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- Errors
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Welcome

Overview

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

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

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

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

This document was last published on February 7, 2018.
Actions

The following actions are supported:

- AuthorizeClusterSecurityGroupIngress (p. 4)
- AuthorizeSnapshotAccess (p. 7)
- CopyClusterSnapshot (p. 9)
- CreateCluster (p. 12)
- CreateClusterParameterGroup (p. 23)
- CreateClusterSecurityGroup (p. 26)
- CreateClusterSnapshot (p. 29)
- CreateClusterSubnetGroup (p. 32)
- CreateEventSubscription (p. 35)
- CreateHsmClientCertificate (p. 39)
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• RevokeClusterSecurityGroupIngress (p. 187)
• RevokeSnapshotAccess (p. 190)
• RotateEncryptionKey (p. 192)
AuthorizeClusterSecurityGroupIngress

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

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterSecurityGroupName

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

Type: String
Required: Yes

CIDRIP

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

Type: String
Required: No

EC2SecurityGroupName

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

Type: String
Required: No

EC2SecurityGroupOwnerId

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

Example: 111122223333

Type: String
Required: No
Response Elements

The following element is returned by the service.

ClusterSecurityGroup

Describes a security group.

Type: ClusterSecurityGroup (p. 210) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

AuthorizationAlreadyExists

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

HTTP Status Code: 400

AuthorizationQuotaExceeded

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

HTTP Status Code: 400

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

InvalidClusterSecurityGroupState

The state of the cluster security group is not available.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=AuthorizeClusterSecurityGroupIngress
&CIDRIP=10.24.34.0/24
&ClusterSecurityGroupName=example-security-group
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20150817/us-west-2/redshift/aws4_request
&X-Amz-Date=20150825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<AuthorizeClusterSecurityGroupIngressResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/"/>
<AuthorizeClusterSecurityGroupIngressResult>
  <ClusterSecurityGroup>
    <Tags/>
    <EC2SecurityGroups/>
    <IPRanges>
      <IPRange>
        <CIDRIP>10.24.34.0/24</CIDRIP>
        <Status>authorized</Status>
      </IPRange>
    </IPRanges>
    <Description>Example security group</Description>
    <ClusterSecurityGroupName>example-security-group</ClusterSecurityGroupName>
  </ClusterSecurityGroup>
</AuthorizeClusterSecurityGroupIngressResult>

<AuthorizeClusterSecurityGroupIngressResponse>
  <ResponseMetadata>
    <RequestId>534d1bce-46ac-11e5-b673-31d855cc98c6</RequestId>
  </ResponseMetadata>
</AuthorizeClusterSecurityGroupIngressResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
AuthorizeSnapshotAccess

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

For more information about working with snapshots, go to Amazon Redshift Snapshots in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

AccountWithRestoreAccess

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

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

Type: String

Required: Yes

SnapshotIdentifier

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

Type: String

Required: Yes

SnapshotClusterIdentifier

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

Type: String

Required: No

Response Elements

The following element is returned by the service.

Snapshot

Describes a snapshot.

Type: Snapshot (p. 245) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

AuthorizationAlreadyExists

The specified CIDR block or EC2 security group is already authorized for the specified cluster security group.
HTTP Status Code: 400

**AuthorizationQuotaExceeded**

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

HTTP Status Code: 400

**ClusterSnapshotNotFound**

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

HTTP Status Code: 404

**DependentServiceRequestThrottlingFault**

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

HTTP Status Code: 400

**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

**LimitExceededFault**

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

HTTP Status Code: 400

---

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CopyClusterSnapshot

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

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

For more information about working with snapshots, go to Amazon Redshift Snapshots in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**SourceSnapshotIdentifier**

The identifier for the source snapshot.

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

Type: String

Required: Yes

**TargetSnapshotIdentifier**

The identifier given to the new manual snapshot.

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

Type: String

Required: Yes

**SourceSnapshotClusterIdentifier**

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

Constraints:
- Must be the identifier for a valid cluster.

Type: String

Required: No
Response Elements

The following element is returned by the service.

**Snapshot**

Describes a snapshot.

Type: Snapshot (p. 245) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterSnapshotAlreadyExists**

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

HTTP Status Code: 400

**ClusterSnapshotNotFound**

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

HTTP Status Code: 404

**ClusterSnapshotQuotaExceeded**

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

HTTP Status Code: 400

**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

Example

Sample Request

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

Sample Response

```
<CopyClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CopyClusterSnapshotResult>
  
  API Version 2012-12-01
  10
```
<Snapshot>
  <Port>5439</Port>
  <SnapshotIdentifier>my-snapshot-456</SnapshotIdentifier>
  <Status>available</Status>
  <SnapshotType>manual</SnapshotType>
  <ClusterVersion>1.0</ClusterVersion>
  <NumberOfNodes>2</NumberOfNodes>
  <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
  <AvailabilityZone>us-east-1c</AvailabilityZone>
  <NodeType>ds2.xlarge</NodeType>
  <ClusterIdentifier>examplecluster</ClusterIdentifier>
  <MasterUsername>adminuser</MasterUsername>
</Snapshot>
</CopyClusterSnapshotResult>
</ResponseMetadata>
</CopyClusterSnapshotResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateCluster

Creates a new cluster.

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

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

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

Example: myexamplecluster

Type: String

Required: Yes

MasterUsername

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

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

Type: String

Required: Yes

MasterUserPassword

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

Constraints:
• Must be between 8 and 64 characters in length.
• Must contain at least one uppercase letter.
• Must contain at least one lowercase letter.
• Must contain one number.
Request Parameters

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

**NodeType**

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

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

  Type: String
  Required: Yes

**AdditionalInfo**

Reserved.

  Type: String
  Required: No

**AllowVersionUpgrade**

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

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

Default: `true`

  Type: Boolean
  Required: No

**AutomatedSnapshotRetentionPeriod**

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with CreateClusterSnapshot (p. 29).

Default: 1

  Constraints: Must be a value from 0 to 35.

  Type: Integer
  Required: No

**AvailabilityZone**

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

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

Example: `us-east-1d`
Constraint: The specified Availability Zone must be in the same region as the current endpoint.

Type: String

Required: No

**ClusterParameterGroupName**

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

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

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

Type: String

Required: No


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

Default: The default cluster security group for Amazon Redshift.

Type: Array of strings

Required: No

**ClusterSubnetGroupName**

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

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

Type: String

Required: No

**ClusterType**

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

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

Valid Values: multi-node | single-node

Default: multi-node

Type: String

Required: No

**ClusterVersion**

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

The version selected runs on all the nodes in the cluster.
Constraints: Only version 1.0 is currently available.

Example: 1.0

Type: String

Required: No

**DBName**

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

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

Default: dev

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

Type: String

Required: No

**ElasticIp**

The Elastic IP (EIP) address for the cluster.

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

Type: String

Required: No

**Encrypted**

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

Default: false

Type: Boolean

Required: No

**EnhancedVpcRouting**

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

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

Default: false

Type: Boolean

Required: No
HsmClientCertificateIdentifier

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

Type: String
Required: No

HsmConfigurationIdentifier

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

Type: String
Required: No

IamRoles.IamRoleArn.N

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

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

Type: Array of strings
Required: No

KmsKeyId

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

Type: String
Required: No

NumberOfNodes

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

For information about determining how many nodes you need, go to Working with Clusters in the Amazon Redshift Cluster Management Guide.

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

Default: 1

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

Type: Integer
Required: No

Port

The port number on which the cluster accepts incoming connections.

The cluster is accessible only via the JDBC and ODBC connection strings. Part of the connection string requires the port on which the cluster will listen for incoming connections.
Default: 5439
Valid Values: 1150–65535
Type: Integer
Required: No

**PreferredMaintenanceWindow**

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

Format: *ddd:*hh24:*mi–*ddd:*hh24:*mi

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

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

Constraints: Minimum 30-minute window.

Type: String
Required: No

**PubliclyAccessible**

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

Type: Boolean
Required: No

**Tags.Tag.N**

A list of tag instances.

Type: Array of Tag (p. 256) objects
Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

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

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

Type: Array of strings
Required: No

**Response Elements**

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: Cluster (p. 198) object
Errors

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterAlreadyExists

The account already has a cluster with the given identifier.

HTTP Status Code: 400

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

ClusterQuotaExceeded

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

HTTP Status Code: 400

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

HsmClientCertificateNotFoundFault

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

HTTP Status Code: 400

HsmConfigurationNotFoundFault

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

HTTP Status Code: 400

InsufficientClusterCapacity

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

HTTP Status Code: 400

InvalidClusterSubnetGroupStateFault

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

HTTP Status Code: 400

InvalidElasticIpFault

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

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

NumberOfNodesPerClusterLimitExceeded

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

HTTP Status Code: 400

NumberOfNodesQuotaExceeded

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

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Examples

Example

Create a non-VPC cluster.

Sample Request

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

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

Sample Request

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

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<CreateClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterResult>
    <Cluster>
      <PendingModifiedValues>
        <MasterUserPassword>****</MasterUserPassword>
      </PendingModifiedValues>
      <ClusterSubnetGroupName>mysubnetgroup1</ClusterSubnetGroupName>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <ClusterStatus>creating</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>false</PubliclyAccessible>
      <Encrpyted>false</Encrpyted>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>sat:08:30-sat:09:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <VpcId>vpc-796a5913</VpcId>
      <ClusterSecurityGroups/>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>exampleclusterinvpc</ClusterIdentifier>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <MasterUsername>master</MasterUsername>
    </Cluster>
  </CreateClusterResult>
  <ResponseMetadata>
    <RequestId>fa337bb4-6a4d-11e2-a12a-cb8076a904bd</RequestId>
  </ResponseMetadata>
</CreateClusterResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
See Also

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateClusterParameterGroup

Creates an Amazon Redshift parameter group.

Creating parameter groups is independent of creating clusters. You can associate a cluster with a parameter group when you create the cluster. You can also associate an existing cluster with a parameter group after the cluster is created by using ModifyCluster (p. 146).

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Description

A description of the parameter group.

Type: String

Required: Yes

ParameterGroupFamily

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

To get a list of valid parameter group family names, you can call DescribeClusterParameterGroups (p. 66). By default, Amazon Redshift returns a list of all the parameter groups that are owned by your AWS account, including the default parameter groups for each Amazon Redshift engine version. The parameter group family names associated with the default parameter groups provide you the valid values. For example, a valid family name is "redshift-1.0".

Type: String

Required: Yes

ParameterGroupName

The name of the cluster parameter group.

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

Note
- This value is stored as a lower-case string.

Type: String

Required: Yes

Tags.Tag.N

A list of tag instances.
Response Elements

The following element is returned by the service.

ClusterParameterGroup

Describes a parameter group.

Type: ClusterParameterGroup (p. 206) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterParameterGroupAlreadyExists

A cluster parameter group with the same name already exists.

HTTP Status Code: 400

ClusterParameterGroupQuotaExceeded

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

Example

Sample Request

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

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateClusterSecurityGroup

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

For information about managing security groups, go to Amazon Redshift Cluster Security Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterSecurityGroupName

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

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

Example: examplesecuritygroup

Type: String

Required: Yes

Description

A description for the security group.

Type: String

Required: Yes

Tags.Tag.N

A list of tag instances.

Type: Array of Tag (p. 256) objects

Required: No

Response Elements

The following element is returned by the service.

ClusterSecurityGroup

Describes a security group.

Type: ClusterSecurityGroup (p. 210) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).
ClusterSecurityGroupAlreadyExists

A cluster security group with the same name already exists.

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

QuotaExceeded.ClusterSecurityGroup

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

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

Example

Sample Request

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

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateClusterSnapshot

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

For more information about working with snapshots, go to Amazon Redshift Snapshots in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterIdentifier**

The cluster identifier for which you want a snapshot.

Type: String

Required: Yes

**SnapshotIdentifier**

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

Constraints:

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

Example: my-snapshot-id

Type: String

Required: Yes

**Tags.Tag.N**

A list of tag instances.

Type: Array of Tag (p. 256) objects

Required: No

Response Elements

The following element is returned by the service.

**Snapshot**

Describes a snapshot.

Type: Snapshot (p. 245) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).
ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

ClusterSnapshotAlreadyExists

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

HTTP Status Code: 400

ClusterSnapshotQuotaExceeded

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

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/?Action=CreateClusterSnapshot
&ClusterIdentifier=examplecluster
&SnapshotIdentifier=snapshot-1234
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T010824Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateClusterSubnetGroup

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

For information about subnet groups, go to Amazon Redshift Cluster Subnet Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterSubnetGroupName**

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

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

Example: examplesubnetgroup

Type: String

Required: Yes

**Description**

A description for the subnet group.

Type: String

Required: Yes

**SubnetIds.SubnetIdentifier.N**

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

Type: Array of strings

Required: Yes

**Tags.Tag.N**

A list of tag instances.

Type: Array of Tag (p. 256) objects

Required: No

Response Elements

The following element is returned by the service.

**ClusterSubnetGroup**

Describes a subnet group.

Type: ClusterSubnetGroup (p. 214) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterSubnetGroupAlreadyExists

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

HTTP Status Code: 400

ClusterSubnetGroupQuotaExceeded

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

HTTP Status Code: 400

ClusterSubnetQuotaExceededFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateEventSubscription

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

SnsTopicArn

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

Type: String
Required: Yes

SubscriptionName

The name of the event subscription to be created.

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

Type: String
Required: Yes

Enabled

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

Type: Boolean
Required: No

EventCategories.EventCategory.N

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

The following element is returned by the service.

EventSubscription

Describes event subscriptions.

Type: EventSubscription (p. 225) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

EventSubscriptionQuotaExceeded

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

SNSInvalidTopic

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

HTTP Status Code: 400

SNSNoAuthorization

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

HTTP Status Code: 400

SNSTopicArnNotFound

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

HTTP Status Code: 404

SourceNotFound

The specified Amazon Redshift event source could not be found.

HTTP Status Code: 404

SubscriptionAlreadyExist

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

HTTP Status Code: 400

SubscriptionCategoryNotFound

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

HTTP Status Code: 404

SubscriptionEventIdNotFound

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

HTTP Status Code: 404

SubscriptionSeverityNotFound

The value specified for the event severity was not one of the allowed values, or it specified a severity that does not apply to the specified source type. The allowed values are ERROR and INFO.
HTTP Status Code: 404

**TagLimitExceededFault**

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateHsmClientCertificate

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

HsmClientCertificateIdentifier

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

Type: String
Required: Yes

Tags.Tag.N

A list of tag instances.

Type: Array of Tag (p. 256) objects
Required: No

Response Elements

The following element is returned by the service.

HsmClientCertificate

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

Type: HsmClientCertificate (p. 227) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

HsmClientCertificateAlreadyExistsFault

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

HTTP Status Code: 400

HsmClientCertificateQuotaExceededFault

The quota for HSM client certificates has been reached. For information about increasing your quota, go to Limits in Amazon Redshift in the Amazon Redshift Cluster Management Guide.
HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateHsmConfiguration

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Description

A text description of the HSM configuration to be created.

Type: String

Required: Yes

HsmConfigurationIdentifier

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

Type: String

Required: Yes

HsmIpAddress

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

Type: String

Required: Yes

HsmPartitionName

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

Type: String

Required: Yes

HsmPartitionPassword

The password required to access the HSM partition.

Type: String

Required: Yes

HsmServerPublicCertificate

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

Type: String

Required: Yes
**Response Elements**

The following element is returned by the service.

**HsmConfiguration**

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

Type: `HsmConfiguration (p. 228)` object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**HsmConfigurationAlreadyExistsFault**

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

HTTP Status Code: 400

**HsmConfigurationQuotaExceededFault**

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

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**TagLimitExceededFault**

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateSnapshotCopyGrant

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

For more information about managing snapshot copy grants, go to Amazon Redshift Database Encryption in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

SnapshotCopyGrantName

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

Constraints:

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

Type: String

Required: Yes

KmsKeyId

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

Type: String

Required: No

Tags.Tag.N

A list of tag instances.

Type: Array of Tag (p. 256) objects

Required: No

Response Elements

The following element is returned by the service.

SnapshotCopyGrant

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

For more information about managing snapshot copy grants, go to Amazon Redshift Database Encryption in the Amazon Redshift Cluster Management Guide.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**DependentServiceRequestThrottlingFault**

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

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**LimitExceededFault**

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

HTTP Status Code: 400

**SnapshotCopyGrantAlreadyExistsFault**

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

HTTP Status Code: 400

**SnapshotCopyGrantQuotaExceededFault**

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

HTTP Status Code: 400

**TagLimitExceededFault**

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
CreateTags

Adds one or more tags to a specified resource.

A resource can have up to 10 tags. If you try to create more than 10 tags for a resource, you will receive an error and the attempt will fail.

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ResourceName**

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

Type: String

Required: Yes

**Tags.Tag.N**

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

Type: Array of Tag (p. 256) objects

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**ResourceNotFoundFault**

The resource could not be found.

HTTP Status Code: 404

**TagLimitExceededFault**

The request exceeds the limit of 10 tags for the resource.

HTTP Status Code: 400
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteCluster

Deletes a previously provisioned cluster. A successful response from the web service indicates that the request was received correctly. Use DescribeClusters (p. 73) to monitor the status of the deletion. The delete operation cannot be canceled or reverted once submitted. For more information about managing clusters, go to Amazon Redshift Clusters in the Amazon Redshift Cluster Management Guide.

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

For more information about managing clusters, go to Amazon Redshift Clusters in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The identifier of the cluster to be deleted.

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

Type: String

Required: Yes

FinalClusterSnapshotIdentifier

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

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

Type: String

Required: No

SkipFinalClusterSnapshot

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

Note
The FinalClusterSnapshotIdentifier parameter must be specified if SkipFinalClusterSnapshot is false.
Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: [Cluster](p. 198) object

Errors

For information about the errors that are common to all actions, see [Common Errors (p. 262)].

**ClusterNotFound**

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

HTTP Status Code: 404

**ClusterSnapshotAlreadyExists**

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

HTTP Status Code: 400

**ClusterSnapshotQuotaExceeded**

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

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

Example

Sample Request

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

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteClusterParameterGroup

Deletes a specified Amazon Redshift parameter group.

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ParameterGroupName

The name of the parameter group to be deleted.

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

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

InvalidClusterParameterGroupState

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

HTTP Status Code: 400

Example

Sample Request

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

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteClusterSecurityGroup

Deletes an Amazon Redshift security group.

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

For information about managing security groups, go to Amazon Redshift Cluster Security Groups in the Amazon Redshift Cluster Management Guide.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterSecurityGroupName**
- The name of the cluster security group to be deleted.
  - Type: String
  - Required: Yes

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterSecurityGroupNameNotFound**
- The cluster security group name does not refer to an existing cluster security group.
  - HTTP Status Code: 404

**InvalidClusterSecurityGroupState**
- The state of the cluster security group is not available.
  - HTTP Status Code: 400

**Example**

**Sample Request**

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

**Sample Response**

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

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See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteClusterSnapshot

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**SnapshotIdentifier**

The unique identifier of the manual snapshot to be deleted.

Constraints: Must be the name of an existing snapshot that is in the available state.

Type: String

Required: Yes

**SnapshotClusterIdentifier**

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

Constraints: Must be the name of valid cluster.

Type: String

Required: No

Response Elements

The following element is returned by the service.

**Snapshot**

Describes a snapshot.

Type: Snapshot (p. 245) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterSnapshotNotFound**

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

HTTP Status Code: 404
**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

### Example

#### Sample Request

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

#### Sample Response

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

### See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DeleteClusterSubnetGroup

Deletes the specified cluster subnet group.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterSubnetGroupName**

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

Type: String

Required: Yes

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterSubnetGroupNotFoundFault**

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

HTTP Status Code: 400

**InvalidClusterSubnetGroupStateFault**

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

HTTP Status Code: 400

**InvalidClusterSubnetStateFault**

The state of the subnet is invalid.

HTTP Status Code: 400

**Example**

**Sample Request**

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

**Sample Response**

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

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DeleteEventSubscription

Deletes an Amazon Redshift event notification subscription.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

SubscriptionName

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

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidSubscriptionStateFault

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

HTTP Status Code: 400

SubscriptionNotFound

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

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteHsmClientCertificate

Deletes the specified HSM client certificate.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**HsmClientCertificateIdentifier**

The identifier of the HSM client certificate to be deleted.

Type: String

Required: Yes

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**HsmClientCertificateNotFoundFault**

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

HTTP Status Code: 400

**InvalidHsmClientCertificateStateFault**

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

HTTP Status Code: 400

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteHsmConfiguration

Deletes the specified Amazon Redshift HSM configuration.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

HsmConfigurationIdentifier

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

Type: String
Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

HsmConfigurationNotFoundFault

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

HTTP Status Code: 400

InvalidHsmConfigurationStateFault

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

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteSnapshotCopyGrant

Deletes the specified snapshot copy grant.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

SnapshotCopyGrantName

The name of the snapshot copy grant to delete.

Type: String
Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidSnapshotCopyGrantStateFault

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

HTTP Status Code: 400

SnapshotCopyGrantNotFoundFault

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

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DeleteTags

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ResourceName

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

Type: String
Required: Yes

TagKeys.TagKey.N

The tag key that you want to delete.

Type: Array of strings
Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
• AWS SDK for Ruby V2
DescribeClusterParameterGroups

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

For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterParameterGroups (p. 66) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.
Type: Integer
Required: No

ParameterGroupName

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

Type: String
Required: No
TagKeys.TagKey.N

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

Type: Array of strings

Required: No

TagValues.TagValue.N

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

Type: Array of strings

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

ParameterGroups.ClusterParameterGroup.N

A list of ClusterParameterGroup (p. 206) instances. Each instance describes one cluster parameter
group.

Type: Array of ClusterParameterGroup (p. 206) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400
Example

Sample Request

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

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeClusterParameters

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

You can specify `source` filter to retrieve parameters of only specific type. For example, to retrieve parameters that were modified by a user action such as from ModifyClusterParameterGroup (p. 157), you can specify `source` equal to `user`.

For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ParameterGroupName**

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

Type: String

Required: Yes

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterParameters (p. 69) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**Source**

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

Default: All parameter types returned.
Valid Values: `user` | `engine-default`  
Type: String  
Required: No

**Response Elements**

The following elements are returned by the service.

**Marker**

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

Type: String  

Parameters.Parameter.N

A list of Parameter (p. 233) instances. Each instance lists the parameters of one cluster parameter group.

Type: Array of Parameter (p. 233) objects

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterParameterGroupNotFound**

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

HTTP Status Code: 404

**Example**

**Sample Request**

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

**Sample Response**

```
<DescribeClusterParametersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterParametersResult>
    <Parameters>
      ...
    </Parameters>
  </DescribeClusterParametersResult>
</DescribeClusterParametersResponse>
```
<Parameter>
  <ParameterValue>ISO, MDY</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the display format for date and time values.</Description>
  <ParameterName>datestyle</ParameterName>
</Parameter>

<Parameter>
  <ParameterValue>0</ParameterValue>
  <DataType>integer</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>Sets the number of digits displayed for floating-point values.</Description>
  <AllowedValues>-15-2</AllowedValues>
  <ParameterName>extra_float_digits</ParameterName>
</Parameter>

<Parameter>
  <ParameterValue>default</ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>This parameter applies a user-defined label to a group of queries that are run during the same session.</Description>
  <ParameterName>query_group</ParameterName>
</Parameter>

<Parameter>
  <ParameterValue>false</ParameterValue>
  <DataType>boolean</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>require ssl for all database connections</Description>
  <AllowedValues>true,false</AllowedValues>
  <ParameterName>require_ssl</ParameterName>
</Parameter>

<Parameter>
  <ParameterValue>
    {
      "query_concurrency":5
    }
  </ParameterValue>
  <DataType>string</DataType>
  <Source>engine-default</Source>
  <IsModifiable>true</IsModifiable>
  <Description>wlm json configuration</Description>
  <ParameterName>wlm_json_configuration</ParameterName>
</Parameter>

</Parameters>
</DescribeClusterParametersResult>

<ResponseMetadata>
  <RequestId>2ba35df4-40d3-11e2-82cf-0b45b05c0221</RequestId>
</ResponseMetadata>
### See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeClusters

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

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

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

Type: String

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusters (p. 73) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer
Response Elements

The following elements are returned by the service.

Clusters.Cluster.N

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

Type: Array of Cluster objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidTagFault

The tag is invalid.
HTTP Status Code: 400

Example

Describing All Clusters

The following example shows a request that describes all clusters.

Sample Request

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

Sample Response

```
<DescribeClustersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
   <DescribeClustersResult>
      <Clusters>
         <Cluster>
            <PendingModifiedValues>
               <MasterUserPassword>****</MasterUserPassword>
            </PendingModifiedValues>
            <ClusterVersion>1.0</ClusterVersion>
            <VpcSecurityGroups/>
            <ClusterStatus>creating</ClusterStatus>
            <NumberOfNodes>2</NumberOfNodes>
            <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
            <PubliclyAccessible>true</PubliclyAccessible>
            <Encrypted>false</Encrypted>
            <EnhancedVpcRouting>false</EnhancedVpcRouting>
            <DBName>dev</DBName>
            <PreferredMaintenanceWindow>sun:10:30-sun:11:00</PreferredMaintenanceWindow>
            <ClusterParameterGroups>
               <ClusterParameterGroup>
                  <ParameterApplyStatus>in-sync</ParameterApplyStatus>
                  <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
               </ClusterParameterGroup>
            </ClusterParameterGroups>
            <ClusterSecurityGroups>
               <ClusterSecurityGroup>
                  <Status>active</Status>
                  <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
               </ClusterSecurityGroup>
            </ClusterSecurityGroups>
            <AvailabilityZone>us-east-1a</AvailabilityZone>
            <NodeType>ds2.xlarge</NodeType>
            <ClusterIdentifier>examplecluster</ClusterIdentifier>
            <AllowVersionUpgrade>true</AllowVersionUpgrade>
            <MasterUsername>masteruser</MasterUsername>
         </Cluster>
      </Clusters>
      <ResponseMetadata>
         <RequestId>837d45d6-64f0-11e2-b07c-f7fbd006c67</RequestId>
      </ResponseMetadata>
   </DescribeClustersResult>
</DescribeClustersResponse>
```
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeClusterSecurityGroups

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

For information about managing security groups, go to Amazon Redshift Cluster Security Groups in the Amazon Redshift Cluster Management Guide.

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterSecurityGroupName

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

Example: securitygroup1

Type: String

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterSecurityGroups (p. 77) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer
Response Elements

The following elements are returned by the service.


Type: Array of ClusterSecurityGroup (p. 210) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400
Example

Sample Request

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

Sample Response

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

See Also

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

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

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

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

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

### Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

#### ClusterIdentifier

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

Type: String

Required: No

#### EndTime

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

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

Type: Timestamp

Required: No

#### Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterSnapshots (p. 81) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

#### MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.
Request Parameters

**OwnerAccount**

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

Type: String

**StartTime**

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

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

Type: Timestamp

**SnapshotType**

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

Valid Values: automated | manual

**TagKeys.TagKey.N**

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

Type: Array of strings

**TagValues.TagValue.N**

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

Type: Array of strings
Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

Snapshots.Snapshot.N

A list of Snapshot instances.

Type: Array of Snapshot objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterSnapshotNotFound

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

HTTP Status Code: 404

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

Example

Sample Request

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

Sample Response

<DescribeClusterSnapshotsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterSnapshotsResult>
    <Snapshots>
    
    </Snapshots>
  </DescribeClusterSnapshotsResult>
</DescribeClusterSnapshotsResponse>
<Snapshot>
  <Port>5439</Port>
  <Status>available</Status>
  <SnapshotType>automated</SnapshotType>
  <ClusterVersion>1.0</ClusterVersion>
  <NumberOfNodes>2</NumberOfNodes>
  <DBName>dev</DBName>
  <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
  <AvailabilityZone>us-east-1c</AvailabilityZone>
  <NodeType>ds2.xlarge</NodeType>
  <ClusterIdentifier>examplecluster</ClusterIdentifier>
  <MasterUsername>adminuser</MasterUsername>
</Snapshot>

<Snapshot>
  <Port>5439</Port>
  <SnapshotIdentifier>my-snapshot-123</SnapshotIdentifier>
  <Status>available</Status>
  <SnapshotType>manual</SnapshotType>
  <ClusterVersion>1.0</ClusterVersion>
  <SnapshotCreateTime>2013-01-23T01:09:03.149Z</SnapshotCreateTime>
  <NumberOfNodes>2</NumberOfNodes>
  <DBName>dev</DBName>
  <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
  <AvailabilityZone>us-east-1c</AvailabilityZone>
  <NodeType>ds2.xlarge</NodeType>
  <ClusterIdentifier>examplecluster</ClusterIdentifier>
  <MasterUsername>adminuser</MasterUsername>
</Snapshot>

</Snapshots>
</DescribeClusterSnapshotsResult>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeClusterSubnetGroups

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterSubnetGroupName**

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

Type: String

Required: No

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterSubnetGroups (p. 85) request exceed the value specified in `MaxRecords`, AWS returns a value in the `Marker` field of the response. You can retrieve the next set of response records by providing the returned marker value in the `Marker` parameter and retrying the request.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**TagKeys.TagKey.N**

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

The following elements are returned by the service.

TagValues.TagValue.N

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

Type: Array of strings
Required: No

ClusterSubnetGroups.ClusterSubnetGroup.N

A list of ClusterSubnetGroup (p. 214) instances.

Type: Array of ClusterSubnetGroup (p. 214) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeClusterVersions

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterParameterGroupFamily

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

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

Type: String
Required: No

ClusterVersion

The specific cluster version to return.

Example: 1.0

Type: String
Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterVersions (p. 88) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer
Required: No
Response Elements

The following elements are returned by the service.

**ClusterVersions.ClusterVersion.N**

A list of Version elements.

Type: Array of ClusterVersion (p. 216) objects

**Marker**

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

Example

Sample Request

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

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeDefaultClusterParameters

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

For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ParameterGroupFamily**

The name of the cluster parameter group family.

Type: String

Required: Yes

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeDefaultClusterParameters (p. 91) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following element is returned by the service.

**DefaultClusterParameters**

Describes the default cluster parameters for a parameter group family.

Type: DefaultClusterParameters (p. 217) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

Example

Sample Request

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

Sample Response

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

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeEventCategories

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

SourceType

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

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

Type: String

Required: No

Response Elements

The following element is returned by the service.

EventCategoriesMapList.EventCategoriesMap.N

A list of event categories descriptions.

Type: Array of EventCategoriesMap (p. 223) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

See Also

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

API Version 2012-12-01
DescribeEvents

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Duration

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

Default: 60

Type: Integer

Required: No

EndTime

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

Example: 2009-07-08T18:00Z

Type: Timestamp

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeEvents (p. 95) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No
SourceIdentifier

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

Constraints:

If SourceIdentifier is supplied, SourceType must also be provided.

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

Type: String
Required: No

SourceType

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

Constraints:

If SourceType is supplied, SourceIdentifier must also be provided.

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

Type: String
Valid Values: cluster | cluster-parameter-group | cluster-security-group | cluster-snapshot
Required: No

StartTime

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

Example: 2009-07-08T18:00Z

Type: Timestamp
Required: No

Response Elements

The following elements are returned by the service.

Events.Event.N

A list of Event instances.

Type: Array of Event (p. 221) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

Example

Sample Request

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

Sample Response

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

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeEventSubscriptions

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**Marker**

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

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**SubscriptionName**

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

Type: String

Required: No

**TagKeys.TagKey.N**

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

Type: Array of strings
TagValues.TagValue.N

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

Type: Array of strings

Required: No

Response Elements

The following elements are returned by the service.

EventSubscriptionsList.EventSubscription.N

A list of event subscriptions.

Type: Array of EventSubscription (p. 225) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

SubscriptionNotFound

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

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DescribeHsmClientCertificates

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

HsmClientCertificateIdentifier

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

Type: String
Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeHsmClientCertificates (p. 102) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.

Type: Integer
Required: No

TagKeys.TagKey.N

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

Type: Array of strings

Required: No

TagValues.TagValue.N

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

Type: Array of strings

Required: No

Response Elements

The following elements are returned by the service.

HsmClientCertificates.HsmClientCertificate.N

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

Type: Array of HsmClientCertificate (p. 227) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

HsmClientCertificateNotFoundFault

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeHsmConfigurations

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

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

HsmConfigurationIdentifier

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

Type: String

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeHsmConfigurations (p. 105) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

TagKeys.TagKey.N

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

The following elements are returned by the service.

HsmConfigurations.HsmConfiguration.N

A list of HsmConfiguration objects.

Type: Array of HsmConfiguration objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

HsmConfigurationNotFoundFault

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DescribeLoggingStatus

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

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

Example: examplecluster

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

BucketName

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

Type: String

LastFailureMessage

The message indicating that logs failed to be delivered.

Type: String

LastFailureTime

The last time when logs failed to be delivered.

Type: Timestamp

LastSuccessfulDeliveryTime

The last time that logs were delivered.

Type: Timestamp

LoggingEnabled

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

Type: Boolean

S3KeyPrefix

The prefix applied to the log file names.

Type: String
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeOrderableClusterOptions

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterVersion

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

Default: All versions.

Constraints: Must be one of the version returned from DescribeClusterVersions (p. 88).

Type: String

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeOrderableClusterOptions (p. 110) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

NodeType

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

Type: String
Response Elements

The following elements are returned by the service.

Marker

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

Type: String

OrderableClusterOptions.OrderableClusterOption.N

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

Type: Array of OrderableClusterOption (p. 232) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

Example

Sample Request

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

Sample Response

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

<AvailabilityZones>
</OrderableClusterOption>

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

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

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112
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeReservedNodeOfferings

Returns a list of the available reserved node offerings by Amazon Redshift with their descriptions including the node type, the fixed and recurring costs of reserving the node and duration the node will be reserved for you. These descriptions help you determine which reserve node offering you want to purchase. You then use the unique offering ID in you call to PurchaseReservedNodeOffering (p. 167) to reserve one or more nodes for your Amazon Redshift cluster.

For more information about reserved node offerings, go to Purchasing Reserved Nodes in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeReservedNodeOfferings (p. 114) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.

Type: Integer
Required: No

ReservedNodeOfferingId

The unique identifier for the offering.

Type: String
Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

ReservedNodeOfferings.ReservedNodeOffering.N

A list of ReservedNodeOffering objects.

Type: Array of ReservedNodeOffering (p. 241) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

DependentServiceUnavailableFault

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

HTTP Status Code: 400

ReservedNodeOfferingNotFound

Specified offering does not exist.

HTTP Status Code: 404

UnsupportedOperation

The requested operation isn't supported.

HTTP Status Code: 400

Example

Sample Request

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

Sample Response

<DescribeReservedNodeOfferingsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeReservedNodeOfferingsResult>
    <ReservedNodeOfferings>
      <ReservedNodeOffering>
        <OfferingType>Heavy Utilization</OfferingType>
        <Duration>9460800</Duration>
        <RecurringCharges>
          ...
        </RecurringCharges>
      </ReservedNodeOffering>
    </ReservedNodeOfferings>
  </DescribeReservedNodeOfferingsResult>
</DescribeReservedNodeOfferingsResponse>
<ReservedNodeOffering>
  <ReservedNodeOfferingId>3a9bf7d-979a-49cc-b568-18f24315baf0</ReservedNodeOfferingId>
  <FixedPrice>12452.0</FixedPrice>
  <ReservedNodeOfferingId>d586503b-289f-408b-955b-9c95005d6908</ReservedNodeOfferingId>
  <UsagePrice>0.0</UsagePrice>
  <NodeType>ds2.8xlarge</NodeType>
  <ReservedNodeOfferingType>regular</ReservedNodeOfferingType>
</ReservedNodeOffering>

<ReservedNodeOffering>
  <OfferingType>Heavy Utilization</OfferingType>
  <Duration>31536000</Duration>
  <RecurringCharges>
    <RecurringCharge>
      <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
      <RecurringChargeAmount>0.09</RecurringChargeAmount>
    </RecurringCharge>
  </RecurringCharges>
  <FixedPrice>1815.0</FixedPrice>
  <ReservedNodeOfferingId>d586503b-289f-408b-955b-9c95005d6908</ReservedNodeOfferingId>
  <UsagePrice>0.0</UsagePrice>
  <NodeType>ds2.xlarge</NodeType>
  <ReservedNodeOfferingType>upgradable</ReservedNodeOfferingType>
</ReservedNodeOffering>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeReservedNodes

Returns the descriptions of the reserved nodes.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeReservedNodes (p. 117) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.
Type: Integer
Required: No

ReservedNodeId

Identifier for the node reservation.

Type: String
Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

ReservedNodes.ReservedNode.N

The list of ReservedNode objects.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**DependentServiceUnavailableFault**

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

HTTP Status Code: 400

**ReservedNodeNotFound**

The specified reserved compute node not found.

HTTP Status Code: 404

Example

**Sample Request**

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

**Sample Response**

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

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeResize

Returns information about the last resize operation for the specified cluster. If no resize operation has ever been initiated for the specified cluster, a HTTP 404 error is returned. If a resize operation was initiated and completed, the status of the resize remains as SUCCEEDED until the next resize.

A resize operation can be requested using ModifyCluster (p. 146) and specifying a different number or type of nodes for the cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

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

By default, resize operations for all clusters defined for an AWS account are returned.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

AvgResizeRateInMegaBytesPerSecond

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

Type: Double

ElapsedTimeInSeconds

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

Type: Long

EstimatedTimeToCompletionInSeconds

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

Type: Long

ImportTablesCompleted.member.N

The names of tables that have been completely imported.

Valid Values: List of table names.

Type: Array of strings
**ImportTablesInProgress.member.N**

The names of tables that are being currently imported.

Valid Values: List of table names.

Type: Array of strings

**ImportTablesNotStarted.member.N**

The names of tables that have not been yet imported.

Valid Values: List of table names

Type: Array of strings

**ProgressInMegaBytes**

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

Type: Long

**Status**

The status of the resize operation.

Valid Values: NONE | IN_PROGRESS | FAILED | SUCCEEDED

Type: String

**TargetClusterType**

The cluster type after the resize operation is complete.

Valid Values: multi-node | single-node

Type: String

**TargetNodeType**

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

Type: String

**TargetNumberOfNodes**

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

Type: Integer

**TotalResizeDataInMegaBytes**

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

Type: Long

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterNotFound**

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

HTTP Status Code: 404
ResizeNotFound
A resize operation for the specified cluster is not found.
HTTP Status Code: 404

Sample Request

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

Sample Response

<DescribeResizeResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
   <DescribeResizeResult>
      <TargetClusterType>multi-node</TargetClusterType>
      <Status>SUCCEEDED</Status>
      <AvgResizeRateInMegaBytesPerSecond>6.5263</AvgResizeRateInMegaBytesPerSecond>
      <ProgressInMegaBytes>66922</ProgressInMegaBytes>
      <EstimatedTimeToCompletionInSeconds>0</EstimatedTimeToCompletionInSeconds>
      <ImportTablesCompleted>
         <member>users</member>
         <member>venue</member>
         <member>sales</member>
         <member>listing</member>
         <member>event</member>
         <member>date</member>
         <member>category</member>
      </ImportTablesCompleted>
      <ElapsedTimeInSeconds>10254</ElapsedTimeInSeconds>
      <TargetNodeType>ds2.xlarge</TargetNodeType>
      <TargetNumberOfNodes>2</TargetNumberOfNodes>
   </DescribeResizeResult>
   <ResponseMetadata>
      <RequestId>a6d59c61-a162-11e2-b2bc-fb54c9d11e09</RequestId>
   </ResponseMetadata>
</DescribeResizeResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
See Also

- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeSnapshotCopyGrants

Returns a list of snapshot copy grants owned by the AWS account in the destination region.

For more information about managing snapshot copy grants, go to Amazon Redshift Database Encryption in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**Marker**

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

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

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

**SnapshotCopyGrantName**

The name of the snapshot copy grant.

Type: String

Required: No

**TagKeys.TagKey.N**

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

Type: Array of strings

Required: No
TagValues.TagValue.N

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

Type: Array of strings
Required: No

Response Elements

The following elements are returned by the service.

Marker

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

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

Type: String

SnapshotCopyGrants.SnapshotCopyGrant.N

The list of SnapshotCopyGrant objects.

Type: Array of SnapshotCopyGrant (p. 250) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

SnapshotCopyGrantNotFoundFault

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

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
DescribeTableRestoreStatus

Lists the status of one or more table restore requests made using the RestoreTableFromClusterSnapshot (p. 184) API action. If you don't specify a value for the TableRestoreRequestId parameter, then DescribeTableRestoreStatus returns the status of all table restore requests ordered by the date and time of the request in ascending order. Otherwise, DescribeTableRestoreStatus returns the status of the table specified by TableRestoreRequestId.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The Amazon Redshift cluster that the table is being restored to.

Type: String

Required: No

Marker

An optional pagination token provided by a previous DescribeTableRestoreStatus request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by the MaxRecords parameter.

Type: String

Required: No

MaxRecords

The maximum number of records to include in the response. If more records exist than the specified MaxRecords value, a pagination token called a marker is included in the response so that the remaining results can be retrieved.

Type: Integer

Required: No

TableRestoreRequestId

The identifier of the table restore request to return status for. If you don't specify a TableRestoreRequestId value, then DescribeTableRestoreStatus returns the status of all in-progress table restore requests.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

A pagination token that can be used in a subsequent DescribeTableRestoreStatus (p. 127) request.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

TableRestoreNotFoundFault

The specified TableRestoreRequestId value was not found.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DescribeTags

Returns a list of tags. You can return tags from a specific resource by specifying an ARN, or you can return all tags for a given type of resource, such as clusters, snapshots, and so on.

The following are limitations for DescribeTags:

- You cannot specify an ARN and a resource-type value together in the same request.
- You cannot use the MaxRecords and Marker parameters together with the ARN parameter.
- The MaxRecords parameter can be a range from 10 to 50 results to return in a request.

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**Marker**

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

Type: String

Required: No

**MaxRecords**

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

Type: Integer

Required: No

**ResourceName**

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

Type: String

Required: No

**ResourceType**

The type of resource with which you want to view tags. Valid resource types are:

- Cluster
• CIDR/IP
• EC2 security group
• Snapshot
• Cluster security group
• Subnet group
• HSM connection
• HSM certificate
• Parameter group
• Snapshot copy grant

For more information about Amazon Redshift resource types and constructing ARNs, go to Specifying Policy Elements: Actions, Effects, Resources, and Principals in the Amazon Redshift Cluster Management Guide.

Type: String
Required: No

TagKeys.TagKey.N

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

Type: Array of strings
Required: No

TagValues.TagValue.N

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

Type: Array of strings
Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

TaggedResources.TaggedResource.N

A list of tags with their associated resources.

Type: Array of TaggedResource (p. 257) objects
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DisableLogging

Stops logging information, such as queries and connection attempts, for the specified Amazon Redshift cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The identifier of the cluster on which logging is to be stopped.

Example: examplecluster

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

BucketName

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

Type: String

LastFailureMessage

The message indicating that logs failed to be delivered.

Type: String

LastFailureTime

The last time when logs failed to be delivered.

Type: Timestamp

LastSuccessfulDeliveryTime

The last time that logs were delivered.

Type: Timestamp

LoggingEnabled

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

Type: Boolean

S3KeyPrefix

The prefix applied to the log file names.

Type: String
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
DisableSnapshotCopy

Disables the automatic copying of snapshots from one region to another region for a specified cluster.

If your cluster and its snapshots are encrypted using a customer master key (CMK) from AWS KMS, use DeleteSnapshotCopyGrant (p. 63) to delete the grant that grants Amazon Redshift permission to the CMK in the destination region.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the source cluster that you want to disable copying of snapshots to a destination region.

Constraints: Must be the valid name of an existing cluster that has cross-region snapshot copy enabled.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

SnapshotCopyAlreadyDisabledFault

The cluster already has cross-region snapshot copy disabled.

HTTP Status Code: 400
UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
EnableLogging

Starts logging information, such as queries and connection attempts, for the specified Amazon Redshift cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

BucketName

The name of an existing S3 bucket where the log files are to be stored.

Constraints:
• Must be in the same region as the cluster
• The cluster must have read bucket and put object permissions

Type: String
Required: Yes

ClusterIdentifier

The identifier of the cluster on which logging is to be started.

Example: examplecluster

Type: String
Required: Yes

S3KeyPrefix

The prefix applied to the log file names.

Constraints:
• Cannot exceed 512 characters
• Cannot contain spaces( ), double quotes ("), single quotes (‘), a backslash (\), or control characters.
  The hexadecimal codes for invalid characters are:
  • x00 to x20
  • x22
  • x27
  • x5c
  • x7f or larger

Type: String
Required: No

Response Elements

The following elements are returned by the service.

BucketName

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

For information about the errors that are common to all actions, see Common Errors (p. 262).

BucketNotFoundFault

Could not find the specified S3 bucket.

HTTP Status Code: 400

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InsufficientS3BucketPolicyFault

The cluster does not have read bucket or put object permissions on the S3 bucket specified when enabling logging.

HTTP Status Code: 400

InvalidS3BucketNameFault

The S3 bucket name is invalid. For more information about naming rules, go to Bucket Restrictions and Limitations in the Amazon Simple Storage Service (S3) Developer Guide.

HTTP Status Code: 400

InvalidS3KeyPrefixFault

The string specified for the logging S3 key prefix does not comply with the documented constraints.
HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
EnableSnapshotCopy

Enables the automatic copy of snapshots from one region to another region for a specified cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the source cluster to copy snapshots from.

Constraints: Must be the valid name of an existing cluster that does not already have cross-region snapshot copy enabled.

Type: String

Required: Yes

DestinationRegion

The destination region that you want to copy snapshots to.

Constraints: Must be the name of a valid region. For more information, see Regions and Endpoints in the Amazon Web Services General Reference.

Type: String

Required: Yes

RetentionPeriod

The number of days to retain automated snapshots in the destination region after they are copied from the source region.

Default: 7.

Constraints: Must be at least 1 and no more than 35.

Type: Integer

Required: No

SnapshotCopyGrantName

The name of the snapshot copy grant to use when snapshots of an AWS KMS-encrypted cluster are copied to the destination region.

Type: String

Required: No

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.
Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

CopyToRegionDisabledFault

Cross-region snapshot copy was temporarily disabled. Try your request again.

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

IncompatibleOrderableOptions

The specified options are incompatible.

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

SnapshotCopyAlreadyEnabledFault

The cluster already has cross-region snapshot copy enabled.

HTTP Status Code: 400

SnapshotCopyGrantNotFoundFault

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

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

UnknownSnapshotCopyRegionFault

The specified region is incorrect or does not exist.
HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
GetClusterCredentials

Returns a database user name and temporary password with temporary authorization to log on to an Amazon Redshift database. The action returns the database user name prefixed with IAM: if AutoCreate is False or IAM: if AutoCreate is True. You can optionally specify one or more database user groups that the user will join at log on. By default, the temporary credentials expire in 900 seconds. You can optionally specify a duration between 900 seconds (15 minutes) and 3600 seconds (60 minutes). For more information, see Using IAM Authentication to Generate Database User Credentials in the Amazon Redshift Cluster Management Guide.

The AWS Identity and Access Management (IAM) user or role that executes GetClusterCredentials must have an IAM policy attached that allows access to all necessary actions and resources. For more information about permissions, see Resource Policies for GetClusterCredentials in the Amazon Redshift Cluster Management Guide.

If the DbGroups parameter is specified, the IAM policy must allow the redshift:JoinGroup action with access to the listed dbgroups.

In addition, if the AutoCreate parameter is set to True, then the policy must include the redshift:CreateClusterUser privilege.

If the DbName parameter is specified, the IAM policy must allow access to the resource dbname for the specified database name.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the cluster that contains the database for which you are requesting credentials. This parameter is case sensitive.

Type: String

Required: Yes

DbUser

The name of a database user. If a user name matching DbUser exists in the database, the temporary user credentials have the same permissions as the existing user. If DbUser doesn't exist in the database and Autocreate is True, a new user is created using the value for DbUser with PUBLIC permissions. If a database user matching the value for DbUser doesn't exist and Autocreate is False, then the command succeeds but the connection attempt will fail because the user doesn't exist in the database.

For more information, see CREATE USER in the Amazon Redshift Database Developer Guide.

Constraints:

- Must be 1 to 64 alphanumeric characters or hyphens. The user name can't be PUBLIC.
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in Reserved Words in the Amazon Redshift Database Developer Guide.
Type: String  
Required: Yes

**AutoCreate**

Create a database user with the name specified for the user named `DbUser` if one does not exist.

Type: Boolean  
Required: No

**DbGroups.DbGroup.N**

A list of the names of existing database groups that the user named in `DbUser` will join for the current session, in addition to any group memberships for an existing user. If not specified, a new user is added only to PUBLIC.

Database group name constraints

- Must be 1 to 64 alphanumeric characters or hyphens
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in Reserved Words in the Amazon Redshift Database Developer Guide.

Type: Array of strings  
Required: No

**DbName**

The name of a database that `DbUser` is authorized to log on to. If `DbName` is not specified, `DbUser` can log on to any existing database.

Constraints:

- Must be 1 to 64 alphanumeric characters or hyphens
- Must contain only lowercase letters, numbers, underscore, plus sign, period (dot), at symbol (@), or hyphen.
- First character must be a letter.
- Must not contain a colon (:) or slash (/).
- Cannot be a reserved word. A list of reserved words can be found in Reserved Words in the Amazon Redshift Database Developer Guide.

Type: String  
Required: No

**DurationSeconds**

The number of seconds until the returned temporary password expires.

Constraint: minimum 900, maximum 3600.

Default: 900

Type: Integer  
Required: No
Response Elements

The following elements are returned by the service.

DbPassword
A temporary password that authorizes the user name returned by DbUser to log on to the database DbName.
Type: String

DbUser
A database user name that is authorized to log on to the database DbName using the password DbPassword. If the specified DbUser exists in the database, the new user name has the same database privileges as the user named in DbUser. By default, the user is added to PUBLIC. If the DbGroups parameter is specified, DbUser is added to the listed groups for any sessions created using these credentials.
Type: String

Expiration
The date and time the password in DbPassword expires.
Type: Timestamp

Errors
For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound
The ClusterIdentifier parameter does not refer to an existing cluster.
HTTP Status Code: 404

UnsupportedOperation
The requested operation isn't supported.
HTTP Status Code: 400

Example

The following example shows a request to get cluster credentials.

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=GetClusterCredentials
&ClusterIdentifier=examplecluster
&DbUser=tempuser
&DbName=exampledb
&DurationSeconds=1800
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20160123/us-east-1/redshift/aws4_request
Sample Response

```xml
<GetClusterCredentialsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <GetClusterCredentialsResults>
    <DBUsername>IAM:tempuser</DBUsername>
    <Expiration>2016-11-08T21:12:53Z</Expiration>
    <DBPassword>EXAMPLEAbCdEf1234567890aBcDeFgHijkLmNoPqRsTuVwXyZwXFPyJyBDr/gqXZtEag6P3==</DBPassword>
  </GetClusterCredentialsResult>
  <ResponseMetadata>
    <RequestId>fa337bb4-6a4d-11e2-a12a-cb8076a904bd</RequestId>
  </ResponseMetadata>
</GetClusterCredentialsResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifyCluster

Modifies the settings for a cluster. For example, you can add another security or parameter group, update the preferred maintenance window, or change the master user password. Resetting a cluster password or modifying the security groups associated with a cluster do not need a reboot. However, modifying a parameter group requires a reboot for parameters to take effect. For more information about managing clusters, go to Amazon Redshift Clusters in the Amazon Redshift Cluster Management Guide.

You can also change node type and the number of nodes to scale up or down the cluster. When resizing a cluster, you must specify both the number of nodes and the node type even if one of the parameters does not change.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the cluster to be modified.

Example: examplecluster

Type: String

Required: Yes

AllowVersionUpgrade

If true, major version upgrades will be applied automatically to the cluster during the maintenance window.

Default: false

Type: Boolean

Required: No

AutomatedSnapshotRetentionPeriod

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with CreateClusterSnapshot (p. 29).

If you decrease the automated snapshot retention period from its current value, existing automated snapshots that fall outside of the new retention period will be immediately deleted.

Default: Uses existing setting.

Constraints: Must be a value from 0 to 35.

Type: Integer

Required: No

ClusterParameterGroupName

The name of the cluster parameter group to apply to this cluster. This change is applied only after the cluster is rebooted. To reboot a cluster use RebootCluster (p. 170).

Default: Uses existing setting.
Constraints: The cluster parameter group must be in the same parameter group family that matches the cluster version.

Type: String

Required: No


A list of cluster security groups to be authorized on this cluster. This change is asynchronously applied as soon as possible.

Security groups currently associated with the cluster, and not in the list of groups to apply, will be revoked from the cluster.

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

Type: Array of strings

Required: No

**ClusterType**

The new cluster type.

When you submit your cluster resize request, your existing cluster goes into a read-only mode. After Amazon Redshift provisions a new cluster based on your resize requirements, there will be outage for a period while the old cluster is deleted and your connection is switched to the new cluster. You can use DescribeResize (p. 120) to track the progress of the resize request.

Valid Values: multi-node | single-node

Type: String

Required: No

**ClusterVersion**

The new version number of the Amazon Redshift engine to upgrade to.

For major version upgrades, if a non-default cluster parameter group is currently in use, a new cluster parameter group in the cluster parameter group family for the new version must be specified. The new cluster parameter group can be the default for that cluster parameter group family. For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.

Example: 1.0

Type: String

Required: No

**ElasticIp**

The Elastic IP (EIP) address for the cluster.

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

**Type:** String  
**Required:** No

**EnhancedVpcRouting**

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

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

Default: false

**Type:** Boolean  
**Required:** No

**HsmClientCertificateIdentifier**

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

**Type:** String  
**Required:** No

**HsmConfigurationIdentifier**

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

**Type:** String  
**Required:** No

**MasterUserPassword**

The new password for the cluster master user. This change is asynchronously applied as soon as possible. Between the time of the request and the completion of the request, the MasterUserPassword element exists in the PendingModifiedValues element of the operation response.

**Note**

Operations never return the password, so this operation provides a way to regain access to the master user account for a cluster if the password is lost.

Default: Uses existing setting.

**Constraints:**

- Must be between 8 and 64 characters in length.
- Must contain at least one uppercase letter.
- Must contain at least one lowercase letter.
- Must contain one number.
- Can be any printable ASCII character (ASCII code 33 to 126) except ' (single quote), " (double quote), \, /, @, or space.

**Type:** String  
**Required:** No

**NewClusterIdentifier**

The new identifier for the cluster.
Constraints:

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

Example: examplecluster

Type: String
Required: No

**NodeType**

The new node type of the cluster. If you specify a new node type, you must also specify the number of nodes parameter.

When you submit your request to resize a cluster, Amazon Redshift sets access permissions for the cluster to read-only. After Amazon Redshift provisions a new cluster according to your resize requirements, there will be a temporary outage while the old cluster is deleted and your connection is switched to the new cluster. When the new connection is complete, the original access permissions for the cluster are restored. You can use DescribeResize (p. 120) to track the progress of the resize request.

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

Type: String
Required: No

**NumberOfNodes**

The new number of nodes of the cluster. If you specify a new number of nodes, you must also specify the node type parameter.

When you submit your request to resize a cluster, Amazon Redshift sets access permissions for the cluster to read-only. After Amazon Redshift provisions a new cluster according to your resize requirements, there will be a temporary outage while the old cluster is deleted and your connection is switched to the new cluster. When the new connection is complete, the original access permissions for the cluster are restored. You can use DescribeResize (p. 120) to track the progress of the resize request.

Valid Values: Integer greater than 0

Type: Integer
Required: No

**PreferredMaintenanceWindow**

The weekly time range (in UTC) during which system maintenance can occur, if necessary. If system maintenance is necessary during the window, it may result in an outage.

This maintenance window change is made immediately. If the new maintenance window indicates the current time, there must be at least 120 minutes between the current time and end of the window in order to ensure that pending changes are applied.

Default: Uses existing setting.

Valid Days: Mon | Tue | Wed | Thu | Fri | Sat | Sun
Constraints: Must be at least 30 minutes.
Type: String
Required: No

PubliclyAccessible
If true, the cluster can be accessed from a public network. Only clusters in VPCs can be set to be publicly available.
Type: Boolean
Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N
A list of virtual private cloud (VPC) security groups to be associated with the cluster.
Type: Array of strings
Required: No

Response Elements
The following element is returned by the service.

Cluster
Describes a cluster.
Type: Cluster (p. 198) object

Errors
For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterAlreadyExists
The account already has a cluster with the given identifier.
HTTP Status Code: 400

ClusterNotFound
The ClusterIdentifier parameter does not refer to an existing cluster.
HTTP Status Code: 404

ClusterParameterGroupNotFound
The parameter group name does not refer to an existing parameter group.
HTTP Status Code: 404

ClusterSecurityGroupNotFound
The cluster security group name does not refer to an existing cluster security group.
HTTP Status Code: 404
DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

HsmClientCertificateNotFoundFault

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

HTTP Status Code: 400

HsmConfigurationNotFoundFault

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

HTTP Status Code: 400

InsufficientClusterCapacity

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

HTTP Status Code: 400

InvalidClusterSecurityGroupState

The state of the cluster security group is not available.

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

InvalidElasticIpFault

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

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

NumberOfNodesPerClusterLimitExceeded

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

HTTP Status Code: 400

NumberOfNodesQuotaExceeded

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

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400
UnsupportedOptionFault

A request option was specified that is not supported.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=ModifyCluster
&AllowVersionUpgrade=true
&AutomatedSnapshotRetentionPeriod=2
&ClusterIdentifier=examplecluster
&ClusterParameterGroupName=parametergroup1
&PreferredMaintenanceWindow=wed:07:30-wed:08:00
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T022911Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

<ModifyClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster.coqoarplqhsn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>available</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>2</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <DBName>dev</DBName>
      <PreferredMaintenanceWindow>wed:07:30-wed:08:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>applying</ParameterApplyStatus>
          <ParameterGroupName>parametergroup1</ParameterGroupName>
        </ClusterParameterGroup>
        <ClusterParameterGroups/>
      <ClusterSecurityGroups>
        <ClusterSecurityGroup>
          <Status>active</Status>
          <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
        </ClusterSecurityGroup>
        <ClusterSecurityGroups/>
      <AvailabilityZone>us-east-1c</AvailabilityZone>
      <NodeType>ds2.xlarge</NodeType>
      <ClusterIdentifier>examplecluster</ClusterIdentifier>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
    </Cluster>
  </ModifyClusterResult>
</ModifyClusterResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifyClusterIamRoles

Modifies the list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services.

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the cluster for which you want to associate or disassociate IAM roles.

Type: String
Required: Yes

AddIamRoles.IamRoleArn.N

Zero or more IAM roles to associate with the cluster. The roles must be in their Amazon Resource Name (ARN) format. You can associate up to 10 IAM roles with a single cluster in a single request.

Type: Array of strings
Required: No

RemoveIamRoles.IamRoleArn.N

Zero or more IAM roles in ARN format to disassociate from the cluster. You can disassociate up to 10 IAM roles from a single cluster in a single request.

Type: Array of strings
Required: No

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404
InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=ModifyClusterIamRoles
&ClusterIdentifier=my-redshift-cluster
&AddIamRoles.member.1=arn:aws:iam::123456789012:role/RedshiftCopyUnload
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20160208/us-east-1/redshift/aws4_request
&x-amz-date=20160208T022525Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

<ModifyClusterIamRolesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterIamRolesResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <Endpoint>
        <Port>5439</Port>
        <Address>examplecluster.cobaosmlqshn.us-east-1.redshift.amazonaws.com</Address>
      </Endpoint>
      <ClusterStatus>rebooting</ClusterStatus>
      <NumberOfNodes>2</NumberOfNodes>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <PubliclyAccessible>true</PubliclyAccessible>
      <Encrypted>false</Encrypted>
      <DBName>dev</DBName>
      <IamRoles>
        <ClusterIamRole>
          <IamRoleArn>arn:aws:iam::123456789012:role/RedshiftCopyUnload</IamRoleArn>
          <ApplyStatus>adding</ApplyStatus>
        </ClusterIamRole>
      </IamRoles>
      <PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        </ClusterParameterGroup>
        <ClusterParameterGroups>
          <ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
          <ClusterSecurityGroups>
            <ClusterSecurityGroup>
              <Status>active</Status>
              <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
            </ClusterSecurityGroup>
          </ClusterSecurityGroups>
          <AvailabilityZone>us-east-1c</AvailabilityZone>
          <NodeType>ds2.xlarge</NodeType>
        </ClusterParameterGroups>
      </ClusterParameterGroups>
    </Cluster>
  </ModifyClusterIamRolesResult>
</ModifyClusterIamRolesResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifyClusterParameterGroup

Modifies the parameters of a parameter group.

For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ParameterGroupName

The name of the parameter group to be modified.

Type: String

Required: Yes

Parameters.Parameter.N

An array of parameters to be modified. A maximum of 20 parameters can be modified in a single request.

For each parameter to be modified, you must supply at least the parameter name and parameter value; other name-value pairs of the parameter are optional.

For the workload management (WLM) configuration, you must supply all the name-value pairs in the wlm_json_configuration parameter.

Type: Array of Parameter (p. 233) objects

Required: Yes

Response Elements

The following elements are returned by the service.

ParameterGroupName

The name of the cluster parameter group.

Type: String

ParameterGroupStatus

The status of the parameter group. For example, if you made a change to a parameter group name-value pair, then the change could be pending a reboot of an associated cluster.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).
ClusterParameterGroupNotFound

The parameter group name does not refer to an existing parameter group.
HTTP Status Code: 404

InvalidClusterParameterGroupState

The cluster parameter group action can not be completed because another task is in progress that involves the parameter group. Wait a few moments and try the operation again.
HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=ModifyClusterParameterGroup
&ParameterGroupName=parametergroup1
&Parameters.member.1.ParameterName=extra_float_digits
&Parameters.member.1.ParameterValue=2
&Parameters.member.2.ParameterName=wlm_json_configuration
&Parameters.member.2.ParameterValue=[{"user_group":"example_user_group1"},
{"query_concurrency":5}]
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T022525Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

<ModifyClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterParameterGroupResult>
    <ParameterGroupStatus>Your parameter group has been updated. Updates to dynamic parameters will be applied immediately. Updates to static parameters will be applied when you reboot the associated Clusters.</ParameterGroupStatus>
    <ParameterGroupName>parametergroup1</ParameterGroupName>
  </ModifyClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>86e64043-40de-11e2-8a25-eb010998df4e</RequestId>
  </ResponseMetadata>
</ModifyClusterParameterGroupResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
See Also

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifyClusterSubnetGroup

Modifies a cluster subnet group to include the specified list of VPC subnets. The operation replaces the existing list of subnets with the new list of subnets.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterSubnetGroupName

The name of the subnet group to be modified.

Type: String

Required: Yes

SubnetIds.SubnetIdentifier.N

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

Type: Array of strings

Required: Yes

Description

A text description of the subnet group to be modified.

Type: String

Required: No

Response Elements

The following element is returned by the service.

ClusterSubnetGroup

Describes a subnet group.

Type: ClusterSubnetGroup (p. 214) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

ClusterSubnetQuotaExceededFault

The request would result in user exceeding the allowed number of subnets in a cluster subnet groups. For information about increasing your quota, go to Limits in Amazon Redshift in the Amazon Redshift Cluster Management Guide.
HTTP Status Code: 400

**DependentServiceRequestThrottlingFault**

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

HTTP Status Code: 400

**InvalidSubnet**

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

HTTP Status Code: 400

**SubnetAlreadyInUse**

A specified subnet is already in use by another cluster.

HTTP Status Code: 400

**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

## See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifyEventSubscription

Modifies an existing Amazon Redshift event notification subscription.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**SubscriptionName**

The name of the modified Amazon Redshift event notification subscription.

- **Type:** String
- **Required:** Yes

**Enabled**

A Boolean value indicating if the subscription is enabled. `true` indicates the subscription is enabled.

- **Type:** Boolean
- **Required:** No

**EventCategories.EventCategory.N**

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

- **Values:** Configuration, Management, Monitoring, Security
- **Type:** Array of strings
- **Required:** No

**Severity**

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

- **Values:** ERROR, INFO
- **Type:** String
- **Required:** No

**SnsTopicArn**

The Amazon Resource Name (ARN) of the SNS topic to be used by the event notification subscription.

- **Type:** String
- **Required:** No

**SourceIds.SourceId.N**

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

- **Example:** my-cluster-1, my-cluster-2
Example: my-snapshot-20131010

Type: Array of strings

Required: No

**SourceType**

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

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

Type: String

Required: No

---

### Response Elements

The following element is returned by the service.

**EventSubscription**

Describes event subscriptions.

Type: `EventSubscription (p. 225)` object

---

### Errors

For information about the errors that are common to all actions, see [Common Errors (p. 262)](#).

**InvalidSubscriptionStateFault**

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

HTTP Status Code: 400

**SNSInvalidTopic**

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

HTTP Status Code: 400

**SNSNoAuthorization**

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

HTTP Status Code: 400

**SNSTopicArnNotFound**

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

HTTP Status Code: 404

**SourceNotFound**

The specified Amazon Redshift event source could not be found.
HTTP Status Code: 404

**SubscriptionCategoryNotFound**

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

HTTP Status Code: 404

**SubscriptionEventIdNotFound**

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

HTTP Status Code: 404

**SubscriptionNotFound**

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

HTTP Status Code: 404

**SubscriptionSeverityNotFound**

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

HTTP Status Code: 404

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
ModifySnapshotCopyRetentionPeriod

Modifies the number of days to retain automated snapshots in the destination region after they are copied from the source region.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the cluster for which you want to change the retention period for automated snapshots that are copied to a destination region.

Constraints: Must be the valid name of an existing cluster that has cross-region snapshot copy enabled.

Type: String

Required: Yes

RetentionPeriod

The number of days to retain automated snapshots in the destination region after they are copied from the source region.

If you decrease the retention period for automated snapshots that are copied to a destination region, Amazon Redshift will delete any existing automated snapshots that were copied to the destination region and that fall outside of the new retention period.

Constraints: Must be at least 1 and no more than 35.

Type: Integer

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404
InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

SnapshotCopyDisabledFault

Cross-region snapshot copy was temporarily disabled. Try your request again.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
PurchaseReservedNodeOffering

Allows you to purchase reserved nodes. Amazon Redshift offers a predefined set of reserved node offerings. You can purchase one or more of the offerings. You can call the DescribeReservedNodeOfferings (p. 114) API to obtain the available reserved node offerings. You can call this API by providing a specific reserved node offering and the number of nodes you want to reserve.

For more information about reserved node offerings, go to Purchasing Reserved Nodes in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ReservedNodeOfferingId

The unique identifier of the reserved node offering you want to purchase.

Type: String
Required: Yes

NodeCount

The number of reserved nodes that you want to purchase.

Default: 1
Type: Integer
Required: No

Response Elements

The following element is returned by the service.

ReservedNode

Describes a reserved node. You can call the DescribeReservedNodeOfferings (p. 114) API to obtain the available reserved node offerings.

Type: ReservedNode (p. 238) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ReservedNodeAlreadyExists

User already has a reservation with the given identifier.

HTTP Status Code: 404

ReservedNodeOfferingNotFound

Specified offering does not exist.

HTTP Status Code: 404
ReservedNodeQuotaExceeded

Request would exceed the user's compute node quota. For information about increasing your quota, go to Limits in Amazon Redshift in the Amazon Redshift Cluster Management Guide.

HTTP Status Code: 400

UnsupportedOperation

The requested operation isn't supported.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=PurchaseReservedNodeOffering
&ReservedNodeOfferingId=3a98bf7d-979a-49cc-b568-18f24315baf0
&NodeCount=2
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130117/us-east-1/redshift/aws4_request
&x-amz-date=20130117T232351Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

<PurchaseReservedNodeOfferingResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ReservedNode>
    <StartTime>2013-01-18T21:42:44.402Z</StartTime>
    <OfferingType>Heavy Utilization</OfferingType>
    <Duration>94608000</Duration>
    <RecurringCharges>
      <RecurringCharge>
        <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
        <RecurringChargeAmount>0.21</RecurringChargeAmount>
      </RecurringCharge>
    </RecurringCharges>
    <FixedPrice>12452.0</FixedPrice>
    <UsagePrice>0.0</UsagePrice>
    <State>payment-pending</State>
    <NodeType>ds2.8xlarge</NodeType>
    <NodeCount>2</NodeCount>
    <ReservedNodeOfferingType>regular</ReservedNodeOfferingType>
    <ReservedNodeOfferingId>1ba8e2e3-dacf-48d9-841f-cc675182a8a6</ReservedNodeOfferingId>
  </ReservedNode>
  <ResponseMetadata>
    <RequestId>fcb117cc-61b7-11e2-b6e9-87e586e4ca38</RequestId>
  </ResponseMetadata>
</PurchaseReservedNodeOfferingResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RebootCluster

Reboots a cluster. This action is taken as soon as possible. It results in a momentary outage to the cluster, during which the cluster status is set to rebooting. A cluster event is created when the reboot is completed. Any pending cluster modifications (see ModifyCluster (p. 146)) are applied at this reboot. For more information about managing clusters, go to Amazon Redshift Clusters in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The cluster identifier.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=RebootCluster
&ClusterIdentifier=examplecluster
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T021951Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

-Sahref=http://redshift.amazonaws.com/doc/2012-12-01/"/
>Cluster
ClusterIdentifier=examplecluster
ClusterVersion=1.0
VpcSecurityGroups/>
<Cluster />
<ClusterStatus>rebooting</ClusterStatus>
<NumberOfNodes>2</NumberOfNodes>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<PubliclyAccessible>true</PubliclyAccessible>
<Encrypted>false</Encrypted>
<DBName>dev</DBName>
<PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
<ClusterParameterGroups/>
<ClusterParameterGroups/>
<ParameterApplyStatus>in-sync</ParameterApplyStatus>
<ParameterGroupName>default.redshift-1.0</ParameterGroupName>
<ClusterParameterGroups/>
<ClusterParameterGroups/>
<ClusterCreateTime>2013-01-22T19:23:59.368Z</ClusterCreateTime>
<Status>active</Status>
<ClusterSecurityGroupName>default</ClusterSecurityGroupName>
<ClusterSecurityGroups/>
<AvailabilityZone>us-east-1c</AvailabilityZone>
<NodeType>d2.xlarge</NodeType>
<ClusterIdentifier>examplecluster</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>adminuser</MasterUsername>
<RebootClusterResult/>
<ResponseMetadata/>
<ResponseMetadata/>
<RequestId>5edee79e-6503-11e2-9e70-918437dd236d</RequestId>
</ResponseMetadata>
</RebootClusterResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V2
ResetClusterParameterGroup

Sets one or more parameters of the specified parameter group to their default values and sets the source values of the parameters to "engine-default". To reset the entire parameter group specify the \textit{ResetAllParameters} parameter. For parameter changes to take effect you must reboot any associated clusters.

Request Parameters

For information about the parameters that are common to all actions, see \textit{Common Parameters (p. 260)}.

\textbf{ParameterGroupName}

The name of the cluster parameter group to be reset.

Type: String

Required: Yes

\textbf{Parameters.Parameter.N}

An array of names of parameters to be reset. If \textit{ResetAllParameters} option is not used, then at least one parameter name must be supplied.

Constraints: A maximum of 20 parameters can be reset in a single request.

Type: Array of Parameter (p. 233) objects

Required: No

\textbf{ResetAllParameters}

If \texttt{true}, all parameters in the specified parameter group will be reset to their default values.

Default: \texttt{true}

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

\textbf{ParameterGroupName}

The name of the cluster parameter group.

Type: String

\textbf{ParameterGroupStatus}

The status of the parameter group. For example, if you made a change to a parameter group name-value pair, then the change could be pending a reboot of an associated cluster.

Type: String
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

InvalidClusterParameterGroupState

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

HTTP Status Code: 400

Example

Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=ResetClusterParameterGroup
&ParameterGroupName=parametergroup1
&Parameters.member.1.ParameterName=extra_float_digits
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20121208/us-east-1/redshift/aws4_request
&x-amz-date=20121208T020847Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

Sample Response

```
<ResetClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResetClusterParameterGroupResult>
    <ParameterGroupStatus>Your parameter group has been updated. Updates to dynamic parameters will be applied immediately. Updates to static parameters will be applied when you reboot the associated Clusters.</ParameterGroupStatus>
    <ParameterGroupName>parametergroup1</ParameterGroupName>
  </ResetClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>625d23c1-40dc-11e2-8a25-eb010998df4e</RequestId>
  </ResponseMetadata>
</ResetClusterParameterGroupResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
See Also

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RestoreFromClusterSnapshot

Creates a new cluster from a snapshot. By default, Amazon Redshift creates the resulting cluster with the same configuration as the original cluster from which the snapshot was created, except that the new cluster is created with the default cluster security and parameter groups. After Amazon Redshift creates the cluster, you can use the ModifyCluster (p. 146) API to associate a different security group and different parameter group with the restored cluster. If you are using a DS node type, you can also choose to change to another DS node type of the same size during restore.

If you restore a cluster into a VPC, you must provide a cluster subnet group where you want the cluster restored.

For more information about working with snapshots, go to Amazon Redshift Snapshots in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The identifier of the cluster that will be created from restoring the snapshot.

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

Type: String
Required: Yes

SnapshotIdentifier

The name of the snapshot from which to create the new cluster. This parameter isn't case sensitive.

Example: my-snapshot-id

Type: String
Required: Yes

AdditionalInfo

Reserved.

Type: String
Required: No

AllowVersionUpgrade

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

Default: true
Type: Boolean
Required: No

**AutomatedSnapshotRetentionPeriod**

The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with [CreateClusterSnapshot](#). Default: The value selected for the cluster from which the snapshot was taken. Constraints: Must be a value from 0 to 35.

Type: Integer
Required: No

**AvailabilityZone**

The Amazon EC2 Availability Zone in which to restore the cluster. Default: A random, system-chosen Availability Zone. Example: `us-east-1a`

Type: String
Required: No

**ClusterParameterGroupName**

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

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

Type: String
Required: No


A list of security groups to be associated with this cluster. Default: The default cluster security group for Amazon Redshift. Cluster security groups only apply to clusters outside of VPCs.

Type: Array of strings
Required: No

**ClusterSubnetGroupName**

The name of the subnet group where you want to cluster restored.

A snapshot of cluster in VPC can be restored only in VPC. Therefore, you must provide subnet group name where you want the cluster restored.
Request Parameters

**ElasticIp**
The elastic IP (EIP) address for the cluster.

- **Type:** String
- **Required:** No

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

- If this option is `true`, enhanced VPC routing is enabled.
- **Default:** false
- **Type:** Boolean
- **Required:** No

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

- **Type:** String
- **Required:** No

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

- **Type:** String
- **Required:** No

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

- A cluster can have up to 10 IAM roles associated at any time.
- **Type:** Array of strings
- **Required:** No

**KmsKeyId**
The AWS Key Management Service (KMS) key ID of the encryption key that you want to use to encrypt data in the cluster that you restore from a shared snapshot.

- **Type:** String
- **Required:** No
Request Parameters

**NodeType**

The node type that the restored cluster will be provisioned with.

Default: The node type of the cluster from which the snapshot was taken. You can modify this if you are using any DS node type. In that case, you can choose to restore into another DS node type of the same size. For example, you can restore ds1.8xlarge into ds2.8xlarge, or ds1.xlarge into ds2.xlarge. If you have a DC instance type, you must restore into that same instance type and size. In other words, you can only restore a dc1.large instance type into another dc1.large instance type or dc2.large instance type. You can't restore dc1.8xlarge to dc2.8xlarge. First restore to a dc1.8xlarge cluster, then resize to a dc2.8xlarge cluster. For more information about node types, see About Clusters and Nodes in the Amazon Redshift Cluster Management Guide.

Type: String

Required: No

**OwnerAccount**

The AWS customer account used to create or copy the snapshot. Required if you are restoring a snapshot you do not own, optional if you own the snapshot.

Type: String

Required: No

**Port**

The port number on which the cluster accepts connections.

Default: The same port as the original cluster.

Constraints: Must be between 1115 and 65535.

Type: Integer

Required: No

**PreferredMaintenanceWindow**

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


Default: The value selected for the cluster from which the snapshot was taken. For more information about the time blocks for each region, see Maintenance Windows in Amazon Redshift Cluster Management Guide.

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

Constraints: Minimum 30-minute window.

Type: String

Required: No

**PubliclyAccessible**

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

Type: Boolean

Required: No
SnapshotClusterIdentifier

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

Type: String
Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of Virtual Private Cloud (VPC) security groups to be associated with the cluster.
Default: The default VPC security group is associated with the cluster.
VPC security groups only apply to clusters in VPCs.
Type: Array of strings
Required: No

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

AccessToSnapshotDenied

The owner of the specified snapshot has not authorized your account to access the snapshot.

HTTP Status Code: 400

ClusterAlreadyExists

The account already has a cluster with the given identifier.

HTTP Status Code: 400

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

ClusterQuotaExceeded

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

HTTP Status Code: 400
ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

ClusterSnapshotNotFound

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

HTTP Status Code: 404

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

HsmClientCertificateNotFoundFault

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

HTTP Status Code: 400

HsmConfigurationNotFoundFault

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

HTTP Status Code: 400

InsufficientClusterCapacity

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

HTTP Status Code: 400

InvalidClusterSnapshotState

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

HTTP Status Code: 400

InvalidClusterSubnetGroupStateFault

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

HTTP Status Code: 400

InvalidElasticIpFault

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

HTTP Status Code: 400

InvalidRestore

The restore is invalid.

HTTP Status Code: 406
InvalidSubnet

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

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

NumberOfNodesPerClusterLimitExceeded

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

HTTP Status Code: 400

NumberOfNodesQuotaExceeded

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

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-1.amazonaws.com/
?Action=RestoreFromClusterSnapshot
&ClusterIdentifier=examplecluster-restored
&SnapshotIdentifier=cm:examplecluster-2013-01-22-19-27-58
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T023350Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

<RestoreFromClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RestoreFromClusterSnapshotResult>
    <Cluster>
      <PendingModifiedValues/>
      <ClusterVersion>1.0</ClusterVersion>
      <VpcSecurityGroups/>
      <ClusterStatus>creating</ClusterStatus>
    </Cluster>
  </RestoreFromClusterSnapshotResult>
</RestoreFromClusterSnapshotResponse>
<NumberOfNodes>2</NumberOfNodes>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<PubliclyAccessible>true</PubliclyAccessible>
<Encrypted>false</Encrypted>
<EnhancedVpcRouting>false</EnhancedVpcRouting>
<DBName>dev</DBName>
<PreferredMaintenanceWindow>sun:06:30-sun:07:00</PreferredMaintenanceWindow>
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<ClusterSecurityGroups>
  <ClusterSecurityGroup>
    <Status>active</Status>
    <ClusterSecurityGroupName>default</ClusterSecurityGroupName>
  </ClusterSecurityGroup>
</ClusterSecurityGroups>
<NodeType>ds2.xlarge</NodeType>
<ClusterIdentifier>examplecluster-restored</ClusterIdentifier>
<AllowVersionUpgrade>true</AllowVersionUpgrade>
<MasterUsername>adminuser</MasterUsername>
</Cluster>
</RestoreFromClusterSnapshotResult>
<ResponseMetadata>
  <RequestId>52a9aee8-6505-11e2-bec0-17624ad140dd</RequestId>
</ResponseMetadata>
</RestoreFromClusterSnapshotResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RestoreTableFromClusterSnapshot

Creates a new table from a table in an Amazon Redshift cluster snapshot. You must create the new table within the Amazon Redshift cluster that the snapshot was taken from.

You cannot use RestoreTableFromClusterSnapshot to restore a table with the same name as an existing table in an Amazon Redshift cluster. That is, you cannot overwrite an existing table in a cluster with a restored table. If you want to replace your original table with a new, restored table, then rename or drop your original table before you call RestoreTableFromClusterSnapshot. When you have renamed your original table, then you can pass the original name of the table as the NewTableName parameter value in the call to RestoreTableFromClusterSnapshot. This way, you can replace the original table with the table created from the snapshot.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

**ClusterIdentifier**

The identifier of the Amazon Redshift cluster to restore the table to.

Type: String

Required: Yes

**NewTableName**

The name of the table to create as a result of the current request.

Type: String

Required: Yes

**SnapshotIdentifier**

The identifier of the snapshot to restore the table from. This snapshot must have been created from the Amazon Redshift cluster specified by the ClusterIdentifier parameter.

Type: String

Required: Yes

**SourceDatabaseName**

The name of the source database that contains the table to restore from.

Type: String

Required: Yes

**SourceTableName**

The name of the source table to restore from.

Type: String

Required: Yes

**SourceSchemaName**

The name of the source schema that contains the table to restore from. If you do not specify a SourceSchemaName value, the default is public.
Response Elements

The following element is returned by the service.

**TableRestoreStatus**

Describes the status of a `RestoreTableFromClusterSnapshot` operation.

Type: `TableRestoreStatus` object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

**ClusterNotFound**

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

HTTP Status Code: 404

**ClusterSnapshotNotFound**

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

HTTP Status Code: 404

**InProgressTableRestoreQuotaExceededFault**

You have exceeded the allowed number of table restore requests. Wait for your current table restore requests to complete before making a new request.

HTTP Status Code: 400

**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the available state.
HTTP Status Code: 400

**InvalidTableRestoreArgument**

The value specified for the `sourceDatabaseName`, `sourceSchemaName`, or `sourceTableName` parameter, or a combination of these, doesn't exist in the snapshot.

HTTP Status Code: 400

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RevokeClusterSecurityGroupIngress

Reverses an ingress rule in an Amazon Redshift security group for a previously authorized IP range or Amazon EC2 security group. To add an ingress rule, see AuthorizeClusterSecurityGroupIngress (p. 4). For information about managing security groups, go to Amazon Redshift Cluster Security Groups in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterSecurityGroupName

The name of the security Group from which to revoke the ingress rule.

Type: String

Required: Yes

CIDRIP

The IP range for which to revoke access. This range must be a valid Classless Inter-Domain Routing (CIDR) block of IP addresses. If CIDRIP is specified, EC2SecurityGroupName and EC2SecurityGroupOwnerId cannot be provided.

Type: String

Required: No

EC2SecurityGroupName

The name of the EC2 Security Group whose access is to be revoked. If EC2SecurityGroupName is specified, EC2SecurityGroupOwnerId must also be provided and CIDRIP cannot be provided.

Type: String

Required: No

EC2SecurityGroupOwnerId

The AWS account number of the owner of the security group specified in the EC2SecurityGroupName parameter. The AWS access key ID is not an acceptable value. If EC2SecurityGroupOwnerId is specified, EC2SecurityGroupName must also be provided and CIDRIP cannot be provided.

Example: 111122223333

Type: String

Required: No

Response Elements

The following element is returned by the service.

ClusterSecurityGroup

Describes a security group.

Type: ClusterSecurityGroup (p. 210) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

AuthorizationNotFound

The specified CIDR IP range or EC2 security group is not authorized for the specified cluster security group.

HTTP Status Code: 404

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

InvalidClusterSecurityGroupState

The state of the cluster security group is not available.

HTTP Status Code: 400

Example

Sample Request

```
https://redshift.us-east-1.amazonaws.com/
?Action=RevokeClusterSecurityGroupIngress
&ClusterSecurityGroupName=securitygroup1
&CIDRIP=192.168.40.3/32
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-1/redshift/aws4_request
&x-amz-date=20130123T021606Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

Sample Response

```
<RevokeClusterSecurityGroupIngressResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RevokeClusterSecurityGroupIngressResult>
    <ClusterSecurityGroup>
      <EC2SecurityGroups/>
      <IPRanges/>
      <Description>my security group</Description>
      <ClusterSecurityGroupName>securitygroup1</ClusterSecurityGroupName>
    </ClusterSecurityGroup>
  </RevokeClusterSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>d8eff363-6502-11e2-a8da-655adc216806</RequestId>
  </ResponseMetadata>
</RevokeClusterSecurityGroupIngressResponse>
```

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RevokeSnapshotAccess

Removes the ability of the specified AWS customer account to restore the specified snapshot. If the account is currently restoring the snapshot, the restore will run to completion.

For more information about working with snapshots, go to Amazon Redshift Snapshots in the Amazon Redshift Cluster Management Guide.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

AccountWithRestoreAccess

The identifier of the AWS customer account that can no longer restore the specified snapshot.

Type: String

Required: Yes

SnapshotIdentifier

The identifier of the snapshot that the account can no longer access.

Type: String

Required: Yes

SnapshotClusterIdentifier

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

Type: String

Required: No

Response Elements

The following element is returned by the service.

Snapshot

Describes a snapshot.

Type: Snapshot (p. 245) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

AccessToSnapshotDenied

The owner of the specified snapshot has not authorized your account to access the snapshot.
HTTP Status Code: 400

**AuthorizationNotFound**

The specified CIDR IP range or EC2 security group is not authorized for the specified cluster security group.

HTTP Status Code: 404

**ClusterSnapshotNotFound**

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

HTTP Status Code: 404

---

**See Also**

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
RotateEncryptionKey

Rotates the encryption keys for a cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 260).

ClusterIdentifier

The unique identifier of the cluster that you want to rotate the encryption keys for.

Constraints: Must be the name of valid cluster that has encryption enabled.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 198) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 262).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V2
Data Types

The Amazon Redshift API contains several data types that various actions use. This section describes each data type in detail.

**Note**
The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AccountWithRestoreAccess (p. 196)
- AvailabilityZone (p. 197)
- Cluster (p. 198)
- ClusterIamRole (p. 204)
- ClusterNode (p. 205)
- ClusterParameterGroup (p. 206)
- ClusterParameterGroupStatus (p. 207)
- ClusterParameterStatus (p. 208)
- ClusterSecurityGroup (p. 210)
- ClusterSecurityGroupMembership (p. 212)
- ClusterSnapshotCopyStatus (p. 213)
- ClusterSubnetGroup (p. 214)
- ClusterVersion (p. 216)
- DefaultClusterParameters (p. 217)
- EC2SecurityGroup (p. 218)
- ElasticIpStatus (p. 219)
- Endpoint (p. 220)
- Event (p. 221)
- EventCategoriesMap (p. 223)
- EventInfoMap (p. 224)
- EventSubscription (p. 225)
- HsmClientCertificate (p. 227)
- HsmConfiguration (p. 228)
- HsmStatus (p. 230)
- IPRange (p. 231)
- OrderableClusterOption (p. 232)
- Parameter (p. 233)
- PendingModifiedValues (p. 235)
- RecurringCharge (p. 237)
- ReservedNode (p. 238)
- ReservedNodeOffering (p. 241)
- RestoreStatus (p. 243)
- Snapshot (p. 245)
- SnapshotCopyGrant (p. 250)
- Subnet (p. 251)
• SupportedPlatform (p. 252)
• TableRestoreStatus (p. 253)
• Tag (p. 256)
• TaggedResource (p. 257)
• VpcSecurityGroupMembership (p. 259)
AccountWithRestoreAccess

Describes an AWS customer account authorized to restore a snapshot.

Contents

Note
In the following list, the required parameters are described first.

AccountAlias
The identifier of an AWS support account authorized to restore a snapshot. For AWS support, the identifier is `amazon-redshift-support`.

Type: String
Required: No

AccountId
The identifier of an AWS customer account authorized to restore a snapshot.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
AvailabilityZone

Describes an availability zone.

Contents

Note
In the following list, the required parameters are described first.

Name
The name of the availability zone.
Type: String
Required: No

SupportedPlatforms.SupportedPlatform.N
A list of supported platforms for orderable clusters.
Type: Array of SupportedPlatform (p. 252) objects
Required: No

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

• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
Cluster

Describes a cluster.

Contents

Note
In the following list, the required parameters are described first.

AllowVersionUpgrade
A Boolean value that, if true, indicates that major version upgrades will be applied automatically to the cluster during the maintenance window.

Type: Boolean
Required: No

AutomatedSnapshotRetentionPeriod
The number of days that automatic cluster snapshots are retained.

Type: Integer
Required: No

AvailabilityZone
The name of the Availability Zone in which the cluster is located.

Type: String
Required: No

ClusterCreateTime
The date and time that the cluster was created.

Type: Timestamp
Required: No

ClusterIdentifier
The unique identifier of the cluster.

Type: String
Required: No

ClusterNodes.member.N
The nodes in the cluster.

Type: Array of ClusterNode (p. 205) objects
Required: No

The list of cluster parameter groups that are associated with this cluster. Each parameter group in the list is returned with its status.

Type: Array of ClusterParameterGroupStatus (p. 207) objects
ClusterPublicKey

The public key for the cluster.

Type: String

Required: No

ClusterRevisionNumber

The specific revision number of the database in the cluster.

Type: String

Required: No


A list of cluster security group that are associated with the cluster. Each security group is represented by an element that contains ClusterSecurityGroup.Name and ClusterSecurityGroup.Status subelements.

Cluster security groups are used when the cluster is not created in an Amazon Virtual Private Cloud (VPC). Clusters that are created in a VPC use VPC security groups, which are listed by the VpcSecurityGroups parameter.

Type: Array of ClusterSecurityGroupMembership (p. 212) objects

Required: No

ClusterSnapshotCopyStatus

A value that returns the destination region and retention period that are configured for cross-region snapshot copy.

Type: ClusterSnapshotCopyStatus (p. 213) object

Required: No

ClusterStatus

The current state of the cluster. Possible values are the following:

- available
- creating
- deleting
- final-snapshot
- hardware-failure
- incompatible-hsm
- incompatible-network
- incompatible-parameters
- incompatible-restore
- modifying
- rebooting
- renaming
- resizing
- rotating-keys
- storage-full
- updating-hsm
Type: String
Required: No

ClusterSubnetGroupName
The name of the subnet group that is associated with the cluster. This parameter is valid only when the cluster is in a VPC.
Type: String
Required: No

ClusterVersion
The version ID of the Amazon Redshift engine that is running on the cluster.
Type: String
Required: No

DBName
The name of the initial database that was created when the cluster was created. This same name is returned for the life of the cluster. If an initial database was not specified, a database named dev was created by default.
Type: String
Required: No

ElasticIpStatus
The status of the elastic IP (EIP) address.
Type: ElasticIpStatus (p. 219) object
Required: No

Encrypted
A Boolean value that, if true, indicates that data in the cluster is encrypted at rest.
Type: Boolean
Required: No

Endpoint
The connection endpoint.
Type: Endpoint (p. 220) object
Required: No

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

If this option is true, enhanced VPC routing is enabled.
Default: false
Type: Boolean
**HsmStatus**

A value that reports whether the Amazon Redshift cluster has finished applying any hardware security module (HSM) settings changes specified in a modify cluster command.

Values: active, applying

Type: HsmStatus (p. 230) object

Required: No

**IamRoles.ClusterIamRole.N**

A list of AWS Identity and Access Management (IAM) roles that can be used by the cluster to access other AWS services.

Type: Array of ClusterIamRole (p. 204) objects

Required: No

**KmsKeyId**

The AWS Key Management Service (AWS KMS) key ID of the encryption key used to encrypt data in the cluster.

Type: String

Required: No

**MasterUsername**

The master user name for the cluster. This name is used to connect to the database that is specified in the DBName parameter.

Type: String

Required: No

**ModifyStatus**

The status of a modify operation, if any, initiated for the cluster.

Type: String

Required: No

**NodeType**

The node type for the nodes in the cluster.

Type: String

Required: No

**NumberOfNodes**

The number of compute nodes in the cluster.

Type: Integer

Required: No

**PendingModifiedValues**

A value that, if present, indicates that changes to the cluster are pending. Specific pending changes are identified by subelements.
Type: `PendingModifiedValues (p. 235)` object

Required: No

**PreferredMaintenanceWindow**

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

Type: String

Required: No

**PubliclyAccessible**

A Boolean value that, if `true`, indicates that the cluster can be accessed from a public network.

Type: Boolean

Required: No

**RestoreStatus**

A value that describes the status of a cluster restore action. This parameter returns null if the cluster was not created by restoring a snapshot.

Type: `RestoreStatus (p. 243)` object

Required: No

**Tags.Tag.N**

The list of tags for the cluster.

Type: Array of `Tag (p. 256)` objects

Required: No

**VpcId**

The identifier of the VPC the cluster is in, if the cluster is in a VPC.

Type: String

Required: No


A list of Amazon Virtual Private Cloud (Amazon VPC) security groups that are associated with the cluster. This parameter is returned only if the cluster is in a VPC.

Type: Array of `VpcSecurityGroupMembership (p. 259)` objects

Required: No

### See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterIamRole

An AWS Identity and Access Management (IAM) role that can be used by the associated Amazon Redshift cluster to access other AWS services.

Contents

**Note**
In the following list, the required parameters are described first.

**ApplyStatus**
A value that describes the status of the IAM role’s association with an Amazon Redshift cluster.

The following are possible statuses and descriptions.
- **in-sync**: The role is available for use by the cluster.
- **adding**: The role is in the process of being associated with the cluster.
- **removing**: The role is in the process of being disassociated with the cluster.

Type: String

Required: No

**IamRoleArn**
The Amazon Resource Name (ARN) of the IAM role, for example, `arn:aws:iam::123456789012:role/RedshiftCopyUnload`.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterNode

The identifier of a node in a cluster.

Contents

Note
In the following list, the required parameters are described first.

NodeRole
Whether the node is a leader node or a compute node.

Type: String
Required: No

PrivateIPAddress
The private IP address of a node within a cluster.

Type: String
Required: No

PublicIPAddress
The public IP address of a node within a cluster.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterParameterGroup

Describes a parameter group.

Contents

Note
In the following list, the required parameters are described first.

Description
The description of the parameter group.

Type: String
Required: No

ParameterGroupFamily
The name of the cluster parameter group family that this cluster parameter group is compatible with.

Type: String
Required: No

ParameterGroupName
The name of the cluster parameter group.

Type: String
Required: No

Tags.Tag.N
The list of tags for the cluster parameter group.

Type: Array of Tag (p. 256) objects
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterParameterGroupStatus

Describes the status of a parameter group.

### Contents

**Note**
In the following list, the required parameters are described first.

- **ClusterParameterStatusList.member.N**
  The list of parameter statuses.
  
  For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.
  
  Type: Array of ClusterParameterStatus (p. 208) objects
  
  Required: No

- **ParameterApplyStatus**
  The status of parameter updates.
  
  Type: String
  
  Required: No

- **ParameterGroupName**
  The name of the cluster parameter group.
  
  Type: String
  
  Required: No

### See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterParameterStatus

Describes the status of a parameter group.

Contents

Note
In the following list, the required parameters are described first.

ParameterApplyErrorDescription

The error that prevented the parameter from being applied to the database.

Type: String
Required: No

ParameterApplyStatus

The status of the parameter that indicates whether the parameter is in sync with the database, waiting for a cluster reboot, or encountered an error when being applied.

The following are possible statuses and descriptions.

- in-sync: The parameter value is in sync with the database.
- pending-reboot: The parameter value will be applied after the cluster reboots.
- applying: The parameter value is being applied to the database.
- invalid-parameter: Cannot apply the parameter value because it has an invalid value or syntax.
- apply-deferred: The parameter contains static property changes. The changes are deferred until the cluster reboots.
- apply-error: Cannot connect to the cluster. The parameter change will be applied after the cluster reboots.
- unknown-error: Cannot apply the parameter change right now. The change will be applied after the cluster reboots.

Type: String
Required: No

ParameterName

The name of the parameter.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterSecurityGroup

Describes a security group.

Contents

Note
In the following list, the required parameters are described first.

ClusterSecurityGroupName
The name of the cluster security group to which the operation was applied.
Type: String
Required: No
Description
A description of the security group.
Type: String
Required: No
EC2SecurityGroups.EC2SecurityGroup.N
A list of EC2 security groups that are permitted to access clusters associated with this cluster security group.
Type: Array of EC2SecurityGroup (p. 218) objects
Required: No
IPRanges.IPRange.N
A list of IP ranges (CIDR blocks) that are permitted to access clusters associated with this cluster security group.
Type: Array of IPRange (p. 231) objects
Required: No
Tags.Tag.N
The list of tags for the cluster security group.
Type: Array of Tag (p. 256) objects
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterSecurityGroupMembership

Describes a cluster security group.

Contents

Note
In the following list, the required parameters are described first.

ClusterSecurityGroupName
The name of the cluster security group.
Type: String
Required: No

Status
The status of the cluster security group.
Type: String
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ClusterSnapshotCopyStatus

Returns the destination region and retention period that are configured for cross-region snapshot copy.

Contents

**Note**
In the following list, the required parameters are described first.

**DestinationRegion**

The destination region that snapshots are automatically copied to when cross-region snapshot copy is enabled.

Type: String  
Required: No

**RetentionPeriod**

The number of days that automated snapshots are retained in the destination region after they are copied from a source region.

Type: Long  
Required: No

**SnapshotCopyGrantName**

The name of the snapshot copy grant.

Type: String  
Required: No

See Also

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

- AWS SDK for C++  
- AWS SDK for Go  
- AWS SDK for Java  
- AWS SDK for Ruby V2
ClusterSubnetGroup

Describes a subnet group.

Contents

Note
In the following list, the required parameters are described first.

ClusterSubnetGroupName
The name of the cluster subnet group.
Type: String
Required: No

Description
The description of the cluster subnet group.
Type: String
Required: No

SubnetGroupStatus
The status of the cluster subnet group. Possible values are Complete, Incomplete and Invalid.
Type: String
Required: No

Subnets.Subnet.N
A list of the VPC Subnet (p. 251) elements.
Type: Array of Subnet (p. 251) objects
Required: No

Tags.Tag.N
The list of tags for the cluster subnet group.
Type: Array of Tag (p. 256) objects
Required: No

VpcId
The VPC ID of the cluster subnet group.
Type: String
Required: No

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:
- AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
ClusterVersion

Describes a cluster version, including the parameter group family and description of the version.

Contents

**Note**

In the following list, the required parameters are described first.

**ClusterParameterGroupFamily**

The name of the cluster parameter group family for the cluster.

Type: String

Required: No

**ClusterVersion**

The version number used by the cluster.

Type: String

Required: No

**Description**

The description of the cluster version.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
DefaultClusterParameters

Describes the default cluster parameters for a parameter group family.

Contents

Note
In the following list, the required parameters are described first.

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

Type: String
Required: No

ParameterGroupFamily

The name of the cluster parameter group family to which the engine default parameters apply.

Type: String
Required: No

Parameters.Parameter.N

The list of cluster default parameters.

Type: Array of Parameter (p. 233) 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
EC2SecurityGroup

Describes an Amazon EC2 security group.

Contents

**Note**

In the following list, the required parameters are described first.

**EC2SecurityGroupName**

The name of the EC2 Security Group.

Type: String

Required: No

**EC2SecurityGroupOwnerId**

The AWS ID of the owner of the EC2 security group specified in the EC2SecurityGroupName field.

Type: String

Required: No

**Status**

The status of the EC2 security group.

Type: String

Required: No

**Tags.Tag.N**

The list of tags for the EC2 security group.

Type: Array of Tag (p. 256) objects

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ElasticIpStatus

Describes the status of the elastic IP (EIP) address.

Contents

Note
In the following list, the required parameters are described first.

ElasticIp
The elastic IP (EIP) address for the cluster.
Type: String
Required: No

Status
The status of the elastic IP (EIP) address.
Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Endpoint

Describes a connection endpoint.

Contents

Note
In the following list, the required parameters are described first.

Address
The DNS address of the Cluster.
Type: String
Required: No

Port
The port that the database engine is listening on.
Type: Integer
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**Event**

Describes an event.

**Contents**

**Note**

In the following list, the required parameters are described first.

**Date**

The date and time of the event.

Type: Timestamp

Required: No

**EventCategories.EventCategory.N**

A list of the event categories.

Values: Configuration, Management, Monitoring, Security

Type: Array of strings

Required: No

**EventId**

The identifier of the event.

Type: String

Required: No

**Message**

The text of this event.

Type: String

Required: No

**Severity**

The severity of the event.

Values: ERROR, INFO

Type: String

Required: No

**SourceIdentifier**

The identifier for the source of the event.

Type: String

Required: No

**SourceType**

The source type for this event.
Type: String

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

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
EventCategoriesMap

Describes event categories.

Contents

**Note**
In the following list, the required parameters are described first.

**Events.EventInfoMap.N**

The events in the event category.

Type: Array of EventInfoMap (p. 224) objects

Required: No

**SourceType**

The source type, such as cluster or cluster-snapshot, that the returned categories belong to.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
EventInfoMap

Describes event information.

Contents

Note
In the following list, the required parameters are described first.

EventCategories.EventCategory.N
The category of an Amazon Redshift event.
Type: Array of strings
Required: No

EventDescription
The description of an Amazon Redshift event.
Type: String
Required: No

EventId
The identifier of an Amazon Redshift event.
Type: String
Required: No

Severity
The severity of the event.
Values: ERROR, INFO
Type: String
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
EventSubscription

Describes event subscriptions.

Contents

Note
In the following list, the required parameters are described first.

CustomerAwsId

The AWS customer account associated with the Amazon Redshift event notification subscription.

Type: String
Required: No

CustSubscriptionId

The name of the Amazon Redshift event notification subscription.

Type: String
Required: No

Enabled

A Boolean value indicating whether the subscription is enabled. true indicates the subscription is enabled.

Type: Boolean
Required: No

EventCategoriesList.EventCategory.N

The list of Amazon Redshift event categories specified in the event notification subscription.

Values: Configuration, Management, Monitoring, Security

Type: Array of strings
Required: No

Severity

The event severity specified in the Amazon Redshift event notification subscription.

Values: ERROR, INFO

Type: String
Required: No

SnsTopicArn

The Amazon Resource Name (ARN) of the Amazon SNS topic used by the event notification subscription.

Type: String
Required: No
SourceldsList.SourceId.N
A list of the sources that publish events to the Amazon Redshift event notification subscription.
Type: Array of strings
Required: No

SourceType
The source type of the events returned the Amazon Redshift event notification, such as cluster, or
cluster-snapshot.
Type: String
Required: No

Status
The status of the Amazon Redshift event notification subscription.
Constraints:
• Can be one of the following: active | no-permission | topic-not-exist
• The status "no-permission" indicates that Amazon Redshift no longer has permission to post to
the Amazon SNS topic. The status "topic-not-exist" indicates that the topic was deleted after the
subscription was created.
Type: String
Required: No

SubscriptionCreationTime
The date and time the Amazon Redshift event notification subscription was created.
Type: Timestamp
Required: No

Tags.Tag.N
The list of tags for the event subscription.
Type: Array of Tag (p. 256) objects
Required: No

See Also
For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
HsmClientCertificate

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

Contents

**Note**
In the following list, the required parameters are described first.

**HsmClientCertificateIdentifier**

The identifier of the HSM client certificate.

Type: String

Required: No

**HsmClientCertificatePublicKey**

The public key that the Amazon Redshift cluster will use to connect to the HSM. You must register the public key in the HSM.

Type: String

Required: No

**Tags.Tag.N**

The list of tags for the HSM client certificate.

Type: Array of Tag (p. 256) objects

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HsmConfiguration

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

Contents

Note
In the following list, the required parameters are described first.

Description
A text description of the HSM configuration.
Type: String
Required: No

HsmConfigurationIdentifier
The name of the Amazon Redshift HSM configuration.
Type: String
Required: No

HsmIpAddress
The IP address that the Amazon Redshift cluster must use to access the HSM.
Type: String
Required: No

HsmPartitionName
The name of the partition in the HSM where the Amazon Redshift clusters will store their database encryption keys.
Type: String
Required: No

Tags.Tag.N
The list of tags for the HSM configuration.
Type: Array of Tag (p. 256) objects
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
HsmStatus

Describes the status of changes to HSM settings.

Contents

Note
In the following list, the required parameters are described first.

HsmClientCertificateIdentifier

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

Type: String

Required: No

HsmConfigurationIdentifier

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

Type: String

Required: No

Status

Reports whether the Amazon Redshift cluster has finished applying any HSM settings changes specified in a modify cluster command.

Values: active, applying

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
IPRange

Describes an IP range used in a security group.

Contents

Note
In the following list, the required parameters are described first.

CIDRIP

The IP range in Classless Inter-Domain Routing (CIDR) notation.

Type: String
Required: No

Status

The status of the IP range, for example, "authorized".

Type: String
Required: No

Tags.Tag.N

The list of tags for the IP range.

Type: Array of Tag (p. 256) objects
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
OrderableClusterOption

Describes an orderable cluster option.

Contents

**Note**

In the following list, the required parameters are described first.

**AvailabilityZones.AvailabilityZone.N**

A list of availability zones for the orderable cluster.

Type: Array of AvailabilityZone (p. 197) objects

Required: No

**ClusterType**

The cluster type, for example multi-node.

Type: String

Required: No

**ClusterVersion**

The version of the orderable cluster.

Type: String

Required: No

**NodeType**

The node type for the orderable cluster.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Parameter

Describes a parameter in a cluster parameter group.

Contents

Note
In the following list, the required parameters are described first.

AllowedValues
The valid range of values for the parameter.
Type: String
Required: No

ApplyType
Specifies how to apply the WLM configuration parameter. Some properties can be applied dynamically, while other properties require that any associated clusters be rebooted for the configuration changes to be applied. For more information about parameters and parameter groups, go to Amazon Redshift Parameter Groups in the Amazon Redshift Cluster Management Guide.
Type: String
Valid Values: static | dynamic
Required: No

DataType
The data type of the parameter.
Type: String
Required: No

Description
A description of the parameter.
Type: String
Required: No

IsModifiable
If true, the parameter can be modified. Some parameters have security or operational implications that prevent them from being changed.
Type: Boolean
Required: No

MinimumEngineVersion
The earliest engine version to which the parameter can apply.
Type: String
Required: No
ParameterName

The name of the parameter.

Type: String
Required: No

ParameterValue

The value of the parameter.

Type: String
Required: No

Source

The source of the parameter value, such as "engine-default" or "user".

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
PendingModifiedValues

Describes cluster attributes that are in a pending state. A change to one or more the attributes was requested and is in progress or will be applied.

Contents

Note
In the following list, the required parameters are described first.

AutomatedSnapshotRetentionPeriod

The pending or in-progress change of the automated snapshot retention period.

Type: Integer

Required: No

ClusterIdentifier

The pending or in-progress change of the new identifier for the cluster.

Type: String

Required: No

ClusterType

The pending or in-progress change of the cluster type.

Type: String

Required: No

ClusterVersion

The pending or in-progress change of the service version.

Type: String

Required: No

EnhancedVpcRouting

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

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

Default: false

Type: Boolean

Required: No

MasterUserPassword

The pending or in-progress change of the master user password for the cluster.

Type: String

Required: No
**NodeType**

The pending or in-progress change of the cluster's node type.

Type: String

Required: No

**NumberOfNodes**

The pending or in-progress change of the number of nodes in the cluster.

Type: Integer

Required: No

**PubliclyAccessible**

The pending or in-progress change of the ability to connect to the cluster from the public network.

Type: Boolean

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
RecurringCharge

Describes a recurring charge.

Contents

**Note**
In the following list, the required parameters are described first.

**RecurringChargeAmount**
The amount charged per the period of time specified by the recurring charge frequency.

Type: Double
Required: No

**RecurringChargeFrequency**
The frequency at which the recurring charge amount is applied.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ReservedNode

Describes a reserved node. You can call the DescribeReservedNodeOfferings (p. 114) API to obtain the available reserved node offerings.

Contents

Note
In the following list, the required parameters are described first.

CurrencyCode
The currency code for the reserved cluster.
Type: String
Required: No

Duration
The duration of the node reservation in seconds.
Type: Integer
Required: No

FixedPrice
The fixed cost Amazon Redshift charges you for this reserved node.
Type: Double
Required: No

NodeCount
The number of reserved compute nodes.
Type: Integer
Required: No

NodeType
The node type of the reserved node.
Type: String
Required: No

OfferingType
The anticipated utilization of the reserved node, as defined in the reserved node offering.
Type: String
Required: No

RecurringCharges.RecurringCharge.N
The recurring charges for the reserved node.
Type: Array of RecurringCharge (p. 237) objects
Required: No
ReservedNodeId

The unique identifier for the reservation.

Type: String

Required: No

ReservedNodeOfferingId

The identifier for the reserved node offering.

Type: String

Required: No

ReservedNodeOfferingType

The type of node reservation.

Type: String

Valid Values: Regular | Upgradable

Required: No

StartTime

The time the reservation started. You purchase a reserved node offering for a duration. This is the start time of that duration.

Type: Timestamp

Required: No

State

The state of the reserved compute node.

Possible Values:
- pending-payment-This reserved node has recently been purchased, and the sale has been approved, but payment has not yet been confirmed.
- active-This reserved node is owned by the caller and is available for use.
- payment-failed-Payment failed for the purchase attempt.

Type: String

Required: No

UsagePrice

The hourly rate Amazon Redshift charges you for this reserved node.

Type: Double

Required: No

See Also

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

- AWS SDK for C++
Amazon Redshift API Reference

See Also

- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
ReservedNodeOffering

Describes a reserved node offering.

Contents

Note
In the following list, the required parameters are described first.

CurrencyCode
The currency code for the compute nodes offering.
Type: String
Required: No

Duration
The duration, in seconds, for which the offering will reserve the node.
Type: Integer
Required: No

FixedPrice
The upfront fixed charge you will pay to purchase the specific reserved node offering.
Type: Double
Required: No

NodeType
The node type offered by the reserved node offering.
Type: String
Required: No

OfferingType
The anticipated utilization of the reserved node, as defined in the reserved node offering.
Type: String
Required: No

RecurringCharges.RecurringCharge.N
The charge to your account regardless of whether you are creating any clusters using the node offering. Recurring charges are only in effect for heavy-utilization reserved nodes.
Type: Array of RecurringCharge (p. 237) objects
Required: No

ReservedNodeOfferingId
The offering identifier.
Type: String
Required: No

**ReservedNodeOfferingType**

The type of node reservation.

Type: String

Valid Values: Regular | Upgradable

Required: No

**UsagePrice**

The rate you are charged for each hour the cluster that is using the offering is running.

Type: Double

Required: No

---

**See Also**

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
**RestoreStatus**

Describes the status of a cluster restore action. Returns null if the cluster was not created by restoring a snapshot.

**Contents**

**Note**
In the following list, the required parameters are described first.

**CurrentRestoreRateInMegaBytesPerSecond**

The number of megabytes per second being transferred from the backup storage. Returns the average rate for a completed backup.

Type: Double

Required: No

**ElapsedTimeInSeconds**

The amount of time an in-progress restore has been running, or the amount of time it took a completed restore to finish.

Type: Long

Required: No

**EstimatedTimeToCompletionInSeconds**

The estimate of the time remaining before the restore will complete. Returns 0 for a completed restore.

Type: Long

Required: No

**ProgressInMegaBytes**

The number of megabytes that have been transferred from snapshot storage.

Type: Long

Required: No

**SnapshotSizeInMegaBytes**

The size of the set of snapshot data used to restore the cluster.

Type: Long

Required: No

**Status**

The status of the restore action. Returns starting, restoring, completed, or failed.

Type: String

Required: No
See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Snapshot

Describes a snapshot.

Contents

Note
In the following list, the required parameters are described first.

A list of the AWS customer accounts authorized to restore the snapshot. Returns null if no accounts are authorized. Visible only to the snapshot owner.
Type: Array of AccountWithRestoreAccess (p. 196) objects
Required: No

ActualIncrementalBackupSizeInMegaBytes
The size of the incremental backup.
Type: Double
Required: No

AvailabilityZone
The Availability Zone in which the cluster was created.
Type: String
Required: No

BackupProgressInMegaBytes
The number of megabytes that have been transferred to the snapshot backup.
Type: Double
Required: No

ClusterCreateTime
The time (UTC) when the cluster was originally created.
Type: Timestamp
Required: No

ClusterIdentifier
The identifier of the cluster for which the snapshot was taken.
Type: String
Required: No

ClusterVersion
The version ID of the Amazon Redshift engine that is running on the cluster.
Type: String
Required: No

**CurrentBackupRateInMegabytesPerSecond**

The number of megabytes per second being transferred to the snapshot backup. Returns 0 for a completed backup.

Type: Double

Required: No

**DBName**

The name of the database that was created when the cluster was created.

Type: String

Required: No

**ElapsedTimeInSeconds**

The amount of time an in-progress snapshot backup has been running, or the amount of time it took a completed backup to finish.

Type: Long

Required: No

**Encrypted**

If true, the data in the snapshot is encrypted at rest.

Type: Boolean

Required: No

**EncryptedWithHSM**

A boolean that indicates whether the snapshot data is encrypted using the HSM keys of the source cluster. true indicates that the data is encrypted using HSM keys.

Type: Boolean

Required: No

**EnhancedVpcRouting**

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

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

Default: false

Type: Boolean

Required: No

**EstimatedSecondsToCompletion**

The estimate of the time remaining before the snapshot backup will complete. Returns 0 for a completed backup.

Type: Long
KmsKeyId

The AWS Key Management Service (KMS) key ID of the encryption key that was used to encrypt data in the cluster from which the snapshot was taken.

Type: String

Required: No

MasterUsername

The master user name for the cluster.

Type: String

Required: No

NodeType

The node type of the nodes in the cluster.

Type: String

Required: No

NumberOfNodes

The number of nodes in the cluster.

Type: Integer

Required: No

OwnerAccount

For manual snapshots, the AWS customer account used to create or copy the snapshot. For automatic snapshots, the owner of the cluster. The owner can perform all snapshot actions, such as sharing a manual snapshot.

Type: String

Required: No

Port

The port that the cluster is listening on.

Type: Integer

Required: No

RestorableNodeTypes.NodeType.N

The list of node types that this cluster snapshot is able to restore into.

Type: Array of strings

Required: No

SnapshotCreateTime

The time (UTC) when Amazon Redshift began the snapshot. A snapshot contains a copy of the cluster data as of this exact time.
Type: Timestamp
Required: No

**SnapshotIdentifier**

The snapshot identifier that is provided in the request.
Type: String
Required: No

**SnapshotType**

The snapshot type. Snapshots created using `CreateClusterSnapshot` (p. 29) and `CopyClusterSnapshot` (p. 9) will be of type "manual".
Type: String
Required: No

**SourceRegion**

The source region from which the snapshot was copied.
Type: String
Required: No

**Status**

The snapshot status. The value of the status depends on the API operation used.
- `CreateClusterSnapshot` (p. 29) and `CopyClusterSnapshot` (p. 9) returns status as "creating".
- `DescribeClusterSnapshots` (p. 81) returns status as "creating", "available", "final snapshot", or "failed".
- `DeleteClusterSnapshot` (p. 55) returns status as "deleted".
Type: String
Required: No

**Tags.Tag.N**

The list of tags for the cluster snapshot.
Type: Array of `Tag` (p. 256) objects
Required: No

**TotalBackupSizeInMegaBytes**

The size of the complete set of backup data that would be used to restore the cluster.
Type: Double
Required: No

**VpcId**

The VPC identifier of the cluster if the snapshot is from a cluster in a VPC. Otherwise, this field is not in the output.
Type: String
Required: No
See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SnapshotCopyGrant

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

For more information about managing snapshot copy grants, go to Amazon Redshift Database Encryption in the Amazon Redshift Cluster Management Guide.

Contents

Note
In the following list, the required parameters are described first.

KmsKeyId
The unique identifier of the customer master key (CMK) in AWS KMS to which Amazon Redshift is granted permission.

Type: String
Required: No

SnapshotCopyGrantName
The name of the snapshot copy grant.

Type: String
Required: No

Tags.Tag.N
A list of tag instances.

Type: Array of Tag (p. 256) 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
Subnet

Describes a subnet.

Contents

Note
In the following list, the required parameters are described first.

SubnetAvailabilityZone

Describes an availability zone.

Type: AvailabilityZone (p. 197) object

Required: No

SubnetIdentifier

The identifier of the subnet.

Type: String

Required: No

SubnetStatus

The status of the subnet.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
SupportedPlatform

A list of supported platforms for orderable clusters.

Contents

Note
In the following list, the required parameters are described first.

Name
Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
TableRestoreStatus

Describes the status of a `RestoreTableFromClusterSnapshot` (p. 184) operation.

Contents

**Note**
In the following list, the required parameters are described first.

**ClusterIdentifier**

The identifier of the Amazon Redshift cluster that the table is being restored to.

Type: String

Required: No

**Message**

A description of the status of the table restore request. Status values include SUCCEEDED, FAILED, CANCELED, PENDING, IN_PROGRESS.

Type: String

Required: No

**NewTableName**

The name of the table to create as a result of the table restore request.

Type: String

Required: No

**ProgressInMegaBytes**

The amount of data restored to the new table so far, in megabytes (MB).

Type: Long

Required: No

**RequestTime**

The time that the table restore request was made, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

**SnapshotIdentifier**

The identifier of the snapshot that the table is being restored from.

Type: String

Required: No

**SourceDatabaseName**

The name of the source database that contains the table being restored.

Type: String
### Required: No

**SourceSchemaName**

The name of the source schema that contains the table being restored.

Type: String

**SourceTableName**

The name of the source table being restored.

Type: String

**Status**

A value that describes the current state of the table restore request.

Valid Values: SUCCEEDED, FAILED, CANCELED, PENDING, IN_PROGRESS

Type: String

**TableRestoreRequestId**

The unique identifier for the table restore request.

Type: String

**TargetDatabaseName**

The name of the database to restore the table to.

Type: String

**TargetSchemaName**

The name of the schema to restore the table to.

Type: String

**TotalDataInMegaBytes**

The total amount of data to restore to the new table, in megabytes (MB).

Type: Long

**See Also**

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V2
Tag

A tag consisting of a name/value pair for a resource.

Contents

Note
In the following list, the required parameters are described first.

Key
The key, or name, for the resource tag.
Type: String
Required: No

Value
The value for the resource tag.
Type: String
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
TaggedResource

A tag and its associated resource.

Contents

Note
In the following list, the required parameters are described first.

ResourceName

The Amazon Resource Name (ARN) with which the tag is associated. For example, arn:aws:redshift:us-east-1:123456789:cluster:t1.

Type: String
Required: No

ResourceType

The type of resource with which the tag is associated. Valid resource types are:

• Cluster
• CIDR/IP
• EC2 security group
• Snapshot
• Cluster security group
• Subnet group
• HSM connection
• HSM certificate
• Parameter group

For more information about Amazon Redshift resource types and constructing ARNs, go to Constructing an Amazon Redshift Amazon Resource Name (ARN) in the Amazon Redshift Cluster Management Guide.

Type: String
Required: No

Tag

The tag for the resource.

Type: Tag (p. 256) object
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Describes the members of a VPC security group.

Contents

Note
In the following list, the required parameters are described first.

Status
The status of the VPC security group.
Type: String
Required: No

VpcSecurityGroupId
The identifier of the VPC security group.
Type: String
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2
Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the Amazon Web Services General Reference.

Action
The action to be performed.
Type: string
Required: Yes

Version
The API version that the request is written for, expressed in the format YYYY-MM-DD.
Type: string
Required: Yes

X-Amz-Algorithm
The hash algorithm that you used to create the request signature.
Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.
Type: string
Valid Values: AWS4-HMAC-SHA256
Required: Conditional

X-Amz-Credential
The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: access_key/YYYYMMDD/region/service/aws4_request.
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'T'HHMMSS'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