# Amazon ElastiCache

## API Reference

## API Version 2015-02-02

# Amazon ElastiCache: API Reference

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# Welcome

Amazon ElastiCache is a web service that makes it easier to set up, operate, and scale a distributed cache in the cloud.

With ElastiCache, customers get all of the benefits of a high-performance, in-memory cache with less of the administrative burden involved in launching and managing a distributed cache. The service makes setup, scaling, and cluster failure handling much simpler than in a self-managed cache deployment.

In addition, through integration with Amazon CloudWatch, customers get enhanced visibility into the key performance statistics associated with their cache and can receive alarms if a part of their cache runs hot.

This document was last published on November 19, 2018.

# Actions

The following actions are supported:

- RevokeCacheSecurityGroupIngress (p. 154)
- TestFailover (p. 157)

# AddTagsToResource

Adds up to 50 cost allocation tags to the named resource. A cost allocation tag is a key-value pair where the key and value are case-sensitive. You can use cost allocation tags to categorize and track your AWS costs.

When you apply tags to your ElastiCache resources, AWS generates a cost allocation report as a comma-separated value (CSV) file with your usage and costs aggregated by your tags. You can apply tags that represent business categories (such as cost centers, application names, or owners) to organize your costs across multiple services. For more information, see Using Cost Allocation Tags in Amazon ElastiCache in the *ElastiCache User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ResourceName**

The Amazon Resource Name (ARN) of the resource to which the tags are to be added, for example `arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster` or `arn:aws:elasticache:us-west-2:0123456789:snapshot:mySnapshot`. ElastiCache resources are *cluster* and *snapshot*.

For more information about ARNs, see Amazon Resource Names (ARNs) and AWS Service Namespaces.

Type: String

Required: Yes

**Tags.Tag.N**

A list of cost allocation tags to be added to this resource. A tag is a key-value pair. A tag key must be accompanied by a tag value.

Type: Array of Tag (p. 223) objects

Required: Yes

## Response Elements

The following element is returned by the service.

**TagList.Tag.N**

A list of cost allocation tags as key-value pairs.

Type: Array of Tag (p. 223) objects

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidARN**

The requested Amazon Resource Name (ARN) does not refer to an existing resource.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

**TagQuotaPerResourceExceeded**

The request cannot be processed because it would cause the resource to have more than the allowed number of tags. The maximum number of tags permitted on a resource is 50.

HTTP Status Code: 400

# Example

## AddTagsToResource

### Sample Request

```
https://elasticache.us-east-1.amazonaws.com/
   ?Action=AddTagsToResource
   &ResourceName=arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Tags.Tag.1.Key=Service
   &Tags.Tag.1.Value=elasticache
   &Tags.Tag.2.Key=Region
   &Tags.Tag.2.Value=us-west-2
   &Version=2015-02-02
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

# See Also

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

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

- AWS SDK for Ruby V2

# AuthorizeCacheSecurityGroupIngress

Allows network ingress to a cache security group. Applications using ElastiCache must be running on Amazon EC2, and Amazon EC2 security groups are used as the authorization mechanism.

**Note**
You cannot authorize ingress from an Amazon EC2 security group in one region to an ElastiCache cluster in another region.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSecurityGroupName**

The cache security group that allows network ingress.

Type: String

Required: Yes

**EC2SecurityGroupName**

The Amazon EC2 security group to be authorized for ingress to the cache security group.

Type: String

Required: Yes

**EC2SecurityGroupOwnerId**

The AWS account number of the Amazon EC2 security group owner. Note that this is not the same thing as an AWS access key ID - you must provide a valid AWS account number for this parameter.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheSecurityGroup**

Represents the output of one of the following operations:

- `AuthorizeCacheSecurityGroupIngress`
- `CreateCacheSecurityGroup`
- `RevokeCacheSecurityGroupIngress`

Type: CacheSecurityGroup (p. 179) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**AuthorizationAlreadyExists**

The specified Amazon EC2 security group is already authorized for the specified cache security group.

HTTP Status Code: 400

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InvalidCacheSecurityGroupState**

The current state of the cache security group does not allow deletion.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Examples

## AuthorizeCacheSecurityGroupIngress

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=AuthorizeCacheSecurityGroupIngress
   &EC2SecurityGroupName=default
   &CacheSecurityGroupName=mygroup
   &EC2SecurityGroupOwnerId=1234-5678-1234
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

## Example

### Sample Response

```
<AuthorizeCacheSecurityGroupIngressResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
   <AuthorizeCacheSecurityGroupIngressResult>
```

```
      <CacheSecurityGroup>
         <EC2SecurityGroups>
            <EC2SecurityGroup>
               <Status>authorizing</Status>
               <EC2SecurityGroupName>default</EC2SecurityGroupName>
               <EC2SecurityGroupOwnerId>565419523791</EC2SecurityGroupOwnerId>
            </EC2SecurityGroup>
         </EC2SecurityGroups>
         <CacheSecurityGroupName>mygroup</CacheSecurityGroupName>
         <OwnerId>123456781234</OwnerId>
         <Description>My security group</Description>
      </CacheSecurityGroup>
   </AuthorizeCacheSecurityGroupIngress>
   <ResponseMetadata>
      <RequestId>817fa999-3647-11e0-ae57-f96cfe56749c</RequestId>
   </ResponseMetadata>
</AuthorizeCacheSecurityGroupIngressResponse>
```

# See Also

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

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

# CopySnapshot

Makes a copy of an existing snapshot.

**Note**
This operation is valid for Redis only.

**Important**
Users or groups that have permissions to use the `CopySnapshot` operation can create their own Amazon S3 buckets and copy snapshots to it. To control access to your snapshots, use an IAM policy to control who has the ability to use the `CopySnapshot` operation. For more information about using IAM to control the use of ElastiCache operations, see Exporting Snapshots and Authentication & Access Control.

You could receive the following error messages.

**Error Messages**

- **Error Message:** The S3 bucket %s is outside of the region.

  **Solution:** Create an Amazon S3 bucket in the same region as your snapshot. For more information, see Step 1: Create an Amazon S3 Bucket in the ElastiCache User Guide.
- **Error Message:** The S3 bucket %s does not exist.

  **Solution:** Create an Amazon S3 bucket in the same region as your snapshot. For more information, see Step 1: Create an Amazon S3 Bucket in the ElastiCache User Guide.
- **Error Message:** The S3 bucket %s is not owned by the authenticated user.

  **Solution:** Create an Amazon S3 bucket in the same region as your snapshot. For more information, see Step 1: Create an Amazon S3 Bucket in the ElastiCache User Guide.
- **Error Message:** The authenticated user does not have sufficient permissions to perform the desired activity.

  **Solution:** Contact your system administrator to get the needed permissions.
- **Error Message:** The S3 bucket %s already contains an object with key %s.

  **Solution:** Give the `TargetSnapshotName` a new and unique value. If exporting a snapshot, you could alternatively create a new Amazon S3 bucket and use this same value for `TargetSnapshotName`.
- **Error Message:** ElastiCache has not been granted READ permissions %s on the S3 Bucket.

  **Solution:** Add List and Read permissions on the bucket. For more information, see Step 2: Grant ElastiCache Access to Your Amazon S3 Bucket in the ElastiCache User Guide.
- **Error Message:** ElastiCache has not been granted WRITE permissions %s on the S3 Bucket.

  **Solution:** Add Upload/Delete permissions on the bucket. For more information, see Step 2: Grant ElastiCache Access to Your Amazon S3 Bucket in the ElastiCache User Guide.
- **Error Message:** ElastiCache has not been granted READ_ACP permissions %s on the S3 Bucket.

  **Solution:** Add View Permissions on the bucket. For more information, see Step 2: Grant ElastiCache Access to Your Amazon S3 Bucket in the ElastiCache User Guide.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**SourceSnapshotName**

The name of an existing snapshot from which to make a copy.

Type: String

Required: Yes

**TargetSnapshotName**

A name for the snapshot copy. ElastiCache does not permit overwriting a snapshot, therefore this name must be unique within its context - ElastiCache or an Amazon S3 bucket if exporting.

Type: String

Required: Yes

**TargetBucket**

The Amazon S3 bucket to which the snapshot is exported. This parameter is used only when exporting a snapshot for external access.

When using this parameter to export a snapshot, be sure Amazon ElastiCache has the needed permissions to this S3 bucket. For more information, see Step 2: Grant ElastiCache Access to Your Amazon S3 Bucket in the *Amazon ElastiCache User Guide*.

For more information, see Exporting a Snapshot in the *Amazon ElastiCache User Guide*.

Type: String

Required: No

# Response Elements

The following element is returned by the service.

**Snapshot**

Represents a copy of an entire Redis cluster as of the time when the snapshot was taken.

Type: Snapshot (p. 217) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidSnapshotState**

The current state of the snapshot does not allow the requested operation to occur.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotAlreadyExistsFault**

You already have a snapshot with the given name.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

**SnapshotQuotaExceededFault**

The request cannot be processed because it would exceed the maximum number of snapshots.

HTTP Status Code: 400

# Example

## Snapshot copy

The following example makes a copy of the snapshot `automatic.my-redis-primary-2016-04-27-03-15` named `my-snapshot-copy`.

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
    ?Action=CopySnapshot
    &SourceSnapshotName=automatic.my-redis-primary-2016-04-27-03-15
    &TargetSnapshotName=my-snapshot-copy
    &SignatureVersion=4
    &SignatureMethod=HmacSHA256
    &Timestamp=20141201T220302Z
    &Version=2015-02-02
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Date=20141201T220302Z
    &X-Amz-SignedHeaders=Host
    &X-Amz-Expires=20141201T220302Z
    &X-Amz-Credential=<credential>
    &X-Amz-Signature=<signature>
```

# See Also

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

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

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

# CreateCacheCluster

Creates a cluster. All nodes in the cluster run the same protocol-compliant cache engine software, either Memcached or Redis.

This operation is not supported for Redis (cluster mode enabled) clusters.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

The node group (shard) identifier. This parameter is stored as a lowercase string.

**Constraints:**

- A name must contain from 1 to 20 alphanumeric characters or hyphens.
- The first character must be a letter.
- A name cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

**AuthToken**

**Reserved parameter.** The password used to access a password protected server.

Password constraints:

- Must be only printable ASCII characters.
- Must be at least 16 characters and no more than 128 characters in length.
- Cannot contain any of the following characters: '/', '"', or '@'.

For more information, see AUTH password at http://redis.io/commands/AUTH.

Type: String

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**AZMode**

Specifies whether the nodes in this Memcached cluster are created in a single Availability Zone or created across multiple Availability Zones in the cluster's region.

This parameter is only supported for Memcached clusters.

If the `AZMode` and `PreferredAvailabilityZones` are not specified, ElastiCache assumes `single-az` mode.

Type: String

Valid Values: `single-az | cross-az`

Required: No

**CacheNodeType**

The compute and memory capacity of the nodes in the node group (shard).

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**CacheParameterGroupName**

The name of the parameter group to associate with this cluster. If this argument is omitted, the default parameter group for the specified engine is used. You cannot use any parameter group which has `cluster-enabled='yes'` when creating a cluster.

Type: String

Required: No

**CacheSecurityGroupNames.CacheSecurityGroupName.N**

A list of security group names to associate with this cluster.

Use this parameter only when you are creating a cluster outside of an Amazon Virtual Private Cloud (Amazon VPC).

Type: Array of strings

Required: No

**CacheSubnetGroupName**

The name of the subnet group to be used for the cluster.

Use this parameter only when you are creating a cluster in an Amazon Virtual Private Cloud (Amazon VPC).

> **Important**
> If you're going to launch your cluster in an Amazon VPC, you need to create a subnet group before you start creating a cluster. For more information, see Subnets and Subnet Groups.

Type: String

Required: No

**Engine**

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

Valid values for this parameter are: `memcached` | `redis`

Type: String

Required: No

**EngineVersion**

The version number of the cache engine to be used for this cluster. To view the supported cache engine versions, use the DescribeCacheEngineVersions operation.

**Important:** You can upgrade to a newer engine version (see Selecting a Cache Engine and Version), but you cannot downgrade to an earlier engine version. If you want to use an earlier engine version, you must delete the existing cluster or replication group and create it anew with the earlier engine version.

Type: String

Required: No

**NotificationTopicArn**

The Amazon Resource Name (ARN) of the Amazon Simple Notification Service (SNS) topic to which notifications are sent.

**Note**
The Amazon SNS topic owner must be the same as the cluster owner.

Type: String

Required: No

**NumCacheNodes**

The initial number of cache nodes that the cluster has.

For clusters running Redis, this value must be 1. For clusters running Memcached, this value must be between 1 and 20.

If you need more than 20 nodes for your Memcached cluster, please fill out the ElastiCache Limit Increase Request form at http://aws.amazon.com/contact-us/elasticache-node-limit-request/.

Type: Integer

Required: No

**Port**

The port number on which each of the cache nodes accepts connections.

Type: Integer

Required: No

**PreferredAvailabilityZone**

The EC2 Availability Zone in which the cluster is created.

All nodes belonging to this Memcached cluster are placed in the preferred Availability Zone. If you want to create your nodes across multiple Availability Zones, use `PreferredAvailabilityZones`.

Default: System chosen Availability Zone.

Type: String

Required: No

**PreferredAvailabilityZones.PreferredAvailabilityZone.N**

A list of the Availability Zones in which cache nodes are created. The order of the zones in the list is not important.

This option is only supported on Memcached.

**Note**
If you are creating your cluster in an Amazon VPC (recommended) you can only locate nodes in Availability Zones that are associated with the subnets in the selected subnet group.
The number of Availability Zones listed must equal the value of `NumCacheNodes`.

If you want all the nodes in the same Availability Zone, use `PreferredAvailabilityZone` instead, or repeat the Availability Zone multiple times in the list.

Default: System chosen Availability Zones.

Type: Array of strings

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period. Valid values for `ddd` are:

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`
- `mon`
- `tue`
- `wed`
- `thu`
- `fri`
- `sat`

Example: `sun:23:00-mon:01:30`

Type: String

Required: No

**ReplicationGroupId**

The ID of the replication group to which this cluster should belong. If this parameter is specified, the cluster is added to the specified replication group as a read replica; otherwise, the cluster is a standalone primary that is not part of any replication group.

If the specified replication group is Multi-AZ enabled and the Availability Zone is not specified, the cluster is created in Availability Zones that provide the best spread of read replicas across Availability Zones.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Type: String

Required: No

**SecurityGroupIds.SecurityGroupId.N**

One or more VPC security groups associated with the cluster.

Use this parameter only when you are creating a cluster in an Amazon Virtual Private Cloud (Amazon VPC).

Type: Array of strings

Required: No

**SnapshotArns.SnapshotArn.N**

A single-element string list containing an Amazon Resource Name (ARN) that uniquely identifies a Redis RDB snapshot file stored in Amazon S3. The snapshot file is used to populate the node group (shard). The Amazon S3 object name in the ARN cannot contain any commas.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Example of an Amazon S3 ARN: `arn:aws:s3:::my_bucket/snapshot1.rdb`

Type: Array of strings

Required: No

**SnapshotName**

The name of a Redis snapshot from which to restore data into the new node group (shard). The snapshot status changes to `restoring` while the new node group (shard) is being created.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Type: String

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic snapshots before deleting them. For example, if you set `SnapshotRetentionLimit` to 5, a snapshot taken today is retained for 5 days before being deleted.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Default: 0 (i.e., automatic backups are disabled for this cache cluster).

Type: Integer

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of your node group (shard).

Example: `05:00-09:00`

If you do not specify this parameter, ElastiCache automatically chooses an appropriate time range.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Type: String

Required: No

**Tags.Tag.N**

A list of cost allocation tags to be added to this resource.

Type: Array of Tag (p. 223) objects

Required: No

# Response Elements

The following element is returned by the service.

**CacheCluster**

Contains all of the attributes of a specific cluster.

Type: CacheCluster (p. 163) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterAlreadyExists**

You already have a cluster with the given identifier.

HTTP Status Code: 400

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**CacheSubnetGroupNotFoundFault**

The requested cache subnet group name does not refer to an existing cache subnet group.

HTTP Status Code: 400

**ClusterQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of clusters per customer.

HTTP Status Code: 400

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeQuotaForClusterExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes in a single cluster.

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**TagQuotaPerResourceExceeded**

The request cannot be processed because it would cause the resource to have more than the allowed number of tags. The maximum number of tags permitted on a resource is 50.

HTTP Status Code: 400

# Example

## CreateCacheCluster

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
 ?Action=CreateCacheCluster
 &CacheClusterId=myMemcachedCluster
 &CacheNodeType=cache.m1.small
 &CacheSecurityGroupNames.CacheSecurityGroupName.1=default
 &Engine=memcached
 &NumCacheNodes=3
 &PreferredAvailabilityZones.PreferredAvailabilityZone.1=us-west-2a
 &PreferredAvailabilityZones.PreferredAvailabilityZone.2=us-west-2b
 &PreferredAvailabilityZones.PreferredAvailabilityZone.3=us-west-2c
 &SignatureMethod=HmacSHA256
 &SignatureVersion=4
 &Version=2015-02-02
 &X-Amz-Algorithm=AWS4-HMAC-SHA256
 &X-Amz-Credential=[your-access-key-id]/20150202/us-west-2/elasticache/aws4_request
 &X-Amz-Date=20150202T170651Z
 &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
 &X-Amz-Signature=[signature-value]
```

### Sample Response

```
<CreateCacheClusterResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
```

```
  <CreateCacheClusterResult>
    <CacheCluster>
      <CacheClusterId>myMemcachedClustger</CacheClusterId>
      <CacheClusterStatus>creating</CacheClusterStatus>
      <CacheParameterGroup>
        <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
        <ParameterApplyStatus>in-sync</ParameterApplyStatus>
        <CacheNodeIdsToReboot/>
      </CacheParameterGroup>
      <CacheNodeType>cache.m1.small</CacheNodeType>
      <Engine>memcached</Engine>
      <PendingModifiedValues/>
      <EngineVersion>1.4.14</EngineVersion>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <PreferredMaintenanceWindow>sat:09:00-sat:10:00</PreferredMaintenanceWindow>
      <ClientDownloadLandingPage>https://console.aws.amazon.com/elasticache/home#client-
download:</ClientDownloadLandingPage>
      <CacheSecurityGroups>
        <CacheSecurityGroup>
          <CacheSecurityGroupName>default</CacheSecurityGroupName>
          <Status>active</Status>
        </CacheSecurityGroup>
      </CacheSecurityGroups>
      <NumCacheNodes>3</NumCacheNodes>
    </CacheCluster>
  </CreateCacheClusterResult>
  <ResponseMetadata>
    <RequestId>69134921-10f9-11e4-81bb-d76bad68b8fd</RequestId>
  </ResponseMetadata>
</CreateCacheClusterResponse>
```

# See Also

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

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

# CreateCacheParameterGroup

Creates a new Amazon ElastiCache cache parameter group. An ElastiCache cache parameter group is a collection of parameters and their values that are applied to all of the nodes in any cluster or replication group using the CacheParameterGroup.

A newly created CacheParameterGroup is an exact duplicate of the default parameter group for the CacheParameterGroupFamily. To customize the newly created CacheParameterGroup you can change the values of specific parameters. For more information, see:

- ModifyCacheParameterGroup in the ElastiCache API Reference.
- Parameters and Parameter Groups in the ElastiCache User Guide.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupFamily**

The name of the cache parameter group family that the cache parameter group can be used with.

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

Type: String

Required: Yes

**CacheParameterGroupName**

A user-specified name for the cache parameter group.

Type: String

Required: Yes

**Description**

A user-specified description for the cache parameter group.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheParameterGroup**

Represents the output of a `CreateCacheParameterGroup` operation.

Type: CacheParameterGroup (p. 177) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupAlreadyExists**

A cache parameter group with the requested name already exists.

HTTP Status Code: 400

**CacheParameterGroupQuotaExceeded**

The request cannot be processed because it would exceed the maximum number of cache security groups.

HTTP Status Code: 400

**InvalidCacheParameterGroupState**

The current state of the cache parameter group does not allow the requested operation to occur.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## CreateCacheParameterGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateCacheParameterGroup
   &CacheParameterGroupFamily=memcached1.4
   &CacheParameterGroupName=mycacheparametergroup1
   &Description=My%20custom%20Redis%20cache%20parameter%20group
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &Version=2015-02-02
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<CreateCacheParameterGroupResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <CreateCacheParameterGroupResult>
    <CacheParameterGroup>
      <CacheParameterGroupName>mycacheparametergroup1</CacheParameterGroupName>
```

```
      <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
      <Description>My first cache parameter group</Description>
    </CacheParameterGroup>
  </CreateCacheParameterGroupResult>
  <ResponseMetadata>
    <RequestId>05699541-b7f9-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</CreateCacheParameterGroupResponse>
```

# See Also

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

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

# CreateCacheSecurityGroup

Creates a new cache security group. Use a cache security group to control access to one or more clusters.

Cache security groups are only used when you are creating a cluster outside of an Amazon Virtual Private Cloud (Amazon VPC). If you are creating a cluster inside of a VPC, use a cache subnet group instead. For more information, see CreateCacheSubnetGroup.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSecurityGroupName**

A name for the cache security group. This value is stored as a lowercase string.

Constraints: Must contain no more than 255 alphanumeric characters. Cannot be the word "Default".

Example: `mysecuritygroup`

Type: String

Required: Yes

**Description**

A description for the cache security group.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheSecurityGroup**

Represents the output of one of the following operations:

- `AuthorizeCacheSecurityGroupIngress`
- `CreateCacheSecurityGroup`
- `RevokeCacheSecurityGroupIngress`

Type: CacheSecurityGroup (p. 179) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSecurityGroupAlreadyExists**

A cache security group with the specified name already exists.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**QuotaExceeded.CacheSecurityGroup**

The request cannot be processed because it would exceed the allowed number of cache security groups.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## CreateCacheSecurityGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateCacheSecurityGroup
   &CacheSecurityGroupName=mycachesecuritygroup
   &Description=My%20cache%20security%20group
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<CreateCacheSecurityGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <CreateCacheSecurityGroupResult>
      <CacheSecurityGroup>
         <EC2SecurityGroups/>
         <CacheSecurityGroupName>mycachesecuritygroup</CacheSecurityGroupName>
         <OwnerId>123456789012</OwnerId>
         <Description>My cache security group</Description>
      </CacheSecurityGroup>
   </CreateCacheSecurityGroupResult>
   <ResponseMetadata>
      <RequestId>2b1c8035-b7fa-11e0-9326-b7275b9d4a6c</RequestId>
   </ResponseMetadata>
</CreateCacheSecurityGroupResponse>
```

# See Also

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

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

# CreateCacheSubnetGroup

Creates a new cache subnet group.

Use this parameter only when you are creating a cluster in an Amazon Virtual Private Cloud (Amazon VPC).

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSubnetGroupDescription**

A description for the cache subnet group.

Type: String

Required: Yes

**CacheSubnetGroupName**

A name for the cache subnet group. This value is stored as a lowercase string.

Constraints: Must contain no more than 255 alphanumeric characters or hyphens.

Example: `mysubnetgroup`

Type: String

Required: Yes

**SubnetIds.SubnetIdentifier.N**

A list of VPC subnet IDs for the cache subnet group.

Type: Array of strings

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheSubnetGroup**

Represents the output of one of the following operations:

- `CreateCacheSubnetGroup`
- `ModifyCacheSubnetGroup`

Type: CacheSubnetGroup (p. 181) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSubnetGroupAlreadyExists**

The requested cache subnet group name is already in use by an existing cache subnet group.

HTTP Status Code: 400

**CacheSubnetGroupQuotaExceeded**

The request cannot be processed because it would exceed the allowed number of cache subnet groups.

HTTP Status Code: 400

**CacheSubnetQuotaExceededFault**

The request cannot be processed because it would exceed the allowed number of subnets in a cache subnet group.

HTTP Status Code: 400

**InvalidSubnet**

An invalid subnet identifier was specified.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## CreateCacheSubnetGroup

### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=CreateCacheSubnetGroup
   &CacheSubnetGroupName=myCachesubnetgroup
   &CacheSubnetGroupDescription=My%20new%20CacheSubnetGroup
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<CreateCacheSubnetGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <CreateCacheSubnetGroupResult>
      <CacheSubnetGroup>
         <VpcId>990524496922</VpcId>
            <CacheSubnetGroupDescription>My new CacheSubnetGroup</
CacheSubnetGroupDescription>
            <CacheSubnetGroupName>myCachesubnetgroup</CacheSubnetGroupName>
            <Subnets>
               <Subnet>
                  <SubnetStatus>Active</SubnetStatus>
                  <SubnetIdentifier>subnet-7c5b4115</SubnetIdentifier>
```

```
                  <SubnetAvailabilityZone>
                     <Name>us-west-2c</Name>
                  </SubnetAvailabilityZone>
               </Subnet>
               <Subnet>
                  <SubnetStatus>Active</SubnetStatus>
                  <SubnetIdentifier>subnet-7b5b4112</SubnetIdentifier>
                  <SubnetAvailabilityZone>
                     <Name>us-west-2b</Name>
                  </SubnetAvailabilityZone>
               </Subnet>
               <Subnet>
                  <SubnetStatus>Active</SubnetStatus>
                  <SubnetIdentifier>subnet-3ea6bd57</SubnetIdentifier>
                  <SubnetAvailabilityZone>
                     <Name>us-west-2c</Name>
                  </SubnetAvailabilityZone>
               </Subnet>
            </Subnets>
         </CacheSubnetGroup>
      </CreateCacheSubnetGroupResult>
      <ResponseMetadata>
         <RequestId>ed662948-a57b-11df-9e38-7ffab86c801f</RequestId>
      </ResponseMetadata>
   </CreateCacheSubnetGroupResponse>
```

# See Also

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

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

# CreateReplicationGroup

Creates a Redis (cluster mode disabled) or a Redis (cluster mode enabled) replication group.

A Redis (cluster mode disabled) replication group is a collection of clusters, where one of the clusters is a read/write primary and the others are read-only replicas. Writes to the primary are asynchronously propagated to the replicas.

A Redis (cluster mode enabled) replication group is a collection of 1 to 15 node groups (shards). Each node group (shard) has one read/write primary node and up to 5 read-only replica nodes. Writes to the primary are asynchronously propagated to the replicas. Redis (cluster mode enabled) replication groups partition the data across node groups (shards).

When a Redis (cluster mode disabled) replication group has been successfully created, you can add one or more read replicas to it, up to a total of 5 read replicas. You cannot alter a Redis (cluster mode enabled) replication group after it has been created. However, if you need to increase or decrease the number of node groups (console: shards), you can avail yourself of ElastiCache for Redis' enhanced backup and restore. For more information, see Restoring From a Backup with Cluster Resizing in the *ElastiCache User Guide*.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ReplicationGroupDescription**

A user-created description for the replication group.

Type: String

Required: Yes

**ReplicationGroupId**

The replication group identifier. This parameter is stored as a lowercase string.

Constraints:

- A name must contain from 1 to 20 alphanumeric characters or hyphens.
- The first character must be a letter.
- A name cannot end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

**AtRestEncryptionEnabled**

A flag that enables encryption at rest when set to `true`.

You cannot modify the value of `AtRestEncryptionEnabled` after the replication group is created. To enable encryption at rest on a replication group you must set `AtRestEncryptionEnabled` to `true` when you create the replication group.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

Type: Boolean

Required: No

**AuthToken**

**Reserved parameter.** The password used to access a password protected server.

`AuthToken` can be specified only on replication groups where `TransitEncryptionEnabled` is `true`.

> **Important**
> For HIPAA compliance, you must specify `TransitEncryptionEnabled` as `true`, an `AuthToken`, and a `CacheSubnetGroup`.

Password constraints:

- Must be only printable ASCII characters.
- Must be at least 16 characters and no more than 128 characters in length.
- Cannot contain any of the following characters: '/', '"', or '@'.

For more information, see AUTH password at http://redis.io/commands/AUTH.

Type: String

Required: No

**AutomaticFailoverEnabled**

Specifies whether a read-only replica is automatically promoted to read/write primary if the existing primary fails.

If `true`, Multi-AZ is enabled for this replication group. If `false`, Multi-AZ is disabled for this replication group.

`AutomaticFailoverEnabled` must be enabled for Redis (cluster mode enabled) replication groups.

Default: false

Amazon ElastiCache for Redis does not support Multi-AZ with automatic failover on:

- Redis versions earlier than 2.8.6.
- Redis (cluster mode disabled): T1 and T2 cache node types.
- Redis (cluster mode enabled): T1 node types.

Type: Boolean

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**CacheNodeType**

The compute and memory capacity of the nodes in the node group (shard).

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**CacheParameterGroupName**

The name of the parameter group to associate with this replication group. If this argument is omitted, the default cache parameter group for the specified engine is used.

If you are running Redis version 3.2.4 or later, only one node group (shard), and want to use a default parameter group, we recommend that you specify the parameter group by name.

- To create a Redis (cluster mode disabled) replication group, use `CacheParameterGroupName=default.redis3.2`.
- To create a Redis (cluster mode enabled) replication group, use `CacheParameterGroupName=default.redis3.2.cluster.on`.

Type: String

Required: No

**CacheSecurityGroupNames.CacheSecurityGroupName.N**

A list of cache security group names to associate with this replication group.

Type: Array of strings

Required: No

**CacheSubnetGroupName**

The name of the cache subnet group to be used for the replication group.

> **Important**
> If you're going to launch your cluster in an Amazon VPC, you need to create a subnet group before you start creating a cluster. For more information, see Subnets and Subnet Groups.

Type: String

Required: No

**Engine**

The name of the cache engine to be used for the clusters in this replication group.

Type: String

Required: No

**EngineVersion**

The version number of the cache engine to be used for the clusters in this replication group. To view the supported cache engine versions, use the `DescribeCacheEngineVersions` operation.

**Important:** You can upgrade to a newer engine version (see Selecting a Cache Engine and Version) in the *ElastiCache User Guide*, but you cannot downgrade to an earlier engine version. If you want to use an earlier engine version, you must delete the existing cluster or replication group and create it anew with the earlier engine version.

Type: String

Required: No

**NodeGroupConfiguration.NodeGroupConfiguration.N**

A list of node group (shard) configuration options. Each node group (shard) configuration has the following members: `PrimaryAvailabilityZone`, `ReplicaAvailabilityZones`, `ReplicaCount`, and `Slots`.

If you're creating a Redis (cluster mode disabled) or a Redis (cluster mode enabled) replication group, you can use this parameter to individually configure each node group (shard), or you can omit this parameter. However, when seeding a Redis (cluster mode enabled) cluster from a S3 rdb file, you must configure each node group (shard) using this parameter because you must specify the slots for each node group.

Type: Array of NodeGroupConfiguration (p. 190) objects

Required: No

**NotificationTopicArn**

The Amazon Resource Name (ARN) of the Amazon Simple Notification Service (SNS) topic to which notifications are sent.

**Note**
The Amazon SNS topic owner must be the same as the cluster owner.

Type: String

Required: No

**NumCacheClusters**

The number of clusters this replication group initially has.

This parameter is not used if there is more than one node group (shard). You should use `ReplicasPerNodeGroup` instead.

If `AutomaticFailoverEnabled` is `true`, the value of this parameter must be at least 2. If `AutomaticFailoverEnabled` is `false` you can omit this parameter (it will default to 1), or you can explicitly set it to a value between 2 and 6.

The maximum permitted value for `NumCacheClusters` is 6 (1 primary plus 5 replicas).

Type: Integer

Required: No

**NumNodeGroups**

An optional parameter that specifies the number of node groups (shards) for this Redis (cluster mode enabled) replication group. For Redis (cluster mode disabled) either omit this parameter or set it to 1.

Default: 1

Type: Integer

Required: No

**Port**

The port number on which each member of the replication group accepts connections.

Type: Integer

Required: No

**PreferredCacheClusterAZs.AvailabilityZone.N**

A list of EC2 Availability Zones in which the replication group's clusters are created. The order of the Availability Zones in the list is the order in which clusters are allocated. The primary cluster is created in the first AZ in the list.

This parameter is not used if there is more than one node group (shard). You should use `NodeGroupConfiguration` instead.

**Note**
If you are creating your replication group in an Amazon VPC (recommended), you can only locate clusters in Availability Zones associated with the subnets in the selected subnet group.
The number of Availability Zones listed must equal the value of `NumCacheClusters`.

Default: system chosen Availability Zones.

Type: Array of strings

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period. Valid values for `ddd` are:

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`
- `mon`
- `tue`
- `wed`
- `thu`
- `fri`
- `sat`

Example: `sun:23:00-mon:01:30`

Type: String

Required: No

**PrimaryClusterId**

The identifier of the cluster that serves as the primary for this replication group. This cluster must already exist and have a status of `available`.

This parameter is not required if `NumCacheClusters`, `NumNodeGroups`, or `ReplicasPerNodeGroup` is specified.

Type: String

Required: No

**ReplicasPerNodeGroup**

An optional parameter that specifies the number of replica nodes in each node group (shard). Valid values are 0 to 5.

Type: Integer

Required: No

**SecurityGroupIds.SecurityGroupId.N**

One or more Amazon VPC security groups associated with this replication group.

Use this parameter only when you are creating a replication group in an Amazon Virtual Private Cloud (Amazon VPC).

Type: Array of strings

Required: No

**SnapshotArns.SnapshotArn.N**

A list of Amazon Resource Names (ARN) that uniquely identify the Redis RDB snapshot files stored in Amazon S3. The snapshot files are used to populate the new replication group. The Amazon S3 object name in the ARN cannot contain any commas. The new replication group will have the number of node groups (console: shards) specified by the parameter *NumNodeGroups* or the number of node groups configured by *NodeGroupConfiguration* regardless of the number of ARNs specified here.

Example of an Amazon S3 ARN: `arn:aws:s3:::my_bucket/snapshot1.rdb`

Type: Array of strings

Required: No

**SnapshotName**

The name of a snapshot from which to restore data into the new replication group. The snapshot status changes to `restoring` while the new replication group is being created.

Type: String

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic snapshots before deleting them. For example, if you set `SnapshotRetentionLimit` to 5, a snapshot that was taken today is retained for 5 days before being deleted.

Default: 0 (i.e., automatic backups are disabled for this cluster).

Type: Integer

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of your node group (shard).

Example: `05:00-09:00`

If you do not specify this parameter, ElastiCache automatically chooses an appropriate time range.

Type: String

Required: No

**Tags.Tag.N**

A list of cost allocation tags to be added to this resource. A tag is a key-value pair.

Type: Array of Tag (p. 223) objects

Required: No

**TransitEncryptionEnabled**

A flag that enables in-transit encryption when set to `true`.

You cannot modify the value of `TransitEncryptionEnabled` after the cluster is created. To enable in-transit encryption on a cluster you must set `TransitEncryptionEnabled` to `true` when you create a cluster.

This parameter is valid only if the `Engine` parameter is `redis`, the `EngineVersion` parameter is `3.2.6` or `4.x`, and the cluster is being created in an Amazon VPC.

If you enable in-transit encryption, you must also specify a value for `CacheSubnetGroup`.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

**Important**
For HIPAA compliance, you must specify `TransitEncryptionEnabled` as `true`, an `AuthToken`, and a `CacheSubnetGroup`.

Type: Boolean

Required: No

# Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**CacheSubnetGroupNotFoundFault**

The requested cache subnet group name does not refer to an existing cache subnet group.

HTTP Status Code: 400

**ClusterQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of clusters per customer.

HTTP Status Code: 400

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeGroupsPerReplicationGroupQuotaExceeded**

The request cannot be processed because it would exceed the maximum allowed number of node groups (shards) in a single replication group. The default maximum is 15

HTTP Status Code: 400

**NodeQuotaForClusterExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes in a single cluster.

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**ReplicationGroupAlreadyExists**

The specified replication group already exists.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**TagQuotaPerResourceExceeded**

The request cannot be processed because it would cause the resource to have more than the allowed number of tags. The maximum number of tags permitted on a resource is 50.

HTTP Status Code: 400

# Examples

## CreateReplicationGroup - Redis (cluster mode disabled) Replication Group

The following example creates a Redis (cluster mode disabled) replication group with three nodes (`NumCacheClusters=3`), a primary and two read replicas. Because a single node group (shard) replication group technically could be either clustered or non-clustered, the parameter group `default.redis3.2` is specified, making this is a non-clustered replication group.

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateReplicationGroup
   &CacheParameterGroup=default.redis3.2
   &Engine=redis
   &EngineVersion=3.2.4
   &NumCacheClusters=3
   &ReplicationGroupDescription=My%20replication%20group
   &ReplicationGroupId=my-repgroup
   &PrimaryClusterId=my-redis-primary
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<CreateReplicationGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <CreateReplicationGroupResult>
      <ReplicationGroup>
         <SnapshottingClusterId>my-redis-primary</SnapshottingClusterId>
         <MemberClusters>
            <ClusterId>my-redis-primary</ClusterId>
         </MemberClusters>
         <ReplicationGroupId>my-repgroup</ReplicationGroupId>
         <Status>creating</Status>
         <PendingModifiedValues />
         <Description>My replication group</Description>
      </ReplicationGroup>
   </CreateReplicationGroupResult>
   <ResponseMetadata>
      <RequestId>f3b7b32d-b9d2-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</CreateReplicationGroupResponse>
```

## Redis (cluster mode enabled) Replication Group - all shards same profile

The following example creates a Redis (cluster mode enabled) replication group with three node groups (shards) and four replica nodes in each node group (shard). Note the following parameters and their values.

- EngineVersion=3.2.4
- CacheParameterGroup=default.redis3.2.cluster.on
- NumNodeGroups=3

- ReplicasPerNodeGroup=4

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateReplicationGroup
   &CacheParameterGroup=default.redis3.2.cluster.on
   &Engine=redis
   &EngineVersion=3.2.4
   &ReplicationGroupDescription=My%20replication%20group
   &ReplicationGroupId=my-repgroup
   &NumNodeGroups=3
   &PrimaryClusterId=my-redis-primary
   &ReplicasPerNodeGroup=4
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

## Redis (cluster mode enabled) Replication Group - each shard configured separately

The following example creates a Redis (cluster mode enabled) replication group with two node groups (shards). The first shard has two replica nodes and slots 0-8192. The second shard has one replica and slots 8193-16383. Note the following parameters and their values.

- EngineVersion
- CacheParameterGroup
- NodeGroupConfiguration.NodeGroupConfiguration.*n*.PrimaryAvailabilityZone
- NodeGroupConfiguration.NodeGroupConfiguration.*n*.ReplicaAvailabilityZones.AvailabilityZone.*n*
- NodeGroupConfiguration.NodeGroupConfiguration.*n*.ReplicaCount
- NodeGroupConfiguration.NodeGroupConfiguration.*n*.Slots

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateReplicationGroup
   &CacheParameterGroup=default.redis3.2.cluster.on
   &Engine=redis
   &EngineVersion=3.2.4
   &ReplicationGroupDescription=My%20replication%20group
   &ReplicationGroupId=my-repgroup
   &NodeGroupConfiguration.NodeGroupConfiguration.1.PrimaryAvailabilityZone=us-east-2a

 &NodeGroupConfiguration.NodeGroupConfiguration.1.ReplicaAvailabilityZones.AvailabilityZone.1=us-
east-2b

 &NodeGroupConfiguration.NodeGroupConfiguration.1.ReplicaAvailabilityZones.AvailabilityZone.2=us-
east-2c
   &NodeGroupConfiguration.NodeGroupConfiguration.1.ReplicaCount=2
   &NodeGroupConfiguration.NodeGroupConfiguration.1.Slots=0-8192
   &NodeGroupConfiguration.NodeGroupConfiguration.2.PrimaryAvailabilityZone=us-east-2b

 &NodeGroupConfiguration.NodeGroupConfiguration.2.ReplicaAvailabilityZones.AvailabilityZone.1=us-
east-2d
   &NodeGroupConfiguration.NodeGroupConfiguration.2.ReplicaCount=1
```

```
&NodeGroupConfiguration.NodeGroupConfiguration.2.Slots=8193-16383
&PrimaryClusterId=my-redis-primary
&Version=2015-02-02
&SignatureVersion=4
&SignatureMethod=HmacSHA256
&Timestamp=20150202T192317Z
&X-Amz-Credential=<credential>
```

# See Also

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

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

# CreateSnapshot

Creates a copy of an entire cluster or replication group at a specific moment in time.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**SnapshotName**

A name for the snapshot being created.

Type: String

Required: Yes

**CacheClusterId**

The identifier of an existing cluster. The snapshot is created from this cluster.

Type: String

Required: No

**ReplicationGroupId**

The identifier of an existing replication group. The snapshot is created from this replication group.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

**Snapshot**

Represents a copy of an entire Redis cluster as of the time when the snapshot was taken.

Type: Snapshot (p. 217) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotAlreadyExistsFault**

You already have a snapshot with the given name.

HTTP Status Code: 400

**SnapshotFeatureNotSupportedFault**

You attempted one of the following operations:

- Creating a snapshot of a Redis cluster running on a `cache.t1.micro` cache node.
- Creating a snapshot of a cluster that is running Memcached rather than Redis.

Neither of these are supported by ElastiCache.

HTTP Status Code: 400

**SnapshotQuotaExceededFault**

The request cannot be processed because it would exceed the maximum number of snapshots.

HTTP Status Code: 400

# Example

## CreateSnapshot

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=CreateSnapshot
   &CacheClusterId=my-redis-primary
   &SnapshotName=my-manual-snapshot
```

```
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<CreateSnapshotResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <CreateSnapshotResult>
      <Snapshot>
         <CacheClusterId>my-redis-primary</CacheClusterId>
         <Port>6379</Port>
         <CacheNodeType>cache.m1.small</CacheNodeType>
         <CacheParameterGroupName>default.redis2.8</CacheParameterGroupName>
         <Engine>redis</Engine>
         <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
         <CacheClusterCreateTime>2015-02-02T18:46:57.972Z</CacheClusterCreateTime>
         <EngineVersion>2.8.6</EngineVersion>
         <SnapshotSource>manual</SnapshotSource>
         <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
         <PreferredMaintenanceWindow>wed:09:00-wed:10:00</PreferredMaintenanceWindow>
         <SnapshotName>my-manual-snapshot</SnapshotName>
         <SnapshotRetentionLimit>5</SnapshotRetentionLimit>
         <NodeSnapshots>
            <NodeSnapshot>
               <CacheNodeCreateTime>2015-02-02T18:46:57.972Z</CacheNodeCreateTime>
               <CacheNodeId>0001</CacheNodeId>
               <CacheSize />
            </NodeSnapshot>
         </NodeSnapshots>
         <SnapshotStatus>creating</SnapshotStatus>
         <NumCacheNodes>1</NumCacheNodes>
         <SnapshotWindow>07:30-08:30</SnapshotWindow>
      </Snapshot>
   </CreateSnapshotResult>
   <ResponseMetadata>
      <RequestId>faf5a232-b9ce-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</CreateSnapshotResponse>
```

# See Also

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

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

# DecreaseReplicaCount

Dynamically decreases the number of replics in a Redis (cluster mode disabled) replication group or the number of replica nodes in one or more node groups (shards) of a Redis (cluster mode enabled) replication group. This operation is performed with no cluster down time.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ApplyImmediately**

If `True`, the number of replica nodes is decreased immediately. `ApplyImmediately=False` is not currently supported.

Type: Boolean

Required: Yes

**ReplicationGroupId**

The id of the replication group from which you want to remove replica nodes.

Type: String

Required: Yes

**NewReplicaCount**

The number of read replica nodes you want at the completion of this operation. For Redis (cluster mode disabled) replication groups, this is the number of replica nodes in the replication group. For Redis (cluster mode enabled) replication groups, this is the number of replica nodes in each of the replication group's node groups.

The minimum number of replicas in a shard or replication group is:

- Redis (cluster mode disabled)
  - If Multi-AZ with Automatic Failover is enabled: 1
  - If Multi-AZ with Automatic Failover is not enabled: 0
- Redis (cluster mode enabled): 0 (though you will not be able to failover to a replica if your primary node fails)

Type: Integer

Required: No

**ReplicaConfiguration.ConfigureShard.N**

A list of `ConfigureShard` objects that can be used to configure each shard in a Redis (cluster mode enabled) replication group. The `ConfigureShard` has three members: `NewReplicaCount`, `NodeGroupId`, and `PreferredAvailabilityZones`.

Type: Array of ConfigureShard (p. 182) objects

Required: No

**ReplicasToRemove.member.N**

A list of the node ids to remove from the replication group or node group (shard).

Type: Array of strings

Required: No

# Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**ClusterQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of clusters per customer.

HTTP Status Code: 400

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeGroupsPerReplicationGroupQuotaExceeded**

The request cannot be processed because it would exceed the maximum allowed number of node groups (shards) in a single replication group. The default maximum is 15

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**NoOperationFault**

The operation was not performed because no changes were required.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Examples

## Example

The following example removes two replicas from each node group in the replication group `sample-repl-group`.

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DecreaseReplicaCount
   &ApplyImmediately=True
   &NewReplicaCount=2
   &ReplicasToRemove.ReplicaToRemove.1=0001
   &ReplicasToRemove.ReplicaToRemove.2=0003
   &ReplicationGroupId=sample-repl-group
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

## Example

The following example removes replicas from two node groups. Because there are multiple node groups, this example is for a Redis (cluster mode enabled) replication group.

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DecreaseReplicaCount
   &ApplyImmediately=True
   &ReplicaConfiguration.ConfigureShard.1.NodeGroupId=0001
```

```
   &ReplicaConfiguration.ConfigureShard.1.NewReplicaCount=1

 &ReplicaConfiguration.ConfigureShard.1.PreferredAvailabilityZones.PreferredAvailabilityZone.1=us-
east-1a

 &ReplicaConfiguration.ConfigureShard.1.PreferredAvailabilityZones.PreferredAvailabilityZone.2=us-
east-1c
   &ReplicaConfiguration.ConfigureShard.2.NodeGroupId=0003
   &ReplicaConfiguration.ConfigureShard.2.NewReplicaCount=2

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.1=us-
east-1a

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.2=us-
east-1b

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.4=us-
east-1c
   &ReplicationGroupId=samplem--repl-group
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

# See Also

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

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

# DeleteCacheCluster

Deletes a previously provisioned cluster. `DeleteCacheCluster` deletes all associated cache nodes, node endpoints and the cluster itself. When you receive a successful response from this operation, Amazon ElastiCache immediately begins deleting the cluster; you cannot cancel or revert this operation.

This operation is not valid for:

- Redis (cluster mode enabled) clusters
- A cluster that is the last read replica of a replication group
- A node group (shard) that has Multi-AZ mode enabled
- A cluster from a Redis (cluster mode enabled) replication group
- A cluster that is not in the `available` state

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

The cluster identifier for the cluster to be deleted. This parameter is not case sensitive.

Type: String

Required: Yes

**FinalSnapshotIdentifier**

The user-supplied name of a final cluster snapshot. This is the unique name that identifies the snapshot. ElastiCache creates the snapshot, and then deletes the cluster immediately afterward.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

**CacheCluster**

Contains all of the attributes of a specific cluster.

Type: CacheCluster (p. 163) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotAlreadyExistsFault**

You already have a snapshot with the given name.

HTTP Status Code: 400

**SnapshotFeatureNotSupportedFault**

You attempted one of the following operations:

- Creating a snapshot of a Redis cluster running on a `cache.t1.micro` cache node.
- Creating a snapshot of a cluster that is running Memcached rather than Redis.

Neither of these are supported by ElastiCache.

HTTP Status Code: 400

**SnapshotQuotaExceededFault**

The request cannot be processed because it would exceed the maximum number of snapshots.

HTTP Status Code: 400

# Example

## DeleteCacheCluster

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DeleteCacheCluster
   &CacheClusterId=simcoprod43
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteCacheClusterResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <DeleteCacheClusterResult>
      <CacheCluster>
         <CacheParameterGroup>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
            <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
            <CacheNodeIdsToReboot/>
         </CacheParameterGroup>
         <CacheClusterId>simcoprod43</CacheClusterId>
         <CacheClusterStatus>deleting</CacheClusterStatus>
         <ConfigurationEndpoint>
            <Port>11211</Port>
            <Address>simcoprod43.m2st2p.cfg.cache.amazonaws.com</Address>
         </ConfigurationEndpoint>
         <CacheNodeType>cache.m1.large</CacheNodeType>
         <Engine>memcached</Engine>
         <PendingModifiedValues/>
         <PreferredAvailabilityZone>us-west-2b</PreferredAvailabilityZone>
         <CacheClusterCreateTime>2015-02-02T02:18:26.497Z</CacheClusterCreateTime>
         <EngineVersion>1.4.5</EngineVersion>
         <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
         <PreferredMaintenanceWindow>mon:05:00-mon:06:00</PreferredMaintenanceWindow>
         <CacheSecurityGroups>
            <CacheSecurityGroup>
               <CacheSecurityGroupName>default</CacheSecurityGroupName>
               <Status>active</Status>
            </CacheSecurityGroup>
         </CacheSecurityGroups>
         <NumCacheNodes>3</NumCacheNodes>
      </CacheCluster>
   </DeleteCacheClusterResult>
   <ResponseMetadata>
      <RequestId>ab84aa7e-b7fa-11e0-9b0b-a9261be2b354</RequestId>
   </ResponseMetadata>
</DeleteCacheClusterResponse>
```

# See Also

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

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

# DeleteCacheParameterGroup

Deletes the specified cache parameter group. You cannot delete a cache parameter group if it is associated with any cache clusters.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupName**

The name of the cache parameter group to delete.

**Note**
The specified cache security group must not be associated with any clusters.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**InvalidCacheParameterGroupState**

The current state of the cache parameter group does not allow the requested operation to occur.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DeleteCacheParameterGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DeleteCacheParameterGroup
   &CacheParameterGroupName=myparametergroup
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteCacheParameterGroupResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <ResponseMetadata>
    <RequestId>d0a417cb-575b-11e0-8869-cd22b4f9d96f</RequestId>
  </ResponseMetadata>
</DeleteCacheParameterGroupResponse>
```

# See Also

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

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

# DeleteCacheSecurityGroup

Deletes a cache security group.

**Note**
You cannot delete a cache security group if it is associated with any clusters.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSecurityGroupName**

The name of the cache security group to delete.

**Note**
You cannot delete the default security group.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InvalidCacheSecurityGroupState**

The current state of the cache security group does not allow deletion.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DeleteCacheSecurityGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
?Action=DeleteCacheSecurityGroup
&CacheSecurityGroupName=mycachesecuritygroup3
&Version=2015-02-02
&SignatureVersion=4
&SignatureMethod=HmacSHA256
&Timestamp=20150202T192317Z
&X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteCacheSecurityGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
    <ResponseMetadata>
        <RequestId>c130cfb7-3650-11e0-ae57-f96cfe56749c</RequestId>
    </ResponseMetadata>
</DeleteCacheSecurityGroupResponse>
```

# See Also

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

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

# DeleteCacheSubnetGroup

Deletes a cache subnet group.

**Note**
You cannot delete a cache subnet group if it is associated with any clusters.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSubnetGroupName**

The name of the cache subnet group to delete.

Constraints: Must contain no more than 255 alphanumeric characters or hyphens.

Type: String

Required: Yes

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSubnetGroupInUse**

The requested cache subnet group is currently in use.

HTTP Status Code: 400

**CacheSubnetGroupNotFoundFault**

The requested cache subnet group name does not refer to an existing cache subnet group.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

## Example

### DeleteCacheSubnetGroup

#### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=DeleteCacheSubnetGroup
   &CacheSubnetGroupName=mysubnetgroup
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
```

```
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteCacheSubnetGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
      <ResponseMetadata>
        <RequestId>5d013245-4172-11df-8520-e7e1e602a915</RequestId>
      </ResponseMetadata>
    </DeleteCacheSubnetGroupResponse>
```

## See Also

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

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

# DeleteReplicationGroup

Deletes an existing replication group. By default, this operation deletes the entire replication group, including the primary/primaries and all of the read replicas. If the replication group has only one primary, you can optionally delete only the read replicas, while retaining the primary by setting `RetainPrimaryCluster=true`.

When you receive a successful response from this operation, Amazon ElastiCache immediately begins deleting the selected resources; you cannot cancel or revert this operation.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ReplicationGroupId**

The identifier for the cluster to be deleted. This parameter is not case sensitive.

Type: String

Required: Yes

**FinalSnapshotIdentifier**

The name of a final node group (shard) snapshot. ElastiCache creates the snapshot from the primary node in the cluster, rather than one of the replicas; this is to ensure that it captures the freshest data. After the final snapshot is taken, the replication group is immediately deleted.

Type: String

Required: No

**RetainPrimaryCluster**

If set to `true`, all of the read replicas are deleted, but the primary node is retained.

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotAlreadyExistsFault**

You already have a snapshot with the given name.

HTTP Status Code: 400

**SnapshotFeatureNotSupportedFault**

You attempted one of the following operations:

- Creating a snapshot of a Redis cluster running on a `cache.t1.micro` cache node.
- Creating a snapshot of a cluster that is running Memcached rather than Redis.

Neither of these are supported by ElastiCache.

HTTP Status Code: 400

**SnapshotQuotaExceededFault**

The request cannot be processed because it would exceed the maximum number of snapshots.

HTTP Status Code: 400

# Example

## DeleteReplicationGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DeleteReplicationGroup &RetainPrimaryCluster=false
   &FinalSnapshotIdentifier=my-final-snapshot
   &ReplicationGroupId=my-repgroup
   &Version=2015-02-02
```

```
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteReplicationGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <DeleteReplicationGroupResult>
      <ReplicationGroup>
         <SnapshottingClusterId>my-redis-primary</SnapshottingClusterId>
         <ReplicationGroupId>my-repgroup</ReplicationGroupId>
         <Status>deleting</Status>
         <PendingModifiedValues />
         <Description>My replication group</Description>
      </ReplicationGroup>
   </DeleteReplicationGroupResult>
   <ResponseMetadata>
      <RequestId>93eb37db-b9d7-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</DeleteReplicationGroupResponse>
```

## See Also

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

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

# DeleteSnapshot

Deletes an existing snapshot. When you receive a successful response from this operation, ElastiCache immediately begins deleting the snapshot; you cannot cancel or revert this operation.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**SnapshotName**

The name of the snapshot to be deleted.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**Snapshot**

Represents a copy of an entire Redis cluster as of the time when the snapshot was taken.

Type: Snapshot (p. 217) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidSnapshotState**

The current state of the snapshot does not allow the requested operation to occur.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

# Example

## DeleteSnapshot

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DeleteSnapshot
   &SnapshotName=my-manual-snapshot
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DeleteSnapshotResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <DeleteSnapshotResult>
      <Snapshot>
         <CacheClusterId>my-redis-primary</CacheClusterId>
         <Port>6379</Port>
         <CacheNodeType>cache.m1.small</CacheNodeType>
         <CacheParameterGroupName>default.redis2.8</CacheParameterGroupName>
         <Engine>redis</Engine>
         <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
         <CacheClusterCreateTime>2015-02-02T18:46:57.972Z</CacheClusterCreateTime>
         <EngineVersion>2.8.6</EngineVersion>
         <SnapshotSource>manual</SnapshotSource>
         <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
         <PreferredMaintenanceWindow>wed:09:00-wed:10:00</PreferredMaintenanceWindow>
         <SnapshotName>my-manual-snapshot</SnapshotName>
         <SnapshotRetentionLimit>5</SnapshotRetentionLimit>
         <NodeSnapshots>
            <NodeSnapshot>
               <SnapshotCreateTime>2015-02-02T18:54:12Z</SnapshotCreateTime>
               <CacheNodeCreateTime>2015-02-02T18:46:57.972Z</CacheNodeCreateTime>
               <CacheNodeId>0001</CacheNodeId>
               <CacheSize>3 MB</CacheSize>
            </NodeSnapshot>
         </NodeSnapshots>
         <SnapshotStatus>deleting</SnapshotStatus>
         <NumCacheNodes>1</NumCacheNodes>
         <SnapshotWindow>07:30-08:30</SnapshotWindow>
      </Snapshot>
   </DeleteSnapshotResult>
   <ResponseMetadata>
      <RequestId>694d7017-b9d2-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</DeleteSnapshotResponse>
```

# See Also

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

- AWS Command Line Interface

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

# DescribeCacheClusters

Returns information about all provisioned clusters if no cluster identifier is specified, or about a specific cache cluster if a cluster identifier is supplied.

By default, abbreviated information about the clusters is returned. You can use the optional *ShowCacheNodeInfo* flag to retrieve detailed information about the cache nodes associated with the clusters. These details include the DNS address and port for the cache node endpoint.

If the cluster is in the *creating* state, only cluster-level information is displayed until all of the nodes are successfully provisioned.

If the cluster is in the *deleting* state, only cluster-level information is displayed.

If cache nodes are currently being added to the cluster, node endpoint information and creation time for the additional nodes are not displayed until they are completely provisioned. When the cluster state is *available*, the cluster is ready for use.

If cache nodes are currently being removed from the cluster, no endpoint information for the removed nodes is displayed.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

The user-supplied cluster identifier. If this parameter is specified, only information about that specific cluster is returned. This parameter isn't case sensitive.

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**ShowCacheClustersNotInReplicationGroups**

An optional flag that can be included in the `DescribeCacheCluster` request to show only nodes (API/CLI: clusters) that are not members of a replication group. In practice, this mean Memcached and single node Redis clusters.

Type: Boolean

Required: No

**ShowCacheNodeInfo**

An optional flag that can be included in the `DescribeCacheCluster` request to retrieve information about the individual cache nodes.

Type: Boolean

Required: No

# Response Elements

The following elements are returned by the service.

**CacheClusters.CacheCluster.N**

A list of clusters. Each item in the list contains detailed information about one cluster.

Type: Array of CacheCluster (p. 163) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheClusters

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeCacheClusters
   &MaxRecords=100
   &ShowCacheNodeInfo=false
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheClustersResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
  <DescribeCacheClustersResult>
    <CacheClusters>
      <CacheCluster>
        <CacheParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
          <CacheNodeIdsToReboot/>
        </CacheParameterGroup>
        <CacheClusterId>simcoprod42</CacheClusterId>
        <CacheClusterStatus>available</CacheClusterStatus>
        <ConfigurationEndpoint>
          <Port>11211</Port>
          <Address>simcoprod42.m2st2p.cfg.cache.amazonaws.com</Address>
        </ConfigurationEndpoint>
        <ClientDownloadLandingPage>
          https://console.aws.amazon.com/elasticache/home#client-download:
        </ClientDownloadLandingPage>
        <CacheNodeType>cache.m1.large</CacheNodeType>
        <Engine>memcached</Engine>
        <PendingModifiedValues/>
        <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
        <CacheClusterCreateTime>2015-02-02T01:21:46.607Z</CacheClusterCreateTime>
        <EngineVersion>1.4.5</EngineVersion>
        <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
        <PreferredMaintenanceWindow>fri:08:30-fri:09:30</PreferredMaintenanceWindow>
        <CacheSecurityGroups>
          <CacheSecurityGroup>
            <CacheSecurityGroupName>default</CacheSecurityGroupName>
            <Status>active</Status>
          </CacheSecurityGroup>
        </CacheSecurityGroups>
        <NotificationConfiguration>
          <TopicStatus>active</TopicStatus>
          <TopicArn>arn:aws:sns:us-west-2:123456789012:ElastiCacheNotifications</TopicArn>
        </NotificationConfiguration>
        <NumCacheNodes>6</NumCacheNodes>
      </CacheCluster>
    </CacheClusters>
  </DescribeCacheClustersResult>
  <ResponseMetadata>
    <RequestId>f270d58f-b7fb-11e0-9326-b7275b9d4a6c</RequestId>
```

```
  </ResponseMetadata>
</DescribeCacheClustersResponse>
```

# See Also

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

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

# DescribeCacheEngineVersions

Returns a list of the available cache engines and their versions.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupFamily**

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

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

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

**DefaultOnly**

If `true`, specifies that only the default version of the specified engine or engine and major version combination is to be returned.

Type: Boolean

Required: No

**Engine**

The cache engine to return. Valid values: `memcached` | `redis`

Type: String

Required: No

**EngineVersion**

The cache engine version to return.

Example: `1.4.14`

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

# Response Elements

The following elements are returned by the service.

**CacheEngineVersions.CacheEngineVersion.N**

A list of cache engine version details. Each element in the list contains detailed information about one cache engine version.

Type: Array of CacheEngineVersion (p. 169) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheEngineVersions

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeCacheEngineVersions
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheEngineVersionsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeCacheEngineVersionsResult>
    <CacheEngineVersions>
      <CacheEngineVersion>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Engine>memcached</Engine>
        <CacheEngineVersionDescription>memcached version 1.4.14</
CacheEngineVersionDescription>
        <CacheEngineDescription>memcached</CacheEngineDescription>
        <EngineVersion>1.4.14</EngineVersion>
      </CacheEngineVersion>
      <CacheEngineVersion>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Engine>memcached</Engine>
        <CacheEngineVersionDescription>memcached version 1.4.5</
CacheEngineVersionDescription>
        <CacheEngineDescription>memcached</CacheEngineDescription>
        <EngineVersion>1.4.5</EngineVersion>
      </CacheEngineVersion>
    </CacheEngineVersions>
  </DescribeCacheEngineVersionsResult>
  <ResponseMetadata>
    <RequestId>a6ac9ad2-f8a4-11e1-a4d1-a345e5370093</RequestId>
  </ResponseMetadata>
</DescribeCacheEngineVersionsResponse>
```

# See Also

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

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

# DescribeCacheParameterGroups

Returns a list of cache parameter group descriptions. If a cache parameter group name is specified, the list contains only the descriptions for that group.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupName**

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

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**CacheParameterGroups.CacheParameterGroup.N**

A list of cache parameter groups. Each element in the list contains detailed information about one cache parameter group.

Type: Array of CacheParameterGroup (p. 177) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheParameterGroups

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeCacheParameterGroups
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheParameterGroupsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeCacheParameterGroupsResult>
    <CacheParameterGroups>
      <CacheParameterGroup>
        <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Description>Default parameter group for memcached1.4</Description>
      </CacheParameterGroup>
      <CacheParameterGroup>
        <CacheParameterGroupName>mycacheparametergroup</CacheParameterGroupName>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Description>My cache parameter group</Description>
      </CacheParameterGroup>
      <CacheParameterGroup>
```

```
        <CacheParameterGroupName>mycacheparametergroup1</CacheParameterGroupName>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Description>My first cache parameter group</Description>
      </CacheParameterGroup>
      <CacheParameterGroup>
        <CacheParameterGroupName>mycacheparametergroup3</CacheParameterGroupName>
        <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
        <Description>My first cache parameter group</Description>
      </CacheParameterGroup>
    </CacheParameterGroups>
  </DescribeCacheParameterGroupsResult>
  <ResponseMetadata>
    <RequestId>7193fbb8-b7fc-11e0-9b0b-a9261be2b354</RequestId>
  </ResponseMetadata>
</DescribeCacheParameterGroupsResponse>
```

# See Also

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

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

# DescribeCacheParameters

Returns the detailed parameter list for a particular cache parameter group.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupName**

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

Type: String

Required: Yes

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**Source**

The parameter types to return.

Valid values: `user` | `system` | `engine-default`

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**CacheNodeTypeSpecificParameters.CacheNodeTypeSpecificParameter.N**

A list of parameters specific to a particular cache node type. Each element in the list contains detailed information about one parameter.

Type: Array of CacheNodeTypeSpecificParameter (p. 174) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

**Parameters.Parameter.N**

A list of Parameter (p. 197) instances.

Type: Array of Parameter (p. 197) objects

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheParameters

Some of the output has been omitted for brevity.

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeCacheParameters
   &CacheParameterGroupName=default.memcached1.4
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheParametersResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
  <DescribeCacheParametersResult>
    <CacheNodeTypeSpecificParameters>
      <CacheNodeTypeSpecificParameter>
        <CacheNodeTypeSpecificValues>
          <CacheNodeTypeSpecificValue>
            <CacheNodeType>cache.c1.xlarge</CacheNodeType>
            <Value>6000</Value>
          </CacheNodeTypeSpecificValue>

 (...output omitted...)

        </CacheNodeTypeSpecificValues>
        <DataType>integer</DataType>
        <Source>system</Source>
        <IsModifiable>false</IsModifiable>
        <Description>The maximum configurable amount of memory to use to store items, in
 megabytes.</Description>
        <AllowedValues>1-100000</AllowedValues>
        <ParameterName>max_cache_memory</ParameterName>
        <MinimumEngineVersion>1.4.5</MinimumEngineVersion>
      </CacheNodeTypeSpecificParameter>
      <CacheNodeTypeSpecificParameter>

 (...output omitted...)

      </CacheNodeTypeSpecificParameter>
    </CacheNodeTypeSpecificParameters>
    <Parameters>
      <Parameter>
        <ParameterValue>1024</ParameterValue>
        <DataType>integer</DataType>
        <Source>system</Source>
        <IsModifiable>false</IsModifiable>
        <Description>The backlog queue limit.</Description>
        <AllowedValues>1-10000</AllowedValues>
        <ParameterName>backlog_queue_limit</ParameterName>
        <MinimumEngineVersion>1.4.5</MinimumEngineVersion>
      </Parameter>

 (...output omitted...)

    </Parameters>
  </DescribeCacheParametersResult>
  <ResponseMetadata>
    <RequestId>0c507368-b7fe-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</DescribeCacheParametersResponse>
```

# See Also

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

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

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

# DescribeCacheSecurityGroups

Returns a list of cache security group descriptions. If a cache security group name is specified, the list contains only the description of that group.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSecurityGroupName**

The name of the cache security group to return details for.

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**CacheSecurityGroups.CacheSecurityGroup.N**

A list of cache security groups. Each element in the list contains detailed information about one group.

Type: Array of CacheSecurityGroup (p. 179) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheSecurityGroups

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeCacheSecurityGroups
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheSecurityGroupsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeCacheSecurityGroupsResult>
    <CacheSecurityGroups>
      <CacheSecurityGroup>
        <EC2SecurityGroups/>
        <CacheSecurityGroupName>default</CacheSecurityGroupName>
        <OwnerId>123456789012</OwnerId>
        <Description>default</Description>
      </CacheSecurityGroup>
      <CacheSecurityGroup>
        <EC2SecurityGroups/>
        <CacheSecurityGroupName>mycachesecuritygroup</CacheSecurityGroupName>
        <OwnerId>123456789012</OwnerId>
```

```
        <Description>My Security Group</Description>
      </CacheSecurityGroup>
    </CacheSecurityGroups>
  </DescribeCacheSecurityGroupsResult>
  <ResponseMetadata>
    <RequestId>a95360ae-b7fc-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</DescribeCacheSecurityGroupsResponse>
```

# See Also

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

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

# DescribeCacheSubnetGroups

Returns a list of cache subnet group descriptions. If a subnet group name is specified, the list contains only the description of that group.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSubnetGroupName**

The name of the cache subnet group to return details for.

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

## Response Elements

The following elements are returned by the service.

**CacheSubnetGroups.CacheSubnetGroup.N**

A list of cache subnet groups. Each element in the list contains detailed information about one group.

Type: Array of CacheSubnetGroup (p. 181) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSubnetGroupNotFoundFault**

The requested cache subnet group name does not refer to an existing cache subnet group.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeCacheSubnetGroups

Some of the output has been omitted for brevity.

### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=DescribeCacheSubnetGroups
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeCacheSubnetGroupsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
        <DescribeCacheSubnetGroupsResult>
            <CacheSubnetGroups>
                <CacheSubnetGroup>
                    <VpcId>990524496922</VpcId>
                    <CacheSubnetGroupDescription>description</CacheSubnetGroupDescription>
                    <CacheSubnetGroupName>subnet_grp1</CacheSubnetGroupName>
                    <Subnets>
                        <Subnet>
                            <SubnetStatus>Active</SubnetStatus>
                            <SubnetIdentifier>subnet-7c5b4115</SubnetIdentifier>
                            <SubnetAvailabilityZone>
                                <Name>us-west-2c</Name>
                            </SubnetAvailabilityZone>
                        </Subnet>
                        <Subnet>
                            <SubnetStatus>Active</SubnetStatus>
                            <SubnetIdentifier>subnet-7b5b4112</SubnetIdentifier>
                            <SubnetAvailabilityZone>
                                <Name>us-west-2b</Name>
                            </SubnetAvailabilityZone>
                        </Subnet>
                        <Subnet>
                            <SubnetStatus>Active</SubnetStatus>
```

```
                            <SubnetIdentifier>subnet-3ea6bd57</SubnetIdentifier>
                            <SubnetAvailabilityZone>
                                <Name>us-west-2c</Name>
                            </SubnetAvailabilityZone>
                        </Subnet>
                    </Subnets>
                </CacheSubnetGroup>

(...output omitted...)

            </CacheSubnetGroups>
        </DescribeCacheSubnetGroupsResult>
        <ResponseMetadata>
            <RequestId>31d0faee-229b-11e1-81f1-df3a2a803dad</RequestId>
        </ResponseMetadata>
    </DescribeCacheSubnetGroupsResponse>
```

# See Also

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

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

# DescribeEngineDefaultParameters

Returns the default engine and system parameter information for the specified cache engine.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupFamily**

The name of the cache parameter group family.

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

Type: String

Required: Yes

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

## Response Elements

The following element is returned by the service.

**EngineDefaults**

Represents the output of a `DescribeEngineDefaultParameters` operation.

Type: EngineDefaults (p. 186) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeEngineDefaultParameters

Some of the output has been omitted for brevity.

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeEngineDefaultParameters
   &CacheParameterGroupFamily=memcached1.4
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeEngineDefaultParametersResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeEngineDefaultParametersResult>
    <EngineDefaults>
      <CacheParameterGroupFamily>memcached1.4</CacheParameterGroupFamily>
      <Parameters>
        <Parameter>
          <ParameterValue>1024</ParameterValue>
          <DataType>integer</DataType>
          <Source>system</Source>
          <IsModifiable>false</IsModifiable>
          <Description>The backlog queue limit.</Description>
          <AllowedValues>1-10000</AllowedValues>
          <ParameterName>backlog_queue_limit</ParameterName>
          <MinimumEngineVersion>1.4.5</MinimumEngineVersion>
        </Parameter>
        <Parameter>

 (...output omitted...)

        </Parameter>
      </Parameters>
```

```
      <CacheNodeTypeSpecificParameters>
        <CacheNodeTypeSpecificParameter>
          <CacheNodeTypeSpecificValues>
            <CacheNodeTypeSpecificValue>
              <CacheNodeType>cache.c1.xlarge</CacheNodeType>
              <Value>6000</Value>
            </CacheNodeTypeSpecificValue>

 (...output omitted...)

          </CacheNodeTypeSpecificValues>
          <DataType>integer</DataType>
          <Source>system</Source>
          <IsModifiable>false</IsModifiable>
          <Description>The maximum configurable amount of memory to use to store items, in
 megabytes.</Description>
          <AllowedValues>1-100000</AllowedValues>
          <ParameterName>max_cache_memory</ParameterName>
          <MinimumEngineVersion>1.4.5</MinimumEngineVersion>
        </CacheNodeTypeSpecificParameter>

 (...output omitted...)

      </CacheNodeTypeSpecificParameters>
    </EngineDefaults>
  </DescribeEngineDefaultParametersResult>
  <ResponseMetadata>
    <RequestId>061282fe-b7fd-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</DescribeEngineDefaultParametersResponse>
```

# See Also

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

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

# DescribeEvents

Returns events related to clusters, cache security groups, and cache parameter groups. You can obtain events specific to a particular cluster, cache security group, or cache parameter group by providing the name as a parameter.

By default, only the events occurring within the last hour are returned; however, you can retrieve up to 14 days' worth of events if necessary.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**Duration**

The number of minutes worth of events to retrieve.

Type: Integer

Required: No

**EndTime**

The end of the time interval for which to retrieve events, specified in ISO 8601 format.

**Example:** 2017-03-30T07:03:49.555Z

Type: Timestamp

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**SourceIdentifier**

The identifier of the event source for which events are returned. If not specified, all sources are included in the response.

Type: String

Required: No

**SourceType**

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

Type: String

Valid Values: `cache-cluster | cache-parameter-group | cache-security-group | cache-subnet-group | replication-group`

Required: No

**StartTime**

The beginning of the time interval to retrieve events for, specified in ISO 8601 format.

**Example:** 2017-03-30T07:03:49.555Z

Type: Timestamp

Required: No

# Response Elements

The following elements are returned by the service.

**Events.Event.N**

A list of events. Each element in the list contains detailed information about one event.

Type: Array of Event (p. 187) objects

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeEvents

Some of the output has been omitted for brevity.

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeEvents
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeEventsResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
    <DescribeEventsResult>
        <Events>
            <Event>
                <Message>Cache cluster created</Message>
                <SourceType>cache-cluster</SourceType>
                <Date>2015-02-02T18:22:18.202Z</Date>
                <SourceIdentifier>my-redis-primary</SourceIdentifier>
            </Event>

 (...output omitted...)

        </Events>
    </DescribeEventsResult>
    <ResponseMetadata>
        <RequestId>e21c81b4-b9cd-11e3-8a16-7978bb24ffdf</RequestId>
    </ResponseMetadata>
</DescribeEventsResponse>
```

# See Also

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

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

# DescribeReplicationGroups

Returns information about a particular replication group. If no identifier is specified, `DescribeReplicationGroups` returns information about all replication groups.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**ReplicationGroupId**

The identifier for the replication group to be described. This parameter is not case sensitive.

If you do not specify this parameter, information about all replication groups is returned.

Type: String

Required: No

## Response Elements

The following elements are returned by the service.

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

**ReplicationGroups.ReplicationGroup.N**

A list of replication groups. Each item in the list contains detailed information about one replication group.

Type: Array of ReplicationGroup (p. 202) objects

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeReplicationGroups

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeReplicationGroups
   &MaxRecords=100
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeReplicationGroupsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
   <DescribeReplicationGroupsResult>
      <ReplicationGroups>
         <ReplicationGroup>
            <SnapshottingClusterId>my-redis-primary</SnapshottingClusterId>
            <MemberClusters>
               <ClusterId>my-redis-primary</ClusterId>
            </MemberClusters>
            <NodeGroups>
               <NodeGroup>
                  <NodeGroupId>0001</NodeGroupId>
```

```
                  <PrimaryEndpoint>
                     <Port>6379</Port>
                     <Address>my-repgroup.q68zge.ng.0001.use1devo.elmo-dev.amazonaws.com</
Address>
                  </PrimaryEndpoint>
                  <Status>available</Status>
                  <NodeGroupMembers>
                     <NodeGroupMember>
                        <CacheClusterId>my-redis-primary</CacheClusterId>
                        <ReadEndpoint>
                           <Port>6379</Port>
                           <Address>my-redis-primary.q68zge.0001.use1devo.elmo-
dev.amazonaws.com</Address>
                        </ReadEndpoint>
                        <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
                        <CacheNodeId>0001</CacheNodeId>
                        <CurrentRole>primary</CurrentRole>
                     </NodeGroupMember>
                  </NodeGroupMembers>
               </NodeGroup>
            </NodeGroups>
            <ReplicationGroupId>my-repgroup</ReplicationGroupId>
            <Status>available</Status>
            <PendingModifiedValues />
            <Description>My replication group</Description>
         </ReplicationGroup>
      </ReplicationGroups>
   </DescribeReplicationGroupsResult>
   <ResponseMetadata>
      <RequestId>144745b0-b9d3-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</DescribeReplicationGroupsResponse>
```

# See Also

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

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

# DescribeReservedCacheNodes

Returns information about reserved cache nodes for this account, or about a specified reserved cache node.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheNodeType**

The cache node type filter value. Use this parameter to show only those reservations matching the specified cache node type.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**Duration**

The duration filter value, specified in years or seconds. Use this parameter to show only reservations for this duration.

Valid Values: `1 | 3 | 31536000 | 94608000`

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**OfferingType**

The offering type filter value. Use this parameter to show only the available offerings matching the specified offering type.

Valid values: `"Light Utilization"|"Medium Utilization"|"Heavy Utilization"`

Type: String

Required: No

**ProductDescription**

The product description filter value. Use this parameter to show only those reservations matching the specified product description.

Type: String

Required: No

**ReservedCacheNodeId**

The reserved cache node identifier filter value. Use this parameter to show only the reservation that matches the specified reservation ID.

Type: String

Required: No

**ReservedCacheNodesOfferingId**

The offering identifier filter value. Use this parameter to show only purchased reservations matching the specified offering identifier.

Type: String

Required: No

# Response Elements

The following elements are returned by the service.

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

**ReservedCacheNodes.ReservedCacheNode.N**

A list of reserved cache nodes. Each element in the list contains detailed information about one node.

Type: Array of ReservedCacheNode (p. 207) objects

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ReservedCacheNodeNotFound**

The requested reserved cache node was not found.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeReservedCacheNodes

### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=DescribeReservedCacheNodes
   &ReservedCacheNodeId=customerSpecifiedID
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeReservedCacheNodesResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeReservedCacheNodesResult>
    <ReservedCacheNodes>
      <ReservedCacheNode>
        <OfferingType>Medium Utilization</OfferingType>
        <RecurringCharges/>
        <ProductDescription>memcached</ProductDescription>
        <ReservedCacheNodesOfferingId>649fd0c8-cf6d-47a0-bfa6-060f8e75e95f</
ReservedCacheNodesOfferingId>
        <State>payment-failed</State>
        <ReservedCacheNodeId>myreservationid</ReservedCacheNodeId>
        <CacheNodeCount>1</CacheNodeCount>
        <StartTime>2010-12-15T00:25:14.131Z</StartTime>
        <Duration>31536000</Duration>
        <FixedPrice>227.5</FixedPrice>
        <UsagePrice>0.046</UsagePrice>
        <CacheNodeType>cache.m1.small</CacheNodeType>
      </ReservedCacheNode>
  </DescribeReservedCacheNodesResult>
  <ResponseMetadata>
    <RequestId>c695119b-2961-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</DescribeReservedCacheNodesResponse>
```

# See Also

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

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

# DescribeReservedCacheNodesOfferings

Lists available reserved cache node offerings.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheNodeType**

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

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**Duration**

Duration filter value, specified in years or seconds. Use this parameter to show only reservations for a given duration.

Valid Values: `1 | 3 | 31536000 | 94608000`

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 100

Constraints: minimum 20; maximum 100.

Type: Integer

Required: No

**OfferingType**

The offering type filter value. Use this parameter to show only the available offerings matching the specified offering type.

Valid Values: `"Light Utilization"|"Medium Utilization"|"Heavy Utilization"`

Type: String

Required: No

**ProductDescription**

The product description filter value. Use this parameter to show only the available offerings matching the specified product description.

Type: String

Required: No

**ReservedCacheNodesOfferingId**

The offering identifier filter value. Use this parameter to show only the available offering that matches the specified reservation identifier.

Example: `438012d3-4052-4cc7-b2e3-8d3372e0e706`

Type: String

Required: No

# Response Elements

The following elements are returned by the service.

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

**ReservedCacheNodesOfferings.ReservedCacheNodesOffering.N**

A list of reserved cache node offerings. Each element in the list contains detailed information about one offering.

Type: Array of ReservedCacheNodesOffering (p. 210) objects

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ReservedCacheNodesOfferingNotFound**

The requested cache node offering does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## DescribeReservedCacheNodesOfferings

### Sample Request

```
https://elasticache.amazonaws.com/
```

```
  ?Action=DescribeReservedCacheNodesOfferings
  &ReservedCacheNodesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
  &Version=2015-02-02
  &SignatureVersion=4
  &SignatureMethod=HmacSHA256
  &Timestamp=20150202T192317Z
  &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeReservedCacheNodesOfferingsResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <DescribeReservedCacheNodesOfferingsResult>
    <ReservedCacheNodesOfferings>
      <ReservedCacheNodesOffering>
        <Duration>31536000</Duration>
        <OfferingType>Heavy Utilization</OfferingType>
        <RecurringCharges>
          <RecurringCharge>
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
            <RecurringChargeAmount>0.123</RecurringChargeAmount>
          </RecurringCharge>
        </RecurringCharges>
        <FixedPrice>162.0</FixedPrice>
        <ProductDescription>memcached</ProductDescription>
        <UsagePrice>0.0</UsagePrice>
        <ReservedCacheNodesOfferingId>SampleOfferingId</ReservedCacheNodesOfferingId>
        <CacheNodeType>cache.m1.small</CacheNodeType>
      </ReservedCacheNodesOffering>
    </ReservedCacheNodesOfferings>
  </DescribeReservedCacheNodesOfferingsResult>
  <ResponseMetadata>
    <RequestId>521b420a-2961-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</DescribeReservedCacheNodesOfferingsResponse>
```

## See Also

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

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

# DescribeSnapshots

Returns information about cluster or replication group snapshots. By default, `DescribeSnapshots` lists all of your snapshots; it can optionally describe a single snapshot, or just the snapshots associated with a particular cache cluster.

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

A user-supplied cluster identifier. If this parameter is specified, only snapshots associated with that specific cluster are described.

Type: String

Required: No

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

Required: No

**MaxRecords**

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

Default: 50

Constraints: minimum 20; maximum 50.

Type: Integer

Required: No

**ReplicationGroupId**

A user-supplied replication group identifier. If this parameter is specified, only snapshots associated with that specific replication group are described.

Type: String

Required: No

**ShowNodeGroupConfig**

A Boolean value which if true, the node group (shard) configuration is included in the snapshot description.

Type: Boolean

Required: No

**SnapshotName**

A user-supplied name of the snapshot. If this parameter is specified, only this snapshot are described.

Type: String

Required: No

**SnapshotSource**

If set to `system`, the output shows snapshots that were automatically created by ElastiCache. If set to `user` the output shows snapshots that were manually created. If omitted, the output shows both automatically and manually created snapshots.

Type: String

Required: No

# Response Elements

The following elements are returned by the service.

**Marker**

An optional marker returned from a prior request. Use this marker for pagination of results from this operation. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords`.

Type: String

**Snapshots.Snapshot.N**

A list of snapshots. Each item in the list contains detailed information about one snapshot.

Type: Array of Snapshot (p. 217) objects

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

# Example

## DescribeSnapshots

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=DescribeSnapshots
   &MaxRecords=50
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<DescribeSnapshotsResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <DescribeSnapshotsResult>
      <Snapshots>
         <Snapshot>
            <CacheClusterId>my-redis-primary</CacheClusterId>
            <Port>6379</Port>
            <CacheNodeType>cache.m1.small</CacheNodeType>
            <CacheParameterGroupName>default.redis2.8</CacheParameterGroupName>
            <Engine>redis</Engine>
            <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
            <CacheClusterCreateTime>2015-02-02T18:46:57.972Z</CacheClusterCreateTime>
            <EngineVersion>2.8.6</EngineVersion>
            <SnapshotSource>manual</SnapshotSource>
            <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
            <PreferredMaintenanceWindow>wed:09:00-wed:10:00</PreferredMaintenanceWindow>
            <SnapshotName>my-manual-snapshot</SnapshotName>
            <SnapshotRetentionLimit>5</SnapshotRetentionLimit>
            <NodeSnapshots>
               <NodeSnapshot>
                  <SnapshotCreateTime>2015-02-02T18:54:12Z</SnapshotCreateTime>
                  <CacheNodeCreateTime>2015-02-02T18:46:57.972Z</CacheNodeCreateTime>
                  <CacheNodeId>0001</CacheNodeId>
                  <CacheSize>3 MB</CacheSize>
               </NodeSnapshot>
            </NodeSnapshots>
            <SnapshotStatus>creating</SnapshotStatus>
            <NumCacheNodes>1</NumCacheNodes>
            <SnapshotWindow>07:30-08:30</SnapshotWindow>
         </Snapshot>
      </Snapshots>
   </DescribeSnapshotsResult>
```

```
   <ResponseMetadata>
      <RequestId>51b0b25e-b9cf-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</DescribeSnapshotsResponse>
```

# See Also

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

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

# IncreaseReplicaCount

Dynamically increases the number of replics in a Redis (cluster mode disabled) replication group or the number of replica nodes in one or more node groups (shards) of a Redis (cluster mode enabled) replication group. This operation is performed with no cluster down time.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ApplyImmediately**

If `True`, the number of replica nodes is increased immediately. `ApplyImmediately=False` is not currently supported.

Type: Boolean

Required: Yes

**ReplicationGroupId**

The id of the replication group to which you want to add replica nodes.

Type: String

Required: Yes

**NewReplicaCount**

The number of read replica nodes you want at the completion of this operation. For Redis (cluster mode disabled) replication groups, this is the number of replica nodes in the replication group. For Redis (cluster mode enabled) replication groups, this is the number of replica nodes in each of the replication group's node groups.

Type: Integer

Required: No

**ReplicaConfiguration.ConfigureShard.N**

A list of `ConfigureShard` objects that can be used to configure each shard in a Redis (cluster mode enabled) replication group. The `ConfigureShard` has three members: `NewReplicaCount`, `NodeGroupId`, and `PreferredAvailabilityZones`.

Type: Array of ConfigureShard (p. 182) objects

Required: No

## Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**ClusterQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of clusters per customer.

HTTP Status Code: 400

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeGroupsPerReplicationGroupQuotaExceeded**

The request cannot be processed because it would exceed the maximum allowed number of node groups (shards) in a single replication group. The default maximum is 15

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**NoOperationFault**

The operation was not performed because no changes were required.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

# Examples

## Example

The following example increases the replica count to 3 in all node groups of `sample-repl-group`.

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=IncreaseReplicaCount
   &ApplyImmediately=True
   &NewReplicaCount=3
   &ReplicationGroupId=sample-repl-group
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

## Example

The following example increases the replica count in two node groups. Because there are multiple node groups, this code only works for Redis (cluster mode enabled) replication groups.

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=IncreaseReplicaCount
   &ApplyImmediately=True
   &ReplicaConfiguration.ConfigureShard.1.NodeGroupId=0001
   &ReplicaConfiguration.ConfigureShard.1.NewReplicaCount=2

 &ReplicaConfiguration.ConfigureShard.1.PreferredAvailabilityZones.PreferredAvailabilityZone.1=us-
east-1a

 &ReplicaConfiguration.ConfigureShard.1.PreferredAvailabilityZones.PreferredAvailabilityZone.2=us-
east-1c

 &ReplicaConfiguration.ConfigureShard.1.PreferredAvailabilityZones.PreferredAvailabilityZone.3=us-
east-1b
   &ReplicaConfiguration.ConfigureShard.2.NodeGroupId=0003
   &ReplicaConfiguration.ConfigureShard.2.NewReplicaCount=3

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.1=us-
east-1a

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.2=us-
east-1b

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.3=us-
east-1c

 &ReplicaConfiguration.ConfigureShard.2.PreferredAvailabilityZones.PreferredAvailabilityZone.4=us-
east-1c
   &ReplicationGroupId=sample-repl-group
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
```

```
&Timestamp=20150202T192317Z
&X-Amz-Credential=<credential>
```

# See Also

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

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

# ListAllowedNodeTypeModifications

Lists all available node types that you can scale your Redis cluster's or replication group's current node type up to.

When you use the `ModifyCacheCluster` or `ModifyReplicationGroup` operations to scale up your cluster or replication group, the value of the `CacheNodeType` parameter must be one of the node types returned by this operation.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

The name of the cluster you want to scale up to a larger node instanced type. ElastiCache uses the cluster id to identify the current node type of this cluster and from that to create a list of node types you can scale up to.

**Important**
You must provide a value for either the `CacheClusterId` or the `ReplicationGroupId`.

Type: String

Required: No

**ReplicationGroupId**

The name of the replication group want to scale up to a larger node type. ElastiCache uses the replication group id to identify the current node type being used by this replication group, and from that to create a list of node types you can scale up to.

**Important**
You must provide a value for either the `CacheClusterId` or the `ReplicationGroupId`.

Type: String

Required: No

## Response Elements

The following element is returned by the service.

**ScaleUpModifications.member.N**

A string list, each element of which specifies a cache node type which you can use to scale your cluster or replication group.

When scaling up a Redis cluster or replication group using `ModifyCacheCluster` or `ModifyReplicationGroup`, use a value from this list for the `CacheNodeType` parameter.

Type: Array of strings

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Examples

## ListAllowedNodeTypeModifications for a Cluster

The following example request a list of node types you can use to scale `myCluster` up.

### Sample Request

```
https://elasticache.us-east-1.amazonaws.com/
   ?Action=ListAllowedNodeTypeModifications
   &CacheClusterId=mycachecluster
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Version=2015-02-02
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

## ListAllowedNodeTypeModifications for a Replication Group

The following example requests a list of node types you can use to scale `myReplGroup` up.

### Sample Request

```
https://elasticache.us-east-1.amazonaws.com/
   ?Action=ListAllowedNodeTypeModifications
   &ReplicationGroupId=myreplgroup
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Version=2015-02-02
   &Timestamp=20150202T192317Z
```

```
&X-Amz-Credential=<credential>
```

# See Also

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

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

# ListTagsForResource

Lists all cost allocation tags currently on the named resource. A `cost allocation tag` is a key-value pair where the key is case-sensitive and the value is optional. You can use cost allocation tags to categorize and track your AWS costs.

If the cluster is not in the *available* state, `ListTagsForResource` returns an error.

You can have a maximum of 50 cost allocation tags on an ElastiCache resource. For more information, see Monitoring Costs with Tags.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ResourceName**

The Amazon Resource Name (ARN) of the resource for which you want the list of tags, for example `arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster` or `arn:aws:elasticache:us-west-2:0123456789:snapshot:mySnapshot`.

For more information about ARNs, see Amazon Resource Names (ARNs) and AWS Service Namespaces.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**TagList.Tag.N**

A list of cost allocation tags as key-value pairs.

Type: Array of Tag (p. 223) objects

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidARN**

The requested Amazon Resource Name (ARN) does not refer to an existing resource.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

# Example

## ListTagsForResource

### Sample Request

```
https://elasticache.us-east-1.amazonaws.com/
   ?Action=ListTagsForResource
   &ResourceName=arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Version=2015-02-02
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

# See Also

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

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

# ModifyCacheCluster

Modifies the settings for a cluster. You can use this operation to change one or more cluster configuration parameters by specifying the parameters and the new values.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

The cluster identifier. This value is stored as a lowercase string.

Type: String

Required: Yes

**ApplyImmediately**

If `true`, this parameter causes the modifications in this request and any pending modifications to be applied, asynchronously and as soon as possible, regardless of the `PreferredMaintenanceWindow` setting for the cluster.

If `false`, changes to the cluster are applied on the next maintenance reboot, or the next failure reboot, whichever occurs first.

> **Important**
> If you perform a `ModifyCacheCluster` before a pending modification is applied, the pending modification is replaced by the newer modification.

Valid values: `true` | `false`

Default: `false`

Type: Boolean

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**AZMode**

Specifies whether the new nodes in this Memcached cluster are all created in a single Availability Zone or created across multiple Availability Zones.

Valid values: `single-az` | `cross-az`.

This option is only supported for Memcached clusters.

> **Note**
> You cannot specify `single-az` if the Memcached cluster already has cache nodes in different Availability Zones. If `cross-az` is specified, existing Memcached nodes remain in their current Availability Zone.
> Only newly created nodes are located in different Availability Zones. For instructions on how to move existing Memcached nodes to different Availability Zones, see the **Availability Zone Considerations** section of Cache Node Considerations for Memcached.

Type: String

Valid Values: `single-az | cross-az`

Required: No

**CacheNodeIdsToRemove.CacheNodeId.N**

A list of cache node IDs to be removed. A node ID is a numeric identifier (0001, 0002, etc.). This parameter is only valid when `NumCacheNodes` is less than the existing number of cache nodes. The number of cache node IDs supplied in this parameter must match the difference between the existing number of cache nodes in the cluster or pending cache nodes, whichever is greater, and the value of `NumCacheNodes` in the request.

For example: If you have 3 active cache nodes, 7 pending cache nodes, and the number of cache nodes in this `ModifyCacheCluster` call is 5, you must list 2 (7 - 5) cache node IDs to remove.

Type: Array of strings

Required: No

**CacheNodeType**

A valid cache node type that you want to scale this cluster up to.

Type: String

Required: No

**CacheParameterGroupName**

The name of the cache parameter group to apply to this cluster. This change is asynchronously applied as soon as possible for parameters when the `ApplyImmediately` parameter is specified as `true` for this request.

Type: String

Required: No

**CacheSecurityGroupNames.CacheSecurityGroupName.N**

A list of cache security group names to authorize on this cluster. This change is asynchronously applied as soon as possible.

You can use this parameter only with clusters that are created outside of an Amazon Virtual Private Cloud (Amazon VPC).

Constraints: Must contain no more than 255 alphanumeric characters. Must not be "Default".

Type: Array of strings

Required: No

**EngineVersion**

The upgraded version of the cache engine to be run on the cache nodes.

**Important:** You can upgrade to a newer engine version (see Selecting a Cache Engine and Version), but you cannot downgrade to an earlier engine version. If you want to use an earlier engine version, you must delete the existing cluster and create it anew with the earlier engine version.

Type: String

Required: No

**NewAvailabilityZones.PreferredAvailabilityZone.N**

The list of Availability Zones where the new Memcached cache nodes are created.

This parameter is only valid when `NumCacheNodes` in the request is greater than the sum of the number of active cache nodes and the number of cache nodes pending creation (which may be zero). The number of Availability Zones supplied in this list must match the cache nodes being added in this request.

This option is only supported on Memcached clusters.

Scenarios:

- **Scenario 1:** You have 3 active nodes and wish to add 2 nodes. Specify `NumCacheNodes=5` (3 + 2) and optionally specify two Availability Zones for the two new nodes.
- **Scenario 2:** You have 3 active nodes and 2 nodes pending creation (from the scenario 1 call) and want to add 1 more node. Specify `NumCacheNodes=6` ((3 + 2) + 1) and optionally specify an Availability Zone for the new node.
- **Scenario 3:** You want to cancel all pending operations. Specify `NumCacheNodes=3` to cancel all pending operations.

The Availability Zone placement of nodes pending creation cannot be modified. If you wish to cancel any nodes pending creation, add 0 nodes by setting `NumCacheNodes` to the number of current nodes.

If `cross-az` is specified, existing Memcached nodes remain in their current Availability Zone. Only newly created nodes can be located in different Availability Zones. For guidance on how to move existing Memcached nodes to different Availability Zones, see the **Availability Zone Considerations** section of Cache Node Considerations for Memcached.

**Impact of new add/remove requests upon pending requests**

- Scenario-1
  - Pending Action: Delete
  - New Request: Delete
  - Result: The new delete, pending or immediate, replaces the pending delete.
- Scenario-2
  - Pending Action: Delete
  - New Request: Create
  - Result: The new create, pending or immediate, replaces the pending delete.
- Scenario-3
  - Pending Action: Create
  - New Request: Delete
  - Result: The new delete, pending or immediate, replaces the pending create.
- Scenario-4
  - Pending Action: Create
  - New Request: Create
  - Result: The new create is added to the pending create.

    **Important**
    **Important:** If the new create request is **Apply Immediately - Yes**, all creates are performed immediately. If the new create request is **Apply Immediately - No**, all creates are pending.

Type: Array of strings

Required: No

**NotificationTopicArn**

The Amazon Resource Name (ARN) of the Amazon SNS topic to which notifications are sent.

**Note**
The Amazon SNS topic owner must be same as the cluster owner.

Type: String

Required: No

**NotificationTopicStatus**

The status of the Amazon SNS notification topic. Notifications are sent only if the status is `active`.

Valid values: `active` | `inactive`

Type: String

Required: No

**NumCacheNodes**

The number of cache nodes that the cluster should have. If the value for `NumCacheNodes` is greater than the sum of the number of current cache nodes and the number of cache nodes pending creation (which may be zero), more nodes are added. If the value is less than the number of existing cache nodes, nodes are removed. If the value is equal to the number of current cache nodes, any pending add or remove requests are canceled.

If you are removing cache nodes, you must use the `CacheNodeIdsToRemove` parameter to provide the IDs of the specific cache nodes to remove.

For clusters running Redis, this value must be 1. For clusters running Memcached, this value must be between 1 and 20.

**Note**
Adding or removing Memcached cache nodes can be applied immediately or as a pending operation (see `ApplyImmediately`).
A pending operation to modify the number of cache nodes in a cluster during its maintenance window, whether by adding or removing nodes in accordance with the scale out architecture, is not queued. The customer's latest request to add or remove nodes to the cluster overrides any previous pending operations to modify the number of cache nodes in the cluster. For example, a request to remove 2 nodes would override a previous pending operation to remove 3 nodes. Similarly, a request to add 2 nodes would override a previous pending operation to remove 3 nodes and vice versa. As Memcached cache nodes may now be provisioned in different Availability Zones with flexible cache node placement, a request to add nodes does not automatically override a previous pending operation to add nodes. The customer can modify the previous pending operation to add more nodes or explicitly cancel the pending request and retry the new request. To cancel pending operations to modify the number of cache nodes in a cluster, use the `ModifyCacheCluster` request and set `NumCacheNodes` equal to the number of cache nodes currently in the cluster.

Type: Integer

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`

- mon
- tue
- wed
- thu
- fri
- sat

Example: sun:23:00-mon:01:30

Type: String

Required: No

**SecurityGroupIds.SecurityGroupId.N**

Specifies the VPC Security Groups associated with the cluster.

This parameter can be used only with clusters that are created in an Amazon Virtual Private Cloud (Amazon VPC).

Type: Array of strings

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic cluster snapshots before deleting them. For example, if you set SnapshotRetentionLimit to 5, a snapshot that was taken today is retained for 5 days before being deleted.

**Note**
If the value of SnapshotRetentionLimit is set to zero (0), backups are turned off.

Type: Integer

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of your cluster.

Type: String

Required: No

# Response Elements

The following element is returned by the service.

**CacheCluster**

Contains all of the attributes of a specific cluster.

Type: CacheCluster (p. 163) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidCacheSecurityGroupState**

The current state of the cache security group does not allow deletion.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeQuotaForClusterExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes in a single cluster.

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## ModifyCacheCluster

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=ModifyCacheCluster
   NumCacheNodes=5
   &CacheClusterId=simcoprod01
   &ApplyImmediately=true
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<ModifyCacheClusterResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
  <ModifyCacheClusterResult>
    <CacheCluster>
      <CacheParameterGroup>
        <ParameterApplyStatus>in-sync</ParameterApplyStatus>
        <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
        <CacheNodeIdsToReboot/>
      </CacheParameterGroup>
      <CacheClusterId>simcoprod01</CacheClusterId>
      <CacheClusterStatus>available</CacheClusterStatus>
      <ConfigurationEndpoint>
        <Port>11211</Port>
        <Address>simcoprod01.m2st2p.cfg.cache.amazonaws.com</Address>
      </ConfigurationEndpoint>
      <CacheNodeType>cache.m1.large</CacheNodeType>
      <Engine>memcached</Engine>
      <PendingModifiedValues>
        <NumCacheNodes>5</NumCacheNodes>
      </PendingModifiedValues>
      <PreferredAvailabilityZone>us-west-2b</PreferredAvailabilityZone>
      <CacheClusterCreateTime>2015-02-02T23:45:20.937Z</CacheClusterCreateTime>
      <EngineVersion>1.4.5</EngineVersion>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <PreferredMaintenanceWindow>fri:04:30-fri:05:30</PreferredMaintenanceWindow>
      <CacheSecurityGroups>
        <CacheSecurityGroup>
          <CacheSecurityGroupName>default</CacheSecurityGroupName>
          <Status>active</Status>
        </CacheSecurityGroup>
      </CacheSecurityGroups>
      <NumCacheNodes>3</NumCacheNodes>
    </CacheCluster>
  </ModifyCacheClusterResult>
  <ResponseMetadata>
```

```
    <RequestId>d5786c6d-b7fe-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</ModifyCacheClusterResponse>
```

# See Also

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

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

# ModifyCacheParameterGroup

Modifies the parameters of a cache parameter group. You can modify up to 20 parameters in a single request by submitting a list parameter name and value pairs.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupName**

The name of the cache parameter group to modify.

Type: String

Required: Yes

**ParameterNameValues.ParameterNameValue.N**

An array of parameter names and values for the parameter update. You must supply at least one parameter name and value; subsequent arguments are optional. A maximum of 20 parameters may be modified per request.

Type: Array of ParameterNameValue (p. 199) objects

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheParameterGroupName**

The name of the cache parameter group.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**InvalidCacheParameterGroupState**

The current state of the cache parameter group does not allow the requested operation to occur.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## ModifyCacheParameterGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=ModifyCacheParameterGroup
   &CacheParameterGroupName=mycacheparametergroup
   &ParameterNameValues.ParameterNameValue.1.ParameterName=chunk_size_growth_factor
   &ParameterNameValues.ParameterNameValue.1.ParameterValue=1.02
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<ModifyCacheParameterGroupResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <ModifyCacheParameterGroupResult>
    <CacheParameterGroupName>mycacheparametergroup</CacheParameterGroupName>
  </ModifyCacheParameterGroupResult>
  <ResponseMetadata>
    <RequestId>fcedeef2-b7ff-11e0-9326-b7275b9d4a6c</RequestId>
  </ResponseMetadata>
</ModifyCacheParameterGroupResponse>
```

# See Also

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

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

- AWS SDK for Python
- AWS SDK for Ruby V2

# ModifyCacheSubnetGroup

Modifies an existing cache subnet group.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSubnetGroupName**

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

Constraints: Must contain no more than 255 alphanumeric characters or hyphens.

Example: `mysubnetgroup`

Type: String

Required: Yes

**CacheSubnetGroupDescription**

A description of the cache subnet group.

Type: String

Required: No

**SubnetIds.SubnetIdentifier.N**

The EC2 subnet IDs for the cache subnet group.

Type: Array of strings

Required: No

## Response Elements

The following element is returned by the service.

**CacheSubnetGroup**

Represents the output of one of the following operations:

- `CreateCacheSubnetGroup`
- `ModifyCacheSubnetGroup`

Type: CacheSubnetGroup (p. 181) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheSubnetGroupNotFoundFault**

The requested cache subnet group name does not refer to an existing cache subnet group.

HTTP Status Code: 400

**CacheSubnetQuotaExceededFault**

The request cannot be processed because it would exceed the allowed number of subnets in a cache subnet group.

HTTP Status Code: 400

**InvalidSubnet**

An invalid subnet identifier was specified.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SubnetInUse**

The requested subnet is being used by another cache subnet group.

HTTP Status Code: 400

# Example

## ModifyCacheSubnetGroup

### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=ModifyCacheSubnetGroup
   &CacheSubnetGroupName=myCachesubnetgroup
   &CacheSubnetGroupDescription=My%20modified%20CacheSubnetGroup
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<ModifyCacheSubnetGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
    <ModifyCacheSubnetGroupResult>
            <CacheSubnetGroup>
                <VpcId>990524496922</VpcId>
                <CacheSubnetGroupDescription>My modified CacheSubnetGroup</
CacheSubnetGroupDescription>
                <CacheSubnetGroupName>myCachesubnetgroup</CacheSubnetGroupName>
                <Subnets>
                    <Subnet>
                        <SubnetStatus>Active</SubnetStatus>
                        <SubnetIdentifier>subnet-7c5b4115</SubnetIdentifier>
                        <SubnetAvailabilityZone>
                            <Name>us-west-2c</Name>
                        </SubnetAvailabilityZone>
                    </Subnet>
                    <Subnet>
```

```
                    <SubnetStatus>Active</SubnetStatus>
                    <SubnetIdentifier>subnet-7b5b4112</SubnetIdentifier>
                    <SubnetAvailabilityZone>
                        <Name>us-west-2b</Name>
                    </SubnetAvailabilityZone>
                </Subnet>
                <Subnet>
                    <SubnetStatus>Active</SubnetStatus>
                    <SubnetIdentifier>subnet-3ea6bd57</SubnetIdentifier>
                    <SubnetAvailabilityZone>
                        <Name>us-west-2c</Name>
                    </SubnetAvailabilityZone>
                </Subnet>
            </Subnets>
        </CacheSubnetGroup>
    </ModifyCacheSubnetGroupResult>
    <ResponseMetadata>
        <RequestId>ed662948-a57b-11df-9e38-7ffab86c801f</RequestId>
    </ResponseMetadata>
</ModifyCacheSubnetGroupResponse>
```

# See Also

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

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

# ModifyReplicationGroup

Modifies the settings for a replication group.

For Redis (cluster mode enabled) clusters, this operation cannot be used to change a cluster's node type or engine version. For more information, see:

- Scaling for Amazon ElastiCache for Redis—Redis (cluster mode enabled) in the ElastiCache User Guide
- ModifyReplicationGroupShardConfiguration in the ElastiCache API Reference

**Note**
This operation is valid for Redis only.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ReplicationGroupId**

The identifier of the replication group to modify.

Type: String

Required: Yes

**ApplyImmediately**

If `true`, this parameter causes the modifications in this request and any pending modifications to be applied, asynchronously and as soon as possible, regardless of the `PreferredMaintenanceWindow` setting for the replication group.

If `false`, changes to the nodes in the replication group are applied on the next maintenance reboot, or the next failure reboot, whichever occurs first.

Valid values: `true` | `false`

Default: `false`

Type: Boolean

Required: No

**AutomaticFailoverEnabled**

Determines whether a read replica is automatically promoted to read/write primary if the existing primary encounters a failure.

Valid values: `true` | `false`

Amazon ElastiCache for Redis does not support Multi-AZ with automatic failover on:

- Redis versions earlier than 2.8.6.
- Redis (cluster mode disabled): T1 and T2 cache node types.
- Redis (cluster mode enabled): T1 node types.

Type: Boolean

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**CacheNodeType**

A valid cache node type that you want to scale this replication group to.

Type: String

Required: No

**CacheParameterGroupName**

The name of the cache parameter group to apply to all of the clusters in this replication group. This change is asynchronously applied as soon as possible for parameters when the `ApplyImmediately` parameter is specified as `true` for this request.

Type: String

Required: No

**CacheSecurityGroupNames.CacheSecurityGroupName.N**

A list of cache security group names to authorize for the clusters in this replication group. This change is asynchronously applied as soon as possible.

This parameter can be used only with replication group containing clusters running outside of an Amazon Virtual Private Cloud (Amazon VPC).

Constraints: Must contain no more than 255 alphanumeric characters. Must not be `Default`.

Type: Array of strings

Required: No

**EngineVersion**

The upgraded version of the cache engine to be run on the clusters in the replication group.

**Important:** You can upgrade to a newer engine version (see Selecting a Cache Engine and Version), but you cannot downgrade to an earlier engine version. If you want to use an earlier engine version, you must delete the existing replication group and create it anew with the earlier engine version.

Type: String

Required: No

**NodeGroupId**

Deprecated. This parameter is not used.

Type: String

Required: No

**NotificationTopicArn**

The Amazon Resource Name (ARN) of the Amazon SNS topic to which notifications are sent.

**Note**
The Amazon SNS topic owner must be same as the replication group owner.

Type: String

Required: No

**NotificationTopicStatus**

The status of the Amazon SNS notification topic for the replication group. Notifications are sent only if the status is `active`.

Valid values: `active` | `inactive`

Type: String

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`
- `mon`
- `tue`
- `wed`
- `thu`
- `fri`
- `sat`

Example: `sun:23:00-mon:01:30`

Type: String

Required: No

**PrimaryClusterId**

For replication groups with a single primary, if this parameter is specified, ElastiCache promotes the specified cluster in the specified replication group to the primary role. The nodes of all other clusters in the replication group are read replicas.

Type: String

Required: No

**ReplicationGroupDescription**

A description for the replication group. Maximum length is 255 characters.

Type: String

Required: No

**SecurityGroupIds.SecurityGroupId.N**

Specifies the VPC Security Groups associated with the clusters in the replication group.

This parameter can be used only with replication group containing clusters running in an Amazon Virtual Private Cloud (Amazon VPC).

Type: Array of strings

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic node group (shard) snapshots before deleting them. For example, if you set `SnapshotRetentionLimit` to 5, a snapshot that was taken today is retained for 5 days before being deleted.

**Important** If the value of SnapshotRetentionLimit is set to zero (0), backups are turned off.

Type: Integer

Required: No

**SnapshottingClusterId**

The cluster ID that is used as the daily snapshot source for the replication group. This parameter cannot be set for Redis (cluster mode enabled) replication groups.

Type: String

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of the node group (shard) specified by `SnapshottingClusterId`.

Example: `05:00-09:00`

If you do not specify this parameter, ElastiCache automatically chooses an appropriate time range.

Type: String

Required: No

# Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidCacheSecurityGroupState**

The current state of the cache security group does not allow deletion.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeQuotaForClusterExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes in a single cluster.

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## ModifyReplicationGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=ModifyReplicationGroup
   &ApplyImmediately=false
   &ReplicationGroupId=my-repgroup
   &PrimaryClusterId=my-replica-1
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<ModifyReplicationGroupResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <ModifyReplicationGroupResult>
      <ReplicationGroup>
         <SnapshottingClusterId>my-redis-primary</SnapshottingClusterId>
         <MemberClusters>
            <ClusterId>my-redis-primary</ClusterId>
            <ClusterId>my-replica-1</ClusterId>
         </MemberClusters>
         <NodeGroups>
            <NodeGroup>
               <NodeGroupId>0001</NodeGroupId>
               <PrimaryEndpoint>
                  <Port>6379</Port>
                  <Address>my-repgroup.q68zge.ng.0001.use1devo.elmo-dev.amazonaws.com</
Address>
               </PrimaryEndpoint>
               <Status>available</Status>
               <NodeGroupMembers>
                  <NodeGroupMember>
                     <CacheClusterId>my-redis-primary</CacheClusterId>
                     <ReadEndpoint>
                        <Port>6379</Port>
                        <Address>my-redis-primary.q68zge.0001.use1devo.elmo-
dev.amazonaws.com</Address>
                     </ReadEndpoint>
                     <PreferredAvailabilityZone>us-west-2c</PreferredAvailabilityZone>
                     <CacheNodeId>0001</CacheNodeId>
                     <CurrentRole>primary</CurrentRole>
                  </NodeGroupMember>
                  <NodeGroupMember>
                     <CacheClusterId>my-replica-1</CacheClusterId>
                     <ReadEndpoint>
                        <Port>6379</Port>
                        <Address>my-replica-1.q68zge.0001.use1devo.elmo-dev.amazonaws.com</
Address>
```

```
                     </ReadEndpoint>
                     <PreferredAvailabilityZone>us-west-2b</PreferredAvailabilityZone>
                     <CacheNodeId>0001</CacheNodeId>
                     <CurrentRole>replica</CurrentRole>
                  </NodeGroupMember>
               </NodeGroupMembers>
            </NodeGroup>
         </NodeGroups>
         <ReplicationGroupId>my-repgroup</ReplicationGroupId>
         <Status>available</Status>
         <PendingModifiedValues>
            <PrimaryClusterId>my-replica-1</PrimaryClusterId>
         </PendingModifiedValues>
         <Description>My replication group</Description>
      </ReplicationGroup>
   </ModifyReplicationGroupResult>
   <ResponseMetadata>
      <RequestId>6fd0aad6-b9d7-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</ModifyReplicationGroupResponse>
```

# See Also

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

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

# ModifyReplicationGroupShardConfiguration

Modifies a replication group's shards (node groups) by allowing you to add shards, remove shards, or rebalance the keyspaces among exisiting shards.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ApplyImmediately**

Indicates that the shard reconfiguration process begins immediately. At present, the only permitted value for this parameter is `true`.

Value: true

Type: Boolean

Required: Yes

**NodeGroupCount**

The number of node groups (shards) that results from the modification of the shard configuration.

Type: Integer

Required: Yes

**ReplicationGroupId**

The name of the Redis (cluster mode enabled) cluster (replication group) on which the shards are to be configured.

Type: String

Required: Yes

**NodeGroupsToRemove.NodeGroupToRemove.N**

If the value of `NodeGroupCount` is less than the current number of node groups (shards), then either `NodeGroupsToRemove` or `NodeGroupsToRetain` is required. `NodeGroupsToRemove` is a list of `NodeGroupIds` to remove from the cluster.

ElastiCache for Redis will attempt to remove all node groups listed by `NodeGroupsToRemove` from the cluster.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: No

**NodeGroupsToRetain.NodeGroupToRetain.N**

If the value of `NodeGroupCount` is less than the current number of node groups (shards), then either `NodeGroupsToRemove` or `NodeGroupsToRetain` is required. `NodeGroupsToRetain` is a list of `NodeGroupIds` to retain in the cluster.

ElastiCache for Redis will attempt to remove all node groups except those listed by `NodeGroupsToRetain` from the cluster.

Type: Array of strings

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: No

**ReshardingConfiguration.ReshardingConfiguration.N**

Specifies the preferred availability zones for each node group in the cluster. If the value of `NodeGroupCount` is greater than the current number of node groups (shards), you can use this parameter to specify the preferred availability zones of the cluster's shards. If you omit this parameter ElastiCache selects availability zones for you.

You can specify this parameter only if the value of `NodeGroupCount` is greater than the current number of node groups (shards).

Type: Array of ReshardingConfiguration (p. 213) objects

Required: No

# Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InsufficientCacheClusterCapacity**

The requested cache node type is not available in the specified Availability Zone. For more information, see InsufficientCacheClusterCapacity in the ElastiCache User Guide.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**InvalidVPCNetworkStateFault**

The VPC network is in an invalid state.

HTTP Status Code: 400

**NodeGroupsPerReplicationGroupQuotaExceeded**

The request cannot be processed because it would exceed the maximum allowed number of node groups (shards) in a single replication group. The default maximum is 15

HTTP Status Code: 400

**NodeQuotaForCustomerExceeded**

The request cannot be processed because it would exceed the allowed number of cache nodes per customer.

HTTP Status Code: 400

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Examples

## Add shards

The following example adds shards to the replication group `my-cluster` so that at the completion of the call there are 4 shards. The availability zones for the nodes in the shards are specified by the parameter `ReshardingConfiguration.ReshardingConfiguration.N.PreferredAvailabilityZones.AvailabilityZ` If there are already 4 shards in this replication group, the call fails.

```
https://elasticache.us-east-2.amazonaws.com/
    ?Action=ModifyReplicationGroupShardConfiguration
    &ApplyImmediately=true
    &NodeGroupCount=4
    &ReplicationGroupId=my-cluster

 &ReshardingConfiguration.ReshardingConfiguration.1.PreferredAvailabilityZones.AvailabilityZone.1=us-
east-2a

 &ReshardingConfiguration.ReshardingConfiguration.1.PreferredAvailabilityZones.AvailabilityZone.2=us-
east-2c
```

```
 &ReshardingConfiguration.ReshardingConfiguration.2.PreferredAvailabilityZones.AvailabilityZone.1=us-
east-2b

 &ReshardingConfiguration.ReshardingConfiguration.2.PreferredAvailabilityZones.AvailabilityZone.2=us-
east-2a

 &ReshardingConfiguration.ReshardingConfiguration.3.PreferredAvailabilityZones.AvailabilityZone.1=us-
east-2c

 &ReshardingConfiguration.ReshardingConfiguration.3.PreferredAvailabilityZones.AvailabilityZone.2=us-
east-2d

 &ReshardingConfiguration.ReshardingConfiguration.4.PreferredAvailabilityZones.AvailabilityZone.1=us-
east-2d

 &ReshardingConfiguration.ReshardingConfiguration.4.PreferredAvailabilityZones.AvailabilityZone.2=us-
east-2c
    &Version=2015-02-02
    &SignatureVersion=4
    &SignatureMethod=HmacSHA256
    &Timestamp=20171002T192317Z
    &X-Amz-Credential=<credential>
```

## Remove shards

The following example removes two shards from the replication group `my-cluster`. leaving 2 shards. When removing shards, the parameter `NodeGroupsToRemove.NodeGroupToRemove` is required.

You cannot remove the last shard leaving zero shards.

```
https://elasticache.us-east-2.amazonaws.com/
    ?Action=ModifyReplicationGroupShardConfiguration
    &ApplyImmediately=true
    &NodeGroupCount=2
    &ReplicationGroupId=my-cluster
    &NodeGroupsToRemove.NodeGroupToRemove.1=0002
    &NodeGroupsToRemove.NodeGroupToRemove.2=0003
    &Version=2015-02-02
    &SignatureVersion=4
    &SignatureMethod=HmacSHA256
    &Timestamp=20171002T192317Z
    &X-Amz-Credential=<credential>
```

## Rebalance shards

The following rebalances the keyspaces among the existing shards in the replication group `my-cluster`. The value specified by `NodeGroupCount` must be the existing number of shards. If the keyspaces are already balanced the call fails.

```
https://elasticache.us-east-2.amazonaws.com/
    ?Action=ModifyReplicationGroupShardConfiguration
    &ApplyImmediately=true
    &NodeGroupCount=4
    &ReplicationGroupId=my-cluster
    &Version=2015-02-02
    &SignatureVersion=4
    &SignatureMethod=HmacSHA256
    &Timestamp=20171002T192317Z
    &X-Amz-Credential=<credential>
```

# See Also

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

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

# PurchaseReservedCacheNodesOffering

Allows you to purchase a reserved cache node offering.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ReservedCacheNodesOfferingId**

The ID of the reserved cache node offering to purchase.

Example: `438012d3-4052-4cc7-b2e3-8d3372e0e706`

Type: String

Required: Yes

**CacheNodeCount**

The number of cache node instances to reserve.

Default: `1`

Type: Integer

Required: No

**ReservedCacheNodeId**

A customer-specified identifier to track this reservation.

> **Note**
> The Reserved Cache Node ID is an unique customer-specified identifier to track this reservation. If this parameter is not specified, ElastiCache automatically generates an identifier for the reservation.

Example: myreservationID

Type: String

Required: No

## Response Elements

The following element is returned by the service.

**ReservedCacheNode**

Represents the output of a `PurchaseReservedCacheNodesOffering` operation.

Type: ReservedCacheNode (p. 207) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ReservedCacheNodeAlreadyExists**

You already have a reservation with the given identifier.

HTTP Status Code: 404

**ReservedCacheNodeQuotaExceeded**

The request cannot be processed because it would exceed the user's cache node quota.

HTTP Status Code: 400

**ReservedCacheNodesOfferingNotFound**

The requested cache node offering does not exist.

HTTP Status Code: 404

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## PurchaseReservedCacheNodesOffering

### Sample Request

```
https://elasticache.amazonaws.com/
   ?Action=PurchaseReservedCacheNodesOffering
   &ReservedCacheNodeId=myreservationID
   &ReservedCacheNodesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
   &CacheNodeCount=1
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<PurchaseReservedCacheNodesOfferingResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
  <PurchaseReservedCacheNodesOfferingResult>
    <ReservedCacheNode>
      <OfferingType>Medium Utilization</OfferingType>
      <RecurringCharges/>
      <ProductDescription>memcached</ProductDescription>
```

```
      <ReservedCacheNodesOfferingId> 438012d3-4052-4cc7-b2e3-8d3372e0e706</
ReservedCacheNodesOfferingId>
      <State>payment-pending</State>
      <ReservedCacheNodeId>myreservationID</ReservedCacheNodeId>
      <CacheNodeCount>10</CacheNodeCount>
      <StartTime>2015-02-02T23:24:56.577Z</StartTime>
      <Duration>31536000</Duration>
      <FixedPrice>123.0</FixedPrice>
      <UsagePrice>0.123</UsagePrice>
      <CacheNodeType>cache.m1.small</CacheNodeType>
    </ReservedCacheNode>
  </PurchaseReservedCacheNodesOfferingResult>
  <ResponseMetadata>
    <RequestId>7f099901-29cf-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</PurchaseReservedCacheNodesOfferingResponse>
```

# See Also

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

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

# RebootCacheCluster

Reboots some, or all, of the cache nodes within a provisioned cluster. This operation applies any modified cache parameter groups to the cluster. The reboot operation takes place as soon as possible, and results in a momentary outage to the cluster. During the reboot, the cluster status is set to REBOOTING.

The reboot causes the contents of the cache (for each cache node being rebooted) to be lost.

When the reboot is complete, a cluster event is created.

Rebooting a cluster is currently supported on Memcached and Redis (cluster mode disabled) clusters. Rebooting is not supported on Redis (cluster mode enabled) clusters.

If you make changes to parameters that require a Redis (cluster mode enabled) cluster reboot for the changes to be applied, see Rebooting a Cluster for an alternate process.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheClusterId**

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

Type: String

Required: Yes

**CacheNodeIdsToReboot.CacheNodeId.N**

A list of cache node IDs to reboot. A node ID is a numeric identifier (0001, 0002, etc.). To reboot an entire cluster, specify all of the cache node IDs.

Type: Array of strings

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheCluster**

Contains all of the attributes of a specific cluster.

Type: CacheCluster (p. 163) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## RebootCacheCluster

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=RebootCacheCluster
   &CacheClusterId=mycache
   &CacheNodeIdsToReboot.CacheNodeId.1=0001
   &CacheNodeIdsToReboot.CacheNodeId.2=0002
   &CacheNodeIdsToReboot.CacheNodeId.3=0003
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<RebootCacheClusterResponse xmlns="http://elasticache.amazonaws.com/doc/2015-02-02/">
   <RebootCacheClusterResult>
      <CacheCluster>
         <CacheClusterStatus>rebooting cluster nodes</CacheClusterStatus>
         <CacheParameterGroup>
            <CacheParameterGroupName>default.memcached1.4</CacheParameterGroupName>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
            <CacheNodeIdsToReboot />
         </CacheParameterGroup>
         <CacheClusterId>mycache</CacheClusterId>
         <ConfigurationEndpoint>
            <Port>11211</Port>
            <Address>mycache.q68zge.cfg.use1devo.elmo-dev.amazonaws.com</Address>
         </ConfigurationEndpoint>
         <CacheNodeType>cache.m1.small</CacheNodeType>
         <Engine>memcached</Engine>
         <PendingModifiedValues />
         <PreferredAvailabilityZone>us-west-2b</PreferredAvailabilityZone>
         <CacheClusterCreateTime>2015-02-02T19:04:12.812Z</CacheClusterCreateTime>
         <EngineVersion>1.4.17</EngineVersion>
         <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
         <PreferredMaintenanceWindow>wed:09:00-wed:10:00</PreferredMaintenanceWindow>
         <ClientDownloadLandingPage>https://console.aws.amazon.com/elasticache/home#client-
download:</ClientDownloadLandingPage>
         <CacheSecurityGroups>
            <CacheSecurityGroup>
               <CacheSecurityGroupName>default</CacheSecurityGroupName>
               <Status>active</Status>
```

```
            </CacheSecurityGroup>
         </CacheSecurityGroups>
         <NumCacheNodes>3</NumCacheNodes>
      </CacheCluster>
   </RebootCacheClusterResult>
   <ResponseMetadata>
      <RequestId>cf7e6fc4-b9d1-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</RebootCacheClusterResponse>
```

# See Also

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

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

# RemoveTagsFromResource

Removes the tags identified by the `TagKeys` list from the named resource.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**ResourceName**

The Amazon Resource Name (ARN) of the resource from which you want the tags removed, for example `arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster` or `arn:aws:elasticache:us-west-2:0123456789:snapshot:mySnapshot`.

For more information about ARNs, see Amazon Resource Names (ARNs) and AWS Service Namespaces.

Type: String

Required: Yes

**TagKeys.member.N**

A list of `TagKeys` identifying the tags you want removed from the named resource.

Type: Array of strings

Required: Yes

## Response Elements

The following element is returned by the service.

**TagList.Tag.N**

A list of cost allocation tags as key-value pairs.

Type: Array of Tag (p. 223) objects

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheClusterNotFound**

The requested cluster ID does not refer to an existing cluster.

HTTP Status Code: 404

**InvalidARN**

The requested Amazon Resource Name (ARN) does not refer to an existing resource.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

**SnapshotNotFoundFault**

The requested snapshot name does not refer to an existing snapshot.

HTTP Status Code: 404

**TagNotFound**

The requested tag was not found on this resource.

HTTP Status Code: 404

# Example

## RemoveTagsFromResource

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=RemoveTagsFromResource
   &ResourceName=arn:aws:elasticache:us-west-2:0123456789:cluster:myCluster
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &TagKeys.TagKey.1=service
   &TagKeys.TagKey.2=organization
   &Version=2015-02-02
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

# See Also

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

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

# ResetCacheParameterGroup

Modifies the parameters of a cache parameter group to the engine or system default value. You can reset specific parameters by submitting a list of parameter names. To reset the entire cache parameter group, specify the `ResetAllParameters` and `CacheParameterGroupName` parameters.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheParameterGroupName**

The name of the cache parameter group to reset.

Type: String

Required: Yes

**ParameterNameValues.ParameterNameValue.N**

An array of parameter names to reset to their default values. If `ResetAllParameters` is `true`, do not use `ParameterNameValues`. If `ResetAllParameters` is `false`, you must specify the name of at least one parameter to reset.

Type: Array of ParameterNameValue (p. 199) objects

Required: No

**ResetAllParameters**

If `true`, all parameters in the cache parameter group are reset to their default values. If `false`, only the parameters listed by `ParameterNameValues` are reset to their default values.

Valid values: `true` | `false`

Type: Boolean

Required: No

## Response Elements

The following element is returned by the service.

**CacheParameterGroupName**

The name of the cache parameter group.

Type: String

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**CacheParameterGroupNotFound**

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

HTTP Status Code: 404

**InvalidCacheParameterGroupState**

The current state of the cache parameter group does not allow the requested operation to occur.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## ResetCacheParameterGroup

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=ResetCacheParameterGroup
   &ResetAllParameters=true
   &CacheParameterGroupName=mycacheparametergroup1
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<ResetCacheParameterGroupResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
   <ResetCacheParameterGroupResult>
      <CacheParameterGroupName>mycacheparametergroup1</CacheParameterGroupName>
   </ResetCacheParameterGroupResult>
   <ResponseMetadata>
      <RequestId>cb7cc855-b9d2-11e3-8a16-7978bb24ffdf</RequestId>
   </ResponseMetadata>
</ResetCacheParameterGroupResponse>
```

# See Also

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

- AWS Command Line Interface

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

# RevokeCacheSecurityGroupIngress

Revokes ingress from a cache security group. Use this operation to disallow access from an Amazon EC2 security group that had been previously authorized.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**CacheSecurityGroupName**

The name of the cache security group to revoke ingress from.

Type: String

Required: Yes

**EC2SecurityGroupName**

The name of the Amazon EC2 security group to revoke access from.

Type: String

Required: Yes

**EC2SecurityGroupOwnerId**

The AWS account number of the Amazon EC2 security group owner. Note that this is not the same thing as an AWS access key ID - you must provide a valid AWS account number for this parameter.

Type: String

Required: Yes

## Response Elements

The following element is returned by the service.

**CacheSecurityGroup**

Represents the output of one of the following operations:

- `AuthorizeCacheSecurityGroupIngress`
- `CreateCacheSecurityGroup`
- `RevokeCacheSecurityGroupIngress`

Type: CacheSecurityGroup (p. 179) object

## Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**AuthorizationNotFound**

The specified Amazon EC2 security group is not authorized for the specified cache security group.

HTTP Status Code: 404

**CacheSecurityGroupNotFound**

The requested cache security group name does not refer to an existing cache security group.

HTTP Status Code: 404

**InvalidCacheSecurityGroupState**

The current state of the cache security group does not allow deletion.

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**ServiceLinkedRoleNotFoundFault**

The specified service linked role (SLR) was not found.

HTTP Status Code: 400

# Example

## RevokeCacheSecurityGroupIngress

### Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=RevokeCacheSecurityGroupIngress
   &EC2SecurityGroupName=default
   &CacheSecurityGroupName=mygroup
   &EC2SecurityGroupOwnerId=1234-5678-1234
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20150202T192317Z
   &X-Amz-Credential=<credential>
```

### Sample Response

```
<RevokeCacheSecurityGroupIngressResponse xmlns="http://elasticache.amazonaws.com/
doc/2015-02-02/">
    <RevokeCacheSecurityGroupIngressResult>
        <CacheSecurityGroup>
            <EC2SecurityGroups>
                <EC2SecurityGroup>
                    <Status>revoking</Status>
                    <EC2SecurityGroupName>default</EC2SecurityGroupName>
                    <EC2SecurityGroupOwnerId>123456781234</EC2SecurityGroupOwnerId>
                </EC2SecurityGroup>
```

```
            </EC2SecurityGroups>
            <CacheSecurityGroupName>mygroup</CacheSecurityGroupName>
            <OwnerId>123456789012</OwnerId>
            <Description>My security group</Description>
        </CacheSecurityGroup>
    </RevokeCacheSecurityGroupIngressResult>
    <ResponseMetadata>
        <RequestId>02ae3699-3650-11e0-a564-8f11342c56b0</RequestId>
    </ResponseMetadata>
</RevokeCacheSecurityGroupIngressResponse>
```

# See Also

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

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

# TestFailover

Represents the input of a `TestFailover` operation which test automatic failover on a specified node group (called shard in the console) in a replication group (called cluster in the console).

**Note the following**

- A customer can use this operation to test automatic failover on up to 5 shards (called node groups in the ElastiCache API and AWS CLI) in any rolling 24-hour period.
- If calling this operation on shards in different clusters (called replication groups in the API and CLI), the calls can be made concurrently.
- If calling this operation multiple times on different shards in the same Redis (cluster mode enabled) replication group, the first node replacement must complete before a subsequent call can be made.
- To determine whether the node replacement is complete you can check Events using the Amazon ElastiCache console, the AWS CLI, or the ElastiCache API. Look for the following automatic failover related events, listed here in order of occurrance:
  1. Replication group message: `Test Failover API called for node group <node-group-id>`
  2. Cache cluster message: `Failover from master node <primary-node-id> to replica node <node-id> completed`
  3. Replication group message: `Failover from master node <primary-node-id> to replica node <node-id> completed`
  4. Cache cluster message: `Recovering cache nodes <node-id>`
  5. Cache cluster message: `Finished recovery for cache nodes <node-id>`

  For more information see:
  - Viewing ElastiCache Events in the *ElastiCache User Guide*
  - DescribeEvents in the ElastiCache API Reference

Also see, Testing Multi-AZ with Automatic Failover in the *ElastiCache User Guide*.

## Request Parameters

For information about the parameters that are common to all actions, see Common Parameters (p. 224).

**NodeGroupId**

The name of the node group (called shard in the console) in this replication group on which automatic failover is to be tested. You may test automatic failover on up to 5 node groups in any rolling 24-hour period.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: Yes

**ReplicationGroupId**

The name of the replication group (console: cluster) whose automatic failover is being tested by this operation.

Type: String

Required: Yes

# Response Elements

The following element is returned by the service.

**ReplicationGroup**

Contains all of the attributes of a specific Redis replication group.

Type: ReplicationGroup (p. 202) object

# Errors

For information about the errors that are common to all actions, see Common Errors (p. 226).

**APICallRateForCustomerExceeded**

The customer has exceeded the allowed rate of API calls.

HTTP Status Code: 400

**InvalidCacheClusterState**

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

HTTP Status Code: 400

**InvalidParameterCombination**

Two or more incompatible parameters were specified.

HTTP Status Code: 400

**InvalidParameterValue**

The value for a parameter is invalid.

HTTP Status Code: 400

**InvalidReplicationGroupState**

The requested replication group is not in the `available` state.

HTTP Status Code: 400

**NodeGroupNotFoundFault**

The node group specified by the `NodeGroupId` parameter could not be found. Please verify that the node group exists and that you spelled the `NodeGroupId` value correctly.

HTTP Status Code: 404

**ReplicationGroupNotFoundFault**

The specified replication group does not exist.

HTTP Status Code: 404

**TestFailoverNotAvailableFault**

The `TestFailover` action is not available.

HTTP Status Code: 400

# Example

The following example tests automatic failover on the Redis (cluster mode disabled) replication group (console: cluster) `redis00`. Since there is only one node group in Redis (cluster mode disabled) clusters, the *NodeGroupId* will always be `<cluster-name>-0001`.

## Sample Request

```
https://elasticache.us-west-2.amazonaws.com/
   ?Action=TestFailover
   &NodeGroupId=redis00-0001
   &ReplicationGroupId=redis00
   &Version=2015-02-02
   &SignatureVersion=4
   &SignatureMethod=HmacSHA256
   &Timestamp=20170418T192317Z
   &X-Amz-Credential=<credential>
```

# See Also

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

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

# Data Types

The Amazon ElastiCache 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:

- Tag (p. 223)

# AvailabilityZone

Describes an Availability Zone in which the cluster is launched.

## Contents

**Note**
In the following list, the required parameters are described first.

**Name**

The name of the Availability Zone.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheCluster

Contains all of the attributes of a specific cluster.

## Contents

**Note**
In the following list, the required parameters are described first.

**AtRestEncryptionEnabled**

A flag that enables encryption at-rest when set to `true`.

You cannot modify the value of `AtRestEncryptionEnabled` after the cluster is created. To enable at-rest encryption on a cluster you must set `AtRestEncryptionEnabled` to `true` when you create a cluster.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

Type: Boolean

Required: No

**AuthTokenEnabled**

A flag that enables using an `AuthToken` (password) when issuing Redis commands.

Default: `false`

Type: Boolean

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**CacheClusterCreateTime**

The date and time when the cluster was created.

Type: Timestamp

Required: No

**CacheClusterId**

The user-supplied identifier of the cluster. This identifier is a unique key that identifies a cluster.

Type: String

Required: No

**CacheClusterStatus**

The current state of this cluster, one of the following values: `available`, `creating`, `deleted`, `deleting`, `incompatible-network`, `modifying`, `rebooting cluster nodes`, `restore-failed`, or `snapshotting`.

Type: String

Required: No

**CacheNodes.CacheNode.N**

A list of cache nodes that are members of the cluster.

Type: Array of CacheNode (p. 171) objects

Required: No

**CacheNodeType**

The name of the compute and memory capacity node type for the cluster.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**CacheParameterGroup**

Status of the cache parameter group.

Type: CacheParameterGroupStatus (p. 178) object

Required: No

**CacheSecurityGroups.CacheSecurityGroup.N**

A list of cache security group elements, composed of name and status sub-elements.

Type: Array of CacheSecurityGroupMembership (p. 180) objects

Required: No

**CacheSubnetGroupName**

The name of the cache subnet group associated with the cluster.

Type: String

Required: No

**ClientDownloadLandingPage**

The URL of the web page where you can download the latest ElastiCache client library.

Type: String

Required: No

**ConfigurationEndpoint**

Represents a Memcached cluster endpoint which, if Automatic Discovery is enabled on the cluster, can be used by an application to connect to any node in the cluster. The configuration endpoint will always have `.cfg` in it.

Example: `mem-3.9dvc4r.cfg.usw2.cache.amazonaws.com:11211`

Type: Endpoint (p. 185) object

Required: No

**Engine**

The name of the cache engine (`memcached` or `redis`) to be used for this cluster.

Type: String

Required: No

**EngineVersion**

The version of the cache engine that is used in this cluster.

Type: String

Required: No

**NotificationConfiguration**

Describes a notification topic and its status. Notification topics are used for publishing ElastiCache events to subscribers using Amazon Simple Notification Service (SNS).

Type: NotificationConfiguration (p. 196) object

Required: No

**NumCacheNodes**

The number of cache nodes in the cluster.

For clusters running Redis, this value must be 1. For clusters running Memcached, this value must be between 1 and 20.

Type: Integer

Required: No

**PendingModifiedValues**

A group of settings that are applied to the cluster in the future, or that are currently being applied.

Type: PendingModifiedValues (p. 200) object

Required: No

**PreferredAvailabilityZone**

The name of the Availability Zone in which the cluster is located or "Multiple" if the cache nodes are located in different Availability Zones.

Type: String

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`
- `mon`
- `tue`
- `wed`
- `thu`
- `fri`
- `sat`

Example: `sun:23:00-mon:01:30`

Type: String

Required: No

**ReplicationGroupId**

The replication group to which this cluster belongs. If this field is empty, the cluster is not associated with any replication group.

Type: String

Required: No

**SecurityGroups.member.N**

A list of VPC Security Groups associated with the cluster.

Type: Array of SecurityGroupMembership (p. 215) objects

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic cluster snapshots before deleting them. For example, if you set `SnapshotRetentionLimit` to 5, a snapshot that was taken today is retained for 5 days before being deleted.

**Important**
If the value of SnapshotRetentionLimit is set to zero (0), backups are turned off.

Type: Integer

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of your cluster.

Example: `05:00-09:00`

Type: String

Required: No

**TransitEncryptionEnabled**

A flag that enables in-transit encryption when set to `true`.

You cannot modify the value of `TransitEncryptionEnabled` after the cluster is created. To enable in-transit encryption on a cluster you must set `TransitEncryptionEnabled` to `true` when you create a cluster.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

Type: Boolean

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheEngineVersion

Provides all of the details about a particular cache engine version.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheEngineDescription**

The description of the cache engine.

Type: String

Required: No

**CacheEngineVersionDescription**

The description of the cache engine version.

Type: String

Required: No

**CacheParameterGroupFamily**

The name of the cache parameter group family associated with this cache engine.

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

Type: String

Required: No

**Engine**

The name of the cache engine.

Type: String

Required: No

**EngineVersion**

The version number of the cache engine.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheNode

Represents an individual cache node within a cluster. Each cache node runs its own instance of the cluster's protocol-compliant caching software - either Memcached or Redis.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

# Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeCreateTime**

The date and time when the cache node was created.

Type: Timestamp

Required: No

**CacheNodeId**

The cache node identifier. A node ID is a numeric identifier (0001, 0002, etc.). The combination of cluster ID and node ID uniquely identifies every cache node used in a customer's AWS account.

Type: String

Required: No

**CacheNodeStatus**

The current state of this cache node.

Type: String

Required: No

**CustomerAvailabilityZone**

The Availability Zone where this node was created and now resides.

Type: String

Required: No

**Endpoint**

The hostname for connecting to this cache node.

Type: Endpoint (p. 185) object

Required: No

**ParameterGroupStatus**

The status of the parameter group applied to this cache node.

Type: String

Required: No

**SourceCacheNodeId**

The ID of the primary node to which this read replica node is synchronized. If this field is empty, this node is not associated with a primary cluster.

Type: String

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheNodeTypeSpecificParameter

A parameter that has a different value for each cache node type it is applied to. For example, in a Redis cluster, a `cache.m1.large` cache node type would have a larger `maxmemory` value than a `cache.m1.small` type.

## 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

**CacheNodeTypeSpecificValues.CacheNodeTypeSpecificValue.N**

A list of cache node types and their corresponding values for this parameter.

Type: Array of CacheNodeTypeSpecificValue (p. 176) objects

Required: No

**ChangeType**

Indicates whether a change to the parameter is applied immediately or requires a reboot for the change to be applied. You can force a reboot or wait until the next maintenance window's reboot. For more information, see Rebooting a Cluster.

Type: String

Valid Values: `immediate | requires-reboot`

Required: No

**DataType**

The valid data type for the parameter.

Type: String

Required: No

**Description**

A description of the parameter.

Type: String

Required: No

**IsModifiable**

Indicates whether (`true`) or not (`false`) the parameter can be modified. Some parameters have security or operational implications that prevent them from being changed.

Type: Boolean

Required: No

**MinimumEngineVersion**

The earliest cache engine version to which the parameter can apply.

Type: String

Required: No

**ParameterName**

The name of the parameter.

Type: String

Required: No

**Source**

The source of the parameter value.

Type: String

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheNodeTypeSpecificValue

A value that applies only to a certain cache node type.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeType**

The cache node type for which this value applies.

Type: String

Required: No

**Value**

The value for the cache node type.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheParameterGroup

Represents the output of a `CreateCacheParameterGroup` operation.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheParameterGroupFamily**

The name of the cache parameter group family that this cache parameter group is compatible with.

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

Type: String

Required: No

**CacheParameterGroupName**

The name of the cache parameter group.

Type: String

Required: No

**Description**

The description for this cache parameter group.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheParameterGroupStatus

Status of the cache parameter group.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeIdsToReboot.CacheNodeId.N**

A list of the cache node IDs which need to be rebooted for parameter changes to be applied. A node ID is a numeric identifier (0001, 0002, etc.).

Type: Array of strings

Required: No

**CacheParameterGroupName**

The name of the cache parameter group.

Type: String

Required: No

**ParameterApplyStatus**

The status of parameter updates.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheSecurityGroup

Represents the output of one of the following operations:

- `AuthorizeCacheSecurityGroupIngress`
- `CreateCacheSecurityGroup`
- `RevokeCacheSecurityGroupIngress`

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheSecurityGroupName**

The name of the cache security group.

Type: String

Required: No

**Description**

The description of the cache security group.

Type: String

Required: No

**EC2SecurityGroups.EC2SecurityGroup.N**

A list of Amazon EC2 security groups that are associated with this cache security group.

Type: Array of EC2SecurityGroup (p. 184) objects

Required: No

**OwnerId**

The AWS account ID of the cache security group owner.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheSecurityGroupMembership

Represents a cluster's status within a particular cache security group.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheSecurityGroupName**

The name of the cache security group.

Type: String

Required: No

**Status**

The membership status in the cache security group. The status changes when a cache security group is modified, or when the cache security groups assigned to a cluster are modified.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# CacheSubnetGroup

Represents the output of one of the following operations:

- `CreateCacheSubnetGroup`
- `ModifyCacheSubnetGroup`

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheSubnetGroupDescription**

The description of the cache subnet group.

Type: String

Required: No

**CacheSubnetGroupName**

The name of the cache subnet group.

Type: String

Required: No

**Subnets.Subnet.N**

A list of subnets associated with the cache subnet group.

Type: Array of Subnet (p. 222) objects

Required: No

**VpcId**

The Amazon Virtual Private Cloud identifier (VPC ID) of the cache subnet group.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ConfigureShard

Node group (shard) configuration options when adding or removing replicas. Each node group (shard) configuration has the following members: NodeGroupId, NewReplicaCount, and PreferredAvailabilityZones.

## Contents

**Note**
In the following list, the required parameters are described first.

**NewReplicaCount**

The number of replicas you want in this node group at the end of this operation. The maximum value for `NewReplicaCount` is 5. The minimum value depends upon the type of Redis replication group you are working with.

The minimum number of replicas in a shard or replication group is:

- Redis (cluster mode disabled)
  - If Multi-AZ with Automatic Failover is enabled: 1
  - If Multi-AZ with Automatic Failover is not enable: 0
- Redis (cluster mode enabled): 0 (though you will not be able to failover to a replica if your primary node fails)

Type: Integer

Required: Yes

**NodeGroupId**

The 4-digit id for the node group you are configuring. For Redis (cluster mode disabled) replication groups, the node group id is always 0001. To find a Redis (cluster mode enabled)'s node group's (shard's) id, see Finding a Shard's Id.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: Yes

**PreferredAvailabilityZones.PreferredAvailabilityZone.N**

A list of `PreferredAvailabilityZone` strings that specify which availability zones the replication group's nodes are to be in. The nummber of `PreferredAvailabilityZone` values must equal the value of `NewReplicaCount` plus 1 to account for the primary node. If this member of `ReplicaConfiguration` is omitted, ElastiCache for Redis selects the availability zone for each of the replicas.

Type: Array of strings

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# EC2SecurityGroup

Provides ownership and status information for an Amazon EC2 security group.

## Contents

**Note**
In the following list, the required parameters are described first.

**EC2SecurityGroupName**

The name of the Amazon EC2 security group.

Type: String

Required: No

**EC2SecurityGroupOwnerId**

The AWS account ID of the Amazon EC2 security group owner.

Type: String

Required: No

**Status**

The status of the Amazon EC2 security group.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Endpoint

Represents the information required for client programs to connect to a cache node.

## Contents

**Note**
In the following list, the required parameters are described first.

**Address**

The DNS hostname of the cache node.

Type: String

Required: No

**Port**

The port number that the cache engine is listening on.

Type: Integer

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# EngineDefaults

Represents the output of a `DescribeEngineDefaultParameters` operation.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeTypeSpecificParameters.CacheNodeTypeSpecificParameter.N**

A list of parameters specific to a particular cache node type. Each element in the list contains detailed information about one parameter.

Type: Array of CacheNodeTypeSpecificParameter (p. 174) objects

Required: No

**CacheParameterGroupFamily**

Specifies the name of the cache parameter group family to which the engine default parameters apply.

Valid values are: `memcached1.4` | `redis2.6` | `redis2.8` | `redis3.2` | `redis4.0`

Type: String

Required: No

**Marker**

Provides an identifier to allow retrieval of paginated results.

Type: String

Required: No

**Parameters.Parameter.N**

Contains a list of engine default parameters.

Type: Array of Parameter (p. 197) objects

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Event

Represents a single occurrence of something interesting within the system. Some examples of events are creating a cluster, adding or removing a cache node, or rebooting a node.

## Contents

**Note**
In the following list, the required parameters are described first.

**Date**

The date and time when the event occurred.

Type: Timestamp

Required: No

**Message**

The text of the event.

Type: String

Required: No

**SourceIdentifier**

The identifier for the source of the event. For example, if the event occurred at the cluster level, the identifier would be the name of the cluster.

Type: String

Required: No

**SourceType**

Specifies the origin of this event - a cluster, a parameter group, a security group, etc.

Type: String

Valid Values: `cache-cluster | cache-parameter-group | cache-security-group | cache-subnet-group | replication-group`

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# NodeGroup

Represents a collection of cache nodes in a replication group. One node in the node group is the read/write primary node. All the other nodes are read-only Replica nodes.

## Contents

**Note**
In the following list, the required parameters are described first.

**NodeGroupId**

The identifier for the node group (shard). A Redis (cluster mode disabled) replication group contains only 1 node group; therefore, the node group ID is 0001. A Redis (cluster mode enabled) replication group contains 1 to 15 node groups numbered 0001 to 0015. Optionally, the user can provide the id for a node group.

Type: String

Required: No

**NodeGroupMembers.NodeGroupMember.N**

A list containing information about individual nodes within the node group (shard).

Type: Array of NodeGroupMember (p. 192) objects

Required: No

**PrimaryEndpoint**

The endpoint of the primary node in this node group (shard).

Type: Endpoint (p. 185) object

Required: No

**Slots**

The keyspace for this node group (shard).

Type: String

Required: No

**Status**

The current state of this replication group - `creating`, `available`, etc.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java

- AWS SDK for Ruby V2

# NodeGroupConfiguration

Node group (shard) configuration options. Each node group (shard) configuration has the following: `Slots`, `PrimaryAvailabilityZone`, `ReplicaAvailabilityZones`, `ReplicaCount`.

## Contents

**Note**
In the following list, the required parameters are described first.

**NodeGroupId**

Either the ElastiCache for Redis supplied 4-digit id or a user supplied id for the node group these configuration values apply to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: No

**PrimaryAvailabilityZone**

The Availability Zone where the primary node of this node group (shard) is launched.

Type: String

Required: No

**ReplicaAvailabilityZones.AvailabilityZone.N**

A list of Availability Zones to be used for the read replicas. The number of Availability Zones in this list must match the value of `ReplicaCount` or `ReplicasPerNodeGroup` if not specified.

Type: Array of strings

Required: No

**ReplicaCount**

The number of read replica nodes in this node group (shard).

Type: Integer

Required: No

**Slots**

A string that specifies the keyspace for a particular node group. Keyspaces range from 0 to 16,383. The string is in the format `startkey-endkey`.

Example: `"0-3999"`

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# NodeGroupMember

Represents a single node within a node group (shard).

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheClusterId**

The ID of the cluster to which the node belongs.

Type: String

Required: No

**CacheNodeId**

The ID of the node within its cluster. A node ID is a numeric identifier (0001, 0002, etc.).

Type: String

Required: No

**CurrentRole**

The role that is currently assigned to the node - `primary` or `replica`. This member is only applicable for Redis (cluster mode disabled) replication groups.

Type: String

Required: No

**PreferredAvailabilityZone**

The name of the Availability Zone in which the node is located.

Type: String

Required: No

**ReadEndpoint**

The information required for client programs to connect to a node for read operations. The read endpoint is only applicable on Redis (cluster mode disabled) clusters.

Type: Endpoint (p. 185) object

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# NodeSnapshot

Represents an individual cache node in a snapshot of a cluster.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheClusterId**

A unique identifier for the source cluster.

Type: String

Required: No

**CacheNodeCreateTime**

The date and time when the cache node was created in the source cluster.

Type: Timestamp

Required: No

**CacheNodeId**

The cache node identifier for the node in the source cluster.

Type: String

Required: No

**CacheSize**

The size of the cache on the source cache node.

Type: String

Required: No

**NodeGroupConfiguration**

The configuration for the source node group (shard).

Type: NodeGroupConfiguration (p. 190) object

Required: No

**NodeGroupId**

A unique identifier for the source node group (shard).

Type: String

Required: No

**SnapshotCreateTime**

The date and time when the source node's metadata and cache data set was obtained for the snapshot.

Type: Timestamp

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# NotificationConfiguration

Describes a notification topic and its status. Notification topics are used for publishing ElastiCache events to subscribers using Amazon Simple Notification Service (SNS).

## Contents

**Note**
In the following list, the required parameters are described first.

**TopicArn**

The Amazon Resource Name (ARN) that identifies the topic.

Type: String

Required: No

**TopicStatus**

The current state of the topic.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Parameter

Describes an individual setting that controls some aspect of ElastiCache behavior.

## 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

**ChangeType**

Indicates whether a change to the parameter is applied immediately or requires a reboot for the change to be applied. You can force a reboot or wait until the next maintenance window's reboot. For more information, see Rebooting a Cluster.

Type: String

Valid Values: `immediate | requires-reboot`

Required: No

**DataType**

The valid data type for the parameter.

Type: String

Required: No

**Description**

A description of the parameter.

Type: String

Required: No

**IsModifiable**

Indicates whether (`true`) or not (`false`) the parameter can be modified. Some parameters have security or operational implications that prevent them from being changed.

Type: Boolean

Required: No

**MinimumEngineVersion**

The earliest cache 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.

Type: String

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ParameterNameValue

Describes a name-value pair that is used to update the value of a parameter.

## Contents

**Note**
In the following list, the required parameters are described first.

**ParameterName**

The name of the parameter.

Type: String

Required: No

**ParameterValue**

The value of the parameter.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# PendingModifiedValues

A group of settings that are applied to the cluster in the future, or that are currently being applied.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeIdsToRemove.CacheNodeId.N**

A list of cache node IDs that are being removed (or will be removed) from the cluster. A node ID is a 4-digit numeric identifier (0001, 0002, etc.).

Type: Array of strings

Required: No

**CacheNodeType**

The cache node type that this cluster or replication group is scaled to.

Type: String

Required: No

**EngineVersion**

The new cache engine version that the cluster runs.

Type: String

Required: No

**NumCacheNodes**

The new number of cache nodes for the cluster.

For clusters running Redis, this value must be 1. For clusters running Memcached, this value must be between 1 and 20.

Type: Integer

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# RecurringCharge

Contains the specific price and frequency of a recurring charges for a reserved cache node, or for a reserved cache node offering.

## Contents

**Note**
In the following list, the required parameters are described first.

**RecurringChargeAmount**

The monetary amount of the recurring charge.

Type: Double

Required: No

**RecurringChargeFrequency**

The frequency of the recurring charge.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReplicationGroup

Contains all of the attributes of a specific Redis replication group.

## Contents

**Note**
In the following list, the required parameters are described first.

**AtRestEncryptionEnabled**

A flag that enables encryption at-rest when set to `true`.

You cannot modify the value of `AtRestEncryptionEnabled` after the cluster is created. To enable encryption at-rest on a cluster you must set `AtRestEncryptionEnabled` to `true` when you create a cluster.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

Type: Boolean

Required: No

**AuthTokenEnabled**

A flag that enables using an `AuthToken` (password) when issuing Redis commands.

Default: `false`

Type: Boolean

Required: No

**AutomaticFailover**

Indicates the status of Multi-AZ with automatic failover for this Redis replication group.

Amazon ElastiCache for Redis does not support Multi-AZ with automatic failover on:

- Redis versions earlier than 2.8.6.
- Redis (cluster mode disabled): T1 and T2 cache node types.
- Redis (cluster mode enabled): T1 node types.

Type: String

Valid Values: `enabled | disabled | enabling | disabling`

Required: No

**CacheNodeType**

The name of the compute and memory capacity node type for each node in the replication group.

Type: String

Required: No

**ClusterEnabled**

A flag indicating whether or not this replication group is cluster enabled; i.e., whether its data can be partitioned across multiple shards (API/CLI: node groups).

Valid values: `true` | `false`

Type: Boolean

Required: No

**ConfigurationEndpoint**

The configuration endpoint for this replication group. Use the configuration endpoint to connect to this replication group.

Type: Endpoint (p. 185) object

Required: No

**Description**

The user supplied description of the replication group.

Type: String

Required: No

**MemberClusters.ClusterId.N**

The names of all the cache clusters that are part of this replication group.

Type: Array of strings

Required: No

**NodeGroups.NodeGroup.N**

A list of node groups in this replication group. For Redis (cluster mode disabled) replication groups, this is a single-element list. For Redis (cluster mode enabled) replication groups, the list contains an entry for each node group (shard).

Type: Array of NodeGroup (p. 188) objects

Required: No

**PendingModifiedValues**

A group of settings to be applied to the replication group, either immediately or during the next maintenance window.

Type: ReplicationGroupPendingModifiedValues (p. 206) object

Required: No

**ReplicationGroupId**

The identifier for the replication group.

Type: String

Required: No

**SnapshotRetentionLimit**

The number of days for which ElastiCache retains automatic cluster snapshots before deleting them. For example, if you set `SnapshotRetentionLimit` to 5, a snapshot that was taken today is retained for 5 days before being deleted.

**Important**
If the value of `SnapshotRetentionLimit` is set to zero (0), backups are turned off.

Type: Integer

Required: No

**SnapshottingClusterId**

The cluster ID that is used as the daily snapshot source for the replication group.

Type: String

Required: No

**SnapshotWindow**

The daily time range (in UTC) during which ElastiCache begins taking a daily snapshot of your node group (shard).

Example: `05:00-09:00`

If you do not specify this parameter, ElastiCache automatically chooses an appropriate time range.

**Note**
This parameter is only valid if the `Engine` parameter is `redis`.

Type: String

Required: No

**Status**

The current state of this replication group - `creating`, `available`, `modifying`, `deleting`, `create-failed`, `snapshotting`.

Type: String

Required: No

**TransitEncryptionEnabled**

A flag that enables in-transit encryption when set to `true`.

You cannot modify the value of `TransitEncryptionEnabled` after the cluster is created. To enable in-transit encryption on a cluster you must set `TransitEncryptionEnabled` to `true` when you create a cluster.

**Required:** Only available when creating a replication group in an Amazon VPC using redis version `3.2.6` or `4.x`.

Default: `false`

Type: Boolean

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReplicationGroupPendingModifiedValues

The settings to be applied to the Redis replication group, either immediately or during the next maintenance window.

## Contents

**Note**
In the following list, the required parameters are described first.

**AutomaticFailoverStatus**

Indicates the status of Multi-AZ with automatic failover for this Redis replication group.

Amazon ElastiCache for Redis does not support Multi-AZ with automatic failover on:

- Redis versions earlier than 2.8.6.
- Redis (cluster mode disabled): T1 and T2 cache node types.
- Redis (cluster mode enabled): T1 node types.

Type: String

Valid Values: `enabled | disabled`

Required: No

**PrimaryClusterId**

The primary cluster ID that is applied immediately (if `--apply-immediately` was specified), or during the next maintenance window.

Type: String

Required: No

**Resharding**

The status of an online resharding operation.

Type: ReshardingStatus (p. 214) object

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReservedCacheNode

Represents the output of a `PurchaseReservedCacheNodesOffering` operation.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeCount**

The number of cache nodes that have been reserved.

Type: Integer

Required: No

**CacheNodeType**

The cache node type for the reserved cache nodes.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**Duration**

The duration of the reservation in seconds.

Type: Integer

Required: No

**FixedPrice**

The fixed price charged for this reserved cache node.

Type: Double

Required: No

**OfferingType**

The offering type of this reserved cache node.

Type: String

Required: No

**ProductDescription**

The description of the reserved cache node.

Type: String

Required: No

**RecurringCharges.RecurringCharge.N**

The recurring price charged to run this reserved cache node.

Type: Array of RecurringCharge (p. 201) objects

Required: No

**ReservationARN**

The Amazon Resource Name (ARN) of the reserved cache node.

Example: `arn:aws:elasticache:us-east-1:123456789012:reserved-instance:ri-2017-03-27-08-33-25-582`

Type: String

Required: No

**ReservedCacheNodeId**

The unique identifier for the reservation.

Type: String

Required: No

**ReservedCacheNodesOfferingId**

The offering identifier.

Type: String

Required: No

**StartTime**

The time the reservation started.

Type: Timestamp

Required: No

**State**

The state of the reserved cache node.

Type: String

Required: No

**UsagePrice**

The hourly price charged for this reserved cache node.

Type: Double

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReservedCacheNodesOffering

Describes all of the attributes of a reserved cache node offering.

## Contents

**Note**
In the following list, the required parameters are described first.

**CacheNodeType**

The cache node type for the reserved cache node.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

    **M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`
  - Previous generation: (not recommended)

    **T1 node types:** `cache.t1.micro`

    **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`
- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`
- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**Duration**

The duration of the offering. in seconds.

Type: Integer

Required: No

**FixedPrice**

The fixed price charged for this offering.

Type: Double

Required: No

**OfferingType**

The offering type.

Type: String

Required: No

**ProductDescription**

The cache engine used by the offering.

Type: String

Required: No

**RecurringCharges.RecurringCharge.N**

The recurring price charged to run this reserved cache node.

Type: Array of RecurringCharge (p. 201) objects

Required: No

**ReservedCacheNodesOfferingId**

A unique identifier for the reserved cache node offering.

Type: String

Required: No

**UsagePrice**

The hourly price charged for this offering.

Type: Double

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReshardingConfiguration

A list of `PreferredAvailabilityZones` objects that specifies the configuration of a node group in the resharded cluster.

## Contents

**Note**
In the following list, the required parameters are described first.

**NodeGroupId**

Either the ElastiCache for Redis supplied 4-digit id or a user supplied id for the node group these configuration values apply to.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 4.

Pattern: `\d+`

Required: No

**PreferredAvailabilityZones.AvailabilityZone.N**

A list of preferred availability zones for the nodes in this cluster.

Type: Array of strings

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# ReshardingStatus

The status of an online resharding operation.

## Contents

**Note**
In the following list, the required parameters are described first.

**SlotMigration**

Represents the progress of an online resharding operation.

Type: SlotMigration (p. 216) object

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# SecurityGroupMembership

Represents a single cache security group and its status.

## Contents

**Note**
In the following list, the required parameters are described first.

**SecurityGroupId**

The identifier of the cache security group.

Type: String

Required: No

**Status**

The status of the cache security group membership. The status changes whenever a cache security group is modified, or when the cache security groups assigned to a cluster are modified.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# SlotMigration

Represents the progress of an online resharding operation.

## Contents

**Note**
In the following list, the required parameters are described first.

**ProgressPercentage**

The percentage of the slot migration that is complete.

Type: Double

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Snapshot

Represents a copy of an entire Redis cluster as of the time when the snapshot was taken.

## Contents

**Note**
In the following list, the required parameters are described first.

**AutomaticFailover**

Indicates the status of Multi-AZ with automatic failover for the source Redis replication group.

Amazon ElastiCache for Redis does not support Multi-AZ with automatic failover on:

- Redis versions earlier than 2.8.6.
- Redis (cluster mode disabled): T1 and T2 cache node types.
- Redis (cluster mode enabled): T1 node types.

Type: String

Valid Values: `enabled | disabled | enabling | disabling`

Required: No

**AutoMinorVersionUpgrade**

This parameter is currently disabled.

Type: Boolean

Required: No

**CacheClusterCreateTime**

The date and time when the source cluster was created.

Type: Timestamp

Required: No

**CacheClusterId**

The user-supplied identifier of the source cluster.

Type: String

Required: No

**CacheNodeType**

The name of the compute and memory capacity node type for the source cluster.

The following node types are supported by ElastiCache. Generally speaking, the current generation types provide more memory and computational power at lower cost when compared to their equivalent previous generation counterparts.

- General purpose:
  - Current generation:

    **T2 node types:** `cache.t2.micro`, `cache.t2.small`, `cache.t2.medium`

    **M3 node types:** `cache.m3.medium`, `cache.m3.large`, `cache.m3.xlarge`, `cache.m3.2xlarge`

**M4 node types:** `cache.m4.large`, `cache.m4.xlarge`, `cache.m4.2xlarge`, `cache.m4.4xlarge`, `cache.m4.10xlarge`

- Previous generation: (not recommended)

  **T1 node types:** `cache.t1.micro`

  **M1 node types:** `cache.m1.small`, `cache.m1.medium`, `cache.m1.large`, `cache.m1.xlarge`

- Compute optimized:
  - Previous generation: (not recommended)

    **C1 node types:** `cache.c1.xlarge`

- Memory optimized:
  - Current generation:

    **R3 node types:** `cache.r3.large`, `cache.r3.xlarge`, `cache.r3.2xlarge`, `cache.r3.4xlarge`, `cache.r3.8xlarge`

    **R4 node types;** `cache.r4.large`, `cache.r4.xlarge`, `cache.r4.2xlarge`, `cache.r4.4xlarge`, `cache.r4.8xlarge`, `cache.r4.16xlarge`
  - Previous generation: (not recommended)

    **M2 node types:** `cache.m2.xlarge`, `cache.m2.2xlarge`, `cache.m2.4xlarge`

**Notes:**

- All T2 instances are created in an Amazon Virtual Private Cloud (Amazon VPC).
- Redis (cluster mode disabled): Redis backup/restore is not supported on T1 and T2 instances.
- Redis (cluster mode enabled): Backup/restore is not supported on T1 instances.
- Redis Append-only files (AOF) functionality is not supported for T1 or T2 instances.

For a complete listing of node types and specifications, see:

- Amazon ElastiCache Product Features and Details
- Cache Node Type-Specific Parameters for Memcached
- Cache Node Type-Specific Parameters for Redis

Type: String

Required: No

**CacheParameterGroupName**

The cache parameter group that is associated with the source cluster.

Type: String

Required: No

**CacheSubnetGroupName**

The name of the cache subnet group associated with the source cluster.

Type: String

Required: No

**Engine**

The name of the cache engine (`memcached` or `redis`) used by the source cluster.

Type: String

Required: No

**EngineVersion**

The version of the cache engine version that is used by the source cluster.

Type: String

Required: No

**NodeSnapshots.NodeSnapshot.N**

A list of the cache nodes in the source cluster.

Type: Array of NodeSnapshot (p. 194) objects

Required: No

**NumCacheNodes**

The number of cache nodes in the source cluster.

For clusters running Redis, this value must be 1. For clusters running Memcached, this value must be between 1 and 20.

Type: Integer

Required: No

**NumNodeGroups**

The number of node groups (shards) in this snapshot. When restoring from a snapshot, the number of node groups (shards) in the snapshot and in the restored replication group must be the same.

Type: Integer

Required: No

**Port**

The port number used by each cache nodes in the source cluster.

Type: Integer

Required: No

**PreferredAvailabilityZone**

The name of the Availability Zone in which the source cluster is located.

Type: String

Required: No

**PreferredMaintenanceWindow**

Specifies the weekly time range during which maintenance on the cluster is performed. It is specified as a range in the format ddd:hh24:mi-ddd:hh24:mi (24H Clock UTC). The minimum maintenance window is a 60 minute period.

Valid values for `ddd` are:

- `sun`
- `mon`
- `tue`

- wed
- thu
- fri
- sat

Example: sun:23:00-mon:01:30

Type: String

Required: No

**ReplicationGroupDescription**

A description of the source replication group.

Type: String

Required: No

**ReplicationGroupId**

The unique identifier of the source replication group.

Type: String

Required: No

**SnapshotName**

The name of a snapshot. For an automatic snapshot, the name is system-generated. For a manual snapshot, this is the user-provided name.

Type: String

Required: No

**SnapshotRetentionLimit**

For an automatic snapshot, the number of days for which ElastiCache retains the snapshot before deleting it.

For manual snapshots, this field reflects the SnapshotRetentionLimit for the source cluster when the snapshot was created. This field is otherwise ignored: Manual snapshots do not expire, and can only be deleted using the DeleteSnapshot operation.

**Important** If the value of SnapshotRetentionLimit is set to zero (0), backups are turned off.

Type: Integer

Required: No

**SnapshotSource**

Indicates whether the snapshot is from an automatic backup (automated) or was created manually (manual).

Type: String

Required: No

**SnapshotStatus**

The status of the snapshot. Valid values: creating | available | restoring | copying | deleting.

Type: String

Required: No

**SnapshotWindow**

The daily time range during which ElastiCache takes daily snapshots of the source cluster.

Type: String

Required: No

**TopicArn**

The Amazon Resource Name (ARN) for the topic used by the source cluster for publishing notifications.

Type: String

Required: No

**VpcId**

The Amazon Virtual Private Cloud identifier (VPC ID) of the cache subnet group for the source cluster.

Type: String

Required: No

# See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Subnet

Represents the subnet associated with a cluster. This parameter refers to subnets defined in Amazon Virtual Private Cloud (Amazon VPC) and used with ElastiCache.

## Contents

**Note**
In the following list, the required parameters are described first.

**SubnetAvailabilityZone**

The Availability Zone associated with the subnet.

Type: AvailabilityZone (p. 162) object

Required: No

**SubnetIdentifier**

The unique identifier for the subnet.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Tag

A cost allocation Tag that can be added to an ElastiCache cluster or replication group. Tags are composed of a Key/Value pair. A tag with a null Value is permitted.

## Contents

**Note**
In the following list, the required parameters are described first.

**Key**

The key for the tag. May not be null.

Type: String

Required: No

**Value**

The tag's value. May be null.

Type: String

Required: No

## See Also

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

- AWS SDK for C++
- AWS SDK for Go
- AWS SDK for Java
- AWS SDK for Ruby V2

# Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signature Version 4 Signing Process in the *Amazon Web Services General Reference*.

**Action**

The action to be performed.

Type: string

Required: Yes

**Version**

The API version that the request is written for, expressed in the format YYYY-MM-DD.

Type: string

Required: Yes

**X-Amz-Algorithm**

The hash algorithm that you used to create the request signature.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Valid Values: `AWS4-HMAC-SHA256`

Required: Conditional

**X-Amz-Credential**

The credential scope value, which is a string that includes your access key, the date, the region you are targeting, the service you are requesting, and a termination string ("aws4_request"). The value is expressed in the following format: *access_key*/*YYYYMMDD*/*region*/*service*/aws4_request.

For more information, see Task 2: Create a String to Sign for Signature Version 4 in the *Amazon Web Services General Reference*.

Condition: Specify this parameter when you include authentication information in a query string instead of in the HTTP authorization header.

Type: string

Required: Conditional

**X-Amz-Date**

The date that is used to create the signature. The format must be ISO 8601 basic format (YYYYMMDD'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