If this argument is omitted, the default `DBParameterGroup` for the specified engine is used.

Constraints:

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

Type: String

Required: No

**DBSecurityGroups.DBSecurityGroupName.N**

A list of DB security groups to associate with this DB instance.

Default: The default DB security group for the database engine.

Type: Array of strings

Required: No

**DBSubnetGroupName**

A DB subnet group to associate with this DB instance.

If there is no DB subnet group, then it is a non-VPC DB instance.

Type: String

Required: No

**Domain**

Specify the Active Directory Domain to create the instance in.

Type: String

Required: No

**DomainIAMRoleName**

Specify the name of the IAM role to be used when making API calls to the Directory Service.

Type: String

Required: No

**EnableCloudwatchLogsExports.member.N**

The list of log types that need to be enabled for exporting to CloudWatch Logs.

Type: Array of strings

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

You can enable IAM database authentication for the following database engines:

**Amazon Aurora**

Not applicable. Mapping AWS IAM accounts to database accounts is managed by the DB cluster. For more information, see [CreateDBCluster](#) (p. 42).

**MySQL**

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher

Default: `false`

Type: Boolean

Required: No

#### **EnablePerformanceInsights**

True to enable Performance Insights for the DB instance, and otherwise false.

Type: Boolean

Required: No

#### **Engine**

The name of the database engine to be used for this instance.

Not every database engine is available for every AWS Region.

Valid Values:

- `aurora` (for MySQL 5.6-compatible Aurora)
- `aurora-mysql` (for MySQL 5.7-compatible Aurora)
- `aurora-postgresql`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-se2`
- `oracle-se1`
- `oracle-se`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

#### **EngineVersion**

The version number of the database engine to use.

The following are the database engines and major and minor versions that are available with Amazon RDS. Not every database engine is available for every AWS Region.

##### **Amazon Aurora**

Not applicable. The version number of the database engine to be used by the DB instance is managed by the DB cluster. For more information, see [CreateDBCluster](#) (p. 42).

##### **MariaDB**

- `10.2.12` (supported in all AWS Regions)
- `10.2.11` (supported in all AWS Regions)

- 10.1.31 (supported in all AWS Regions)
  - 10.1.26 (supported in all AWS Regions)
  - 10.1.23 (supported in all AWS Regions)
  - 10.1.19 (supported in all AWS Regions)
  - 10.1.14 (supported in all AWS Regions except us-east-2)
- 
- 10.0.34 (supported in all AWS Regions)
  - 10.0.32 (supported in all AWS Regions)
  - 10.0.31 (supported in all AWS Regions)
  - 10.0.28 (supported in all AWS Regions)
  - 10.0.24 (supported in all AWS Regions)
  - 10.0.17 (supported in all AWS Regions except us-east-2, ca-central-1, eu-west-2)
- Microsoft SQL Server 2017**
- 14.00.1000.169.v1 (supported for all editions, and all AWS Regions)
- Microsoft SQL Server 2016**
- 13.00.4451.0.v1 (supported for all editions, and all AWS Regions)
  - 13.00.4422.0.v1 (supported for all editions, and all AWS Regions)
  - 13.00.2164.0.v1 (supported for all editions, and all AWS Regions)
- Microsoft SQL Server 2014**
- 12.00.5546.0.v1 (supported for all editions, and all AWS Regions)
  - 12.00.5000.0.v1 (supported for all editions, and all AWS Regions)
  - 12.00.4422.0.v1 (supported for all editions except Enterprise Edition, and all AWS Regions except ca-central-1 and eu-west-2)
- Microsoft SQL Server 2012**
- 11.00.6594.0.v1 (supported for all editions, and all AWS Regions)
  - 11.00.6020.0.v1 (supported for all editions, and all AWS Regions)
  - 11.00.5058.0.v1 (supported for all editions, and all AWS Regions except us-east-2, ca-central-1, and eu-west-2)
  - 11.00.2100.60.v1 (supported for all editions, and all AWS Regions except us-east-2, ca-central-1, and eu-west-2)
- Microsoft SQL Server 2008 R2**
- 10.50.6529.0.v1 (supported for all editions, and all AWS Regions except us-east-2, ca-central-1, and eu-west-2)
  - 10.50.6000.34.v1 (supported for all editions, and all AWS Regions except us-east-2, ca-central-1, and eu-west-2)
  - 10.50.2789.0.v1 (supported for all editions, and all AWS Regions except us-east-2, ca-central-1, and eu-west-2)
- MySQL**
- 5.7.21 (supported in all AWS regions)
  - 5.7.19 (supported in all AWS regions)
  - 5.7.17 (supported in all AWS regions)
  - 5.7.16 (supported in all AWS regions)
- 
- 5.6.39 (supported in all AWS Regions)

- 5.6.37 (supported in all AWS Regions)
- 5.6.35 (supported in all AWS Regions)
- 5.6.34 (supported in all AWS Regions)
- 5.6.29 (supported in all AWS Regions)
- 5.6.27 (supported in all AWS Regions except us-east-2, ca-central-1, eu-west-2)
- 5.5.59 (supported in all AWS Regions)
- 5.5.57 (supported in all AWS Regions)
- 5.5.54 (supported in all AWS Regions)
- 5.5.53 (supported in all AWS Regions)
- 5.5.46 (supported in all AWS Regions)

#### **Oracle 12c**

- 12.1.0.2.v9 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v8 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v7 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v6 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v5 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v4 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v3 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v2 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)
- 12.1.0.2.v1 (supported for EE in all AWS regions, and SE2 in all AWS regions except us-gov-west-1)

#### **Oracle 11g**

- 11.2.0.4.v13 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v12 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v11 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v10 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v9 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v8 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v7 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v6 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v5 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v4 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v3 (supported for EE, SE1, and SE, in all AWS regions)
- 11.2.0.4.v1 (supported for EE, SE1, and SE, in all AWS regions)

#### **PostgreSQL**

- **Version 10.1**
- **Version 9.6.x:** 9.6.6 | 9.6.5 | 9.6.3 | 9.6.2 | 9.6.1

- **Version 9.5.x:** 9.5.9 | 9.5.7 | 9.5.6 | 9.5.4 | 9.5.2
- **Version 9.4.x:** 9.4.14 | 9.4.12 | 9.4.11 | 9.4.9 | 9.4.7
- **Version 9.3.x:** 9.3.19 | 9.3.17 | 9.3.16 | 9.3.14 | 9.3.12

Type: String

Required: No

### **Iops**

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for the DB instance. For information about valid Iops values, see [Amazon RDS Provisioned IOPS Storage to Improve Performance](#).

Constraints: Must be a multiple between 1 and 50 of the storage amount for the DB instance. Must also be an integer multiple of 1000. For example, if the size of your DB instance is 500 GiB, then your Iops value can be 2000, 3000, 4000, or 5000.

Type: Integer

Required: No

### **KmsKeyId**

The AWS KMS key identifier for an encrypted DB instance.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are creating a DB instance with the same AWS account that owns the KMS encryption key used to encrypt the new DB instance, then you can use the KMS key alias instead of the ARN for the KMS encryption key.

#### **Amazon Aurora**

Not applicable. The KMS key identifier is managed by the DB cluster. For more information, see [CreateDBCluster \(p. 42\)](#).

If the `StorageEncrypted` parameter is true, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS will use your default encryption key. AWS KMS creates the default encryption key for your AWS account. Your AWS account has a different default encryption key for each AWS Region.

Type: String

Required: No

### **LicenseModel**

License model information for this DB instance.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

### **MasterUsername**

The name for the master user.

#### **Amazon Aurora**

Not applicable. The name for the master user is managed by the DB cluster. For more information, see [CreateDBCluster \(p. 42\)](#).



### **MariaDB**

Constraints:

- Required for MariaDB.
- Must be 1 to 16 letters or numbers.
- Cannot be a reserved word for the chosen database engine.

### **Microsoft SQL Server**

Constraints:

- Required for SQL Server.
- Must be 1 to 128 letters or numbers.
- The first character must be a letter.
- Cannot be a reserved word for the chosen database engine.

### **MySQL**

Constraints:

- Required for MySQL.
- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

### **Oracle**

Constraints:

- Required for Oracle.
- Must be 1 to 30 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

### **PostgreSQL**

Constraints:

- Required for PostgreSQL.
- Must be 1 to 63 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

Type: String

Required: No

### **MasterUserPassword**

The password for the master user. The password can include any printable ASCII character except "/", "", or "@".

### **Amazon Aurora**

Not applicable. The password for the master user is managed by the DB cluster. For more information, see [CreateDBCluster](#) (p. 42).

### **MariaDB**

Constraints: Must contain from 8 to 41 characters.

**Microsoft SQL Server**

Constraints: Must contain from 8 to 128 characters.

**MySQL**

Constraints: Must contain from 8 to 41 characters.

**Oracle**

Constraints: Must contain from 8 to 30 characters.

**PostgreSQL**

Constraints: Must contain from 8 to 128 characters.

Type: String

Required: No

**MonitoringInterval**

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collecting Enhanced Monitoring metrics, specify 0. The default is 0.

If `MonitoringRoleArn` is specified, then you must also set `MonitoringInterval` to a value other than 0.

Valid Values: 0, 1, 5, 10, 15, 30, 60

Type: Integer

Required: No

**MonitoringRoleArn**

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, go to [Setting Up and Enabling Enhanced Monitoring](#).

If `MonitoringInterval` is set to a value other than 0, then you must supply a `MonitoringRoleArn` value.

Type: String

Required: No

**MultiAZ**

Specifies if the DB instance is a Multi-AZ deployment. You can't set the `AvailabilityZone` parameter if the `MultiAZ` parameter is set to true.

Type: Boolean

Required: No

**OptionGroupName**

Indicates that the DB instance should be associated with the specified option group.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: No

**PerformanceInsightsKMSKeyId**

The AWS KMS key identifier for encryption of Performance Insights data. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

Type: String

Required: No

**Port**

The port number on which the database accepts connections.

**MySQL**

Default: 3306

Valid Values: 1150–65535

Type: Integer

**MariaDB**

Default: 3306

Valid Values: 1150–65535

Type: Integer

**PostgreSQL**

Default: 5432

Valid Values: 1150–65535

Type: Integer

**Oracle**

Default: 1521

Valid Values: 1150–65535

**SQL Server**

Default: 1433

Valid Values: 1150–65535 except for 1434, 3389, 47001, 49152, and 49152 through 49156.

**Amazon Aurora**

Default: 3306

Valid Values: 1150–65535

Type: Integer

Type: Integer

Required: No

### **PreferredBackupWindow**

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter. For more information, see [The Backup Window](#).

#### **Amazon Aurora**

Not applicable. The daily time range for creating automated backups is managed by the DB cluster. For more information, see [CreateDBCluster](#) (p. 42).

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region. To see the time blocks available, see [Adjusting the Preferred DB Instance Maintenance Window](#).

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

### **PreferredMaintenanceWindow**

The time range each week during which system maintenance can occur, in Universal Coordinated Time (UTC). For more information, see [Amazon RDS Maintenance Window](#).

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

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region, occurring on a random day of the week.

Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.

Constraints: Minimum 30-minute window.

Type: String

Required: No

### **PromotionTier**

A value that specifies the order in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see [Fault Tolerance for an Aurora DB Cluster](#).

Default: 1

Valid Values: 0 - 15

Type: Integer

Required: No

### **PubliclyAccessible**

Specifies the accessibility options for the DB instance. A value of `true` specifies an Internet-facing instance with a publicly resolvable DNS name, which resolves to a public IP address. A value of `false` specifies an internal instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether a VPC has been requested or not. The following list shows the default behavior in each case.

- **Default VPC:** true
- **VPC:** false

If no DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is publicly accessible. If a specific DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is private.

Type: Boolean

Required: No

### **StorageEncrypted**

Specifies whether the DB instance is encrypted.

#### **Amazon Aurora**

Not applicable. The encryption for DB instances is managed by the DB cluster. For more information, see [CreateDBCluster \(p. 42\)](#).

Default: false

Type: Boolean

Required: No

### **StorageType**

Specifies the storage type to be associated with the DB instance.

Valid values: `standard` | `gp2` | `io1`

If you specify `io1`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified, otherwise `standard`

Type: String

Required: No

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

### **TdeCredentialArn**

The ARN from the key store with which to associate the instance for TDE encryption.

Type: String

Required: No

### **TdeCredentialPassword**

The password for the given ARN from the key store in order to access the device.

Type: String

Required: No

### **Timezone**

The time zone of the DB instance. The time zone parameter is currently supported only by [Microsoft SQL Server](#).

Type: String

Required: No

### **VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of EC2 VPC security groups to associate with this DB instance.

#### **Amazon Aurora**

Not applicable. The associated list of EC2 VPC security groups is managed by the DB cluster. For more information, see [CreateDBCluster \(p. 42\)](#).

Default: The default EC2 VPC security group for the DB subnet group's VPC.

Type: Array of strings

Required: No

## **Response Elements**

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## **Errors**

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

**DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

**DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

**DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

**DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**DomainNotFoundFault**

*Domain* doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

**InstanceQuotaExceeded**

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

**InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

**InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

#### **OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

#### **ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

#### **StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

#### **StorageTypeNotSupported**

Storage of the *StorageType* specified can't be associated with the DB instance.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBInstance
&AllocatedStorage=15
&DBInstanceClass=db.m1.large
&DBInstanceIdentifier=myawsuser-dbi01
&Engine=MySQL
&MasterUserPassword=<password>
&MasterUsername=myawsuser
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140424/us-east-1/rds/aws4_request
&X-Amz-Date=20140424T194844Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=bee4aabcf750bf7dad0cd9e22b952bd6089d91e2a16592c2293e532eeaab8bc77
```

### Sample Response

```
<CreateDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>myawsuser-dbi01</DBInstanceIdentifier>

      <PreferredBackupWindow>03:50-04:20</PreferredBackupWindow>
    </DBInstance>
  </CreateDBInstanceResult>
</CreateDBInstanceResponse>
```



```
<PreferredMaintenanceWindow>wed:06:38-wed:07:08</PreferredMaintenanceWindow>
<ReadReplicaDBInstanceIdentifiers/>
<Engine>mysql</Engine>
<PendingModifiedValues>
  <MasterUserPassword>****</MasterUserPassword>
</PendingModifiedValues>
<LicenseModel>general-public-license</LicenseModel>
<EngineVersion>5.6.13</EngineVersion>
<DBParameterGroups>
  <DBParameterGroup>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
  </DBParameterGroup>
</DBParameterGroups>
<OptionGroupMemberships>
  <OptionGroupMembership>
    <OptionGroupName>default:mysql-5-6</OptionGroupName>
    <Status>in-sync</Status>
  </OptionGroupMembership>
</OptionGroupMemberships>
<DBSecurityGroups>
  <DBSecurityGroup>
    <Status>active</Status>
    <DBSecurityGroupName>default</DBSecurityGroupName>
  </DBSecurityGroup>
</DBSecurityGroups>
<PubliclyAccessible>true</PubliclyAccessible>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<AllocatedStorage>15</AllocatedStorage>
<DBInstanceClass>db.m1.large</DBInstanceClass>
<MasterUsername>myawsuser</MasterUsername>
</DBInstance>
</CreateDBInstanceResult>
<ResponseMetadata>
  <RequestId>523e3218-afc7-11c3-90f5-f90431260ab4</RequestId>
</ResponseMetadata>
</CreateDBInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBInstanceReadReplica

Creates a new DB instance that acts as a Read Replica for an existing source DB instance. You can create a Read Replica for a DB instance running MySQL, MariaDB, or PostgreSQL. For more information, see [Working with PostgreSQL, MySQL, and MariaDB Read Replicas](#).

Amazon Aurora doesn't support this action. You must call the `CreateDBInstance` action to create a DB instance for an Aurora DB cluster.

All Read Replica DB instances are created with backups disabled. All other DB instance attributes (including DB security groups and DB parameter groups) are inherited from the source DB instance, except as specified following.

## Important

Your source DB instance must have backup retention enabled.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### AutoMinorVersionUpgrade

Indicates that minor engine upgrades are applied automatically to the Read Replica during the maintenance window.

Default: Inherits from the source DB instance

Type: Boolean

Required: No

### AvailabilityZone

The Amazon EC2 Availability Zone that the Read Replica is created in.

Default: A random, system-chosen Availability Zone in the endpoint's AWS Region.

Example: `us-east-1d`

Type: String

Required: No

### CopyTagsToSnapshot

True to copy all tags from the Read Replica to snapshots of the Read Replica, and otherwise false. The default is false.

Type: Boolean

Required: No

### DBInstanceClass

The compute and memory capacity of the Read Replica, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

Default: Inherits from the source DB instance.

Type: String

Required: No

**DBInstanceIdentifier**

The DB instance identifier of the Read Replica. This identifier is the unique key that identifies a DB instance. This parameter is stored as a lowercase string.

Type: String

Required: Yes

**DBSubnetGroupName**

Specifies a DB subnet group for the DB instance. The new DB instance is created in the VPC associated with the DB subnet group. If no DB subnet group is specified, then the new DB instance is not created in a VPC.

Constraints:

- Can only be specified if the source DB instance identifier specifies a DB instance in another AWS Region.
- If supplied, must match the name of an existing DBSubnetGroup.
- The specified DB subnet group must be in the same AWS Region in which the operation is running.
- All Read Replicas in one AWS Region that are created from the same source DB instance must either:>
  - Specify DB subnet groups from the same VPC. All these Read Replicas are created in the same VPC.
  - Not specify a DB subnet group. All these Read Replicas are created outside of any VPC.

Example: `mySubnetgroup`

Type: String

Required: No

**EnableCloudwatchLogsExports.member.N**

The list of logs that the new DB instance is to export to CloudWatch Logs.

Type: Array of strings

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

You can enable IAM database authentication for the following database engines

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher
- Aurora 5.6 or higher.

Default: `false`

Type: Boolean

Required: No

**EnablePerformanceInsights**

True to enable Performance Insights for the read replica, and otherwise false.

Type: Boolean

Required: No

### **Iops**

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for the DB instance.

Type: Integer

Required: No

### **KmsKeyId**

The AWS KMS key ID for an encrypted Read Replica. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

If you specify this parameter when you create a Read Replica from an unencrypted DB instance, the Read Replica is encrypted.

If you create an encrypted Read Replica in the same AWS Region as the source DB instance, then you do not have to specify a value for this parameter. The Read Replica is encrypted with the same KMS key as the source DB instance.

If you create an encrypted Read Replica in a different AWS Region, then you must specify a KMS key for the destination AWS Region. KMS encryption keys are specific to the AWS Region that they are created in, and you can't use encryption keys from one AWS Region in another AWS Region.

Type: String

Required: No

### **MonitoringInterval**

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the Read Replica. To disable collecting Enhanced Monitoring metrics, specify 0. The default is 0.

If `MonitoringRoleArn` is specified, then you must also set `MonitoringInterval` to a value other than 0.

Valid Values: 0, 1, 5, 10, 15, 30, 60

Type: Integer

Required: No

### **MonitoringRoleArn**

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, go to [To create an IAM role for Amazon RDS Enhanced Monitoring](#).

If `MonitoringInterval` is set to a value other than 0, then you must supply a `MonitoringRoleArn` value.

Type: String

Required: No

### **MultiAZ**

Specifies whether the Read Replica is in a Multi-AZ deployment.

You can create a Read Replica as a Multi-AZ DB instance. RDS creates a standby of your replica in another Availability Zone for failover support for the replica. Creating your Read Replica as a Multi-AZ DB instance is independent of whether the source database is a Multi-AZ DB instance.

Type: Boolean

Required: No

**OptionGroupName**

The option group the DB instance is associated with. If omitted, the default option group for the engine specified is used.

Type: String

Required: No

**PerformanceInsightsKMSKeyId**

The AWS KMS key identifier for encryption of Performance Insights data. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

Type: String

Required: No

**Port**

The port number that the DB instance uses for connections.

Default: Inherits from the source DB instance

Valid Values: 1150–65535

Type: Integer

Required: No

**PreSignedUrl**

The URL that contains a Signature Version 4 signed request for the `CreateDBInstanceReadReplica` API action in the source AWS Region that contains the source DB instance.

You must specify this parameter when you create an encrypted Read Replica from another AWS Region by using the Amazon RDS API. You can specify the `--source-region` option instead of this parameter when you create an encrypted Read Replica from another AWS Region by using the AWS CLI.

The presigned URL must be a valid request for the `CreateDBInstanceReadReplica` API action that can be executed in the source AWS Region that contains the encrypted source DB instance. The presigned URL request must contain the following parameter values:

- `DestinationRegion` - The AWS Region that the encrypted Read Replica is created in. This AWS Region is the same one where the `CreateDBInstanceReadReplica` action is called that contains this presigned URL.

For example, if you create an encrypted DB instance in the us-west-1 AWS Region, from a source DB instance in the us-east-2 AWS Region, then you call the `CreateDBInstanceReadReplica` action in the us-east-1 AWS Region and provide a presigned URL that contains a call to the `CreateDBInstanceReadReplica` action in the us-west-2 AWS Region. For this example, the `DestinationRegion` in the presigned URL must be set to the us-east-1 AWS Region.

- `KmsKeyId` - The AWS KMS key identifier for the key to use to encrypt the Read Replica in the destination AWS Region. This is the same identifier for both the

CreateDBInstanceReadReplica action that is called in the destination AWS Region, and the action contained in the presigned URL.

- **SourceDBInstanceIdentifier** - The DB instance identifier for the encrypted DB instance to be replicated. This identifier must be in the Amazon Resource Name (ARN) format for the source AWS Region. For example, if you are creating an encrypted Read Replica from a DB instance in the us-west-2 AWS Region, then your SourceDBInstanceIdentifier looks like the following example: `arn:aws:rds:us-west-2:123456789012:instance:mysql-instance1-20161115`.

To learn how to generate a Signature Version 4 signed request, see [Authenticating Requests: Using Query Parameters \(AWS Signature Version 4\)](#) and [Signature Version 4 Signing Process](#).

Type: String

Required: No

### **PubliclyAccessible**

Specifies the accessibility options for the DB instance. A value of true specifies an Internet-facing instance with a publicly resolvable DNS name, which resolves to a public IP address. A value of false specifies an internal instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether a VPC has been requested or not. The following list shows the default behavior in each case.

- **Default VPC:**true
- **VPC:**false

If no DB subnet group has been specified as part of the request and the PubliclyAccessible value has not been set, the DB instance is publicly accessible. If a specific DB subnet group has been specified as part of the request and the PubliclyAccessible value has not been set, the DB instance is private.

Type: Boolean

Required: No

### **SourceDBInstanceIdentifier**

The identifier of the DB instance that will act as the source for the Read Replica. Each DB instance can have up to five Read Replicas.

Constraints:

- Must be the identifier of an existing MySQL, MariaDB, or PostgreSQL DB instance.
- Can specify a DB instance that is a MySQL Read Replica only if the source is running MySQL 5.6.
- Can specify a DB instance that is a PostgreSQL DB instance only if the source is running PostgreSQL 9.3.5 or later (9.4.7 and higher for cross-region replication).
- The specified DB instance must have automatic backups enabled, its backup retention period must be greater than 0.
- If the source DB instance is in the same AWS Region as the Read Replica, specify a valid DB instance identifier.
- If the source DB instance is in a different AWS Region than the Read Replica, specify a valid DB instance ARN. For more information, go to [Constructing a Amazon RDS Amazon Resource Name \(ARN\)](#).

Type: String

Required: Yes

### **StorageType**

Specifies the storage type to be associated with the Read Replica.

Valid values: `standard` | `gp2` | `io1`

If you specify `io1`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified, otherwise `standard`

Type: String

Required: No

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

#### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

#### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

#### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

#### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

#### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

#### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

**DBSubnetGroupNotAllowedFault**

The DBSubnetGroup shouldn't be specified while creating read replicas that lie in the same region as the source instance.

HTTP Status Code: 400

**DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**InstanceQuotaExceeded**

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

**InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

**InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

**InvalidDBSubnetGroupFault**

The DBSubnetGroup doesn't belong to the same VPC as that of an existing cross-region read replica of the same source instance.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400



### StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

### StorageTypeNotSupported

Storage of the *StorageType* specified can't be associated with the DB instance.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBInstanceReadReplica
&DBInstanceIdentifier=mysqlldb-rr
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBInstanceIdentifier=mysqlldb
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T170525Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=a5bc7bb9648272e9967c76fc582b308d3ee37d6c4f7a4eb62c2d885ec595c373
```

### Sample Response

```
<CreateDBInstanceReadReplicaResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateDBInstanceReadReplicaResult>
    <DBInstance>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <MultiAZ>>false</MultiAZ>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqlldb-rr</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <ReadReplicaSourceDBInstanceIdentifier>mysqlldb</
ReadReplicaSourceDBInstanceIdentifier>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
        </OptionGroupMembership>
      </OptionGroupMemberships>
    </DBInstance>
  </CreateDBInstanceReadReplicaResult>
</CreateDBInstanceReadReplicaResponse>
```

```
<Status>pending-apply</Status>
</OptionGroupMembership>
</OptionGroupMemberships>
<PubliclyAccessible>true</PubliclyAccessible>
<DBSecurityGroups>
  <DBSecurityGroup>
    <Status>active</Status>
    <DBSecurityGroupName>default</DBSecurityGroupName>
  </DBSecurityGroup>
</DBSecurityGroups>
<DBName>mysqldb</DBName>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<AllocatedStorage>100</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
<DBInstanceClass>db.m1.medium</DBInstanceClass>
</DBInstance>
</CreateDBInstanceReadReplicaResult>
<ResponseMetadata>
  <RequestId>ba8dedf0-bb9a-11d3-855b-576787000e19</RequestId>
</ResponseMetadata>
</CreateDBInstanceReadReplicaResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBParameterGroup

Creates a new DB parameter group.

A DB parameter group is initially created with the default parameters for the database engine used by the DB instance. To provide custom values for any of the parameters, you must modify the group after creating it using *ModifyDBParameterGroup*. Once you've created a DB parameter group, you need to associate it with your DB instance using *ModifyDBInstance*. When you associate a new DB parameter group with a running DB instance, you need to reboot the DB instance without failover for the new DB parameter group and associated settings to take effect.

## Important

After you create a DB parameter group, you should wait at least 5 minutes before creating your first DB instance that uses that DB parameter group as the default parameter group. This allows Amazon RDS to fully complete the create action before the parameter group is used as the default for a new DB instance. This is especially important for parameters that are critical when creating the default database for a DB instance, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the [Amazon RDS console](#) or the *DescribeDBParameters* command to verify that your DB parameter group has been created or modified.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### DBParameterGroupFamily

The DB parameter group family name. A DB parameter group can be associated with one and only one DB parameter group family, and can be applied only to a DB instance running a database engine and engine version compatible with that DB parameter group family.

Type: String

Required: Yes

### DBParameterGroupName

The name of the DB parameter group.

Constraints:

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

## Note

This value is stored as a lowercase string.

Type: String

Required: Yes

### Description

The description for the DB parameter group.

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

### **DBParameterGroup**

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the [DescribeDBParameterGroups \(p. 166\)](#) action.

Type: [DBParameterGroup \(p. 402\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBParameterGroupAlreadyExists**

A DB parameter group with the same name exists.

HTTP Status Code: 400

### **DBParameterGroupQuotaExceeded**

The request would result in the user exceeding the allowed number of DB parameter groups.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBParameterGroup
&DBParameterGroupFamily=MySQL5.1
&DBParameterGroupName=mydbparamgroup3
&Description=My%20new%20DB%20Parameter%20Group
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T201938Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=e9e5e723f627e872e8bccdc6ccc60bdfcf4a32ae6758ef0a3717ffae49097ae
```

## Sample Response

```
<CreateDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateDBParameterGroupResult>
    <DBParameterGroup>
      <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
      <Description>My new DB Parameter Group</Description>
      <DBParameterGroupName>mydbparamgroup3</DBParameterGroupName>
    </DBParameterGroup>
  </CreateDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>7805c127-af22-11c3-96ac-6999cc5f7e72</RequestId>
  </ResponseMetadata>
</CreateDBParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBSecurityGroup

Creates a new DB security group. DB security groups control access to a DB instance.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBSecurityGroupDescription**

The description for the DB security group.

Type: String

Required: Yes

### **DBSecurityGroupName**

The name for the DB security group. This value is stored as a lowercase string.

Constraints:

- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens
- Must not be "Default"

Example: mysecuritygroup

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

### **DBSecurityGroup**

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the [DescribeDBSecurityGroups \(p. 173\)](#) action.

Type: [DBSecurityGroup \(p. 404\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBSecurityGroupAlreadyExists**

A DB security group with the name specified in *DBSecurityGroupName* already exists.

HTTP Status Code: 400

### **DBSecurityGroupNotSupported**

A DB security group isn't allowed for this action.

HTTP Status Code: 400

### **QuotaExceeded.DBSecurityGroup**

The request would result in the user exceeding the allowed number of DB security groups.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBSecurityGroup
&DBSecurityGroupDescription=My%20new%20DB%20Security%20Group
&DBSecurityGroupName=mydbsecuritygroup00
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140424/us-east-1/rds/aws4_request
&X-Amz-Date=20140424T190716Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=c2f180a3f0f5d73b47f9c229937a78f3569bf14392db8093d9b2e6785609ab45
```

### Sample Response

```
<CreateDBSecurityGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateDBSecurityGroupResult>
    <DBSecurityGroup>
      <EC2SecurityGroups/>
      <DBSecurityGroupDescription>My new DB Security Group</DBSecurityGroupDescription>
      <IPRanges/>
      <OwnerId>803#####</OwnerId>
      <DBSecurityGroupName>mydbsecuritygroup00</DBSecurityGroupName>
    </DBSecurityGroup>
  </CreateDBSecurityGroupResult>
  <ResponseMetadata>
    <RequestId>e68ef6fa-afc1-11c3-845a-476777009d19</RequestId>
  </ResponseMetadata>
</CreateDBSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# CreateDBSnapshot

Creates a DBSnapshot. The source DBInstance must be in "available" state.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The identifier of the DB instance that you want to create the snapshot of.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

### **DBSnapshotIdentifier**

The identifier for the DB snapshot.

Constraints:

- Cannot be null, empty, or blank
- Must contain from 1 to 255 letters, numbers, 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

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

## Response Elements

The following element is returned by the service.

### **DBSnapshot**

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the [DescribeDBSnapshots](#) (p. 178) action.

Type: [DBSnapshot](#) (p. 407) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBSnapshotAlreadyExists**

*DBSnapshotIdentifier* is already used by an existing snapshot.

HTTP Status Code: 400

### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

### **SnapshotQuotaExceeded**

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=CreateDBSnapshot  
&DBInstanceIdentifier=mysqldb-02  
&DBSnapshotIdentifier=mysqlLdb-snap-1  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request  
&X-Amz-Date=20140423T161105Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=e9649af6edcfbab4016f04d72e1b7fc16d8734c37477afcf25b3def625484ed2
```

### Sample Response

```
<CreateDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">  
  <CreateDBSnapshotResult>  
    <DBSnapshot>  
      <Port>3306</Port>  
      <OptionGroupName>default:mysql-5-6</OptionGroupName>  
      <Engine>mysql</Engine>  
      <Status>creating</Status>  
      <SnapshotType>manual</SnapshotType>  
      <LicenseModel>general-public-license</LicenseModel>  
      <EngineVersion>5.6.13</EngineVersion>  
      <DBInstanceIdentifier>mysqldb-02</DBInstanceIdentifier>
```

```
<DBSnapshotIdentifier>mysqldb-snap-1</DBSnapshotIdentifier>
<AvailabilityZone>us-east-1a</AvailabilityZone>
<InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
<PercentProgress>0</PercentProgress>
<AllocatedStorage>100</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
</DBSnapshot>
</CreateDBSnapshotResult>
<ResponseMetadata>
  <RequestId>bd80a25a-af09-11c3-ed11-23c32f9aa7d3</RequestId>
</ResponseMetadata>
</CreateDBSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateDBSubnetGroup

Creates a new DB subnet group. DB subnet groups must contain at least one subnet in at least two AZs in the AWS Region.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBSubnetGroupDescription**

The description for the DB subnet group.

Type: String

Required: Yes

### **DBSubnetGroupName**

The name for the DB subnet group. This value is stored as a lowercase string.

Constraints: Must contain no more than 255 letters, numbers, periods, underscores, spaces, or hyphens. Must not be default.

Example: mySubnetgroup

Type: String

Required: Yes

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

The EC2 Subnet IDs for the DB subnet group.

Type: Array of strings

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

## Response Elements

The following element is returned by the service.

### **DBSubnetGroup**

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the [DescribeDBSubnetGroups](#) (p. 182) action.

Type: [DBSubnetGroup](#) (p. 413) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBSubnetGroupAlreadyExists**

*DBSubnetGroupName* is already used by an existing DB subnet group.

HTTP Status Code: 400

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

### **DBSubnetGroupQuotaExceeded**

The request would result in the user exceeding the allowed number of DB subnet groups.

HTTP Status Code: 400

### **DBSubnetQuotaExceededFault**

The request would result in the user exceeding the allowed number of subnets in a DB subnet groups.

HTTP Status Code: 400

### **InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateDBSubnetGroup
&DBSubnetGroupDescription=My%20new%20DB%20Subnet%20Group
&DBSubnetGroupName=myawsuser-dbsubnetgroup
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SubnetIds.member.1=subnet-e4d398a1
&SubnetIds.member.2=subnet-c2bdb6ba
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T173028Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=f434cd02a766ea034637debf67996a743ca3e098efc9a5881c61e0c6859259d3
```

### Sample Response

```
<CreateDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateDBSubnetGroupResult>
    <DBSubnetGroup>
      <VpcId>vpc-33dc97ea</VpcId>
      <SubnetGroupStatus>Complete</SubnetGroupStatus>
      <DBSubnetGroupDescription>My new DB Subnet Group</DBSubnetGroupDescription>
      <DBSubnetGroupName>myawsuser-dbsubnetgroup</DBSubnetGroupName>
      <Subnets>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-e4d398a1</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1b</Name>
            <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-c2bdb6ba</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1c</Name>
            <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
      </Subnets>
    </DBSubnetGroup>
  </CreateDBSubnetGroupResult>
  <ResponseMetadata>
    <RequestId>3a401b3f-bb9e-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateDBSubnetGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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 RDS event notification subscription. This action requires a topic ARN (Amazon Resource Name) created by either the RDS console, the SNS console, or the SNS API. To obtain an ARN with 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 type of source (**SourceType**) you want to be notified of, provide a list of RDS sources (**SourceIds**) that triggers the events, and provide a list of event categories (**EventCategories**) for events you want to be notified of. For example, you can specify **SourceType** = db-instance, **SourceIds** = mydbinstance1, mydbinstance2 and **EventCategories** = Availability, Backup.

If you specify both the **SourceType** and **SourceIds**, such as **SourceType** = db-instance and **SourceIdentifier** = myDBInstance1, you are notified of all the db-instance events for the specified source. If you specify a **SourceType** but do not specify a **SourceIdentifier**, you receive notice of the events for that source type for all your RDS sources. If you do not specify either the **SourceType** nor the **SourceIdentifier**, you are notified of events generated from all RDS sources belonging to your customer account.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### Enabled

A Boolean value; set to **true** to activate the subscription, set to **false** to create the subscription but not active it.

Type: Boolean

Required: No

### EventCategories.EventCategory.N

A list of event categories for a **SourceType** that you want to subscribe to. You can see a list of the categories for a given **SourceType** in the [Events](#) topic in the Amazon RDS User Guide or by using the **DescribeEventCategories** action.

Type: Array of strings

Required: No

### SnsTopicArn

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

Type: String

Required: Yes

### SourceIds.SourceId.N

The list of identifiers of the event sources for which events are returned. If not specified, then all sources are included in the response. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

Constraints:

- If **SourceIds** are supplied, **SourceType** must also be provided.

- If the source type is a DB instance, then a `DBInstanceIdentifier` must be supplied.
- If the source type is a DB security group, a `DBSecurityGroupName` must be supplied.
- If the source type is a DB parameter group, a `DBParameterGroupName` must be supplied.
- If the source type is a DB snapshot, a `DBSnapshotIdentifier` must be supplied.

Type: Array of strings

Required: No

#### **SourceType**

The type of source that is generating the events. For example, if you want to be notified of events generated by a DB instance, you would set this parameter to `db-instance`. If this value is not specified, all events are returned.

Valid values: `db-instance` | `db-cluster` | `db-parameter-group` | `db-security-group` | `db-snapshot` | `db-cluster-snapshot`

Type: String

Required: No

#### **SubscriptionName**

The name of the subscription.

Constraints: The name must be less than 255 characters.

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

## Response Elements

The following element is returned by the service.

#### **EventSubscription**

Contains the results of a successful invocation of the [DescribeEventSubscriptions \(p. 198\)](#) action.

Type: [EventSubscription \(p. 424\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

#### **EventSubscriptionQuotaExceeded**

You have reached the maximum number of event subscriptions.

HTTP Status Code: 400



### **SNSInvalidTopic**

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

HTTP Status Code: 400

### **SNSNoAuthorization**

You do not have permission to publish to the SNS topic ARN.

HTTP Status Code: 400

### **SNSTopicArnNotFound**

The SNS topic ARN does not exist.

HTTP Status Code: 404

### **SourceNotFound**

The requested source could not be found.

HTTP Status Code: 404

### **SubscriptionAlreadyExist**

The supplied subscription name already exists.

HTTP Status Code: 400

### **SubscriptionCategoryNotFound**

The supplied category does not exist.

HTTP Status Code: 404

## Examples

### Example

#### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateEventSubscription
&Enabled=true
&EventCategories.member.1=failure
&EventCategories.member.2=configuration%20change
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SnsTopicArn=arn%3Aaws%3Asns%3Aus-east-1%3A802#####%3Amyawsuser-RDS
&SourceType=db-security-group
&SubscriptionName=myawsuser-secgrp
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T214325Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7045960f6ab15609571fb05278004256e186b7633ab2a3ae46826d7713e0b461
```

#### Sample Response

```
<CreateEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateEventSubscriptionResult>
    <EventSubscription>
      <SourceType>db-security-group</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#####</CustomerAwsId>
      <Status>creating</Status>
      <SubscriptionCreationTime>Fri Apr 25 21:43:25 UTC 2014</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>configuration change</EventCategory>
        <EventCategory>failure</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </CreateEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>f15e9dc3-bbb1-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateEventSubscriptionResponse>
```

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateEventSubscription
&Enabled=true
&EventCategories.member.1=creation
&EventCategories.member.2=deletion
&EventCategories.member.3=failover
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SnsTopicArn=arn%3Aaws%3Asns%3Aus-east-1%3A802#####%3Amyawsuser-RDS
&SourceType=db-instance
&SubscriptionName=myawsuser-inst
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
&X-Amz-Date=20140429T184410Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=1e1879f20ef3aec07135d69cc192426bf1cc5c42fc9d1acc7726bcd93155fb71
```

### Sample Response

```
<CreateEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateEventSubscriptionResult>
    <EventSubscription>
      <SourceType>db-instance</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#####</CustomerAwsId>
      <Status>creating</Status>
      <SubscriptionCreationTime>Tue Apr 29 18:44:10 UTC 2014</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
        <EventCategory>failover</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>myawsuser-inst</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </CreateEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>f15e9dc3-bbb1-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateEventSubscriptionResponse>
```

```
</EventSubscription>
</CreateEventSubscriptionResult>
<ResponseMetadata>
  <RequestId>30feb307-bebd-11d3-f4c6-37db295f7674</RequestId>
</ResponseMetadata>
</CreateEventSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# CreateOptionGroup

Creates a new option group. You can create up to 20 option groups.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **EngineName**

Specifies the name of the engine that this option group should be associated with.

Type: String

Required: Yes

### **MajorEngineVersion**

Specifies the major version of the engine that this option group should be associated with.

Type: String

Required: Yes

### **OptionGroupDescription**

The description of the option group.

Type: String

Required: Yes

### **OptionGroupName**

Specifies the name of the option group to be created.

Constraints:

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

Example: myoptiongroup

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

## Response Elements

The following element is returned by the service.

## OptionGroup

Type: [OptionGroup](#) (p. 432) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### OptionGroupAlreadyExistsFault

The option group you are trying to create already exists.

HTTP Status Code: 400

### OptionGroupQuotaExceededFault

The quota of 20 option groups was exceeded for this AWS account.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=CreateOptionGroup
&EngineName=mysql
&MajorEngineVersion=5.6
&OptionGroupDescription=My%20Option%20Group
&OptionGroupName=myawsuser-og00
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T174519Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=d3a89afa4511d0c4ecab046d6dc760a72bfe6bb15999cce053adeb2617b60384
```

### Sample Response

```
<CreateOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <CreateOptionGroupResult>
    <OptionGroup>
      <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <OptionGroupName>myawsuser-og00</OptionGroupName>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>My Option Group</OptionGroupDescription>
      <Options/>
    </OptionGroup>
  </CreateOptionGroupResult>
  <ResponseMetadata>
    <RequestId>4d7f11f2-bbf0-11d3-ae4f-eec568ed6b36</RequestId>
  </ResponseMetadata>
</CreateOptionGroupResponse>
```

```
</CreateOptionGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBCluster

The DeleteDBCluster action deletes a previously provisioned DB cluster. When you delete a DB cluster, all automated backups for that DB cluster are deleted and can't be recovered. Manual DB cluster snapshots of the specified DB cluster are not deleted.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### DBClusterIdentifier

The DB cluster identifier for the DB cluster to be deleted. This parameter isn't case-sensitive.

Constraints:

- Must match an existing DBClusterIdentifier.

Type: String

Required: Yes

### FinalDBSnapshotIdentifier

The DB cluster snapshot identifier of the new DB cluster snapshot created when `SkipFinalSnapshot` is set to `false`.

#### Note

Specifying this parameter and also setting the `SkipFinalShapshot` parameter to `true` results in an error.

Constraints:

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

Type: String

Required: No

### SkipFinalSnapshot

Determines whether a final DB cluster snapshot is created before the DB cluster is deleted. If `true` is specified, no DB cluster snapshot is created. If `false` is specified, a DB cluster snapshot is created before the DB cluster is deleted.

#### Note

You must specify a `FinalDBSnapshotIdentifier` parameter if `SkipFinalSnapshot` is `false`.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterSnapshotAlreadyExistsFault**

The user already has a DB cluster snapshot with the given identifier.

HTTP Status Code: 400

### **InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

### **SnapshotQuotaExceeded**

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteDBCluster  
&DBClusterIdentifier=sample-cluster2  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-10-31  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140725/us-east-1/rds/aws4_request
```



```
&X-Amz-Date=20140725T162148Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=815910f78c5a9813e1c15300fcf206e04da071b3586770169765292dc6aa2ed4
```

## Sample Response

```
<DeleteDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteDBClusterResult>
    <DBCluster>
      <Engine>aurora5.6</Engine>
      <Status>available</Status>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <DBSubnetGroup>my-subgroup</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster2.cluster-cbfvmgb0y5fy.us-east-1.rds.amazonaws.com</Endpoint>
      <DBClusterIdentifier>sample-cluster2</DBClusterIdentifier>
      <PreferredBackupWindow>04:45-05:15</PreferredBackupWindow>
      <PreferredMaintenanceWindow>sat:05:56-sat:06:26</PreferredMaintenanceWindow>
      <DBClusterMembers/>
      <AllocatedStorage>15</AllocatedStorage>
      <MasterUsername>awsuser</MasterUsername>
    </DBCluster>
  </DeleteDBClusterResult>
  <ResponseMetadata>
    <RequestId>c72118dc-1417-11e4-8c7b-931a6c1fef28</RequestId>
  </ResponseMetadata>
</DeleteDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBClusterParameterGroup

Deletes a specified DB cluster parameter group. The DB cluster parameter group to be deleted can't be associated with any DB clusters.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterParameterGroupName**

The name of the DB cluster parameter group.

Constraints:

- Must be the name of an existing DB cluster parameter group.
- You can't delete a default DB cluster parameter group.
- Cannot be associated with any DB clusters.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **InvalidDBParameterGroupState**

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DeleteDBClusterParameterGroup
&DBClusterParameterGroupName=sample-cluster-pg
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
```

```
&X-Amz-Date=20160913T172430Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=3f54b5ee720c2644296e98a1c0393a9abd91bc0847dfe7dd9be02ede8fd95ae5
```

## Sample Response

```
<DeleteDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>ee0201e1-79d6-11e6-9b94-838991bd60c6</RequestId>
  </ResponseMetadata>
</DeleteDBClusterParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBClusterSnapshot

Deletes a DB cluster snapshot. If the snapshot is being copied, the copy operation is terminated.

**Note**

The DB cluster snapshot must be in the `available` state to be deleted.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

**DBClusterSnapshotIdentifier**

The identifier of the DB cluster snapshot to delete.

Constraints: Must be the name of an existing DB cluster snapshot in the `available` state.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**DBClusterSnapshot**

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the [DescribeDBClusterSnapshots](#) (p. 149) action.

Type: [DBClusterSnapshot](#) (p. 386) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

**DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

**InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DeleteDBClusterSnapshot
&DBClusterSnapshotIdentifier=sample-cluster-snapshot
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
&X-Amz-Date=20150318T215614Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7aaab0a295151051bc4723f5b1f7b6b535615b8db9256bd56993c4dc6df4c2c4
```

## Sample Response

```
<DeleteDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteDBClusterSnapshotResult>
    <DBClusterSnapshot>
      <Port>0</Port>
      <Status>available</Status>
      <Engine>aurora</Engine>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>aurora</LicenseModel>
      <DBClusterSnapshotIdentifier>sample-cluster-snapshot</DBClusterSnapshotIdentifier>
      <SnapshotCreateTime>2015-03-18T20:53:22.523Z</SnapshotCreateTime>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <VpcId>vpc-3fabee54</VpcId>
      <ClusterCreateTime>2015-03-06T22:11:13.826Z</ClusterCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>awsuser</MasterUsername>
    </DBClusterSnapshot>
  </DeleteDBClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>994ab08d-cdb9-2ce4-abf9-7528e6348483</RequestId>
  </ResponseMetadata>
</DeleteDBClusterSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBInstance

The DeleteDBInstance action deletes a previously provisioned DB instance. When you delete a DB instance, all automated backups for that instance are deleted and can't be recovered. Manual DB snapshots of the DB instance to be deleted by DeleteDBInstance are not deleted.

If you request a final DB snapshot the status of the Amazon RDS DB instance is `deleting` until the DB snapshot is created. The API action `DescribeDBInstance` is used to monitor the status of this operation. The action can't be canceled or reverted once submitted.

Note that when a DB instance is in a failure state and has a status of `failed`, `incompatible-restore`, or `incompatible-network`, you can only delete it when the `SkipFinalSnapshot` parameter is set to `true`.

If the specified DB instance is part of an Amazon Aurora DB cluster, you can't delete the DB instance if both of the following conditions are true:

- The DB cluster is a Read Replica of another Amazon Aurora DB cluster.
- The DB instance is the only instance in the DB cluster.

To delete a DB instance in this case, first call the [PromoteReadReplicaDBCluster](#) (p. 289) API action to promote the DB cluster so it's no longer a Read Replica. After the promotion completes, then call the DeleteDBInstance API action to delete the final instance in the DB cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### DBInstanceIdentifier

The DB instance identifier for the DB instance to be deleted. This parameter isn't case-sensitive.

Constraints:

- Must match the name of an existing DB instance.

Type: String

Required: Yes

### FinalDBSnapshotIdentifier

The DBSnapshotIdentifier of the new DBSnapshot created when SkipFinalSnapshot is set to `false`.

#### Note

Specifying this parameter and also setting the SkipFinalSnapshot parameter to `true` results in an error.

Constraints:

- Must be 1 to 255 letters or numbers.
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens
- Cannot be specified when deleting a Read Replica.

Type: String

Required: No

### **SkipFinalSnapshot**

Determines whether a final DB snapshot is created before the DB instance is deleted. If `true` is specified, no DBSnapshot is created. If `false` is specified, a DB snapshot is created before the DB instance is deleted.

Note that when a DB instance is in a failure state and has a status of 'failed', 'incompatible-restore', or 'incompatible-network', it can only be deleted when the SkipFinalSnapshot parameter is set to "true".

Specify `true` when deleting a Read Replica.

#### **Note**

The FinalDBSnapshotIdentifier parameter must be specified if SkipFinalSnapshot is `false`.

Default: `false`

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBSnapshotAlreadyExists**

*DBSnapshotIdentifier* is already used by an existing snapshot.

HTTP Status Code: 400

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

### SnapshotQuotaExceeded

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

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DeleteDBInstance
&DBInstanceIdentifier=mydatabase
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SkipFinalSnapshot=true
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20131109/us-east-1/rds/aws4_request
&X-Amz-Date=20131109T001924Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=70e774e243c0fbb7ffe84029637005bf543e9e321cdf432c0b272be5687d32d8
```

### Sample Response

```
<DeleteDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DeleteDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>deleting</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mydatabase</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <LatestRestorableTime>2013-11-09T00:15:00Z</LatestRestorableTime>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <Endpoint>
        <Port>3306</Port>
        <Address>mydatabase.cf037hpkuvt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
    </DBInstance>
  </DeleteDBInstanceResult>
</DeleteDBInstanceResponse>
```



```
<PubliclyAccessible>true</PubliclyAccessible>
<DBSecurityGroups>
  <DBSecurityGroup>
    <Status>active</Status>
    <DBSecurityGroupName>default</DBSecurityGroupName>
  </DBSecurityGroup>
</DBSecurityGroups>
<DBName>mysqldb</DBName>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<InstanceCreateTime>2011-04-28T23:33:54.909Z</InstanceCreateTime>
<AllocatedStorage>100</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
<DBInstanceClass>db.m1.medium</DBInstanceClass>
</DBInstance>
</DeleteDBInstanceResult>
<ResponseMetadata>
  <RequestId>7369556f-b70d-11c3-faca-6ba18376ea1b</RequestId>
</ResponseMetadata>
</DeleteDBInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBParameterGroup

Deletes a specified DBParameterGroup. The DBParameterGroup to be deleted can't be associated with any DB instances.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBParameterGroupName

The name of the DB parameter group.

Constraints:

- Must be the name of an existing DB parameter group
- You can't delete a default DB parameter group
- Cannot be associated with any DB instances

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBParameterGroupNotFound

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### InvalidDBParameterGroupState

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteDBParameterGroup  
&DBParameterGroupName=mydbparamgroup3  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request  
&X-Amz-Date=20140423T203550Z
```

```
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7364d4d88b4200d14da46aac748781a6da08bc18c5fdc468ee18780e6f84b19e
```

## Sample Response

```
<DeleteDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ResponseMetadata>
    <RequestId>cad6c267-ba25-11d3-fe11-33d33a9bb7e3</RequestId>
  </ResponseMetadata>
</DeleteDBParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBSecurityGroup

Deletes a DB security group.

## Note

The specified DB security group must not be associated with any DB instances.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBSecurityGroupName

The name of the DB security group to delete.

## Note

You can't delete the default DB security group.

Constraints:

- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens
- Must not be "Default"

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBSecurityGroupNotFound

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### InvalidDBSecurityGroupState

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteDBSecurityGroup  
&DBSecurityGroupName=mydbsecuritygroup  
&SignatureMethod=HmacSHA256
```

```
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T203336Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=873c15061fe60b9db8ea63137e5af82b157019696fc3e9764ef2abd9d71c640a
```

## Sample Response

```
<DeleteDBSecurityGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ResponseMetadata>
    <RequestId>7aec7454-ba25-11d3-855b-576787000e19</RequestId>
  </ResponseMetadata>
</DeleteDBSecurityGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBSnapshot

Deletes a DBSnapshot. If the snapshot is being copied, the copy operation is terminated.

**Note**

The DBSnapshot must be in the `available` state to be deleted.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

**DBSnapshotIdentifier**

The DBSnapshot identifier.

Constraints: Must be the name of an existing DB snapshot in the `available` state.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**DBSnapshot**

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the [DescribeDBSnapshots \(p. 178\)](#) action.

Type: [DBSnapshot \(p. 407\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

**DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

**InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DeleteDBSnapshot
&DBSnapshotIdentifier=mysqldb-snap-02
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T203337Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=619f04acffeb4b80d2f442526b1c9da79d0b3097151c24f28e83e851d6541414
```

## Sample Response

```
<DeleteDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DeleteDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Status>deleted</Status>
      <Engine>mysql</Engine>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
      <EngineVersion>5.6.13</EngineVersion>
      <DBSnapshotIdentifier>mysqldb-snap-02</DBSnapshotIdentifier>
      <SnapshotCreateTime>2014-04-23T16:11:25.371Z</SnapshotCreateTime>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBSnapshot>
  </DeleteDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>7b17b2b1-ba25-11d3-a537-cef97546330c</RequestId>
  </ResponseMetadata>
</DeleteDBSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteDBSubnetGroup

Deletes a DB subnet group.

**Note**

The specified database subnet group must not be associated with any DB instances.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

**DBSubnetGroupName**

The name of the database subnet group to delete.

**Note**

You can't delete the default subnet group.

Constraints:

Constraints: Must match the name of an existing DBSubnetGroup. Must not be default.

Example: mySubnetgroup

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

**DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**InvalidDBSubnetGroupStateFault**

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

**InvalidDBSubnetStateFault**

The DB subnet isn't in the *available* state.

HTTP Status Code: 400

## Example

### Sample Request



```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteDBSubnetGroup  
&DBSubnetGroupName=myawsuser-dbsubnetgroup  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request  
&X-Amz-Date=20140425T180721Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=0f461da21ec03527fdc98acba8a11c36863a399065f9b4ff891ab7cb5e70de74
```

## Sample Response

```
<DeleteDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">  
  <ResponseMetadata>  
    <RequestId>6295e5ab-bbf3-11d3-f4c6-37db295f7674</RequestId>  
  </ResponseMetadata>  
</DeleteDBSubnetGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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 RDS event notification subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### SubscriptionName

The name of the RDS event notification subscription you want to delete.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### EventSubscription

Contains the results of a successful invocation of the [DescribeEventSubscriptions \(p. 198\)](#) action.

Type: [EventSubscription \(p. 424\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### InvalidEventSubscriptionState

This error can occur if someone else is modifying a subscription. You should retry the action.

HTTP Status Code: 400

### SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteEventSubscription  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&SubscriptionName=EventSubscription04
```

```
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T203337Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=05aa834e364a9e1a279d44cc955694518fc96fff638c74faa2be45783102e785
```

## Sample Response

```
<DeleteEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DeleteEventSubscriptionResult>
    <EventSubscription>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#####</CustomerAwsId>
      <SourceType>db-instance</SourceType>
      <Status>deleting</Status>
      <SourceIdsList>
        <SourceId>mysqlpdb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-22 23:03:19.776</SubscriptionCreationTime>
      <CustSubscriptionId>EventSubscription04</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:803#####:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </DeleteEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>7b4cf02a-ba25-11d3-a691-857dc0addcc9</RequestId>
  </ResponseMetadata>
</DeleteEventSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DeleteOptionGroup

Deletes an existing option group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### OptionGroupName

The name of the option group to be deleted.

#### Note

You can't delete default option groups.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### InvalidOptionGroupStateFault

The option group isn't in the *available* state.

HTTP Status Code: 400

### OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DeleteOptionGroup  
&OptionGroupName=myawsuser-og00  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request  
&X-Amz-Date=20140425T181205Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=8a684aeb6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

### Sample Response

```
<DeleteOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ResponseMetadata>
    <RequestId>0ac9cda2-bbf4-11d3-f92b-31fa5e8dbc99</RequestId>
  </ResponseMetadata>
</DeleteOptionGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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

Lists all of the attributes for a customer account. The attributes include Amazon RDS quotas for the account, such as the number of DB instances allowed. The description for a quota includes the quota name, current usage toward that quota, and the quota's maximum value.

This command doesn't take any parameters.

## Response Elements

The following element is returned by the service.

### **AccountQuotas.AccountQuota.N**

A list of [AccountQuota](#) (p. 368) objects. Within this list, each quota has a name, a count of usage toward the quota maximum, and a maximum value for the quota.

Type: Array of [AccountQuota](#) (p. 368) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
  ?Action=DescribeAccountAttributes  
  &SignatureMethod=HmacSHA256  
  &SignatureVersion=4  
  &Version=2014-10-31  
  &X-Amz-Algorithm=AWS4-HMAC-SHA256  
  &X-Amz-Credential=AKIADQKE4SARGYLE/20141216/us-west-2/rds/aws4_request  
  &X-Amz-Date=20141216T192233Z  
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
  &X-Amz-Signature=b49545dd3c933bddd80655d433d84bf743261ea1bebb33a7922c5c2c5240cd8
```

### Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">  
  <DescribeAccountAttributesResult>  
    <AccountQuotaList>  
      <AccountQuota>  
        <AccountQuotaName>DBInstances</AccountQuotaName>  
        <Used>22</Used>  
        <Max>40</Max>  
      </AccountQuota>  
      <AccountQuota>  
        <AccountQuotaName>ReservedDBInstances</AccountQuotaName>  
        <Used>6</Used>  
        <Max>40</Max>  
      </AccountQuota>  
      <AccountQuota>  
        <AccountQuotaName>AllocatedStorage</AccountQuotaName>
```

```
<Used>27459</Used>
<Max>100000</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>DBSecurityGroupsPerVPC</AccountQuotaName>
  <Used>11</Used>
  <Max>25</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>AuthorizationsPerDBSecurityGroup</AccountQuotaName>
  <Used>10</Used>
  <Max>20</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>DBParameterGroups</AccountQuotaName>
  <Used>40</Used>
  <Max>50</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>ManualSnapshots</AccountQuotaName>
  <Used>32</Used>
  <Max>50</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>EventSubscriptions</AccountQuotaName>
  <Used>3</Used>
  <Max>20</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>DBSubnetGroups</AccountQuotaName>
  <Used>19</Used>
  <Max>20</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>OptionGroups</AccountQuotaName>
  <Used>14</Used>
  <Max>20</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>SubnetsPerDBSubnetGroup</AccountQuotaName>
  <Used>6</Used>
  <Max>20</Max>
</AccountQuota>
<AccountQuota>
  <AccountQuotaName>ReadReplicasPerMaster</AccountQuotaName>
  <Used>2</Used>
  <Max>5</Max>
</AccountQuota>
<AccountQuota>
  <Used>1</Used>
  <AccountQuotaName>DBClusterRoles</AccountQuotaName>
  <Max>5</Max>
</AccountQuota>
</AccountQuotaList>
</DescribeAccountAttributesResult>
<ResponseMetadata>
  <RequestId>0ce48079-68e4-11de-8c8e-eb648410240d</RequestId>
</ResponseMetadata>
</DescribeAccountAttributesResponse>
```

## See Also

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

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



# DescribeCertificates

Lists the set of CA certificates provided by Amazon RDS for this AWS account.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **CertificateIdentifier**

The user-supplied certificate identifier. If this parameter is specified, information for only the identified certificate is returned. This parameter isn't case-sensitive.

Constraints:

- Must match an existing CertificateIdentifier.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous [DescribeCertificates](#) (p. 130) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### Certificates.Certificate.N

The list of [Certificate \(p. 370\)](#) objects for the AWS account.

Type: Array of [Certificate \(p. 370\)](#) objects

### Marker

An optional pagination token provided by a previous [DescribeCertificates \(p. 130\)](#) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### CertificateNotFound

*CertificateIdentifier* doesn't refer to an existing certificate.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.amazonaws.com/
?Action=DescribeCertificates
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20141121/us-west-2/rds/aws4_request
&X-Amz-Date=20141121T164732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856abd2a158e21c35441a736e4fde2b
```

### Sample Response

```
<DescribeCertificatesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeCertificatesResult>
    <Certificates>
      <Certificate>
        <CertificateIdentifier>rdscacertificate</CertificateIdentifier>
        <CertificateType>ca</CertificateType>
        <ThumbPrint>xxxxxxxxxxxx</ThumbPrint>
        <ValidFrom>2010-05-22T01:12:00.000Z</ValidFrom>
        <ValidTill>2014-05-22T01:12:00.000Z</ValidTill>
      </Certificate>
    </Certificates>
  </DescribeCertificatesResult>
  <ResponseMetadata>
    <RequestId>9135fff3-8509-11e0-bd9b-a7b1ece36d51</RequestId>
  </ResponseMetadata>
</DescribeCertificatesResponse>
```

`</DescribeCertificatesResponse>`

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBClusterBacktracks

Returns information about backtracks for a DB cluster.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **BacktrackIdentifier**

If specified, this value is the backtrack identifier of the backtrack to be described.

Constraints:

- Must contain a valid universally unique identifier (UUID). For more information about UUIDs, see [A Universally Unique Identifier \(UUID\) URN Namespace](#).

Example: 123e4567-e89b-12d3-a456-426655440000

Type: String

Required: No

### **DBClusterIdentifier**

The DB cluster identifier of the DB cluster to be described. This parameter is stored as a lowercase string.

Constraints:

- 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.

Example: my-cluster1

Type: String

Required: Yes

### **Filters.Filter.N**

A filter that specifies one or more DB clusters to describe. Supported filters include the following:

- `db-cluster-backtrack-id` - Accepts backtrack identifiers. The results list includes information about only the backtracks identified by these identifiers.
- `db-cluster-backtrack-status` - Accepts any of the following backtrack status values:
  - `applying`
  - `completed`
  - `failed`
  - `pending`

The results list includes information about only the backtracks identified by these values. For more information about backtrack status values, see [DBClusterBacktrack](#) (p. 380).

Type: Array of [Filter](#) (p. 426) objects

Required: No

### Marker

An optional pagination token provided by a previous [DescribeDBClusterBacktracks \(p. 133\)](#) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### DBClusterBacktracks.DBClusterBacktrack.N

Contains a list of backtracks for the user.

Type: Array of [DBClusterBacktrack \(p. 380\)](#) objects

### Marker

A pagination token that can be used in a subsequent [DescribeDBClusterBacktracks \(p. 133\)](#) request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBClusterBacktrackNotFoundFault

*BacktrackIdentifier* doesn't refer to an existing backtrack.

HTTP Status Code: 404

### DBClusterNotFoundFault

*DBClusterIdentifier* doesn't refer to an existing DB 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](#)

# DescribeDBClusterParameterGroups

Returns a list of `DBClusterParameterGroup` descriptions. If a `DBClusterParameterGroupName` parameter is specified, the list will contain only the description of the specified DB cluster parameter group.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterParameterGroupName**

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

Constraints:

- If supplied, must match the name of an existing `DBClusterParameterGroup`.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBClusterParameterGroups` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBClusterParameterGroups.DBClusterParameterGroup.N**

A list of DB cluster parameter groups.

Type: Array of [DBClusterParameterGroup](#) (p. 384) objects

### **Marker**

An optional pagination token provided by a previous `DescribeDBClusterParameterGroups` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## **Errors**

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

## **Example**

### **Sample Request**

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeDBClusterParameterGroups
&MaxRecords=30
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
&X-Amz-Date=20150318T184307Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=d9922fdf06b86b870c072b896745251ea8b52bad64bf90e30b0e46f1bb488cca
```

### **Sample Response**

```
<DescribeDBClusterParameterGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterParameterGroupsResult>
    <DBClusterParameterGroups>
      <DBClusterParameterGroup>
        <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
        <Description>Default cluster parameter group for aurora5.6</Description>
        <DBClusterParameterGroupName>default.aurora5.6</DBClusterParameterGroupName>
      </DBClusterParameterGroup>
      <DBClusterParameterGroup>
        <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
        <Description>Sample group</Description>
        <DBClusterParameterGroupName>samplegroup</DBClusterParameterGroupName>
      </DBClusterParameterGroup>
    </DBClusterParameterGroups>
  </DescribeDBClusterParameterGroupsResult>
</DescribeDBClusterParameterGroupsResponse>
```



```
<DBClusterParameterGroup>
  <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
  <Description>Custom group</Description>
  <DBClusterParameterGroupName>custom-group</DBClusterParameterGroupName>
</DBClusterParameterGroup>
</DBClusterParameterGroups>
</DescribeDBClusterParameterGroupsResult>
<ResponseMetadata>
  <RequestId>9e6503d0-cd9e-11e4-ccf9-7528e6a28483</RequestId>
</ResponseMetadata>
</DescribeDBClusterParameterGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBClusterParameters

Returns the detailed parameter list for a particular DB cluster parameter group.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBClusterParameterGroupName**

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

Constraints:

- If supplied, must match the name of an existing DBClusterParameterGroup.

Type: String

Required: Yes

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBClusterParameters` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### **Source**

A value that indicates to return only parameters for a specific source. Parameter sources can be `engine`, `service`, or `customer`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous `DescribeDBClusterParameters` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### Parameters.Parameter.N

Provides a list of parameters for the DB cluster parameter group.

Type: Array of [Parameter](#) (p. 446) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### DBParameterGroupNotFound

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBClusterParameters
&DBClusterParameterGroupName=default.aurora5.6
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20151231/us-west-2/rds/aws4_request
&X-Amz-Date=20151231T225813Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=cf8b9ab9c4a36bbb5f5043209b1985784a226d132ed61a5c35163c40506e83f7
```

### Sample Response

```
<DescribeDBClusterParametersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterParametersResult>
    <Parameters>
      <Parameter>
```

```

        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>Intended for use with master-to-master replication, and can be used to
control the operation of AUTO_INCREMENT columns</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>1-65535</AllowedValues>
        <ParameterName>auto_increment_increment</ParameterName>
    </Parameter>
    <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>Determines the starting point for the AUTO_INCREMENT column value</
Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>1-65535</AllowedValues>
        <ParameterName>auto_increment_offset</ParameterName>
    </Parameter>
    <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>When enabled, this variable causes the master to write a checksum for
each event in the binary log.</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>NONE,CRC32</AllowedValues>
        <ParameterName>binlog_checksum</ParameterName>
    </Parameter>
    <Parameter>
        <ParameterValue>OFF</ParameterValue>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>system</Source>
        <IsModifiable>true</IsModifiable>
        <Description>Binary logging format for replication</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>ROW,STATEMENT,MIXED,OFF</AllowedValues>
        <ParameterName>binlog_format</ParameterName>
    </Parameter>
    <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>false</IsModifiable>
        <Description>Whether the server logs full or minimal rows with row-based
replication.</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>full,minimal,noblob</AllowedValues>
        <ParameterName>binlog_row_image</ParameterName>
    </Parameter>
</Parameters>
</DescribeDBClusterParametersResult>
<ResponseMetadata>
    <RequestId>c4e42d91-cb92-11e5-895a-99e063757579</RequestId>
</ResponseMetadata>
</DescribeDBClusterParametersResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBClusters

Returns information about provisioned Aurora DB clusters. This API supports pagination.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### DBClusterIdentifier

The user-supplied DB cluster identifier. If this parameter is specified, information from only the specific DB cluster is returned. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match an existing DBClusterIdentifier.

Type: String

Required: No

### Filters.Filter.N

A filter that specifies one or more DB clusters to describe.

Supported filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list will only include information about the DB clusters identified by these ARNs.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### Marker

An optional pagination token provided by a previous [DescribeDBClusters](#) (p. 143) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBClusters.DBCluster.N**

Contains a list of DB clusters for the user.

Type: Array of [DBCluster](#) (p. 374) objects

### **Marker**

A pagination token that can be used in a subsequent DescribeDBClusters request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DescribeDBClusters  
&MaxRecords=100  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-10-31  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140722/us-east-1/rds/aws4_request  
&X-Amz-Date=20140722T200807Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

### Sample Response

```
<DescribeDBClustersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">  
  <DescribeDBClustersResult>  
    <DBClusters>  
      <DBCluster>  
        <AssociatedRoles>  
          <DBClusterRole>  
            <RoleArn>arn:aws:iam::123456789012:role/sample-role</RoleArn>  
            <Status>ACTIVE</Status>  
          </DBClusterRole>  
        </AssociatedRoles>  
      </DBCluster>  
    </DBClusters>  
  </DescribeDBClustersResult>  
</DescribeDBClustersResponse>
```

```

    <Engine>aurora</Engine>
    <Status>available</Status>
    <BackupRetentionPeriod>0</BackupRetentionPeriod>
    <DBSubnetGroup>my-subgroup</DBSubnetGroup>
    <EngineVersion>5.6.10a</EngineVersion>
    <Endpoint>sample-cluster2.cluster-cbfvmgb0y5fy.us-east-1.rds.amazonaws.com</
Endpoint>
    <DBClusterIdentifier>sample-cluster2</DBClusterIdentifier>
    <PreferredBackupWindow>04:45-05:15</PreferredBackupWindow>
    <PreferredMaintenanceWindow>sat:05:56-sat:06:26</PreferredMaintenanceWindow>
    <DBClusterMembers/>
    <AllocatedStorage>15</AllocatedStorage>
    <MasterUsername>awsuser</MasterUsername>
  </DBCluster>
  <DBCluster>
    <AssociatedRoles />
    <Engine>aurora5.6</Engine>
    <Status>available</Status>
    <BackupRetentionPeriod>0</BackupRetentionPeriod>
    <DBSubnetGroup>my-subgroup</DBSubnetGroup>
    <EngineVersion>5.6.10a</EngineVersion>
    <Endpoint>sample-cluster3.cluster-cefgqfx9y5fy.us-east-1.rds.amazonaws.com</
Endpoint>
    <DBClusterIdentifier>sample-cluster3</DBClusterIdentifier>
    <PreferredBackupWindow>07:06-07:36</PreferredBackupWindow>
    <PreferredMaintenanceWindow>tue:10:18-tue:10:48</PreferredMaintenanceWindow>
    <DBClusterMembers>
      <DBClusterMember>
        <IsClusterWriter>true</IsClusterWriter>
        <DBInstanceIdentifier>sample-cluster3-master</DBInstanceIdentifier>
      </DBClusterMember>
      <DBClusterMember>
        <IsClusterWriter>false</IsClusterWriter>
        <DBInstanceIdentifier>sample-cluster3-read1</DBInstanceIdentifier>
      </DBClusterMember>
    </DBClusterMembers>
    <AllocatedStorage>15</AllocatedStorage>
    <MasterUsername>awsuser</MasterUsername>
  </DBCluster>
</DBClusters>
</DescribeDBClustersResult>
<ResponseMetadata>
  <RequestId>d682b02c-1383-11b4-a6bb-172dfac7f170</RequestId>
</ResponseMetadata>
</DescribeDBClustersResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)





# DescribeDBClusterSnapshotAttributes

Returns a list of DB cluster snapshot attribute names and values for a manual DB cluster snapshot.

When sharing snapshots with other AWS accounts, `DescribeDBClusterSnapshotAttributes` returns the `restore` attribute and a list of IDs for the AWS accounts that are authorized to copy or restore the manual DB cluster snapshot. If `all` is included in the list of values for the `restore` attribute, then the manual DB cluster snapshot is public and can be copied or restored by all AWS accounts.

To add or remove access for an AWS account to copy or restore a manual DB cluster snapshot, or to make the manual DB cluster snapshot public or private, use the [ModifyDBClusterSnapshotAttribute \(p. 249\)](#) API action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBClusterSnapshotIdentifier**

The identifier for the DB cluster snapshot to describe the attributes for.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBClusterSnapshotAttributesResult**

Contains the results of a successful call to the [DescribeDBClusterSnapshotAttributes \(p. 147\)](#) API action.

Manual DB cluster snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB cluster snapshot. For more information, see the [ModifyDBClusterSnapshotAttribute \(p. 249\)](#) API action.

Type: [DBClusterSnapshotAttributesResult \(p. 390\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBClusterSnapshotAttributes
&DBClusterSnapshotIdentifier=manual-cluster-snapshot1
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20151027/us-east-1/rds/aws4_request
&X-Amz-Date=20151027T210706Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=27413f450dfac3d68b2197453e52109bacd3863f9df1a02d6e40022165bb2e09
```

### Sample Response

```
<DescribeDBClusterSnapshotAttributesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterSnapshotAttributesResult>
    <DBClusterSnapshotAttributesResult>
      <DBClusterSnapshotAttributes>
        <DBClusterSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
            <AttributeValue>012345678901</AttributeValue>
          </AttributeValues>
        </DBClusterSnapshotAttribute>
      </DBClusterSnapshotAttributes>
      <DBSnapshotIdentifier>manual-cluster-snapshot1</DBSnapshotIdentifier>
    </DBClusterSnapshotAttributesResult>
  </DescribeDBClusterSnapshotAttributesResult>
  <ResponseMetadata>
    <RequestId>ae5be4a2-7cee-11e5-a056-f1c189649a47</RequestId>
  </ResponseMetadata>
</DescribeDBClusterSnapshotAttributesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBClusterSnapshots

Returns information about DB cluster snapshots. This API action supports pagination.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

The ID of the DB cluster to retrieve the list of DB cluster snapshots for. This parameter can't be used in conjunction with the `DBClusterSnapshotIdentifier` parameter. This parameter is not case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DBCluster.

Type: String

Required: No

### **DBClusterSnapshotIdentifier**

A specific DB cluster snapshot identifier to describe. This parameter can't be used in conjunction with the `DBClusterIdentifier` parameter. This value is stored as a lowercase string.

Constraints:

- If supplied, must match the identifier of an existing DBClusterSnapshot.
- If this identifier is for an automated snapshot, the `SnapshotType` parameter must also be specified.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **IncludePublic**

True to include manual DB cluster snapshots that are public and can be copied or restored by any AWS account, and otherwise false. The default is `false`. The default is false.

You can share a manual DB cluster snapshot as public by using the [ModifyDBClusterSnapshotAttribute](#) (p. 249) API action.

Type: Boolean

Required: No

### **IncludeShared**

True to include shared manual DB cluster snapshots from other AWS accounts that this AWS account has been given permission to copy or restore, and otherwise false. The default is `false`.

You can give an AWS account permission to restore a manual DB cluster snapshot from another AWS account by the [ModifyDBClusterSnapshotAttribute](#) (p. 249) API action.

Type: Boolean

Required: No

**Marker**

An optional pagination token provided by a previous `DescribeDBClusterSnapshots` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

**SnapshotType**

The type of DB cluster snapshots to be returned. You can specify one of the following values:

- `automated` - Return all DB cluster snapshots that have been automatically taken by Amazon RDS for my AWS account.
- `manual` - Return all DB cluster snapshots that have been taken by my AWS account.
- `shared` - Return all manual DB cluster snapshots that have been shared to my AWS account.
- `public` - Return all DB cluster snapshots that have been marked as public.

If you don't specify a `SnapshotType` value, then both automated and manual DB cluster snapshots are returned. You can include shared DB cluster snapshots with these results by setting the `IncludeShared` parameter to `true`. You can include public DB cluster snapshots with these results by setting the `IncludePublic` parameter to `true`.

The `IncludeShared` and `IncludePublic` parameters don't apply for `SnapshotType` values of `manual` or `automated`. The `IncludePublic` parameter doesn't apply when `SnapshotType` is set to `shared`. The `IncludeShared` parameter doesn't apply when `SnapshotType` is set to `public`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**DBClusterSnapshots.DBClusterSnapshot.N**

Provides a list of DB cluster snapshots for the user.

Type: Array of [DBClusterSnapshot](#) (p. 386) objects

#### Marker

An optional pagination token provided by a previous [DescribeDBClusterSnapshots](#) (p. 149) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

#### DBClusterSnapshotNotFoundFault

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeDBClusterSnapshots
&IncludePublic=false
&IncludeShared=true
&MaxRecords=40
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
&X-Amz-Date=20150318T204210Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=913f0ec1dfc684ff9c6ef3eab5885258dbb22017c47b1bcd4fed4680e35aef4b
```

### Sample Response

```
<DescribeDBClusterSnapshotsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterSnapshotsResult>
    <DBClusterSnapshots>
      <DBClusterSnapshot>
        <Port>0</Port>
        <Status>available</Status>
        <Engine>aurora</Engine>
        <SnapshotType>manual</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>sample-cluster-snapshot1</DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2015-03-12T17:42:48.271Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2015-03-06T22:11:13.826Z</ClusterCreateTime>
        <PercentProgress>100</PercentProgress>
      </DBClusterSnapshot>
    </DBClusterSnapshots>
  </DescribeDBClusterSnapshotsResult>
</DescribeDBClusterSnapshotsResponse>
```

```

        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
    </DBClusterSnapshot>
    <DBClusterSnapshot>
        <Port>0</Port>
        <Status>creating</Status>
        <Engine>aurora</Engine>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>rds:sample2-cluster-2014-10-22-03-12</
DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2014-10-22T03:12:09.445Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample2-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2014-10-16T18:44:13.633Z</ClusterCreateTime>
        <PercentProgress>0</PercentProgress>
        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
    </DBClusterSnapshot>
    <DBClusterSnapshot>
        <Port>0</Port>
        <Status>creating</Status>
        <Engine>aurora</Engine>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>rds:sample-cluster-2014-10-22-08-27</
DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2014-10-22T08:27:08.435Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2014-10-16T20:11:04.016Z</ClusterCreateTime>
        <PercentProgress>0</PercentProgress>
        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
    </DBClusterSnapshot>
    </DBClusterSnapshots>
</DescribeDBClusterSnapshotsResult>
<ResponseMetadata>
    <RequestId>3ff63be1-ceef-11e4-840b-459216ffcb55</RequestId>
</ResponseMetadata>
</DescribeDBClusterSnapshotsResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBEngineVersions

Returns a list of the available DB engines.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBParameterGroupFamily**

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

Constraints:

- If supplied, must match an existing DBParameterGroupFamily.

Type: String

Required: No

### **DefaultOnly**

Indicates that only the default version of the specified engine or engine and major version combination is returned.

Type: Boolean

Required: No

### **Engine**

The database engine to return.

Type: String

Required: No

### **EngineVersion**

The database engine version to return.

Example: 5 . 1 . 49

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **ListSupportedCharacterSets**

If this parameter is specified and the requested engine supports the `CharacterSetName` parameter for `CreateDBInstance`, the response includes a list of supported character sets for each engine version.

Type: Boolean

Required: No



### **ListSupportedTimezones**

If this parameter is specified and the requested engine supports the `TimeZone` parameter for `CreateDBInstance`, the response includes a list of supported time zones for each engine version.

Type: Boolean

Required: No

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

### **MaxRecords**

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so that the following results can be retrieved.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBEngineVersions.DBEngineVersion.N**

A list of `DBEngineVersion` elements.

Type: Array of [DBEngineVersion \(p. 391\)](#) objects

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBEngineVersions
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=4772d17a4c43bcd209ff42a0778dd23e73f8434253effd7ac53b89ade3dad45f
```

## Sample Response

```
<DescribeDBEngineVersionsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBEngineVersionsResult>
    <DBEngineVersions>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.57</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.57</DBEngineVersionDescription>
      </DBEngineVersion>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.61</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.61</DBEngineVersionDescription>
      </DBEngineVersion>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.62</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.62</DBEngineVersionDescription>
      </DBEngineVersion>
    </DescribeDBEngineVersionsResult>
    <ResponseMetadata>
      <RequestId>b74d2635-b98c-11d3-fbc7-5c0aad74da7c</RequestId>
    </ResponseMetadata>
  </DescribeDBEngineVersionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# DescribeDBInstances

Returns information about provisioned RDS instances. This API supports pagination.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The user-supplied instance identifier. If this parameter is specified, information from only the specific DB instance is returned. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DBInstance.

Type: String

Required: No

### **Filters.Filter.N**

A filter that specifies one or more DB instances to describe.

Supported filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list will only include information about the DB instances associated with the DB clusters identified by these ARNs.
- `db-instance-id` - Accepts DB instance identifiers and DB instance Amazon Resource Names (ARNs). The results list will only include information about the DB instances identified by these ARNs.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBInstances` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBInstances.DBInstance.N**

A list of [DBInstance](#) (p. 393) instances.

Type: Array of [DBInstance](#) (p. 393) objects

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeDBInstances
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-east-1/rds/aws4_request
&X-Amz-Date=20140420T171917Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=caa44629fa60576c2c282d9b74d47647f9e9f229f6d0e52db1d3be0d095743b0
```

### Sample Response

```
<DescribeDBInstancesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBInstancesResult>
    <DBInstances>
      <DBInstance>
        <AllocatedStorage>100</AllocatedStorage>
        <DBParameterGroups>
          <DBParameterGroup>
            <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
```

```

    </DBParameterGroup>
  </DBParameterGroups>
  <AvailabilityZone>us-east-1b</AvailabilityZone>
  <SecondaryAvailabilityZone>us-east-1a</SecondaryAvailabilityZone>
  <DBSecurityGroups/>
  <Iops>1000</Iops>
  <EnhancedMonitoringResourceArn>arn:aws:logs:us-east-1:1234567890:log-
group:RDSOSMetrics:log-stream:db-IXRXA2XS7KFFA6JWYYWFZEBJDE</EnhancedMonitoringResourceArn>
  <EngineVersion>5.6.39</EngineVersion>
  <MasterUsername>mysqladmin</MasterUsername>
  <InstanceCreateTime>2018-03-28T19:54:07.871Z</InstanceCreateTime>
  <DBInstanceClass>db.m4.xlarge</DBInstanceClass>
  <ReadReplicaDBInstanceIdentifiers/>
  <MonitoringInterval>60</MonitoringInterval>
  <DBInstanceStatus>available</DBInstanceStatus>
  <BackupRetentionPeriod>7</BackupRetentionPeriod>
  <KmsKeyId>arn:aws:kms:us-east-1:1234567890:key/#####</KmsKeyId>
  <OptionGroupMemberships>
    <OptionGroupMembership>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Status>in-sync</Status>
    </OptionGroupMembership>
  </OptionGroupMemberships>
  <LatestRestorableTime>2018-03-28T20:10:00Z</LatestRestorableTime>
  <CACertificateIdentifier>rds-ca-2015</CACertificateIdentifier>
  <DbInstancePort>0</DbInstancePort>
  <DbiResourceId>db-IXRXA2XS7KFFA6JWYYWFZEBJDE</DbiResourceId>
  <PreferredBackupWindow>05:27-05:57</PreferredBackupWindow>
  <DBInstanceIdentifier>mysqladb</DBInstanceIdentifier>
  <DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:mysqladb</DBInstanceArn>
  <Endpoint>
    <HostedZoneId>Z2R2ITUGPM61AM</HostedZoneId>
    <Address>mysqladb.#####.us-east-1.rds.amazonaws.com</Address>
    <Port>3306</Port>
  </Endpoint>
  <Engine>mysql</Engine>
  <PubliclyAccessible>true</PubliclyAccessible>
  <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
  <PerformanceInsightsEnabled>false</PerformanceInsightsEnabled>
  <MultiAZ>true</MultiAZ>
  <MonitoringRoleArn>arn:aws:iam::1234567890:role/rds-monitoring-role</
MonitoringRoleArn>
  <DomainMemberships/>
  <StorageEncrypted>true</StorageEncrypted>
  <DBSubnetGroup>
    <VpcId>vpc-#####</VpcId>
    <Subnets>
      <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
          <Name>us-east-1e</Name>
        </SubnetAvailabilityZone>
      </Subnet>
      <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
          <Name>us-east-1d</Name>
        </SubnetAvailabilityZone>
      </Subnet>
      <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
          <Name>us-east-1c</Name>

```

```

        </SubnetAvailabilityZone>
    </Subnet>
    <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
            <Name>us-east-1f</Name>
        </SubnetAvailabilityZone>
    </Subnet>
    <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
            <Name>us-east-1a</Name>
        </SubnetAvailabilityZone>
    </Subnet>
    <Subnet>
        <SubnetIdentifier>subnet-#####</SubnetIdentifier>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetAvailabilityZone>
            <Name>us-east-1b</Name>
        </SubnetAvailabilityZone>
    </Subnet>
</Subnets>
<SubnetGroupStatus>Complete</SubnetGroupStatus>
<DBSubnetGroupDescription>default</DBSubnetGroupDescription>
<DBSubnetGroupName>default</DBSubnetGroupName>
</DBSubnetGroup>
<VpcSecurityGroups>
    <VpcSecurityGroupMembership>
        <VpcSecurityGroupId>sg-#####</VpcSecurityGroupId>
        <Status>active</Status>
    </VpcSecurityGroupMembership>
</VpcSecurityGroups>
<LicenseModel>general-public-license</LicenseModel>
<PendingModifiedValues/>
<PreferredMaintenanceWindow>fri:05:57-fri:06:27</PreferredMaintenanceWindow>
<StorageType>iol</StorageType>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<CopyTagsToSnapshot>false</CopyTagsToSnapshot>
</DBInstance>
<DBInstance>
    <AllocatedStorage>100</AllocatedStorage>
    <DBParameterGroups>
        <DBParameterGroup>
            <DBParameterGroupName>default.oracle-ee-12.1</DBParameterGroupName>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
        </DBParameterGroup>
    </DBParameterGroups>
    <AvailabilityZone>us-east-1c</AvailabilityZone>
    <SecondaryAvailabilityZone>us-east-1f</SecondaryAvailabilityZone>
    <DBSecurityGroups/>
    <Iops>1000</Iops>
    <EnhancedMonitoringResourceArn>arn:aws:logs:us-east-1:1234567890:log-
group:RDSOSMetrics:log-stream:db-YVS5NRBNHPGJZ3IT3WADXYYSWYU</EnhancedMonitoringResourceArn>
    <EngineVersion>12.1.0.2.v11</EngineVersion>
    <MasterUsername>oracledbadmin</MasterUsername>
    <InstanceCreateTime>2018-03-28T20:00:48.832Z</InstanceCreateTime>
    <DBInstanceClass>db.m4.xlarge</DBInstanceClass>
    <ReadReplicaDBInstanceIdentifiers/>
    <MonitoringInterval>60</MonitoringInterval>
    <DBInstanceStatus>available</DBInstanceStatus>
    <BackupRetentionPeriod>7</BackupRetentionPeriod>
    <KmsKeyId>arn:aws:kms:us-east-1:1234567890:key/#####</KmsKeyId>
    <OptionGroupMemberships>
        <OptionGroupMembership>

```

```

        <OptionGroupName>default:oracle-ee-12-1</OptionGroupName>
        <Status>in-sync</Status>
    </OptionGroupMembership>
</OptionGroupMemberships>
<LatestRestorableTime>2018-03-28T20:14:30.818Z</LatestRestorableTime>
<CACertificateIdentifier>rds-ca-2015</CACertificateIdentifier>
<DbInstancePort>0</DbInstancePort>
<DbiResourceId>db-YVS5NRBNHPGJZ3IT3WADXYSWYU</DbiResourceId>
<PreferredBackupWindow>07:39-08:09</PreferredBackupWindow>
<DBInstanceIdentifier>oracledb</DBInstanceIdentifier>
<DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:oracledb</DBInstanceArn>
<Endpoint>
    <HostedZoneId>Z2R2ITUGPM61AM</HostedZoneId>
    <Address>oracledb.#####.us-east-1.rds.amazonaws.com</Address>
    <Port>1521</Port>
</Endpoint>
<Engine>oracle-ee</Engine>
<PubliclyAccessible>true</PubliclyAccessible>
<IAMDatabaseAuthenticationEnabled>>false</IAMDatabaseAuthenticationEnabled>
<PerformanceInsightsEnabled>>false</PerformanceInsightsEnabled>
<DBName>ORCL</DBName>
<MultiAZ>true</MultiAZ>
<CharacterSetName>AL32UTF8</CharacterSetName>
<MonitoringRoleArn>arn:aws:iam::1234567890:role/rds-monitoring-role</
MonitoringRoleArn>
<DomainMemberships/>
<StorageEncrypted>true</StorageEncrypted>
<DBSubnetGroup>
    <VpcId>vpc-#####</VpcId>
    <Subnets>
        <Subnet>
            <SubnetIdentifier>subnet-#####</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
                <Name>us-east-1e</Name>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetIdentifier>subnet-#####</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
                <Name>us-east-1d</Name>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetIdentifier>subnet-#####</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
                <Name>us-east-1c</Name>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetIdentifier>subnet-#####</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
                <Name>us-east-1f</Name>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetIdentifier>subnet-#####</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
                <Name>us-east-1a</Name>
            </SubnetAvailabilityZone>
        </Subnet>
    </Subnets>
</DBSubnetGroup>

```



```
<SubnetIdentifier>subnet-#####</SubnetIdentifier>
<SubnetStatus>Active</SubnetStatus>
<SubnetAvailabilityZone>
  <Name>us-east-1b</Name>
</SubnetAvailabilityZone>
</Subnet>
</Subnets>
<SubnetGroupStatus>Complete</SubnetGroupStatus>
<DBSubnetGroupDescription>default</DBSubnetGroupDescription>
<DBSubnetGroupName>default</DBSubnetGroupName>
</DBSubnetGroup>
<VpcSecurityGroups>
  <VpcSecurityGroupMembership>
    <VpcSecurityGroupId>sg-#####</VpcSecurityGroupId>
    <Status>active</Status>
  </VpcSecurityGroupMembership>
</VpcSecurityGroups>
<LicenseModel>bring-your-own-license</LicenseModel>
<PendingModifiedValues/>
<PreferredMaintenanceWindow>tue:08:39-tue:09:09</PreferredMaintenanceWindow>
<StorageType>io1</StorageType>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<CopyTagsToSnapshot>>false</CopyTagsToSnapshot>
</DBInstance>
</DBInstances>
</DescribeDBInstancesResult>
<ResponseMetadata>
  <RequestId>298f362b-e14a-4ee0-9840-4546c276014a</RequestId>
</ResponseMetadata>
</DescribeDBInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBLogFiles

Returns a list of DB log files for the DB instance.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The customer-assigned name of the DB instance that contains the log files you want to list.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

### **FileLastWritten**

Filters the available log files for files written since the specified date, in POSIX timestamp format with milliseconds.

Type: Long

Required: No

### **FilenameContains**

Filters the available log files for log file names that contain the specified string.

Type: String

Required: No

### **FileSize**

Filters the available log files for files larger than the specified size.

Type: Long

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

The pagination token provided in the previous request. If this parameter is specified the response includes only records beyond the marker, up to MaxRecords.

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

## Response Elements

The following elements are returned by the service.

#### **DescribeDBLogFiles.DescribeDBLogFilesDetails.N**

The DB log files returned.

Type: Array of [DescribeDBLogFilesDetails](#) (p. 415) objects

#### **Marker**

A pagination token that can be used in a subsequent DescribeDBLogFiles request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

#### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=DescribeDBLogFiles  
&DBInstanceIdentifier=mysqlldb  
&MaxRecords=100  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request  
&X-Amz-Date=20140421T225750Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=9020fd1bcd658614e058cd2eb8c58572cf6c11460b1e96380635ee428a52e8a1
```

## Sample Response

```
<DescribeDBLogFilesResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBLogFilesResult>
    <DescribeDBLogFiles>
      <DescribeDBLogFilesDetails>
        <LastWritten>1398119101000</LastWritten>
        <LogFileName>error/mysql-error-running.log</LogFileName>
        <Size>1599</Size>
      </DescribeDBLogFilesDetails>
      <DescribeDBLogFilesDetails>
        <LastWritten>1398120900000</LastWritten>
        <LogFileName>error/mysql-error.log</LogFileName>
        <Size>0</Size>
      </DescribeDBLogFilesDetails>
    </DescribeDBLogFiles>
  </DescribeDBLogFilesResult>
  <ResponseMetadata>
    <RequestId>4c6ed648-b9f7-11d3-97bd-7999dd5a8f72</RequestId>
  </ResponseMetadata>
</DescribeDBLogFilesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBParameterGroups

Returns a list of `DBParameterGroup` descriptions. If a `DBParameterGroupName` is specified, the list will contain only the description of the specified DB parameter group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBParameterGroupName**

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

Constraints:

- If supplied, must match the name of an existing `DBClusterParameterGroup`.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBParameterGroups` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBParameterGroups.DBParameterGroup.N**

A list of [DBParameterGroup \(p. 402\)](#) instances.

Type: Array of [DBParameterGroup](#) (p. 402) objects

#### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

#### DBParameterGroupNotFound

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBParameterGroups
&DBParameterGroupName=mysql-logs
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=e2753df1cb019f212057b51e8a2ac16dae05b344063355b195b560ef6e76661a
```

### Sample Response

```
<DescribeDBParameterGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBParameterGroupsResult>
    <DBParameterGroups>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.1</Description>
        <DBParameterGroupName>default.mysql5.1</DBParameterGroupName>
      </DBParameterGroup>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.5</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.5</Description>
        <DBParameterGroupName>default.mysql5.5</DBParameterGroupName>
      </DBParameterGroup>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.6</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.6</Description>
        <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
      </DBParameterGroup>
    </DBParameterGroups>
  </DescribeDBParameterGroupsResult>
</DescribeDBParameterGroupsResponse>
```

```
</DBParameterGroups>
</DescribeDBParameterGroupsResult>
<ResponseMetadata>
  <RequestId>b75d527a-b98c-11d3-f272-7cd6cce12cc5</RequestId>
</ResponseMetadata>
</DescribeDBParameterGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBParameters

Returns the detailed parameter list for a particular DB parameter group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBParameterGroupName**

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

Constraints:

- If supplied, must match the name of an existing DBParameterGroup.

Type: String

Required: Yes

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBParameters` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### **Source**

The parameter types to return.

Default: All parameter types returned

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

Type: String

Required: No



## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### Parameters.Parameter.N

A list of [Parameter](#) (p. 446) values.

Type: Array of [Parameter](#) (p. 446) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### DBParameterGroupNotFound

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeDBParameters
&DBParameterGroupName=oracle-logs
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request
&X-Amz-Date=20140421T231357Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=ac9b18d6ae7cab4bf45ed2caa99cd8438101b293c0a84e80c3bab77f7369cc7
```

### Sample Response

```
<DescribeDBParametersResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBParametersResult>
    <Marker>bGlzdGVuZXJfbmV0d29ya3M=</Marker>
    <Parameters>
      <Parameter>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>number of AQ Time Managers to start</Description>
```

```

        <ApplyType>dynamic</ApplyType>
        <AllowedValues>0-40</AllowedValues>
        <ParameterName>aq_tm_processes</ParameterName>
    </Parameter>
    <Parameter>
        <ParameterValue>300</ParameterValue>
        <DataType>integer</DataType>
        <Source>system</Source>
        <IsModifiable>>false</IsModifiable>
        <Description>Maximum number of seconds of redos the standby could lose</
Description>
        <ApplyType>dynamic</ApplyType>
        <ParameterName>archive_lag_target</ParameterName>
    </Parameter>
    <Parameter>
        <ParameterValue>/rdsdbdata/admin/{dbName}/adump</ParameterValue>
        <DataType>string</DataType>
        <Source>system</Source>
        <IsModifiable>>false</IsModifiable>
        <Description>Directory in which auditing files are to reside</Description>
        <ApplyType>dynamic</ApplyType>
        <ParameterName>audit_file_dest</ParameterName>
    </Parameter>
    <Parameter>
        <DataType>boolean</DataType>
        <Source>engine-default</Source>
        <IsModifiable>>false</IsModifiable>
        <Description>enable sys auditing</Description>
        <ApplyType>static</ApplyType>
        <AllowedValues>TRUE,FALSE</AllowedValues>
        <ParameterName>audit_sys_operations</ParameterName>
    </Parameter>
    <Parameter>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>>false</IsModifiable>
        <Description>Syslog facility and level</Description>
        <ApplyType>static</ApplyType>
        <ParameterName>audit_syslog_level</ParameterName>
    </Parameter>
    <Parameter>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>>true</IsModifiable>
        <Description>enable system auditing</Description>
        <ApplyType>static</ApplyType>
        <AllowedValues>DB,OS,NONE,TRUE,FALSE,DB_EXTENDED,XML</AllowedValues>
        <ParameterName>audit_trail</ParameterName>
    </Parameter>
</Parameters>
</DescribeDBParametersResult>
<ResponseMetadata>
    <RequestId>8c40488f-b9ff-11d3-a15e-7ac49293f4fa</RequestId>
</ResponseMetadata>
</DescribeDBParametersResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBSecurityGroups

Returns a list of `DBSecurityGroup` descriptions. If a `DBSecurityGroupName` is specified, the list will contain only the descriptions of the specified DB security group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBSecurityGroupName**

The name of the DB security group to return details for.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeDBSecurityGroups` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBSecurityGroups.DBSecurityGroup.N**

A list of [DBSecurityGroup \(p. 404\)](#) instances.

Type: Array of [DBSecurityGroup \(p. 404\)](#) objects

**Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

**DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBSecurityGroups
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=b14bcddedcf2fd7ffbbcc45ed2caa99cd848ee309a19070f946ad2a54f5331fe
```

### Sample Response

```
<DescribeDBSecurityGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBSecurityGroupsResult>
    <DBSecurityGroups>
      <DBSecurityGroup>
        <EC2SecurityGroups/>
        <DBSecurityGroupDescription>My security group</DBSecurityGroupDescription>
        <IPRanges>
          <IPRange>
            <CIDRIP>192.0.0.0/24</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
          <IPRange>
            <CIDRIP>190.0.1.0/29</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
          <IPRange>
            <CIDRIP>190.0.2.0/29</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
        </IPRanges>
      </DBSecurityGroup>
    </DBSecurityGroups>
  </DescribeDBSecurityGroupsResult>
</DescribeDBSecurityGroupsResponse>
```

```
<CIDRIP>10.0.0.0/8</CIDRIP>
<Status>authorized</Status>
</IPRange>
</IPRanges>
<OwnerId>803#####</OwnerId>
<DBSecurityGroupName>my-secgrp</DBSecurityGroupName>
</DBSecurityGroup>
<DBSecurityGroup>
  <EC2SecurityGroups/>
  <DBSecurityGroupDescription>default</DBSecurityGroupDescription>
  <IPRanges/>
  <OwnerId>803#####</OwnerId>
  <DBSecurityGroupName>default</DBSecurityGroupName>
</DBSecurityGroup>
</DBSecurityGroups>
</DescribeDBSecurityGroupsResult>
<ResponseMetadata>
  <RequestId>b76e692c-b98c-11d3-a907-5a2c468b9cb0</RequestId>
</ResponseMetadata>
</DescribeDBSecurityGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBSnapshotAttributes

Returns a list of DB snapshot attribute names and values for a manual DB snapshot.

When sharing snapshots with other AWS accounts, `DescribeDBSnapshotAttributes` returns the `restore` attribute and a list of IDs for the AWS accounts that are authorized to copy or restore the manual DB snapshot. If `all` is included in the list of values for the `restore` attribute, then the manual DB snapshot is public and can be copied or restored by all AWS accounts.

To add or remove access for an AWS account to copy or restore a manual DB snapshot, or to make the manual DB snapshot public or private, use the [ModifyDBSnapshotAttribute \(p. 272\)](#) API action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBSnapshotIdentifier**

The identifier for the DB snapshot to describe the attributes for.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBSnapshotAttributesResult**

Contains the results of a successful call to the [DescribeDBSnapshotAttributes \(p. 176\)](#) API action.

Manual DB snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB snapshot. For more information, see the [ModifyDBSnapshotAttribute \(p. 272\)](#) API action.

Type: [DBSnapshotAttributesResult \(p. 412\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=DescribeDBSnapshotAttributes  
&DBSnapshotIdentifier>manual-snapshot1  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-10-31  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20151027/us-east-1/rds/aws4_request  
&X-Amz-Date=20151027T210706Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=27413f450dfac3d68b2197453e52109bacd3863f9df1a02d6e40022165bb2e09
```

## Sample Response

```
<DescribeDBSnapshotAttributesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">  
  <DescribeDBSnapshotAttributesResult>  
    <DBSnapshotAttributesResult>  
      <DBSnapshotAttributes>  
        <DBSnapshotAttribute>  
          <AttributeName>restore</AttributeName>  
          <AttributeValues>  
            <AttributeValue>012345678901</AttributeValue>  
          </AttributeValues>  
        </DBSnapshotAttribute>  
      </DBSnapshotAttributes>  
      <DBSnapshotIdentifier>>manual-snapshot1</DBSnapshotIdentifier>  
    </DBSnapshotAttributesResult>  
  </DescribeDBSnapshotAttributesResult>  
  <ResponseMetadata>  
    <RequestId>ae5be4a2-7cee-11e5-a056-f1c189649a47</RequestId>  
  </ResponseMetadata>  
</DescribeDBSnapshotAttributesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# DescribeDBSnapshots

Returns information about DB snapshots. This API action supports pagination.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBInstanceIdentifier**

The ID of the DB instance to retrieve the list of DB snapshots for. This parameter can't be used in conjunction with `DBSnapshotIdentifier`. This parameter is not case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DBInstance.

Type: String

Required: No

### **DBSnapshotIdentifier**

A specific DB snapshot identifier to describe. This parameter can't be used in conjunction with `DBInstanceIdentifier`. This value is stored as a lowercase string.

Constraints:

- If supplied, must match the identifier of an existing DBSnapshot.
- If this identifier is for an automated snapshot, the `SnapshotType` parameter must also be specified.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **IncludePublic**

True to include manual DB snapshots that are public and can be copied or restored by any AWS account, and otherwise false. The default is false.

You can share a manual DB snapshot as public by using the [ModifyDBSnapshotAttribute \(p. 272\)](#) API.

Type: Boolean

Required: No

### **IncludeShared**

True to include shared manual DB snapshots from other AWS accounts that this AWS account has been given permission to copy or restore, and otherwise false. The default is false.

You can give an AWS account permission to restore a manual DB snapshot from another AWS account by using the [ModifyDBSnapshotAttribute \(p. 272\)](#) API action.

Type: Boolean

Required: No

**Marker**

An optional pagination token provided by a previous `DescribeDBSnapshots` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

**SnapshotType**

The type of snapshots to be returned. You can specify one of the following values:

- `automated` - Return all DB snapshots that have been automatically taken by Amazon RDS for my AWS account.
- `manual` - Return all DB snapshots that have been taken by my AWS account.
- `shared` - Return all manual DB snapshots that have been shared to my AWS account.
- `public` - Return all DB snapshots that have been marked as public.

If you don't specify a `SnapshotType` value, then both automated and manual snapshots are returned. Shared and public DB snapshots are not included in the returned results by default. You can include shared snapshots with these results by setting the `IncludeShared` parameter to `true`. You can include public snapshots with these results by setting the `IncludePublic` parameter to `true`.

The `IncludeShared` and `IncludePublic` parameters don't apply for `SnapshotType` values of `manual` or `automated`. The `IncludePublic` parameter doesn't apply when `SnapshotType` is set to `shared`. The `IncludeShared` parameter doesn't apply when `SnapshotType` is set to `public`.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**DBSnapshots.DBSnapshot.N**

A list of [DBSnapshot \(p. 407\)](#) instances.

Type: Array of [DBSnapshot \(p. 407\)](#) objects

### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBSnapshotNotFound

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBSnapshots
&IncludePublic=false
&IncludeShared=true
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=4aa31bdcf7b5e00dadffbd6dc8448a31871e283ffe270e77890e15487354bcca
```

### Sample Response

```
<DescribeDBSnapshotsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBSnapshotsResult>
    <DBSnapshots>
      <DBSnapshot>
        <Port>3306</Port>
        <OptionGroupName>default:mysql-5-6</OptionGroupName>
        <Engine>mysql</Engine>
        <Status>available</Status>
        <SnapshotType>manual</SnapshotType>
        <LicenseModel>general-public-license</LicenseModel>
        <EngineVersion>5.6.13</EngineVersion>
        <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
        <DBSnapshotIdentifier>my-test-restore-snapshot</DBSnapshotIdentifier>
        <SnapshotCreateTime>2014-03-28T19:57:16.707Z</SnapshotCreateTime>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <InstanceCreateTime>2014-01-29T22:58:24.231Z</InstanceCreateTime>
        <PercentProgress>100</PercentProgress>
        <AllocatedStorage>5</AllocatedStorage>
      </DBSnapshot>
    </DBSnapshots>
  </DescribeDBSnapshotsResult>
</DescribeDBSnapshotsResponse>
```

```
<MasterUsername>awsmyuser</MasterUsername>
</DBSnapshot>
<DBSnapshot>
  <Port>3306</Port>
  <OptionGroupName>default:mysql-5-6</OptionGroupName>
  <Engine>mysql</Engine>
  <Status>available</Status>
  <SnapshotType>automated</SnapshotType>
  <LicenseModel>general-public-license</LicenseModel>
  <EngineVersion>5.6.13</EngineVersion>
  <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
  <DBSnapshotIdentifier>rds:my-mysqlexampledb-2014-04-19-10-08</DBSnapshotIdentifier>
  <SnapshotCreateTime>2014-04-19T10:09:09.790Z</SnapshotCreateTime>
  <AvailabilityZone>us-west-2b</AvailabilityZone>
  <InstanceCreateTime>2014-01-29T22:58:24.231Z</InstanceCreateTime>
  <PercentProgress>100</PercentProgress>
  <AllocatedStorage>5</AllocatedStorage>
  <MasterUsername>awsmyuser</MasterUsername>
</DBSnapshot>
<DBSnapshot>
  <Port>3306</Port>
  <OptionGroupName>default:mysql-5-6</OptionGroupName>
  <Engine>mysql</Engine>
  <Status>available</Status>
  <SnapshotType>automated</SnapshotType>
  <LicenseModel>general-public-license</LicenseModel>
  <EngineVersion>5.6.13</EngineVersion>
  <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
  <DBSnapshotIdentifier>rds:my-mysqlexampledb-2014-04-20-10-09</DBSnapshotIdentifier>
  <SnapshotCreateTime>2014-04-20T10:09:15.446Z</SnapshotCreateTime>
  <AvailabilityZone>us-west-2b</AvailabilityZone>
  <InstanceCreateTime>2014-01-29T22:58:24.231Z</InstanceCreateTime>
  <PercentProgress>100</PercentProgress>
  <AllocatedStorage>5</AllocatedStorage>
  <MasterUsername>awsmyuser</MasterUsername>
</DBSnapshot>
</DBSnapshots>
</DescribeDBSnapshotsResult>
<ResponseMetadata>
  <RequestId>b7769930-b98c-11d3-f272-7cd6cce12cc5</RequestId>
</ResponseMetadata>
</DescribeDBSnapshotsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeDBSubnetGroups

Returns a list of DBSubnetGroup descriptions. If a DBSubnetGroupName is specified, the list will contain only the descriptions of the specified DBSubnetGroup.

For an overview of CIDR ranges, go to the [Wikipedia Tutorial](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBSubnetGroupName**

The name of the DB subnet group to return details for.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous DescribeDBSubnetGroups request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by MaxRecords.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **DBSubnetGroups.DBSubnetGroup.N**

A list of [DBSubnetGroup](#) (p. 413) instances.

Type: Array of [DBSubnetGroup](#) (p. 413) objects

#### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

#### DBSubnetGroupNotFoundFault

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeDBSubnetGroups
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6cc9b2825866148e1d6290b8aa2e9d75b1884b116d8665759942d87ebfbed426
```

### Sample Response

```
<DescribeDBSubnetGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeDBSubnetGroupsResult>
    <DBSubnetGroups>
      <DBSubnetGroup>
        <VpcId>vpc-e7abbdce</VpcId>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <DBSubnetGroupDescription>DB subnet group 1</DBSubnetGroupDescription>
        <DBSubnetGroupName>mydbsubnetgroup1</DBSubnetGroupName>
        <Subnets>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-e8b3e5b1</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2a</Name>
              <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
```

```

        <SubnetIdentifier>subnet-44b2f22e</SubnetIdentifier>
        <SubnetAvailabilityZone>
            <Name>us-west-2b</Name>
            <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
        </SubnetAvailabilityZone>
    </Subnet>
</Subnets>
</DBSubnetGroup>
<DBSubnetGroup>
    <VpcId>vpc-c1e17bb8</VpcId>
    <SubnetGroupStatus>Complete</SubnetGroupStatus>
    <DBSubnetGroupDescription>My DB Subnet Group 2</DBSubnetGroupDescription>
    <DBSubnetGroupName>sub-grp-2</DBSubnetGroupName>
    <Subnets>
        <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-d281ef8a</SubnetIdentifier>
            <SubnetAvailabilityZone>
                <Name>us-west-2a</Name>
                <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-b381ef9f</SubnetIdentifier>
            <SubnetAvailabilityZone>
                <Name>us-west-2c</Name>
                <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-e1e17ebd</SubnetIdentifier>
            <SubnetAvailabilityZone>
                <Name>us-west-2b</Name>
                <ProvisionedIopsCapable>>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
        </Subnet>
    </Subnets>
</DBSubnetGroup>
</DBSubnetGroups>
</DescribeDBSubnetGroupsResult>
<ResponseMetadata>
    <RequestId>b783db3b-b98c-11d3-fbc7-5c0aad74da7c</RequestId>
</ResponseMetadata>
</DescribeDBSubnetGroupsResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)





# DescribeEngineDefaultClusterParameters

Returns the default engine and system parameter information for the cluster database engine.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBParameterGroupFamily

The name of the DB cluster parameter group family to return engine parameter information for.

Type: String

Required: Yes

### Filters.Filter.N

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### Marker

An optional pagination token provided by a previous `DescribeEngineDefaultClusterParameters` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

### EngineDefaults

Contains the result of a successful invocation of the [DescribeEngineDefaultParameters \(p. 188\)](#) action.

Type: [EngineDefaults \(p. 420\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

## Example

### Sample Request

### Sample Response

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeEngineDefaultParameters

Returns the default engine and system parameter information for the specified database engine.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBParameterGroupFamily**

The name of the DB parameter group family.

Type: String

Required: Yes

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous `DescribeEngineDefaultParameters` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

### **EngineDefaults**

Contains the result of a successful invocation of the [DescribeEngineDefaultParameters](#) (p. 188) action.

Type: [EngineDefaults](#) (p. 420) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeEngineDefaultParameters
&DBParameterGroupFamily=mysql5.1
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=747cc243a8a2385b0b06a9e2d145d08b905a39620b2782edd8382ea1712cf826
```

### Sample Response

```
<DescribeEngineDefaultParametersResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeEngineDefaultParametersResult>
    <EngineDefaults>
      <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
      <Marker>bG9nX3FZXJpZ4Nfbm90X3VzaW5nX2luZGV4Z1M=</Marker>
      <Parameters>
        <Parameter>
          <DataType>boolean</DataType>
          <Source>engine-default</Source>
          <IsModifiable>false</IsModifiable>
          <Description>Controls whether user-defined functions that have only an xxx symbol
for the main function can be loaded</Description>
          <ApplyType>static</ApplyType>
          <AllowedValues>0,1</AllowedValues>
          <ParameterName>allow-suspicious-udfs</ParameterName>
        </Parameter>
        <Parameter>
          <DataType>integer</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Intended for use with master-to-master replication, and can be used
to control the operation of AUTO_INCREMENT columns</Description>
          <ApplyType>dynamic</ApplyType>
          <AllowedValues>1-65535</AllowedValues>
          <ParameterName>auto_increment_increment</ParameterName>
        </Parameter>
        <Parameter>
          <DataType>integer</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Determines the starting point for the AUTO_INCREMENT column value</
Description>
          <ApplyType>dynamic</ApplyType>
          <AllowedValues>1-65535</AllowedValues>
          <ParameterName>auto_increment_offset</ParameterName>
```

```
        </Parameter>
      </Parameters>
    </EngineDefaults>
  </DescribeEngineDefaultParametersResult>
  <ResponseMetadata>
    <RequestId>b789ce01-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeEngineDefaultParametersResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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 categories for all event source types, or, if specified, for a specified source type. You can see a list of the event categories and source types in the [Events](#) topic in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### Filters.Filter.N

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### SourceType

The type of source that is generating the events.

Valid values: db-instance | db-parameter-group | db-security-group | db-snapshot

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### EventCategoriesMapList.EventCategoriesMap.N

A list of EventCategoriesMap data types.

Type: Array of [EventCategoriesMap](#) (p. 423) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=DescribeEventCategories  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request  
&X-Amz-Date=20140421T194732Z
```

```
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

## Sample Response

```
<DescribeEventCategoriesResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeEventCategoriesResult>
    <EventCategoriesMapList>
      <EventCategoriesMap>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
          <EventCategory>recovery</EventCategory>
          <EventCategory>restoration</EventCategory>
          <EventCategory>failover</EventCategory>
          <EventCategory>low storage</EventCategory>
          <EventCategory>maintenance</EventCategory>
          <EventCategory>deletion</EventCategory>
          <EventCategory>availability</EventCategory>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>notification</EventCategory>
          <EventCategory>failure</EventCategory>
          <EventCategory>creation</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
      <EventCategoriesMap>
        <SourceType>db-security-group</SourceType>
        <EventCategories>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>failure</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
      <EventCategoriesMap>
        <SourceType>db-parameter-group</SourceType>
        <EventCategories>
          <EventCategory>configuration change</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
      <EventCategoriesMap>
        <SourceType>db-snapshot</SourceType>
        <EventCategories>
          <EventCategory>deletion</EventCategory>
          <EventCategory>restoration</EventCategory>
          <EventCategory>notification</EventCategory>
          <EventCategory>failure</EventCategory>
          <EventCategory>creation</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
    </EventCategoriesMapList>
  </DescribeEventCategoriesResult>
  <ResponseMetadata>
    <RequestId>b79456f2-b98c-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeEventCategoriesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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 DB instances, DB security groups, DB snapshots, and DB parameter groups for the past 14 days. Events specific to a particular DB instance, DB security group, database snapshot, or DB 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. 470).

### **Duration**

The number of minutes to retrieve events for.

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

### **EventCategories.EventCategory.N**

A list of event categories that trigger notifications for a event notification subscription.

Type: Array of strings

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous DescribeEvents request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

#### **SourceIdentifier**

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

Constraints:

- If `SourceIdentifier` is supplied, `SourceType` must also be provided.
- If the source type is `DBInstance`, then a `DBInstanceIdentifier` must be supplied.
- If the source type is `DBSecurityGroup`, a `DBSecurityGroupName` must be supplied.
- If the source type is `DBParameterGroup`, a `DBParameterGroupName` must be supplied.
- If the source type is `DBSnapshot`, a `DBSnapshotIdentifier` must be supplied.
- Cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

#### **SourceType**

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

Type: String

Valid Values: `db-instance` | `db-parameter-group` | `db-security-group` | `db-snapshot` | `db-cluster` | `db-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 \(p. 421\)](#) instances.

Type: Array of [Event \(p. 421\)](#) objects

#### **Marker**

An optional pagination token provided by a previous Events request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeEvents
&Duration=1440
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194733Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=8e313cabcd9766c56a2886b5b298fd944e0b7cfa248953c82705fdd0374f27
```

### Sample Response

```
<DescribeEventsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeEventsResult>
    <Events>
      <Event>
        <Message>Backing up DB instance</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T06:23:33.866Z</Date>
        <SourceIdentifier>mypgdbinstance</SourceIdentifier>
      </Event>
      <Event>
        <Message>Finished DB Instance backup</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T06:25:03.928Z</Date>
        <SourceIdentifier>mypgdbinstance</SourceIdentifier>
      </Event>
      <Event>
        <Message>Backing up DB instance</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T07:09:34.594Z</Date>
        <SourceIdentifier>my-mysqlexampled4</SourceIdentifier>
      </Event>
      <Event>
        <Message>Finished DB Instance backup</Message>
```

```
<SourceType>db-instance</SourceType>
<EventCategories>
  <EventCategory>backup</EventCategory>
</EventCategories>
<Date>2014-04-21T07:11:05.640Z</Date>
<SourceIdentifier>my-mysqlexampled4</SourceIdentifier>
</Event>
<Event>
  <Message>Backing up DB instance</Message>
  <SourceType>db-instance</SourceType>
  <EventCategories>
    <EventCategory>backup</EventCategory>
  </EventCategories>
  <Date>2014-04-21T09:26:25.988Z</Date>
  <SourceIdentifier>my-oracledb1</SourceIdentifier>
</Event>
<Event>
  <Message>Finished DB Instance backup</Message>
  <SourceType>db-instance</SourceType>
  <EventCategories>
    <EventCategory>backup</EventCategory>
  </EventCategories>
  <Date>2014-04-21T09:28:38.048Z</Date>
  <SourceIdentifier>my-oracledb1</SourceIdentifier>
</Event>
</Events>
</DescribeEventsResult>
<ResponseMetadata>
  <RequestId>b7a8cd43-b98c-11d3-a907-5a2c468b9cb0</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 all the subscription descriptions for a customer account. The description for a subscription includes SubscriptionName, SNSTopicARN, CustomerID, SourceType, SourceID, CreationTime, and Status.

If you specify a SubscriptionName, lists the description for that subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### Filters.Filter.N

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### Marker

An optional pagination token provided by a previous DescribeOrderableDBInstanceOptions request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by MaxRecords .

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### SubscriptionName

The name of the RDS event notification subscription you want to describe.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### EventSubscriptionsList.EventSubscription.N

A list of EventSubscriptions data types.

Type: Array of [EventSubscription \(p. 424\)](#) objects

#### Marker

An optional pagination token provided by a previous `DescribeOrderableDBInstanceOptions` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

#### SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeEventSubscriptions
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T161907Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=4208679fe967783a1a149c826199080a066085d5a88227a80c6c0cadb3e8c0d4
```

### Sample Response

```
<DescribeEventSubscriptionsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeEventSubscriptionsResult>
    <EventSubscriptionsList>
      <EventSubscription>
        <Enabled>true</Enabled>
        <CustomerAwsId>802#####</CustomerAwsId>
        <SourceType>db-instance</SourceType>
        <Status>active</Status>
        <SourceIdsList>
          <SourceId>mysqldb-rr</SourceId>
          <SourceId>mysqldb</SourceId>
        </SourceIdsList>
        <SubscriptionCreationTime>2014-04-25 22:01:46.327</SubscriptionCreationTime>
        <EventCategoriesList>
          <EventCategory>creation</EventCategory>
          <EventCategory>deletion</EventCategory>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>low storage</EventCategory>
        </EventCategoriesList>
      </EventSubscription>
    </EventSubscriptionsList>
  </DescribeEventSubscriptionsResult>
</DescribeEventSubscriptionsResponse>
```

```

    </EventCategoriesList>
    <CustSubscriptionId>myawsuser-instance</CustSubscriptionId>
    <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
  </EventSubscription>
  <EventSubscription>
    <Enabled>true</Enabled>
    <CustomerAwsId>802#####</CustomerAwsId>
    <SourceType>db-parameter-group</SourceType>
    <Status>active</Status>
    <SourceIdsList>
      <SourceId>mydbparametergroup00</SourceId>
    </SourceIdsList>
    <SubscriptionCreationTime>2014-04-25 21:44:44.68</SubscriptionCreationTime>
    <EventCategoriesList>
      <EventCategory>configuration change</EventCategory>
    </EventCategoriesList>
    <CustSubscriptionId>myawsuser-paramgrp</CustSubscriptionId>
    <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
  </EventSubscription>
  <EventSubscription>
    <Enabled>true</Enabled>
    <CustomerAwsId>802#####</CustomerAwsId>
    <SourceType>db-security-group</SourceType>
    <Status>active</Status>
    <SubscriptionCreationTime>2014-04-25 21:43:25.542</SubscriptionCreationTime>
    <EventCategoriesList>
      <EventCategory>configuration change</EventCategory>
      <EventCategory>failure</EventCategory>
    </EventCategoriesList>
    <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>
    <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
  </EventSubscription>
  <EventSubscription>
    <Enabled>true</Enabled>
    <CustomerAwsId>802#####</CustomerAwsId>
    <SourceType>db-snapshot</SourceType>
    <Status>active</Status>
    <SubscriptionCreationTime>2014-04-25 21:41:24.405</SubscriptionCreationTime>
    <EventCategoriesList>
      <EventCategory>creation</EventCategory>
      <EventCategory>failure</EventCategory>
      <EventCategory>deletion</EventCategory>
    </EventCategoriesList>
    <CustSubscriptionId>myawsuser-snapshot</CustSubscriptionId>
    <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>
  </EventSubscription>
</EventSubscriptionsList>
</DescribeEventSubscriptionsResult>
<ResponseMetadata>
  <RequestId>c2c6da4e-bde9-11d3-fe11-33d33a9bb7e3</RequestId>
</ResponseMetadata>
</DescribeEventSubscriptionsResponse>

```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# DescribeOptionGroupOptions

Describes all available options.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **EngineName**

A required parameter. Options available for the given engine name are described.

Type: String

Required: Yes

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **MajorEngineVersion**

If specified, filters the results to include only options for the specified major engine version.

Type: String

Required: No

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

## Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

## OptionGroupOptions.OptionGroupOption.N

List of available option group options.

Type: Array of [OptionGroupOption](#) (p. 435) objects

# Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeOptionGroupOptions
&EngineName=oracle-se1
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194733Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=3792d1669ce65ba1ba6a85b2e4057235e46dd3d0072663c17f4b4439fd8af702
```

### Sample Response

```
<DescribeOptionGroupOptionsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeOptionGroupOptionsResult>
    <OptionGroupOptions>
      <OptionGroupOption>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <PortRequired>>false</PortRequired>
        <Persistent>>false</Persistent>
        <OptionsDependedOn>
          <OptionName>XMLDB</OptionName>
        </OptionsDependedOn>
        <OptionsConflictsWith/>
        <Permanent>>false</Permanent>
        <Description>Oracle Application Express Runtime Environment</Description>
        <Name>APEX</Name>
        <OptionGroupOptionSettings/>
        <EngineName>oracle-se1</EngineName>
        <MinimumRequiredMinorEngineVersion>0.2.v4</MinimumRequiredMinorEngineVersion>
      </OptionGroupOption>
      <OptionGroupOption>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <PortRequired>>false</PortRequired>
        <Persistent>>false</Persistent>
```

```
<OptionsDependedOn>
  <OptionName>APEX</OptionName>
</OptionsDependedOn>
<OptionsConflictsWith/>
<Permanent>>false</Permanent>
<Description>Oracle Application Express Development Environment</Description>
<Name>APEX-DEV</Name>
<OptionGroupOptionSettings/>
<EngineName>oracle-se1</EngineName>
<MinimumRequiredMinorEngineVersion>0.2.v4</MinimumRequiredMinorEngineVersion>
</OptionGroupOption>
<OptionGroupOption>
  <MajorEngineVersion>11.2</MajorEngineVersion>
  <PortRequired>>true</PortRequired>
  <Persistent>>false</Persistent>
  <OptionsDependedOn/>
  <OptionsConflictsWith/>
  <Permanent>>false</Permanent>
  <Description>Oracle Enterprise Manager (Database Control only)</Description>
  <DefaultPort>1158</DefaultPort>
  <Name>OEM</Name>
  <OptionGroupOptionSettings/>
  <EngineName>oracle-se1</EngineName>
  <MinimumRequiredMinorEngineVersion>0.2.v3</MinimumRequiredMinorEngineVersion>
</OptionGroupOption>
</OptionGroupOptions>
</DescribeOptionGroupOptionsResult>
<ResponseMetadata>
  <RequestId>b7b26a8f-b98c-11d3-f272-7cd6cce12cc5</RequestId>
</ResponseMetadata>
</DescribeOptionGroupOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeOptionGroups

Describes the available option groups.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **EngineName**

Filters the list of option groups to only include groups associated with a specific database engine.

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **MajorEngineVersion**

Filters the list of option groups to only include groups associated with a specific database engine version. If specified, then EngineName must also be specified.

Type: String

Required: No

### **Marker**

An optional pagination token provided by a previous DescribeOptionGroups request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by MaxRecords.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### **OptionGroupName**

The name of the option group to describe. Cannot be supplied together with EngineName or MajorEngineVersion.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### OptionGroupsList.OptionGroup.N

List of option groups.

Type: Array of [OptionGroup](#) (p. 432) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

## Examples

### Example

#### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeOptionGroups
&MaxRecords=100
&OptionGroupName=myawsuser-grp1
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request
&X-Amz-Date=20140421T231357Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=fabfbefb85c44e3f151d44211790c5135a9074fdb8d85ec117788ac6cfab6c5bc
```

#### Sample Response

```
<DescribeOptionGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
```

```
<DescribeOptionGroupsResult>
  <OptionGroupsList>
    <OptionGroup>
      <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <OptionGroupName>myawsuser-grp1</OptionGroupName>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>my test option group</OptionGroupDescription>
      <Options/>
    </OptionGroup>
  </OptionGroupsList>
</DescribeOptionGroupsResult>
<ResponseMetadata>
  <RequestId>8c6201fc-b9ff-11d3-f92b-31fa5e8dbc99</RequestId>
</ResponseMetadata>
</DescribeOptionGroupsResponse>
```

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeOptionGroups
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140613/us-west-2/rds/aws4_request
&X-Amz-Date=20140613T223341Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=5ae331adcd684c27d66e0b794a51933effe32a4c026eba2e994ae483ee47a0ba
```

### Sample Response

```
<DescribeOptionGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeOptionGroupsResult>
    <OptionGroupsList>
      <OptionGroup>
        <OptionGroupName>default:mysql-5-5</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>5.5</MajorEngineVersion>
        <EngineName>mysql</EngineName>
        <OptionGroupDescription>Default option group MySQL 5.5</OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:postgres-9-3</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>9.3</MajorEngineVersion>
        <EngineName>postgres</EngineName>
        <OptionGroupDescription>Default option group for postgres 9.3</
OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:sqlserver-ex-10-50</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>10.50</MajorEngineVersion>
        <EngineName>sqlserver-ex</EngineName>
```

```

    <OptionGroupDescription>Default option group for sqlserver-ex 10.50</
OptionGroupDescription>
    <Options/>
  </OptionGroup>
<OptionGroup>
  <OptionGroupName>default:sqlserver-se-10-50-mirrored</OptionGroupName>
  <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
  <MajorEngineVersion>10.50</MajorEngineVersion>
  <EngineName>sqlserver-se</EngineName>
  <OptionGroupDescription>Default Mirroring-enabled option group for sqlserver-se
10.50</OptionGroupDescription>
  <Options>
    <Option>
      <OptionName>Mirroring</OptionName>
      <OptionDescription>SQLServer Database Mirroring</OptionDescription>
      <Persistent>>false</Persistent>
      <Permanent>>false</Permanent>
      <OptionSettings/>
      <VpcSecurityGroupMemberships/>
      <DBSecurityGroupMemberships/>
    </Option>
  </Options>
</OptionGroup>
<OptionGroup>
  <OptionGroupName>default:sqlserver-se-11-00</OptionGroupName>
  <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
  <MajorEngineVersion>11.00</MajorEngineVersion>
  <EngineName>sqlserver-se</EngineName>
  <OptionGroupDescription>Default option group for sqlserver-se 11.00</
OptionGroupDescription>
  <Options/>
</OptionGroup>
<OptionGroup>
  <OptionGroupName>myawsuser-opt-grp</OptionGroupName>
  <AllowsVpcAndNonVpcInstanceMemberships>>false</
AllowsVpcAndNonVpcInstanceMemberships>
  <MajorEngineVersion>11.2</MajorEngineVersion>
  <EngineName>oracle-ee</EngineName>
  <OptionGroupDescription>test option group</OptionGroupDescription>
  <Options>
    <Option>
      <OptionName>NATIVE_NETWORK_ENCRYPTION</OptionName>
      <OptionDescription>Oracle Advanced Security - Native Network Encryption</
OptionDescription>
      <Persistent>>false</Persistent>
      <Permanent>>false</Permanent>
      <OptionSettings>
        <OptionSetting>
          <DataType>STRING</DataType>
          <IsModifiable>true</IsModifiable>
          <IsCollection>true</IsCollection>
          <Description>Specifies list of checksumming algorithms in order of intended
use</Description>
          <Name>SQLNET.CRYPTO_CHECKSUM_TYPES_SERVER</Name>
          <Value>SHA1,MD5</Value>
          <ApplyType>STATIC</ApplyType>
          <DefaultValue>SHA1,MD5</DefaultValue>
          <AllowedValues>SHA1,MD5</AllowedValues>
        </OptionSetting>
        <OptionSetting>
          <DataType>STRING</DataType>
          <IsModifiable>true</IsModifiable>
          <IsCollection>true</IsCollection>
          <Description>Specifies list of encryption algorithms in order of intended
use</Description>
          <Name>SQLNET.ENCRYPTION_TYPES_SERVER</Name>

```

```

    <Value>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
Value>
    <ApplyType>STATIC</ApplyType>

    <DefaultValue>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
DefaultValue>

    <AllowedValues>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
AllowedValues>
    </OptionSetting>
    <OptionSetting>
      <DataType>STRING</DataType>
      <IsModifiable>true</IsModifiable>
      <IsCollection>false</IsCollection>
      <Description>Specifies the desired encryption behavior</Description>
      <Name>SQLNET.ENCRYPTION_SERVER</Name>
      <Value>REQUESTED</Value>
      <ApplyType>STATIC</ApplyType>
      <DefaultValue>REQUESTED</DefaultValue>
      <AllowedValues>ACCEPTED,REJECTED,REQUESTED,REQUIRED</AllowedValues>
    </OptionSetting>
    <OptionSetting>
      <DataType>STRING</DataType>
      <IsModifiable>true</IsModifiable>
      <IsCollection>false</IsCollection>
      <Description>Specifies the desired data integrity behavior</Description>
      <Name>SQLNET.CRYPTO_CHECKSUM_SERVER</Name>
      <Value>REQUESTED</Value>
      <ApplyType>STATIC</ApplyType>
      <DefaultValue>REQUESTED</DefaultValue>
      <AllowedValues>ACCEPTED,REJECTED,REQUESTED,REQUIRED</AllowedValues>
    </OptionSetting>
  </OptionSettings>
  <VpcSecurityGroupMemberships/>
  <DBSecurityGroupMemberships/>
</Option>
<Option>
  <OptionName>XMLDB</OptionName>
  <OptionDescription>Oracle XMLDB Repository</OptionDescription>
  <Persistent>false</Persistent>
  <Permanent>false</Permanent>
  <OptionSettings/>
  <VpcSecurityGroupMemberships/>
  <DBSecurityGroupMemberships/>
</Option>
<Option>
  <Port>1158</Port>
  <OptionName>OEM</OptionName>
  <OptionDescription>Oracle Enterprise Manager (Database Control only)</
OptionDescription>
  <Persistent>false</Persistent>
  <Permanent>false</Permanent>
  <OptionSettings/>
  <VpcSecurityGroupMemberships/>
  <DBSecurityGroupMemberships>
    <DBSecurityGroup>
      <Status>authorized</Status>
      <DBSecurityGroupName>sg-db-sec-grp</DBSecurityGroupName>
    </DBSecurityGroup>
  </DBSecurityGroupMemberships>
</Option>
</Options>
</OptionGroup>
<Option>
  <OptionName>APEX</OptionName>

```



```
        <OptionDescription>Oracle Application Express Runtime Environment</OptionDescription>
        <Persistent>false</Persistent>
        <Permanent>false</Permanent>
        <OptionSettings/>
        <VpcSecurityGroupMemberships/>
        <DBSecurityGroupMemberships/>
    </Option>
</Options>
</OptionGroup>
</OptionGroupsList>
</DescribeOptionGroupsResult>
<ResponseMetadata>
    <RequestId>b2ce0772-f55a-11e3-bd0f-bb88ac05a37c</RequestId>
</ResponseMetadata>
</DescribeOptionGroupsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeOrderableDBInstanceOptions

Returns a list of orderable DB instance options for the specified engine.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceClass**

The DB instance class filter value. Specify this parameter to show only the available offerings matching the specified DB instance class.

Type: String

Required: No

### **Engine**

The name of the engine to retrieve DB instance options for.

Type: String

Required: Yes

### **EngineVersion**

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

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **LicenseModel**

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

Type: String

Required: No

### **Marker**

An optional pagination token provided by a previous DescribeOrderableDBInstanceOptions request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### Vpc

The VPC filter value. Specify this parameter to show only the available VPC or non-VPC offerings.

Type: Boolean

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous `OrderableDBInstanceOptions` request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### OrderableDBInstanceOptions.OrderableDBInstanceOption.N

An [OrderableDBInstanceOption](#) (p. 443) structure containing information about orderable options for the DB instance.

Type: Array of [OrderableDBInstanceOption](#) (p. 443) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeOrderableDBInstanceOptions
&Engine=mysql
&MaxRecords=100
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194733Z
```

```
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=b49545dd3c933bdded80655d433d84bf743261ea1bebb33a7922c5c2c5240cd8
```

## Sample Response

```
<DescribeOrderableDBInstanceOptionsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeOrderableDBInstanceOptionsResult>
    <Marker>ZGIubTEuc21hbGwKZ2VuZXJhbC1wdWJsaWMtbGljZW5zZQo1LjEuNjkKTg==</Marker>
    <OrderableDBInstanceOptions>
      <OrderableDBInstanceOption>
        <MultiAZCapable>true</MultiAZCapable>
        <Engine>mysql</Engine>
        <LicenseModel>general-public-license</LicenseModel>
        <ReadReplicaCapable>true</ReadReplicaCapable>
        <Vpc>false</Vpc>
        <EngineVersion>5.1.57</EngineVersion>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-west-2a</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2b</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2c</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
        </AvailabilityZones>
        <DBInstanceClass>db.m1.large</DBInstanceClass>
      </OrderableDBInstanceOption>
      <OrderableDBInstanceOption>
        <MultiAZCapable>true</MultiAZCapable>
        <Engine>mysql</Engine>
        <LicenseModel>general-public-license</LicenseModel>
        <ReadReplicaCapable>true</ReadReplicaCapable>
        <Vpc>true</Vpc>
        <EngineVersion>5.1.57</EngineVersion>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-west-2a</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2b</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2c</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
        </AvailabilityZones>
        <DBInstanceClass>db.m1.large</DBInstanceClass>
      </OrderableDBInstanceOption>
    </OrderableDBInstanceOptions>
  </DescribeOrderableDBInstanceOptionsResult>
  <ResponseMetadata>
    <RequestId>b7ceb73e-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeOrderableDBInstanceOptionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribePendingMaintenanceActions

Returns a list of resources (for example, DB instances) that have at least one pending maintenance action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### Filters.Filter.N

A filter that specifies one or more resources to return pending maintenance actions for.

Supported filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list will only include pending maintenance actions for the DB clusters identified by these ARNs.
- `db-instance-id` - Accepts DB instance identifiers and DB instance ARNs. The results list will only include pending maintenance actions for the DB instances identified by these ARNs.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### Marker

An optional pagination token provided by a previous `DescribePendingMaintenanceActions` request. If this parameter is specified, the response includes only records beyond the marker, up to a number of records specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### ResourceIdentifier

The ARN of a resource to return pending maintenance actions for.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous `DescribePendingMaintenanceActions` request. If this parameter is specified, the response includes only records beyond the marker, up to a number of records specified by `MaxRecords`.

Type: String

### `PendingMaintenanceActions.ResourcePendingMaintenanceActions.N`

A list of the pending maintenance actions for the resource.

Type: Array of [ResourcePendingMaintenanceActions](#) (p. 461) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### `ResourceNotFoundFault`

The specified resource ID was not found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribePendingMaintenanceActions
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20141216/us-west-2/rds/aws4_request
&X-Amz-Date=20140421T194732Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

### Sample Response

```
<DescribePendingMaintenanceActionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribePendingMaintenanceActionsResult>
    <PendingMaintenanceActions>
      <ResourcePendingMaintenanceActions>
        <ResourceIdentifier>arn:aws:rds:us-east-1:123456781234:db:my-instance</ResourceIdentifier>
        <PendingMaintenanceActionDetails>
          <PendingMaintenanceAction>
            <Action>os-upgrade</Action>
          </PendingMaintenanceAction>
        </PendingMaintenanceActionDetails>
      </ResourcePendingMaintenanceActions>
    </ResourcePendingMaintenanceActions>
  </DescribePendingMaintenanceActionsResult>
</DescribePendingMaintenanceActionsResponse>
```

```
<ResourceIdentifier>arn:aws:rds:us-east-1:123456781234:db:another-instance</ResourceIdentifier>
  <PendingMaintenanceActionDetails>
    <PendingMaintenanceAction>
      <Action>os-upgrade</Action>
    </PendingMaintenanceAction>
  </PendingMaintenanceActionDetails>
</ResourcePendingMaintenanceActions>
</PendingMaintenanceActions>
</DescribePendingMaintenanceActionsResult>
<ResponseMetadata>
  <RequestId>dcfe0682-870c-11e4-9833-b3ad657ea9da</RequestId>
</ResponseMetadata>
</DescribePendingMaintenanceActionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# DescribeReservedDBInstances

Returns information about reserved DB instances for this account, or about a specified reserved DB instance.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceClass**

The DB instance class filter value. Specify this parameter to show only those reservations matching the specified DB instances class.

Type: String

Required: No

### **Duration**

The duration filter value, specified in years or seconds. Specify this parameter to show only reservations for this duration.

Valid Values: 1 | 3 | 31536000 | 94608000

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

### **MaxRecords**

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so that the following results can be retrieved.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### **MultiAZ**

The Multi-AZ filter value. Specify this parameter to show only those reservations matching the specified Multi-AZ parameter.

Type: Boolean

Required: No

### **OfferingType**

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

Valid Values: "Partial Upfront" | "All Upfront" | "No Upfront"

Type: String

Required: No

### **ProductDescription**

The product description filter value. Specify this parameter to show only those reservations matching the specified product description.

Type: String

Required: No

### **ReservedDBInstanceid**

The reserved DB instance identifier filter value. Specify this parameter to show only the reservation that matches the specified reservation ID.

Type: String

Required: No

### **ReservedDBInstancesOfferingId**

The offering identifier filter value. Specify this parameter to show only purchased reservations matching the specified offering identifier.

Type: String

Required: No

## **Response Elements**

The following elements are returned by the service.

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### **ReservedDBInstances.ReservedDBInstance.N**

A list of reserved DB instances.

Type: Array of [ReservedDBInstance](#) (p. 456) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### ReservedDBInstanceNotFound

The specified reserved DB Instance not found.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=DescribeReservedDBInstances
&ReservedDBInstanceId=customerSpecifiedID
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-west-2/rds/aws4_request
&X-Amz-Date=20140420T162211Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=3312d17a4c43bcd209bc22a0778dd23e73f8434254abbd7ac53b89ade3dae88e
```

### Sample Response

```
<DescribeReservedDBInstancesResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeReservedDBInstancesResult>
    <ReservedDBInstances>
      <ReservedDBInstance>
        <OfferingType>Partial Upfront</OfferingType>
        <CurrencyCode>USD</CurrencyCode>
        <RecurringCharges/>
        <ProductDescription>mysql</ProductDescription>
        <ReservedDBInstancesOfferingId>649fd0c8-cf6d-47a0-bfa6-060f8e75e95f</
ReservedDBInstancesOfferingId>
        <MultiAZ>false</MultiAZ>
        <State>active</State>
        <ReservedDBInstanceId>myreservationid</ReservedDBInstanceId>
        <DBInstanceCount>1</DBInstanceCount>
        <StartTime>2014-05-15T00:25:14.131Z</StartTime>
        <Duration>31536000</Duration>
        <FixedPrice>227.5</FixedPrice>
        <UsagePrice>0.046</UsagePrice>
        <DBInstanceClass>db.m1.small</DBInstanceClass>
      </ReservedDBInstance>
    </DescribeReservedDBInstancesResult>
    <ResponseMetadata>
      <RequestId>c695119b-2961-11e1-bd06-6fe008f046c3</RequestId>
    </ResponseMetadata>
  </DescribeReservedDBInstancesResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeReservedDBInstancesOfferings

Lists available reserved DB instance offerings.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBInstanceClass**

The DB instance class filter value. Specify this parameter to show only the available offerings matching the specified DB instance class.

Type: String

Required: No

### **Duration**

Duration filter value, specified in years or seconds. Specify this parameter to show only reservations for this duration.

Valid Values: 1 | 3 | 31536000 | 94608000

Type: String

Required: No

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter \(p. 426\)](#) objects

Required: No

### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

### **MaxRecords**

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so that the following results can be retrieved.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### **MultiAZ**

The Multi-AZ filter value. Specify this parameter to show only the available offerings matching the specified Multi-AZ parameter.

Type: Boolean

Required: No

#### **OfferingType**

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

Valid Values: "Partial Upfront" | "All Upfront" | "No Upfront"

Type: String

Required: No

#### **ProductDescription**

Product description filter value. Specify this parameter to show only the available offerings matching the specified product description.

Type: String

Required: No

#### **ReservedDBInstancesOfferingId**

The offering identifier filter value. Specify this parameter to show only the available offering that matches the specified reservation identifier.

Example: 438012d3-4052-4cc7-b2e3-8d3372e0e706

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

#### **Marker**

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

#### **ReservedDBInstancesOfferings.ReservedDBInstancesOffering.N**

A list of reserved DB instance offerings.

Type: Array of [ReservedDBInstancesOffering](#) (p. 459) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

#### **ReservedDBInstancesOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeReservedDBInstancesOfferings
&ReservedDBInstancesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140411/us-east-1/rds/aws4_request
&X-Amz-Date=20140411T203327Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=545f04acffeb4b80d2e778526b1c9da79d0b3097151c24f28e83e851d65422e2
```

### Sample Response

```
<DescribeReservedDBInstancesOfferingsResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DescribeReservedDBInstancesOfferingsResult>
    <ReservedDBInstancesOfferings>
      <ReservedDBInstancesOffering>
        <Duration>31536000</Duration>
        <OfferingType>Partial Upfront</OfferingType>
        <CurrencyCode>USD</CurrencyCode>
        <RecurringCharges>
          <RecurringCharge>
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
            <RecurringChargeAmount>0.123</RecurringChargeAmount>
          </RecurringCharge>
        </RecurringCharges>
        <FixedPrice>162.0</FixedPrice>
        <ProductDescription>mysql</ProductDescription>
        <UsagePrice>0.0</UsagePrice>
        <MultiAZ>false</MultiAZ>
        <ReservedDBInstancesOfferingId>SampleOfferingId</ReservedDBInstancesOfferingId>
        <DBInstanceClass>db.m1.small</DBInstanceClass>
      </ReservedDBInstancesOffering>
    </ReservedDBInstancesOfferings>
  </DescribeReservedDBInstancesOfferingsResult>
  <ResponseMetadata>
    <RequestId>521b420a-2961-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</DescribeReservedDBInstancesOfferingsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# DescribeSourceRegions

Returns a list of the source AWS Regions where the current AWS Region can create a Read Replica or copy a DB snapshot from. This API action supports pagination.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### Filters.Filter.N

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### Marker

An optional pagination token provided by a previous [DescribeSourceRegions](#) (p. 226) request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

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.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

### RegionName

The source AWS Region name. For example, `us-east-1`.

Constraints:

- Must specify a valid AWS Region name.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

### Marker

An optional pagination token provided by a previous request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

### **SourceRegions.SourceRegion.N**

A list of SourceRegion instances that contains each source AWS Region that the current AWS Region can get a Read Replica or a DB snapshot from.

Type: Array of [SourceRegion](#) (p. 462) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeSourceRegions
&MaxRecords=10
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
&X-Amz-Date=20140429T175351Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

### Sample Response

```
<DescribeSourceRegionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeSourceRegionsResult>
    <SourceRegions>
      <SourceRegion>
        <RegionName>ap-northeast-1</RegionName>
        <EndPoint>https://rds.ap-northeast-1.amazonaws.com</EndPoint>
        <Status>available</Status>
      </SourceRegion>
      <SourceRegion>
        <RegionName>ap-southeast-2</RegionName>
        <EndPoint>https://rds.ap-southeast-2.amazonaws.com</EndPoint>
        <Status>available</Status>
      </SourceRegion>
    </SourceRegions>
  </DescribeSourceRegionsResult>
  <ResponseMetadata>
    <RequestId>01b2685a-b978-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeSourceRegionsResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# DescribeValidDBInstanceModifications

You can call [DescribeValidDBInstanceModifications](#) (p. 229) to learn what modifications you can make to your DB instance. You can use this information when you call [ModifyDBInstance](#) (p. 252).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The customer identifier or the ARN of your DB instance.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **ValidDBInstanceModificationsMessage**

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the [DescribeValidDBInstanceModifications](#) (p. 229) action. You can use this information when you call [ModifyDBInstance](#) (p. 252).

Type: [ValidDBInstanceModificationsMessage](#) (p. 467) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **InvalidDBInstanceState**

The specified DB instance isn't 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](#)

# DownloadDBLogFilePortion

Downloads all or a portion of the specified log file, up to 1 MB in size.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The customer-assigned name of the DB instance that contains the log files you want to list.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

### **LogFileName**

The name of the log file to be downloaded.

Type: String

Required: Yes

### **Marker**

The pagination token provided in the previous request or "0". If the Marker parameter is specified the response includes only records beyond the marker until the end of the file or up to NumberOfLines.

Type: String

Required: No

### **NumberOfLines**

The number of lines to download. If the number of lines specified results in a file over 1 MB in size, the file is truncated at 1 MB in size.

If the NumberOfLines parameter is specified, then the block of lines returned can be from the beginning or the end of the log file, depending on the value of the Marker parameter.

- If neither Marker or NumberOfLines are specified, the entire log file is returned up to a maximum of 10000 lines, starting with the most recent log entries first.
- If NumberOfLines is specified and Marker is not specified, then the most recent lines from the end of the log file are returned.
- If Marker is specified as "0", then the specified number of lines from the beginning of the log file are returned.
- You can download the log file in blocks of lines by specifying the size of the block using the NumberOfLines parameter, and by specifying a value of "0" for the Marker parameter in your first request. Include the Marker value returned in the response as the Marker value for the next request, continuing until the AdditionalDataPending response element returns false.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

### **AdditionalDataPending**

Boolean value that if true, indicates there is more data to be downloaded.

Type: Boolean

### **LogFileData**

Entries from the specified log file.

Type: String

### **Marker**

A pagination token that can be used in a subsequent DownloadDBLogFilePortion request.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBLogFileNotFoundFault**

*LogFileName* doesn't refer to an existing DB log file.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=DownloadDBLogFilePortion  
&DBInstanceIdentifier=myexampledb  
&LogFileName=log%2FERROR  
&Marker=0  
&NumberOfLines=50  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140127/us-west-2/rds/aws4_request  
&X-Amz-Date=20140127T235259Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=2171c5a8e91a70202e77de7e81df75787f3bbd6b4ea97f7a426205474fcc446f
```

## Sample Response

```
<DownloadDBLogFilePortionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <DownloadDBLogFilePortionResult>
    <Marker>0:4485</Marker>
    <LogFileData>??2014-01-26 23:59:00.01 spid54      Microsoft SQL Server 2012 -
11.0.2100.60 (X64)

Feb 10 2012 19:39:15

Copyright (c) Microsoft Corporation

Web Edition (64-bit) on Windows NT 6.1 &lt;X64&gt; (Build 7601: Service Pack 1)
(Hypervisor)

2014-01-26 23:59:00.01 spid54      (c) Microsoft Corporation.

2014-01-26 23:59:00.01 spid54      All rights reserved.

2014-01-26 23:59:00.01 spid54      Server process ID is 2976.

2014-01-26 23:59:00.01 spid54      System Manufacturer: 'Xen', System Model: 'HVM domU'.

2014-01-26 23:59:00.01 spid54      Authentication mode is MIXED.

2014-01-26 23:59:00.01 spid54      Logging SQL Server messages in file 'D:\RDSDBDATA\Log
\ERROR'.

2014-01-26 23:59:00.01 spid54      The service account is 'WORKGROUP\AMAZONA-NUQUUMV$'.
This is an informational message; no user action is required.

2014-01-26 23:59:00.01 spid54      The error log has been reinitialized. See the previous
log for older entries.

2014-01-27 00:00:56.42 spid25s      This instance of SQL Server has been using a process
ID of 2976 since 10/21/2013 2:16:50 AM (local) 10/21/2013 2:16:50 AM (UTC). This is an
informational message only; no user action is required.

2014-01-27 09:35:15.43 spid71      I/O is frozen on database model. No user action is
required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid72      I/O is frozen on database msdb. No user action is
required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid74      I/O is frozen on database rdsadmin. No user action is
required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid73      I/O is frozen on database master. No user action is
required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:25.57 spid73      I/O was resumed on database master. No user action is
required.

2014-01-27 09:35:25.57 spid74      I/O was resumed on database rdsadmin. No user action is
required.

2014-01-27 09:35:25.57 spid71      I/O was resumed on database model. No user action is
required.

2014-01-27 09:35:25.57 spid72      I/O was resumed on database msdb. No user action is
required.
```



```
</LogFileData>
  <AdditionalDataPending>false</AdditionalDataPending>
</DownloadDBLogFilePortionResult>
<ResponseMetadata>
  <RequestId>27143425-87ae-11e3-acc9-fb64b157268e</RequestId>
</ResponseMetadata>
</DownloadDBLogFilePortionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# FailoverDBCluster

Forces a failover for a DB cluster.

A failover for a DB cluster promotes one of the Aurora Replicas (read-only instances) in the DB cluster to be the primary instance (the cluster writer).

Amazon Aurora will automatically fail over to an Aurora Replica, if one exists, when the primary instance fails. You can force a failover when you want to simulate a failure of a primary instance for testing. Because each instance in a DB cluster has its own endpoint address, you will need to clean up and re-establish any existing connections that use those endpoint addresses when the failover is complete.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

A DB cluster identifier to force a failover for. This parameter is not case-sensitive.

Constraints:

- Must match the identifier of an existing DBCluster.

Type: String

Required: No

### **TargetDBInstanceIdentifier**

The name of the instance to promote to the primary instance.

You must specify the instance identifier for an Aurora Replica in the DB cluster. For example, `mydbcluster-replica1`.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=FailoverDBCluster
&DBClusterIdentifier=sample-cluster
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150323/us-east-1/rds/aws4_request
&X-Amz-Date=20150323T170232Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=9be705fa28a68244d5072722463a29a322f9ef8eb58a63c40a6f6547174dec44
```

### Sample Response

```
<FailoverDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <FailoverDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <LatestRestorableTime>2015-03-23T17:00:54.893Z</LatestRestorableTime>
      <Engine>aurora</Engine>
      <Status>available</Status>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-922dc2fd</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>sample-group</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster.cluster-claxbpgwvdf. us-east-1.rds.amazonaws.com</Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <PreferredBackupWindow>05:47-06:17</PreferredBackupWindow>
      <PreferredMaintenanceWindow>mon:10:16-mon:10:46</PreferredMaintenanceWindow>
      <EarliestRestorableTime>2015-03-04T23:08:59.159Z</EarliestRestorableTime>
    </DBCluster>
  </FailoverDBClusterResult>
</FailoverDBClusterResponse>
```

```
<DBClusterMembers>
  <DBClusterMember>
    <IsClusterWriter>false</IsClusterWriter>
    <DBInstanceIdentifier>sample-replica1</DBInstanceIdentifier>
    <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
  </DBClusterMember>
  <DBClusterMember>
    <IsClusterWriter>true</IsClusterWriter>
    <DBInstanceIdentifier>sample-primary</DBInstanceIdentifier>
    <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
  </DBClusterMember>
</DBClusterMembers>
<AllocatedStorage>1</AllocatedStorage>
<MasterUsername>awsuser</MasterUsername>
</DBCluster>
</FailoverDBClusterResult>
<ResponseMetadata>
  <RequestId>659c3dba-d17e-11e4-9fd0-35e9d88e2515</RequestId>
</ResponseMetadata>
</FailoverDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ListTagsForResource

Lists all tags on an Amazon RDS resource.

For an overview on tagging an Amazon RDS resource, see [Tagging Amazon RDS Resources](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **Filters.Filter.N**

This parameter is not currently supported.

Type: Array of [Filter](#) (p. 426) objects

Required: No

### **ResourceName**

The Amazon RDS resource with tags to be listed. This value is an Amazon Resource Name (ARN). For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **TagList.Tag.N**

List of tags returned by the ListTagsForResource operation.

Type: Array of [Tag](#) (p. 464) objects

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=ListTagsForResource  
&ResourceName=arn%3Aaws%3Ards%3Aus-west-2%3A12345678910%3Adb%3Asample-sql  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-10-31  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20160304/us-west-2/rds/aws4_request  
&X-Amz-Date=20160304T205529Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=ad333e422a92110b6340a28a684f0ed78606cc48b29b25682df0173e04b93b85
```

### Sample Response

```
<ListTagsForResourceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">  
  <ListTagsForResourceResult>  
    <TagList>  
      <Tag>  
        <Value>development-team</Value>  
        <Key>owner</Key>  
      </Tag>  
      <Tag>  
        <Value>test</Value>  
        <Key>environment</Key>  
      </Tag>  
    </TagList>  
  </ListTagsForResourceResult>  
  <ResponseMetadata>  
    <RequestId>71217a3c-e24b-11e5-a5e9-cad172f9e6c1</RequestId>  
  </ResponseMetadata>  
</ListTagsForResourceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBCluster

Modify a setting for an Amazon Aurora DB cluster. You can change one or more database configuration parameters by specifying these parameters and the new values in the request. For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### ApplyImmediately

A value that specifies whether the modifications in this request and any pending modifications are asynchronously applied as soon as possible, regardless of the `PreferredMaintenanceWindow` setting for the DB cluster. If this parameter is set to `false`, changes to the DB cluster are applied during the next maintenance window.

The `ApplyImmediately` parameter only affects the `NewDBClusterIdentifier` and `MasterUserPassword` values. If you set the `ApplyImmediately` parameter value to `false`, then changes to the `NewDBClusterIdentifier` and `MasterUserPassword` values are applied during the next maintenance window. All other changes are applied immediately, regardless of the value of the `ApplyImmediately` parameter.

Default: `false`

Type: Boolean

Required: No

### BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

### BackupRetentionPeriod

The number of days for which automated backups are retained. You must specify a minimum value of 1.

Default: 1

Constraints:

- Must be a value from 1 to 35

Type: Integer

Required: No

### DBClusterIdentifier

The DB cluster identifier for the cluster being modified. This parameter is not case-sensitive.

Constraints:

- Must match the identifier of an existing DBCluster.

Type: String

Required: Yes

#### **DBClusterParameterGroupName**

The name of the DB cluster parameter group to use for the DB cluster.

Type: String

Required: No

#### **EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: `false`

Type: Boolean

Required: No

#### **EngineVersion**

The version number of the database engine to which you want to upgrade. Changing this parameter results in an outage. The change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to true.

For a list of valid engine versions, see [CreateDBInstance \(p. 57\)](#), or call [DescribeDBEngineVersions \(p. 153\)](#).

Type: String

Required: No

#### **MasterUserPassword**

The new password for the master database user. This password can contain any printable ASCII character except `/`, `""`, or `@`.

Constraints: Must contain from 8 to 41 characters.

Type: String

Required: No

#### **NewDBClusterIdentifier**

The new DB cluster identifier for the DB cluster when renaming a DB cluster. This value is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens
- The first character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Example: `my-cluster2`

Type: String



Required: No

### **OptionGroupName**

A value that indicates that the DB cluster should be associated with the specified option group. Changing this parameter doesn't result in an outage except in the following case, and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request. If the parameter change results in an option group that enables OEM, this change can cause a brief (sub-second) period during which new connections are rejected but existing connections are not interrupted.

Permanent options can't be removed from an option group. The option group can't be removed from a DB cluster once it is associated with a DB cluster.

Type: String

Required: No

### **Port**

The port number on which the DB cluster accepts connections.

Constraints: Value must be 1150–65535

Default: The same port as the original DB cluster.

Type: Integer

Required: No

### **PreferredBackupWindow**

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

### **PreferredMaintenanceWindow**

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

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

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region, occurring on a random day of the week. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.

Constraints: Minimum 30-minute window.

Type: String

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of VPC security groups that the DB cluster will belong to.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

**DBClusterAlreadyExistsFault**

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

**DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

**DBClusterParameterGroupNotFound**

*DBClusterParameterGroupName* doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

**DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

**InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

#### **InvalidDBSecurityGroupState**

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

#### **InvalidDBSubnetGroupStateFault**

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

#### **InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

#### **InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

#### **StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=ModifyDBCluster
&DBClusterIdentifier=sample-cluster3
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140725/us-east-1/rds/aws4_request
&X-Amz-Date=20140725T161457Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=d6d1c65c2e94f5800ab411a3f7336625820b103713b6c063430900514e21d784
```

### Sample Response

```
<ModifyDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBClusterResult>
    <DBCluster>
      <Engine>aurora5.6</Engine>
      <Status>available</Status>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <DBSubnetGroup>my-subgroup</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
```

```
<Endpoint>sample-cluster3.cluster-cefgqfx9y5fy.us-east-1.rds.amazonaws.com</Endpoint>
<DBClusterIdentifier>sample-cluster3</DBClusterIdentifier>
<PreferredBackupWindow>07:06-07:36</PreferredBackupWindow>
<PreferredMaintenanceWindow>tue:10:18-tue:10:48</PreferredMaintenanceWindow>
<DBClusterMembers>
  <DBClusterMember>
    <IsClusterWriter>true</IsClusterWriter>
    <DBInstanceIdentifier>sample-cluster3-master</DBInstanceIdentifier>
  </DBClusterMember>
  <DBClusterMember>
    <IsClusterWriter>false</IsClusterWriter>
    <DBInstanceIdentifier>sample-cluster3-read1</DBInstanceIdentifier>
  </DBClusterMember>
</DBClusterMembers>
<AllocatedStorage>15</AllocatedStorage>
<MasterUsername>awsuser</MasterUsername>
</DBCluster>
</ModifyDBClusterResult>
<ResponseMetadata>
  <RequestId>d2cd0e2f-1416-11e4-9210-cf99df4125d0</RequestId>
</ResponseMetadata>
</ModifyDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBClusterParameterGroup

Modifies the parameters of a DB cluster parameter group. To modify more than one parameter, submit a list of the following: `ParameterName`, `ParameterValue`, and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Note

Changes to dynamic parameters are applied immediately. Changes to static parameters require a reboot without failover to the DB cluster associated with the parameter group before the change can take effect.

## Important

After you create a DB cluster parameter group, you should wait at least 5 minutes before creating your first DB cluster that uses that DB cluster parameter group as the default parameter group. This allows Amazon RDS to fully complete the create action before the parameter group is used as the default for a new DB cluster. This is especially important for parameters that are critical when creating the default database for a DB cluster, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the [Amazon RDS console](#) or the [DescribeDBClusterParameters \(p. 139\)](#) command to verify that your DB cluster parameter group has been created or modified.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBClusterParameterGroupName

The name of the DB cluster parameter group to modify.

Type: String

Required: Yes

### Parameters.Parameter.N

A list of parameters in the DB cluster parameter group to modify.

Type: Array of [Parameter \(p. 446\)](#) objects

Required: Yes

## Response Elements

The following element is returned by the service.

### DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

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

**Note**

This value is stored as a lowercase string.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **InvalidDBParameterGroupState**

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=ModifyDBClusterParameterGroup
&DBClusterParameterGroupName=sample-cluster-pg
&Parameters.member.1.ApplyMethod=pending-reboot
&Parameters.member.1.ParameterName=binlog_format
&Parameters.member.1.ParameterValue=MIXED
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T173245Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=cfb4f35de32455f77405636315dd431f2e236a1a997f94e0f6e00183d1f5156e
```

### Sample Response

```
<ModifyDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBClusterParameterGroupResult>
    <DBClusterParameterGroupName>sample-cluster-pg</DBClusterParameterGroupName>
  </ModifyDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>1534d6a1-79d8-11e6-9b94-838991bd50c6</RequestId>
  </ResponseMetadata>
</ModifyDBClusterParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBClusterSnapshotAttribute

Adds an attribute and values to, or removes an attribute and values from, a manual DB cluster snapshot.

To share a manual DB cluster snapshot with other AWS accounts, specify `restore` as the `AttributeName` and use the `ValuesToAdd` parameter to add a list of IDs of the AWS accounts that are authorized to restore the manual DB cluster snapshot. Use the value `all` to make the manual DB cluster snapshot public, which means that it can be copied or restored by all AWS accounts. Do not add the `all` value for any manual DB cluster snapshots that contain private information that you don't want available to all AWS accounts. If a manual DB cluster snapshot is encrypted, it can be shared, but only by specifying a list of authorized AWS account IDs for the `ValuesToAdd` parameter. You can't use `all` as a value for that parameter in this case.

To view which AWS accounts have access to copy or restore a manual DB cluster snapshot, or whether a manual DB cluster snapshot public or private, use the [DescribeDBClusterSnapshotAttributes \(p. 147\)](#) API action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **AttributeName**

The name of the DB cluster snapshot attribute to modify.

To manage authorization for other AWS accounts to copy or restore a manual DB cluster snapshot, set this value to `restore`.

Type: String

Required: Yes

### **DBClusterSnapshotIdentifier**

The identifier for the DB cluster snapshot to modify the attributes for.

Type: String

Required: Yes

### **ValuesToAdd.AttributeValue.N**

A list of DB cluster snapshot attributes to add to the attribute specified by `AttributeName`.

To authorize other AWS accounts to copy or restore a manual DB cluster snapshot, set this list to include one or more AWS account IDs, or `all` to make the manual DB cluster snapshot restorable by any AWS account. Do not add the `all` value for any manual DB cluster snapshots that contain private information that you don't want available to all AWS accounts.

Type: Array of strings

Required: No

### **ValuesToRemove.AttributeValue.N**

A list of DB cluster snapshot attributes to remove from the attribute specified by `AttributeName`.

To remove authorization for other AWS accounts to copy or restore a manual DB cluster snapshot, set this list to include one or more AWS account identifiers, or `all` to remove authorization for any AWS account to copy or restore the DB cluster snapshot. If you specify `all`, an AWS account whose



account ID is explicitly added to the `restore` attribute can still copy or restore a manual DB cluster snapshot.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **DBClusterSnapshotAttributesResult**

Contains the results of a successful call to the [DescribeDBClusterSnapshotAttributes \(p. 147\)](#) API action.

Manual DB cluster snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB cluster snapshot. For more information, see the [ModifyDBClusterSnapshotAttribute \(p. 249\)](#) API action.

Type: [DBClusterSnapshotAttributesResult \(p. 390\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

### **InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

### **SharedSnapshotQuotaExceeded**

You have exceeded the maximum number of accounts that you can share a manual DB snapshot with.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=ModifyDBClusterSnapshotAttribute  
&AttributeName=restore  
&DBClusterSnapshotIdentifier>manual-cluster-snapshot1  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4
```

```
&ValuesToAdd.member.1=123451234512
&ValuesToAdd.member.2=123456789012
&ValuesToRemove.member.1=all
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150922/us-west-2/rds/aws4_request
&X-Amz-Date=20150922T220515Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=ef38f1ce3dab4e1dbf113d8d2a265c67d17ece1999ffd36be85714ed36dddbb3
```

## Sample Response

```
<ModifyDBClusterSnapshotAttributeResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBClusterSnapshotAttributeResult>
    <DBClusterSnapshotAttributesResult>
      <DBClusterSnapshotAttributes>
        <DBClusterSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
            <AttributeValue>123451234512</AttributeValue>
            <AttributeValue>123456789012</AttributeValue>
          </AttributeValues>
        </DBClusterSnapshotAttribute>
      </DBClusterSnapshotAttributes>
      <DBClusterSnapshotIdentifier>manual-cluster-snapshot1</DBSnapshotIdentifier>
    </DBClusterSnapshotAttributesResult>
  </ModifyDBClusterSnapshotAttributeResult>
  <ResponseMetadata>
    <RequestId>0122a108-2276-11e5-9cc3-0f535cff56aa</RequestId>
  </ResponseMetadata>
</ModifyDBClusterSnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBInstance

Modifies settings for a DB instance. You can change one or more database configuration parameters by specifying these parameters and the new values in the request. To learn what modifications you can make to your DB instance, call [DescribeValidDBInstanceModifications](#) (p. 229) before you call [ModifyDBInstance](#) (p. 252).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **AllocatedStorage**

The new amount of storage (in gibibytes) to allocate for the DB instance.

For MariaDB, MySQL, Oracle, and PostgreSQL, the value supplied must be at least 10% greater than the current value. Values that are not at least 10% greater than the existing value are rounded up so that they are 10% greater than the current value.

For the valid values for allocated storage for each engine, see [CreateDBInstance](#) (p. 57).

Type: Integer

Required: No

### **AllowMajorVersionUpgrade**

Indicates that major version upgrades are allowed. Changing this parameter doesn't result in an outage and the change is asynchronously applied as soon as possible.

Constraints: This parameter must be set to true when specifying a value for the EngineVersion parameter that is a different major version than the DB instance's current version.

Type: Boolean

Required: No

### **ApplyImmediately**

Specifies whether the modifications in this request and any pending modifications are asynchronously applied as soon as possible, regardless of the PreferredMaintenanceWindow setting for the DB instance.

If this parameter is set to `false`, changes to the DB instance are applied during the next maintenance window. Some parameter changes can cause an outage and are applied on the next call to [RebootDBInstance](#) (p. 295), or the next failure reboot. Review the table of parameters in [Modifying a DB Instance and Using the Apply Immediately Parameter](#) to see the impact that setting `ApplyImmediately` to true or false has for each modified parameter and to determine when the changes are applied.

Default: `false`

Type: Boolean

Required: No

### **AutoMinorVersionUpgrade**

Indicates that minor version upgrades are applied automatically to the DB instance during the maintenance window. Changing this parameter doesn't result in an outage except in the following

case and the change is asynchronously applied as soon as possible. An outage will result if this parameter is set to `true` during the maintenance window, and a newer minor version is available, and RDS has enabled auto patching for that engine version.

Type: Boolean

Required: No

### **BackupRetentionPeriod**

The number of days to retain automated backups. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

Changing this parameter can result in an outage if you change from 0 to a non-zero value or from a non-zero value to 0. These changes are applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request. If you change the parameter from one non-zero value to another non-zero value, the change is asynchronously applied as soon as possible.

### **Amazon Aurora**

Not applicable. The retention period for automated backups is managed by the DB cluster. For more information, see [ModifyDBCluster](#) (p. 240).

Default: Uses existing setting

Constraints:

- Must be a value from 0 to 35
- Can be specified for a MySQL Read Replica only if the source is running MySQL 5.6
- Can be specified for a PostgreSQL Read Replica only if the source is running PostgreSQL 9.3.5
- Cannot be set to 0 if the DB instance is a source to Read Replicas

Type: Integer

Required: No

### **CACertificateIdentifier**

Indicates the certificate that needs to be associated with the instance.

Type: String

Required: No

### **CloudwatchLogsExportConfiguration**

The configuration setting for the log types to be enabled for export to CloudWatch Logs for a specific DB instance or DB cluster.

Type: [CloudwatchLogsExportConfiguration](#) (p. 373) object

Required: No

### **CopyTagsToSnapshot**

True to copy all tags from the DB instance to snapshots of the DB instance, and otherwise false. The default is false.

Type: Boolean

Required: No

### **DBInstanceClass**

The new compute and memory capacity of the DB instance, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

If you modify the DB instance class, an outage occurs during the change. The change is applied during the next maintenance window, unless `ApplyImmediately` is specified as `true` for this request.

Default: Uses existing setting

Type: String

Required: No

### **DBInstanceIdentifier**

The DB instance identifier. This value is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

### **DBParameterGroupName**

The name of the DB parameter group to apply to the DB instance. Changing this setting doesn't result in an outage. The parameter group name itself is changed immediately, but the actual parameter changes are not applied until you reboot the instance without failover. The db instance will NOT be rebooted automatically and the parameter changes will NOT be applied during the next maintenance window.

Default: Uses existing setting

Constraints: The DB parameter group must be in the same DB parameter group family as this DB instance.

Type: String

Required: No

### **DBPortNumber**

The port number on which the database accepts connections.

The value of the `DBPortNumber` parameter must not match any of the port values specified for options in the option group for the DB instance.

Your database will restart when you change the `DBPortNumber` value regardless of the value of the `ApplyImmediately` parameter.

### **MySQL**

Default: 3306

Valid Values: 1150–65535

### **MariaDB**

Default: 3306

Valid Values: 1150–65535

**PostgreSQL**

Default: 5432

Valid Values: 1150–65535

Type: Integer

**Oracle**

Default: 1521

Valid Values: 1150–65535

**SQL Server**

Default: 1433

Valid Values: 1150–65535 except for 1434, 3389, 47001, 49152, and 49152 through 49156.

**Amazon Aurora**

Default: 3306

Valid Values: 1150–65535

Type: Integer

Required: No

**DBSecurityGroups.DBSecurityGroupName.N**

A list of DB security groups to authorize on this DB instance. Changing this setting doesn't result in an outage and the change is asynchronously applied as soon as possible.

Constraints:

- If supplied, must match existing DBSecurityGroups.

Type: Array of strings

Required: No

**DBSubnetGroupName**

The new DB subnet group for the DB instance. You can use this parameter to move your DB instance to a different VPC. If your DB instance is not in a VPC, you can also use this parameter to move your DB instance into a VPC. For more information, see [Updating the VPC for a DB Instance](#).

Changing the subnet group causes an outage during the change. The change is applied during the next maintenance window, unless you specify `true` for the `ApplyImmediately` parameter.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mySubnetGroup`

Type: String

Required: No

### **Domain**

The Active Directory Domain to move the instance to. Specify `none` to remove the instance from its current domain. The domain must be created prior to this operation. Currently only a Microsoft SQL Server instance can be created in a Active Directory Domain.

Type: String

Required: No

### **DomainIAMRoleName**

The name of the IAM role to use when making API calls to the Directory Service.

Type: String

Required: No

### **EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

You can enable IAM database authentication for the following database engines

#### **Amazon Aurora**

Not applicable. Mapping AWS IAM accounts to database accounts is managed by the DB cluster. For more information, see [ModifyDBCluster \(p. 240\)](#).

#### **MySQL**

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher

Default: `false`

Type: Boolean

Required: No

### **EnablePerformanceInsights**

True to enable Performance Insights for the DB instance, and otherwise false.

Type: Boolean

Required: No

### **EngineVersion**

The version number of the database engine to upgrade to. Changing this parameter results in an outage and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request.

For major version upgrades, if a nondefault DB parameter group is currently in use, a new DB parameter group in the DB parameter group family for the new engine version must be specified. The new DB parameter group can be the default for that DB parameter group family.

For a list of valid engine versions, see [CreateDBInstance \(p. 57\)](#).

Type: String

Required: No

## **Iops**

The new Provisioned IOPS (I/O operations per second) value for the RDS instance.

Changing this setting doesn't result in an outage and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request. If you are migrating from Provisioned IOPS to standard storage, set this value to 0. The DB instance will require a reboot for the change in storage type to take effect.

If you choose to migrate your DB instance from using standard storage to using Provisioned IOPS, or from using Provisioned IOPS to using standard storage, the process can take time. The duration of the migration depends on several factors such as database load, storage size, storage type (standard or Provisioned IOPS), amount of IOPS provisioned (if any), and the number of prior scale storage operations. Typical migration times are under 24 hours, but the process can take up to several days in some cases. During the migration, the DB instance is available for use, but might experience performance degradation. While the migration takes place, nightly backups for the instance are suspended. No other Amazon RDS operations can take place for the instance, including modifying the instance, rebooting the instance, deleting the instance, creating a Read Replica for the instance, and creating a DB snapshot of the instance.

Constraints: For MariaDB, MySQL, Oracle, and PostgreSQL, the value supplied must be at least 10% greater than the current value. Values that are not at least 10% greater than the existing value are rounded up so that they are 10% greater than the current value.

Default: Uses existing setting

Type: Integer

Required: No

## **LicenseModel**

The license model for the DB instance.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

## **MasterUserPassword**

The new password for the master user. The password can include any printable ASCII character except `"/`, `""`, or `"@"`.

Changing this parameter doesn't result in an outage and the 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.

## **Amazon Aurora**

Not applicable. The password for the master user is managed by the DB cluster. For more information, see [ModifyDBCluster](#) (p. 240).

Default: Uses existing setting

## **MariaDB**

Constraints: Must contain from 8 to 41 characters.

## **Microsoft SQL Server**



Constraints: Must contain from 8 to 128 characters.

### MySQL

Constraints: Must contain from 8 to 41 characters.

### Oracle

Constraints: Must contain from 8 to 30 characters.

### PostgreSQL

Constraints: Must contain from 8 to 128 characters.

#### Note

Amazon RDS API actions never return the password, so this action provides a way to regain access to a primary instance user if the password is lost. This includes restoring privileges that might have been accidentally revoked.

Type: String

Required: No

### MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collecting Enhanced Monitoring metrics, specify 0. The default is 0.

If `MonitoringRoleArn` is specified, then you must also set `MonitoringInterval` to a value other than 0.

Valid Values: 0, 1, 5, 10, 15, 30, 60

Type: Integer

Required: No

### MonitoringRoleArn

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, go to [To create an IAM role for Amazon RDS Enhanced Monitoring](#).

If `MonitoringInterval` is set to a value other than 0, then you must supply a `MonitoringRoleArn` value.

Type: String

Required: No

### MultiAZ

Specifies if the DB instance is a Multi-AZ deployment. Changing this parameter doesn't result in an outage and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request.

Type: Boolean

Required: No

### NewDBInstanceIdentifier

The new DB instance identifier for the DB instance when renaming a DB instance. When you change the DB instance identifier, an instance reboot will occur immediately if you set `Apply Immediately`

to true, or will occur during the next maintenance window if `Apply Immediately` to false. This value is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- The first character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `mydbinstance`

Type: String

Required: No

### **OptionGroupName**

Indicates that the DB instance should be associated with the specified option group. Changing this parameter doesn't result in an outage except in the following case and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is set to `true` for this request. If the parameter change results in an option group that enables OEM, this change can cause a brief (sub-second) period during which new connections are rejected but existing connections are not interrupted.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: No

### **PerformanceInsightsKMSKeyId**

The AWS KMS key identifier for encryption of Performance Insights data. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

Type: String

Required: No

### **PreferredBackupWindow**

The daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod` parameter. Changing this parameter doesn't result in an outage and the change is asynchronously applied as soon as possible.

#### **Amazon Aurora**

Not applicable. The daily time range for creating automated backups is managed by the DB cluster. For more information, see [ModifyDBCluster \(p. 240\)](#).

Constraints:

- Must be in the format `hh24:mi-hh24:mi`
- Must be in Universal Time Coordinated (UTC)
- Must not conflict with the preferred maintenance window
- Must be at least 30 minutes

Type: String

Required: No

### **PreferredMaintenanceWindow**

The weekly time range (in UTC) during which system maintenance can occur, which might result in an outage. Changing this parameter doesn't result in an outage, except in the following situation, and the change is asynchronously applied as soon as possible. If there are pending actions that cause a reboot, and the maintenance window is changed to include the current time, then changing this parameter will cause a reboot of the DB instance. If moving this window to the current time, there must be at least 30 minutes between the current time and end of the window to ensure pending changes are applied.

Default: Uses existing setting

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

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

Constraints: Must be at least 30 minutes

Type: String

Required: No

### **PromotionTier**

A value that specifies the order in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see [Fault Tolerance for an Aurora DB Cluster](#).

Default: 1

Valid Values: 0 - 15

Type: Integer

Required: No

### **PubliclyAccessible**

Boolean value that indicates if the DB instance has a publicly resolvable DNS name. Set to `True` to make the DB instance Internet-facing with a publicly resolvable DNS name, which resolves to a public IP address. Set to `False` to make the DB instance internal with a DNS name that resolves to a private IP address.

`PubliclyAccessible` only applies to DB instances in a VPC. The DB instance must be part of a public subnet and `PubliclyAccessible` must be true in order for it to be publicly accessible.

Changes to the `PubliclyAccessible` parameter are applied immediately regardless of the value of the `ApplyImmediately` parameter.

Default: false

Type: Boolean

Required: No

### **StorageType**

Specifies the storage type to be associated with the DB instance.

If you specify Provisioned IOPS (`io1`), you must also include a value for the `Iops` parameter.

If you choose to migrate your DB instance from using standard storage to using Provisioned IOPS, or from using Provisioned IOPS to using standard storage, the process can take time. The duration of

the migration depends on several factors such as database load, storage size, storage type (standard or Provisioned IOPS), amount of IOPS provisioned (if any), and the number of prior scale storage operations. Typical migration times are under 24 hours, but the process can take up to several days in some cases. During the migration, the DB instance is available for use, but might experience performance degradation. While the migration takes place, nightly backups for the instance are suspended. No other Amazon RDS operations can take place for the instance, including modifying the instance, rebooting the instance, deleting the instance, creating a Read Replica for the instance, and creating a DB snapshot of the instance.

Valid values: `standard` | `gp2` | `io1`

Default: `io1` if the `Iops` parameter is specified, otherwise `standard`

Type: String

Required: No

#### **TdeCredentialArn**

The ARN from the key store with which to associate the instance for TDE encryption.

Type: String

Required: No

#### **TdeCredentialPassword**

The password for the given ARN from the key store in order to access the device.

Type: String

Required: No

#### **VpcSecurityGroupIds.VpcSecurityGroupIds.N**

A list of EC2 VPC security groups to authorize on this DB instance. This change is asynchronously applied as soon as possible.

##### **Amazon Aurora**

Not applicable. The associated list of EC2 VPC security groups is managed by the DB cluster. For more information, see [ModifyDBCluster](#) (p. 240).

Constraints:

- If supplied, must match existing `VpcSecurityGroupIds`.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

#### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances](#) (p. 157) action.

Type: [DBInstance](#) (p. 393) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **CertificateNotFound**

*CertificateIdentifier* doesn't refer to an existing certificate.

HTTP Status Code: 404

### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **DBUpgradeDependencyFailure**

The DB upgrade failed because a resource the DB depends on can't be modified.

HTTP Status Code: 400

### **DomainNotFoundFault**

*Domain* doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

### **InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

#### **InvalidDBSecurityGroupState**

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

#### **InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

#### **OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

#### **ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

#### **StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

#### **StorageTypeNotSupported**

Storage of the *StorageType* specified can't be associated with the DB instance.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=ModifyDBInstance  
&AllocatedStorage=20  
&DBInstanceIdentifier=myawsuser-dbi04  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request  
&X-Amz-Date=20140425T192732Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=1dc9dd716f4855e9bdf188c70f1cf9f6251b070b68b81103b59ec70c3e7854b3
```

### Sample Response

```
<ModifyDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">  
  <ModifyDBInstanceResult>  
    <DBInstance>
```

```
<BackupRetentionPeriod>7</BackupRetentionPeriod>
<DBInstanceStatus>available</DBInstanceStatus>
<MultiAZ>true</MultiAZ>
<VpcSecurityGroups/>
<DBInstanceIdentifier>myawsuser-dbi04</DBInstanceIdentifier>
<PreferredBackupWindow>10:03-10:33</PreferredBackupWindow>
<PreferredMaintenanceWindow>wed:03:32-wed:04:02</PreferredMaintenanceWindow>
<AvailabilityZone>us-east-1a</AvailabilityZone>
<ReadReplicaDBInstanceIdentifiers/>
<LatestRestorableTime>2014-04-25T19:25:00Z</LatestRestorableTime>
<Engine>mysql</Engine>
<PendingModifiedValues>
  <AllocatedStorage>20</AllocatedStorage>
</PendingModifiedValues>
<LicenseModel>general-public-license</LicenseModel>
<DBParameterGroups>
  <DBParameterGroup>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
  </DBParameterGroup>
</DBParameterGroups>
<Endpoint>
  <Port>3306</Port>
  <Address>myawsuser-dbi04.cg037hpkuajt.us-east-1.rds.amazonaws.com</Address>
</Endpoint>
<EngineVersion>5.6.13</EngineVersion>
<SecondaryAvailabilityZone>us-east-1b</SecondaryAvailabilityZone>
<OptionGroupMemberships>
  <OptionGroupMembership>
    <OptionGroupName>default:mysql-5-6</OptionGroupName>
    <Status>in-sync</Status>
  </OptionGroupMembership>
</OptionGroupMemberships>
<PubliclyAccessible>true</PubliclyAccessible>
<DBSecurityGroups>
  <DBSecurityGroup>
    <Status>active</Status>
    <DBSecurityGroupName>default</DBSecurityGroupName>
  </DBSecurityGroup>
</DBSecurityGroups>
<DBName>myawsuser_db04</DBName>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<InstanceCreateTime>2014-04-25T18:07:51.508Z</InstanceCreateTime>
<AllocatedStorage>15</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
<DBInstanceClass>db.m1.small</DBInstanceClass>
</DBInstance>
</ModifyDBInstanceResult>
<ResponseMetadata>
  <RequestId>f643f1ac-bbfe-11d3-f4c6-37db295f7674</RequestId>
</ResponseMetadata>
</ModifyDBInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# ModifyDBParameterGroup

Modifies the parameters of a DB parameter group. To modify more than one parameter, submit a list of the following: `ParameterName`, `ParameterValue`, and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

## Note

Changes to dynamic parameters are applied immediately. Changes to static parameters require a reboot without failover to the DB instance associated with the parameter group before the change can take effect.

## Important

After you modify a DB parameter group, you should wait at least 5 minutes before creating your first DB instance that uses that DB parameter group as the default parameter group. This allows Amazon RDS to fully complete the modify action before the parameter group is used as the default for a new DB instance. This is especially important for parameters that are critical when creating the default database for a DB instance, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the [Amazon RDS console](#) or the *DescribeDBParameters* command to verify that your DB parameter group has been created or modified.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBParameterGroupName

The name of the DB parameter group.

Constraints:

- If supplied, must match the name of an existing DBParameterGroup.

Type: String

Required: Yes

### Parameters.Parameter.N

An array of parameter names, values, and the apply method for the parameter update. At least one parameter name, value, and apply method must be supplied; subsequent arguments are optional. A maximum of 20 parameters can be modified in a single request.

Valid Values (for the application method): `immediate` | `pending-reboot`

## Note

You can use the `immediate` value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters, and changes are applied when you reboot the DB instance without failover.

Type: Array of [Parameter \(p. 446\)](#) objects

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBParameterGroupName**

Provides the name of the DB parameter group.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **InvalidDBParameterGroupState**

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=ModifyDBParameterGroup
&DBParameterGroupName=mydbparametergroup01
&Parameters.member.1.ApplyMethod=immediate
&Parameters.member.1.ParameterName=binlog_cache_size
&Parameters.member.1.ParameterValue=65536
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T193811Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=afd9acfee876360dd294189465aca26502343d405292dc6e43b1961ad4d1d7e2
```

### Sample Response

```
<ModifyDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ModifyDBParameterGroupResult>
    <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
  </ModifyDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>12d7435e-bba0-11d3-fe11-33d33a9bb7e3</RequestId>
  </ResponseMetadata>
</ModifyDBParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBSnapshot

Updates a manual DB snapshot, which can be encrypted or not encrypted, with a new engine version.

Amazon RDS supports upgrading DB snapshots for MySQL and Oracle.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **DBSnapshotIdentifier**

The identifier of the DB snapshot to modify.

Type: String

Required: Yes

### **EngineVersion**

The engine version to upgrade the DB snapshot to.

The following are the database engines and engine versions that are available when you upgrade a DB snapshot.

#### **MySQL**

- 5.5.46 (supported for 5.1 DB snapshots)

#### **Oracle**

- 12.1.0.2.v8 (supported for 12.1.0.1 DB snapshots)
- 11.2.0.4.v12 (supported for 11.2.0.2 DB snapshots)
- 11.2.0.4.v11 (supported for 11.2.0.3 DB snapshots)

Type: String

Required: No

### **OptionGroupName**

The option group to identify with the upgraded DB snapshot.

You can specify this parameter when you upgrade an Oracle DB snapshot. The same option group considerations apply when upgrading a DB snapshot as when upgrading a DB instance. For more information, see [Option Group Considerations](#).

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBSnapshot**

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the [DescribeDBSnapshots \(p. 178\)](#) action.

Type: [DBSnapshot \(p. 407\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBSnapshotNotFound

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=ModifyDBSnapshot
&DBSnapshotIdentifier=mysnapshot1
&EngineVersion=5.5.46
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20161228/us-west-2/rds/aws4_request
&X-Amz-Date=20161228T220515Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=eb44f1ce3dab4e1dbf113d8d2a265d88d17ece1999ffd36be85714ed36cbdbe3
```

### Sample Response

```
<ModifyDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-5</OptionGroupName>
      <Engine>mysql</Engine>
      <Status>available</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.5.46</EngineVersion>
      <DBInstanceIdentifier>mysqldb-sample</DBInstanceIdentifier>
      <DBSnapshotIdentifier>mysnapshot1</DBSnapshotIdentifier>
      <AvailabilityZone>us-west-2b</AvailabilityZone>
      <InstanceCreateTime>2016-12-28T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBSnapshot>
  </ModifyDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>aa80a25a-af09-11d4-ed11-23c32f9aa7d3</RequestId>
  </ResponseMetadata>
</ModifyDBSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBSnapshotAttribute

Adds an attribute and values to, or removes an attribute and values from, a manual DB snapshot.

To share a manual DB snapshot with other AWS accounts, specify `restore` as the `AttributeName` and use the `ValuesToAdd` parameter to add a list of IDs of the AWS accounts that are authorized to restore the manual DB snapshot. Uses the value `all` to make the manual DB snapshot public, which means it can be copied or restored by all AWS accounts. Do not add the `all` value for any manual DB snapshots that contain private information that you don't want available to all AWS accounts. If the manual DB snapshot is encrypted, it can be shared, but only by specifying a list of authorized AWS account IDs for the `ValuesToAdd` parameter. You can't use `all` as a value for that parameter in this case.

To view which AWS accounts have access to copy or restore a manual DB snapshot, or whether a manual DB snapshot public or private, use the [DescribeDBSnapshotAttributes \(p. 176\)](#) API action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **AttributeName**

The name of the DB snapshot attribute to modify.

To manage authorization for other AWS accounts to copy or restore a manual DB snapshot, set this value to `restore`.

Type: String

Required: Yes

### **DBSnapshotIdentifier**

The identifier for the DB snapshot to modify the attributes for.

Type: String

Required: Yes

### **ValuesToAdd.AttributeValue.N**

A list of DB snapshot attributes to add to the attribute specified by `AttributeName`.

To authorize other AWS accounts to copy or restore a manual snapshot, set this list to include one or more AWS account IDs, or `all` to make the manual DB snapshot restorable by any AWS account. Do not add the `all` value for any manual DB snapshots that contain private information that you don't want available to all AWS accounts.

Type: Array of strings

Required: No

### **ValuesToRemove.AttributeValue.N**

A list of DB snapshot attributes to remove from the attribute specified by `AttributeName`.

To remove authorization for other AWS accounts to copy or restore a manual snapshot, set this list to include one or more AWS account identifiers, or `all` to remove authorization for any AWS account to copy or restore the DB snapshot. If you specify `all`, an AWS account whose account ID is explicitly added to the `restore` attribute can still copy or restore the manual DB snapshot.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **DBSnapshotAttributesResult**

Contains the results of a successful call to the [DescribeDBSnapshotAttributes](#) (p. 176) API action.

Manual DB snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB snapshot. For more information, see the [ModifyDBSnapshotAttribute](#) (p. 272) API action.

Type: [DBSnapshotAttributesResult](#) (p. 412) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

### **InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

### **SharedSnapshotQuotaExceeded**

You have exceeded the maximum number of accounts that you can share a manual DB snapshot with.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=ModifyDBSnapshotAttribute
&AttributeName=restore
&DBSnapshotIdentifier>manual-snapshot1
&SignatureMethod=HmacSHA256&SignatureVersion=4
&ValuesToAdd.member.1=123451234512
&ValuesToAdd.member.2=123456789012
&ValuesToRemove.member.1=all
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150922/us-west-2/rds/aws4_request
```



```
&X-Amz-Date=20150922T220515Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=ef38f1ce3dab4e1dbf113d8d2a265c67d17ece1999ffd36be85714ed36dddbb3
```

## Sample Response

```
<ModifyDBSnapshotAttributeResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBSnapshotAttributeResult>
    <DBSnapshotAttributesResult>
      <DBSnapshotAttributes>
        <DBSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
            <AttributeValue>123451234512</AttributeValue>
            <AttributeValue>123456789012</AttributeValue>
          </AttributeValues>
        </DBSnapshotAttribute>
      </DBSnapshotAttributes>
      <DBSnapshotIdentifier>manual-snapshot1</DBSnapshotIdentifier>
    </DBSnapshotAttributesResult>
  </ModifyDBSnapshotAttributeResult>
  <ResponseMetadata>
    <RequestId>0122a108-2276-11e5-9cc3-0f535cff56aa</RequestId>
  </ResponseMetadata>
</ModifyDBSnapshotAttributeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyDBSubnetGroup

Modifies an existing DB subnet group. DB subnet groups must contain at least one subnet in at least two AZs in the AWS Region.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBSubnetGroupDescription**

The description for the DB subnet group.

Type: String

Required: No

### **DBSubnetGroupName**

The name for the DB subnet group. This value is stored as a lowercase string. You can't modify the default subnet group.

Constraints: Must match the name of an existing DBSubnetGroup. Must not be default.

Example: mySubnetgroup

Type: String

Required: Yes

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

The EC2 subnet IDs for the DB subnet group.

Type: Array of strings

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBSubnetGroup**

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the [DescribeDBSubnetGroups](#) (p. 182) action.

Type: [DBSubnetGroup](#) (p. 413) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

**DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

**DBSubnetQuotaExceededFault**

The request would result in the user exceeding the allowed number of subnets in a DB subnet groups.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**SubnetAlreadyInUse**

The DB subnet is already in use in the Availability Zone.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=ModifyDBSubnetGroup
&DBSubnetGroupDescription=A%20new%20Description
&DBSubnetGroupName=myawsuser-sngrp
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SubnetIds.member.1=subnet-e4d398a1
&SubnetIds.member.2=subnet-c2bdb6ba
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
&X-Amz-Date=20140425T200214Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=213c429d925cb1608fc13a1dde48715bcac3b0794536ee90beac34203265f9af
```

### Sample Response

```
<ModifyDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ModifyDBSubnetGroupResult>
    <DBSubnetGroup>
      <VpcId>vpc-33ac97ea</VpcId>
      <SubnetGroupStatus>Complete</SubnetGroupStatus>
      <DBSubnetGroupDescription>A new Description</DBSubnetGroupDescription>
      <DBSubnetGroupName>myawsuser-sngrp</DBSubnetGroupName>
      <Subnets>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
```

```
<SubnetIdentifier>subnet-e4d398a1</SubnetIdentifier>
<SubnetAvailabilityZone>
  <Name>us-east-1b</Name>
  <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
</SubnetAvailabilityZone>
</Subnet>
<Subnet>
  <SubnetStatus>Active</SubnetStatus>
  <SubnetIdentifier>subnet-c2bdb6ba</SubnetIdentifier>
  <SubnetAvailabilityZone>
    <Name>us-east-1c</Name>
    <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
  </SubnetAvailabilityZone>
</Subnet>
</Subnets>
</DBSubnetGroup>
</ModifyDBSubnetGroupResult>
<ResponseMetadata>
  <RequestId>6dd028be-bba3-11d3-f4c6-37db295f7674</RequestId>
</ResponseMetadata>
</ModifyDBSubnetGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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 RDS event notification subscription. Note that you can't modify the source identifiers using this call; to change source identifiers for a subscription, use the [AddSourceIdentifierToSubscription](#) (p. 7) and [RemoveSourceIdentifierFromSubscription](#) (p. 300) calls.

You can see a list of the event categories for a given SourceType in the [Events](#) topic in the Amazon RDS User Guide or by using the **DescribeEventCategories** action.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### Enabled

A Boolean value; set to **true** to activate the subscription.

Type: Boolean

Required: No

### EventCategories.EventCategory.N

A list of event categories for a SourceType that you want to subscribe to. You can see a list of the categories for a given SourceType in the [Events](#) topic in the Amazon RDS User Guide or by using the **DescribeEventCategories** action.

Type: Array of strings

Required: No

### SnsTopicArn

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

Type: String

Required: No

### SourceType

The type of source that is generating the events. For example, if you want to be notified of events generated by a DB instance, you would set this parameter to db-instance. If this value is not specified, all events are returned.

Valid values: db-instance | db-parameter-group | db-security-group | db-snapshot

Type: String

Required: No

### SubscriptionName

The name of the RDS event notification subscription.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **EventSubscription**

Contains the results of a successful invocation of the [DescribeEventSubscriptions \(p. 198\)](#) action.

Type: [EventSubscription \(p. 424\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **EventSubscriptionQuotaExceeded**

You have reached the maximum number of event subscriptions.

HTTP Status Code: 400

### **SNSInvalidTopic**

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

HTTP Status Code: 400

### **SNSNoAuthorization**

You do not have permission to publish to the SNS topic ARN.

HTTP Status Code: 400

### **SNSTopicArnNotFound**

The SNS topic ARN does not exist.

HTTP Status Code: 404

### **SubscriptionCategoryNotFound**

The supplied category does not exist.

HTTP Status Code: 404

### **SubscriptionNotFound**

The subscription name does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=ModifyEventSubscription  
&Enabled=true  
&EventCategories.member.1=creation
```

```
&EventCategories.member.2=deletion
&EventCategories.member.3=failover
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SnsTopicArn=arn%3Aaws%3Asns%3Aus-west-2%3A802#####%3Amy-rds-events
&SourceIds.member.1=myexampledb&SourceType=db-instance
&SubscriptionName=ES-myuser01
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-west-2/rds/aws4_request
&X-Amz-Date=20140428T183020Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=3d85bdfaf13861e93a9528824d9876ed87e6e01aaf43a962ce6f2a39247cf33a
```

## Sample Response

```
<ModifyEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ModifyEventSubscriptionResult>
    <EventSubscription>
      <CustomerAwsId>802#####</CustomerAwsId>
      <Enabled>true</Enabled>
      <SourceType>db-instance</SourceType>
      <Status>modifying</Status>
      <SourceIdsList>
        <SourceId>myexampledb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-28 18:24:52.735</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
        <EventCategory>failover</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>ES-myuser01</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-west-2:802#####:my-rds-events</SnsTopicArn>
    </EventSubscription>
  </ModifyEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>1798605b-be02-11d3-f73c-899ec2766c3b</RequestId>
  </ResponseMetadata>
</ModifyEventSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ModifyOptionGroup

Modifies an existing option group.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **ApplyImmediately**

Indicates whether the changes should be applied immediately, or during the next maintenance window for each instance associated with the option group.

Type: Boolean

Required: No

### **OptionGroupName**

The name of the option group to be modified.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: Yes

### **OptionsToInclude.OptionConfiguration.N**

Options in this list are added to the option group or, if already present, the specified configuration is used to update the existing configuration.

Type: Array of [OptionConfiguration \(p. 430\)](#) objects

Required: No

### **OptionsToRemove.member.N**

Options in this list are removed from the option group.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **OptionGroup**

Type: [OptionGroup \(p. 432\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).



### InvalidOptionGroupStateFault

The option group isn't in the *available* state.

HTTP Status Code: 400

### OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

## Examples

### Example

#### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=ModifyOptionGroup  
&ApplyImmediately=true  
&OptionGroupName=myawsuser-og02  
&OptionsToInclude.member.1.DBSecurityGroupMemberships.member.1=default  
&OptionsToInclude.member.1.OptionName=MEMCACHED  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140501/us-east-1/rds/aws4_request  
&X-Amz-Date=20140501T230529Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=4b278baae6294738704a9948e355af0e9bd4fa0913d5b35b0a9a3c916925aced
```

#### Sample Response

```
<ModifyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">  
  <ModifyOptionGroupResult>  
    <OptionGroup>  
      <OptionGroupName>myawsuser-og02</OptionGroupName>  
      <MajorEngineVersion>5.6</MajorEngineVersion>  
      <AllowsVpcAndNonVpcInstanceMemberships>>false</AllowsVpcAndNonVpcInstanceMemberships>  
      <EngineName>mysql</EngineName>  
      <OptionGroupDescription>my second og</OptionGroupDescription>  
      <Options>  
        <Option>  
          <Port>11211</Port>  
          <OptionName>MEMCACHED</OptionName>  
          <OptionDescription>InnoDB Memcached for MySQL</OptionDescription>  
          <Persistent>>false</Persistent>  
          <OptionSettings>  
            <OptionSetting>  
              <DataType>BOOLEAN</DataType>  
              <IsModifiable>true</IsModifiable>  
              <IsCollection>>false</IsCollection>  
              <Description>If enabled when there is no more memory to store items,  
memcached will return an error rather than evicting items.</Description>  
              <Name>ERROR_ON_MEMORY_EXHAUSTED</Name>  
              <Value>0</Value>
```

```

        <ApplyType>STATIC</ApplyType>
        <AllowedValues>0,1</AllowedValues>
        <DefaultValue>0</DefaultValue>
    </OptionSetting>
    <OptionSetting>
        <DataType>INTEGER</DataType>
        <IsModifiable>true</IsModifiable>
        <IsCollection>false</IsCollection>
        <Description>The backlog queue configures how many network connections can be
waiting to be processed by memcached</Description>
        <Name>BACKLOG_QUEUE_LIMIT</Name>
        <Value>1024</Value>
        <ApplyType>STATIC</ApplyType>
        <AllowedValues>1-2048</AllowedValues>
        <DefaultValue>1024</DefaultValue>
    </OptionSetting>
</OptionSettings>
<VpcSecurityGroupMemberships/>
<Permanent>false</Permanent>
<DBSecurityGroupMemberships>
    <DBSecurityGroup>
        <Status>authorized</Status>
        <DBSecurityGroupName>default</DBSecurityGroupName>
    </DBSecurityGroup>
</DBSecurityGroupMemberships>
</Option>
</Options>
</OptionGroup>
</ModifyOptionGroupResult>
<ResponseMetadata>
    <RequestId>073cfb45-c184-11d3-a537-cef97546330c</RequestId>
</ResponseMetadata>
</ModifyOptionGroupResponse>

```

## Example

### Sample Request

```

https://rds.us-east-1.amazonaws.com/
?Action=ModifyOptionGroup
&ApplyImmediately=true
&OptionGroupName=myawsuser-og02
&OptionsToRemove.OptionName=MEMCACHED
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140501/us-east-1/rds/aws4_request
&X-Amz-Date=20140501T231731Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=fd7ee924d39f1014488eb3444a8fdfb028e958b97703f95845a5addc435c1399

```

### Sample Response

```

<ModifyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ModifyOptionGroupResult>
    <OptionGroup>
      <OptionGroupName>myawsuser-og02</OptionGroupName>
      <AllowsVpcAndNonVpcInstanceMemberships>true</AllowsVpcAndNonVpcInstanceMemberships>
      <MajorEngineVersion>5.6</MajorEngineVersion>
    </OptionGroup>
  </ModifyOptionGroupResult>
</ModifyOptionGroupResponse>

```

```
<EngineName>mysql</EngineName>
<OptionGroupDescription>my second og</OptionGroupDescription>
<Options/>
</OptionGroup>
</ModifyOptionGroupResult>
<ResponseMetadata>
  <RequestId>b5f134f3-c185-11d3-f4c6-37db295f7674</RequestId>
</ResponseMetadata>
</ModifyOptionGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# PromoteReadReplica

Promotes a Read Replica DB instance to a standalone DB instance.

## Note

- Backup duration is a function of the amount of changes to the database since the previous backup. If you plan to promote a Read Replica to a standalone instance, we recommend that you enable backups and complete at least one backup prior to promotion. In addition, a Read Replica cannot be promoted to a standalone instance when it is in the `backing-up` status. If you have enabled backups on your Read Replica, configure the automated backup window so that daily backups do not interfere with Read Replica promotion.
- This command doesn't apply to Aurora MySQL and Aurora PostgreSQL.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### BackupRetentionPeriod

The number of days to retain automated backups. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

Default: 1

Constraints:

- Must be a value from 0 to 8

Type: Integer

Required: No

### DBInstanceIdentifier

The DB instance identifier. This value is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing Read Replica DB instance.

Example: `mydbinstance`

Type: String

Required: Yes

### PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.

- Must be at least 30 minutes.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=PromoteReadReplica
&BackupRetentionPeriod=7
&DBInstanceIdentifier=mysqlldb-rr
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T221536Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=c0b2cfc3db8334b6ef86922f664e05ab306754e30e408d9fd3c8e58069a9b386
```

### Sample Response

```
<PromoteReadReplicaResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <PromoteReadReplicaResult>
```

```
<DBInstance>
  <BackupRetentionPeriod>0</BackupRetentionPeriod>
  <DBInstanceStatus>modifying</DBInstanceStatus>
  <MultiAZ>false</MultiAZ>
  <VpcSecurityGroups/>
  <DBInstanceIdentifier>mysqldb-rr</DBInstanceIdentifier>
  <PreferredBackupWindow>08:25-08:55</PreferredBackupWindow>
  <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
  <StatusInfos>
    <DBInstanceStatusInfo>
      <Status>replicating</Status>
      <StatusType>read_replication</StatusType>
      <Normal>true</Normal>
    </DBInstanceStatusInfo>
  </StatusInfos>
  <AvailabilityZone>us-east-1a</AvailabilityZone>
  <ReadReplicaDBInstanceIdentifiers/>
  <Engine>mysql</Engine>
  <PendingModifiedValues>
    <BackupRetentionPeriod>7</BackupRetentionPeriod>
  </PendingModifiedValues>
  <LicenseModel>general-public-license</LicenseModel>
  <DBParameterGroups>
    <DBParameterGroup>
      <ParameterApplyStatus>in-sync</ParameterApplyStatus>
      <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
    </DBParameterGroup>
  </DBParameterGroups>
  <Endpoint>
    <Port>3306</Port>
    <Address>mysqldb-rr.cg029hpkxcjt.us-east-1.rds.amazonaws.com</Address>
  </Endpoint>
  <EngineVersion>5.6.13</EngineVersion>
  <ReadReplicaSourceDBInstanceIdentifier>mysqldb</
ReadReplicaSourceDBInstanceIdentifier>
  <OptionGroupMemberships>
    <OptionGroupMembership>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Status>in-sync</Status>
    </OptionGroupMembership>
  </OptionGroupMemberships>
  <PubliclyAccessible>true</PubliclyAccessible>
  <DBSecurityGroups>
    <DBSecurityGroup>
      <Status>active</Status>
      <DBSecurityGroupName>default</DBSecurityGroupName>
    </DBSecurityGroup>
  </DBSecurityGroups>
  <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
  <DBName>mysqldb</DBName>
  <InstanceCreateTime>2014-04-25T17:12:34.460Z</InstanceCreateTime>
  <AllocatedStorage>100</AllocatedStorage>
  <DBInstanceClass>db.m1.medium</DBInstanceClass>
  <MasterUsername>myawsuser</MasterUsername>
</DBInstance>
</PromoteReadReplicaResult>
<ResponseMetadata>
  <RequestId>8e8c0d64-be21-11d3-a71c-13dc2f771e41</RequestId>
</ResponseMetadata>
</PromoteReadReplicaResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# PromoteReadReplicaDBCluster

Promotes a Read Replica DB cluster to a standalone DB cluster.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

The identifier of the DB cluster Read Replica to promote. This parameter is not case-sensitive.

Constraints:

- Must match the identifier of an existing DBCluster Read Replica.

Example: `my-cluster-replica1`

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

## Example

### Sample Request



```
https://rds.us-east-1.amazonaws.com/
?Action=PromoteReadReplicaDBCluster
&DBClusterIdentifier=my-cluster-replica1
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160328/us-east-1/rds/aws4_request
&X-Amz-Date=20160328T221226Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=e2b2cfc3db7766b6ef86922f664e05ab306754e30e408d9fd3c8e58069a9b386
```

## Sample Response

```
<PromoteReadReplicaDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <PromoteReadReplicaDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>default</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster.cluster-ctrayan0ryng.us-east-1.rds.amazonaws.com</Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <AvailabilityZones>
        <AvailabilityZone>us-east-1a</AvailabilityZone>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <AvailabilityZone>us-east-1e</AvailabilityZone>
      </AvailabilityZones>
      <DBClusterIdentifier>my-cluster-replica1</DBClusterIdentifier>
      <PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
      <DBClusterMembers>
        <DBClusterMember>
          <IsClusterWriter>true</IsClusterWriter>
          <DBInstanceIdentifier>my-cluster1-master</DBInstanceIdentifier>
        </DBClusterMember>
        <DBClusterMember>
          <IsClusterWriter>false</IsClusterWriter>
          <DBInstanceIdentifier>my-cluster1-read1</DBInstanceIdentifier>
        </DBClusterMember>
      </DBClusterMembers>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBCluster>
  </PromoteReadReplicaDBClusterResult>
  <ResponseMetadata>
    <RequestId>8e8c0d64-be21-11d3-a71c-13dc2f771e41</RequestId>
  </ResponseMetadata>
</PromoteReadReplicaDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# PurchaseReservedDBInstancesOffering

Purchases a reserved DB instance offering.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceCount**

The number of instances to reserve.

Default: 1

Type: Integer

Required: No

### **ReservedDBInstanceid**

Customer-specified identifier to track this reservation.

Example: myreservationID

Type: String

Required: No

### **ReservedDBInstancesOfferingId**

The ID of the Reserved DB instance offering to purchase.

Example: 438012d3-4052-4cc7-b2e3-8d3372e0e706

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag](#) (p. 464) objects

Required: No

## Response Elements

The following element is returned by the service.

### **ReservedDBInstance**

This data type is used as a response element in the [DescribeReservedDBInstances](#) (p. 218) and [PurchaseReservedDBInstancesOffering](#) (p. 292) actions.

Type: [ReservedDBInstance](#) (p. 456) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **ReservedDBInstanceAlreadyExists**

User already has a reservation with the given identifier.

HTTP Status Code: 404

### **ReservedDBInstanceQuotaExceeded**

Request would exceed the user's DB Instance quota.

HTTP Status Code: 400

### **ReservedDBInstancesOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=PurchaseReservedDBInstancesOffering
&ReservedDBInstanceId=myreservationID
&ReservedDBInstancesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
&DBInstanceCount=10
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140415/us-east-1/rds/aws4_request
&X-Amz-Date=20140415T232655Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=c2ac761e8c8f54a8c0727f5a87ad0a766fbb0024510b9aa34ea6d1f7df52fb11
```

### Sample Response

```
<PurchaseReservedDBInstancesOfferingResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <PurchaseReservedDBInstancesOfferingResult>
    <ReservedDBInstance>
      <OfferingType>Partial Upfront</OfferingType>
      <CurrencyCode>USD</CurrencyCode>
      <RecurringCharges/>
      <ProductDescription>mysql</ProductDescription>
      <ReservedDBInstancesOfferingId>438012d3-4052-4cc7-b2e3-8d3372e0e706</
ReservedDBInstancesOfferingId>
      <MultiAZ>true</MultiAZ>
      <State>payment-pending</State>
      <ReservedDBInstanceId>myreservationID</ReservedDBInstanceId>
      <DBInstanceCount>10</DBInstanceCount>
      <StartTime>2014-05-18T23:24:56.577Z</StartTime>
```

```
<Duration>31536000</Duration>
<FixedPrice>123.0</FixedPrice>
<UsagePrice>0.123</UsagePrice>
<DBInstanceClass>db.m1.small</DBInstanceClass>
</ReservedDBInstance>
</PurchaseReservedDBInstancesOfferingResult>
<ResponseMetadata>
  <RequestId>7f099901-29cf-11e1-bd06-6fe008f046c3</RequestId>
</ResponseMetadata>
</PurchaseReservedDBInstancesOfferingResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RebootDBInstance

You might need to reboot your DB instance, usually for maintenance reasons. For example, if you make certain modifications, or if you change the DB parameter group associated with the DB instance, you must reboot the instance for the changes to take effect.

Rebooting a DB instance restarts the database engine service. Rebooting a DB instance results in a momentary outage, during which the DB instance status is set to rebooting.

For more information about rebooting, see [Rebooting a DB Instance](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBInstanceIdentifier**

The DB instance identifier. This parameter is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

### **ForceFailover**

When `true`, the reboot is conducted through a MultiAZ failover.

Constraint: You can't specify `true` if the instance is not configured for MultiAZ.

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances](#) (p. 157) action.

Type: [DBInstance](#) (p. 393) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

#### InvalidDBInstanceState

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=RebootDBInstance
&DBInstanceIdentifier=mysqldb
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T222011Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=1c48f44c14183cff26fde7d912946f87f3bb9d715f66448f457a8f9e99602af5
```

### Sample Response

```
<RebootDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <RebootDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>rebooting</DBInstanceStatus>
      <MultiAZ>>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <LatestRestorableTime>2014-04-28T22:15:00Z</LatestRestorableTime>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <Endpoint>
        <Port>3306</Port>
        <Address>mysqldb.cb036hpkmopt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
    </DBInstance>
  </RebootDBInstanceResult>
</RebootDBInstanceResponse>
```

```
</OptionGroupMemberships>
<PubliclyAccessible>true</PubliclyAccessible>
<DBSecurityGroups>
  <DBSecurityGroup>
    <Status>active</Status>
    <DBSecurityGroupName>default</DBSecurityGroupName>
  </DBSecurityGroup>
</DBSecurityGroups>
<DBName>mysqldb</DBName>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
<AllocatedStorage>100</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
<DBInstanceClass>db.m1.medium</DBInstanceClass>
</DBInstance>
</RebootDBInstanceResult>
<ResponseMetadata>
  <RequestId>33c99cd2-be22-11d3-abdb-7cb19376fb1c</RequestId>
</ResponseMetadata>
</RebootDBInstanceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)



# RemoveRoleFromDBCluster

Disassociates an Identity and Access Management (IAM) role from an Aurora DB cluster. For more information, see [Authorizing Amazon Aurora to Access Other AWS Services On Your Behalf](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterIdentifier**

The name of the DB cluster to disassociate the IAM role from.

Type: String

Required: Yes

### **RoleArn**

The Amazon Resource Name (ARN) of the IAM role to disassociate from the Aurora DB cluster, for example `arn:aws:iam::123456789012:role/AuroraAccessRole`.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterRoleNotFound**

The specified IAM role Amazon Resource Name (ARN) isn't associated with the specified DB cluster.

HTTP Status Code: 404

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=RemoveRoleFromDBCluster  
&DBClusterIdentifier=sample-cluster
```

```
&RoleArn=arn%3Aaws%3Aiam%3A%3A123456789012%3Arole%2Fsample-role
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20161012/us-east-1/rds/aws4_request
&X-Amz-Date=20161012T204525Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=cd7d5005d56a505b4e2a878c297e6f8a3cc26b19a335ede018ba41f3185c92a2
```

## Sample Response

```
<RemoveRoleFromDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>ccfca75a-90bc-11e6-8533-cd6377e421f8</RequestId>
  </ResponseMetadata>
</RemoveRoleFromDBClusterResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RemoveSourceIdentifierFromSubscription

Removes a source identifier from an existing RDS event notification subscription.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### SourceIdentifier

The source identifier to be removed from the subscription, such as the **DB instance identifier** for a DB instance or the name of a security group.

Type: String

Required: Yes

### SubscriptionName

The name of the RDS event notification subscription you want to remove a source identifier from.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### EventSubscription

Contains the results of a successful invocation of the [DescribeEventSubscriptions](#) (p. 198) action.

Type: [EventSubscription](#) (p. 424) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### SourceNotFound

The requested source could not be found.

HTTP Status Code: 404

### SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=RemoveSourceIdentifierFromSubscription  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&SourceIdentifier=si-sample  
&SubscriptionName=myawsuser-secgrp  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request  
&X-Amz-Date=20140428T222718Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=4419f0015657ee120d781849ffdc6642eeafeee42bfd1d18c4b2ed8eb732f7bf8
```

## Sample Response

```
<RemoveSourceIdentifierFromSubscriptionResponse xmlns="http://rds.amazonaws.com/  
doc/2014-09-01/">  
  <RemoveSourceIdentifierFromSubscriptionResult>  
    <EventSubscription>  
      <Enabled>true</Enabled>  
      <CustomerAwsId>802#####</CustomerAwsId>  
      <SourceType>db-security-group</SourceType>  
      <Status>active</Status>  
      <SubscriptionCreationTime>2014-04-25 21:43:25.542</SubscriptionCreationTime>  
      <EventCategoriesList>  
        <EventCategory>configuration change</EventCategory>  
        <EventCategory>failure</EventCategory>  
      </EventCategoriesList>  
      <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>  
      <SnsTopicArn>arn:aws:sns:us-east-1:802#####:myawsuser-RDS</SnsTopicArn>  
    </EventSubscription>  
  </RemoveSourceIdentifierFromSubscriptionResult>  
  <ResponseMetadata>  
    <RequestId>326cdeb9-be23-11d3-91a5-a90441261bc4</RequestId>  
  </ResponseMetadata>  
</RemoveSourceIdentifierFromSubscriptionResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RemoveTagsFromResource

Removes metadata tags from an Amazon RDS resource.

For an overview on tagging an Amazon RDS resource, see [Tagging Amazon RDS Resources](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### ResourceName

The Amazon RDS resource that the tags are removed from. This value is an Amazon Resource Name (ARN). For information about creating an ARN, see [Constructing an RDS Amazon Resource Name \(ARN\)](#).

Type: String

Required: Yes

### TagKeys.member.N

The tag key (name) of the tag to be removed.

Type: Array of strings

Required: Yes

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### DBClusterNotFoundFault

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### DBInstanceNotFound

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### DBSnapshotNotFound

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
```

```
?Action=RemoveTagsFromResource
&ResourceName=arn%3Aaws%3Ard%3Aus-west-2%3A123456789012%3Adb%3Asample
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&TagKeys.member.1=InstanceType
&TagKeys.member.2=Owner
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T174918Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=4c72f307a75444461bd9b9ccb7de361fec75b8adad66a52824226320d0a33ca8
```

## Sample Response

```
<RemoveTagsFromResourceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>126d40cc-79da-11e6-b8e4-29f0c684be5d</RequestId>
  </ResponseMetadata>
</RemoveTagsFromResourceResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ResetDBClusterParameterGroup

Modifies the parameters of a DB cluster parameter group to the default value. To reset specific parameters submit a list of the following: `ParameterName` and `ApplyMethod`. To reset the entire DB cluster parameter group, specify the `DBClusterParameterGroupName` and `ResetAllParameters` parameters.

When resetting the entire group, dynamic parameters are updated immediately and static parameters are set to `pending-reboot` to take effect on the next DB instance restart or [RebootDBInstance](#) (p. 295) request. You must call [RebootDBInstance](#) (p. 295) for every DB instance in your DB cluster that you want the updated static parameter to apply to.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBClusterParameterGroupName**

The name of the DB cluster parameter group to reset.

Type: String

Required: Yes

### **Parameters.Parameter.N**

A list of parameter names in the DB cluster parameter group to reset to the default values. You can't use this parameter if the `ResetAllParameters` parameter is set to `true`.

Type: Array of [Parameter](#) (p. 446) objects

Required: No

### **ResetAllParameters**

A value that is set to `true` to reset all parameters in the DB cluster parameter group to their default values, and `false` otherwise. You can't use this parameter if there is a list of parameter names specified for the `Parameters` parameter.

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBClusterParameterGroupName**

The name of the DB cluster parameter group.

Constraints:

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

**Note**

This value is stored as a lowercase string.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **InvalidDBParameterGroupState**

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=ResetDBClusterParameterGroup
&DBClusterParameterGroupName=sample-cluster-pg
&Parameters.member.1.ApplyMethod=pending-reboot
&Parameters.member.1.ParameterName=binlog_format
&Parameters.member.2.ApplyMethod=pending-reboot
&Parameters.member.2.ParameterName=innodb_support_xa
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T230026Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7cca4504082065e227696f2dd904fab2f39633bc7d120258c4bedd35da3ade7f
```

### Sample Response

```
<ResetDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResetDBClusterParameterGroupResult>
    <DBClusterParameterGroupName>sample-cluster-pg</DBClusterParameterGroupName>
  </ResetDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>dc2c61eb-7a05-11e6-b83b-cd70a540d79f</RequestId>
  </ResponseMetadata>
</ResetDBClusterParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# ResetDBParameterGroup

Modifies the parameters of a DB parameter group to the engine/system default value. To reset specific parameters, provide a list of the following: `ParameterName` and `ApplyMethod`. To reset the entire DB parameter group, specify the `DBParameterGroup` name and `ResetAllParameters` parameters. When resetting the entire group, dynamic parameters are updated immediately and static parameters are set to `pending-reboot` to take effect on the next DB instance restart or `RebootDBInstance` request.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **DBParameterGroupName**

The name of the DB parameter group.

Constraints:

- Must match the name of an existing `DBParameterGroup`.

Type: String

Required: Yes

### **Parameters.Parameter.N**

To reset the entire DB parameter group, specify the `DBParameterGroup` name and `ResetAllParameters` parameters. To reset specific parameters, provide a list of the following: `ParameterName` and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

#### **MySQL**

Valid Values (for Apply method): `immediate` | `pending-reboot`

You can use the `immediate` value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters, and changes are applied when DB instance reboots.

#### **MariaDB**

Valid Values (for Apply method): `immediate` | `pending-reboot`

You can use the `immediate` value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters, and changes are applied when DB instance reboots.

#### **Oracle**

Valid Values (for Apply method): `pending-reboot`

Type: Array of [Parameter](#) (p. 446) objects

Required: No

### **ResetAllParameters**

Specifies whether (`true`) or not (`false`) to reset all parameters in the DB parameter group to default values.

Default: `true`

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBParameterGroupName**

Provides the name of the DB parameter group.

Type: String

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **InvalidDBParameterGroupState**

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

## Examples

### Example

#### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=ResetDBParameterGroup
&DBParameterGroupName=mydbparametergroup01
&ResetAllParameters=true
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T225714Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=709d1418c91c5ef4129d4665e5c2820002a9665699acf4204683c778f03c3573
```

#### Sample Response

```
<ResetDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
```

```
<ResetDBParameterGroupResult>
  <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
</ResetDBParameterGroupResult>
<ResponseMetadata>
  <RequestId>610909c6-be27-11d3-a71c-13dc2f771e41</RequestId>
</ResponseMetadata>
</ResetDBParameterGroupResponse>
```

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=ResetDBParameterGroup
&DBParameterGroupName=mydbparametergroup01
&Parameters.member.1.ApplyMethod=immediate
&Parameters.member.1.ParameterName=bulk_insert_buffer_size
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T230509Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=d343dd7fcc3789d30295b5e3fc67262f28af15d71fcaf978921f0e8846b2d1e6
```

### Sample Response

```
<ResetDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <ResetDBParameterGroupResult>
    <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
  </ResetDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>7acb72cf-be28-11d3-a4fc-e3b7f6c20c5f</RequestId>
  </ResponseMetadata>
</ResetDBParameterGroupResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RestoreDBClusterFromS3

Creates an Amazon Aurora DB cluster from data stored in an Amazon S3 bucket. Amazon RDS must be authorized to access the Amazon S3 bucket and the data must be created using the Percona XtraBackup utility as described in [Migrating Data from MySQL by Using an Amazon S3 Bucket](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **AvailabilityZones.AvailabilityZone.N**

A list of EC2 Availability Zones that instances in the restored DB cluster can be created in.

Type: Array of strings

Required: No

### **BacktrackWindow**

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

### **BackupRetentionPeriod**

The number of days for which automated backups of the restored DB cluster are retained. You must specify a minimum value of 1.

Default: 1

Constraints:

- Must be a value from 1 to 35

Type: Integer

Required: No

### **CharacterSetName**

A value that indicates that the restored DB cluster should be associated with the specified CharacterSet.

Type: String

Required: No

### **DatabaseName**

The database name for the restored DB cluster.

Type: String

Required: No

### **DBClusterIdentifier**

The name of the DB cluster to create from the source data in the Amazon S3 bucket. This parameter is isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster1`

Type: String

Required: Yes

### **DBClusterParameterGroupName**

The name of the DB cluster parameter group to associate with the restored DB cluster. If this argument is omitted, `default.aurora5.6` is used.

Constraints:

- If supplied, must match the name of an existing `DBClusterParameterGroup`.

Type: String

Required: No

### **DBSubnetGroupName**

A DB subnet group to associate with the restored DB cluster.

Constraints: If supplied, must match the name of an existing `DBSubnetGroup`.

Example: `mySubnetgroup`

Type: String

Required: No

### **EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: `false`

Type: Boolean

Required: No

### **Engine**

The name of the database engine to be used for the restored DB cluster.

Valid Values: `aurora`, `aurora-postgresql`

Type: String

Required: Yes

### **EngineVersion**

The version number of the database engine to use.

### **Aurora MySQL**

Example: 5.6.10a

### **Aurora PostgreSQL**

Example: 9.6.3

Type: String

Required: No

### **KmsKeyId**

The AWS KMS key identifier for an encrypted DB cluster.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are creating a DB cluster with the same AWS account that owns the KMS encryption key used to encrypt the new DB cluster, then you can use the KMS key alias instead of the ARN for the KM encryption key.

If the `StorageEncrypted` parameter is true, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS will use your default encryption key. AWS KMS creates the default encryption key for your AWS account. Your AWS account has a different default encryption key for each AWS Region.

Type: String

Required: No

### **MasterUsername**

The name of the master user for the restored DB cluster.

Constraints:

- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

Type: String

Required: Yes

### **MasterUserPassword**

The password for the master database user. This password can contain any printable ASCII character except `/`, `""`, or `@`.

Constraints: Must contain from 8 to 41 characters.

Type: String

Required: Yes

### **OptionGroupName**

A value that indicates that the restored DB cluster should be associated with the specified option group.

Permanent options can't be removed from an option group. An option group can't be removed from a DB cluster once it is associated with a DB cluster.

Type: String

Required: No

### **Port**

The port number on which the instances in the restored DB cluster accept connections.

Default: 3306

Type: Integer

Required: No

### **PreferredBackupWindow**

The daily time range during which automated backups are created if automated backups are enabled using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

### **PreferredMaintenanceWindow**

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

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

The default is a 30-minute window selected at random from an 8-hour block of time for each AWS Region, occurring on a random day of the week. To see the time blocks available, see [Adjusting the Preferred Maintenance Window](#) in the *Amazon RDS User Guide*.

Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.

Constraints: Minimum 30-minute window.

Type: String

Required: No

### **S3BucketName**

The name of the Amazon S3 bucket that contains the data used to create the Amazon Aurora DB cluster.

Type: String

Required: Yes

### **S3IngestionRoleArn**

The Amazon Resource Name (ARN) of the AWS Identity and Access Management (IAM) role that authorizes Amazon RDS to access the Amazon S3 bucket on your behalf.



Type: String

Required: Yes

**S3Prefix**

The prefix for all of the file names that contain the data used to create the Amazon Aurora DB cluster. If you do not specify a **SourceS3Prefix** value, then the Amazon Aurora DB cluster is created by using all of the files in the Amazon S3 bucket.

Type: String

Required: No

**SourceEngine**

The identifier for the database engine that was backed up to create the files stored in the Amazon S3 bucket.

Valid values: mysql

Type: String

Required: Yes

**SourceEngineVersion**

The version of the database that the backup files were created from.

MySQL version 5.5 and 5.6 are supported.

Example: 5.6.22

Type: String

Required: Yes

**StorageEncrypted**

Specifies whether the restored DB cluster is encrypted.

Type: Boolean

Required: No

**Tags.Tag.N**

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of EC2 VPC security groups to associate with the restored DB cluster.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

Type: [DBCluster](#) (p. 374) object

## **Errors**

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **DBClusterAlreadyExistsFault**

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterParameterGroupNotFound**

*DBClusterParameterGroupName* doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

### **DBClusterQuotaExceededFault**

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **InsufficientStorageClusterCapacity**

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

### **InvalidDBSubnetGroupStateFault**

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

### **InvalidS3BucketFault**

The specified Amazon S3 bucket name can't be found or Amazon RDS isn't authorized to access the specified Amazon S3 bucket. Verify the **SourceS3BucketName** and **S3IngestionRoleArn** values and try again.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=RestoreDBClusterFromS3
&DBClusterIdentifier=sample-cluster
&Engine=aurora
&S3BucketName=s3-ingestion-sample
&SourceEngine=mysql
&SourceEngineVersion=5.6.22
&MasterUsername=myawsuser
&MasterUserPassword=<password>
&S3IngestionRoleArn=arn:aws:iam:123456789012:role/sample-role
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SnapshotIdentifier=sample-snapshot
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20150323/us-east-1/rds/aws4_request
&X-Amz-Date=20150323T165638Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=c59effef9b7b96f6a8dfed7873611df555364594f7f9acf9cd14d353114771fd
```

### Sample Response

```
<RestoreDBClusterFromS3Response xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RestoreDBClusterFromS3Result>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
```

```
<BackupRetentionPeriod>1</BackupRetentionPeriod>
<VpcSecurityGroups>
  <VpcSecurityGroupMembership>
    <Status>active</Status>
    <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
  </VpcSecurityGroupMembership>
</VpcSecurityGroups>
<DBSubnetGroup>default</DBSubnetGroup>
<EngineVersion>5.6.10a</EngineVersion>
<Endpoint>sample-cluster.cluster-ctrayan0ryng.us-east-1.rds.amazonaws.com</Endpoint>
<DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
<AvailabilityZones>
  <AvailabilityZone>us-east-1a</AvailabilityZone>
  <AvailabilityZone>us-east-1c</AvailabilityZone>
  <AvailabilityZone>us-east-1e</AvailabilityZone>
</AvailabilityZones>
<DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
<PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
<PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
<DBClusterMembers/>
<AllocatedStorage>1</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
</DBCluster>
</RestoreDBClusterFromS3Result>
<ResponseMetadata>
  <RequestId>46d2b228-7681-11e5-3e8b-9b2c0d5d51a9</RequestId>
</ResponseMetadata>
</RestoreDBClusterFromS3Response>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RestoreDBClusterFromSnapshot

Creates a new DB cluster from a DB snapshot or DB cluster snapshot.

If a DB snapshot is specified, the target DB cluster is created from the source DB snapshot with a default configuration and default security group.

If a DB cluster snapshot is specified, the target DB cluster is created from the source DB cluster restore point with the same configuration as the original source DB cluster, except that the new DB cluster is created with the default security group.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### **AvailabilityZones.AvailabilityZone.N**

Provides the list of EC2 Availability Zones that instances in the restored DB cluster can be created in.

Type: Array of strings

Required: No

### **BacktrackWindow**

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

### **DatabaseName**

The database name for the restored DB cluster.

Type: String

Required: No

### **DBClusterIdentifier**

The name of the DB cluster to create from the DB snapshot or DB cluster snapshot. This parameter isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 letters, numbers, 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

**DBSubnetGroupName**

The name of the DB subnet group to use for the new DB cluster.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: mySubnetgroup

Type: String

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: false

Type: Boolean

Required: No

**Engine**

The database engine to use for the new DB cluster.

Default: The same as source

Constraint: Must be compatible with the engine of the source

Type: String

Required: Yes

**EngineVersion**

The version of the database engine to use for the new DB cluster.

Type: String

Required: No

**KmsKeyId**

The AWS KMS key identifier to use when restoring an encrypted DB cluster from a DB snapshot or DB cluster snapshot.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are restoring a DB cluster with the same AWS account that owns the KMS encryption key used to encrypt the new DB cluster, then you can use the KMS key alias instead of the ARN for the KMS encryption key.

If you do not specify a value for the `KmsKeyId` parameter, then the following will occur:

- If the DB snapshot or DB cluster snapshot in `SnapshotIdentifier` is encrypted, then the restored DB cluster is encrypted using the KMS key that was used to encrypt the DB snapshot or DB cluster snapshot.
- If the DB snapshot or DB cluster snapshot in `SnapshotIdentifier` is not encrypted, then the restored DB cluster is not encrypted.

Type: String

Required: No

**OptionGroupName**

The name of the option group to use for the restored DB cluster.

Type: String

Required: No

**Port**

The port number on which the new DB cluster accepts connections.

Constraints: Value must be 1150–65535

Default: The same port as the original DB cluster.

Type: Integer

Required: No

**SnapshotIdentifier**

The identifier for the DB snapshot or DB cluster snapshot to restore from.

You can use either the name or the Amazon Resource Name (ARN) to specify a DB cluster snapshot. However, you can use only the ARN to specify a DB snapshot.

Constraints:

- Must match the identifier of an existing Snapshot.

Type: String

Required: Yes

**Tags.Tag.N**

The tags to be assigned to the restored DB cluster.

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of VPC security groups that the new DB cluster will belong to.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters \(p. 143\)](#) action.

Type: [DBCluster \(p. 374\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterAlreadyExistsFault**

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

### **DBClusterQuotaExceededFault**

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

### **DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **InsufficientDBClusterCapacityFault**

The DB cluster doesn't have enough capacity for the current operation.

HTTP Status Code: 403

### **InsufficientStorageClusterCapacity**

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

### **InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

### **InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

### **InvalidRestoreFault**

Cannot restore from VPC backup to non-VPC DB instance.



HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/
?Action=RestoreDBClusterFromSnapshot
&DBClusterIdentifier=sample-restored
&Engine=aurora
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SnapshotIdentifier=sample-snapshot-1
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T223701Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=65d0d03242d99a16ef3712142bfcd52ac63fd2f68fbb5efd7edfb1e89138da57
```

### Sample Response

```
<RestoreDBClusterFromSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

```
<RestoreDBClusterFromSnapshotResult>
  <DBCluster>
    <AllocatedStorage>1</AllocatedStorage>
    <DatabaseName>sample</DatabaseName>
    <AvailabilityZones>
      <AvailabilityZone>us-west-2a</AvailabilityZone>
      <AvailabilityZone>us-west-2b</AvailabilityZone>
      <AvailabilityZone>us-west-2c</AvailabilityZone>
    </AvailabilityZones>
    <PreferredBackupWindow>10:37-11:07</PreferredBackupWindow>
    <Endpoint>sample-restored.cluster-cnubrrrevfka6.us-west-2.rds.amazonaws.com</Endpoint>
    <Engine>aurora</Engine>
    <ReaderEndpoint>sample-restored.cluster-ro-cnubrrrevfka6.us-west-2.rds.amazonaws.com</
ReaderEndpoint>
    <ReadReplicaIdentifiers/>
    <EngineVersion>5.6.10a</EngineVersion>
    <MasterUsername>mymasteruser</MasterUsername>
    <DBClusterMembers/>
    <StorageEncrypted>>false</StorageEncrypted>
    <DBSubnetGroup>default</DBSubnetGroup>
    <VpcSecurityGroups>
      <VpcSecurityGroupMembership>
        <VpcSecurityGroupId>sg-178c1671</VpcSecurityGroupId>
        <Status>active</Status>
      </VpcSecurityGroupMembership>
    </VpcSecurityGroups>
    <HostedZoneId>Z1PVI0B346C1W</HostedZoneId>
    <Port>3306</Port>
    <PreferredMaintenanceWindow>tue:11:51-tue:12:21</PreferredMaintenanceWindow>
    <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
    <BackupRetentionPeriod>1</BackupRetentionPeriod>
    <DBClusterIdentifier>sample-restored</DBClusterIdentifier>
    <DbClusterResourceId>cluster-BOCABDT6N5UVQW273AOXAX234Y</DbClusterResourceId>
    <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:sample-restored</
DBClusterArn>
    <Status>creating</Status>
  </DBCluster>
</RestoreDBClusterFromSnapshotResult>
<ResponseMetadata>
  <RequestId>955ebc45-7a02-11e6-a5e1-0785f9b8437a</RequestId>
</ResponseMetadata>
</RestoreDBClusterFromSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RestoreDBClusterToPointInTime

Restores a DB cluster to an arbitrary point in time. Users can restore to any point in time before `LatestRestorableTime` for up to `BackupRetentionPeriod` days. The target DB cluster is created from the source DB cluster with the same configuration as the original DB cluster, except that the new DB cluster is created with the default DB security group.

## Note

This action only restores the DB cluster, not the DB instances for that DB cluster. You must invoke the [CreateDBInstance](#) (p. 57) action to create DB instances for the restored DB cluster, specifying the identifier of the restored DB cluster in `DBClusterIdentifier`. You can create DB instances only after the `RestoreDBClusterToPointInTime` action has completed and the DB cluster is available.

For more information on Amazon Aurora, see [Aurora on Amazon RDS](#) in the *Amazon RDS User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

### DBClusterIdentifier

The name of the new DB cluster to be created.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Type: String

Required: Yes

### DBSubnetGroupName

The DB subnet group name to use for the new DB cluster.

Constraints: If supplied, must match the name of an existing `DBSubnetGroup`.

Example: `mySubnetgroup`

Type: String

Required: No

### **EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: `false`

Type: Boolean

Required: No

### **KmsKeyId**

The AWS KMS key identifier to use when restoring an encrypted DB cluster from an encrypted DB cluster.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are restoring a DB cluster with the same AWS account that owns the KMS encryption key used to encrypt the new DB cluster, then you can use the KMS key alias instead of the ARN for the KMS encryption key.

You can restore to a new DB cluster and encrypt the new DB cluster with a KMS key that is different than the KMS key used to encrypt the source DB cluster. The new DB cluster is encrypted with the KMS key identified by the `KmsKeyId` parameter.

If you do not specify a value for the `KmsKeyId` parameter, then the following will occur:

- If the DB cluster is encrypted, then the restored DB cluster is encrypted using the KMS key that was used to encrypt the source DB cluster.
- If the DB cluster is not encrypted, then the restored DB cluster is not encrypted.

If `DBClusterIdentifier` refers to a DB cluster that is not encrypted, then the restore request is rejected.

Type: String

Required: No

### **OptionGroupName**

The name of the option group for the new DB cluster.

Type: String

Required: No

### **Port**

The port number on which the new DB cluster accepts connections.

Constraints: Value must be 1150–65535

Default: The same port as the original DB cluster.

Type: Integer

Required: No

### **RestoreToTime**

The date and time to restore the DB cluster to.

Valid Values: Value must be a time in Universal Coordinated Time (UTC) format

Constraints:

- Must be before the latest restorable time for the DB instance
- Must be specified if `UseLatestRestorableTime` parameter is not provided
- Cannot be specified if `UseLatestRestorableTime` parameter is `true`
- Cannot be specified if `RestoreType` parameter is `copy-on-write`

Example: `2015-03-07T23:45:00Z`

Type: Timestamp

Required: No

### **RestoreType**

The type of restore to be performed. You can specify one of the following values:

- `full-copy` - The new DB cluster is restored as a full copy of the source DB cluster.
- `copy-on-write` - The new DB cluster is restored as a clone of the source DB cluster.

Constraints: You can't specify `copy-on-write` if the engine version of the source DB cluster is earlier than 1.11.

If you don't specify a `RestoreType` value, then the new DB cluster is restored as a full copy of the source DB cluster.

Type: String

Required: No

### **SourceDBClusterIdentifier**

The identifier of the source DB cluster from which to restore.

Constraints:

- Must match the identifier of an existing DBCluster.

Type: String

Required: Yes

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

### **UseLatestRestorableTime**

A value that is set to `true` to restore the DB cluster to the latest restorable backup time, and `false` otherwise.

Default: `false`

Constraints: Cannot be specified if `RestoreToTime` parameter is provided.

Type: Boolean

Required: No

### **VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of VPC security groups that the new DB cluster belongs to.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

### **DBCluster**

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters \(p. 143\)](#) action.

Type: [DBCluster \(p. 374\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **DBClusterAlreadyExistsFault**

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

### **DBClusterNotFoundFault**

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### **DBClusterQuotaExceededFault**

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

### **DBClusterSnapshotNotFoundFault**

*DBClusterSnapshotIdentifier* doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **InsufficientDBClusterCapacityFault**

The DB cluster doesn't have enough capacity for the current operation.

HTTP Status Code: 403

### **InsufficientStorageClusterCapacity**

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

**InvalidDBClusterSnapshotStateFault**

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

**InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

**InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

**InvalidRestoreFault**

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-west-2.amazonaws.com/  
?Action=RestoreDBClusterToPointInTime  
&DBClusterIdentifier=sample-restored-1  
&RestoreToTime=2016-09-13T18%3A45%3A00Z  
&SignatureMethod=HmacSHA256
```

```
&SignatureVersion=4
&SourceDBClusterIdentifier=sample-cluster
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
&X-Amz-Date=20160913T224930Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=e3b88945052247e82eaeaca6e269e7f6e18a36147b45c3b077bc600472e70de6
```

## Sample Response

```
<RestoreDBClusterToPointInTimeResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RestoreDBClusterToPointInTimeResult>
    <DBCluster>
      <AllocatedStorage>1</AllocatedStorage>
      <DatabaseName>sample</DatabaseName>
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <PreferredBackupWindow>10:37-11:07</PreferredBackupWindow>
      <Endpoint>sample-restored-1.cluster-cnubrrfwfkg6.us-west-2.rds.amazonaws.com</
Endpoint>
      <Engine>aurora</Engine>
      <ReaderEndpoint>sample-restored-1.cluster-ro-cnubrrfwfkg6.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <ReadReplicaIdentifiers/>
      <EngineVersion>5.6.10a</EngineVersion>
      <MasterUsername>mymasteruser</MasterUsername>
      <DBClusterMembers/>
      <StorageEncrypted>>false</StorageEncrypted>
      <DBSubnetGroup>default</DBSubnetGroup>
      <HostedZoneId>Z1PVIF0B622C1W</HostedZoneId>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-187c1671</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <Port>3306</Port>
      <PreferredMaintenanceWindow>tue:11:51-tue:12:21</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <DBClusterIdentifier>sample-restored-1</DBClusterIdentifier>
      <DbClusterResourceId>cluster-U5ZXU3237H7YVCVKISDIXSQKUQ</DbClusterResourceId>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:sample-restored-1</
DBClusterArn>
      <Status>creating</Status>
    </DBCluster>
  </RestoreDBClusterToPointInTimeResult>
  <ResponseMetadata>
    <RequestId>54b75eef-7a04-15b6-aaa0-75ef834084a0</RequestId>
  </ResponseMetadata>
</RestoreDBClusterToPointInTimeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RestoreDBInstanceFromDBSnapshot

Creates a new DB instance from a DB snapshot. The target database is created from the source database restore point with the most of original configuration with the default security group and the default DB parameter group. By default, the new DB instance is created as a single-AZ deployment except when the instance is a SQL Server instance that has an option group that is associated with mirroring; in this case, the instance becomes a mirrored AZ deployment and not a single-AZ deployment.

If your intent is to replace your original DB instance with the new, restored DB instance, then rename your original DB instance before you call the `RestoreDBInstanceFromDBSnapshot` action. RDS doesn't allow two DB instances with the same name. Once you have renamed your original DB instance with a different identifier, then you can pass the original name of the DB instance as the `DBInstanceIdentifier` in the call to the `RestoreDBInstanceFromDBSnapshot` action. The result is that you will replace the original DB instance with the DB instance created from the snapshot.

If you are restoring from a shared manual DB snapshot, the `DBSnapshotIdentifier` must be the ARN of the shared DB snapshot.

## Note

This command doesn't apply to Aurora MySQL and Aurora PostgreSQL. For Aurora, use [RestoreDBClusterFromSnapshot \(p. 318\)](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### AutoMinorVersionUpgrade

Indicates that minor version upgrades are applied automatically to the DB instance during the maintenance window.

Type: Boolean

Required: No

### AvailabilityZone

The EC2 Availability Zone that the DB instance is created in.

Default: A random, system-chosen Availability Zone.

Constraint: You can't specify the `AvailabilityZone` parameter if the `MultiAZ` parameter is set to `true`.

Example: `us-east-1a`

Type: String

Required: No

### CopyTagsToSnapshot

True to copy all tags from the restored DB instance to snapshots of the DB instance, and otherwise false. The default is false.

Type: Boolean

Required: No

### DBInstanceClass

The compute and memory capacity of the Amazon RDS DB instance, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full

list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

Default: The same DBInstanceClass as the original DB instance.

Type: String

Required: No

**DBInstanceIdentifier**

Name of the DB instance to create from the DB snapshot. This parameter isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 numbers, letters, 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

**DBName**

The database name for the restored DB instance.

**Note**

This parameter doesn't apply to the MySQL, PostgreSQL, or MariaDB engines.

Type: String

Required: No

**DBSnapshotIdentifier**

The identifier for the DB snapshot to restore from.

Constraints:

- Must match the identifier of an existing DBSnapshot.
- If you are restoring from a shared manual DB snapshot, the `DBSnapshotIdentifier` must be the ARN of the shared DB snapshot.

Type: String

Required: Yes

**DBSubnetGroupName**

The DB subnet group name to use for the new instance.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mySubnetgroup`

Type: String

Required: No

**Domain**

Specify the Active Directory Domain to restore the instance in.

Type: String

Required: No

**DomainIAMRoleName**

Specify the name of the IAM role to be used when making API calls to the Directory Service.

Type: String

Required: No

**EnableCloudwatchLogsExports.member.N**

The list of logs that the restored DB instance is to export to CloudWatch Logs.

Type: Array of strings

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

You can enable IAM database authentication for the following database engines

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher

Default: `false`

Type: Boolean

Required: No

**Engine**

The database engine to use for the new instance.

Default: The same as source

Constraint: Must be compatible with the engine of the source. For example, you can restore a MariaDB 10.1 DB instance from a MySQL 5.6 snapshot.

Valid Values:

- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-se2`
- `oracle-se1`
- `oracle-se`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: No

### **IOPS**

Specifies the amount of provisioned IOPS for the DB instance, expressed in I/O operations per second. If this parameter is not specified, the IOPS value is taken from the backup. If this parameter is set to 0, the new instance is converted to a non-PIOPS instance. The conversion takes additional time, though your DB instance is available for connections before the conversion starts.

The provisioned IOPS value must follow the requirements for your database engine. For more information, see [Amazon RDS Provisioned IOPS Storage to Improve Performance](#).

Constraints: Must be an integer greater than 1000.

Type: Integer

Required: No

### **LicenseModel**

License model information for the restored DB instance.

Default: Same as source.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

### **MultiAZ**

Specifies if the DB instance is a Multi-AZ deployment.

Constraint: You can't specify the AvailabilityZone parameter if the MultiAZ parameter is set to `true`.

Type: Boolean

Required: No

### **OptionGroupName**

The name of the option group to be used for the restored DB instance.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: No

### **Port**

The port number on which the database accepts connections.

Default: The same port as the original DB instance

Constraints: Value must be 1150–65535

Type: Integer

Required: No

### **PubliclyAccessible**

Specifies the accessibility options for the DB instance. A value of `true` specifies an Internet-facing instance with a publicly resolvable DNS name, which resolves to a public IP address. A value of `false` specifies an internal instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether a VPC has been requested or not. The following list shows the default behavior in each case.

- **Default VPC:** true
- **VPC:** false

If no DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is publicly accessible. If a specific DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is private.

Type: Boolean

Required: No

### **StorageType**

Specifies the storage type to be associated with the DB instance.

Valid values: `standard` | `gp2` | `io1`

If you specify `io1`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified, otherwise `standard`

Type: String

Required: No

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

### **TdeCredentialArn**

The ARN from the key store with which to associate the instance for TDE encryption.

Type: String

Required: No

### **TdeCredentialPassword**

The password for the given ARN from the key store in order to access the device.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **DBSnapshotNotFound**

*DBSnapshotIdentifier* doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **DomainNotFoundFault**

*Domain* doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

### **InstanceQuotaExceeded**

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

### **InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

### **InvalidDBSnapshotState**

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

**InvalidRestoreFault**

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

**StorageTypeNotSupported**

Storage of the *StorageType* specified can't be associated with the DB instance.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=RestoreDBInstanceFromDBSnapshot
&DBInstanceIdentifier=mysql-db-restored
&DBSnapshotIdentifier=rds%3Amysql-db-2014-04-22-08-15
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
```



```
&X-Amz-Date=20140428T232655Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=78ac761e8c8f54a8c0727f4e67ad0a766fbb0024510b9aa34ea6d1f7df52fe92
```

## Sample Response

```
<RestoreDBInstanceFromDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <RestoreDBInstanceFromDBSnapshotResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <MultiAZ>>false</MultiAZ>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb-restored</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>pending-apply</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
  </RestoreDBInstanceFromDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>863fd73e-be2b-11d3-855b-576787000e19</RequestId>
  </ResponseMetadata>
</RestoreDBInstanceFromDBSnapshotResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RestoreDBInstanceFromS3

Amazon Relational Database Service (Amazon RDS) supports importing MySQL databases by using backup files. You can create a backup of your on-premises database, store it on Amazon Simple Storage Service (Amazon S3), and then restore the backup file onto a new Amazon RDS DB instance running MySQL. For more information, see [Importing Data into an Amazon RDS MySQL DB Instance](#).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### AllocatedStorage

The amount of storage (in gigabytes) to allocate initially for the DB instance. Follow the allocation rules specified in [CreateDBInstance \(p. 57\)](#).

#### Note

Be sure to allocate enough memory for your new DB instance so that the restore operation can succeed. You can also allocate additional memory for future growth.

Type: Integer

Required: No

### AutoMinorVersionUpgrade

True to indicate that minor engine upgrades are applied automatically to the DB instance during the maintenance window, and otherwise false.

Default: `true`

Type: Boolean

Required: No

### AvailabilityZone

The Availability Zone that the DB instance is created in. For information about AWS Regions and Availability Zones, see [Regions and Availability Zones](#).

Default: A random, system-chosen Availability Zone in the endpoint's AWS Region.

Example: `us-east-1d`

Constraint: The AvailabilityZone parameter can't be specified if the MultiAZ parameter is set to `true`. The specified Availability Zone must be in the same AWS Region as the current endpoint.

Type: String

Required: No

### BackupRetentionPeriod

The number of days for which automated backups are retained. Setting this parameter to a positive number enables backups. For more information, see [CreateDBInstance \(p. 57\)](#).

Type: Integer

Required: No

### **CopyTagsToSnapshot**

True to copy all tags from the DB instance to snapshots of the DB instance, and otherwise false.

Default: false.

Type: Boolean

Required: No

### **DBInstanceClass**

The compute and memory capacity of the DB instance, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

Importing from Amazon S3 is not supported on the `db.t2.micro` DB instance class.

Type: String

Required: Yes

### **DBInstanceIdentifier**

The DB instance identifier. This parameter is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Cannot end with a hyphen or contain two consecutive hyphens.

Example: `mydbinstance`

Type: String

Required: Yes

### **DBName**

The name of the database to create when the DB instance is created. Follow the naming rules specified in [CreateDBInstance \(p. 57\)](#).

Type: String

Required: No

### **DBParameterGroupName**

The name of the DB parameter group to associate with this DB instance. If this argument is omitted, the default parameter group for the specified engine is used.

Type: String

Required: No

### **DBSecurityGroups.DBSecurityGroupName.N**

A list of DB security groups to associate with this DB instance.

Default: The default DB security group for the database engine.

Type: Array of strings

Required: No

**DBSubnetGroupName**

A DB subnet group to associate with this DB instance.

Type: String

Required: No

**EnableCloudwatchLogsExports.member.N**

The list of logs that the restored DB instance is to export to CloudWatch Logs.

Type: Array of strings

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

Default: `false`

Type: Boolean

Required: No

**EnablePerformanceInsights**

True to enable Performance Insights for the DB instance, and otherwise false.

Type: Boolean

Required: No

**Engine**

The name of the database engine to be used for this instance.

Valid Values: `mysql`

Type: String

Required: Yes

**EngineVersion**

The version number of the database engine to use. Choose the latest minor version of your database engine as specified in [CreateDBInstance \(p. 57\)](#).

Type: String

Required: No

**Iops**

The amount of Provisioned IOPS (input/output operations per second) to allocate initially for the DB instance. For information about valid IOPS values, see [Amazon RDS Provisioned IOPS Storage to Improve Performance](#).

Type: Integer

Required: No

### **KmsKeyId**

The AWS KMS key identifier for an encrypted DB instance.

The KMS key identifier is the Amazon Resource Name (ARN) for the KMS encryption key. If you are creating a DB instance with the same AWS account that owns the KMS encryption key used to encrypt the new DB instance, then you can use the KMS key alias instead of the ARN for the KMS encryption key.

If the `StorageEncrypted` parameter is true, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS will use your default encryption key. AWS KMS creates the default encryption key for your AWS account. Your AWS account has a different default encryption key for each AWS Region.

Type: String

Required: No

### **LicenseModel**

The license model for this DB instance. Use `general-public-license`.

Type: String

Required: No

### **MasterUsername**

The name for the master user.

Constraints:

- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Cannot be a reserved word for the chosen database engine.

Type: String

Required: No

### **MasterUserPassword**

The password for the master user. The password can include any printable ASCII character except `"/`, `""`, or `"@"`.

Constraints: Must contain from 8 to 41 characters.

Type: String

Required: No

### **MonitoringInterval**

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collecting Enhanced Monitoring metrics, specify 0.

If `MonitoringRoleArn` is specified, then you must also set `MonitoringInterval` to a value other than 0.

Valid Values: 0, 1, 5, 10, 15, 30, 60

Default: 0

Type: Integer

Required: No

**MonitoringRoleArn**

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see [Setting Up and Enabling Enhanced Monitoring](#).

If `MonitoringInterval` is set to a value other than 0, then you must supply a `MonitoringRoleArn` value.

Type: String

Required: No

**MultiAZ**

Specifies whether the DB instance is a Multi-AZ deployment. If `MultiAZ` is set to `true`, you can't set the `AvailabilityZone` parameter.

Type: Boolean

Required: No

**OptionGroupName**

The name of the option group to associate with this DB instance. If this argument is omitted, the default option group for the specified engine is used.

Type: String

Required: No

**PerformanceInsightsKMSKeyId**

The AWS KMS key identifier for encryption of Performance Insights data. The KMS key ID is the Amazon Resource Name (ARN), the KMS key identifier, or the KMS key alias for the KMS encryption key.

Type: String

Required: No

**Port**

The port number on which the database accepts connections.

Type: Integer

Valid Values: 1150-65535

Default: 3306

Type: Integer

Required: No

**PreferredBackupWindow**

The time range each day during which automated backups are created if automated backups are enabled. For more information, see [The Backup Window](#).

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.

- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

#### **PreferredMaintenanceWindow**

The time range each week during which system maintenance can occur, in Universal Coordinated Time (UTC). For more information, see [Amazon RDS Maintenance Window](#).

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred backup window.
- Must be at least 30 minutes.

Type: String

Required: No

#### **PubliclyAccessible**

Specifies whether the DB instance is publicly accessible or not. For more information, see [CreateDBInstance \(p. 57\)](#).

Type: Boolean

Required: No

#### **S3BucketName**

The name of your Amazon S3 bucket that contains your database backup file.

Type: String

Required: Yes

#### **S3IngestionRoleArn**

An AWS Identity and Access Management (IAM) role to allow Amazon RDS to access your Amazon S3 bucket.

Type: String

Required: Yes

#### **S3Prefix**

The prefix of your Amazon S3 bucket.

Type: String

Required: No

#### **SourceEngine**

The name of the engine of your source database.

Valid Values: `mysql`



Type: String

Required: Yes

**SourceEngineVersion**

The engine version of your source database.

Valid Values: 5 . 6

Type: String

Required: Yes

**StorageEncrypted**

Specifies whether the new DB instance is encrypted or not.

Type: Boolean

Required: No

**StorageType**

Specifies the storage type to be associated with the DB instance.

Valid values: `standard` | `gp2` | `io1`

If you specify `io1`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified; otherwise `standard`

Type: String

Required: No

**Tags.Tag.N**

A list of tags to associate with this DB instance. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of VPC security groups to associate with this DB instance.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance](#) (p. 393) object

## Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 472).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

### **DBParameterGroupNotFound**

*DBParameterGroupName* doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **InstanceQuotaExceeded**

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

### **InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

### **InvalidS3BucketFault**

The specified Amazon S3 bucket name can't be found or Amazon RDS isn't authorized to access the specified Amazon S3 bucket. Verify the **SourceS3BucketName** and **S3IngestionRoleArn** values and try again.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

**StorageTypeNotSupported**

Storage of the *StorageType* specified can't be associated with the DB instance.

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](#)

# RestoreDBInstanceToPointInTime

Restores a DB instance to an arbitrary point in time. You can restore to any point in time before the time identified by the LatestRestorableTime property. You can restore to a point up to the number of days specified by the BackupRetentionPeriod property.

The target database is created with most of the original configuration, but in a system-selected availability zone, with the default security group, the default subnet group, and the default DB parameter group. By default, the new DB instance is created as a single-AZ deployment except when the instance is a SQL Server instance that has an option group that is associated with mirroring; in this case, the instance becomes a mirrored deployment and not a single-AZ deployment.

## Note

This command doesn't apply to Aurora MySQL and Aurora PostgreSQL. For Aurora, use [RestoreDBClusterToPointInTime](#) (p. 324).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### AutoMinorVersionUpgrade

Indicates that minor version upgrades are applied automatically to the DB instance during the maintenance window.

Type: Boolean

Required: No

### AvailabilityZone

The EC2 Availability Zone that the DB instance is created in.

Default: A random, system-chosen Availability Zone.

Constraint: You can't specify the AvailabilityZone parameter if the MultiAZ parameter is set to true.

Example: `us-east-1a`

Type: String

Required: No

### CopyTagsToSnapshot

True to copy all tags from the restored DB instance to snapshots of the DB instance, and otherwise false. The default is false.

Type: Boolean

Required: No

### DBInstanceClass

The compute and memory capacity of the Amazon RDS DB instance, for example, `db.m4.large`. Not all DB instance classes are available in all AWS Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see [DB Instance Class](#) in the Amazon RDS User Guide.

Default: The same DBInstanceClass as the original DB instance.

Type: String

Required: No

**DBName**

The database name for the restored DB instance.

**Note**

This parameter is not used for the MySQL or MariaDB engines.

Type: String

Required: No

**DBSubnetGroupName**

The DB subnet group name to use for the new instance.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mySubnetgroup`

Type: String

Required: No

**Domain**

Specify the Active Directory Domain to restore the instance in.

Type: String

Required: No

**DomainIAMRoleName**

Specify the name of the IAM role to be used when making API calls to the Directory Service.

Type: String

Required: No

**EnableCloudwatchLogsExports.member.N**

The list of logs that the restored DB instance is to export to CloudWatch Logs.

Type: Array of strings

Required: No

**EnableIAMDatabaseAuthentication**

True to enable mapping of AWS Identity and Access Management (IAM) accounts to database accounts, and otherwise false.

You can enable IAM database authentication for the following database engines

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher

Default: `false`

Type: Boolean

Required: No

### Engine

The database engine to use for the new instance.

Default: The same as source

Constraint: Must be compatible with the engine of the source

Valid Values:

- mariadb
- mysql
- oracle-ee
- oracle-se2
- oracle-se1
- oracle-se
- postgres
- sqlserver-ee
- sqlserver-se
- sqlserver-ex
- sqlserver-web

Type: String

Required: No

### IOPS

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for the DB instance.

Constraints: Must be an integer greater than 1000.

### SQL Server

Setting the IOPS value for the SQL Server database engine is not supported.

Type: Integer

Required: No

### LicenseModel

License model information for the restored DB instance.

Default: Same as source.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

### MultiAZ

Specifies if the DB instance is a Multi-AZ deployment.

Constraint: You can't specify the `AvailabilityZone` parameter if the `MultiAZ` parameter is set to `true`.

Type: Boolean

Required: No

### **OptionGroupName**

The name of the option group to be used for the restored DB instance.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: No

### **Port**

The port number on which the database accepts connections.

Constraints: Value must be 1150–65535

Default: The same port as the original DB instance.

Type: Integer

Required: No

### **PubliclyAccessible**

Specifies the accessibility options for the DB instance. A value of true specifies an Internet-facing instance with a publicly resolvable DNS name, which resolves to a public IP address. A value of false specifies an internal instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether a VPC has been requested or not. The following list shows the default behavior in each case.

- **Default VPC:**true
- **VPC:**false

If no DB subnet group has been specified as part of the request and the PubliclyAccessible value has not been set, the DB instance is publicly accessible. If a specific DB subnet group has been specified as part of the request and the PubliclyAccessible value has not been set, the DB instance is private.

Type: Boolean

Required: No

### **RestoreTime**

The date and time to restore from.

Valid Values: Value must be a time in Universal Coordinated Time (UTC) format

Constraints:

- Must be before the latest restorable time for the DB instance
- Cannot be specified if UseLatestRestorableTime parameter is true

Example: 2009-09-07T23:45:00Z

Type: Timestamp

Required: No

### **SourceDBInstanceIdentifier**

The identifier of the source DB instance from which to restore.

Constraints:

- Must match the identifier of an existing DB instance.

Type: String

Required: Yes

### **StorageType**

Specifies the storage type to be associated with the DB instance.

Valid values: `standard` | `gp2` | `io1`

If you specify `io1`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified, otherwise `standard`

Type: String

Required: No

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

A list of tags. For more information, see [Tagging Amazon RDS Resources](#).

Type: Array of [Tag \(p. 464\)](#) objects

Required: No

### **TargetDBInstanceIdentifier**

The name of the new DB instance to be created.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens
- First character must be a letter
- Cannot end with a hyphen or contain two consecutive hyphens

Type: String

Required: Yes

### **TdeCredentialArn**

The ARN from the key store with which to associate the instance for TDE encryption.

Type: String

Required: No

### **TdeCredentialPassword**

The password for the given ARN from the key store in order to access the device.

Type: String

Required: No

### **UseLatestRestorableTime**

Specifies whether (`true`) or not (`false`) the DB instance is restored from the latest backup time.

Default: `false`

Constraints: Cannot be specified if `RestoreTime` parameter is provided.



Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

### **DBInstance**

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **DBInstanceAlreadyExists**

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

### **DBInstanceNotFound**

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

### **DomainNotFoundFault**

*Domain* doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

**InstanceQuotaExceeded**

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

**InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

**InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

**InvalidRestoreFault**

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

**InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

**KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

HTTP Status Code: 400

**OptionGroupNotFoundFault**

The specified option group could not be found.

HTTP Status Code: 404

**PointInTimeRestoreNotEnabled**

*SourceDBInstanceIdentifier* refers to a DB instance with *BackupRetentionPeriod* equal to 0.

HTTP Status Code: 400

**ProvisionedIopsNotAvailableInAZFault**

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

**StorageQuotaExceeded**

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

## StorageTypeNotSupported

Storage of the *StorageType* specified can't be associated with the DB instance.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=RestoreDBInstanceToPointInTime
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&SourceDBInstanceIdentifier=mysqlldb
&TargetDBInstanceIdentifier=mysqlldb-pitr
&UseLatestRestorableTime=true
&Version=2014-09-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
&X-Amz-Date=20140428T233051Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=087a8eb41cb1ab0fc9ec1575f23e73757ffc6a1e42d7d2b30b9cc0be988cff97
```

### Sample Response

```
<RestoreDBInstanceToPointInTimeResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <RestoreDBInstanceToPointInTimeResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <MultiAZ>>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqlldb-pitr</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <EngineVersion>5.6.13</EngineVersion>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>pending-apply</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
    </DBInstance>
  </RestoreDBInstanceToPointInTimeResult>
</RestoreDBInstanceToPointInTimeResponse>
```

```
</DBSecurityGroup>
</DBSecurityGroups>
<DBName>mysqldb</DBName>
<AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
<AllocatedStorage>100</AllocatedStorage>
<MasterUsername>myawsuser</MasterUsername>
<DBInstanceClass>db.m1.medium</DBInstanceClass>
</DBInstance>
</RestoreDBInstanceToPointInTimeResult>
<ResponseMetadata>
  <RequestId>13447c70-be2c-11d3-f4c6-37db295f7674</RequestId>
</ResponseMetadata>
</RestoreDBInstanceToPointInTimeResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# RevokeDBSecurityGroupIngress

Revokes ingress from a DBSecurityGroup for previously authorized IP ranges or EC2 or VPC Security Groups. Required parameters for this API are one of `CIDRIP`, `EC2SecurityGroupId` for VPC, or (`EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId`).

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters](#) (p. 470).

### **CIDRIP**

The IP range to revoke access from. Must be a valid CIDR range. If `CIDRIP` is specified, `EC2SecurityGroupName`, `EC2SecurityGroupId` and `EC2SecurityGroupOwnerId` can't be provided.

Type: String

Required: No

### **DBSecurityGroupName**

The name of the DB security group to revoke ingress from.

Type: String

Required: Yes

### **EC2SecurityGroupId**

The id of the EC2 security group to revoke access from. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, `EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

### **EC2SecurityGroupName**

The name of the EC2 security group to revoke access from. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, `EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

### **EC2SecurityGroupOwnerId**

The AWS Account Number of the owner of the EC2 security group specified in the `EC2SecurityGroupName` parameter. The AWS Access Key ID is not an acceptable value. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, `EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### **DBSecurityGroup**

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the [DescribeDBSecurityGroups \(p. 173\)](#) action.

Type: [DBSecurityGroup \(p. 404\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### **AuthorizationNotFound**

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### **DBSecurityGroupNotFound**

*DBSecurityGroupName* doesn't refer to an existing DB security group.

HTTP Status Code: 404

### **InvalidDBSecurityGroupState**

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

## Example

### Sample Request

```
https://rds.us-east-1.amazonaws.com/  
?Action=RevokeDBSecurityGroupIngress  
&CIDRIP=192.0.0.1%2F32  
&DBSecurityGroupName=mydbsecuritygroup01  
&SignatureMethod=HmacSHA256  
&SignatureVersion=4  
&Version=2014-09-01  
&X-Amz-Algorithm=AWS4-HMAC-SHA256  
&X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request  
&X-Amz-Date=20140428T233956Z  
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date  
&X-Amz-Signature=d9edabccacae36138704fb2b3cf6755ef08123862191b19d74582497b75e544a
```

### Sample Response

```
<RevokeDBSecurityGroupIngressResponse xmlns="http://rds.amazonaws.com/doc/2014-09-01/">
  <RevokeDBSecurityGroupIngressResult>
    <DBSecurityGroup>
      <EC2SecurityGroups/>
      <DBSecurityGroupDescription>My new DBSecurityGroup</DBSecurityGroupDescription>
      <IPRanges>
        <IPRange>
          <CIDRIP>192.0.0.1/32</CIDRIP>
          <Status>revoking</Status>
        </IPRange>
      </IPRanges>
      <OwnerId>803#####</OwnerId>
      <DBSecurityGroupName>mydbsecuritygroup01</DBSecurityGroupName>
    </DBSecurityGroup>
  </RevokeDBSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>579d8ba0-be2d-11d3-ae4f-eec568ed6b36</RequestId>
  </ResponseMetadata>
</RevokeDBSecurityGroupIngressResponse>
```

## See Also

For more information about using this API in one of the language-specific AWS 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](#)

# StartDBInstance

Starts a DB instance that was stopped using the AWS console, the stop-db-instance AWS CLI command, or the StopDBInstance action. For more information, see [Stopping and Starting a DB instance in the AWS RDS user guide](#).

## Note

This command doesn't apply to Aurora MySQL and Aurora PostgreSQL.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBInstanceIdentifier

The user-supplied instance identifier.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

### DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### AuthorizationNotFound

The specified CIDRIP or Amazon EC2 security group isn't authorized for the specified DB security group.

RDS also may not be authorized by using IAM to perform necessary actions on your behalf.

HTTP Status Code: 404

### DBClusterNotFoundFault

*DBClusterIdentifier* doesn't refer to an existing DB cluster.

HTTP Status Code: 404

### DBInstanceNotFound

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404



#### **DBSubnetGroupDoesNotCoverEnoughAZs**

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

#### **DBSubnetGroupNotFoundFault**

*DBSubnetGroupName* doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

#### **InsufficientDBInstanceCapacity**

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

#### **InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

#### **InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

#### **InvalidSubnet**

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

#### **InvalidVPCNetworkStateFault**

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

#### **KMSKeyNotAccessibleFault**

An error occurred accessing an AWS KMS key.

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](#)

# StopDBInstance

Stops a DB instance. When you stop a DB instance, Amazon RDS retains the DB instance's metadata, including its endpoint, DB parameter group, and option group membership. Amazon RDS also retains the transaction logs so you can do a point-in-time restore if necessary. For more information, see [Stopping and Starting a DB instance in the AWS RDS user guide](#).

## Note

This command doesn't apply to Aurora MySQL and Aurora PostgreSQL.

## Request Parameters

For information about the parameters that are common to all actions, see [Common Parameters \(p. 470\)](#).

### DBInstanceIdentifier

The user-supplied instance identifier.

Type: String

Required: Yes

### DBSnapshotIdentifier

The user-supplied instance identifier of the DB Snapshot created immediately before the DB instance is stopped.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

### DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances \(p. 157\)](#) action.

Type: [DBInstance \(p. 393\)](#) object

## Errors

For information about the errors that are common to all actions, see [Common Errors \(p. 472\)](#).

### DBInstanceNotFound

*DBInstanceIdentifier* doesn't refer to an existing DB instance.

HTTP Status Code: 404

### DBSnapshotAlreadyExists

*DBSnapshotIdentifier* is already used by an existing snapshot.

HTTP Status Code: 400

**InvalidDBClusterStateFault**

The DB cluster isn't in a valid state.

HTTP Status Code: 400

**InvalidDBInstanceState**

The specified DB instance isn't in the *available* state.

HTTP Status Code: 400

**SnapshotQuotaExceeded**

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

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 Relational Database Service 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:

- [AccountQuota](#) (p. 368)
- [AvailabilityZone](#) (p. 369)
- [Certificate](#) (p. 370)
- [CharacterSet](#) (p. 372)
- [CloudwatchLogsExportConfiguration](#) (p. 373)
- [DBCluster](#) (p. 374)
- [DBClusterBacktrack](#) (p. 380)
- [DBClusterMember](#) (p. 382)
- [DBClusterOptionGroupStatus](#) (p. 383)
- [DBClusterParameterGroup](#) (p. 384)
- [DBClusterRole](#) (p. 385)
- [DBClusterSnapshot](#) (p. 386)
- [DBClusterSnapshotAttribute](#) (p. 389)
- [DBClusterSnapshotAttributesResult](#) (p. 390)
- [DBEngineVersion](#) (p. 391)
- [DBInstance](#) (p. 393)
- [DBInstanceStatusInfo](#) (p. 401)
- [DBParameterGroup](#) (p. 402)
- [DBParameterGroupStatus](#) (p. 403)
- [DBSecurityGroup](#) (p. 404)
- [DBSecurityGroupMembership](#) (p. 406)
- [DBSnapshot](#) (p. 407)
- [DBSnapshotAttribute](#) (p. 411)
- [DBSnapshotAttributesResult](#) (p. 412)
- [DBSubnetGroup](#) (p. 413)
- [DescribeDBLogFilesDetails](#) (p. 415)
- [DomainMembership](#) (p. 416)
- [DoubleRange](#) (p. 417)
- [EC2SecurityGroup](#) (p. 418)
- [Endpoint](#) (p. 419)
- [EngineDefaults](#) (p. 420)
- [Event](#) (p. 421)
- [EventCategoriesMap](#) (p. 423)
- [EventSubscription](#) (p. 424)
- [Filter](#) (p. 426)

- [IPRange](#) (p. 427)
- [Option](#) (p. 428)
- [OptionConfiguration](#) (p. 430)
- [OptionGroup](#) (p. 432)
- [OptionGroupMembership](#) (p. 434)
- [OptionGroupOption](#) (p. 435)
- [OptionGroupOptionSetting](#) (p. 438)
- [OptionSetting](#) (p. 440)
- [OptionVersion](#) (p. 442)
- [OrderableDBInstanceOption](#) (p. 443)
- [Parameter](#) (p. 446)
- [PendingCloudwatchLogsExports](#) (p. 448)
- [PendingMaintenanceAction](#) (p. 449)
- [PendingModifiedValues](#) (p. 451)
- [Range](#) (p. 454)
- [RecurringCharge](#) (p. 455)
- [ReservedDBInstance](#) (p. 456)
- [ReservedDBInstancesOffering](#) (p. 459)
- [ResourcePendingMaintenanceActions](#) (p. 461)
- [SourceRegion](#) (p. 462)
- [Subnet](#) (p. 463)
- [Tag](#) (p. 464)
- [Timezone](#) (p. 465)
- [UpgradeTarget](#) (p. 466)
- [ValidDBInstanceModificationsMessage](#) (p. 467)
- [ValidStorageOptions](#) (p. 468)
- [VpcSecurityGroupMembership](#) (p. 469)

# AccountQuota

Describes a quota for an AWS account, for example, the number of DB instances allowed.

## Contents

### **AccountQuotaName**

The name of the Amazon RDS quota for this AWS account.

Type: String

Required: No

### **Max**

The maximum allowed value for the quota.

Type: Long

Required: No

### **Used**

The amount currently used toward the quota maximum.

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](#)

# AvailabilityZone

Contains Availability Zone information.

This data type is used as an element in the following data type:

- [OrderableDBInstanceOption \(p. 443\)](#)

## Contents

### Name

The name of the availability zone.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)



# Certificate

A CA certificate for an AWS account.

## Contents

### **CertificateArn**

The Amazon Resource Name (ARN) for the certificate.

Type: String

Required: No

### **CertificateIdentifier**

The unique key that identifies a certificate.

Type: String

Required: No

### **CertificateType**

The type of the certificate.

Type: String

Required: No

### **Thumbprint**

The thumbprint of the certificate.

Type: String

Required: No

### **ValidFrom**

The starting date from which the certificate is valid.

Type: Timestamp

Required: No

### **ValidTill**

The final date that the certificate continues to be valid.

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](#)

# CharacterSet

This data type is used as a response element in the action [DescribeDBEngineVersions](#) (p. 153).

## Contents

### **CharacterSetDescription**

The description of the character set.

Type: String

Required: No

### **CharacterSetName**

The name of the character set.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# CloudwatchLogsExportConfiguration

The configuration setting for the log types to be enabled for export to CloudWatch Logs for a specific DB instance or DB cluster.

## Contents

### **DisableLogTypes.member.N**

The list of log types to disable.

Type: Array of strings

Required: No

### **EnableLogTypes.member.N**

The list of log types to enable.

Type: Array of strings

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# DBCluster

Contains the details of an Amazon RDS DB cluster.

This data type is used as a response element in the [DescribeDBClusters](#) (p. 143) action.

## Contents

### **AllocatedStorage**

For all database engines except Amazon Aurora, `AllocatedStorage` specifies the allocated storage size in gibibytes (GiB). For Aurora, `AllocatedStorage` always returns 1, because Aurora DB cluster storage size is not fixed, but instead automatically adjusts as needed.

Type: Integer

Required: No

### **AssociatedRoles.DBClusterRole.N**

Provides a list of the AWS Identity and Access Management (IAM) roles that are associated with the DB cluster. IAM roles that are associated with a DB cluster grant permission for the DB cluster to access other AWS services on your behalf.

Type: Array of [DBClusterRole](#) (p. 385) objects

Required: No

### **AvailabilityZones.AvailabilityZone.N**

Provides the list of EC2 Availability Zones that instances in the DB cluster can be created in.

Type: Array of strings

Required: No

### **BacktrackConsumedChangeRecords**

The number of change records stored for Backtrack.

Type: Long

Required: No

### **BacktrackWindow**

The target backtrack window, in seconds. If this value is set to 0, backtracking is disabled for the DB cluster. Otherwise, backtracking is enabled.

Type: Long

Required: No

### **BackupRetentionPeriod**

Specifies the number of days for which automatic DB snapshots are retained.

Type: Integer

Required: No

### **CharacterSetName**

If present, specifies the name of the character set that this cluster is associated with.

Type: String

Required: No

**CloneGroupId**

Identifies the clone group to which the DB cluster is associated.

Type: String

Required: No

**ClusterCreateTime**

Specifies the time when the DB cluster was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

**DatabaseName**

Contains the name of the initial database of this DB cluster that was provided at create time, if one was specified when the DB cluster was created. This same name is returned for the life of the DB cluster.

Type: String

Required: No

**DBClusterArn**

The Amazon Resource Name (ARN) for the DB cluster.

Type: String

Required: No

**DBClusterIdentifier**

Contains a user-supplied DB cluster identifier. This identifier is the unique key that identifies a DB cluster.

Type: String

Required: No

**DBClusterMembers.DBClusterMember.N**

Provides the list of instances that make up the DB cluster.

Type: Array of [DBClusterMember](#) (p. 382) objects

Required: No

**DBClusterOptionGroupMemberships.DBClusterOptionGroup.N**

Provides the list of option group memberships for this DB cluster.

Type: Array of [DBClusterOptionGroupStatus](#) (p. 383) objects

Required: No

**DBClusterParameterGroup**

Specifies the name of the DB cluster parameter group for the DB cluster.

Type: String

Required: No

**DbClusterResourceCld**

The AWS Region-unique, immutable identifier for the DB cluster. This identifier is found in AWS CloudTrail log entries whenever the AWS KMS key for the DB cluster is accessed.

Type: String

Required: No

**DBSubnetGroup**

Specifies information on the subnet group associated with the DB cluster, including the name, description, and subnets in the subnet group.

Type: String

Required: No

**EarliestBacktrackTime**

The earliest time to which a DB cluster can be backtracked.

Type: Timestamp

Required: No

**EarliestRestorableTime**

The earliest time to which a database can be restored with point-in-time restore.

Type: Timestamp

Required: No

**Endpoint**

Specifies the connection endpoint for the primary instance of the DB cluster.

Type: String

Required: No

**Engine**

Provides the name of the database engine to be used for this DB cluster.

Type: String

Required: No

**EngineVersion**

Indicates the database engine version.

Type: String

Required: No

**HostedZoneId**

Specifies the ID that Amazon Route 53 assigns when you create a hosted zone.

Type: String

Required: No

**IAMDatabaseAuthenticationEnabled**

True if mapping of AWS Identity and Access Management (IAM) accounts to database accounts is enabled, and otherwise false.

Type: Boolean

Required: No

**KmsKeyId**

If `StorageEncrypted` is true, the AWS KMS key identifier for the encrypted DB cluster.

Type: String

Required: No

**LatestRestorableTime**

Specifies the latest time to which a database can be restored with point-in-time restore.

Type: Timestamp

Required: No

**MasterUsername**

Contains the master username for the DB cluster.

Type: String

Required: No

**MultiAZ**

Specifies whether the DB cluster has instances in multiple Availability Zones.

Type: Boolean

Required: No

**PercentProgress**

Specifies the progress of the operation as a percentage.

Type: String

Required: No

**Port**

Specifies the port that the database engine is listening on.

Type: Integer

Required: No

**PreferredBackupWindow**

Specifies the daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod`.

Type: String

Required: No



**PreferredMaintenanceWindow**

Specifies the weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Type: String

Required: No

**ReaderEndpoint**

The reader endpoint for the DB cluster. The reader endpoint for a DB cluster load-balances connections across the Aurora Replicas that are available in a DB cluster. As clients request new connections to the reader endpoint, Aurora distributes the connection requests among the Aurora Replicas in the DB cluster. This functionality can help balance your read workload across multiple Aurora Replicas in your DB cluster.

If a failover occurs, and the Aurora Replica that you are connected to is promoted to be the primary instance, your connection is dropped. To continue sending your read workload to other Aurora Replicas in the cluster, you can then reconnect to the reader endpoint.

Type: String

Required: No

**ReadReplicaIdentifiers.ReadReplicaIdentifier.N**

Contains one or more identifiers of the Read Replicas associated with this DB cluster.

Type: Array of strings

Required: No

**ReplicationSourceIdentifier**

Contains the identifier of the source DB cluster if this DB cluster is a Read Replica.

Type: String

Required: No

**Status**

Specifies the current state of this DB cluster.

Type: String

Required: No

**StorageEncrypted**

Specifies whether the DB cluster is encrypted.

Type: Boolean

Required: No

**VpcSecurityGroups.VpcSecurityGroupMembership.N**

Provides a list of VPC security groups that the DB cluster belongs to.

Type: Array of [VpcSecurityGroupMembership](#) (p. 469) 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](#)

# DBClusterBacktrack

This data type is used as a response element in the [DescribeDBClusterBacktracks \(p. 133\)](#) action.

## Contents

### **BacktrackedFrom**

The timestamp of the time from which the DB cluster was backtracked.

Type: Timestamp

Required: No

### **BacktrackIdentifier**

Contains the backtrack identifier.

Type: String

Required: No

### **BacktrackRequestCreationTime**

The timestamp of the time at which the backtrack was requested.

Type: Timestamp

Required: No

### **BacktrackTo**

The timestamp of the time to which the DB cluster was backtracked.

Type: Timestamp

Required: No

### **DBClusterIdentifier**

Contains a user-supplied DB cluster identifier. This identifier is the unique key that identifies a DB cluster.

Type: String

Required: No

### **Status**

The status of the backtrack. This property returns one of the following values:

- `applying` - The backtrack is currently being applied to or rolled back from the DB cluster.
- `completed` - The backtrack has successfully been applied to or rolled back from the DB cluster.
- `failed` - An error occurred while the backtrack was applied to or rolled back from the DB cluster.
- `pending` - The backtrack is currently pending application to or rollback from the DB 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](#)

# DBClusterMember

Contains information about an instance that is part of a DB cluster.

## Contents

### **DBClusterParameterGroupStatus**

Specifies the status of the DB cluster parameter group for this member of the DB cluster.

Type: String

Required: No

### **DBInstanceIdentifier**

Specifies the instance identifier for this member of the DB cluster.

Type: String

Required: No

### **IsClusterWriter**

Value that is `true` if the cluster member is the primary instance for the DB cluster and `false` otherwise.

Type: Boolean

Required: No

### **PromotionTier**

A value that specifies the order in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see [Fault Tolerance for an Aurora DB Cluster](#).

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](#)

# DBClusterOptionGroupStatus

Contains status information for a DB cluster option group.

## Contents

### **DBClusterOptionGroupName**

Specifies the name of the DB cluster option group.

Type: String

Required: No

### **Status**

Specifies the status of the DB cluster option 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](#)

# DBClusterParameterGroup

Contains the details of an Amazon RDS DB cluster parameter group.

This data type is used as a response element in the [DescribeDBClusterParameterGroups \(p. 136\)](#) action.

## Contents

### **DBClusterParameterGroupArn**

The Amazon Resource Name (ARN) for the DB cluster parameter group.

Type: String

Required: No

### **DBClusterParameterGroupName**

Provides the name of the DB cluster parameter group.

Type: String

Required: No

### **DBParameterGroupFamily**

Provides the name of the DB parameter group family that this DB cluster parameter group is compatible with.

Type: String

Required: No

### **Description**

Provides the customer-specified description for this DB 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](#)

# DBClusterRole

Describes an AWS Identity and Access Management (IAM) role that is associated with a DB cluster.

## Contents

### RoleArn

The Amazon Resource Name (ARN) of the IAM role that is associated with the DB cluster.

Type: String

Required: No

### Status

Describes the state of association between the IAM role and the DB cluster. The Status property returns one of the following values:

- **ACTIVE** - the IAM role ARN is associated with the DB cluster and can be used to access other AWS services on your behalf.
- **PENDING** - the IAM role ARN is being associated with the DB cluster.
- **INVALID** - the IAM role ARN is associated with the DB cluster, but the DB cluster is unable to assume the IAM role in order to access other AWS services on your behalf.

Type: String

Required: No

## See Also

For more information about using this 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](#)



# DBClusterSnapshot

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the [DescribeDBClusterSnapshots \(p. 149\)](#) action.

## Contents

### **AllocatedStorage**

Specifies the allocated storage size in gibibytes (GiB).

Type: Integer

Required: No

### **AvailabilityZones.AvailabilityZone.N**

Provides the list of EC2 Availability Zones that instances in the DB cluster snapshot can be restored in.

Type: Array of strings

Required: No

### **ClusterCreateTime**

Specifies the time when the DB cluster was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

### **DBClusterIdentifier**

Specifies the DB cluster identifier of the DB cluster that this DB cluster snapshot was created from.

Type: String

Required: No

### **DBClusterSnapshotArn**

The Amazon Resource Name (ARN) for the DB cluster snapshot.

Type: String

Required: No

### **DBClusterSnapshotIdentifier**

Specifies the identifier for the DB cluster snapshot.

Type: String

Required: No

### **Engine**

Specifies the name of the database engine.

Type: String

Required: No

**EngineVersion**

Provides the version of the database engine for this DB cluster snapshot.

Type: String

Required: No

**IAMDatabaseAuthenticationEnabled**

True if mapping of AWS Identity and Access Management (IAM) accounts to database accounts is enabled, and otherwise false.

Type: Boolean

Required: No

**KmsKeyId**

If `StorageEncrypted` is true, the AWS KMS key identifier for the encrypted DB cluster snapshot.

Type: String

Required: No

**LicenseModel**

Provides the license model information for this DB cluster snapshot.

Type: String

Required: No

**MasterUsername**

Provides the master username for the DB cluster snapshot.

Type: String

Required: No

**PercentProgress**

Specifies the percentage of the estimated data that has been transferred.

Type: Integer

Required: No

**Port**

Specifies the port that the DB cluster was listening on at the time of the snapshot.

Type: Integer

Required: No

**SnapshotCreateTime**

Provides the time when the snapshot was taken, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

**SnapshotType**

Provides the type of the DB cluster snapshot.

Type: String

Required: No

**SourceDBClusterSnapshotArn**

If the DB cluster snapshot was copied from a source DB cluster snapshot, the Amazon Resource Name (ARN) for the source DB cluster snapshot, otherwise, a null value.

Type: String

Required: No

**Status**

Specifies the status of this DB cluster snapshot.

Type: String

Required: No

**StorageEncrypted**

Specifies whether the DB cluster snapshot is encrypted.

Type: Boolean

Required: No

**VpcId**

Provides the VPC ID associated with the DB cluster 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](#)

# DBClusterSnapshotAttribute

Contains the name and values of a manual DB cluster snapshot attribute.

Manual DB cluster snapshot attributes are used to authorize other AWS accounts to restore a manual DB cluster snapshot. For more information, see the [ModifyDBClusterSnapshotAttribute \(p. 249\)](#) API action.

## Contents

### AttributeName

The name of the manual DB cluster snapshot attribute.

The attribute named `restore` refers to the list of AWS accounts that have permission to copy or restore the manual DB cluster snapshot. For more information, see the [ModifyDBClusterSnapshotAttribute \(p. 249\)](#) API action.

Type: String

Required: No

### AttributeValues.AttributeValue.N

The value(s) for the manual DB cluster snapshot attribute.

If the `AttributeName` field is set to `restore`, then this element returns a list of IDs of the AWS accounts that are authorized to copy or restore the manual DB cluster snapshot. If a value of `all` is in the list, then the manual DB cluster snapshot is public and available for any AWS account to copy or restore.

Type: Array of strings

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# DBClusterSnapshotAttributesResult

Contains the results of a successful call to the [DescribeDBClusterSnapshotAttributes](#) (p. 147) API action.

Manual DB cluster snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB cluster snapshot. For more information, see the [ModifyDBClusterSnapshotAttribute](#) (p. 249) API action.

## Contents

### **DBClusterSnapshotAttributes.DBClusterSnapshotAttribute.N**

The list of attributes and values for the manual DB cluster snapshot.

Type: Array of [DBClusterSnapshotAttribute](#) (p. 389) objects

Required: No

### **DBClusterSnapshotIdentifier**

The identifier of the manual DB cluster snapshot that the attributes apply 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](#)

# DBEngineVersion

This data type is used as a response element in the action [DescribeDBEngineVersions](#) (p. 153).

## Contents

### **DBEngineDescription**

The description of the database engine.

Type: String

Required: No

### **DBEngineVersionDescription**

The description of the database engine version.

Type: String

Required: No

### **DBParameterGroupFamily**

The name of the DB parameter group family for the database engine.

Type: String

Required: No

### **DefaultCharacterSet**

The default character set for new instances of this engine version, if the `CharacterSetName` parameter of the `CreateDBInstance` API is not specified.

Type: [CharacterSet](#) (p. 372) object

Required: No

### **Engine**

The name of the database engine.

Type: String

Required: No

### **EngineVersion**

The version number of the database engine.

Type: String

Required: No

### **ExportableLogTypes.member.N**

The types of logs that the database engine has available for export to CloudWatch Logs.

Type: Array of strings

Required: No

### **SupportedCharacterSets.CharacterSet.N**

A list of the character sets supported by this engine for the `CharacterSetName` parameter of the `CreateDBInstance` action.

Type: Array of [CharacterSet \(p. 372\)](#) objects

Required: No

### **SupportedTimezones.Timezone.N**

A list of the time zones supported by this engine for the `Timezone` parameter of the `CreateDBInstance` action.

Type: Array of [Timezone \(p. 465\)](#) objects

Required: No

### **SupportsLogExportsToCloudwatchLogs**

A value that indicates whether the engine version supports exporting the log types specified by `ExportableLogTypes` to CloudWatch Logs.

Type: Boolean

Required: No

### **SupportsReadReplica**

Indicates whether the database engine version supports read replicas.

Type: Boolean

Required: No

### **ValidUpgradeTarget.UpgradeTarget.N**

A list of engine versions that this database engine version can be upgraded to.

Type: Array of [UpgradeTarget \(p. 466\)](#) 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](#)

# DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the [DescribeDBInstances](#) (p. 157) action.

## Contents

### **AllocatedStorage**

Specifies the allocated storage size specified in gibibytes.

Type: Integer

Required: No

### **AutoMinorVersionUpgrade**

Indicates that minor version patches are applied automatically.

Type: Boolean

Required: No

### **AvailabilityZone**

Specifies the name of the Availability Zone the DB instance is located in.

Type: String

Required: No

### **BackupRetentionPeriod**

Specifies the number of days for which automatic DB snapshots are retained.

Type: Integer

Required: No

### **CACertificateIdentifier**

The identifier of the CA certificate for this DB instance.

Type: String

Required: No

### **CharacterSetName**

If present, specifies the name of the character set that this instance is associated with.

Type: String

Required: No

### **CopyTagsToSnapshot**

Specifies whether tags are copied from the DB instance to snapshots of the DB instance.

Type: Boolean

Required: No



**DBClusterIdentifier**

If the DB instance is a member of a DB cluster, contains the name of the DB cluster that the DB instance is a member of.

Type: String

Required: No

**DBInstanceArn**

The Amazon Resource Name (ARN) for the DB instance.

Type: String

Required: No

**DBInstanceClass**

Contains the name of the compute and memory capacity class of the DB instance.

Type: String

Required: No

**DBInstanceIdentifier**

Contains a user-supplied database identifier. This identifier is the unique key that identifies a DB instance.

Type: String

Required: No

**DbInstancePort**

Specifies the port that the DB instance listens on. If the DB instance is part of a DB cluster, this can be a different port than the DB cluster port.

Type: Integer

Required: No

**DBInstanceStatus**

Specifies the current state of this database.

Type: String

Required: No

**DbiResourceId**

The AWS Region-unique, immutable identifier for the DB instance. This identifier is found in AWS CloudTrail log entries whenever the AWS KMS key for the DB instance is accessed.

Type: String

Required: No

**DBName**

The meaning of this parameter differs according to the database engine you use. For example, this value returns MySQL, MariaDB, or PostgreSQL information when returning values from `CreateDBInstanceReadReplica` since Read Replicas are only supported for these engines.

### **MySQL, MariaDB, SQL Server, PostgreSQL**

Contains the name of the initial database of this instance that was provided at create time, if one was specified when the DB instance was created. This same name is returned for the life of the DB instance.

Type: String

### **Oracle**

Contains the Oracle System ID (SID) of the created DB instance. Not shown when the returned parameters do not apply to an Oracle DB instance.

Type: String

Required: No

### **DBParameterGroups.DBParameterGroup.N**

Provides the list of DB parameter groups applied to this DB instance.

Type: Array of [DBParameterGroupStatus \(p. 403\)](#) objects

Required: No

### **DBSecurityGroups.DBSecurityGroup.N**

Provides List of DB security group elements containing only `DBSecurityGroup.Name` and `DBSecurityGroup.Status` subelements.

Type: Array of [DBSecurityGroupMembership \(p. 406\)](#) objects

Required: No

### **DBSubnetGroup**

Specifies information on the subnet group associated with the DB instance, including the name, description, and subnets in the subnet group.

Type: [DBSubnetGroup \(p. 413\)](#) object

Required: No

### **DomainMemberships.DomainMembership.N**

The Active Directory Domain membership records associated with the DB instance.

Type: Array of [DomainMembership \(p. 416\)](#) objects

Required: No

### **EnabledCloudwatchLogsExports.member.N**

A list of log types that this DB instance is configured to export to CloudWatch Logs.

Type: Array of strings

Required: No

### **Endpoint**

Specifies the connection endpoint.

Type: [Endpoint \(p. 419\)](#) object

Required: No

**Engine**

Provides the name of the database engine to be used for this DB instance.

Type: String

Required: No

**EngineVersion**

Indicates the database engine version.

Type: String

Required: No

**EnhancedMonitoringResourceArn**

The Amazon Resource Name (ARN) of the Amazon CloudWatch Logs log stream that receives the Enhanced Monitoring metrics data for the DB instance.

Type: String

Required: No

**IAMDatabaseAuthenticationEnabled**

True if mapping of AWS Identity and Access Management (IAM) accounts to database accounts is enabled, and otherwise false.

IAM database authentication can be enabled for the following database engines

- For MySQL 5.6, minor version 5.6.34 or higher
- For MySQL 5.7, minor version 5.7.16 or higher
- Aurora 5.6 or higher. To enable IAM database authentication for Aurora, see DBCluster Type.

Type: Boolean

Required: No

**InstanceCreateTime**

Provides the date and time the DB instance was created.

Type: Timestamp

Required: No

**Iops**

Specifies the Provisioned IOPS (I/O operations per second) value.

Type: Integer

Required: No

**KmsKeyId**

If `StorageEncrypted` is true, the AWS KMS key identifier for the encrypted DB instance.

Type: String

Required: No

**LatestRestorableTime**

Specifies the latest time to which a database can be restored with point-in-time restore.

Type: Timestamp

Required: No

**LicenseModel**

License model information for this DB instance.

Type: String

Required: No

**MasterUsername**

Contains the master username for the DB instance.

Type: String

Required: No

**MonitoringInterval**

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance.

Type: Integer

Required: No

**MonitoringRoleArn**

The ARN for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs.

Type: String

Required: No

**MultiAZ**

Specifies if the DB instance is a Multi-AZ deployment.

Type: Boolean

Required: No

**OptionGroupMemberships.OptionGroupMembership.N**

Provides the list of option group memberships for this DB instance.

Type: Array of [OptionGroupMembership \(p. 434\)](#) objects

Required: No

**PendingModifiedValues**

Specifies that changes to the DB instance are pending. This element is only included when changes are pending. Specific changes are identified by subelements.

Type: [PendingModifiedValues \(p. 451\)](#) object

Required: No

**PerformanceInsightsEnabled**

True if Performance Insights is enabled for the DB instance, and otherwise false.

Type: Boolean

Required: No

**PerformanceInsightsKMSKeyId**

The AWS KMS key identifier for encryption of Performance Insights data. The KMS key ID is the Amazon Resource Name (ARN), KMS key identifier, or the KMS key alias for the KMS encryption key.

Type: String

Required: No

**PreferredBackupWindow**

Specifies the daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod`.

Type: String

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Type: String

Required: No

**PromotionTier**

A value that specifies the order in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see [Fault Tolerance for an Aurora DB Cluster](#).

Type: Integer

Required: No

**PubliclyAccessible**

Specifies the accessibility options for the DB instance. A value of true specifies an Internet-facing instance with a publicly resolvable DNS name, which resolves to a public IP address. A value of false specifies an internal instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether a VPC has been requested or not. The following list shows the default behavior in each case.

- **Default VPC:**true
- **VPC:**false

If no DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is publicly accessible. If a specific DB subnet group has been specified as part of the request and the `PubliclyAccessible` value has not been set, the DB instance is private.

Type: Boolean

Required: No

**ReadReplicaDBClusterIdentifiers.ReadReplicaDBClusterIdentifier.N**

Contains one or more identifiers of Aurora DB clusters that are Read Replicas of this DB instance.

Type: Array of strings

Required: No

**ReadReplicaDBInstanceIdentifiers.ReadReplicaDBInstanceIdentifier.N**

Contains one or more identifiers of the Read Replicas associated with this DB instance.

Type: Array of strings

Required: No

**ReadReplicaSourceDBInstanceIdentifier**

Contains the identifier of the source DB instance if this DB instance is a Read Replica.

Type: String

Required: No

**SecondaryAvailabilityZone**

If present, specifies the name of the secondary Availability Zone for a DB instance with multi-AZ support.

Type: String

Required: No

**StatusInfos.DBInstanceStatusInfo.N**

The status of a Read Replica. If the instance is not a Read Replica, this is blank.

Type: Array of [DBInstanceStatusInfo](#) (p. 401) objects

Required: No

**StorageEncrypted**

Specifies whether the DB instance is encrypted.

Type: Boolean

Required: No

**StorageType**

Specifies the storage type associated with DB instance.

Type: String

Required: No

**TdeCredentialArn**

The ARN from the key store with which the instance is associated for TDE encryption.

Type: String

Required: No

**Timezone**

The time zone of the DB instance. In most cases, the `Timezone` element is empty. `Timezone` content appears only for Microsoft SQL Server DB instances that were created with a time zone specified.

Type: String

Required: No

### **VpcSecurityGroups.VpcSecurityGroupMembership.N**

Provides a list of VPC security group elements that the DB instance belongs to.

Type: Array of [VpcSecurityGroupMembership](#) (p. 469) 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](#)

# DBInstanceStatusInfo

Provides a list of status information for a DB instance.

## Contents

### Message

Details of the error if there is an error for the instance. If the instance is not in an error state, this value is blank.

Type: String

Required: No

### Normal

Boolean value that is true if the instance is operating normally, or false if the instance is in an error state.

Type: Boolean

Required: No

### Status

Status of the DB instance. For a `StatusType` of read replica, the values can be replicating, error, stopped, or terminated.

Type: String

Required: No

### StatusType

This value is currently "read replication."

Type: String

Required: No

## See Also

For more information about using this 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](#)



# DBParameterGroup

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the [DescribeDBParameterGroups](#) (p. 166) action.

## Contents

### **DBParameterGroupArn**

The Amazon Resource Name (ARN) for the DB parameter group.

Type: String

Required: No

### **DBParameterGroupFamily**

Provides the name of the DB parameter group family that this DB parameter group is compatible with.

Type: String

Required: No

### **DBParameterGroupName**

Provides the name of the DB parameter group.

Type: String

Required: No

### **Description**

Provides the customer-specified description for this DB 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](#)

# DBParameterGroupStatus

The status of the DB parameter group.

This data type is used as a response element in the following actions:

- [CreateDBInstance](#) (p. 57)
- [CreateDBInstanceReadReplica](#) (p. 75)
- [DeleteDBInstance](#) (p. 111)
- [ModifyDBInstance](#) (p. 252)
- [RebootDBInstance](#) (p. 295)
- [RestoreDBInstanceFromDBSnapshot](#) (p. 331)

## Contents

### **DBParameterGroupName**

The name of the DP parameter group.

Type: String

Required: No

### **ParameterApplyStatus**

The status of parameter updates.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# DBSecurityGroup

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the [DescribeDBSecurityGroups](#) (p. 173) action.

## Contents

### **DBSecurityGroupArn**

The Amazon Resource Name (ARN) for the DB security group.

Type: String

Required: No

### **DBSecurityGroupDescription**

Provides the description of the DB security group.

Type: String

Required: No

### **DBSecurityGroupName**

Specifies the name of the DB security group.

Type: String

Required: No

### **EC2SecurityGroups.EC2SecurityGroup.N**

Contains a list of [EC2SecurityGroup](#) (p. 418) elements.

Type: Array of [EC2SecurityGroup](#) (p. 418) objects

Required: No

### **IPRanges.IPRange.N**

Contains a list of [IPRange](#) (p. 427) elements.

Type: Array of [IPRange](#) (p. 427) objects

Required: No

### **OwnerId**

Provides the AWS ID of the owner of a specific DB security group.

Type: String

Required: No

### **VpcId**

Provides the VpcId of the DB 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](#)

# DBSecurityGroupMembership

This data type is used as a response element in the following actions:

- [ModifyDBInstance](#) (p. 252)
- [RebootDBInstance](#) (p. 295)
- [RestoreDBInstanceFromDBSnapshot](#) (p. 331)
- [RestoreDBInstanceToPointInTime](#) (p. 349)

## Contents

### **DBSecurityGroupName**

The name of the DB security group.

Type: String

Required: No

### **Status**

The status of the DB 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](#)

# DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the [DescribeDBSnapshots \(p. 178\)](#) action.

## Contents

### **AllocatedStorage**

Specifies the allocated storage size in gibibytes (GiB).

Type: Integer

Required: No

### **AvailabilityZone**

Specifies the name of the Availability Zone the DB instance was located in at the time of the DB snapshot.

Type: String

Required: No

### **DBInstanceIdentifier**

Specifies the DB instance identifier of the DB instance this DB snapshot was created from.

Type: String

Required: No

### **DBSnapshotArn**

The Amazon Resource Name (ARN) for the DB snapshot.

Type: String

Required: No

### **DBSnapshotIdentifier**

Specifies the identifier for the DB snapshot.

Type: String

Required: No

### **Encrypted**

Specifies whether the DB snapshot is encrypted.

Type: Boolean

Required: No

### **Engine**

Specifies the name of the database engine.

Type: String

Required: No

**EngineVersion**

Specifies the version of the database engine.

Type: String

Required: No

**IAMDatabaseAuthenticationEnabled**

True if mapping of AWS Identity and Access Management (IAM) accounts to database accounts is enabled, and otherwise false.

Type: Boolean

Required: No

**InstanceCreateTime**

Specifies the time when the snapshot was taken, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

**Iops**

Specifies the Provisioned IOPS (I/O operations per second) value of the DB instance at the time of the snapshot.

Type: Integer

Required: No

**KmsKeyId**

If `Encrypted` is true, the AWS KMS key identifier for the encrypted DB snapshot.

Type: String

Required: No

**LicenseModel**

License model information for the restored DB instance.

Type: String

Required: No

**MasterUsername**

Provides the master username for the DB snapshot.

Type: String

Required: No

**OptionGroupName**

Provides the option group name for the DB snapshot.

Type: String

Required: No

**PercentProgress**

The percentage of the estimated data that has been transferred.

Type: Integer

Required: No

**Port**

Specifies the port that the database engine was listening on at the time of the snapshot.

Type: Integer

Required: No

**SnapshotCreateTime**

Provides the time when the snapshot was taken, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

**SnapshotType**

Provides the type of the DB snapshot.

Type: String

Required: No

**SourceDBSnapshotIdentifier**

The DB snapshot Amazon Resource Name (ARN) that the DB snapshot was copied from. It only has value in case of cross-customer or cross-region copy.

Type: String

Required: No

**SourceRegion**

The AWS Region that the DB snapshot was created in or copied from.

Type: String

Required: No

**Status**

Specifies the status of this DB snapshot.

Type: String

Required: No

**StorageType**

Specifies the storage type associated with DB snapshot.

Type: String

Required: No

**TdeCredentialArn**

The ARN from the key store with which to associate the instance for TDE encryption.



Type: String

Required: No

**Timezone**

The time zone of the DB snapshot. In most cases, the `Timezone` element is empty. `Timezone` content appears only for snapshots taken from Microsoft SQL Server DB instances that were created with a time zone specified.

Type: String

Required: No

**VpcId**

Provides the VPC ID associated with the DB 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](#)

# DBSnapshotAttribute

Contains the name and values of a manual DB snapshot attribute

Manual DB snapshot attributes are used to authorize other AWS accounts to restore a manual DB snapshot. For more information, see the [ModifyDBSnapshotAttribute \(p. 272\)](#) API.

## Contents

### **AttributeName**

The name of the manual DB snapshot attribute.

The attribute named `restore` refers to the list of AWS accounts that have permission to copy or restore the manual DB cluster snapshot. For more information, see the [ModifyDBSnapshotAttribute \(p. 272\)](#) API action.

Type: String

Required: No

### **AttributeValues.AttributeValue.N**

The value or values for the manual DB snapshot attribute.

If the `AttributeName` field is set to `restore`, then this element returns a list of IDs of the AWS accounts that are authorized to copy or restore the manual DB snapshot. If a value of `all` is in the list, then the manual DB snapshot is public and available for any AWS account to copy or restore.

Type: Array of strings

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# DBSnapshotAttributesResult

Contains the results of a successful call to the [DescribeDBSnapshotAttributes \(p. 176\)](#) API action.

Manual DB snapshot attributes are used to authorize other AWS accounts to copy or restore a manual DB snapshot. For more information, see the [ModifyDBSnapshotAttribute \(p. 272\)](#) API action.

## Contents

### **DBSnapshotAttributes.DBSnapshotAttribute.N**

The list of attributes and values for the manual DB snapshot.

Type: Array of [DBSnapshotAttribute \(p. 411\)](#) objects

Required: No

### **DBSnapshotIdentifier**

The identifier of the manual DB snapshot that the attributes apply 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](#)

# DBSubnetGroup

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the [DescribeDBSubnetGroups \(p. 182\)](#) action.

## Contents

### **DBSubnetGroupArn**

The Amazon Resource Name (ARN) for the DB subnet group.

Type: String

Required: No

### **DBSubnetGroupDescription**

Provides the description of the DB subnet group.

Type: String

Required: No

### **DBSubnetGroupName**

The name of the DB subnet group.

Type: String

Required: No

### **SubnetGroupStatus**

Provides the status of the DB subnet group.

Type: String

Required: No

### **Subnets.Subnet.N**

Contains a list of [Subnet \(p. 463\)](#) elements.

Type: Array of [Subnet \(p. 463\)](#) objects

Required: No

### **VpcId**

Provides the VpcId of the DB 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](#)

# DescribeDBLogFilesDetails

This data type is used as a response element to [DescribeDBLogFiles \(p. 163\)](#).

## Contents

### **LastWritten**

A POSIX timestamp when the last log entry was written.

Type: Long

Required: No

### **LogFileName**

The name of the log file for the specified DB instance.

Type: String

Required: No

### **Size**

The size, in bytes, of the log file for the specified DB instance.

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](#)

# DomainMembership

An Active Directory Domain membership record associated with the DB instance.

## Contents

### **Domain**

The identifier of the Active Directory Domain.

Type: String

Required: No

### **FQDN**

The fully qualified domain name of the Active Directory Domain.

Type: String

Required: No

### **IAMRoleName**

The name of the IAM role to be used when making API calls to the Directory Service.

Type: String

Required: No

### **Status**

The status of the DB instance's Active Directory Domain membership, such as joined, pending-join, failed etc).

Type: String

Required: No

## See Also

For more information about using this 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](#)

# DoubleRange

A range of double values.

## Contents

### From

The minimum value in the range.

Type: Double

Required: No

### To

The maximum value in the range.

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](#)



# EC2SecurityGroup

This data type is used as a response element in the following actions:

- [AuthorizeDBSecurityGroupIngress](#) (p. 15)
- [DescribeDBSecurityGroups](#) (p. 173)
- [RevokeDBSecurityGroupIngress](#) (p. 358)

## Contents

### **EC2SecurityGroupId**

Specifies the id of the EC2 security group.

Type: String

Required: No

### **EC2SecurityGroupName**

Specifies the name of the EC2 security group.

Type: String

Required: No

### **EC2SecurityGroupOwnerId**

Specifies the AWS ID of the owner of the EC2 security group specified in the `EC2SecurityGroupName` field.

Type: String

Required: No

### **Status**

Provides the status of the EC2 security group. Status can be "authorizing", "authorized", "revoking", and "revoked".

Type: String

Required: No

## See Also

For more information about using this 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

This data type is used as a response element in the following actions:

- [CreateDBInstance](#) (p. 57)
- [DescribeDBInstances](#) (p. 157)
- [DeleteDBInstance](#) (p. 111)

## Contents

### Address

Specifies the DNS address of the DB instance.

Type: String

Required: No

### HostedZoneId

Specifies the ID that Amazon Route 53 assigns when you create a hosted zone.

Type: String

Required: No

### Port

Specifies 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](#)

# EngineDefaults

Contains the result of a successful invocation of the [DescribeEngineDefaultParameters \(p. 188\)](#) action.

## Contents

### **DBParameterGroupFamily**

Specifies the name of the DB parameter group family that the engine default parameters apply to.

Type: String

Required: No

### **Marker**

An optional pagination token provided by a previous EngineDefaults request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

### **Parameters.Parameter.N**

Contains a list of engine default parameters.

Type: Array of [Parameter \(p. 446\)](#) 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](#)

# Event

This data type is used as a response element in the [DescribeEvents \(p. 194\)](#) action.

## Contents

### Date

Specifies the date and time of the event.

Type: Timestamp

Required: No

### EventCategories.EventCategory.N

Specifies the category for the event.

Type: Array of strings

Required: No

### Message

Provides the text of this event.

Type: String

Required: No

### SourceArn

The Amazon Resource Name (ARN) for the event.

Type: String

Required: No

### SourceIdentifier

Provides the identifier for the source of the event.

Type: String

Required: No

### SourceType

Specifies the source type for this event.

Type: String

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

Contains the results of a successful invocation of the [DescribeEventCategories](#) (p. 191) action.

## Contents

### **EventCategories.EventCategory.N**

The event categories for the specified source type

Type: Array of strings

Required: No

### **SourceType**

The source type 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](#)

# EventSubscription

Contains the results of a successful invocation of the [DescribeEventSubscriptions](#) (p. 198) action.

## Contents

### **CustomerAwsId**

The AWS customer account associated with the RDS event notification subscription.

Type: String

Required: No

### **CustSubscriptionId**

The RDS event notification subscription Id.

Type: String

Required: No

### **Enabled**

A Boolean value indicating if the subscription is enabled. True indicates the subscription is enabled.

Type: Boolean

Required: No

### **EventCategoriesList.EventCategory.N**

A list of event categories for the RDS event notification subscription.

Type: Array of strings

Required: No

### **EventSubscriptionArn**

The Amazon Resource Name (ARN) for the event subscription.

Type: String

Required: No

### **SnsTopicArn**

The topic ARN of the RDS event notification subscription.

Type: String

Required: No

### **SourceIdsList.SourceId.N**

A list of source IDs for the RDS event notification subscription.

Type: Array of strings

Required: No

### **SourceType**

The source type for the RDS event notification subscription.

Type: String

Required: No

**Status**

The status of the RDS event notification subscription.

Constraints:

Can be one of the following: creating | modifying | deleting | active | no-permission | topic-not-exist

The status "no-permission" indicates that RDS no longer has permission to post to the SNS topic. The status "topic-not-exist" indicates that the topic was deleted after the subscription was created.

Type: String

Required: No

**SubscriptionCreationTime**

The time the RDS event notification subscription was created.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)



## Filter

A filter name and value pair that is used to return a more specific list of results from a describe operation. Filters can be used to match a set of resources by specific criteria, such as IDs. The filters supported by a describe operation are documented with the describe operation.

### Note

Currently, wildcards are not supported in filters.

The following actions can be filtered:

- [DescribeDBClusterBacktracks](#) (p. 133)
- [DescribeDBClusters](#) (p. 143)
- [DescribeDBInstances](#) (p. 157)
- [DescribePendingMaintenanceActions](#) (p. 215)

## Contents

### Name

The name of the filter. Filter names are case-sensitive.

Type: String

Required: Yes

### Values.Value.N

One or more filter values. Filter values are case-sensitive.

Type: Array of strings

Required: Yes

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# IPRange

This data type is used as a response element in the [DescribeDBSecurityGroups \(p. 173\)](#) action.

## Contents

### **CIDRIP**

Specifies the IP range.

Type: String

Required: No

### **Status**

Specifies the status of the IP range. Status can be "authorizing", "authorized", "revoking", and "revoked".

Type: String

Required: No

## See Also

For more information about using this 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](#)

# Option

Option details.

## Contents

### **DBSecurityGroupMemberships.DBSecurityGroup.N**

If the option requires access to a port, then this DB security group allows access to the port.

Type: Array of [DBSecurityGroupMembership \(p. 406\)](#) objects

Required: No

### **OptionDescription**

The description of the option.

Type: String

Required: No

### **OptionName**

The name of the option.

Type: String

Required: No

### **OptionSettings.OptionSetting.N**

The option settings for this option.

Type: Array of [OptionSetting \(p. 440\)](#) objects

Required: No

### **OptionVersion**

The version of the option.

Type: String

Required: No

### **Permanent**

Indicate if this option is permanent.

Type: Boolean

Required: No

### **Persistent**

Indicate if this option is persistent.

Type: Boolean

Required: No

### **Port**

If required, the port configured for this option to use.

Type: Integer

Required: No

**VpcSecurityGroupMemberships.VpcSecurityGroupMembership.N**

If the option requires access to a port, then this VPC security group allows access to the port.

Type: Array of [VpcSecurityGroupMembership](#) (p. 469) 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](#)

# OptionConfiguration

A list of all available options

## Contents

### **DBSecurityGroupMemberships.DBSecurityGroupName.N**

A list of DBSecurityGroupMemembrship name strings used for this option.

Type: Array of strings

Required: No

### **OptionName**

The configuration of options to include in a group.

Type: String

Required: Yes

### **OptionSettings.OptionSetting.N**

The option settings to include in an option group.

Type: Array of [OptionSetting](#) (p. 440) objects

Required: No

### **OptionVersion**

The version for the option.

Type: String

Required: No

### **Port**

The optional port for the option.

Type: Integer

Required: No

### **VpcSecurityGroupMemberships.VpcSecurityGroupId.N**

A list of VpcSecurityGroupMemembrship name strings used for this option.

Type: Array of strings

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)

- [AWS SDK for Ruby V2](#)

# OptionGroup

## Contents

### **AllowsVpcAndNonVpcInstanceMemberships**

Indicates whether this option group can be applied to both VPC and non-VPC instances. The value `true` indicates the option group can be applied to both VPC and non-VPC instances.

Type: Boolean

Required: No

### **EngineName**

Indicates the name of the engine that this option group can be applied to.

Type: String

Required: No

### **MajorEngineVersion**

Indicates the major engine version associated with this option group.

Type: String

Required: No

### **OptionGroupArn**

The Amazon Resource Name (ARN) for the option group.

Type: String

Required: No

### **OptionGroupDescription**

Provides a description of the option group.

Type: String

Required: No

### **OptionGroupName**

Specifies the name of the option group.

Type: String

Required: No

### **Options.Option.N**

Indicates what options are available in the option group.

Type: Array of [Option](#) (p. 428) objects

Required: No

### **VpcId**

If **AllowsVpcAndNonVpcInstanceMemberships** is `false`, this field is blank. If **AllowsVpcAndNonVpcInstanceMemberships** is `true` and this field is blank, then this option group

can be applied to both VPC and non-VPC instances. If this field contains a value, then this option group can only be applied to instances that are in the VPC indicated by this field.

Type: String

Required: No

## See Also

For more information about using this 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](#)



# OptionGroupMembership

Provides information on the option groups the DB instance is a member of.

## Contents

### **OptionGroupName**

The name of the option group that the instance belongs to.

Type: String

Required: No

### **Status**

The status of the DB instance's option group membership. Valid values are: `in-sync`, `pending-apply`, `pending-removal`, `pending-maintenance-apply`, `pending-maintenance-removal`, `applying`, `removing`, and `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](#)

# OptionGroupOption

Available option.

## Contents

### **DefaultPort**

If the option requires a port, specifies the default port for the option.

Type: Integer

Required: No

### **Description**

The description of the option.

Type: String

Required: No

### **EngineName**

The name of the engine that this option can be applied to.

Type: String

Required: No

### **MajorEngineVersion**

Indicates the major engine version that the option is available for.

Type: String

Required: No

### **MinimumRequiredMinorEngineVersion**

The minimum required engine version for the option to be applied.

Type: String

Required: No

### **Name**

The name of the option.

Type: String

Required: No

### **OptionGroupOptionSettings.OptionGroupOptionSetting.N**

The option settings that are available (and the default value) for each option in an option group.

Type: Array of [OptionGroupOptionSetting](#) (p. 438) objects

Required: No

### **OptionGroupOptionVersions.OptionVersion.N**

The versions that are available for the option.

Type: Array of [OptionVersion \(p. 442\)](#) objects

Required: No

**OptionsConflictsWith.OptionConflictName.N**

The options that conflict with this option.

Type: Array of strings

Required: No

**OptionsDependedOn.OptionName.N**

The options that are prerequisites for this option.

Type: Array of strings

Required: No

**Permanent**

Permanent options can never be removed from an option group. An option group containing a permanent option can't be removed from a DB instance.

Type: Boolean

Required: No

**Persistent**

Persistent options can't be removed from an option group while DB instances are associated with the option group. If you disassociate all DB instances from the option group, you can remove the persistent option from the option group.

Type: Boolean

Required: No

**PortRequired**

Specifies whether the option requires a port.

Type: Boolean

Required: No

**RequiresAutoMinorEngineVersionUpgrade**

If true, you must enable the Auto Minor Version Upgrade setting for your DB instance before you can use this option. You can enable Auto Minor Version Upgrade when you first create your DB instance, or by modifying your DB instance later.

Type: Boolean

Required: No

**SupportsOptionVersionDowngrade**

If true, you can change the option to an earlier version of the option. This only applies to options that have different versions available.

Type: Boolean

Required: No

### VpcOnly

If true, you can only use this option with a DB instance that is in a VPC.

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](#)

# OptionGroupOptionSetting

Option group option settings are used to display settings available for each option with their default values and other information. These values are used with the DescribeOptionGroupOptions action.

## Contents

### **AllowedValues**

Indicates the acceptable values for the option group option.

Type: String

Required: No

### **ApplyType**

The DB engine specific parameter type for the option group option.

Type: String

Required: No

### **DefaultValue**

The default value for the option group option.

Type: String

Required: No

### **IsModifiable**

Boolean value where true indicates that this option group option can be changed from the default value.

Type: Boolean

Required: No

### **SettingDescription**

The description of the option group option.

Type: String

Required: No

### **SettingName**

The name of the option group option.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# OptionSetting

Option settings are the actual settings being applied or configured for that option. It is used when you modify an option group or describe option groups. For example, the `NATIVE_NETWORK_ENCRYPTION` option has a setting called `SQLNET.ENCRYPTION_SERVER` that can have several different values.

## Contents

### **AllowedValues**

The allowed values of the option setting.

Type: String

Required: No

### **ApplyType**

The DB engine specific parameter type.

Type: String

Required: No

### **DataType**

The data type of the option setting.

Type: String

Required: No

### **DefaultValue**

The default value of the option setting.

Type: String

Required: No

### **Description**

The description of the option setting.

Type: String

Required: No

### **IsCollection**

Indicates if the option setting is part of a collection.

Type: Boolean

Required: No

### **IsModifiable**

A Boolean value that, when true, indicates the option setting can be modified from the default.

Type: Boolean

Required: No

**Name**

The name of the option that has settings that you can set.

Type: String

Required: No

**Value**

The current value of the option setting.

Type: String

Required: No

## See Also

For more information about using this 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](#)



# OptionVersion

The version for an option. Option group option versions are returned by the [DescribeOptionGroupOptions \(p. 202\)](#) action.

## Contents

### IsDefault

True if the version is the default version of the option, and otherwise false.

Type: Boolean

Required: No

### Version

The version of the option.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# OrderableDBInstanceOption

Contains a list of available options for a DB instance.

This data type is used as a response element in the [DescribeOrderableDBInstanceOptions](#) (p. 211) action.

## Contents

### **AvailabilityZones.AvailabilityZone.N**

A list of Availability Zones for a DB instance.

Type: Array of [AvailabilityZone](#) (p. 369) objects

Required: No

### **DBInstanceClass**

The DB instance class for a DB instance.

Type: String

Required: No

### **Engine**

The engine type of a DB instance.

Type: String

Required: No

### **EngineVersion**

The engine version of a DB instance.

Type: String

Required: No

### **LicenseModel**

The license model for a DB instance.

Type: String

Required: No

### **MaxIopsPerDbInstance**

Maximum total provisioned IOPS for a DB instance.

Type: Integer

Required: No

### **MaxIopsPerGiB**

Maximum provisioned IOPS per GiB for a DB instance.

Type: Double

Required: No

**MaxStorageSize**

Maximum storage size for a DB instance.

Type: Integer

Required: No

**MinIopsPerDbInstance**

Minimum total provisioned IOPS for a DB instance.

Type: Integer

Required: No

**MinIopsPerGib**

Minimum provisioned IOPS per GiB for a DB instance.

Type: Double

Required: No

**MinStorageSize**

Minimum storage size for a DB instance.

Type: Integer

Required: No

**MultiAZCapable**

Indicates whether a DB instance is Multi-AZ capable.

Type: Boolean

Required: No

**ReadReplicaCapable**

Indicates whether a DB instance can have a Read Replica.

Type: Boolean

Required: No

**StorageType**

Indicates the storage type for a DB instance.

Type: String

Required: No

**SupportsEnhancedMonitoring**

Indicates whether a DB instance supports Enhanced Monitoring at intervals from 1 to 60 seconds.

Type: Boolean

Required: No

**SupportsIAMDatabaseAuthentication**

Indicates whether a DB instance supports IAM database authentication.

Type: Boolean

Required: No

**SupportsIOPS**

Indicates whether a DB instance supports provisioned IOPS.

Type: Boolean

Required: No

**SupportsPerformanceInsights**

True if a DB instance supports Performance Insights, otherwise false.

Type: Boolean

Required: No

**SupportsStorageEncryption**

Indicates whether a DB instance supports encrypted storage.

Type: Boolean

Required: No

**Vpc**

Indicates whether a DB instance is in a VPC.

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](#)

# Parameter

This data type is used as a request parameter in the [ModifyDBParameterGroup](#) (p. 266) and [ResetDBParameterGroup](#) (p. 307) actions.

This data type is used as a response element in the [DescribeEngineDefaultParameters](#) (p. 188) and [DescribeDBParameters](#) (p. 169) actions.

## Contents

### AllowedValues

Specifies the valid range of values for the parameter.

Type: String

Required: No

### ApplyMethod

Indicates when to apply parameter updates.

Type: String

Valid Values: `immediate` | `pending-reboot`

Required: No

### ApplyType

Specifies the engine specific parameters type.

Type: String

Required: No

### DataType

Specifies the valid data type for the parameter.

Type: String

Required: No

### Description

Provides a description of the parameter.

Type: String

Required: No

### IsModifiable

Indicates whether (`true`) or not (`false`) 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**

Specifies the name of the parameter.

Type: String

Required: No

**ParameterValue**

Specifies the value of the parameter.

Type: String

Required: No

**Source**

Indicates the source of the parameter value.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# PendingCloudwatchLogsExports

A list of the log types whose configuration is still pending. In other words, these log types are in the process of being activated or deactivated.

## Contents

### **LogTypesToDisable.member.N**

Log types that are in the process of being enabled. After they are enabled, these log types are exported to CloudWatch Logs.

Type: Array of strings

Required: No

### **LogTypesToEnable.member.N**

Log types that are in the process of being deactivated. After they are deactivated, these log types aren't exported to CloudWatch Logs.

Type: Array of strings

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# PendingMaintenanceAction

Provides information about a pending maintenance action for a resource.

## Contents

### Action

The type of pending maintenance action that is available for the resource.

Type: String

Required: No

### AutoAppliedAfterDate

The date of the maintenance window when the action is applied. The maintenance action is applied to the resource during its first maintenance window after this date. If this date is specified, any `next-maintenance` opt-in requests are ignored.

Type: Timestamp

Required: No

### CurrentApplyDate

The effective date when the pending maintenance action is applied to the resource. This date takes into account opt-in requests received from the [ApplyPendingMaintenanceAction \(p. 12\)](#) API, the `AutoAppliedAfterDate`, and the `ForcedApplyDate`. This value is blank if an opt-in request has not been received and nothing has been specified as `AutoAppliedAfterDate` or `ForcedApplyDate`.

Type: Timestamp

Required: No

### Description

A description providing more detail about the maintenance action.

Type: String

Required: No

### ForcedApplyDate

The date when the maintenance action is automatically applied. The maintenance action is applied to the resource on this date regardless of the maintenance window for the resource. If this date is specified, any `immediate` opt-in requests are ignored.

Type: Timestamp

Required: No

### OptInStatus

Indicates the type of opt-in request that has been received for the resource.

Type: String

Required: No



## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# PendingModifiedValues

This data type is used as a response element in the [ModifyDBInstance \(p. 252\)](#) action.

## Contents

### **AllocatedStorage**

Contains the new `AllocatedStorage` size for the DB instance that will be applied or is currently being applied.

Type: Integer

Required: No

### **BackupRetentionPeriod**

Specifies the pending number of days for which automated backups are retained.

Type: Integer

Required: No

### **CACertificateIdentifier**

Specifies the identifier of the CA certificate for the DB instance.

Type: String

Required: No

### **DBInstanceClass**

Contains the new `DBInstanceClass` for the DB instance that will be applied or is currently being applied.

Type: String

Required: No

### **DBInstanceIdentifier**

Contains the new `DBInstanceIdentifier` for the DB instance that will be applied or is currently being applied.

Type: String

Required: No

### **DBSubnetGroupName**

The new DB subnet group for the DB instance.

Type: String

Required: No

### **EngineVersion**

Indicates the database engine version.

Type: String

Required: No

**Iops**

Specifies the new Provisioned IOPS value for the DB instance that will be applied or is currently being applied.

Type: Integer

Required: No

**LicenseModel**

The license model for the DB instance.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

**MasterUserPassword**

Contains the pending or currently-in-progress change of the master credentials for the DB instance.

Type: String

Required: No

**MultiAZ**

Indicates that the Single-AZ DB instance is to change to a Multi-AZ deployment.

Type: Boolean

Required: No

**PendingCloudwatchLogsExports**

A list of the log types whose configuration is still pending. In other words, these log types are in the process of being activated or deactivated.

Type: [PendingCloudwatchLogsExports \(p. 448\)](#) object

Required: No

**Port**

Specifies the pending port for the DB instance.

Type: Integer

Required: No

**StorageType**

Specifies the storage type to be associated with the DB instance.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)

- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# Range

A range of integer values.

## Contents

### From

The minimum value in the range.

Type: Integer

Required: No

### Step

The step value for the range. For example, if you have a range of 5,000 to 10,000, with a step value of 1,000, the valid values start at 5,000 and step up by 1,000. Even though 7,500 is within the range, it isn't a valid value for the range. The valid values are 5,000, 6,000, 7,000, 8,000...

Type: Integer

Required: No

### To

The maximum value in the range.

Type: Integer

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# RecurringCharge

This data type is used as a response element in the [DescribeReservedDBInstances](#) (p. 218) and [DescribeReservedDBInstancesOfferings](#) (p. 222) actions.

## Contents

### **RecurringChargeAmount**

The amount of the recurring charge.

Type: Double

Required: No

### **RecurringChargeFrequency**

The frequency of the recurring charge.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# ReservedDBInstance

This data type is used as a response element in the [DescribeReservedDBInstances](#) (p. 218) and [PurchaseReservedDBInstancesOffering](#) (p. 292) actions.

## Contents

### **CurrencyCode**

The currency code for the reserved DB instance.

Type: String

Required: No

### **DBInstanceClass**

The DB instance class for the reserved DB instance.

Type: String

Required: No

### **DBInstanceCount**

The number of reserved DB instances.

Type: Integer

Required: No

### **Duration**

The duration of the reservation in seconds.

Type: Integer

Required: No

### **FixedPrice**

The fixed price charged for this reserved DB instance.

Type: Double

Required: No

### **MultiAZ**

Indicates if the reservation applies to Multi-AZ deployments.

Type: Boolean

Required: No

### **OfferingType**

The offering type of this reserved DB instance.

Type: String

Required: No

### **ProductDescription**

The description of the reserved DB instance.

Type: String

Required: No

**RecurringCharges.RecurringCharge.N**

The recurring price charged to run this reserved DB instance.

Type: Array of [RecurringCharge](#) (p. 455) objects

Required: No

**ReservedDBInstanceArn**

The Amazon Resource Name (ARN) for the reserved DB instance.

Type: String

Required: No

**ReservedDBInstanceId**

The unique identifier for the reservation.

Type: String

Required: No

**ReservedDBInstancesOfferingId**

The offering identifier.

Type: String

Required: No

**StartTime**

The time the reservation started.

Type: Timestamp

Required: No

**State**

The state of the reserved DB instance.

Type: String

Required: No

**UsagePrice**

The hourly price charged for this reserved DB instance.

Type: Double

Required: No

## See Also

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

- [AWS SDK for C++](#)



- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# ReservedDBInstancesOffering

This data type is used as a response element in the [DescribeReservedDBInstancesOfferings](#) (p. 222) action.

## Contents

### **CurrencyCode**

The currency code for the reserved DB instance offering.

Type: String

Required: No

### **DBInstanceClass**

The DB instance class for the reserved DB instance.

Type: String

Required: No

### **Duration**

The duration of the offering in seconds.

Type: Integer

Required: No

### **FixedPrice**

The fixed price charged for this offering.

Type: Double

Required: No

### **MultiAZ**

Indicates if the offering applies to Multi-AZ deployments.

Type: Boolean

Required: No

### **OfferingType**

The offering type.

Type: String

Required: No

### **ProductDescription**

The database engine used by the offering.

Type: String

Required: No

**RecurringCharges.RecurringCharge.N**

The recurring price charged to run this reserved DB instance.

Type: Array of [RecurringCharge \(p. 455\)](#) objects

Required: No

**ReservedDBInstancesOfferingId**

The offering identifier.

Type: String

Required: No

**UsagePrice**

The hourly price charged for this offering.

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](#)

# ResourcePendingMaintenanceActions

Describes the pending maintenance actions for a resource.

## Contents

### **PendingMaintenanceActionDetails.PendingMaintenanceAction.N**

A list that provides details about the pending maintenance actions for the resource.

Type: Array of [PendingMaintenanceAction](#) (p. 449) objects

Required: No

### **ResourceIdentifier**

The ARN of the resource that has pending maintenance actions.

Type: String

Required: No

## See Also

For more information about using this 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](#)

# SourceRegion

Contains an AWS Region name as the result of a successful call to the [DescribeSourceRegions \(p. 226\)](#) action.

## Contents

### Endpoint

The endpoint for the source AWS Region endpoint.

Type: String

Required: No

### RegionName

The name of the source AWS Region.

Type: String

Required: No

### Status

The status of the source AWS Region.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)

# Subnet

This data type is used as a response element in the [DescribeDBSubnetGroups \(p. 182\)](#) action.

## Contents

### **SubnetAvailabilityZone**

Contains Availability Zone information.

This data type is used as an element in the following data type:

- [OrderableDBInstanceOption \(p. 443\)](#)

Type: [AvailabilityZone \(p. 369\)](#) object

Required: No

### **SubnetIdentifier**

Specifies the identifier of the subnet.

Type: String

Required: No

### **SubnetStatus**

Specifies 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](#)

# Tag

Metadata assigned to an Amazon RDS resource consisting of a key-value pair.

## Contents

### Key

A key is the required name of the tag. The string value can be from 1 to 128 Unicode characters in length and can't be prefixed with "aws:" or "rds:". The string can only contain only the set of Unicode letters, digits, white-space, '\_', ':', '/', '=', '+', '-' (Java regex: "^[\\p{L}\\p{Z}\\p{N}\_:/=+\\-]\*\$").

Type: String

Required: No

### Value

A value is the optional value of the tag. The string value can be from 1 to 256 Unicode characters in length and can't be prefixed with "aws:" or "rds:". The string can only contain only the set of Unicode letters, digits, white-space, '\_', ':', '/', '=', '+', '-' (Java regex: "^[\\p{L}\\p{Z}\\p{N}\_:/=+\\-]\*\$").

Type: String

Required: No

## See Also

For more information about using this 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](#)

# Timezone

A time zone associated with a [DBInstance \(p. 393\)](#) or a [DBSnapshot \(p. 407\)](#). This data type is an element in the response to the [DescribeDBInstances \(p. 157\)](#), the [DescribeDBSnapshots \(p. 178\)](#), and the [DescribeDBEngineVersions \(p. 153\)](#) actions.

## Contents

### **TimezoneName**

The name of the time zone.

Type: String

Required: No

## See Also

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

- [AWS SDK for C++](#)
- [AWS SDK for Go](#)
- [AWS SDK for Java](#)
- [AWS SDK for Ruby V2](#)



# UpgradeTarget

The version of the database engine that a DB instance can be upgraded to.

## Contents

### AutoUpgrade

A value that indicates whether the target version is applied to any source DB instances that have AutoMinorVersionUpgrade set to true.

Type: Boolean

Required: No

### Description

The version of the database engine that a DB instance can be upgraded to.

Type: String

Required: No

### Engine

The name of the upgrade target database engine.

Type: String

Required: No

### EngineVersion

The version number of the upgrade target database engine.

Type: String

Required: No

### IsMajorVersionUpgrade

A value that indicates whether a database engine is upgraded to a major version.

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](#)

# ValidDBInstanceModificationsMessage

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the [DescribeValidDBInstanceModifications](#) (p. 229) action. You can use this information when you call [ModifyDBInstance](#) (p. 252).

## Contents

### **Storage.ValidStorageOptions.N**

Valid storage options for your DB instance.

Type: Array of [ValidStorageOptions](#) (p. 468) 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](#)

# ValidStorageOptions

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the [DescribeValidDBInstanceModifications](#) (p. 229) action.

## Contents

### **IopsToStorageRatio.DoubleRange.N**

The valid range of Provisioned IOPS to gibibytes of storage multiplier. For example, 3-10, which means that provisioned IOPS can be between 3 and 10 times storage.

Type: Array of [DoubleRange](#) (p. 417) objects

Required: No

### **ProvisionedIops.Range.N**

The valid range of provisioned IOPS. For example, 1000-20000.

Type: Array of [Range](#) (p. 454) objects

Required: No

### **StorageSize.Range.N**

The valid range of storage in gibibytes. For example, 100 to 16384.

Type: Array of [Range](#) (p. 454) objects

Required: No

### **StorageType**

The valid storage types for your DB instance. For example, gp2, io1.

Type: String

Required: No

## See Also

For more information about using this 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

This data type is used as a response element for queries on VPC security group membership.

## Contents

### Status

The status of the VPC security group.

Type: String

Required: No

### VpcSecurityGroupId

The name 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