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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 April 3, 2020.
Actions

The following actions are supported:

- AcceptReservedNodeExchange (p. 5)
- AuthorizeClusterSecurityGroupIngress (p. 8)
- AuthorizeSnapshotAccess (p. 11)
- BatchDeleteClusterSnapshots (p. 13)
- BatchModifyClusterSnapshots (p. 15)
- CancelResize (p. 18)
- CopyClusterSnapshot (p. 22)
- CreateCluster (p. 26)
- CreateClusterParameterGroup (p. 36)
- CreateClusterSecurityGroup (p. 39)
- CreateClusterSnapshot (p. 42)
- CreateClusterSubnetGroup (p. 46)
- CreateEventSubscription (p. 49)
- CreateHsmClientCertificate (p. 54)
- CreateHsmConfiguration (p. 57)
- CreateScheduledAction (p. 60)
- CreateSnapshotCopyGrant (p. 64)
- CreateSnapshotSchedule (p. 67)
- CreateTags (p. 70)
- DeleteCluster (p. 72)
- DeleteClusterParameterGroup (p. 76)
- DeleteClusterSecurityGroup (p. 78)
- DeleteClusterSnapshot (p. 80)
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• ModifyCluster (p. 212)
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• ModifyScheduledAction (p. 245)
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• PauseCluster (p. 256)
• PurchaseReservedNodeOffering (p. 258)
• RebootCluster (p. 261)
• ResetClusterParameterGroup (p. 264)
• ResizeCluster (p. 267)
• RestoreFromClusterSnapshot (p. 272)
• RestoreTableFromClusterSnapshot (p. 281)
• ResumeCluster (p. 285)
• RevokeClusterSecurityGroupIngress (p. 287)
• RevokeSnapshotAccess (p. 290)
• RotateEncryptionKey (p. 292)
AcceptReservedNodeExchange

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ReservedNode

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

Type: String

Required: Yes

TargetReservedNodeOfferingId

The unique identifier of the DC2 Reserved Node offering to be used for the exchange. You can obtain the value for the parameter by calling GetReservedNodeExchangeOfferings (p. 209)

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

ExchangedReservedNode

Type: ReservedNode (p. 352) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

DependentServiceUnavailableFault

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

HTTP Status Code: 400

InvalidReservedNodeState

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

HTTP Status Code: 400

ReservedNodeAlreadyExists

User already has a reservation with the given identifier.

HTTP Status Code: 404
ReservedNodeAlreadyMigrated

Indicates that the reserved node has already been exchanged.

HTTP Status Code: 400

ReservedNodeNotFound

The specified reserved compute node not found.

HTTP Status Code: 404

ReservedNodeOfferingNotFound

Specified offering does not exist.

HTTP Status Code: 404

UnsupportedOperation

The requested operation isn't supported.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=AcceptReservedNodeExchange
&ReservedNodeId=12345678-12ab-12a1-1a2a-12ab-12a12aEXAMPLE
&TargetReservedNodeOfferingId=12345678-12ab-12a1-1a2a-12ab-12a12bEXAMPLE
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<AcceptReservedNodeExchangeResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <AcceptReservedNodeExchangeResult>
    <ExchangedReservedNode>
      <ReservedNodeId>12345678-12ab-12a1-1a2a-12ab-12a12aEXAMPLE</ReservedNodeId>
      <OfferingType>All Upfront</OfferingType>
      <ReservedNodeOfferingType>Regular</ReservedNodeOfferingType>
      <RecurringCharges/>
        <RecurringChargeAmount>0.0</RecurringChargeAmount>
        <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
      </RecurringCharges>
      <NodeType>dc2.large</NodeType>
      <FixedPrice>0.0</FixedPrice>
      <Duration>31536000</Duration>
      <UsagePrice>0.0</UsagePrice>
    </ReservedNodeOfferingId>
  </ExchangedReservedNode>
</AcceptReservedNodeExchangeResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**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. 316) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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-2.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-east-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=0aa1234bb5cc678d901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

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>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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 V3
BatchDeleteClusterSnapshots

Deletes a set of cluster snapshots.

**Request Parameters**

For information about the parameters that are common to all actions, see [Common Parameters](p. 388).

Identifiers.DeleteClusterSnapshotMessage.N

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

Type: Array of `DeleteClusterSnapshotMessage` (p. 327) objects

Required: Yes

**Response Elements**

The following elements are returned by the service.

Errors.SnapshotErrorMessage.N

A list of any errors returned.

Type: Array of `SnapshotErrorMessage` (p. 373) objects

Resources.String.N

A list of the snapshot identifiers that were deleted.

Type: Array of strings

**Errors**

For information about the errors that are common to all actions, see [Common Errors](p. 390).

BatchDeleteRequestSizeExceeded

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

HTTP Status Code: 400

**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=BatchDeleteClusterSnapshots
&Identifiers.DeleteClusterSnapshotMessage.1.SnapshotIdentifier=mysnapshotid1
&Identifiers.DeleteClusterSnapshotMessage.2.SnapshotIdentifier=mysnapshotid2
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
```
Sample Response

```xml
<BatchDeleteClusterSnapshotsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <BatchDeleteClusterSnapshotsResult>
    <Resources>
      <String>mysnapshotid1</String>
      <String>mysnapshotid2</String>
    </Resources>
  </BatchDeleteClusterSnapshotsResult>
  <ResponseMetadata>
    <RequestId>5b43fc38-282e-11ea-8cc9-43f1872b4b75</RequestId>
  </ResponseMetadata>
</BatchDeleteClusterSnapshotsResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
BatchModifyClusterSnapshots

Modifies the settings for a set of cluster snapshots.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

SnapshotIdentifierList.String.N

A list of snapshot identifiers you want to modify.

Type: Array of strings

Required: Yes

Force

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

Type: Boolean

Required: No

ManualSnapshotRetentionPeriod

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

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

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

Errors.SnapshotErrorMessage.N

A list of any errors returned.

Type: Array of SnapshotErrorMessage (p. 373) objects

Resources.String.N

A list of the snapshots that were modified.

Type: Array of strings

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).
BatchModifyClusterSnapshotsLimitExceededFault

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

HTTP Status Code: 400

InvalidRetentionPeriodFault

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

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

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=BatchModifyClusterSnapshots
&SnapshotIdentifierList.String.1=mysnapshotid1
&SnapshotIdentifierList.String.2=mysnapshotid2
&ManualSnapshotRetentionPeriod=30
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<BatchModifyClusterSnapshotsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  
  <BatchModifyClusterSnapshotsResult>  
    <Resources>  
      <String>mysnapshotid1</String>  
      <String>mysnapshotid2</String>  
    </Resources>  
    <Errors/>  
  </BatchModifyClusterSnapshotsResult>  
  <ResponseMetadata>  
    <RequestId>c10326d1-282d-11ea-8314-974e2ba81189</RequestId>  
  </ResponseMetadata>  
</BatchModifyClusterSnapshotsResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
CancelResize

Cancels a resize operation for a cluster.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ClusterIdentifier**

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

Type: String

Required: Yes

**Response Elements**

The following elements are returned by the service.

**AvgResizeRateInMegaBytesPerSecond**

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

Type: Double

**DataTransferProgressPercent**

The percent of data transferred from source cluster to target cluster.

Type: Double

**ElapsedTimeInSeconds**

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

Type: Long

**EstimatedTimeToCompletionInSeconds**

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

Type: Long

**ImportTablesCompleted.member.N**

The names of tables that have been completely imported.

Valid Values: List of table names.

Type: Array of strings

**ImportTablesInProgress.member.N**

The names of tables that are being currently imported.
Valid Values: List of table names.
Type: Array of strings

ImportTablesNotStarted.member.N

The names of tables that have not been yet imported.

Valid Values: List of table names
Type: Array of strings

Message
An optional string to provide additional details about the resize action.
Type: String

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

ResizeType
An enum with possible values of ClassicResize and ElasticResize. These values describe the type of resize operation being performed.
Type: String

Status
The status of the resize operation.
Valid Values: NONE | IN_PROGRESS | FAILED | SUCCEEDED | CANCELLING
Type: String

TargetClusterType
The cluster type after the resize operation is complete.
Valid Values: multi-node | single-node
Type: String

TargetEncryptionType
The type of encryption for the cluster after the resize is complete.
Possible values are KMS and None. In the China region possible values are: Legacy and None.
Type: String

TargetNodeType
The node type that the cluster will have after the resize operation is complete.
Type: String

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

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterNotFound**

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

HTTP Status Code: 404

**InvalidClusterState**

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

HTTP Status Code: 400

**ResizeNotFound**

A resize operation for the specified cluster is not found.

HTTP Status Code: 404

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

Example

Sample Request

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=CancelResize
&ClusterIdentifier=mycluster
&ManualSnapshotRetentionPeriod=30
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-AlGORITHM=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<CancelResizeResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CancelResizeResult>
    <TargetNodeType>dc2.large</TargetNodeType>
    <TargetEncryptionType>NONE</TargetEncryptionType>
    <TargetClusterType>single-node</TargetClusterType>
  </CancelResizeResult>
</CancelResizeResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

SourceSnapshotIdentifier

The identifier for the source snapshot.

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

Type: String
Required: Yes

TargetSnapshotIdentifier

The identifier given to the new manual snapshot.

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

Type: String
Required: Yes

ManualSnapshotRetentionPeriod

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

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

The default value is -1.

Type: Integer
Required: No
SourceSnapshotClusterIdentifier

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

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

Type: String

Required: No

Response Elements

The following element is returned by the service.

Snapshot

Describes a snapshot.

Type: Snapshot (p. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterSnapshotAlreadyExists

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

HTTP Status Code: 400

ClusterSnapshotNotFoundException

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

HTTP Status Code: 404

ClusterSnapshotQuotaExceeded

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

HTTP Status Code: 400

InvalidClusterSnapshotState

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

HTTP Status Code: 400

InvalidRetentionPeriodFault

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

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

HTTP Status Code: 400
**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=CopyClusterSnapshot
&SourceSnapshotIdentifier=mysnapshotid1
&TargetSnapshotIdentifier=mysnapshotid2
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa456789b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```
<CopyClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CopyClusterSnapshotResult>
    <Snapshot>
      <SnapshotRetentionStartTime>2019-12-26T19:15:49.354Z</SnapshotRetentionStartTime>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <EncryptedWithHSM>false</EncryptedWithHSM>
      <NumberOfNodes>1</NumberOfNodes>
      <OwnerAccount>123456789012</OwnerAccount>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <TotalBackupSizeInMegaBytes>41.0</TotalBackupSizeInMegaBytes>
      <VpcId>vpc-a1abc1a1</VpcId>
      <BackupInProgressInMegaBytes>14.0</BackupInProgressInMegaBytes>
      <CurrentBackupRateInMegaBytesPerSecond>0.0</CurrentBackupRateInMegaBytesPerSecond>
      <ElapsedInTimeInSeconds>0</ElapsedInTimeInSeconds>
      <ClusterCreateTime>2019-12-25T11:21:49.458Z</ClusterCreateTime>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <ActualIncrementalBackupSizeInMegaBytes>14.0</ActualIncrementalBackupSizeInMegaBytes>
      <SnapshotType>manual</SnapshotType>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <SnapshotIdentifier>mysnapshotid2</SnapshotIdentifier>
      <NodeType>dc2.large</NodeType>
      <Tags/>
      <Encrypted>true</Encrypted>
      <EstimatedSecondsToCompletion>-1</EstimatedSecondsToCompletion>
      <Port>5439</Port>
      <MaintenanceTrackName>current</MaintenanceTrackName>
      <SnapshotCreateTime>2019-12-26T19:15:48.359Z</SnapshotCreateTime>
      <KmsKeyId>arn:aws:kms:us-east-2:123456789012:key/bPxrFih3yCo8nvbEXAMPLEKEY</KmsKeyId>
      <Status>available</Status>
    </Snapshot>
  </CopyClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>45c7d545-2820-11ea-9caa-c956bec1ce87</RequestId>
  </ResponseMetadata>
</CopyClusterSnapshotResponse>
```

**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 V3
CreateCluster

Creates a new cluster with the specified parameters.

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

Request Parameters

For information about the parameters that are common to all actions, see Common
Parameters (p. 388).

**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 | dc1.large | dc1.8xlarge | dc2.large | dc2.8xlarge | ra3.4xlarge | ra3.16xlarge

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. 42).

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-2d
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

**MaintenanceTrackName**

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

Type: String

Required: No

**ManualSnapshotRetentionPeriod**

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

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

Type: Integer

Required: No

**NumberOfNodes**

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

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

API Version 2012-12-01
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.


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

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

Constraints: Minimum 30-minute window.

Type: String

Required: No

PubliclyAccessible

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

Type: Boolean

Required: No

SnapshotScheduleIdentifier

A unique identifier for the snapshot schedule.

Type: String

Required: No

Tags.Tag.N

A list of tag instances.

Type: Array of Tag (p. 383) 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. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterAlreadyExists

The account already has a cluster with the given identifier.

HTTP Status Code: 400

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

ClusterQuotaExceeded

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

HTTP Status Code: 400

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

The request cannot be completed because a dependent service is throttling requests made by Amazon Redshift on your behalf. Wait and retry the request.
HTTP Status Code: 400

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

HTTP Status Code: 400

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

HTTP Status Code: 400

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

HTTP Status Code: 400

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

HTTP Status Code: 400

**InvalidClusterTrack**
The provided cluster track name is not valid.

HTTP Status Code: 400

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

HTTP Status Code: 400

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

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

HTTP Status Code: 400

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

HTTP Status Code: 400

**InvalidTagFault**
The tag is invalid.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**
The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

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

HTTP Status Code: 400
NumberOfNodesPerClusterLimitExceeded

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

HTTP Status Code: 400

NumberOfNodesQuotaExceeded

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

HTTP Status Code: 400

SnapshotScheduleNotFound

We could not find the specified snapshot schedule.

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
  ?Action=CreateCluster
  &ClusterIdentifier=mycluster
  &NodeType=dc2.large
  &MasterUsername=adminuser
  &MasterUserPassword=A1b2c3d4
  &NumberOfNodes=2
  &SignatureMethod=HmacSHA256&SignatureVersion=4
  &Version=2012-12-01
  &X-Amz-Algorithm=AWS4-HMAC-SHA256
  &X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
  &X-Amz-Date=20190825T160000Z
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
  &X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<CreateClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>2</NumberOfNodes>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
  </Cluster>
</CreateClusterResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 212).

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. 388).

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

Type: String

Required: Yes

ParameterGroupName

The name of the cluster parameter group.

Constraints:

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

Note

This value is stored as a lower-case string.

Type: String

Required: Yes

Tags.Tag.N

A list of tag instances.
Response Elements

The following element is returned by the service.

**ClusterParameterGroup**

Describes a parameter group.

Type: [ClusterParameterGroup](#) (p. 312) object

Errors

For information about the errors that are common to all actions, see [Common Errors](#) (p. 390).

**ClusterParameterGroupAlreadyExists**

A cluster parameter group with the same name already exists.

HTTP Status Code: 400

**ClusterParameterGroupQuotaExceeded**

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

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=CreateClusterParameterGroup
&ParameterGroupName=myclusterparametergroup
&ParameterGroupFamily=redshift-1.0
&Description=My+first+cluster+parameter+group
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
```
Sample Response

```xml
<CreateClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterParameterGroupResult>
    <ClusterParameterGroup>
      <ParameterGroupName>myclusterparametergroup</ParameterGroupName>
      <Description>My first cluster parameter group</Description>
      <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
      <Tags/>
    </ClusterParameterGroup>
  </CreateClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>d52df43b-281e-11ea-8314-974e2ba81189</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 V3
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. 388).

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. 383) objects
Required: No

Response Elements

The following element is returned by the service.

ClusterSecurityGroup

Describes a security group.

Type: ClusterSecurityGroup (p. 316) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).
ClusterSecurityGroupAlreadyExists

A cluster security group with the same name already exists.

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

QuotaExceeded.ClusterSecurityGroup

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

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateClusterSecurityGroup
&ClusterSecurityGroupName=securitygroup1
&Description=my security group
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-2/redshift/aws4_request
&x-amz-date=20130123T005817Z
&x-amz-signedheaders=content-type;host;x-amz-date

Sample Response

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

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
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 V3
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. 388).

**ClusterIdentifier**

The cluster identifier for which you want a snapshot.

Type: String

Required: Yes

**SnapshotIdentifier**

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

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

Example: my-snapshot-id

Type: String

Required: Yes

**ManualSnapshotRetentionPeriod**

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

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

The default value is -1.

Type: Integer

Required: No

**Tags.Tag.N**

A list of tag instances.

Type: Array of Tag (p. 383) objects

Required: No

Response Elements

The following element is returned by the service.
Snapshot

Describes a snapshot.

Type: Snapshot (p. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

ClusterSnapshotAlreadyExists

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

HTTP Status Code: 400

ClusterSnapshotQuotaExceeded

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

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

InvalidRetentionPeriodFault

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

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateClusterSnapshot
&SnapshotIdentifier=mysnapshotid
&ClusterIdentifier=mycluster
Amazon Redshift API Reference
See Also

SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<CreateClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterSnapshotResult>
    <Snapshot>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <EncryptedWithHSM>false</EncryptedWithHSM>
      <NumberOfNodes>2</NumberOfNodes>
      <OwnerAccount>123456789012</OwnerAccount>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <TotalBackupSizeInMegaBytes>-1.0</TotalBackupSizeInMegaBytes>
      <VpcId>vpc-1abc1234</VpcId>
      <BackupProgressInMegaBytes>0.0</BackupProgressInMegaBytes>
      <CurrentBackupRateInMegaBytesPerSecond>0.0</CurrentBackupRateInMegaBytesPerSecond>
      <ElapsedTimeInSeconds>0</ElapsedTimeInSeconds>
      <ClusterCreateTime>2019-12-26T20:25:38.716Z</ClusterCreateTime>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <ActualIncrementalBackupSizeInMegaBytes>-1.0</ActualIncrementalBackupSizeInMegaBytes>
      <SnapshotType>manual</SnapshotType>
      <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>
      <NodeType>dc2.large</NodeType>
      <Tags/>
      <Encrypted>false</Encrypted>
      <EstimatedSecondsToCompletion>-1</EstimatedSecondsToCompletion>
      <Port>5439</Port>
      <MaintenanceTrackName>current</MaintenanceTrackName>
      <SnapshotCreateTime>2019-12-26T22:38:18.854Z</SnapshotCreateTime>
      <Status>creating</Status>
    </Snapshot>
  </CreateClusterSnapshotResult>
  <ResponseMetadata>
    <RequestId>69dec674-2830-11ea-9ca9-c956bec1ce87</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

API Version 2012-12-01
• AWS SDK for Ruby V3
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. 388).

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. 383) objects

Required: No

Response Elements

The following element is returned by the service.

ClusterSubnetGroup

Describes a subnet group.

Type: ClusterSubnetGroup (p. 320) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterSubnetGroupAlreadyExists

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

HTTP Status Code: 400

ClusterSubnetGroupQuotaExceeded

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

HTTP Status Code: 400

ClusterSubnetQuotaExceededFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateClusterSubnetGroup
&ClusterSubnetGroupName=mysubnetgroup
&Description=My+subnet+group
&SubnetIds.SubnetIdentifier.1=subnet-a1b23abc
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<CreateClusterSubnetGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateClusterSubnetGroupResult>
    <VpcId>vpc-a1abc1a1</VpcId>
    <Description>My subnet group</Description>
    <Subnets>
      <Subnet>
        <SubnetStatus>Active</SubnetStatus>
        <SubnetIdentifier>subnet-a1b23abc</SubnetIdentifier>
        <SubnetAvailabilityZone>
          <Name>us-east-2e</Name>
        </SubnetAvailabilityZone>
      </Subnet>
    </Subnets>
    <ClusterSubnetGroupName>mysubnetgroup</ClusterSubnetGroupName>
    <SubnetGroupStatus>Complete</SubnetGroupStatus>
    <Tags/>
  </CreateClusterSubnetGroupResult>
</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 V3
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. 388).

SnsTopicArn

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

Type: String
Required: Yes

SubscriptionName

The name of the event subscription to be created.

Constraints:

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

Type: String
Required: Yes

Enabled

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

Type: Boolean
Required: No

EventCategories.EventCategory.N

Specifies the Amazon Redshift event categories to be published by the event notification subscription.
Values: configuration, management, monitoring, security
Type: Array of strings
Required: No

Severity
Specifies the Amazon Redshift event severity to be published by the event notification subscription.
Values: ERROR, INFO
Type: String
Required: No

SourceIds.SourceId.N
A list of one or more identifiers of Amazon Redshift source objects. All of the objects must be of the same type as was specified in the source type parameter. The event subscription will return only events generated by the specified objects. If not specified, then events are returned for all objects within the source type specified.
Example: my-cluster-1, my-cluster-2
Example: my-snapshot-20131010
Type: Array of strings
Required: No

SourceType
The type of source that will be generating the events. For example, if you want to be notified of events generated by a cluster, you would set this parameter to cluster. If this value is not specified, events are returned for all Amazon Redshift objects in your AWS account. You must specify a source type in order to specify source IDs.
Valid values: cluster, cluster-parameter-group, cluster-security-group, cluster-snapshot, and scheduled-action.
Type: String
Required: No

Tags.Tag.N
A list of tag instances.
Type: Array of Tag (p. 383) objects
Required: No

Response Elements
The following element is returned by the service.

EventSubscription
Describes event subscriptions.
Type: EventSubscription (p. 335) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**Errors**

**EventSubscriptionQuotaExceeded**

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

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**SNSInvalidTopic**

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

HTTP Status Code: 400

**SNSNoAuthorization**

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

HTTP Status Code: 400

**SNSTopicArnNotFound**

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

HTTP Status Code: 404

**SourceNotFound**

The specified Amazon Redshift event source could not be found.

HTTP Status Code: 404

**SubscriptionAlreadyExist**

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

HTTP Status Code: 400

**SubscriptionCategoryNotFound**

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

HTTP Status Code: 404

**SubscriptionEventIdNotFound**

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

HTTP Status Code: 404

**SubscriptionSeverityNotFound**

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

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400

## Example

### Sample Request

```text
https://redshift.us-east-2.amazonaws.com/
?Action=CreateEventSubscription
&SubscriptionName=mysubscription
&SnsTopicArn=arn%3Aaws%3Aamzn%3Aelasticmapreduce%3Aus-east-2%3A123456789012%3Athemevent
&SourceType=cluster
&SourceIds.SourceId.1=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddfd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

### Sample Response

```xml
<CreateEventSubscriptionResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateEventSubscriptionResult>
    <EventSubscription>
      <Severity>INFO</Severity>
      <CustSubscriptionId>mysubscription</CustSubscriptionId>
      <SourceType>cluster</SourceType>
      <SourceIdsList>
        <SourceId>mycluster</SourceId>
      </SourceIdsList>
      <EventCategoriesList/>
      <SubscriptionCreationTime>2019-12-26T22:58:57.382Z</SubscriptionCreationTime>
      <Enabled>true</Enabled>
      <Tags/>
      <Status>active</Status>
      <CustomerAwsId>123456789012</CustomerAwsId>
    </EventSubscription>
  </CreateEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>4c096ab5-2833-11ea-a940-1b28a85fd753</RequestId>
  </ResponseMetadata>
</CreateEventSubscriptionResponse>
```

## See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V3
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. 388).

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. 383) 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. 337) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

HsmClientCertificateAlreadyExistsFault

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

HTTP Status Code: 400

HsmClientCertificateQuotaExceededFault

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

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateHsmClientCertificate
&HsmClientCertificateIdentifier=myhsmclientcert
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3a5aa45678b9c012d3456e6ff7890123456b7b

Sample Response

<CreateHsmClientCertificateResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateHsmClientCertificateResult>
    <HsmClientCertificate>
      <HsmClientCertificateIdentifier>myhsmclientcert</HsmClientCertificateIdentifier>
      <HsmClientCertificatePublicKey>
        <pasted code from the example response></p>
      </HsmClientCertificatePublicKey>
      <Tags/>
    </HsmClientCertificate>
  </CreateHsmClientCertificateResult>
  <ResponseMetadata>
    <RequestId>917e54e0-2833-11ea-9c9a-c956bec1ce87</RequestId>
  </ResponseMetadata>
</CreateHsmClientCertificateResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**Description**

A text description of the HSM configuration to be created.

_Type_: String  
_Required_: Yes

**HsmConfigurationIdentifier**

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

_Type_: String  
_Required_: Yes

**HsmIpAddress**

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

_Type_: String  
_Required_: Yes

**HsmPartitionName**

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

_Type_: String  
_Required_: Yes

**HsmPartitionPassword**

The password required to access the HSM partition.

_Type_: String  
_Required_: Yes

**HsmServerPublicCertificate**

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

_Type_: String  
_Required_: Yes
Tags.Tag.N
A list of tag instances.
Type: Array of Tag (p. 383) objects
Required: No

Response Elements
The following element is returned by the service.

HsmConfiguration
Returns information about an HSM configuration, which is an object that describes to Amazon Redshift clusters the information they require to connect to an HSM where they can store database encryption keys.
Type: HsmConfiguration (p. 338) object

Errors
For information about the errors that are common to all actions, see Common Errors (p. 390).

HsmConfigurationAlreadyExistsFault
There is already an existing Amazon Redshift HSM configuration with the specified identifier.
HTTP Status Code: 400

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

InvalidTagFault
The tag is invalid.
HTTP Status Code: 400

TagLimitExceededFault
You have exceeded the number of tags allowed.
HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateHsmConfiguration
&HsmConfigurationIdentifier=myhsmconnection
&Description=My+HSM+connection
&HsmIpAddress=192.0.2.09
&HsmPartitionName=myhsmpartition
&HsmPartitionPassword=A1b2c3d4
&HsmServerPublicCertificate=myhsmclientcert
&SSignatureMethod=HmacSHA256&SSignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<CreateHsmConfigurationResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateHsmConfigurationResult>
    <HsmConfiguration>
      <Description>My HSM connection</Description>
      <HsmPartitionName>myhsmpartition</HsmPartitionName>
      <HsmConfigurationIdentifier>myhsmconnection</HsmConfigurationIdentifier>
      <Tags/>
      <HsmIpAddress>192.0.2.09</HsmIpAddress>
    </HsmConfiguration>
  </CreateHsmConfigurationResult>
  <ResponseMetadata>
    <RequestId>e106be9e-2833-11ea-9caa-c956bec1ce87</RequestId>
  </ResponseMetadata>
</CreateHsmConfigurationResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
CreateScheduledAction

Creates a scheduled action. A scheduled action contains a schedule and an Amazon Redshift API action. For example, you can create a schedule of when to run the ResizeCluster API operation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

IamRole

The IAM role to assume to run the target action. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: Yes

Schedule

The schedule in \texttt{at()} or \texttt{cron()} format. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: Yes

ScheduledActionName

The name of the scheduled action. The name must be unique within an account. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: Yes

TargetAction

A JSON format string of the Amazon Redshift API operation with input parameters. For more information about this parameter, see ScheduledAction (p. 363).

Type: ScheduledActionType (p. 366) object

Required: Yes

Enable

If true, the schedule is enabled. If false, the scheduled action does not trigger. For more information about state of the scheduled action, see ScheduledAction (p. 363).

Type: Boolean

Required: No

EndTime

The end time in UTC of the scheduled action. After this time, the scheduled action does not trigger. For more information about this parameter, see ScheduledAction (p. 363).

Type: Timestamp

Required: No
ScheduledActionDescription

The description of the scheduled action.

Type: String

Required: No

StartTime

The start time in UTC of the scheduled action. Before this time, the scheduled action does not
trigger. For more information about this parameter, see ScheduledAction (p. 363).

Type: Timestamp

Required: No

Response Elements

The following elements are returned by the service.

EndTime

The end time in UTC when the schedule is no longer active. After this time, the scheduled action
does not trigger.

Type: Timestamp

IamRole

The IAM role to assume to run the scheduled action. This IAM role must have permission to run
the Amazon Redshift API operation in the scheduled action. This IAM role must allow the Amazon
Redshift scheduler (Principal scheduler.redshift.amazonaws.com) to assume permissions on your
behalf. For more information about the IAM role to use with the Amazon Redshift scheduler, see
Using Identity-Based Policies for Amazon Redshift in the Amazon Redshift Cluster Management
Guide.

Type: String

NextInvocations.ScheduledActionTime.N

List of times when the scheduled action will run.

Type: Array of timestamps

Schedule

The schedule for a one-time (at format) or recurring (cron format) scheduled action. Schedule
invocations must be separated by at least one hour.

Format of at expressions is "at(yyyy-mm-ddThh:mm:ss)". For example,
"at(2016-03-04T17:27:00)".

Format of cron expressions is "cron(Minutes Hours Day-of-month Month Day-of-week
Year)". For example, "cron(0 10 ? * MON *)". For more information, see Cron Expressions in the
Amazon CloudWatch Events User Guide.

Type: String

ScheduledActionDescription

The description of the scheduled action.
Type: String

**ScheduledActionName**

The name of the scheduled action.

Type: String

**StartTime**

The start time in UTC when the schedule is active. Before this time, the scheduled action does not trigger.

Type: Timestamp

**State**

The state of the scheduled action. For example, DISABLED.

Type: String

Valid Values: ACTIVE | DISABLED

**TargetAction**

A JSON format string of the Amazon Redshift API operation with input parameters.

"{"ResizeCluster":{"NodeType":"ds2.8xlarge","ClusterIdentifier":"my-test-cluster","NumberOfNodes":3}}".

Type: ScheduledActionType (p. 366) object

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

**InvalidSchedule**

The schedule you submitted isn't valid.

HTTP Status Code: 400

**InvalidScheduledAction**

The scheduled action is not valid.

HTTP Status Code: 400

**ScheduledActionAlreadyExists**

The scheduled action already exists.

HTTP Status Code: 400

**ScheduledActionQuotaExceeded**

The quota for scheduled actions exceeded.

HTTP Status Code: 400

**ScheduledActionTypeUnsupported**

The action type specified for a scheduled action is not supported.

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 V3
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. 388).

**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. 383) objects

  Required: No

Response Elements

The following element is returned by the service.

**SnapshotCopyGrant**

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

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

  Type: SnapshotCopyGrant (p. 372) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

SnapshotCopyGrantAlreadyExistsFault

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

HTTP Status Code: 400

SnapshotCopyGrantQuotaExceededFault

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

HTTP Status Code: 400

TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=CreateSnapshotCopyGrant
&SnapshotCopyGrantName=mysnapshotcopygrantnew
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

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

API Version 2012-12-01
65
See Also

For more information about using this API in one of the language-specific AWS 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 V3
CreateSnapshotSchedule

Create a snapshot schedule that can be associated to a cluster and which overrides the default system backup schedule.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

DryRun

Type: Boolean
Required: No

NextInvocations

Type: Integer
Required: No

ScheduleDefinitions.ScheduleDefinition.N

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

Type: Array of strings
Required: No

ScheduleDescription

The description of the snapshot schedule.

Type: String
Required: No

ScheduleIdentifier

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

Type: String
Required: No

Tags.Tag.N

An optional set of tags you can use to search for the schedule.

Type: Array of Tag (p. 383) objects
Required: No

Response Elements

The following elements are returned by the service.
**AssociatedClusterCount**

The number of clusters associated with the schedule.

Type: Integer

**AssociatedClusters.ClusterAssociatedToSchedule.N**

A list of clusters associated with the schedule. A maximum of 100 clusters is returned.

Type: Array of ClusterAssociatedToSchedule (p. 308) objects

**NextInvocations.SnapshotTime.N**

Type: Array of timestamps

**ScheduleDefinitions.ScheduleDefinition.N**

A list of ScheduleDefinitions.

Type: Array of strings

**ScheduleDescription**

The description of the schedule.

Type: String

**ScheduleIdentifier**

A unique identifier for the schedule.

Type: String

**Tags.Tag.N**

An optional set of tags describing the schedule.

Type: Array of Tag (p. 383) objects

---

**Errors**

For information about the errors that are common to all actions, see [Common Errors (p. 390)](#).

**InvalidSchedule**

The schedule you submitted isn't valid.

HTTP Status Code: 400

**ScheduleDefinitionTypeUnsupported**

The definition you submitted is not supported.

HTTP Status Code: 400

**SnapshotScheduleAlreadyExists**

The specified snapshot schedule already exists.

HTTP Status Code: 400

**SnapshotScheduleQuotaExceeded**

You have exceeded the quota of snapshot schedules.

HTTP Status Code: 400
TagLimitExceededFault

You have exceeded the number of tags allowed.

HTTP Status Code: 400

Example

Sample Request

```xml
https://redshift.us-east-2.amazonaws.com/
    /Action=CreateSnapshotSchedule
&ScheduleDefinitions.ScheduleDefinition.1=rate(12+hours)
&ScheduleIdentifier=mysnapshotschedule
&ScheduleDescription=My+schedule+description
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<CreateSnapshotScheduleResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <CreateSnapshotScheduleResult>
    <ScheduleDefinitions>
      <ScheduleDefinition>rate(12 hours)</ScheduleDefinition>
    </ScheduleDefinitions>
    <ScheduleDescription>My schedule description</ScheduleDescription>
    <ScheduleIdentifier>mysnapshotschedule</ScheduleIdentifier>
    <Tags/>
  </CreateSnapshotScheduleResult>
  <ResponseMetadata>
    <RequestId>6f3e2f58-2837-11ea-9939-5fccefa818c0</RequestId>
  </ResponseMetadata>
</CreateSnapshotScheduleResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
CreateTags

Adds tags to a cluster.

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

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

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ResourceName**

The Amazon Resource Name (ARN) to which you want to add the tag or tags. For example, arn:aws:redshift:us-east-2:123456789: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. 383) objects

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**ResourceNotFoundFault**

The resource could not be found.

HTTP Status Code: 404

**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400
Example

Sample Request

```xml
https://redshift.us-east-2.amazonaws.com/
?Action=CreateTags
&ResourceName=arn%3Aaws%3Aredshift%3Aus-east-2%3A123456789012%3Acluster%3Amycluster
&Tags.Tag.1.Key=mytag
&Tags.Tag.1.Value=newtag
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<CreateTagsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>bf5cbe2f-2837-11ea-9467-b9a67a99da45</RequestId>
  </ResponseMetadata>
</CreateTagsResponse>
```

See Also

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

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

Deletes a previously provisioned cluster without its final snapshot being created. A successful response from the web service indicates that the request was received correctly. Use DescribeClusters (p. 112) 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. 388).

ClusterIdentifier

The identifier of the cluster to be deleted.

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

Type: String

Required: Yes

FinalClusterSnapshotIdentifier

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

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

Type: String

Required: No

FinalClusterSnapshotRetentionPeriod

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

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

The default value is -1.
SkipFinalClusterSnapshot

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

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

Default: `false`

Type: Boolean

Required: No

### Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: [Cluster](p. 301) object

### Errors

For information about the errors that are common to all actions, see [Common Errors (p. 390)].

**ClusterNotFound**

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

HTTP Status Code: 404

**ClusterSnapshotAlreadyExists**

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

HTTP Status Code: 400

**ClusterSnapshotQuotaExceeded**

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

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

**InvalidRetentionPeriodFault**

The retention period specified is either in the past or is not a valid value.
The value must be either -1 or an integer between 1 and 3,653.

HTTP Status Code: 400

Example

Sample Request

```xml
https://redshift.us-east-2.amazonaws.com/
  ?Action=DeleteCluster
&ClusterIdentifier=mycluster
&SkipFinalClusterSnapshot=true
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<DeleteClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DeleteClusterResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>2</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Modifying</ClusterAvailabilityStatus>
      <Endpoint>
        <Address>mycluster.cmeaswqeuae.us-east-2.redshift.amazonaws.com</Address>
      </Endpoint>
      <VpcId>vpc-a1abca1</VpcId>
      <PubliclyAccessible>true</PubliclyAccessible>
      <ClusterCreateTime>2019-12-26T20:25:38.716Z</ClusterCreateTime>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles/>
      <ClusterSecurityGroups/>
      <NodeType>dc2.large</NodeType>
      <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
      <NextMaintenanceWindowStartTime>2019-12-27T04:00:00Z</NextMaintenanceWindowStartTime>
      <DeferredMaintenanceWindows/>
      <Tags>
        <Tag>
          <Value>newtag</Value>
          <Key>mytag</Key>
        </Tag>
      </Tags>
      <VpcSecurityGroups/>
      <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
      <Status>active</Status>
    </Cluster>
  </DeleteClusterResult>
</DeleteClusterResponse>
```
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<Encrypted>false</Encrypted>
<MaintenanceTrackName>current</MaintenanceTrackName>
<PendingModifiedValues>
  <ClusterType>single-node</ClusterType>
  <NodeType>dc2.large</NodeType>
</PendingModifiedValues>
<PreferredMaintenanceWindow>fri:04:00-fri:04:30</PreferredMaintenanceWindow>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<ClusterStatus>deleting</ClusterStatus>
</Cluster>
</DeleteClusterResult>
<ResponseMetadata>
  <RequestId>4b6dd471-2838-11ea-b6af-7126da6f11af</RequestId>
</ResponseMetadata>
</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 V3
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. 388).

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. 390).

ClusterParameterGroupNameNotFound

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-2.amazonaws.com/
?Action=DeleteClusterParameterGroup
&ParameterGroupName=myclusterparametergroup
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
Sample Response

<DeleteClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>95c53381-2838-11ea-a07c-5d44c0d19e91</RequestId>
  </ResponseMetadata>
</DeleteClusterParameterGroupResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

**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. 390).

**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**

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=DeleteClusterSecurityGroup
&ClusterSecurityGroupName=securitygroup1
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODN7EXAMPLE/20121208/us-east-2/redshift/aws4_request
&x-amz-date=20121208T015926Z
&x-amz-signedheaders=content-type;host;x-amz-date
```

**Sample Response**

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

API Version 2012-12-01
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**SnapshotIdentifier**

The unique identifier of the manual snapshot to be deleted.

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

Type: String

Required: Yes

**SnapshotClusterIdentifier**

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

Constraints: Must be the name of valid cluster.

Type: String

Required: No

Response Elements

The following element is returned by the service.

**Snapshot**

Describes a snapshot.

Type: Snapshot (p. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterSnapshotNotFoundException**

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

HTTP Status Code: 404
InvalidClusterSnapshotState

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

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DeleteClusterSnapshot
&SnapshotIdentifier=mysnapshotid
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd91eef2ff3aa45678b90c12d345e6eef789012345a6b7

Sample Response

<DeleteClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DeleteClusterSnapshotResult>
    <Snapshot>
      <SnapshotRetentionStartTime>2019-12-26T22:38:40.158Z</SnapshotRetentionStartTime>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <EncryptedWithHSM>false</EncryptedWithHSM>
      <NumberOfNodes>2</NumberOfNodes>
      <OwnerAccount>123456789012</OwnerAccount>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <TotalBackupSizeInMegaBytes>55.0</TotalBackupSizeInMegaBytes>
      <VpcId>vpc-a1abc1a1</VpcId>
      <BackupProgressInMegaBytes>31.0</BackupProgressInMegaBytes>
      <CurrentBackupRateInMegaBytesPerSecond>25.5354</CurrentBackupRateInMegaBytesPerSecond>
      <ElapsedTimeInSeconds>1</ElapsedTimeInSeconds>
      <ClusterCreateTime>2019-12-26T20:25:38.716Z</ClusterCreateTime>
      <MasterUsername>adminuser</MasterUsername>
      <ActualIncrementalBackupSizeInMegaBytes>31.0</ActualIncrementalBackupSizeInMegaBytes>
      <SnapshotType>manual</SnapshotType>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>
      <NodeType>dc2.large</NodeType>
      <Tags/>
      <Encrypted>false</Encrypted>
      <Port>5439</Port>
      <EstimatedSecondsToCompletion>0</EstimatedSecondsToCompletion>
      <MaintenanceTrackName>current</MaintenanceTrackName>
      <SnapshotCreateTime>2019-12-26T22:38:38.944Z</SnapshotCreateTime>
      <Status>deleted</Status>
    </Snapshot>
  </DeleteClusterSnapshotResult>
</DeleteClusterSnapshotResponse>

API Version 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 V3
DeleteClusterSubnetGroup

Deletes the specified cluster subnet group.

**Request Parameters**

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

*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](#).

*ClusterSubnetGroupNotFoundFault*

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

- **HTTP Status Code:** 400

*InvalidClusterSubnetGroupStateFault*

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

- **HTTP Status Code:** 400

*InvalidClusterSubnetStateFault*

The state of the subnet is invalid.

- **HTTP Status Code:** 400

**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=DeleteClusterSubnetGroup
&ClusterSubnetGroupName=mysubnetgroup
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678d3d3d01ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

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

API Version 2012-12-01
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DeleteEventSubscription
&SubscriptionName=mysubscription
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DeleteEventSubscriptionResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>8beeeaac-2839-11ea-9467-b9a67a99da45</RequestId>
  </ResponseMetadata>
</DeleteEventSubscriptionResponse>
See Also

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

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

Deletes the specified HSM client certificate.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**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. 390).

**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

**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=DeleteHsmClientCertificate
&HsmClientCertificateIdentifier=myhsmclientcert
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```
<DeleteHsmClientCertificateResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>ff0388ec-2839-11ea-b6af-7126da6f11af</RequestId>
  </ResponseMetadata>
</DeleteHsmClientCertificateResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DeleteHsmConfiguration
&HsmConfigurationIdentifier=myhsmconnection
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&Sx-Amz-Algorithm=AWS4-HMAC-SHA256
&Sx-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&Sx-Amz-Date=20190825T160000Z
&Sx-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&Sx-Amz-Signature=0aa1234bb5cc678d3dd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DeleteHsmConfigurationResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>3d45f314-283a-11ea-8397-219d1980588b</RequestId>
  </ResponseMetadata>
</DeleteHsmConfigurationResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
DeleteScheduledAction

Deletes a scheduled action.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ScheduledActionName

The name of the scheduled action to delete.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ScheduledActionNotFound

The scheduled action cannot be found.

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-2.amazonaws.com/
?Action=DeleteScheduledAction
&ScheduledActionName=myscheduledaction
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd901ee2ff3aaa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DeleteScheduledActionResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>2c20099c-283b-11ea-9caa-c956bec1ce87</RequestId>
  </ResponseMetadata>
</DeleteScheduledActionResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
DeleteSnapshotCopyGrant

Deletes the specified snapshot copy grant.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

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. 390).

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

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DeleteSnapshotCopyGrant
&SnapshotCopyGrantName=mysnapshotcopygrantname
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DeleteSnapshotCopyGrantResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>a0c0f3ad-283c-11ea-a940-1b28a85fd753</RequestId>
  </ResponseMetadata>
</DeleteSnapshotCopyGrantResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
DeleteSnapshotSchedule

Deletes a snapshot schedule.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ScheduleIdentifier

A unique identifier of the snapshot schedule to delete.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

InvalidClusterSnapshotScheduleState

The cluster snapshot schedule state is not valid.

HTTP Status Code: 400

SnapshotScheduleNotFoundException

We could not find the specified snapshot schedule.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/?Action=DeleteSnapshotSchedule
&ScheduleIdentifier=mysnapshotschedule
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DeleteSnapshotScheduleResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResponseMetadata>
    <RequestId>165cd56f-283d-11ea-a940-1b28a85fd753</RequestId>
  </ResponseMetadata>
</DeleteSnapshotScheduleResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
DeleteTags

Deletes 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. 388).

ResourceName

The Amazon Resource Name (ARN) from which you want to remove the tag or tags. For example, arn:aws:redshift:us-east-2:123456789: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. 390).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DeleteTags
&TagKeys.TagKey.1=mytag
&TagKeys.TagKey.2=newtag
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request

API Version 2012-12-01
Amazon Redshift API Reference

See Also

Sample Response

```xml
<DeleteTagsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/"
  <ResponseMetadata>
    <RequestId>bd69e08c-283d-11ea-9939-5fccefa818c0</RequestId>
  </ResponseMetadata>
</DeleteTagsResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
DescribeAccountAttributes

Returns a list of attributes attached to an account

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**AttributeNames.AttributeName.N**

A list of attribute names.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

**AccountAttributes.AccountAttribute.N**

A list of attributes assigned to an account.

Type: Array of AccountAttribute (p. 297) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeAccountAttributes
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeAccountAttributesResult>
    <AccountAttributes>
      <AccountAttribute>
        <AttributeValues>
          <AttributeValueTarget>API Version 2012-12-01</AttributeValueTarget>
        </AttributeValues>
      </AccountAttribute>
    </AccountAttributes>
  </DescribeAccountAttributesResult>
</DescribeAccountAttributesResponse>
```
See Also

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

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

Returns an array of ClusterDbRevision objects.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

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

Type: String
Required: No

Marker

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

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

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.

Type: Integer
Required: No

Response Elements

The following elements are returned by the service.

ClusterDbRevisions.ClusterDbRevision.N

A list of revisions.

Type: Array of ClusterDbRevision (p. 309) objects
Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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-2.amazonaws.com/
?Action=DescribeClusterDbRevisions
&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256 &SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<?xml version="1.0" encoding="UTF-8" standalone="yes"?><DescribeClusterDbRevisionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterDbRevisionsResult>
    <ClusterDbRevisions>
      <ClusterDbRevision>
        <DatabaseRevisionReleaseDate>2019-12-23T19:11:37.360Z</DatabaseRevisionReleaseDate>
        <ClusterIdentifier>mycluster</ClusterIdentifier>
        <RevisionTargets/>
        <CurrentDatabaseRevision>11978</CurrentDatabaseRevision>
      </ClusterDbRevision>
    </ClusterDbRevisions>
  </DescribeClusterDbRevisionsResult>
  <ResponseMetadata>
    <RequestId>28c11f9d-283e-11ea-8c9-43f1872b4b75</RequestId>
  </ResponseMetadata>
</DescribeClusterDbRevisionsResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeClusterParameterGroups (p. 104) 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
Response Elements

The following elements are returned by the service.

**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

**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* instances. Each instance describes one cluster parameter group.

Type: Array of *ClusterParameterGroup* objects

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

**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-2.amazonaws.com/
?Action=DescribeClusterParameterGroups
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d34e6ff789012345a6b7b

Sample Response

<DescribeClusterParameterGroupsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterParameterGroupsResult>
    <ParameterGroups>
      <ClusterParameterGroup>
        <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
        <Description>Default parameter group for redshift-1.0</Description>
        <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
        <Tags/>
      </ClusterParameterGroup>
      <ClusterParameterGroup>
        <ParameterGroupName>myclusterparametergroup</ParameterGroupName>
        <Description>My first cluster parameter group</Description>
        <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
        <Tags/>
      </ClusterParameterGroup>
    </ParameterGroups>
  </DescribeClusterParameterGroupsResult>
  <ResponseMetadata>
    <RequestId>71d08207-2831-11ea-9939-5fccefa818c0</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 V3
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. 230), 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. 388).

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. 107) 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
Response Elements

The following elements are returned by the service.

**Marker**

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

Type: String

**Parameters.Parameter.N**

A list of Parameter (p. 346) instances. Each instance lists the parameters of one cluster parameter group.

Type: Array of Parameter (p. 346) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterParameterGroupNotFound**

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

HTTP Status Code: 404

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeClusterParameters
&ParameterGroupName=myclusterparametergroup
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DescribeClusterParametersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterParametersResult>
    <Parameters>
      <Parameter>
        <ParameterName>myparameter</ParameterName>
        <ParameterValue>value</ParameterValue>
      </Parameter>
    </Parameters>
  </DescribeClusterParametersResult>
</DescribeClusterParametersResponse>
```
<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>true,false</AllowedValues>
.DataType>boolean</DataType>
.Description>Use auto analyze</Description>
.<Source>engine-default</Source>
.ParameterName>auto_analyze</ParameterName>
ParameterValue>true</ParameterValue>
.IsModifiable>true</IsModifiable>
</Parameter>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<DataType>string</DataType>
.Description>Sets the display format for date and time values.</Description>
.<Source>engine-default</Source>
.ParameterName>datestyle</ParameterName>
ParameterValue>ISO, MDY</ParameterValue>
.IsModifiable>true</IsModifiable>
</Parameter>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>true,false</AllowedValues>
.DataType>boolean</DataType>
.Description>parameter for audit logging purpose</Description>
.<Source>engine-default</Source>
.ParameterName>enable_user_activity_logging</ParameterName>
ParameterValue>false</ParameterValue>
.IsModifiable>true</IsModifiable>
</Parameter>
</Parameter>

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

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>0-10</AllowedValues>
.DataType>integer</DataType>
.Description>The maximum concurrency scaling clusters can be used.</Description>
.<Source>engine-default</Source>
.ParameterName>max_concurrency_scaling_clusters</ParameterName>
ParameterValue>1</ParameterValue>
.IsModifiable>true</IsModifiable>
</Parameter>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>0-14400000</AllowedValues>
(DataType>integer</DataType>
.Description>Sets the max cursor result set size</Description>
.<Source>engine-default</Source>
.ParameterName>max_cursor_result_set_size</ParameterName>
ParameterValue>default</ParameterValue>
.IsModifiable>true</IsModifiable>
</Parameter>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<DataType>string</DataType>
.Description>This parameter applies a user-defined label to a group of queries that are run during the same session.</Description>
.<Source>engine-default</Source>
.
Amazon Redshift API Reference

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 112) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No
TagKeys.TagKey.N

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

Type: Array of strings
Required: No

TagValues.TagValue.N

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

Type: Array of strings
Required: No

Response Elements

The following elements are returned by the service.

Clusters.Cluster.N

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

Type: Array of Cluster (p. 301) 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. 390).

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

Sample Request

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeClusters
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d34566ff789012345a6b7b
```

Sample Response

```xml
<DescribeClustersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClustersResult>
    <Clusters>
      <Cluster>
        <AllowVersionUpgrade>true</AllowVersionUpgrade>
        <ClusterIdentifier>mycluster</ClusterIdentifier>
        <ClusterRevisionNumber>11978</ClusterRevisionNumber>
        <NumberOfNodes>1</NumberOfNodes>
        <ClusterPublicKey>ssh-rsa AAAABexamplepublickey...LzrwzEXAMPLE Amazon-Redshift</ClusterPublicKey>
        <AvailabilityZone>us-east-2f</AvailabilityZone>
        <ClusterVersion>1.0</ClusterVersion>
        <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
        <ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
        <Endpoint>
          <Port>5439</Port>
          <Address>mycluster.cmeaswqueuae.us-east-2.redshift.amazonaws.com</Address>
        </Endpoint>
        <VpcId>vpc-a1abc1a1</VpcId>
        <PubliclyAccessible>false</PubliclyAccessible>
        <ClusterCreateTime>2019-12-23T23:21:27.977Z</ClusterCreateTime>
        <ClusterSnapshotCopyStatus>
          <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
          <DestinationRegion>us-east-1</DestinationRegion>
          <RetentionPeriod>15</RetentionPeriod>
        </ClusterSnapshotCopyStatus>
        <MasterUsername>adminuser</MasterUsername>
        <DBName>dev</DBName>
        <EnhancedVpcRouting>false</EnhancedVpcRouting>
        <IAMRoles/>
        <ClusterSecurityGroups/>
        <NodeType>dc2.large</NodeType>
        <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
        <NextMaintenanceWindowStartTime>2020-01-12T23:15:00Z</NextMaintenanceWindowStartTime>
        <DeferredMaintenanceWindows>
          <DeferredMaintenanceWindow>
            <DeferMaintenanceEnddatetime>2020-01-09T18:39:35Z</DeferMaintenanceEnddatetime>
            <DeferMaintenanceIdentifier>dfm-MuEIBOA9bi0aZ1Vjh0cy</DeferMaintenanceIdentifier>
          </DeferredMaintenanceWindow>
        </DeferredMaintenanceWindows>
        <Tags/>
        <VpcSecurityGroups/>
    </Cluster>
  </Clusters>
</DescribeClustersResponse>
```
<VpcSecurityGroup>
  <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
  <Status>active</Status>
</VpcSecurityGroup>
</VpcSecurityGroups>

<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
  </ClusterParameterGroup>
</ClusterParameterGroups>

<Encrypted>false</Encrypted>

<ClusterNodes>
  <member>
    <PrivateIPAddress>172.31.64.51</PrivateIPAddress>
    <NodeRole>SHARED</NodeRole>
    <PublicIPAddress>54.162.164.238</PublicIPAddress>
  </member>
</ClusterNodes>

<MaintenanceTrackName>current</MaintenanceTrackName>

<PendingModifiedValues/>


<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>

<ClusterStatus>available</ClusterStatus>
</Cluster>
</Clusters>
</DescribeClustersResult>

<ResponseMetadata>
  <RequestId>e47f901c-283e-11ea-8397-219d1980588b</RequestId>
</ResponseMetadata>
</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 V3
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. 388).

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. 116) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer
Required: No

**TagKeys.TagKey.N**

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

Type: Array of strings

Required: No

**TagValues.TagValue.N**

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

Type: Array of strings

Required: No

## Response Elements

The following elements are returned by the service.


A list of `ClusterSecurityGroup (p. 316)` instances.

Type: Array of `ClusterSecurityGroup (p. 316)` 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. 390)](#).

**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-2.amazonaws.com/
?Action=DescribeClusterSecurityGroups
&Version=2012-12-01
&x-amz-algorithm=AWS4-HMAC-SHA256
&x-amz-credential=AKIAIOSFODNN7EXAMPLE/20130123/us-east-2/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 V3
See Also
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. 388).

ClusterExists

A value that indicates whether to return snapshots only for an existing cluster. You can perform table-level restore only by using a snapshot of an existing cluster, that is, a cluster that has not been deleted. Values for this parameter work as follows:

- If `ClusterExists` is set to `true`, `ClusterIdentifier` is required.
- If `ClusterExists` is set to `false` and `ClusterIdentifier` isn't specified, all snapshots associated with deleted clusters (orphaned snapshots) are returned.
- If `ClusterExists` is set to `false` and `ClusterIdentifier` is specified for a deleted cluster, snapshots associated with that cluster are returned.
- If `ClusterExists` is set to `false` and `ClusterIdentifier` is specified for an existing cluster, no snapshots are returned.

Type: Boolean

Required: No

ClusterIdentifier

The identifier of the cluster which generated the requested snapshots.

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. 120) request exceed the value specified in MaxRecords,
AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

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

**MaxRecords**

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

**Default:** 100  
**Constraints:** minimum 20, maximum 100.

**Type:** Integer  
**Required:** No

**OwnerAccount**

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

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

**SnapshotIdentifier**

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

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

**SnapshotType**

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

**Valid Values:** automated | manual  
**Type:** String  
**Required:** No

**SortingEntities.SnapshotSortingEntity.N**

**Type:** Array of **SnapshotSortingEntity (p. 376)** objects  
**Required:** No

**StartTime**

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

**Example:** 2012-07-16T18:00:00Z  
**Type:** Timestamp
Response Elements

The following elements are returned by the service.

**Marker**

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

Type: String

**Snapshots.Snapshot.N**

A list of Snapshot (p. 367) instances.

Type: Array of Snapshot (p. 367) objects

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterNotFoundException**

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

**ClusterSnapshotNotFoundException**

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-2.amazonaws.com/
?Action=DescribeClusterSnapshots
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DescribeClusterSnapshotsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterSnapshotsResult>
    <Snapshots>
      <Snapshot>
        <SnapshotRetentionStartTime>2019-12-26T22:38:40.158Z</SnapshotRetentionStartTime>
        <ClusterIdentifier>mycluster</ClusterIdentifier>
        <EncryptedWithHSM>false</EncryptedWithHSM>
        <NumberOfNodes>2</NumberOfNodes>
        <OwnerAccount>123456789012</OwnerAccount>
        <AvailabilityZone>us-east-2a</AvailabilityZone>
        <ClusterVersion>1.0</ClusterVersion>
        <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
        <TotalBackupSizeInMegaBytes>55.0</TotalBackupSizeInMegaBytes>
        <VpcId>vpc-a1abc1a1</VpcId>
        <BackupProgressInMegaBytes>31.0</BackupProgressInMegaBytes>
        <CurrentBackupRateInMegaBytesPerSecond>25.5354</CurrentBackupRateInMegaBytesPerSecond>
        <ElapsedTimeInSeconds>1</ElapsedTimeInSeconds>
        <ClusterCreateTime>2019-12-26T20:25:38.716Z</ClusterCreateTime>
        <MasterUsername>adminuser</MasterUsername>
        <DBName>dev</DBName>
        <ActualIncrementalBackupSizeInMegaBytes>31.0</ActualIncrementalBackupSizeInMegaBytes>
        <SnapshotType>manual</SnapshotType>
        <EnhancedVpcRouting>false</EnhancedVpcRouting>
        <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>
        <NodeType>dc2.large</NodeType>
        <Tags/>
        <RestorableNodeTypes/>
        <NodeTypes/>
        <Encrypted>false</Encrypted>
        <EstimatedSecondsToCompletion>0</EstimatedSecondsToCompletion>
        <Port>5439</Port>
        <MaintenanceTrackName>current</MaintenanceTrackName>
        <SnapshotCreateTime>2019-12-26T22:38:38.944Z</SnapshotCreateTime>
        <Status>available</Status>
      </Snapshot>
    </Snapshots>
  </DescribeClusterSnapshotsResult>
</DescribeClusterSnapshotsResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

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. 125) request exceed the value specified in MaxRecords, AWS returns a value in the Marker field of the response. You can retrieve the next set of response records by providing the returned marker value in the Marker parameter and retrying the request.

Type: String
Required: No

MaxRecords

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

Default: 100
Constraints: minimum 20, maximum 100.

Type: Integer
Required: No

TagKeys.TagKey.N

A tag key or keys for which you want to return all matching 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.

ClusterSubnetGroups.ClusterSubnetGroup.N

A list of ClusterSubnetGroup (p. 320) instances.

Type: Array of ClusterSubnetGroup (p. 320) 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. 390).

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-2.amazonaws.com/
?Action=DescribeClusterSubnetGroups
Sample Response

```xml
<DescribeClusterSubnetGroupsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterSubnetGroupsResult>
    <ClusterSubnetGroups>
      <ClusterSubnetGroup>
        <VpcId>vpc-a1abc1a1</VpcId>
        <Description>default</Description>
        <Subnets>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-a1b23aba</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-east-2a</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-a1b23abb</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-east-2b</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-a1b23abc</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-east-2c</Name>
            </SubnetAvailabilityZone>
          </Subnet>
        </Subnets>
        <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <Tags/>
      </ClusterSubnetGroup>
    </ClusterSubnetGroups>
  </DescribeClusterSubnetGroupsResult>
  <ResponseMetadata>
    <RequestId>29fd403c-2b32-11ea-8397-219d1980588b</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
See Also

- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
DescribeClusterTracks

Returns a list of all the available maintenance tracks.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

MaintenanceTrackName

The name of the maintenance track.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

MaintenanceTracks.MaintenanceTrack.N

A list of maintenance tracks output by the DescribeClusterTracks operation.

Type: Array of MaintenanceTrack (p. 342) objects

Marker

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

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).
InvalidClusterTrack

The provided cluster track name is not valid.

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DescribeClusterTracks
&MaintenanceTrackName=current
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aaa45678b90c12d345e6f789012345a6b7b

Sample Response

<DescribeClusterTracksResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
<DescribeClusterTracksResult>
<UpdateTargets>
<UpdateTarget>
<DatabaseVersion>1.0.11746</DatabaseVersion>
<MaintenanceTrackName>preview_features</MaintenanceTrackName>
<SupportedOperations>
<SupportedOperation>
<OperationName>restore-from-cluster-snapshot</OperationName>
</SupportedOperation>
</SupportedOperations>
</UpdateTarget>
<UpdateTarget>
<DatabaseVersion>1.0.11116</DatabaseVersion>
<MaintenanceTrackName>trailing</MaintenanceTrackName>
<SupportedOperations>
<SupportedOperation>
<OperationName>restore-from-cluster-snapshot</OperationName>
</SupportedOperation>
<SupportedOperation>
<OperationName>modify-cluster</OperationName>
</SupportedOperation>
</SupportedOperations>
</UpdateTarget>
</UpdateTargets>
<DatabaseVersion>1.0.11978</DatabaseVersion>
<MaintenanceTrackName>current</MaintenanceTrackName>
</MaintenanceTrack>
</MaintenanceTracks>
</DescribeClusterTracksResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**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. 132) 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
Response Elements

The following elements are returned by the service.

**ClusterVersions.ClusterVersion.N**

A list of Version elements.

Type: Array of ClusterVersion (p. 322) 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. 390).

Example

**Sample Request**

```plaintext
https://redshift.us-east-2.amazonaws.com/
  ?Action=DescribeClusterVersions
  &SignatureMethod=HmacSHA256&SignatureVersion=4
  &Version=2012-12-01
  &X-Amz-Algorithm=AWS4-HMAC-SHA256
  &X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
  &X-Amz-Date=20190825T160000Z
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
  &X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```xml
<DescribeClusterVersionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeClusterVersionsResult>
    <ClusterVersions>
      <ClusterVersion>
        <ClusterParameterGroupFamily>redshift-1.0</ClusterParameterGroupFamily>
        <Description>release db engine 1.0.54</Description>
        <ClusterVersion>1.0</ClusterVersion>
      </ClusterVersion>
    </ClusterVersions>
    <ResponseMetadata>
      <RequestId>be41d43b-283e-11ea-8cc9-43f1872b4b75</RequestId>
    </ResponseMetadata>
  </DescribeClusterVersionsResult>
</DescribeClusterVersionsResponse>
```
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

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. 135) 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. 325) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeDefaultClusterParameters
&ParameterGroupFamily=redshift-1.0
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d34e6ff789012345a6b7b
```

Sample Response

```
<DescribeDefaultClusterParametersResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeDefaultClusterParametersResult>
    <DefaultClusterParameters>
      <ParameterGroupFamily>redshift-1.0</ParameterGroupFamily>
      <Parameters>
        <Parameter>
          <ApplyType>static</ApplyType>
          <AllowedValues>true,false</AllowedValues>
          <DataType>boolean</DataType>
          <Description>Use auto analyze</Description>
          <Source>engine-default</Source>
          <ParameterName>auto_analyze</ParameterName>
          <ParameterValue>true</ParameterValue>
          <IsModifiable>true</IsModifiable>
        </Parameter>
        <Parameter>
          <ApplyType>static</ApplyType>
          <AllowedValues>-15-2</AllowedValues>
          <DataType>integer</DataType>
          <Description>sets the display format for date and time values</Description>
          <Source>engine-default</Source>
          <ParameterName>datestyle</ParameterName>
          <ParameterValue>ISO, MDY</ParameterValue>
          <IsModifiable>true</IsModifiable>
        </Parameter>
        <Parameter>
          <ApplyType>static</ApplyType>
          <AllowedValues>true,false</AllowedValues>
          <DataType>boolean</DataType>
          <Description>parameter for audit logging purpose</Description>
          <Source>engine-default</Source>
          <ParameterName>enable_user_activity_logging</ParameterName>
          <ParameterValue>false</ParameterValue>
          <IsModifiable>true</IsModifiable>
        </Parameter>
      </Parameters>
    </DefaultClusterParameters>
  </DescribeDefaultClusterParametersResult>
</DescribeDefaultClusterParametersResponse>
```
<Description>Sets the number of digits displayed for floating-point values</Description>

<Parameter>
<ParameterValue>0</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>0-10</AllowedValues>
<Description>The maximum concurrency scaling clusters can be used.</Description>

<Parameter>
<ParameterValue>1</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>0-14400000</AllowedValues>
<Description>Sets the max cursor result set size</Description>

<Parameter>
<ParameterValue>default</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<DataType>string</DataType>
<Description>This parameter applies a user-defined label to a group of queries that are run during the same session.</Description>

<Parameter>
<ParameterValue>default</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<AllowedValues>true,false</AllowedValues>
<Description>require ssl for all database connections</Description>

<Parameter>
<ParameterValue>false</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<DataType>string</DataType>
<Description>Sets the schema search order for names that are not schema-qualified.</Description>

<Parameter>
<ParameterValue>$user, public</ParameterValue>
<IsModifiable>true</IsModifiable>
</Parameter>

<Parameter>
<ApplyType>static</ApplyType>
<DataType>integer</DataType>
<Description>Aborts any statement that takes over the specified number of milliseconds.</Description>

<Parameter>
<ParameterValue>0</ParameterValue>
</Parameter>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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, cluster-security-group, and scheduled-action.

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. 333) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
   ?Action=DescribeEventCategories
   &SourceType=cluster
   &SignatureMethod=HmacSHA256&SignatureVersion=4
   &Version=2012-12-01
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
   &X-Amz-Date=20190825T160000Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=0aa1234bb5cc678dd6901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DescribeEventCategoriesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/"/>
<DescribeEventCategoriesResult>
  <EventCategoriesMapList>
    <EventCategoriesMap>
      <SourceType>cluster</SourceType>
      <Events>
        <EventInfoMap>
          <Severity>INFO</Severity>
          <EventDescription>Cluster <cluster name> created at <time in UTC>.</EventDescription>
          <EventId>REDSHIFT-EVENT-2000</EventId>
          <EventCategories>
            <EventCategory>management</EventCategory>
          </EventCategories>
        </EventInfoMap>
        <EventInfoMap>
          <Severity>INFO</Severity>
          <EventDescription>Cluster <cluster name> deleted at <time in UTC>.</EventDescription>
          <EventId>REDSHIFT-EVENT-2001</EventId>
          <EventCategories>
            <EventCategory>management</EventCategory>
          </EventCategories>
        </EventInfoMap>
      </Events>
    </EventCategoriesMap>
  </EventCategoriesMapList>
</DescribeEventCategoriesResult>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**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. 141) 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 | scheduled-action
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. 331) 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. 390).

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DescribeEvents
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45e78bbb90c12d345e6ff789012345a6b7b

Sample Response

<DescribeEventsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeEventsResult>
    <Events>
      <Event>
        <Date>2019-12-26T23:36:48.457Z</Date>
        <Severity>INFO</Severity>
        <EventId>REDSHIFT-EVENT-1004</EventId>
        <SourceIdentifier>myclusterparametergroup</SourceIdentifier>
        <SourceType>cluster-parameter-group</SourceType>
        <EventCategories>
          <EventCategory>configuration</EventCategory>
        </EventCategories>
        <Message>Cluster parameter group 'myclusterparametergroup' was deleted at 2019-12-26 23:36 UTC.</Message>
      </Event>
      <Event>
        <Date>2019-12-26T23:40:00.753Z</Date>
        <Severity>INFO</Severity>
        <EventId>REDSHIFT-EVENT-2011</EventId>
        <SourceIdentifier>mysnapshotid</SourceIdentifier>
        <SourceType>cluster-snapshot</SourceType>
        <EventCategories>
          <EventCategory>management</EventCategory>
        </EventCategories>
        <Message>The cluster snapshot 'mysnapshotid' for Amazon Redshift cluster 'mycluster' was deleted at 2019-12-26 23:40 UTC.</Message>
      </Event>
    </Events>
  </DescribeEventsResult>
</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
See Also

- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: minimum 20, maximum 100.

Type: Integer

Required: No

SubscriptionName

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

Type: String

Required: No

TagKeys.TagKey.N

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

Type: Array of strings
Required: No

**TagValues.TagValue.N**

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

Type: Array of strings

Required: No

### Response Elements

The following elements are returned by the service.

**EventSubscriptionsList.EventSubscription.N**

A list of event subscriptions.

Type: Array of [EventSubscription](p. 335) 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. 390)]().

**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

### Example

**Sample Request**

https://redshift.us-east-2.amazonaws.com/

?Action=DescribeEventSubscriptions

&SubscriptionName=mysubscription
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DescribeEventSubscriptionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeEventSubscriptionsResult>
    <EventSubscriptionsList>
      <EventSubscription>
        <Severity>ERROR</Severity>
        <CustSubscriptionId>mysubscription</CustSubscriptionId>
        <SourceIdsList/>
        <EventCategoriesList/>
        <SubscriptionCreationTime>2019-12-27T00:27:43.748Z</SubscriptionCreationTime>
        <Enabled>true</Enabled>
        <Tags/>
        <Status>active</Status>
        <CustomerAwsId>123456789012</CustomerAwsId>
      </EventSubscription>
    </EventSubscriptionsList>
  </DescribeEventSubscriptionsResult>
  <ResponseMetadata>
    <RequestId>b80f1c37-283f-11ea-9ca2c956bec1ce87</RequestId>
  </ResponseMetadata>
</DescribeEventSubscriptionsResponse>

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

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. 149) 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.
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. 337) 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. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
API Version 2012-12-01
151
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. 388).

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. 152) 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.

API Version 2012-12-01
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. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

Example

Sample Request

```url
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeLoggingStatus
&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<DescribeLoggingStatusResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeLoggingStatusResult>
    <LoggingEnabled>false</LoggingEnabled>
  </DescribeLoggingStatusResult>
  <ResponseMetadata>
    <RequestId>9ed2dcec-28cc-11ea-b6af-7126da6f11af</RequestId>
  </ResponseMetadata>
</DescribeLoggingStatusResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
DescribeNodeConfigurationOptions

Returns properties of possible node configurations such as node type, number of nodes, and disk usage for the specified action type.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ActionType**

The action type to evaluate for possible node configurations. Specify "restore-cluster" to get configuration combinations based on an existing snapshot. Specify "recommend-node-config" to get configuration recommendations based on an existing cluster or snapshot. Specify "resize-cluster" to get configuration combinations for elastic resize based on an existing cluster.

Type: String

Valid Values: restore-cluster | recommend-node-config | resize-cluster

Required: Yes

**ClusterIdentifier**

The identifier of the cluster to evaluate for possible node configurations.

Type: String

Required: No

**Filter.NodeConfigurationOptionsFilter.N**

A set of name, operator, and value items to filter the results.

Type: Array of NodeConfigurationOptionsFilter (p. 344) objects

Required: No

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeNodeConfigurationOptions (p. 157) 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: 500

Constraints: minimum 100, maximum 500.

Type: Integer
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

**SnapshotIdentifier**

The identifier of the snapshot to evaluate for possible node configurations.

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

**NodeConfigurationOptionList.NodeConfigurationOption.N**

A list of valid node configurations.

Type: Array of `NodeConfigurationOption` objects

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

**AccessToSnapshotDenied**

The owner of the specified snapshot has not authorized your account to access the snapshot.

HTTP Status Code: 400

**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

**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-2.amazonaws.com/
?Action=DescribeNodeConfigurationOptions
&ActionType=restore-cluster
&S3BucketName=mynodeconfigbucket
&S3KeyPrefix=node-pool
&S3Versioning.enabled=true
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DescribeNodeConfigurationOptionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeNodeConfigurationOptionsResult>
    <NodeConfigurationOptionList>
      <NodeConfigurationOption>
        <EstimatedDiskUtilizationPercent>0.01</EstimatedDiskUtilizationPercent>
        <NumberOfNodes>2</NumberOfNodes>
        <NodeType>dc2.large</NodeType>
      </NodeConfigurationOption>
      <NodeConfigurationOption>
        <EstimatedDiskUtilizationPercent>0.01</EstimatedDiskUtilizationPercent>
        <NumberOfNodes>4</NumberOfNodes>
        <NodeType>dc2.large</NodeType>
      </NodeConfigurationOption>
      <NodeConfigurationOption>
        <EstimatedDiskUtilizationPercent>0.01</EstimatedDiskUtilizationPercent>
        <NumberOfNodes>2</NumberOfNodes>
        <NodeType>ds2.xlarge</NodeType>
      </NodeConfigurationOption>
      <NodeConfigurationOption>
        <EstimatedDiskUtilizationPercent>0.01</EstimatedDiskUtilizationPercent>
        <NumberOfNodes>4</NumberOfNodes>
        <NodeType>ds2.xlarge</NodeType>
      </NodeConfigurationOption>
    </NodeConfigurationOptionList>
  </DescribeNodeConfigurationOptionsResult>
  <ResponseMetadata>
    <RequestId>ed601e39-28cc-11ea-a940-1b28a85fd753</RequestId>
  </ResponseMetadata>
</DescribeNodeConfigurationOptionsResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 132).

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. 161) 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. 345) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DescribeOrderableClusterOptions
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<?xml version="1.0" encoding="UTF-8"?>
<DescribeOrderableClusterOptionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeOrderableClusterOptionsResult>
    <OrderableClusterOptions>
      <OrderableClusterOption>
        <ClusterType>multi-node</ClusterType>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-east-2a</Name>
            <SupportedPlatforms>
              <SupportedPlatform>
                <Name>VPC</Name>
              </SupportedPlatform>
            </SupportedPlatforms>
          </AvailabilityZone>
        </AvailabilityZones>
      </OrderableClusterOption>
    </OrderableClusterOptions>
  </DescribeOrderableClusterOptionsResult>
</DescribeOrderableClusterOptionsResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 258) 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. 388).

**Marker**

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeReservedNodeOfferings (p. 165) 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. 355) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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-2.amazonaws.com/
?Action=DescribeReservedNodeOfferings
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678d8dd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DescribeReservedNodeOfferingsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeReservedNodeOfferingsResult>
    <ReservedNodeOfferings>
      <ReservedNodeOffering>
        <Duration>94608000</Duration>
        <UsagePrice>0.0</UsagePrice>
        <ReservedNodeOfferingId>12345678-12ab-12a1-12a2-12ab-12a12aEXAMPLE</ReservedNodeOfferingId>
      </ReservedNodeOffering>
    </ReservedNodeOfferings>
  </DescribeReservedNodeOfferingsResult>
</DescribeReservedNodeOfferingsResponse>
See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeReservedNodes (p. 168) 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

ReservedNodeIds

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

The list of ReservedNode objects.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

ReservedListNodeNotFound

The specified reserved compute node not found.

HTTP Status Code: 404

Example

Sample Request

```xml
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeReservedNodes
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddd901ee2ff3aa4567890123456789012345a6b7b
```

Sample Response

```xml
<DescribeReservedNodesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeReservedNodesResult>
    <ReservedNodes>
      <ReservedNode>
        <ReservedNodeId>12345678-12ab-12a1-1a2a-12ab-12a12aEXAMPLE</ReservedNodeId>
        <OfferingType>All Upfront</OfferingType>
        <ReservedNodeOfferingType>Regular</ReservedNodeOfferingType>
        <RecurringCharges>
          <RecurringCharge>
            <RecurringChargeAmount>0.0</RecurringChargeAmount>
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
          </RecurringCharge>
        </RecurringCharges>
        <NodeType>dc2.large</NodeType>
        <FixedPrice>1380.0</FixedPrice>
        <Duration>3153600</Duration>
        <UsagePrice>0.0</UsagePrice>
        <ReservedNodeOfferingId>12345678-12ab-12a1-1a2a-12ab-12a12bEXAMPLE</ReservedNodeOfferingId>
        <StartTime>2019-12-23T22:33:53.881Z</StartTime>
        <NodeCount>1</NodeCount>
        <State>active</State>
        <CurrencyCode>USD</CurrencyCode>
      </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 V3
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. 212) 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. 388).

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

DataTransferProgressPercent

The percent of data transferred from source cluster to target cluster.

Type: Double

ElapsedTimeInSeconds

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

Type: Long

EstimatedTimeToCompletionInSeconds

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

Type: Long

ImportTablesCompleted.member.N

The names of tables that have been completely imported.
Valid Values: List of table names.
Type: Array of strings
ImportTablesInProgress.member.N
The names of tables that are being currently imported.
Valid Values: List of table names.
Type: Array of strings
ImportTablesNotStarted.member.N
The names of tables that have not been yet imported.
Valid Values: List of table names
Type: Array of strings
Message
An optional string to provide additional details about the resize action.
Type: String
ProgressInMegaBytes
While the resize operation is in progress, this value shows the current amount of data, in megabytes, that has been processed so far. When the resize operation is complete, this value shows the total amount of data, in megabytes, on the cluster, which may be more or less than TotalResizeDataInMegaBytes (the estimated total amount of data before resize).
Type: Long
ResizeType
An enum with possible values of ClassicResize and ElasticResize. These values describe the type of resize operation being performed.
Type: String
Status
The status of the resize operation.
Valid Values: NONE | IN_PROGRESS | FAILED | SUCCEEDED | CANCELLING
Type: String
TargetClusterType
The cluster type after the resize operation is complete.
Valid Values: multi-node | single-node
Type: String
TargetEncryptionType
The type of encryption for the cluster after the resize is complete.
Possible values are KMS and None. In the China region possible values are: Legacy and None.
Type: String
TargetNodeType
The node type that the cluster will have after the resize operation is complete.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

ResizeNotFound

A resize operation for the specified cluster is not found.

HTTP Status Code: 404

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeResize
&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DescribeResizeResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeResizeResult>
    <AvgResizeRateInMegaBytesPerSecond>0.1498</AvgResizeRateInMegaBytesPerSecond>
    <TargetNodeType>dc2.large</TargetNodeType>
    <TargetEncryptionType>NONE</TargetEncryptionType>
    <EstimatedTimeToCompletionInSeconds>0</EstimatedTimeToCompletionInSeconds>
    <ProgressInMegaBytes>55</ProgressInMegaBytes>
    <DataTransferProgressPercent>100.0</DataTransferProgressPercent>
    <TotalResizeDataInMegaBytes>55</TotalResizeDataInMegaBytes>
    <ElapsedTimeInSeconds>1226</ElapsedTimeInSeconds>
    <TargetClusterType>single-node</TargetClusterType>
  </DescribeResizeResult>
</DescribeResizeResponse>
```
<ResizeType>ClassicResize</ResizeType>
<Status>SUCCEEDED</Status>
</DescribeResizeResult>
<ResponseMetadata>
  <RequestId>6a152dbe-28d1-11ea-8cc9-43f1872b4b75</RequestId>
</ResponseMetadata>
</DescribeResizeResponse>

See Also

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

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

Describes properties of scheduled actions.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

Active

If true, retrieve only active scheduled actions. If false, retrieve only disabled scheduled actions.

Type: Boolean

Required: No

EndTime

The end time in UTC of the scheduled action to retrieve. Only active scheduled actions that have invocations before this time are retrieved.

Type: Timestamp

Required: No

Filters.ScheduledActionFilter.N

List of scheduled action filters.

Type: Array of ScheduledActionFilter (p. 365) objects

Required: No

Marker

An optional parameter that specifies the starting point to return a set of response records. When the results of a DescribeScheduledActions (p. 175) 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
ScheduledActionName

The name of the scheduled action to retrieve.

Type: String
Required: No

StartTime

The start time in UTC of the scheduled actions to retrieve. Only active scheduled actions that have invocations after this time are retrieved.

Type: Timestamp
Required: No

TargetActionType

The type of the scheduled actions to retrieve.

Type: String
Valid Values: ResizeCluster | PauseCluster | ResumeCluster
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 DescribeScheduledActions (p. 175) 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

ScheduledActions.ScheduledAction.N

List of retrieved scheduled actions.

Type: Array of ScheduledAction (p. 363) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ScheduledActionNotFound

The scheduled action cannot be found.

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-2.amazonaws.com/
?Action=DescribeScheduledActions
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7

Sample Response

<DescribeScheduledActionsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeScheduledActionsResult>
    <ScheduledActions>
      <ScheduledAction>
        <IamRole>arn:aws:iam::123456789012:role/myRedshiftRole</IamRole>
        <Schedule>at(2019-12-10T00:07:00)</Schedule>
        <ScheduledActionName>myscheduledaction</ScheduledActionName>
        <TargetAction>
          <ResizeCluster>
            <ClusterIdentifier>mycluster</ClusterIdentifier>
            <Classic>false</Classic>
            <NumberOfNodes>4</NumberOfNodes>
          </ResizeCluster>
        </TargetAction>
        <NextInvocations/>
        <State>DISABLED</State>
      </ScheduledAction>
    </ScheduledActions>
  </ DescribeScheduledActionsResult>
  <ResponseMetadata>
    <RequestId>d9377e44-28d1-11ea-b6af-7126da6f11af</RequestId>
  </ResponseMetadata>
</DescribeScheduledActionsResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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
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. 372) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DescribeSnapshotCopyGrants
&SnapshotCopyGrantName=mysnapshotcopygrantnew
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<DescribeSnapshotCopyGrantsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeSnapshotCopyGrantsResult>
    <SnapshotCopyGrants>
      <SnapshotCopyGrant>
        <SnapshotCopyGrantName>mysnapshotcopygrantnew</SnapshotCopyGrantName>
        <KmsKeyId>arn:aws:kms:us-east-2:123456789012:key/bPxRfh3yCo8nvbEXAMPLEKEY</KmsKeyId>
        <Tags/>
      </SnapshotCopyGrant>
    </SnapshotCopyGrants>
  </DescribeSnapshotCopyGrantsResult>
  <ResponseMetadata>
    <RequestId>3a843f76-2bd2-11ea-9c9a-c956be01ce87</RequestId>
  </ResponseMetadata>
</DescribeSnapshotCopyGrantsResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
DescribeSnapshotSchedules

Returns a list of snapshot schedules.

**Request Parameters**

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ClusterIdentifier**

The unique identifier for the cluster whose snapshot schedules you want to view.

Type: String
Required: No

**Marker**

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

Type: String
Required: No

**MaxRecords**

The maximum number 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

**ScheduleIdentifier**

A unique identifier for a snapshot schedule.

Type: String
Required: No

**TagKeys.TagKey.N**

The key value for a snapshot schedule tag.

Type: Array of strings
Required: No

**TagValues.TagValue.N**

The value corresponding to the key of the snapshot schedule tag.

Type: Array of strings
Required: No
Response Elements

The following elements are returned by the service.

**Marker**

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

Type: String

**SnapshotSchedules.SnapshotSchedule.N**

A list of SnapshotSchedules.

Type: Array of SnapshotSchedule (p. 374) objects

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

**Example**

**Sample Request**

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeSnapshotSchedules
&ClusterIdentifier=mycluster
&ScheduleIdentifier=mysnapshotschedule
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```xml
<DescribeSnapshotSchedulesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeSnapshotSchedulesResult>
    <SnapshotSchedules>
      <ScheduleDefinition>rate(12 hours)</ScheduleDefinition>
      <ScheduleDescription>My schedule description</ScheduleDescription>
      <AssociatedClusterCount>1</AssociatedClusterCount>
      <AssociatedClusters>
        <ClusterAssociatedToSchedule>
          <ScheduleAssociationState>ACTIVE</ScheduleAssociationState>
          <ClusterIdentifier>mycluster</ClusterIdentifier>
        </ClusterAssociatedToSchedule>
      </AssociatedClusters>
    </ScheduleDefinition>
  </SnapshotSchedules>
</DescribeSnapshotSchedulesResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
DescribeStorage

Returns account level backups storage size and provisional storage.

Response Elements

The following elements are returned by the service.

TotalBackupSizeInMegaBytes

The total amount of storage currently used for snapshots.

Type: Double

TotalProvisionedStorageInMegaBytes

The total amount of storage currently provisioned.

Type: Double

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=DescribeStorage
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678dddd901ee2ff3aa45678b90c12d345eef789012345a6b7b

Sample Response

<DescribeStorageResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeStorageResult>
    <TotalProvisionedStorageInMegaBytes>491520.0</TotalProvisionedStorageInMegaBytes>
    <TotalBackupSizeInMegaBytes>26.0</TotalBackupSizeInMegaBytes>
  </DescribeStorageResult>
  <ResponseMetadata>
    <RequestId>d6b07363-28d3-11ea-8397-219d1980588b</RequestId>
  </ResponseMetadata>
</DescribeStorageResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
DescribeTableRestoreStatus

Lists the status of one or more table restore requests made using the RestoreTableFromClusterSnapshot (p. 281) 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. 388).

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. 186) request.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
  ?Action=DescribeTableRestoreStatus
  &ClusterIdentifier=mycluster
  &SignatureMethod=HmacSHA256
  &SignatureVersion=4
  &Version=2012-12-01
  &X-Amz-AlGORITHM=AWS4-HMAC-SHA256
  &X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
  &X-Amz-Date=20190825T160000Z
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
  &X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d34e6ff789012345a6b7b

Sample Response

<DescribeTableRestoreStatusResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeTableRestoreStatusResult>
    <TableRestoreStatusDetails>
      <TableRestoreStatus>
        <NewTableName>mytable-clone</NewTableName>
        <ClusterIdentifier>mycluster</ClusterIdentifier>
        <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>
        <SourceTableName>mytable</SourceTableName>
        <SourceDatabaseName>dev</SourceDatabaseName>
        <SourceSchemaName>public</SourceSchemaName>
        <TargetDatabaseName>dev</TargetDatabaseName>
        <TargetSchemaName>public</TargetSchemaName>
        <Status>IN_PROGRESS</Status>
      </TableRestoreStatus>
    </TableRestoreStatusDetails>
  </DescribeTableRestoreStatusResult>
</DescribeTableRestoreStatusResponse>
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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-2:123456789:cluster:t1.

Type: String
Required: No

ResourceType

The type of resource with which you want to view tags. Valid resource types are:
- Cluster
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. 384) objects
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

InvalidTagFault

The tag is invalid.

HTTP Status Code: 400

ResourceNotFoundFault

The resource could not be found.

HTTP Status Code: 404

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=DescribeTags
&ResourceName=arn%3Aaws%3Aredshift%3Aus-east-2%3A123456789012%3Acluster%3Amycluster
&TagKeys.TagKey.1=mytag
&TagValues.TagValue.1=newtag
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DescribeTagsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DescribeTagsResult>
    <TaggedResources>
      <TaggedResource>
        <Tag>
          <Value>newtag</Value>
          <Key>mytag</Key>
        </Tag>
        <ResourceType>cluster</ResourceType>
      </TaggedResource>
    </TaggedResources>
  </DescribeTagsResult>
  <ResponseMetadata>
    <RequestId>09b7e6a0-28da-11ea-8314-974e2ba81189</RequestId>
  </ResponseMetadata>
</DescribeTagsResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 390).

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 V3
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. 93) 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. 388).

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. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
  ?Action=DisableSnapshotCopy
&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<DisableSnapshotCopyResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <DisableSnapshotCopyResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ExpectedNextSnapshotScheduleTimeStatus>OnTrack</ExpectedNextSnapshotScheduleTimeStatus>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
    </Cluster>
  </DisableSnapshotCopyResult>
</DisableSnapshotCopyResponse>
```

API Version 2012-12-01
<VpcSecurityGroup>
  <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
  <Status>active</Status>
</VpcSecurityGroup>
</VpcSecurityGroups>
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<Encrypted>false</Encrypted>
<MaintenanceTrackName>current</MaintenanceTrackName>
<PendingModifiedValues/>
<PreferredMaintenanceWindow>sun:05:30-sun:06:00</PreferredMaintenanceWindow>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<ClusterStatus>available</ClusterStatus>
</Cluster>
</DisableSnapshotCopyResult>
<ResponseMetadata>
  <RequestId>7ec20f61-28da-11ea-9939-5fccefa818c0</RequestId>
</ResponseMetadata>
</DisableSnapshotCopyResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

**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. 390).

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

InvalidClusterState

The specified cluster is not in the available state.

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 V3
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. 388).

ClusterIdentifier

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

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

Type: String

Required: Yes

DestinationRegion

The destination AWS Region that you want to copy snapshots to.

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

Type: String

Required: Yes

ManualSnapshotRetentionPeriod

The number of days to retain newly copied snapshots in the destination AWS Region after they are copied from the source AWS Region. If the value is -1, the manual snapshot is retained indefinitely.

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

Type: Integer

Required: No

RetentionPeriod

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

Default: 7.

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

Type: Integer

Required: No

SnapshotCopyGrantName

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

Type: String

Required: No
Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

CopyToRegionDisabledFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

IncompatibleOrderableOptions

The specified options are incompatible.

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

InvalidRetentionPeriodFault

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

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

HTTP Status Code: 400

LimitExceededFault

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

HTTP Status Code: 400

SnapshotCopyAlreadyEnabledFault

The cluster already has cross-region snapshot copy enabled.

HTTP Status Code: 400
SnapshotCopyGrantNotFoundFault

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

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

UnknownSnapshotCopyRegionFault

The specified region is incorrect or does not exist.

HTTP Status Code: 404

Example

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=EnableSnapshotCopy
&ClusterIdentifier=mycluster
&DestinationRegion=us-east-1
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<EnableSnapshotCopyResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <EnableSnapshotCopyResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ExpectedNextSnapshotScheduleTimeStatus>OnTrack</ExpectedNextSnapshotScheduleTimeStatus>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
    </Cluster>
    <Endpoint>
      <Port>5439</Port>
      <Address>mycluster.cmeaswqeuae.us-east-2.redshift.amazonaws.com</Address>
    </Endpoint>
    <VpcId>vpc-alabc1a1</VpcId>
    <PubliclyAccessible>true</PubliclyAccessible>
    <ClusterCreateTime>2019-12-27T17:48:01.504Z</ClusterCreateTime>
    <ClusterSnapshotCopyStatus>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <DestinationRegion>us-east-1</DestinationRegion>
      <RetentionPeriod>7</RetentionPeriod>
    </ClusterSnapshotCopyStatus>
  </EnableSnapshotCopyResult>
</EnableSnapshotCopyResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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.
**AutoCreate**

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

Type: Boolean

Required: No

**DbGroups.DbGroup.N**

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

Database group name constraints

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

Type: Array of strings

Required: No

**DbName**

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

Constraints:

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

Type: String

Required: No

**DurationSeconds**

The number of seconds until the returned temporary password expires.

Constraint: minimum 900, maximum 3600.

Default: 900

Type: Integer

Required: No
Response Elements

The following elements are returned by the service.

**DbPassword**

A temporary password that authorizes the user name returned by `DbUser` to log on to the database `DbName`.

Type: String

**DbUser**

A database user name that is authorized to log on to the database `DbName` using the password `DbPassword`. If the specified `DbUser` exists in the database, the new user name has the same database privileges as the 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. 390).

**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

Sample Request

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=GetClusterCredentials
&ClusterIdentifier=mycluster
&DbUser=adminuser
&DbName=dev
&SSignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
```
Sample Response

```xml
<GetClusterCredentialsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <GetClusterCredentialsResult>
    <DbUser>IAM:adminuser</DbUser>
    <Expiration>2019-12-27T19:44:51.001Z</Expiration>
    <DbPassword>AMAFUyyuros/QjxPTtgzcSuQsqIasdzJEN04aCtWDzXx109d6UmpkBtvEeqFly/EXAMPLE==</DbPassword>
  </GetClusterCredentialsResult>
  <ResponseMetadata>
    <RequestId>404b34b9-28df-11ea-a940-1b28a85fd753</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 V3
GetReservedNodeExchangeOfferings

Returns an array of DC2 ReservedNodeOfferings that matches the payment type, term, and usage price of the given DC1 reserved node.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ReservedNodeId
A string representing the node identifier for the DC1 Reserved Node to be exchanged.
Type: String
Required: Yes

Marker
A value that indicates the starting point for the next set of ReservedNodeOfferings.
Type: String
Required: No

MaxRecords
An integer setting the maximum number of ReservedNodeOfferings to retrieve.
Type: Integer
Required: No

Response Elements

The following elements are returned by the service.

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

ReservedNodeOfferings.ReservedNodeOffering.N
Returns an array of ReservedNodeOffering (p. 355) objects.
Type: Array of ReservedNodeOffering (p. 355) objects

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).
**DependentServiceUnavailableFault**

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

HTTP Status Code: 400

**InvalidReservedNodeState**

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

HTTP Status Code: 400

**ReservedNodeAlreadyMigrated**

Indicates that the reserved node has already been exchanged.

HTTP Status Code: 400

**ReservedNodeNotFound**

The specified reserved compute node not found.

HTTP Status Code: 404

**ReservedNodeOfferingNotFound**

Specified offering does not exist.

HTTP Status Code: 404

**UnsupportedOperation**

The requested operation isn't supported.

HTTP Status Code: 400

---

**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=GetReservedNodeExchangeOfferings
&ReservedNodeId=12345678-12ab-12a1-1a2a-12ab-12a12EXAMPLE
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```
<GetReservedNodeExchangeOfferingsResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <GetReservedNodeExchangeOfferingsResult>
    <ReservedNodeOfferings>
      <ReservedNodeOffering>
        <Duration>31536000</Duration>
        <UsagePrice>0.0</UsagePrice>
      </ReservedNodeOffering>
    </ReservedNodeOfferings>
  </GetReservedNodeExchangeOfferingsResult>
</GetReservedNodeExchangeOfferingsResponse>
```
ReservedNodeOfferingId>12345678-12ab-12a1-1a2a-12ab-12a12EXAMPLE</ReservedNodeOfferingId>
<OfferingType>All Upfront</OfferingType>
<ReservedNodeOfferingType>Regular</ReservedNodeOfferingType>
<RecurringCharges>
  <RecurringCharge>
    <RecurringChargeAmount>0.0</RecurringChargeAmount>
    <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
  </RecurringCharge>
</RecurringCharges>
<NodeType>dc2.large</NodeType>
<FixedPrice>0.0</FixedPrice>
<CurrencyCode>USD</CurrencyCode>
</ReservedNodeOffering>
</ReservedNodeOfferings>
</GetReservedNodeExchangeOfferingsResult>
<ResponseMetadata>
  <RequestId>c75f325d-282f-11ea-9caa-c956bec1ce87</RequestId>
</ResponseMetadata>
</GetReservedNodeExchangeOfferingsResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
ModifyCluster

Modifies the settings for a cluster.

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.

You can add another security or parameter group, 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.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

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. 42).

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. 261).
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. 171)` 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.
Encrypted

Indicates whether the cluster is encrypted. If the value is encrypted (true) and you provide a value for the KmsKeyId parameter, we encrypt the cluster with the provided KmsKeyId. If you don't provide a KmsKeyId, we encrypt with the default key. In the China region we use legacy encryption if you specify that the cluster is encrypted.

If the value is not encrypted (false), then the cluster is decrypted.

Type: Boolean
Required: No

EnhancedVpcRouting

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

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

Default: false
Type: Boolean
Required: No

HsmClientCertificateIdentifier

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

Type: String
Required: No

HsmConfigurationIdentifier

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

Type: String
Required: No

KmsKeyId

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

Type: String
Required: No

MaintenanceTrackName

The name for the maintenance track that you want to assign for the cluster. This name change is asynchronous. The new track name stays in the PendingModifiedValues for the cluster until the next maintenance window. When the maintenance track changes, the cluster is switched to the latest cluster release available for the maintenance track. At this point, the maintenance track name is applied.
**ManualSnapshotRetentionPeriod**

The default for number of days that a newly created manual snapshot is retained. If the value is -1, the manual snapshot is retained indefinitely. This value doesn't retroactively change the retention periods of existing manual snapshots.

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

The default value is -1.

**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.

**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`
Request Parameters

**NodeType**

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

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

Valid Values: `ds2.xlarge | ds2.8xlarge | dc1.large | dc1.8xlarge | dc2.large | dc2.8xlarge | ra3.4xlarge | ra3.16xlarge`

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.

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

Valid Values: Integer greater than 0.

Type: Integer
Required: No

**PreferredMaintenanceWindow**

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

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

Default: Uses existing setting.

Format: `ddd:hh24:mi-ddd:hh24:mi`, for example `wed:07:30-wed:08:00`.

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

Constraints: Must be at least 30 minutes.

Type: String
Required: No

**PubliclyAccessible**

If `true`, the cluster can be accessed from a public network. Only clusters in VPCs can be set to be publicly available.

Type: Boolean
Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

A list of virtual private cloud (VPC) security groups to be associated with the cluster. This change is asynchronously applied as soon as possible.

Type: Array of strings
Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterAlreadyExists**

The account already has a cluster with the given identifier.

HTTP Status Code: 400

**ClusterNotFound**

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

**ClusterParameterGroupNotFound**

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

HTTP Status Code: 404

**ClusterSecurityGroupNotFound**

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

HTTP Status Code: 404

**DependentServiceRequestThrottlingFault**

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

HTTP Status Code: 400

**HsmClientCertificateNotFoundFault**

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

HTTP Status Code: 400

**HsmConfigurationNotFoundFault**

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

HTTP Status Code: 400

**InsufficientClusterCapacity**

The number of nodes specified exceeds the allotted capacity of the cluster.
HTTP Status Code: 400
**InvalidClusterSecurityGroupState**

The state of the cluster security group is not available.

HTTP Status Code: 400
**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400
**InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400
**InvalidElasticIpFault**

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

HTTP Status Code: 400
**InvalidRetentionPeriodFault**

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

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

HTTP Status Code: 400
**LimitExceededFault**

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

HTTP Status Code: 400
**NumberOfNodesPerClusterLimitExceeded**

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

HTTP Status Code: 400
**NumberOfNodesQuotaExceeded**

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

HTTP Status Code: 400
**TableLimitExceeded**

The number of tables in the cluster exceeds the limit for the requested new cluster node type.

HTTP Status Code: 400
**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400
**UnsupportedOptionFault**

A request option was specified that is not supported.
HTTP Status Code: 400

Example

This example changes the weekly preferred maintenance window for a cluster to be the minimum four hour window starting Sundays at 11:15 PM, and ending Mondays at 3:15 AM.

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=ModifyCluster
&ClusterIdentifier=mycluster
&PreferredMaintenanceWindow=Sun%3A23%3A15-Mon%3A03%3A15
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<ModifyClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ExpectedNextSnapshotScheduleTimeStatus>OnTrack</ExpectedNextSnapshotScheduleTimeStatus>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
    </Cluster>
    <Endpoint>
      <Port>5439</Port>
      <Address>mycluster.cmeaswqueuae.us-east-2.redshift.amazonaws.com</Address>
    </Endpoint>
    <VpcId>vpc-aiabsca1</VpcId>
    <PubliclyAccessible>true</PubliclyAccessible>
    <ClusterCreateTime>2019-12-27T17:48:01.504Z</ClusterCreateTime>
    <MasterUsername>adminuser</MasterUsername>
    <DBName>dev</DBName>
    <EnhancedVpcRouting>false</EnhancedVpcRouting>
    <IamRoles/>
    <ClusterSecurityGroups/>
    <NodeType>dc2.large</NodeType>
    <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
    <NextMaintenanceWindowStart_time>2019-12-29T03:15:00Z</NextMaintenanceWindowStart_time>
    <DeferredMaintenanceWindows/>
    <Tags>
      <Tag>
        <Value>newtag</Value>
        <Key>mytag</Key>
      </Tag>
    </Tags>
    <VpcSecurityGroups/>
  </ModifyClusterResult>
</ModifyClusterResponse>
```
<VpcSecurityGroup>
  <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
  <Status>active</Status>
</VpcSecurityGroup>
</VpcSecurityGroups>
</ClusterParameterGroups>
<ClusterParameterGroup>
  <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
  <ParameterApplyStatus>in-sync</ParameterApplyStatus>
</ClusterParameterGroup>
</ClusterParameterGroups>
<Encrypted>false</Encrypted>
<MaintenanceTrackName>current</MaintenanceTrackName>
<PendingModifiedValues/>
<PreferredMaintenanceWindow>sun:23:15-mon:03:15</PreferredMaintenanceWindow>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<ClusterStatus>available</ClusterStatus>
</Cluster>
</ModifyClusterResult>
<ResponseMetadata>
  <RequestId>819eaffd-28df-11ea-8397-219d1980588b</RequestId>
</ResponseMetadata>
</ModifyClusterResponse>

See Also

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

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

Modifies the database revision of a cluster. The database revision is a unique revision of the database running in a cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

The unique identifier of a cluster whose database revision you want to modify.

Example: examplecluster

Type: String

Required: Yes

RevisionTarget

The identifier of the database revision. You can retrieve this value from the response to the DescribeClusterDbRevisions (p. 101) request.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

ClusterOnLatestRevision

Cluster is already on the latest database revision.

HTTP Status Code: 400

InvalidClusterState

The specified cluster is not in the available state.
HTTP Status Code: 400

See Also

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

- AWS Command Line Interface
- AWS SDK for .NET
- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for JavaScript
- AWS SDK for PHP V3
- AWS SDK for Python
- AWS SDK for Ruby V3
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. 388).

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. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

This example removes an AWS Identity and Access Management (IAM) role from a cluster.

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
  ?Action=ModifyClusterIamRoles
&ClusterIdentifier=mycluster
&RemoveIamRoles.IamRoleArn.1=arn:aws:iam::123456789012:role%2FmyRedshiftRole
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<ModifyClusterIamRolesResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterIamRolesResult/>
  <ExpectedNextSnapshotScheduleTimeStatus>OnTrack</ExpectedNextSnapshotScheduleTimeStatus>
</ModifyClusterIamRolesResponse>
```

API Version 2012-12-01
<ModifyClusterIamRolesResult>
<Cluster>
  <Tag/>
  <Tags/>
  <VpcSecurityGroups>
    <VpcSecurityGroup>
      <VpcSecurityGroupId>sh-al1a23ab</VpcSecurityGroupId>
      <Status>active</Status>
    </VpcSecurityGroup>
  </VpcSecurityGroups>
  <ClusterParameterGroups>
    <ClusterParameterGroup>
      <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
      <ParameterApplyStatus>in-sync</ParameterApplyStatus>
    </ClusterParameterGroup>
  </ClusterParameterGroups>
  <Encrypted>false</Encrypted>
  <MaintenanceTrackName>current</MaintenanceTrackName>
  <PendingModifiedValues/>
  <PreferredMaintenanceWindow>sun:23:15-mon:03:15</PreferredMaintenanceWindow>
  <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
  <ClusterStatus>available</ClusterStatus>
</Cluster>
</ModifyClusterIamRolesResult>
<ResponseMetadata>
  <RequestId>3ca20e36-28e0-11ea-8397-219d1980588b</RequestId>
</ResponseMetadata>
</ModifyClusterIamRolesResponse>

See Also

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

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

Modifies the maintenance settings of a cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

A unique identifier for the cluster.
Type: String
Required: Yes

DeferMaintenance

A boolean indicating whether to enable the deferred maintenance window.
Type: Boolean
Required: No

DeferMaintenanceDuration

An integer indicating the duration of the maintenance window in days. If you specify a duration, you can't specify an end time. The duration must be 45 days or less.
Type: Integer
Required: No

DeferMaintenanceEndTime

A timestamp indicating end time for the deferred maintenance window. If you specify an end time, you can't specify a duration.
Type: Timestamp
Required: No

DeferMaintenanceIdentifier

A unique identifier for the deferred maintenance window.
Type: String
Required: No

DeferMaintenanceStartTime

A timestamp indicating the start time for the deferred maintenance window.
Type: Timestamp
Required: No

Response Elements

The following element is returned by the service.
Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

This example defers the maintenance of a cluster by duration of 30 days. You can also update or cancel a deferment.

Sample Request

```
https://redshift.us-east-2.amazonaws.com/
?Action=ModifyClusterMaintenance
&ClusterIdentifier=mycluster
&DeferMaintenance=true
&DeferMaintenanceDuration=30
&SignatureMethod=HmacSHA256&SignatureVersion=4
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d35e6ff789012345a6b7b
```

Sample Response

```
<ModifyClusterMaintenanceResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterMaintenanceResult>
    <Cluster>
      < AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      < NumberOfNodes>1</NumberOfNodes>
      < AvailabilityZone>us-east-2d</AvailabilityZone>
      < ClusterVersion>1.0</ClusterVersion>
      < ExpectedNextSnapshotScheduleTimeStatus>OnTrack</ExpectedNextSnapshotScheduleTimeStatus>
      < ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      < ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
    <Endpoint>
      < Port>5439</Port>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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. 346) 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. 390).
ClusterParameterGroupNotFound

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

HTTP Status Code: 404

InvalidClusterParameterGroupState

The cluster parameter group action cannot 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-2.amazonaws.com/
?Action=ModifyClusterParameterGroup
&ParameterGroupName=myclusterparametergroup
&Parameters.Parameter.1.ParameterName=auto_analyze
&Parameters.Parameter.1.ParameterValue=false
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<ModifyClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterParameterGroupResult>
    <ParameterGroupName>myclusterparametergroup</ParameterGroupName>
    <ParameterGroupStatus>Your parameter group has been updated. If you changed only dynamic parameters, associated clusters are being modified now. If you changed static parameters, all updates, including dynamic parameters, will be applied when you reboot the associated clusters.</ParameterGroupStatus>
  </ModifyClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>565b33e6-28e9-11ea-9939-5fcefa818c0</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

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• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V3
ModifyClusterSnapshot

Modifies the settings for a snapshot.

This example modifies the manual retention period setting for a cluster snapshot.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**SnapshotIdentifier**

The identifier of the snapshot whose setting you want to modify.

Type: String

Required: Yes

**Force**

A Boolean option to override an exception if the retention period has already passed.

Type: Boolean

Required: No

**ManualSnapshotRetentionPeriod**

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

If the manual snapshot falls outside of the new retention period, you can specify the force option to immediately delete the snapshot.

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

Type: Integer

Required: No

Response Elements

The following element is returned by the service.

**Snapshot**

Describes a snapshot.

Type: Snapshot (p. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterSnapshotNotFound**

The snapshot identifier does not refer to an existing cluster snapshot.
HTTP Status Code: 404

**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

**InvalidRetentionPeriodFault**

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

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

HTTP Status Code: 400

**Example**

**Sample Request**

```plaintext
https://redshift.us-east-2.amazonaws.com/?Action=ModifyClusterSnapshot
&ClusterIdentifier=mycluster
&SnapshotIdentifier=mysnapshotid
&ManualSnapshotRetentionPeriod=10
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```xml
<ModifyClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterSnapshotResult>
    <Snapshot>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <EncryptedWithHSM>false</EncryptedWithHSM>
      <NumberOfNodes>1</NumberOfNodes>
      <OwnerAccount>123456789012</OwnerAccount>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>10</ManualSnapshotRetentionPeriod>
      <TotalBackupSizeInMegaBytes>62758.0</TotalBackupSizeInMegaBytes>
      <VpcId>vpc-a1abc1a1</VpcId>
      <BackupProgressInMegaBytes>15.0</BackupProgressInMegaBytes>
      <CurrentBackupRateInMegaBytesPerSecond>5.4506</CurrentBackupRateInMegaBytesPerSecond>
      <ClusterCreateTime>2019-12-23T23:21:27Z</ClusterCreateTime>
      <ElapsedTimeInSeconds>2</ElapsedTimeInSeconds>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <ActualIncrementalBackupSizeInMegaBytes>15.0</ActualIncrementalBackupSizeInMegaBytes>
      <SnapshotType>manual</SnapshotType>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <ManualSnapshotRemainingDays>9</ManualSnapshotRemainingDays>
      <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>
    </Snapshot>
  </ModifyClusterSnapshotResult>
</ModifyClusterSnapshotResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
ModifyClusterSnapshotSchedule

Modifies a snapshot schedule for a cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

A unique identifier for the cluster whose snapshot schedule you want to modify.

Type: String

Required: Yes

DisassociateSchedule

A boolean to indicate whether to remove the association between the cluster and the schedule.

Type: Boolean

Required: No

ScheduleIdentifier

A unique alphanumeric identifier for the schedule that you want to associate with the cluster.

Type: String

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidClusterSnapshotScheduleState

The cluster snapshot schedule state is not valid.

HTTP Status Code: 400

SnapshotScheduleNotFound

We could not find the specified snapshot schedule.

HTTP Status Code: 400

Example

This example removes a snapshot schedule from a cluster.
Sample Request

https://redshift.us-east-2.amazonaws.com/
    ?Action=ModifyClusterSnapshotSchedule
&ClusterIdentifier=mycluster
&ScheduleIdentifier=mysnapshotschedule
&DisassociateSchedule=true
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<ModifyClusterSnapshotScheduleResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/"
    <ResponseMetadata>
        <RequestId>3ec38335-28ea-11ea-b6af-7126da6f11af</RequestId>
    </ResponseMetadata>
</ModifyClusterSnapshotScheduleResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

- **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. 320) object

**Errors**

For information about the errors that are common to all actions, see [Common Errors](p. 390).

- **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](https://docs.aws.amazon.com/redshift/latest/guide/limits.html) in the [Amazon Redshift Cluster Management Guide](https://docs.aws.amazon.com/redshift/latest/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

---

**Example**

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=ModifyClusterSubnetGroup
&ClusterSubnetGroupName=mysubnetgroup
&SubnetIds.SubnetIdentifier.1=subnet-a1b21abc
&SubnetIds.SubnetIdentifier.2=subnet-a1b22abc
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-AlGORITHM=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```
<ModifyClusterSubnetGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyClusterSubnetGroupResult>
    <ClusterSubnetGroup>
      <VpcId>vpc-a1abc1a1</VpcId>
      <Description>My subnet group</Description>
      <Subnets>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-a1b21abc</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-2f</Name>
          </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-a1b22abc</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-2f</Name>
          </SubnetAvailabilityZone>
        </Subnet>
      </Subnets>
    </ClusterSubnetGroup>
  </ModifyClusterSubnetGroupResult>
</ModifyClusterSubnetGroupResponse>
```
### See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 388).

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
Response Elements

The following element is returned by the service.

EventSubscription

Describes event subscriptions.

Type: EventSubscription (p. 335) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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.

Example

This example disables an event notification subscription.

**Sample Request**

```
https://redshift.us-east-2.amazonaws.com/
?Action=ModifyEventSubscription
&SubscriptionName=mysubscription
&Enabled=false
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

**Sample Response**

```
<ModifyEventSubscriptionResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyEventSubscriptionResult>
    <EventSubscription>
      <CustSubscriptionId>mysubscription</CustSubscriptionId>
      <Severity>ERROR</Severity>
      <SourceIdsList/>
      <EventCategoriesList/>
      <SubscriptionCreationTime>2019-12-27T00:27:43.748Z</SubscriptionCreationTime>
      <Enabled>false</Enabled>
      <Tags/>
    </EventSubscription>
  </ModifyEventSubscriptionResult>
</ModifyEventSubscriptionResponse>
```
See Also

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

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

Modifies a scheduled action.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ScheduledActionName

The name of the scheduled action to modify.

Type: String

Required: Yes

Enable

A modified enable flag of the scheduled action. If true, the scheduled action is active. If false, the scheduled action is disabled.

Type: Boolean

Required: No

EndTime

A modified end time of the scheduled action. For more information about this parameter, see ScheduledAction (p. 363).

Type: Timestamp

Required: No

IamRole

A different IAM role to assume to run the target action. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: No

Schedule

A modified schedule in either at( ) or cron( ) format. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: No

ScheduledActionDescription

A modified description of the scheduled action.

Type: String

Required: No

StartTime

A modified start time of the scheduled action. For more information about this parameter, see ScheduledAction (p. 363).

Type: String

Required: No
Response Elements

The following elements are returned by the service.

EndTime

The end time in UTC when the schedule is no longer active. After this time, the scheduled action does not trigger.

Type: Timestamp

IamRole

The IAM role to assume to run the scheduled action. This IAM role must have permission to run the Amazon Redshift API operation in the scheduled action. This IAM role must allow the Amazon Redshift scheduler (Principal scheduler.redshift.amazonaws.com) to assume permissions on your behalf. For more information about the IAM role to use with the Amazon Redshift scheduler, see Using Identity-Based Policies for Amazon Redshift in the Amazon Redshift Cluster Management Guide.

Type: String

NextInvocations.ScheduledActionTime.N

List of times when the scheduled action will run.

Type: Array of timestamps

Schedule

The schedule for a one-time (at format) or recurring (cron format) scheduled action. Schedule invocations must be separated by at least one hour.

Format of at expressions is "at(yyyy-mm-ddThh:mm:ss)". For example, "at(2016-03-04T17:27:00)".

Format of cron expressions is "cron(Minutes Hours Day-of-month Month Day-of-week Year)". For example, "cron(0 10 ? * MON *)". For more information, see Cron Expressions in the Amazon CloudWatch Events User Guide.

Type: String

ScheduledActionDescription

The description of the scheduled action.

Type: String

ScheduledActionName

The name of the scheduled action.
Type: String

**StartTime**

The start time in UTC when the schedule is active. Before this time, the scheduled action does not trigger.

Type: Timestamp

**State**

The state of the scheduled action. For example, DISABLED.

Type: String

Valid Values: ACTIVE | DISABLED

**TargetAction**

A JSON format string of the Amazon Redshift API operation with input parameters.

```
{"ResizeCluster":{"NodeType":"ds2.8xlarge","ClusterIdentifier":"my-test-cluster","NumberOfNodes":3}}
```

Type: ScheduledActionType (p. 366) object

---

**Errors**

For information about the errors that are common to all actions, see Common Errors (p. 390).

- **InvalidSchedule**
  
  The schedule you submitted isn't valid.
  
  HTTP Status Code: 400

- **InvalidScheduledAction**
  
  The scheduled action is not valid.
  
  HTTP Status Code: 400

- **ScheduledActionNotFound**
  
  The scheduled action cannot be found.
  
  HTTP Status Code: 400

- **ScheduledActionTypeUnsupported**
  
  The action type specified for a scheduled action is not supported.
  
  HTTP Status Code: 400

- **UnauthorizedOperation**
  
  Your account is not authorized to perform the requested operation.
  
  HTTP Status Code: 400

---

**Example**

This example adds description to an existing scheduled action.
Sample Request

```
https://redshift.us-east-2.amazonaws.com/
  ?Action=ModifyScheduledAction
&ScheduledActionName=myscheduledaction
&ScheduledActionDescription=My+scheduled+action
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<ModifyScheduledActionResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifyScheduledActionResult>
    <IamRole>arn:aws:iam::123456789012:role/myRedshiftRole</IamRole>
    <Schedule>at(2019-12-31T00:00:00)</Schedule>
    <ScheduledActionName>myscheduledaction</ScheduledActionName>
    <TargetAction>
      <ResizeCluster>
        <ClusterType>multi-node</ClusterType>
        <ClusterIdentifier>mycluster</ClusterIdentifier>
        <Classic>true</Classic>
        <NumberOfNodes>3</NumberOfNodes>
        <NodeType>dc2.large</NodeType>
      </ResizeCluster>
    </TargetAction>
    <NextInvocations>
      <ScheduledActionTime>2019-12-31T00:00:00Z</ScheduledActionTime>
    </NextInvocations>
    <State>ACTIVE</State>
    <ScheduledActionDescription>My scheduled action</ScheduledActionDescription>
  </ModifyScheduledActionResult>
  <ResponseMetadata>
    <RequestId>a2388ba8-28f3-11ea-8a28-2fd1719d0e86</RequestId>
  </ResponseMetadata>
</ModifyScheduledActionResponse>
```

See Also

For more information about using this API in one of the language-specific AWS 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 V3
ModifySnapshotCopyRetentionPeriod

Modifies the number of days to retain snapshots in the destination AWS Region after they are copied from the source AWS Region. By default, this operation only changes the retention period of copied automated snapshots. The retention periods for both new and existing copied automated snapshots are updated with the new retention period. You can set the manual option to change only the retention periods of copied manual snapshots. If you set this option, only newly copied manual snapshots have the new retention period.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

The unique identifier of the cluster for which you want to change the retention period for either automated or manual snapshots that are copied to a destination AWS Region.

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

Type: String

Required: Yes

RetentionPeriod

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

By default, this only changes the retention period of copied automated snapshots.

If you decrease the retention period for automated snapshots that are copied to a destination AWS Region, Amazon Redshift deletes any existing automated snapshots that were copied to the destination AWS Region and that fall outside of the new retention period.

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

If you specify the manual option, only newly copied manual snapshots will have the new retention period.

If you specify the value of -1 newly copied manual snapshots are retained indefinitely.

Constraints: The number of days must be either -1 or an integer between 1 and 3,653 for manual snapshots.

Type: Integer

Required: Yes

Manual

Indicates whether to apply the snapshot retention period to newly copied manual snapshots instead of automated snapshots.

Type: Boolean

Required: No
Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFound

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidClusterState

The specified cluster is not in the available state.

HTTP Status Code: 400

InvalidRetentionPeriodFault

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

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

HTTP Status Code: 400

SnapshotCopyDisabledFault

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

HTTP Status Code: 400

UnauthorizedOperation

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
?Action=ModifySnapshotCopyRetentionPeriod
&ClusterIdentifier=mycluster
&RetentionPeriod=15
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
Sample Response

```xml
<ModifySnapshotCopyRetentionPeriodResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifySnapshotCopyRetentionPeriodResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Available</ClusterAvailabilityStatus>
      <Endpoint>
        <Port>5439</Port>
        <Address>mycluster.cmeaswqewae.us-east-2.redshift.amazonaws.com</Address>
      </Endpoint>
      <VpcId>vpc-a1abc1a1</VpcId>
      <PubliclyAccessible>true</PubliclyAccessible>
      <ClusterCreateTime>2019-12-27T17:48:01.504Z</ClusterCreateTime>
      <ClusterSnapshotCopyStatus>
        <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
        <DestinationRegion>us-east-1</DestinationRegion>
        <RetentionPeriod>15</RetentionPeriod>
      </ClusterSnapshotCopyStatus>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles/>
      <ClusterSecurityGroups/>
      <NodeType>dc2.large</NodeType>
      <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
      <NextMaintenanceWindowStart_time>2020-01-26T23:15:00Z</NextMaintenanceWindowStart_time>
      <DeferredMaintenanceWindows>
        <DeferredMaintenanceWindow>
          <DeferMaintenanceEndTime>2020-01-26T19:39:15.075Z</DeferMaintenanceEndTime>
          <DeferMaintenanceIdentifier>dfm-VcfYqSYq4tdXQ9qbWwG</DeferMaintenanceIdentifier>
        </DeferredMaintenanceWindow>
      </DeferredMaintenanceWindows>
      <Tags>
        <Tag>
          <Value>newtag</Value>
          <Key>mytag</Key>
        </Tag>
      </Tags>
      <VpcSecurityGroups>
        <VpcSecurityGroup>
          <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroup>
      </VpcSecurityGroups>
      <ClusterParameterGroups>
        <ClusterParameterGroup>
          <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
        </ClusterParameterGroup>
      </ClusterParameterGroups>
      <Encrypted>false</Encrypted>
      <MaintenanceTrackName>current</MaintenanceTrackName>
      <PendingModifiedValues/>
      <PreferredMaintenanceWindow>sun:23:15-mon:03:15</PreferredMaintenanceWindow>
      <AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
      <ClusterStatus>available</ClusterStatus>
    </Cluster>
  </ModifySnapshotCopyRetentionPeriodResult>
</ModifySnapshotCopyRetentionPeriodResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
ModifySnapshotSchedule

Modifies a snapshot schedule. Any schedule associated with a cluster is modified asynchronously.

Request Parameters

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

ScheduleDefinitions.ScheduleDefinition.N

An updated list of schedule definitions. A schedule definition is made up of schedule expressions, for example, "cron(30 12 *)" or "rate(12 hours)".

Type: Array of strings

Required: Yes

ScheduleIdentifier

A unique alphanumeric identifier of the schedule to modify.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

AssociatedClusterCount

The number of clusters associated with the schedule.

Type: Integer

AssociatedClusters.ClusterAssociatedToSchedule.N

A list of clusters associated with the schedule. A maximum of 100 clusters is returned.

Type: Array of ClusterAssociatedToSchedule objects

NextInvocations.SnapshotTime.N

Type: Array of timestamps

ScheduleDefinitions.ScheduleDefinition.N

A list of ScheduleDefinitions.

Type: Array of strings

ScheduleDescription

The description of the schedule.

Type: String

ScheduleIdentifier

A unique identifier for the schedule.
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

InvalidSchedule

The schedule you submitted isn't valid.

HTTP Status Code: 400

SnapshotScheduleNotFound

We could not find the specified snapshot schedule.

HTTP Status Code: 400

SnapshotScheduleUpdateInProgress

The specified snapshot schedule is already being updated.

HTTP Status Code: 400

Example

This example sets a snapshot schedule to the rate of every 10 hours.

Sample Request

```plaintext
https://redshift.us-east-2.amazonaws.com/
/?Action=ModifySnapshotSchedule
&ScheduleIdentifier=mysnapshotschedule
&ScheduleDefinitions.ScheduleDefinition.1=rate(10+hours)
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAILOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<ModifySnapshotScheduleResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ModifySnapshotScheduleResult>
    <ScheduleDefinitions>
      <ScheduleDefinition>rate(10+hours)</ScheduleDefinition>
    </ScheduleDefinitions>
    <ScheduleDescription>My schedule description</ScheduleDescription>
    <ScheduleIdentifier>mysnapshotschedule</ScheduleIdentifier>
    <Tags/>
  </ModifySnapshotScheduleResult>
</ModifySnapshotScheduleResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
PauseCluster

Pauses a cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

ClusterIdentifier

The identifier of the cluster to be paused.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterNotFoundException

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

InvalidClusterStateException

The specified cluster is not in the available state.

HTTP Status Code: 400

See Also

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

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

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 API to obtain the available reserved node offerings.

Type: ReservedNode object

Errors

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

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-2.amazonaws.com/
?Action=PurchaseReservedNodeOffering
&ReservedNodeOfferingId=12345678-12ab-12a1-1a2a-12ab-12a12bEXAMPLE
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c1d345e6ff789012345a6b7b

Sample Response

<PurchaseReservedNodeOfferingResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <PurchaseReservedNodeOfferingResult>
    <ReservedNode>
      <ReservedNodeId>12345678-12ab-12a1-1a2a-12ab-12a12bEXAMPLE</ReservedNodeId>
      <OfferingType>All Upfront</OfferingType>
      <ReservedNodeOfferingType>Regular</ReservedNodeOfferingType>
      <RecurringCharges/>
      <NodeType>ds2.xlarge</NodeType>
      <FixedPrice>4295.0</FixedPrice>
      <Duration>31536000</Duration>
      <UsagePrice>0.0</UsagePrice>
      <ReservedNodeOfferingId>12345678-12ab-12a1-1a2a-12ab-12a12bEXAMPLE</ReservedNodeOfferingId>
      <NodeCount>1</NodeCount>
      <State>payment-pending</State>
      <CurrencyCode>USD</CurrencyCode>
    </ReservedNode>
  </PurchaseReservedNodeOfferingResult>
</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 V3
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) 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.

ClusterIdentifier

The cluster identifier.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

Cluster

Describes a cluster.

Type: Cluster object

Errors

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

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-2.amazonaws.com/?Action=RebootCluster
Amazon Redshift API Reference

Example

&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aaa45678b90c12d345e6ff7890123456a7b

Sample Response

<RebootClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RebootClusterResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Modifying</ClusterAvailabilityStatus>
      <Endpoint>
        <Port>5439</Port>
        <Address>mycluster.cmeaswqemae.us-east-2.redshift.amazonaws.com</Address>
      </Endpoint>
      <VpcId>vpc-a1abc1a1</VpcId>
      <PubliclyAccessible>true</PubliclyAccessible>
      <ClusterCreateTime>2019-12-27T17:48:01.504Z</ClusterCreateTime>
      <ClusterSnapshotCopyStatus>
        <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
        <DestinationRegion>us-east-1</DestinationRegion>
        <RetentionPeriod>15</RetentionPeriod>
      </ClusterSnapshotCopyStatus>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles/>
      <ClusterSecurityGroups/>
      <NodeType>dc2.large</NodeType>
      <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
      <NextMaintenanceWindowStart_time>2020-01-26T23:15:00Z</NextMaintenanceWindowStart_time>
      <DeferredMaintenanceWindows>
        <DeferredMaintenanceWindow>
          <DeferMaintenanceEndTime>2020-01-26T19:39:15.075Z</DeferMaintenanceEndTime>
        </DeferredMaintenanceWindow>
      </DeferredMaintenanceWindows>
      <Tags>
        <Tag>
          <Value>newtag</Value>
          <Key>mytag</Key>
        </Tag>
      </Tags>
      <VpcSecurityGroups/>
    </Cluster>
  </RebootClusterResult>
</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 V3
ResetClusterParameterGroup

Sets one or more parameters of the specified parameter group to their default values and sets the source values of the parameters to "engine-default". To reset the entire parameter group specify the `ResetAllParameters` parameter. For parameter changes to take effect you must reboot any associated clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ParameterGroupName**

The name of the cluster parameter group to be reset.

Type: String

Required: Yes

**Parameters.Parameter.N**

An array of names of parameters to be reset. If `ResetAllParameters` option is not used, then at least one parameter name must be supplied.

Constraints: A maximum of 20 parameters can be reset in a single request.

Type: Array of Parameter (p. 346) objects

Required: No

**ResetAllParameters**

If `true`, all parameters in the specified parameter group will be reset to their default values.

Default: `true`

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

**ParameterGroupName**

The name of the cluster parameter group.

Type: String

**ParameterGroupStatus**

The status of the parameter group. For example, if you made a change to a parameter group name-value pair, then the change could be pending a reboot of an associated cluster.

Type: String
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

InvalidClusterParameterGroupState

The cluster parameter group action cannot 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-2.amazonaws.com/?Action=ResetClusterParameterGroup&ParameterGroupName=myclusterparametergroup&ResetAllParameters=true&SignatureMethod=HmacSHA256&SignatureVersion=4&Version=2012-12-01&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request&X-Amz-Date=20190825T160000Z&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date&X-Amz-Signature=0aa1234bb5cc678dd6901ee2ff3aa45678b90c12d345e6ff789012345a6b7b

Sample Response

<ResetClusterParameterGroupResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
    <ResetClusterParameterGroupResult>
        <ParameterGroupName>myclusterparametergroup</ParameterGroupName>
        <ParameterGroupStatus>Your parameter group has been updated. If you changed only dynamic parameters, associated clusters are being modified now. If you changed static parameters, all updates, including dynamic parameters, will be applied when you reboot the associated clusters.</ParameterGroupStatus>
    </ResetClusterParameterGroupResult>
    <ResponseMetadata>
        <RequestId>9e0e57b9-28f5-11ea-9caa-c956bec1ce87</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++

API Version 2012-12-01
• 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 V3
ResizeCluster

Changes the size of the cluster. You can change the cluster’s type, or change the number or type of nodes. The default behavior is to use the elastic resize method. With an elastic resize, your cluster is available for read and write operations more quickly than with the classic resize method.

Elastic resize operations have the following restrictions:

- You can only resize clusters of the following types:
  - dc2.large
  - dc2.8xlarge
  - ds2.xlarge
  - ds2.8xlarge
  - ra3.4xlarge
  - ra3.16xlarge
- The type of nodes that you add must match the node type for the cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ClusterIdentifier**

The unique identifier for the cluster to resize.

Type: String

Required: Yes

**Classic**

A boolean value indicating whether the resize operation is using the classic resize process. If you don’t provide this parameter or set the value to false, the resize type is elastic.

Type: Boolean

Required: No

**ClusterType**

The new cluster type for the specified cluster.

Type: String

Required: No

**NodeType**

The new node type for the nodes you are adding. If not specified, the cluster’s current node type is used.

Type: String

Required: No

**NumberOfNodes**

The new number of nodes for the cluster.
Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterNotFound**

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

HTTP Status Code: 404

**InsufficientClusterCapacity**

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

HTTP Status Code: 400

**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

**LimitExceededFault**

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

HTTP Status Code: 400

**NumberOfNodesPerClusterLimitExceeded**

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

HTTP Status Code: 400

**NumberOfNodesQuotaExceeded**

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

HTTP Status Code: 400

**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400
UnsupportedOperation

The requested operation isn't supported.

HTTP Status Code: 400

UnsupportedOptionFault

A request option was specified that is not supported.

HTTP Status Code: 400

Example

Sample Request

```xml
https://redshift.us-east-2.amazonaws.com/
?Action=ResizeCluster
&ClusterIdentifier=mycluster
&ClusterType=multi-node
&NodeType=dc2.large
&NumberOfNodes=6
&Classic=true
$SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d3456ff789012345a6b7b
```

Sample Response

```xml
<ResizeClusterResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <ResizeClusterResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2d</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Modifying</ClusterAvailabilityStatus>
      <Endpoint>
        <Port>5439</Port>
        <Address>mycluster.cmeaswqeuae.us-east-2.redshift.amazonaws.com</Address>
      </Endpoint>
      <VpcId>vpc-a1abc1a1</VpcId>
      <PubliclyAccessible>true</PubliclyAccessible>
      <ClusterCreateTime>2019-12-27T17:48:01.504Z</ClusterCreateTime>
      <SnapshotCopyStatus>
        <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
        <DestinationRegion>us-east-1</DestinationRegion>
        <RetentionPeriod>15</RetentionPeriod>
      </SnapshotCopyStatus>
      <MasterUsername>adminuser</MasterUsername>
      <DbName>dev</DbName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles/>
    </Cluster>
  </ResizeClusterResult>
</ResizeClusterResponse>
```
<AllowCancelResize>true</AllowCancelResize>
<ResizeType>ClassicResize</ResizeType>
</ResizeInfo>
<ClusterSecurityGroups/>
<NodeType>dc2.large</NodeType>
<ClusterSubnetGroupName>default</ClusterSubnetGroupName>
<NextMaintenanceWindowStartTime>2020-01-26T23:15:00Z</NextMaintenanceWindowStartTime>
<DeferredMaintenanceWindows>
<DeferredMaintenanceWindow>
<DeferMaintenanceEndTime>2020-01-26T19:39:15.075Z</DeferMaintenanceEndTime>
<DeferMaintenanceIdentifier>dfm-VcfYsSyq4t4dXOgkWwo</DeferMaintenanceIdentifier>
</DeferredMaintenanceWindow>
</DeferredMaintenanceWindows>
<Tags>
<Tag>
<Value>newtag</Value>
<Key>mytag</Key>
</Tag>
</Tags>
<VpcSecurityGroups>
<VpcSecurityGroup>
<VpcSecurityGroupId>sh-a1a23ab</VpcSecurityGroupId>
<Status>active</Status>
</VpcSecurityGroup>
</VpcSecurityGroups>
<ClusterParameterGroups>
<ClusterParameterGroup>
<ParameterGroupName>default.redshift-1.0</ParameterGroupName>
<ParameterApplyStatus>in-sync</ParameterApplyStatus>
</ClusterParameterGroup>
</ClusterParameterGroups>
<Encrypted>false</Encrypted>
<MaintenanceTrackName>current</MaintenanceTrackName>
<PendingModifiedValues>
<ClusterType>multi-node</ClusterType>
<NumberOfNodes>6</NumberOfNodes>
<NodeType>dc2.large</NodeType>
</PendingModifiedValues>
<PreferredMaintenanceWindow>sun:23:15-mon:03:15</PreferredMaintenanceWindow>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<ClusterStatus>resizing</ClusterStatus>
</Cluster>
</ResizeClusterResult>
<ResponseMetadata>
<RequestId>d504c6c0-28f5-11ea-8cc9-43f1872b4b75</RequestId>
</ResponseMetadata>
</ResizeClusterResponse>

See Also

For more information about using this API in one of the language-specific AWS 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 V3
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. 212) 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. 388).

**ClusterIdentifier**

The identifier of the cluster that will be created from restoring the snapshot.

Constraints:

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

Type: String

Required: Yes

**SnapshotIdentifier**

The name of the snapshot from which to create the new cluster. This parameter isn't case sensitive.

Example: my-snapshot-id

Type: String

Required: Yes

**AdditionalInfo**

Reserved.

Type: String

Required: No

**AllowVersionUpgrade**

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

Default: true
**Type:** Boolean  
**Required:** No  

**AutomatedSnapshotRetentionPeriod**  
The number of days that automated snapshots are retained. If the value is 0, automated snapshots are disabled. Even if automated snapshots are disabled, you can still create manual snapshots when you want with CreateClusterSnapshot (p. 42).

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-2a

**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 a cluster in VPC can be restored only in VPC. Therefore, you must provide subnet group name where you want the cluster restored.
Type: String
Required: No

**ElasticIp**

The elastic IP (EIP) address for the cluster.

Type: String
Required: No

**EnhancedVpcRouting**

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

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

Default: false
Type: Boolean
Required: No

**HsmClientCertificateIdentifier**

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

Type: String
Required: No

**HsmConfigurationIdentifier**

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

Type: String
Required: No

**IamRoles.IamRoleArn.N**

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

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

Type: Array of strings
Required: No

**KmsKeyId**

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

Type: String
Required: No
**MaintenanceTrackName**

The name of the maintenance track for the restored cluster. When you take a snapshot, the snapshot inherits the `MaintenanceTrack` value from the cluster. The snapshot might be on a different track than the cluster that was the source for the snapshot. For example, suppose that you take a snapshot of a cluster that is on the current track and then change the cluster to be on the trailing track. In this case, the snapshot and the source cluster are on different tracks.

Type: String

Required: No

**ManualSnapshotRetentionPeriod**

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

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

Type: Integer

Required: No

**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

**NumberOfNodes**

The number of nodes specified when provisioning the restored cluster.

Type: Integer

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

**SnapshotScheduleIdentifier**

A unique identifier for the snapshot schedule.

Type: String
Required: No

**VpcSecurityGroupIds.VpcSecurityGroupId.N**

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

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

VPC security groups only apply to clusters in VPCs.

Type: Array of strings
Required: No

---

**Response Elements**

The following element is returned by the service.
Cluster

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

AccessToSnapshotDenied

The owner of the specified snapshot has not authorized your account to access the snapshot.

HTTP Status Code: 400

ClusterAlreadyExists

The account already has a cluster with the given identifier.

HTTP Status Code: 400

ClusterParameterGroupNotFound

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

HTTP Status Code: 404

ClusterQuotaExceeded

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

HTTP Status Code: 400

ClusterSecurityGroupNotFound

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

HTTP Status Code: 404

ClusterSnapshotNotFound

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

HTTP Status Code: 404

ClusterSubnetGroupNotFoundFault

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

HTTP Status Code: 400

DependentServiceRequestThrottlingFault

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

HTTP Status Code: 400

HsmClientCertificateNotFoundFault

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

HTTP Status Code: 400
**HsmConfigurationNotFoundFault**

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

HTTP Status Code: 400

**InsufficientClusterCapacity**

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

HTTP Status Code: 400

**InvalidClusterSnapshotState**

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

HTTP Status Code: 400

**InvalidClusterSubnetGroupStateFault**

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

HTTP Status Code: 400

**InvalidClusterTrack**

The provided cluster track name is not valid.

HTTP Status Code: 400

**InvalidElasticIpFault**

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

HTTP Status Code: 400

**InvalidRestore**

The restore is invalid.

HTTP Status Code: 406

**InvalidSubnet**

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

HTTP Status Code: 400

**InvalidTagFault**

The tag is invalid.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The cluster subnet group does not cover all Availability Zones.

HTTP Status Code: 400

**LimitExceededFault**

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

HTTP Status Code: 400

**NumberOfNodesPerClusterLimitExceeded**

The operation would exceed the number of nodes allowed for a cluster.
HTTP Status Code: 400
**NumberOfNodesQuotaExceeded**

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

HTTP Status Code: 400
**SnapshotScheduleNotFound**

We could not find the specified snapshot schedule.

HTTP Status Code: 400
**TagLimitExceededFault**

You have exceeded the number of tags allowed.

HTTP Status Code: 400
**UnauthorizedOperation**

Your account is not authorized to perform the requested operation.

HTTP Status Code: 400

Example

Sample Request

```plaintext
https://redshift.us-east-2.amazonaws.com/
?Action=RestoreFromClusterSnapshot
&ClusterIdentifier=mycluster
&SnapshotIdentifier=mysnapshotid
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678d7dd9d01ee2ff3a45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```xml
<RestoreFromClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RestoreFromClusterSnapshotResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Modifying</ClusterAvailabilityStatus>
      <VpcId>vpc-8abc123</VpcId>
      <PubliclyAccessible>true</PubliclyAccessible>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles/>
    </Cluster>
  </RestoreFromClusterSnapshotResult>
</RestoreFromClusterSnapshotResponse>
```
<ClusterSecurityGroups/>
<Type>dc2.large</Type>
<ClusterSubnetGroupName>default</ClusterSubnetGroupName>
<NextMaintenanceWindowStartTime>2019-12-29T23:15:00Z</NextMaintenanceWindowStartTime>
<DeferredMaintenanceWindows/>
<Tags/>
<VpcSecurityGroups>
  <VpcSecurityGroup>
    <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
    <Status>active</Status>
  </VpcSecurityGroup>
</VpcSecurityGroups>
<ClusterParameterGroups>
  <ClusterParameterGroup>
    <ParameterGroupName>default.redshift-1.0</ParameterGroupName>
    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
  </ClusterParameterGroup>
</ClusterParameterGroups>
<Encrypted>false</Encrypted>
<MaintenanceTrackName>current</MaintenanceTrackName>
<PendingModifiedValues/>
<AutomatedSnapshotRetentionPeriod>1</AutomatedSnapshotRetentionPeriod>
<ClusterStatus>creating</ClusterStatus>
</Cluster>
</RestoreFromClusterSnapshotResult>
<ResponseMetadata>
  <RequestId>56190ef5-28f6-11ea-8a28-2fd1719d0e86</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 V3
Create 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. 388).

- **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 (p. 281) operation.

Type: TableRestoreStatus (p. 380) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**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

Example

Sample Request

```https://redshift.us-east-2.amazonaws.com/?Action=RestoreTableFromClusterSnapshot&ClusterIdentifier=mycluster&SSnapshotIdentifier=mysnapshotid&SourceDatabaseName=dev&SourceSchemaName=public&SourceTableName=mytable&TargetDatabaseName=dev&TargetSchemaName=public&NewTableName=mytable-clone&SignatureMethod=HmacSHA256&SignatureVersion=4&Version=2012-12-01&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request&X-Amz-Date=20190825T160000Z&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b```

Sample Response

```<RestoreTableFromClusterSnapshotResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">  <RestoreTableFromClusterSnapshotResult>    <TableRestoreStatus>      <NewTableName>mytable-clone</NewTableName>      <ClusterIdentifier>mycluster</ClusterIdentifier>      <SnapshotIdentifier>mysnapshotid</SnapshotIdentifier>      <SourceDatabaseName>dev</SourceDatabaseName>      <SourceTableName>mytable</SourceTableName>      <SourceSchemaName>public</SourceSchemaName>      <TargetDatabaseName>dev</TargetDatabaseName>      <TargetSchemaName>public</TargetSchemaName>      <RequestId>z1116630-0e80-46f4-ba86-bd9670411ebd</RequestId>      <Status>PENDING</Status>    </TableRestoreStatus>  </RestoreTableFromClusterSnapshotResult>  <ResponseMetadata>    <RequestId>cd0df3b1-28d5-11ea-a07c-5d44c0d19e91</RequestId>  </ResponseMetadata> </RestoreTableFromClusterSnapshotResponse>```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
ResumeCluster

Resumes a paused cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 388).

**ClusterIdentifier**

The identifier of the cluster to be resumed.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

**Cluster**

Describes a cluster.

Type: Cluster (p. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

**ClusterNotFound**

The ClusterIdentifier parameter does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidClusterState**

The specified cluster is not in the available state.

HTTP Status Code: 400

See Also

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

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

API Version 2012-12-01
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V3
RevokeClusterSecurityGroupIngress

RevokeClusterSecurityGroupIngress

Revoke 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. 8). 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. 388).

**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. 316) object
Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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-2.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-2/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>d8ef363-6502-11e2-a8da-655adc216806</RequestId>
</ResponseMetadata>
</RevokeClusterSecurityGroupIngressResponse>

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS Command Line Interface
• AWS SDK for .NET
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for JavaScript
• AWS SDK for PHP V3
• AWS SDK for Python
• AWS SDK for Ruby V3
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. 388).

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. 367) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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 V3
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. 388).

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. 301) object

Errors

For information about the errors that are common to all actions, see Common Errors (p. 390).

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

Example

Sample Request

https://redshift.us-east-2.amazonaws.com/
Amazon Redshift API Reference

Example

```
?Action=RotateEncryptionKey
&ClusterIdentifier=mycluster
&SignatureMethod=HmacSHA256&SignatureVersion=4
&Version=2012-12-01
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIAIOSFODNN7EXAMPLE/20190817/us-east-2/redshift/aws4_request
&X-Amz-Date=20190825T160000Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=0aa1234bb5cc678ddddd901ee2ff3aa45678b90c12d345e6ff789012345a6b7b
```

Sample Response

```
<RotateEncryptionKeyResponse xmlns="http://redshift.amazonaws.com/doc/2012-12-01/">
  <RotateEncryptionKeyResult>
    <Cluster>
      <AllowVersionUpgrade>true</AllowVersionUpgrade>
      <ClusterIdentifier>mycluster</ClusterIdentifier>
      <NumberOfNodes>1</NumberOfNodes>
      <AvailabilityZone>us-east-2a</AvailabilityZone>
      <ClusterVersion>1.0</ClusterVersion>
      <ManualSnapshotRetentionPeriod>-1</ManualSnapshotRetentionPeriod>
      <ClusterAvailabilityStatus>Modifying</ClusterAvailabilityStatus>
      <Endpoint>
        <Port>5439</Port>
        <Address>mycluster.cmeaswgehua.us-east-2.redshift.amazonaws.com</Address>
      </Endpoint>
      <VpcId>vpc-1ab1a1b1</VpcId>
      <PubliclyAccessible>false</PubliclyAccessible>
      <ClusterCreateTime>2019-12-25T11:21:49.458Z</ClusterCreateTime>
      <MasterUsername>adminuser</MasterUsername>
      <DBName>dev</DBName>
      <EnhancedVpcRouting>false</EnhancedVpcRouting>
      <IamRoles>
        <ClusterIamRole>
          <IamRoleArn>arn:aws:iam::123456789012:role/myRedshiftRole</IamRoleArn>
          <ApplyStatus>in-sync</ApplyStatus>
        </ClusterIamRole>
      </IamRoles>
      <ClusterSecurityGroups/>
      <NodeType>dc2.large</NodeType>
      <ClusterSubnetGroupName>default</ClusterSubnetGroupName>
      <NextMaintenanceWindowStartTime>2019-12-28T16:00:00Z</NextMaintenanceWindowStartTime>
      <DeferredMaintenanceWindows/>
      <Tags/>
      <VpcSecurityGroups/>
      <VpcSecurityGroupId>sh-a1a123ab</VpcSecurityGroupId>
      <Status>active</Status>
    </VpcSecurityGroup>
  </Cluster>
</RotateEncryptionKeyResponse>
```
See Also

For more information about using this API in one of the language-specific AWS 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 V3
Data Types

The Amazon Redshift API contains several data types that various actions use. This section describes each data type in detail.

Note
The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AccountAttribute (p. 297)
- AccountWithRestoreAccess (p. 298)
- AttributeValueTarget (p. 299)
- AvailabilityZone (p. 300)
- Cluster (p. 301)
- ClusterAssociatedToSchedule (p. 308)
- ClusterDbRevision (p. 309)
- ClusterIamRole (p. 310)
- ClusterNode (p. 311)
- ClusterParameterGroup (p. 312)
- ClusterParameterGroupStatus (p. 313)
- ClusterParameterStatus (p. 314)
- ClusterSecurityGroup (p. 316)
- ClusterSecurityGroupMembership (p. 318)
- ClusterSnapshotCopyStatus (p. 319)
- ClusterSubnetGroup (p. 320)
- ClusterVersion (p. 322)
- DataTransferProgress (p. 323)
- DefaultClusterParameters (p. 325)
- DeferredMaintenanceWindow (p. 326)
- DeleteClusterSnapshotMessage (p. 327)
- EC2SecurityGroup (p. 328)
- ElasticIpStatus (p. 329)
- Endpoint (p. 330)
- Event (p. 331)
- EventCategoriesMap (p. 333)
- EventInfoMap (p. 334)
- EventSubscription (p. 335)
- HsmClientCertificate (p. 337)
- HsmConfiguration (p. 338)
- HsmStatus (p. 340)
- IPRange (p. 341)
- MaintenanceTrack (p. 342)
- NodeConfigurationOption (p. 343)
- NodeConfigurationOptionsFilter (p. 344)
• OrderableClusterOption (p. 345)
• Parameter (p. 346)
• PauseClusterMessage (p. 348)
• PendingModifiedValues (p. 349)
• RecurringCharge (p. 351)
• ReservedNode (p. 352)
• ReservedNodeOffering (p. 355)
• ResizeClusterMessage (p. 357)
• ResizeInfo (p. 358)
• RestoreStatus (p. 359)
• ResumeClusterMessage (p. 361)
• RevisionTarget (p. 362)
• ScheduledAction (p. 363)
• ScheduledActionFilter (p. 365)
• ScheduledActionType (p. 366)
• Snapshot (p. 367)
• SnapshotCopyGrant (p. 372)
• SnapshotErrorMessage (p. 373)
• SnapshotSchedule (p. 374)
• SnapshotSortingEntity (p. 376)
• Subnet (p. 377)
• SupportedOperation (p. 378)
• SupportedPlatform (p. 379)
• TableRestoreStatus (p. 380)
• Tag (p. 383)
• TaggedResource (p. 384)
• UpdateTarget (p. 386)
• VpcSecurityGroupMembership (p. 387)
AccountAttribute

A name value pair that describes an aspect of an account.

Contents

Note
In the following list, the required parameters are described first.

AttributeName
The name of the attribute.
Type: String
Required: No

AttributeValueTarget
A list of attribute values.
Type: Array of AttributeValueTarget 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 V3
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 V3
AttributeValueTarget

Describes an attribute value.

Contents

Note
In the following list, the required parameters are described first.

AttributeValue

The value of the attribute.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
AvailabilityZone

Describes an availability zone.

Contents

Note
In the following list, the required parameters are described first.

Name
The name of the availability zone.
Type: String
Required: No

SupportedPlatforms.SupportedPlatform.N
Type: Array of SupportedPlatform (p. 379) 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 V3
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

ClusterAvailabilityStatus

The availability status of the cluster for queries. Possible values are the following:

- Available - The cluster is available for queries.
- Unavailable - The cluster is not available for queries.
- Maintenance - The cluster is intermittently available for queries due to maintenance activities.
- Modifying - The cluster is intermittently available for queries due to changes that modify the cluster.
- Failed - The cluster failed and is not available for queries.

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. 311) objects

Required: No

**ClusterParameterGroups.ClusterParameterGroup.N**

The list of cluster parameter groups that are associated with this cluster. Each parameter group in the list is returned with its status.

Type: Array of [ClusterParameterGroupStatus](p. 313) objects

Required: No

**ClusterPublicKey**

The public key for the cluster.

Type: String

Required: No

**ClusterRevisionNumber**

The specific revision number of the database in the cluster.

Type: String

Required: No


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](p. 318) parameter.

Type: Array of [ClusterSecurityGroupMembership](p. 318) 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. 319) object

Required: No

**ClusterStatus**

The current state of the cluster. Possible values are the following:

- available
- available, prep-for-resize
- available, resize-cleanup
- cancelling-resize
- creating
- deleting
- final-snapshot
- hardware-failure
- incompatible-hsm
- incompatible-network
- incompatible-parameters
- incompatible-restore
- modifying
- paused
- rebooting
- renaming
- resizing
- rotating-keys
- storage-full
- updating-hsm

Type: String
Required: No

**ClusterSubnetGroupName**

The name of the subnet group that is associated with the cluster. This parameter is valid only when the cluster is in a VPC.

Type: String
Required: No

**ClusterVersion**

The version ID of the Amazon Redshift engine that is running on the cluster.

Type: String
Required: No

**DataTransferProgress**

Type: [DataTransferProgress](p. 323) object
Required: No

**DBName**

The name of the initial database that was created when the cluster was created. This same name is returned for the life of the cluster. If an initial database was not specified, a database named devdev was created by default.

Type: String
Required: No

**DeferredMaintenanceWindows.DeferredMaintenanceWindow.N**

Describes a group of DeferredMaintenanceWindow objects.

Type: Array of [DeferredMaintenanceWindow](p. 326) objects
**ElasticIpStatus**

The status of the elastic IP (EIP) address.

Type: ElasticIpStatus (p. 329) object

Required: No

**ElasticResizeNumberOfNodeOptions**

The number of nodes that you can resize the cluster to with the elastic resize method.

Type: String

Required: No

**Encrypted**

A boolean value that, if true, indicates that data in the cluster is encrypted at rest.

Type: Boolean

Required: No

**Endpoint**

The connection endpoint.

Type: Endpoint (p. 330) object

Required: No

**EnhancedVpcRouting**

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

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

Default: false

Type: Boolean

Required: No

**ExpectedNextSnapshotScheduleTime**

The date and time when the next snapshot is expected to be taken for clusters with a valid snapshot schedule and backups enabled.

Type: Timestamp

Required: No

**ExpectedNextSnapshotScheduleTimeStatus**

The status of next expected snapshot for clusters having a valid snapshot schedule and backups enabled. Possible values are the following:

- OnTrack - The next snapshot is expected to be taken on time.
- Pending - The next snapshot is pending to be taken.

Type: String
Required: No

**HsmStatus**

A value that reports whether the Amazon Redshift cluster has finished applying any hardware security module (HSM) settings changes specified in a modify cluster command.

Values: active, applying

Type: `HsmStatus (p. 340)` 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. 310)` objects

Required: No

**KmsKeyId**

The AWS Key Management Service (AWS KMS) key ID of the encryption key used to encrypt data in the cluster.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track for the cluster.

Type: String

Required: No

**ManualSnapshotRetentionPeriod**

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

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

Type: Integer

Required: No

**MasterUsername**

The master user name for the cluster. This name is used to connect to the database that is specified in the `DBName` parameter.

Type: String

Required: No

**ModifyStatus**

The status of a modify operation, if any, initiated for the cluster.

Type: String

Required: No
**NextMaintenanceWindowStartTime**

The date and time in UTC when system maintenance can begin.

Type: Timestamp

Required: No

**NodeType**

The node type for the nodes in the cluster.

Type: String

Required: No

**NumberOfNodes**

The number of compute nodes in the cluster.

Type: Integer

Required: No

**PendingActions.member.N**

Cluster operations that are waiting to be started.

Type: Array of strings

Required: No

**PendingModifiedValues**

A value that, if present, indicates that changes to the cluster are pending. Specific pending changes are identified by subelements.

Type: `PendingModifiedValues (p. 349)` object

Required: No

**PreferredMaintenanceWindow**

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

Type: String

Required: No

**PubliclyAccessible**

A boolean value that, if `true`, indicates that the cluster can be accessed from a public network.

Type: Boolean

Required: No

**ResizeInfo**

Returns the following:

- AllowCancelResize: a boolean value indicating if the resize operation can be cancelled.
- ResizeType: Returns ClassicResize

Type: `ResizeInfo (p. 358)` object

Required: No
**RestoreStatus**

A value that describes the status of a cluster restore action. This parameter returns null if the cluster was not created by restoring a snapshot.

Type: RestoreStatus (p. 359) object

Required: No

**SnapshotScheduleIdentifier**

A unique identifier for the cluster snapshot schedule.

Type: String

Required: No

**SnapshotScheduleState**

The current state of the cluster snapshot schedule.

Type: String

Valid Values: MODIFYING | ACTIVE | FAILED

Required: No

**Tags.Tag.N**

The list of tags for the cluster.

Type: Array of Tag (p. 383) 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. 387) 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 V3
ClusterAssociatedToSchedule

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier
Type: String
Required: No

ScheduleAssociationState
Type: String
Valid Values: MODIFYING | ACTIVE | FAILED
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
ClusterDbRevision

Describes a ClusterDbRevision.

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier
The unique identifier of the cluster.
Type: String
Required: No

CurrentDatabaseRevision
A string representing the current cluster version.
Type: String
Required: No

DatabaseRevisionReleaseDate
The date on which the database revision was released.
Type: Timestamp
Required: No

RevisionTargets.RevisionTarget.N
A list of RevisionTarget objects, where each object describes the database revision that a cluster can be updated to.
Type: Array of RevisionTarget (p. 362) 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 V3
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 V3
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 V3
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. 383) 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 V3
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. 314) 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 V3
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 V3
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. 328) 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. 341) objects

Required: No

Tags.Tag.N

The list of tags for the cluster security group.

Type: Array of Tag (p. 383) 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 V3
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 V3
ClusterSnapshotCopyStatus

Returns the destination region and retention period that are configured for cross-region snapshot copy.

Contents

Note
In the following list, the required parameters are described first.

DestinationRegion

The destination region that snapshots are automatically copied to when cross-region snapshot copy is enabled.

Type: String

Required: No

ManualSnapshotRetentionPeriod

The number of days that automated snapshots are retained in the destination region after they are copied from a source region. If the value is -1, the manual snapshot is retained indefinitely.

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

Type: Integer

Required: No

RetentionPeriod

The number of days that automated snapshots are retained in the destination region after they are copied from a source region.

Type: Long

Required: No

SnapshotCopyGrantName

The name of the snapshot copy grant.

Type: String

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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. 377) elements.
Type: Array of Subnet (p. 377) objects
Required: No

Tags.Tag.N
The list of tags for the cluster subnet group.
Type: Array of Tag (p. 383) 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 V3
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 V3
DataTransferProgress

Describes the status of a cluster while it is in the process of resizing with an incremental resize.

Contents

Note

In the following list, the required parameters are described first.

CurrentRateInMegaBytesPerSecond

Describes the data transfer rate in MB's per second.

Type: Double

Required: No

DataTransferredInMegaBytes

Describes the total amount of data that has been transferred in MB's.

Type: Long

Required: No

ElapsedTimeInSeconds

Describes the number of seconds that have elapsed during the data transfer.

Type: Long

Required: No

EstimatedTimeToCompletionInSeconds

Describes the estimated number of seconds remaining to complete the transfer.

Type: Long

Required: No

Status

Describes the status of the cluster. While the transfer is in progress the status is transferringdata.

Type: String

Required: No

TotalDataInMegaBytes

Describes the total amount of data to be transferred in megabytes.

Type: Long

Required: No

See Also

For more information about using this API in one of the language-specific AWS SDKs, see the following:
• AWS SDK for C++
• AWS SDK for Go
• AWS SDK for Java
• AWS SDK for Ruby V3
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 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 V3
DeferredMaintenanceWindow

Describes a deferred maintenance window

Contents

Note
In the following list, the required parameters are described first.

DeferredMaintenanceEndTime
A timestamp for the end of the time period when we defer maintenance.
Type: Timestamp
Required: No

DeferredMaintenanceIdentifier
A unique identifier for the maintenance window.
Type: String
Required: No

DeferredMaintenanceStartTime
A timestamp for the beginning of the time period when we defer maintenance.
Type: Timestamp
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
DeleteClusterSnapshotMessage

Contents

Note
In the following list, the required parameters are described first.

SnapshotIdentifier

The unique identifier of the manual snapshot to be deleted.

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

Type: String
Required: Yes

SnapshotClusterIdentifier

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

Constraints: Must be the name of valid cluster.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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. 383) 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 V3
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 V3
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 V3
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 | scheduled-action

Required: No

See Also

For more information about using this 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 V3
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. 334) 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 V3
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 V3
EventSubscription

Describes event subscriptions.

Contents

**Note**
In the following list, the required parameters are described first.

**CustomerAwsId**

The AWS customer account associated with the Amazon Redshift event notification subscription.

Type: String

Required: No

**CustSubscriptionId**

The name of the Amazon Redshift event notification subscription.

Type: String

Required: No

**Enabled**

A boolean value indicating whether the subscription is enabled; `true` indicates that the subscription is enabled.

Type: Boolean

Required: No

**EventCategoriesList.EventCategory.N**

The list of Amazon Redshift event categories specified in the event notification subscription.

Values: Configuration, Management, Monitoring, Security

Type: Array of strings

Required: No

**Severity**

The event severity specified in the Amazon Redshift event notification subscription.

Values: ERROR, INFO

Type: String

Required: No

**SnsTopicArn**

The Amazon Resource Name (ARN) of the Amazon SNS topic used by the event notification subscription.

Type: String

Required: No
**SourceIdsList.SourceId.N**

A list of the sources that publish events to the Amazon Redshift event notification subscription.

Type: Array of strings

Required: No

**SourceType**

The source type of the events returned by the Amazon Redshift event notification, such as cluster, cluster-snapshot, cluster-parameter-group, cluster-security-group, or scheduled-action.

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. 383) 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 V3
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. 383) 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 V3
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. 383) 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 V3
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 V3
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. 383) 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 V3
MaintenanceTrack

Defines a maintenance track that determines which Amazon Redshift version to apply during a maintenance window. If the value for MaintenanceTrack is current, the cluster is updated to the most recently certified maintenance release. If the value is trailing, the cluster is updated to the previously certified maintenance release.

Contents

**Note**
In the following list, the required parameters are described first.

**DatabaseVersion**

The version number for the cluster release.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track. Possible values are current and trailing.

Type: String

Required: No

**UpdateTargets.UpdateTarget.N**

An array of UpdateTarget (p. 386) objects to update with the maintenance track.

Type: Array of UpdateTarget (p. 386) 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 V3
NodeConfigurationOption

A list of node configurations.

Contents

Note
In the following list, the required parameters are described first.

EstimatedDiskUtilizationPercent
The estimated disk utilization percentage.
Type: Double
Required: No

Mode
The category of the node configuration recommendation.
Type: String
Valid Values: standard | high-performance
Required: No

NodeType
The node type, such as, "ds2.8xlarge".
Type: String
Required: No

NumberOfNodes
The number of nodes.
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 V3
NodeConfigurationOptionsFilter

A set of elements to filter the returned node configurations.

Contents

Note
In the following list, the required parameters are described first.

Name
The name of the element to filter.

Type: String

Valid Values: NodeType | NumberOfNodes | EstimatedDiskUtilizationPercent | Mode

Required: No

Operator
The filter operator. If filter Name is NodeType only the 'in' operator is supported. Provide one value to evaluate for 'eq', 'lt', 'le', 'gt', and 'ge'. Provide two values to evaluate for 'between'. Provide a list of values for 'in'.

Type: String

Valid Values: eq | lt | gt | le | ge | in | between

Required: No

Value.item.N

List of values. Compare Name using Operator to Values. If filter Name is NumberOfNodes, then values can range from 0 to 200. If filter Name is EstimatedDiskUtilizationPercent, then values can range from 0 to 100. For example, filter NumberOfNodes (name) GT (operator) 3 (values).

Type: Array of strings

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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. 300)` 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 V3
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 V3
PauseClusterMessage

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier
The identifier of the cluster to be paused.
Type: String
Required: Yes

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
PendingModifiedValues

Describes cluster attributes that are in a pending state. A change to one or more the attributes was requested and is in progress or will be applied.

Contents

Note
In the following list, the required parameters are described first.

AutomatedSnapshotRetentionPeriod

The pending or in-progress change of the automated snapshot retention period.

Type: Integer
Required: No

ClusterIdentifier

The pending or in-progress change of the new identifier for the cluster.

Type: String
Required: No

ClusterType

The pending or in-progress change of the cluster type.

Type: String
Required: No

ClusterVersion

The pending or in-progress change of the service version.

Type: String
Required: No

EncryptionType

The encryption type for a cluster. Possible values are: KMS and None. For the China region the possible values are None, and Legacy.

Type: String
Required: No

EnhancedVpcRouting

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

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

Default: false
Type: Boolean
Required: No
**MaintenanceTrackName**

The name of the maintenance track that the cluster will change to during the next maintenance window.

Type: String

Required: No

**MasterUserPassword**

The pending or in-progress change of the master user password for the cluster.

Type: String

Required: No

**NodeType**

The pending or in-progress change of the cluster's node type.

Type: String

Required: No

**NumberOfNodes**

The pending or in-progress change of the number of nodes in the cluster.

Type: Integer

Required: No

**PubliclyAccessible**

The pending or in-progress change of the ability to connect to the cluster from the public network.

Type: Boolean

Required: No

**See Also**

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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 V3
ReservedNode

Describes a reserved node. You can call the `DescribeReservedNodeOfferings (p. 165)` 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. 351)` objects
Required: No

**ReservedNodeId**

The unique identifier for the reservation.

Type: String

Required: No

**ReservedNodeOfferingId**

The identifier for the reserved node offering.

Type: String

Required: No

**ReservedNodeOfferingType**

Type: String

Valid Values: Regular | Upgradable

Required: No

**StartTime**

The time the reservation started. You purchase a reserved node offering for a duration. This is the start time of that duration.

Type: Timestamp

Required: No

**State**

The state of the reserved compute node.

Possible Values:
- pending-payment-This reserved node has recently been purchased, and the sale has been approved, but payment has not yet been confirmed.
- active-This reserved node is owned by the caller and is available for use.
- payment-failed-Payment failed for the purchase attempt.
- retired-The reserved node is no longer available.
- exchanging-The owner is exchanging the reserved node for another reserved node.

Type: String

Required: No

**UsagePrice**

The hourly rate Amazon Redshift charges you for this reserved node.

Type: Double

Required: No

**See Also**

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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. 351) objects
Required: No

ReservedNodeOfferingId
The offering identifier.
Type: String
Required: No

**ReservedNodeOfferingType**

Type: String

Valid Values: Regular | Upgradable

Required: No

**UsagePrice**

The rate you are charged for each hour the cluster that is using the offering is running.

Type: Double

Required: No

**See Also**

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
ResizeClusterMessage

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier
The unique identifier for the cluster to resize.
Type: String
Required: Yes

Classic
A boolean value indicating whether the resize operation is using the classic resize process. If you don't provide this parameter or set the value to false, the resize type is elastic.
Type: Boolean
Required: No

ClusterType
The new cluster type for the specified cluster.
Type: String
Required: No

NodeType
The new node type for the nodes you are adding. If not specified, the cluster's current node type is used.
Type: String
Required: No

NumberOfNodes
The new number of nodes for the cluster.
Type: Integer
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
ResizeInfo

Describes a resize operation.

Contents

Note
In the following list, the required parameters are described first.

AllowCancelResize
A boolean value indicating if the resize operation can be cancelled.
Type: Boolean
Required: No

ResizeType
Returns the value ClassicResize.
Type: String
Required: No

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
**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. This field is only updated when you restore to DC2 and DS2 node types.

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. This field is only updated when you restore to DC2 and DS2 node types.

Type: Long

Required: No

**EstimatedTimeToCompletionInSeconds**

The estimate of the time remaining before the restore will complete. Returns 0 for a completed restore. This field is only updated when you restore to DC2 and DS2 node types.

Type: Long

Required: No

**ProgressInMegaBytes**

The number of megabytes that have been transferred from snapshot storage. This field is only updated when you restore to DC2 and DS2 node types.

Type: Long

Required: No

**SnapshotSizeInMegaBytes**

The size of the set of snapshot data used to restore the cluster. This field is only updated when you restore to DC2 and DS2 node types.

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 V3
ResumeClusterMessage

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier
The identifier of the cluster to be resumed.
Type: String
Required: Yes

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
RevisionTarget

Describes a RevisionTarget.

Contents

Note
In the following list, the required parameters are described first.

DatabaseRevision
A unique string that identifies the version to update the cluster to. You can use this value in ModifyClusterDbRevision (p. 221).

Type: String
Required: No

DatabaseRevisionReleaseDate
The date on which the database revision was released.

Type: Timestamp
Required: No

Description
A string that describes the changes and features that will be applied to the cluster when it is updated to the corresponding ClusterDbRevision (p. 309).

Type: String
Required: No

See Also
For more information about using this 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 V3
ScheduledAction

Describes a scheduled action. You can use a scheduled action to trigger some Amazon Redshift API operations on a schedule. For information about which API operations can be scheduled, see ScheduledActionType (p. 366).

Contents

Note
In the following list, the required parameters are described first.

EndTime
The end time in UTC when the schedule is no longer active. After this time, the scheduled action does not trigger.

Type: Timestamp
Required: No

IamRole
The IAM role to assume to run the scheduled action. This IAM role must have permission to run the Amazon Redshift API operation in the scheduled action. This IAM role must allow the Amazon Redshift scheduler (Principal scheduler.redshift.amazonaws.com) to assume permissions on your behalf. For more information about the IAM role to use with the Amazon Redshift scheduler, see Using Identity-Based Policies for Amazon Redshift in the Amazon Redshift Cluster Management Guide.

Type: String
Required: No

NextInvocations.ScheduledActionTime.N
List of times when the scheduled action will run.

Type: Array of timestamps
Required: No

Schedule
The schedule for a one-time (at format) or recurring (cron format) scheduled action. Schedule invocations must be separated by at least one hour.

Format of at expressions is "at(yyyy-mm-ddThh:mm:ss)". For example, "at(2016-03-04T17:27:00)".

Format of cron expressions is "cron(Minutes Hours Day-of-month Month Day-of-week Year)". For example, "cron(0 10 ? * MON *)". For more information, see Cron Expressions in the Amazon CloudWatch Events User Guide.

Type: String
Required: No

ScheduledActionDescription
The description of the scheduled action.

Type: String
Required: No

**ScheduledActionName**

The name of the scheduled action.

Type: String

Required: No

**StartTime**

The start time in UTC when the schedule is active. Before this time, the scheduled action does not trigger.

Type: Timestamp

Required: No

**State**

The state of the scheduled action. For example, DISABLED.

Type: String

Valid Values: ACTIVE | DISABLED

Required: No

**TargetAction**

A JSON format string of the Amazon Redshift API operation with input parameters.

"{"ResizeCluster":{"NodeType":"ds2.8xlarge","ClusterIdentifier": "my-test-cluster","NumberOfNodes":3}}".

Type: ScheduledActionType (p. 366) 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 V3
ScheduledActionFilter

A set of elements to filter the returned scheduled actions.

Contents

Note
In the following list, the required parameters are described first.

Name
The type of element to filter.
Type: String
Valid Values: cluster-identifier | iam-role
Required: Yes

Values.item.N
List of values. Compare if the value (of type defined by Name) equals an item in the list of scheduled actions.
Type: Array of strings
Required: Yes

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
ScheduledActionType

The action type that specifies an Amazon Redshift API operation that is supported by the Amazon
Redshift scheduler.

Contents

Note
In the following list, the required parameters are described first.

PauseCluster
An action that runs a PauseCluster API operation.
Type: PauseClusterMessage (p. 348) object
Required: No

ResizeCluster
An action that runs a ResizeCluster API operation.
Type: ResizeClusterMessage (p. 357) object
Required: No

ResumeCluster
An action that runs a ResumeCluster API operation.
Type: ResumeClusterMessage (p. 361) 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 V3
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. 298)` objects
- **Required:** No

**ActualIncrementalBackupSizeInMegaBytes**
The size of the incremental backup.

- **Type:** Double
- **Required:** No

**AvailabilityZone**
The Availability Zone in which the cluster was created.

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

**BackupProgressInMegaBytes**
The number of megabytes that have been transferred to the snapshot backup.

- **Type:** Double
- **Required:** No

**ClusterCreateTime**
The time (UTC) when the cluster was originally created.

- **Type:** Timestamp
- **Required:** No

**ClusterIdentifier**
The identifier of the cluster for which the snapshot was taken.

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

**ClusterVersion**
The version ID of the Amazon Redshift engine that is running on the cluster.

- **Type:** String
Required: No

**CurrentBackupRateInMegabytesPerSecond**

The number of megabytes per second being transferred to the snapshot backup. Returns 0 for a completed backup.

Type: Double

Required: No

**DBName**

The name of the database that was created when the cluster was created.

Type: String

Required: No

**ElapsedTimeInSeconds**

The amount of time an in-progress snapshot backup has been running, or the amount of time it took a completed backup to finish.

Type: Long

Required: No

**Encrypted**

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

Type: Boolean

Required: No

**EncryptedWithHSM**

A boolean that indicates whether the snapshot data is encrypted using the HSM keys of the source cluster. true indicates that the data is encrypted using HSM keys.

Type: Boolean

Required: No

**EnhancedVpcRouting**

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

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

Default: false

Type: Boolean

Required: No

**EstimatedSecondsToCompletion**

The estimate of the time remaining before the snapshot backup will complete. Returns 0 for a completed backup.

Type: Long

Required: No
**KmsKeyId**

The AWS Key Management Service (KMS) key ID of the encryption key that was used to encrypt data in the cluster from which the snapshot was taken.

Type: String

Required: No

**MaintenanceTrackName**

The name of the maintenance track for the snapshot.

Type: String

Required: No

**ManualSnapshotRemainingDays**

The number of days until a manual snapshot will pass its retention period.

Type: Integer

Required: No

**ManualSnapshotRetentionPeriod**

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

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

Type: Integer

Required: No

**MasterUsername**

The master user name for the cluster.

Type: String

Required: No

**NodeType**

The node type of the nodes in the cluster.

Type: String

Required: No

**NumberOfNodes**

The number of nodes in the cluster.

Type: Integer

Required: No

**OwnerAccount**

For manual snapshots, the AWS customer account used to create or copy the snapshot. For automatic snapshots, the owner of the cluster. The owner can perform all snapshot actions, such as sharing a manual snapshot.

Type: String
Required: No

**Port**

The port that the cluster is listening on.

Type: Integer

Required: No

**RestorableNodeTypes.NodeType.N**

The list of node types that this cluster snapshot is able to restore into.

Type: Array of strings

Required: No

**SnapshotCreateTime**

The time (in UTC format) when Amazon Redshift began the snapshot. A snapshot contains a copy of the cluster data as of this exact time.

Type: Timestamp

Required: No

**SnapshotIdentifier**

The snapshot identifier that is provided in the request.

Type: String

Required: No

**SnapshotRetentionStartTime**

A timestamp representing the start of the retention period for the snapshot.

Type: Timestamp

Required: No

**SnapshotType**

The snapshot type. Snapshots created using CreateClusterSnapshot (p. 42) and CopyClusterSnapshot (p. 22) are of type "manual".

Type: String

Required: No

**SourceRegion**

The source region from which the snapshot was copied.

Type: String

Required: No

**Status**

The snapshot status. The value of the status depends on the API operation used:
- CreateClusterSnapshot (p. 42) and CopyClusterSnapshot (p. 22) returns status as "creating".
- DescribeClusterSnapshots (p. 120) returns status as "creating", "available", "final snapshot", or "failed".
• DeleteClusterSnapshot (p. 80) returns status as "deleted".
  Type: String
  Required: No

Tags.Tag.N
  The list of tags for the cluster snapshot.
  Type: Array of Tag (p. 383) 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 V3
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. 383) 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 V3
SnapshotErrorMessage

Describes the errors returned by a snapshot.

Contents

**Note**
In the following list, the required parameters are described first.

**FailureCode**
The failure code for the error.

Type: String
Required: No

**FailureReason**
The text message describing the error.

Type: String
Required: No

**SnapshotClusterIdentifier**
A unique identifier for the cluster.

Type: String
Required: No

**SnapshotIdentifier**
A unique identifier for the snapshot returning the error.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
SnapshotSchedule

Describes a snapshot schedule. You can set a regular interval for creating snapshots of a cluster. You can also schedule snapshots for specific dates.

Contents

Note
In the following list, the required parameters are described first.

AssociatedClusterCount
The number of clusters associated with the schedule.
Type: Integer
Required: No

AssociatedClusters.ClusterAssociatedToSchedule.N
A list of clusters associated with the schedule. A maximum of 100 clusters is returned.
Type: Array of ClusterAssociatedToSchedule (p. 308) objects
Required: No

NextInvocations.SnapshotTime.N
Type: Array of timestamps
Required: No

ScheduleDefinitions.ScheduleDefinition.N
A list of ScheduleDefinitions.
Type: Array of strings
Required: No

ScheduleDescription
The description of the schedule.
Type: String
Required: No

ScheduleIdentifier
A unique identifier for the schedule.
Type: String
Required: No

Tags.Tag.N
An optional set of tags describing the schedule.
Type: Array of Tag (p. 383) 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 V3
SnapShotSortingEntity

Describes a sorting entity

Contents

Note
In the following list, the required parameters are described first.

Attribute
The category for sorting the snapshots.

Type: String

Valid Values: SOURCE_TYPE | TOTAL_SIZE | CREATE_TIME

Required: Yes

SortOrder
The order for listing the attributes.

Type: String

Valid Values: ASC | DESC

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
Subnet

Describes a subnet.

Contents

Note
In the following list, the required parameters are described first.

SubnetAvailabilityZone

Type: AvailabilityZone (p. 300) 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 V3
SupportedOperation

Describes the operations that are allowed on a maintenance track.

Contents

Note
In the following list, the required parameters are described first.

OperationName
A list of the supported operations.
Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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 V3
TableRestoreStatus

Describes the status of a RestoreTableFromClusterSnapshot (p. 281) operation.

Contents

Note
In the following list, the required parameters are described first.

ClusterIdentifier

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

Type: String
Required: No

Message

A description of the status of the table restore request. Status values include SUCCEEDED, FAILED, CANCELED, PENDING, IN_PROGRESS.

Type: String
Required: No

NewTableName

The name of the table to create as a result of the table restore request.

Type: String
Required: No

ProgressInMegaBytes

The amount of data restored to the new table so far, in megabytes (MB).

Type: Long
Required: No

RequestTime

The time that the table restore request was made, in Universal Coordinated Time (UTC).

Type: Timestamp
Required: No

SnapshotIdentifier

The identifier of the snapshot that the table is being restored from.

Type: String
Required: No

SourceDatabaseName

The name of the source database that contains the table being restored.

Type: String
Required: No

**SourceSchemaName**

The name of the source schema that contains the table being restored.

Type: String

Required: No

**SourceTableName**

The name of the source table being restored.

Type: String

Required: No

**Status**

A value that describes the current state of the table restore request.

Valid Values: SUCCEEDED, FAILED, CANCELED, PENDING, IN_PROGRESS

Type: String

Valid Values: PENDING | IN_PROGRESS | SUCCEEDED | FAILED | CANCELED

Required: No

**TableRestoreRequestId**

The unique identifier for the table restore request.

Type: String

Required: No

**TargetDatabaseName**

The name of the database to restore the table to.

Type: String

Required: No

**TargetSchemaName**

The name of the schema to restore the table to.

Type: String

Required: No

**TotalDataInMegaBytes**

The total amount of data to restore to the new table, in megabytes (MB).

Type: Long

Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
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 V3
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-2:123456789: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 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 V3
UpdateTarget

A maintenance track that you can switch the current track to.

Contents

Note
In the following list, the required parameters are described first.

DatabaseVersion

The cluster version for the new maintenance track.

Type: String

Required: No

MaintenanceTrackName

The name of the new maintenance track.

Type: String

Required: No

SupportedOperations SupportedOperation N

A list of operations supported by the maintenance track.

Type: Array of SupportedOperation (p. 378) 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 V3
VpcSecurityGroupMembership

Describes the members of a VPC security group.

Contents

Note
In the following list, the required parameters are described first.

Status
The status of the VPC security group.

Type: String
Required: No

VpcSecurityGroupId
The identifier of the VPC security group.

Type: String
Required: No

See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V3
Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the Amazon Web Services General Reference.

Action
The action to be performed.
Type: string
Required: Yes

Version
The API version that the request is written for, expressed in the format YYYY-MM-DD.
Type: string
Required: Yes

X-Amz-Algorithm
The hash algorithm that you used to create the request signature.
Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.
Type: string
Valid Values: AWS4-HMAC-SHA256
Required: Conditional

X-Amz-Credential
The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string (“aws4_request”). The value is expressed in the following format: access_key/YYYYMMDD/region/service/aws4_request.

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the Amazon Web Services General Reference.
Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.
Type: string
Required: Conditional

X-Amz-Date
The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'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