亚马逊云科技

API Reference

Amazon Relational Database Service

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Amazon Relational Database Service: API Reference

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Welcome

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

Amazon RDS gives you access to the capabilities of a MySQL, MariaDB, PostgreSQL, Microsoft SQL Server, Oracle, Db2, or Amazon Aurora database server. These capabilities mean that the code, applications, and tools you already use today with your existing databases work with Amazon RDS without modification. Amazon RDS automatically backs up your database and maintains the database software that powers your DB instance. Amazon RDS is flexible: you can scale your DB instance's compute resources and storage capacity to meet your application's demand. As with all Amazon Web Services, there are no up-front investments, and you pay only for the resources you use.

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

Amazon RDS API Reference

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

Amazon RDS User Guide

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

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Actions

The following actions are supported:

- AddRoleToDBCluster
- AddRoleToDBInstance
- AddSourceIdentifierToSubscription
- AddTagsToResource
- ApplyPendingMaintenanceAction
- AuthorizeDBSecurityGroupIngress
- BacktrackDBCluster
- CancelExportTask
- CopyDBClusterParameterGroup
- CopyDBClusterSnapshot
- CopyDBParameterGroup
- CopyDBSnapshot
- CopyOptionGroup
- CreateBlueGreenDeployment
- CreateCustomDBEngineVersion
- CreateDBCluster
- CreateDBClusterEndpoint
- CreateDBClusterParameterGroup
- CreateDBClusterSnapshot
- CreateDBInstance
- CreateDBInstanceReadReplica
- CreateDBParameterGroup
- CreateDBProxy
- CreateDBProxyEndpoint
- CreateDBSecurityGroup
- CreateDBShardGroup
- CreateDBSnapshot

- CreateDBSubnetGroup
- CreateEventSubscription
- CreateGlobalCluster
- CreateIntegration
- CreateOptionGroup
- CreateTenantDatabase
- DeleteBlueGreenDeployment
- DeleteCustomDBEngineVersion
- DeleteDBCluster
- DeleteDBClusterAutomatedBackup
- DeleteDBClusterEndpoint
- DeleteDBClusterParameterGroup
- DeleteDBClusterSnapshot
- DeleteDBInstance
- DeleteDBInstanceAutomatedBackup
- DeleteDBParameterGroup
- DeleteDBProxy
- DeleteDBProxyEndpoint
- DeleteDBSecurityGroup
- DeleteDBShardGroup
- DeleteDBSnapshot
- DeleteDBSubnetGroup
- DeleteEventSubscription
- DeleteGlobalCluster
- DeleteIntegration
- DeleteOptionGroup
- DeleteTenantDatabase
- DeregisterDBProxyTargets
- DescribeAccountAttributes
- DescribeBlueGreenDeployments

- DescribeCertificates
- DescribeDBClusterAutomatedBackups
- DescribeDBClusterBacktracks
- DescribeDBClusterEndpoints
- DescribeDBClusterParameterGroups
- DescribeDBClusterParameters
- DescribeDBClusters
- DescribeDBClusterSnapshotAttributes
- DescribeDBClusterSnapshots
- DescribeDBEngineVersions
- DescribeDBInstanceAutomatedBackups
- DescribeDBInstances
- DescribeDBLogFiles
- DescribeDBMajorEngineVersions
- DescribeDBParameterGroups
- DescribeDBParameters
- DescribeDBProxies
- DescribeDBProxyEndpoints
- DescribeDBProxyTargetGroups
- DescribeDBProxyTargets
- DescribeDBRecommendations
- DescribeDBSecurityGroups
- DescribeDBShardGroups
- DescribeDBSnapshotAttributes
- DescribeDBSnapshots
- DescribeDBSnapshotTenantDatabases
- DescribeDBSubnetGroups
- DescribeEngineDefaultClusterParameters
- DescribeEngineDefaultParameters
- DescribeEventCategories

- DescribeEvents
- DescribeEventSubscriptions
- DescribeExportTasks
- DescribeGlobalClusters
- DescribeIntegrations
- DescribeOptionGroupOptions
- DescribeOptionGroups
- DescribeOrderableDBInstanceOptions
- DescribePendingMaintenanceActions
- DescribeReservedDBInstances
- DescribeReservedDBInstancesOfferings
- DescribeSourceRegions
- DescribeTenantDatabases
- DescribeValidDBInstanceModifications
- DisableHttpEndpoint
- DownloadDBLogFilePortion
- EnableHttpEndpoint
- FailoverDBCluster
- FailoverGlobalCluster
- ListTagsForResource
- ModifyActivityStream
- ModifyCertificates
- ModifyCurrentDBClusterCapacity
- ModifyCustomDBEngineVersion
- ModifyDBCluster
- ModifyDBClusterEndpoint
- ModifyDBClusterParameterGroup
- ModifyDBClusterSnapshotAttribute
- ModifyDBInstance
- ModifyDBParameterGroup

- ModifyDBProxy
- ModifyDBProxyEndpoint
- ModifyDBProxyTargetGroup
- ModifyDBRecommendation
- ModifyDBShardGroup
- ModifyDBSnapshot
- ModifyDBSnapshotAttribute
- ModifyDBSubnetGroup
- ModifyEventSubscription
- ModifyGlobalCluster
- ModifyIntegration
- ModifyOptionGroup
- ModifyTenantDatabase
- PromoteReadReplica
- PromoteReadReplicaDBCluster
- PurchaseReservedDBInstancesOffering
- RebootDBCluster
- RebootDBInstance
- RebootDBShardGroup
- RegisterDBProxyTargets
- RemoveFromGlobalCluster
- RemoveRoleFromDBCluster
- RemoveRoleFromDBInstance
- RemoveSourceIdentifierFromSubscription
- RemoveTagsFromResource
- ResetDBClusterParameterGroup
- ResetDBParameterGroup
- RestoreDBClusterFromS3
- RestoreDBClusterFromSnapshot
- RestoreDBClusterToPointInTime

- RestoreDBInstanceFromDBSnapshot
- RestoreDBInstanceFromS3
- RestoreDBInstanceToPointInTime
- RevokeDBSecurityGroupIngress
- StartActivityStream
- StartDBCluster
- StartDBInstance
- StartDBInstanceAutomatedBackupsReplication
- StartExportTask
- StopActivityStream
- StopDBCluster
- StopDBInstance
- StopDBInstanceAutomatedBackupsReplication
- SwitchoverBlueGreenDeployment
- SwitchoverGlobalCluster
- SwitchoverReadReplica

AddRoleToDBCluster

Associates an Amazon Identity and Access Management (IAM) role with a DB cluster.

Request Parameters

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

DBClusterIdentifier

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

Type: String

Required: Yes

RoleArn

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

Type: String

Required: Yes

FeatureName

The name of the feature for the DB cluster that the IAM role is to be associated with. For information about supported feature names, see DBEngineVersion.

Type: String

Required: No

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBClusterRoleAlreadyExists

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

HTTP Status Code: 400

DBClusterRoleQuotaExceeded

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of AddRoleToDBCluster.

Sample Request

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

Sample Response

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

AddRoleToDBInstance

Associates an Amazon Identity and Access Management (IAM) role with a DB instance.

> **Note**
>
> To add a role to a DB instance, the status of the DB instance must be `available`.

This command doesn't apply to RDS Custom.

Request Parameters

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

DBInstanceIdentifier

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

Type: String

Required: Yes

FeatureName

The name of the feature for the DB instance that the IAM role is to be associated with. For information about supported feature names, see DBEngineVersion.

Type: String

Required: Yes

RoleArn

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

Type: String

Required: Yes

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

DBInstanceRoleAlreadyExists

The specified `RoleArn` or `FeatureName` value is already associated with the DB instance.

HTTP Status Code: 400

DBInstanceRoleQuotaExceeded

You can't associate any more Amazon Identity and Access Management (IAM) roles with the DB instance because the quota has been reached.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of AddRoleToDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=AddRoleToDBInstance
    &DBInstanceIdentifier=sample-instance
    &RoleArn=arn%3Aaws%3Aiam%3A%3A123456789012%3Arole%2Fsample-role
    &FeatureName=s3Import
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

AddSourceIdentifierToSubscription

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

Request Parameters

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

SourceIdentifier

The identifier of the event source to be added.

Constraints:

- If the source type is a DB instance, a `DBInstanceIdentifier` value must be supplied.
- If the source type is a DB cluster, a `DBClusterIdentifier` value must be supplied.
- If the source type is a DB parameter group, a `DBParameterGroupName` value must be supplied.
- If the source type is a DB security group, a `DBSecurityGroupName` value must be supplied.
- If the source type is a DB snapshot, a `DBSnapshotIdentifier` value must be supplied.
- If the source type is a DB cluster snapshot, a `DBClusterSnapshotIdentifier` value must be supplied.
- If the source type is an RDS Proxy, a `DBProxyName` value must be supplied.

Type: String

Required: Yes

SubscriptionName

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

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Type: EventSubscription object

Errors

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

SourceNotFound

The requested source could not be found.

HTTP Status Code: 404

SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of AddSourceIdentifierToSubscription.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=AddSourceIdentifierToSubscription
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceIdentifier=mysqldb
   &SubscriptionName=EventSubscription04
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140422/us-east-1/rds/aws4_request
   &X-Amz-Date=20140422T230442Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
```

```
&X-Amz-Signature=347d5e788e809cd06c50214b12750a3c39716bf65b239bb6f7ee8ff5374e2df9
```

Sample Response

```
<AddSourceIdentifierToSubscriptionResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <AddSourceIdentifierToSubscriptionResult>
    <EventSubscription>
      <SourceType>db-instance</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#########</CustomerAwsId>
      <Status>modifying</Status>
      <SourceIdsList>
        <SourceId>mysqldb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-22 23:03:19.776</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>EventSubscription04</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:803#########:mytopic</SnsTopicArn>
    </EventSubscription>
  </AddSourceIdentifierToSubscriptionResult>
  <ResponseMetadata>
    <RequestId>6c05f0b0-bf71-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</AddSourceIdentifierToSubscriptionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

AddTagsToResource

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

For an overview on tagging your relational database resources, see Tagging Amazon RDS Resources or Tagging Amazon Aurora and Amazon RDS Resources.

Request Parameters

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

ResourceName

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

Type: String

Required: Yes

Tags.Tag.N

The tags to be assigned to the Amazon RDS resource.

Type: Array of Tag objects

Required: Yes

Errors

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

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceNotFound

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

HTTP Status Code: 404

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBSnapshotNotFound

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

HTTP Status Code: 404

DBSnapshotTenantDatabaseNotFoundFault

The specified snapshot tenant database wasn't found.

HTTP Status Code: 404

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

TenantDatabaseNotFound

The specified tenant database wasn't found in the DB instance.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of AddTagsToResource.

Sample Request

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

Sample Response

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

See Also

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

- Amazon Command Line Interface

- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ApplyPendingMaintenanceAction

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

Request Parameters

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

ApplyAction

The pending maintenance action to apply to this resource.

Valid Values:

- `ca-certificate-rotation`
- `db-upgrade`
- `hardware-maintenance`
- `os-upgrade`
- `system-update`

For more information about these actions, see Maintenance actions for Amazon Aurora or Maintenance actions for Amazon RDS.

Type: String

Required: Yes

OptInType

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

Valid Values:

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

Type: String

Required: Yes

ResourceIdentifier

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

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

ResourcePendingMaintenanceActions

Describes the pending maintenance actions for a resource.

Type: ResourcePendingMaintenanceActions object

Errors

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

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of ApplyPendingMaintenanceAction.

Sample Request

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

Sample Response

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

```
</ApplyPendingMaintenanceActionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

AuthorizeDBSecurityGroupIngress

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

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

For an overview of CIDR ranges, go to the Wikipedia Tutorial.

> **Note**
>
> EC2-Classic was retired on August 15, 2022. If you haven't migrated from EC2-Classic to a VPC, we recommend that you migrate as soon as possible. For more information, see Migrate from EC2-Classic to a VPC in the *Amazon EC2 User Guide*, the blog EC2-Classic Networking is Retiring – Here's How to Prepare, and Moving a DB instance not in a VPC into a VPC in the *Amazon RDS User Guide*.

Request Parameters

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

DBSecurityGroupName

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

Type: String

Required: Yes

CIDRIP

The IP range to authorize.

Type: String

Required: No

EC2SecurityGroupId

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

Type: String

Required: No

EC2SecurityGroupName

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

Type: String

Required: No

EC2SecurityGroupOwnerId

Amazon Web Services account number of the owner of the EC2 security group specified in the `EC2SecurityGroupName` parameter. The Amazon access key ID isn't an acceptable value. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, `EC2SecurityGroupOwnerId` and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBSecurityGroup

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the `DescribeDBSecurityGroups` action.

Type: DBSecurityGroup object

Errors

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

AuthorizationAlreadyExists

The specified CIDR IP range or Amazon EC2 security group is already authorized for the specified DB security group.

HTTP Status Code: 400

AuthorizationQuotaExceeded

The DB security group authorization quota has been reached.

HTTP Status Code: 400

DBSecurityGroupNotFound

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

HTTP Status Code: 404

InvalidDBSecurityGroupState

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of AuthorizeDBSecurityGroupIngress.

Sample Request

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

```
&DBSecurityGroupName=default
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
&X-Amz-Date=20140423T154632Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=7803146e430626f47b0da058921cdb9f2ab7ffd881bd99fc859f2f635e4472bd
```

Sample Response

```
<AuthorizeDBSecurityGroupIngressResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <AuthorizeDBSecurityGroupIngressResult>
    <DBSecurityGroup>
      <EC2SecurityGroups>
        <EC2SecurityGroup>
          <Status>authorized</Status>
          <EC2SecurityGroupName>elasticbeanstalk-windows</EC2SecurityGroupName>
          <EC2SecurityGroupOwnerId>803########</EC2SecurityGroupOwnerId>
          <EC2SecurityGroupId>sg-7f476617</EC2SecurityGroupId>
        </EC2SecurityGroup>
      </EC2SecurityGroups>
      <DBSecurityGroupDescription>default</DBSecurityGroupDescription>
      <IPRanges>
        <IPRange>
          <CIDRIP>192.0.0.0/24</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>190.0.1.0/29</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>190.0.2.0/29</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
        <IPRange>
          <CIDRIP>10.0.0.0/8</CIDRIP>
          <Status>authorized</Status>
        </IPRange>
```

```
      </IPRanges>
      <OwnerId>803#########</OwnerId>
      <DBSecurityGroupName>default</DBSecurityGroupName>
    </DBSecurityGroup>
  </AuthorizeDBSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>6176b5f8-bfed-11d3-f92b-31fa5e8dbc99</RequestId>
  </ResponseMetadata>
</AuthorizeDBSecurityGroupIngressResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

BacktrackDBCluster

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

For more information on backtracking, see Backtracking an Aurora DB Cluster in the *Amazon Aurora User Guide*.

> **Note**
>
> This action applies only to Aurora MySQL DB clusters.

Request Parameters

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

BacktrackTo

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

> **Note**
>
> If the specified time isn't a consistent time for the DB cluster, Aurora automatically chooses the nearest possible consistent time for the DB cluster.

Constraints:

- Must contain a valid ISO 8601 timestamp.
- Can't contain a timestamp set in the future.

Example: `2017-07-08T18:00Z`

Type: Timestamp

Required: Yes

DBClusterIdentifier

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

Constraints:

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

Example: `my-cluster1`

Type: String

Required: Yes

Force

Specifies whether to force the DB cluster to backtrack when binary logging is enabled. Otherwise, an error occurs when binary logging is enabled.

Type: Boolean

Required: No

UseEarliestTimeOnPointInTimeUnavailable

Specifies whether to backtrack the DB cluster to the earliest possible backtrack time when *BacktrackTo* is set to a timestamp earlier than the earliest backtrack time. When this parameter is disabled and *BacktrackTo* is set to a timestamp earlier than the earliest backtrack time, an error occurs.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

BacktrackedFrom

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

Type: Timestamp

BacktrackIdentifier

Contains the backtrack identifier.

Type: String

BacktrackRequestCreationTime

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

Type: Timestamp

BacktrackTo

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

Type: Timestamp

DBClusterIdentifier

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

Type: String

Status

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

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

Type: String

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CancelExportTask

Cancels an export task in progress that is exporting a snapshot or cluster to Amazon S3. Any data that has already been written to the S3 bucket isn't removed.

Request Parameters

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

ExportTaskIdentifier

The identifier of the snapshot or cluster export task to cancel.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

ExportOnly.member.N

The data exported from the snapshot or cluster.

Valid Values:

- `database` - Export all the data from a specified database.
- `database.table` *table-name* - Export a table of the snapshot or cluster. This format is valid only for RDS for MySQL, RDS for MariaDB, and Aurora MySQL.
- `database.schema` *schema-name* - Export a database schema of the snapshot or cluster. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.
- `database.schema.table` *table-name* - Export a table of the database schema. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.

Type: Array of strings

ExportTaskIdentifier

A unique identifier for the snapshot or cluster export task. This ID isn't an identifier for the Amazon S3 bucket where the data is exported.

Type: String

FailureCause

The reason the export failed, if it failed.

Type: String

IamRoleArn

The name of the IAM role that is used to write to Amazon S3 when exporting a snapshot or cluster.

Type: String

KmsKeyId

The key identifier of the Amazon KMS key that is used to encrypt the data when it's exported to Amazon S3. The KMS key identifier is its key ARN, key ID, alias ARN, or alias name. The IAM role used for the export must have encryption and decryption permissions to use this KMS key.

Type: String

PercentProgress

The progress of the snapshot or cluster export task as a percentage.

Type: Integer

S3Bucket

The Amazon S3 bucket where the snapshot or cluster is exported to.

Type: String

S3Prefix

The Amazon S3 bucket prefix that is the file name and path of the exported data.

Type: String

SnapshotTime

The time when the snapshot was created.

Type: Timestamp

SourceArn

The Amazon Resource Name (ARN) of the snapshot or cluster exported to Amazon S3.

Type: String

SourceType

The type of source for the export.

Type: String

Valid Values: `SNAPSHOT` | `CLUSTER`

Status

The progress status of the export task. The status can be one of the following:

- `CANCELED`
- `CANCELING`
- `COMPLETE`
- `FAILED`
- `IN_PROGRESS`
- `STARTING`

Type: String

TaskEndTime

The time when the snapshot or cluster export task ended.

Type: Timestamp

TaskStartTime

The time when the snapshot or cluster export task started.

Type: Timestamp

TotalExtractedDataInGB

The total amount of data exported, in gigabytes.

Type: Integer

WarningMessage

A warning about the snapshot or cluster export task.

Type: String

Errors

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

ExportTaskNotFound

The export task doesn't exist.

HTTP Status Code: 404

InvalidExportTaskStateFault

You can't cancel an export task that has completed.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CopyDBClusterParameterGroup

Copies the specified DB cluster parameter group.

> **Note**
>
> You can't copy a default DB cluster parameter group. Instead, create a new custom DB cluster parameter group, which copies the default parameters and values for the specified DB cluster parameter group family.

Request Parameters

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

SourceDBClusterParameterGroupIdentifier

The identifier or Amazon Resource Name (ARN) for the source DB cluster parameter group. For information about creating an ARN, see Constructing an ARN for Amazon RDS in the *Amazon Aurora User Guide*.

Constraints:

- Must specify a valid DB cluster parameter group.

Type: String

Required: Yes

TargetDBClusterParameterGroupDescription

A description for the copied DB cluster parameter group.

Type: String

Required: Yes

TargetDBClusterParameterGroupIdentifier

The identifier for the copied DB cluster parameter group.

Constraints:

- Can't be null, empty, or blank

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

Example: `my-cluster-param-group1`

Type: String

Required: Yes

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBClusterParameterGroup

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

This data type is used as a response element in the `DescribeDBClusterParameterGroups` action.

Type: DBClusterParameterGroup object

Errors

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

DBParameterGroupAlreadyExists

A DB parameter group with the same name exists.

HTTP Status Code: 400

DBParameterGroupNotFound

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

HTTP Status Code: 404

DBParameterGroupQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CopyDBClusterParameterGroup.

Sample Request

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

Sample Response

```
<CopyDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterParameterGroupResult>
```

```
    <DBClusterParameterGroup>
      <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
      <Description>New cluster group</Description>
      <DBClusterParameterGroupName>new-cluster-pg</DBClusterParameterGroupName>
    </DBClusterParameterGroup>
  </CreateDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>ae81a963-cd9d-11e4-8b88-8351746a4c92</RequestId>
  </ResponseMetadata>
</CopyDBClusterParameterGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CopyDBClusterSnapshot

Copies a snapshot of a DB cluster.

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

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

- `KmsKeyId` - The Amazon Key Management System (Amazon KMS) key identifier for the key to use to encrypt the copy of the DB cluster snapshot in the destination Amazon Web Services Region.
- `TargetDBClusterSnapshotIdentifier` - The identifier for the new copy of the DB cluster snapshot in the destination Amazon Web Services Region.
- `SourceDBClusterSnapshotIdentifier` - The DB cluster snapshot identifier for the encrypted DB cluster snapshot to be copied. This identifier must be in the ARN format for the source Amazon Web Services Region and is the same value as the `SourceDBClusterSnapshotIdentifier` in the presigned URL.

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

For more information on copying encrypted Amazon Aurora DB cluster snapshots from one Amazon Web Services Region to another, see Copying a Snapshot in the *Amazon Aurora User Guide*.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

SourceDBClusterSnapshotIdentifier

The identifier of the DB cluster snapshot to copy. This parameter isn't case-sensitive.

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

Constraints:

- Must specify a valid system snapshot in the "available" state.
- If the source snapshot is in the same Amazon Web Services Region as the copy, specify a valid DB snapshot identifier.
- If the source snapshot is in a different Amazon Web Services Region than the copy, specify a valid DB cluster snapshot ARN. For more information, go to Copying Snapshots Across Amazon Web Services Regions in the *Amazon Aurora User Guide*.

Example: `my-cluster-snapshot1`

Type: String

Required: Yes

TargetDBClusterSnapshotIdentifier

The identifier of the new DB cluster snapshot to create from the source DB cluster snapshot. This parameter isn't case-sensitive.

Constraints:

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

Example: `my-cluster-snapshot2`

Type: String

Required: Yes

CopyTags

Specifies whether to copy all tags from the source DB cluster snapshot to the target DB cluster snapshot. By default, tags are not copied.

Type: Boolean

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB cluster snapshot. The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the Amazon KMS key.

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

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

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

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

Type: String

Required: No

PreSignedUrl

When you are copying a DB cluster snapshot from one Amazon GovCloud (US) Region to another, the URL that contains a Signature Version 4 signed request for the `CopyDBClusterSnapshot` API operation in the Amazon Web Services Region that contains the source DB cluster snapshot to copy. Use the `PreSignedUrl` parameter when copying an encrypted DB cluster snapshot from another Amazon Web Services Region. Don't specify

`PreSignedUrl` when copying an encrypted DB cluster snapshot in the same Amazon Web Services Region.

This setting applies only to Amazon GovCloud (US) Regions. It's ignored in other Amazon Web Services Regions.

The presigned URL must be a valid request for the `CopyDBClusterSnapshot` API operation that can run in the source Amazon Web Services Region that contains the encrypted DB cluster snapshot to copy. The presigned URL request must contain the following parameter values:

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

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

> **Note**
>
> If you are using an Amazon SDK tool or the Amazon CLI, you can specify `SourceRegion` (or `--source-region` for the Amazon CLI) instead of specifying `PreSignedUrl` manually. Specifying `SourceRegion` autogenerates a presigned URL that is a valid request for the operation that can run in the source Amazon Web Services Region.

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBClusterSnapshot

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the `DescribeDBClusterSnapshots` action.

Type: DBClusterSnapshot object

Errors

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

DBClusterSnapshotAlreadyExistsFault

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

HTTP Status Code: 400

DBClusterSnapshotNotFoundFault

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

HTTP Status Code: 404

InvalidDBClusterSnapshotStateFault

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CopyDBClusterSnapshot.

Sample Request

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

Sample Response

```
<CopyDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CopyDBParameterGroup

Copies the specified DB parameter group.

> **Note**
>
> You can't copy a default DB parameter group. Instead, create a new custom DB parameter group, which copies the default parameters and values for the specified DB parameter group family.

Request Parameters

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

SourceDBParameterGroupIdentifier

The identifier or ARN for the source DB parameter group. For information about creating an ARN, see Constructing an ARN for Amazon RDS in the *Amazon RDS User Guide*.

Constraints:

- Must specify a valid DB parameter group.

Type: String

Required: Yes

TargetDBParameterGroupDescription

A description for the copied DB parameter group.

Type: String

Required: Yes

TargetDBParameterGroupIdentifier

The identifier for the copied DB parameter group.

Constraints:

- Can't be null, empty, or blank
- Must contain from 1 to 255 letters, numbers, or hyphens

- First character must be a letter
- Can't end with a hyphen or contain two consecutive hyphens

Example: `my-db-parameter-group`

Type: String

Required: Yes

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBParameterGroup

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the `DescribeDBParameterGroups` action.

Type: DBParameterGroup object

Errors

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

DBParameterGroupAlreadyExists

A DB parameter group with the same name exists.

HTTP Status Code: 400

DBParameterGroupNotFound

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

HTTP Status Code: 404

DBParameterGroupQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CopyDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CopyDBParameterGroup
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceDBParameterGroupIdentifier=arn%3Aaws%3Ards%3Aus-west-2%3A815981987263%3pg
%3Amy-remote-param-group
   &TargetDBParameterGroupIdentifier=new-local-param-group
   &TargetDBParameterGroupDescription=description
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
   &X-Amz-Date=20140429T175351Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

Sample Response

```
<CopyDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CopyDBParameterGroupResult>
    <DBParameterGroup>
```

```
      <DBParameterGroupFamily>mysql5.6</DBParameterGroupFamily>
      <Description>description</Description>
      <DBParameterGroupName>new-local-param-group</DBParameterGroupName>
    </DBParameterGroup>
  </CopyDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>2928d60e-beb6-11d3-8e5c-3ccda5460c46</RequestId>
  </ResponseMetadata>
</CopyDBParameterGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CopyDBSnapshot

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

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

This command doesn't apply to RDS Custom.

For more information about copying snapshots, see Copying a DB Snapshot in the *Amazon RDS User Guide*.

Request Parameters

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

SourceDBSnapshotIdentifier

The identifier for the source DB snapshot.

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

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

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

If you are copying an encrypted snapshot this parameter must be in the ARN format for the source Amazon Web Services Region.

Constraints:

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

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

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

Type: String

Required: Yes

TargetDBSnapshotIdentifier

The identifier for the copy of the snapshot.

Constraints:

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

Example: `my-db-snapshot`

Type: String

Required: Yes

CopyOptionGroup

Specifies whether to copy the DB option group associated with the source DB snapshot to the target Amazon Web Services account and associate with the target DB snapshot. The associated option group can be copied only with cross-account snapshot copy calls.

Type: Boolean

Required: No

CopyTags

Specifies whether to copy all tags from the source DB snapshot to the target DB snapshot. By default, tags aren't copied.

Type: Boolean

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB snapshot. The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

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

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

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

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

Type: String

Required: No

OptionGroupName

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

Specify this option if you are copying a snapshot from one Amazon Web Services Region to another, and your DB instance uses a nondefault option group. If your source DB instance uses Transparent Data Encryption for Oracle or Microsoft SQL Server, you must specify this option when copying across Amazon Web Services Regions. For more information, see Option group considerations in the *Amazon RDS User Guide*.

Type: String

Required: No

PreSignedUrl

When you are copying a snapshot from one Amazon GovCloud (US) Region to another, the URL that contains a Signature Version 4 signed request for the `CopyDBSnapshot` API operation in the source Amazon Web Services Region that contains the source DB snapshot to copy.

This setting applies only to Amazon GovCloud (US) Regions. It's ignored in other Amazon Web Services Regions.

You must specify this parameter when you copy an encrypted DB snapshot from another Amazon Web Services Region by using the Amazon RDS API. Don't specify `PreSignedUrl` when you are copying an encrypted DB snapshot in the same Amazon Web Services Region.

The presigned URL must be a valid request for the `CopyDBClusterSnapshot` API operation that can run in the source Amazon Web Services Region that contains the encrypted DB cluster snapshot to copy. The presigned URL request must contain the following parameter values:

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

  For example, if you copy an encrypted DB snapshot from the us-west-2 Amazon Web Services Region to the us-east-1 Amazon Web Services Region, then you call the `CopyDBSnapshot` operation in the us-east-1 Amazon Web Services Region and provide a presigned URL that contains a call to the `CopyDBSnapshot` operation in the us-west-2 Amazon Web Services Region. For this example, the `DestinationRegion` in the presigned URL must be set to the us-east-1 Amazon Web Services Region.
- `KmsKeyId` - The Amazon KMS key identifier for the KMS key to use to encrypt the copy of the DB snapshot in the destination Amazon Web Services Region. This is the same identifier for both the `CopyDBSnapshot` operation that is called in the destination Amazon Web Services Region, and the operation contained in the presigned URL.
- `SourceDBSnapshotIdentifier` - The DB snapshot identifier for the encrypted snapshot to be copied. This identifier must be in the Amazon Resource Name (ARN) format for the source Amazon Web Services Region. For example, if you are copying an encrypted DB snapshot from the us-west-2 Amazon Web Services Region, then your `SourceDBSnapshotIdentifier` looks like the following example: `arn:aws:rds:us-west-2:123456789012:snapshot:mysql-instance1-snapshot-20161115`.

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

> **Note**
>
> If you are using an Amazon SDK tool or the Amazon CLI, you can specify `SourceRegion` (or `--source-region` for the Amazon CLI) instead of specifying

`PreSignedUrl` manually. Specifying `SourceRegion` autogenerates a presigned URL that is a valid request for the operation that can run in the source Amazon Web Services Region.

Type: String

Required: No

SnapshotAvailabilityZone

Specifies the name of the Availability Zone where RDS stores the DB snapshot. This value is valid only for snapshots that RDS stores on a Dedicated Local Zone.

Type: String

Required: No

SnapshotTarget

Configures the location where RDS will store copied snapshots.

Valid Values:

- `local` (Dedicated Local Zone)
- `outposts` (Amazon Outposts)
- `region` (Amazon Web Services Region)

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TargetCustomAvailabilityZone

The external custom Availability Zone (CAZ) identifier for the target CAZ.

Example: `rds-caz-aiqhTgQv`.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the `DescribeDBSnapshots` action.

Type: DBSnapshot object

Errors

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

CustomAvailabilityZoneNotFound

`CustomAvailabilityZoneId` doesn't refer to an existing custom Availability Zone identifier.

HTTP Status Code: 404

DBSnapshotAlreadyExists

`DBSnapshotIdentifier` is already used by an existing snapshot.

HTTP Status Code: 400

DBSnapshotNotFound

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

HTTP Status Code: 404

InvalidDBSnapshotState

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

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CopyDBSnapshot.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CopyDBSnapshot
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceDBSnapshotIdentifier=arn%3Aaws%3Ards%3Aus-east-1%3A123456789012%3Asnapshot
%3Ards%3Amysqldb-2021-04-27-08-16
   &TargetDBSnapshotIdentifier=mysqldb-copy
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
   &X-Amz-Date=20210629T175351Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

Sample Response

```
<CopyDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CopyDBSnapshotResult>
    <DBSnapshot>
```

```
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Engine>mysql</Engine>
      <Status>available</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.44</EngineVersion>
      <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
      <DBSnapshotIdentifier>mysqldb-copy</DBSnapshotIdentifier>
      <SnapshotCreateTime>2021-05-11T06:02:03.422Z</SnapshotCreateTime>
      <OriginalSnapshotCreateTime>2021-04-27T08:16:05.356Z</OriginalSnapshotCreateTime>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <InstanceCreateTime>2021-04-21T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>admin</MasterUsername>
    </DBSnapshot>
  </CopyDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>2928d60e-beb6-11d3-8e5c-3ccda5460c46</RequestId>
  </ResponseMetadata>
</CopyDBSnapshotResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CopyOptionGroup

Copies the specified option group.

Request Parameters

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

SourceOptionGroupIdentifier

The identifier for the source option group.

Constraints:

- Must specify a valid option group.

Type: String

Required: Yes

TargetOptionGroupDescription

The description for the copied option group.

Type: String

Required: Yes

TargetOptionGroupIdentifier

The identifier for the copied option group.

Constraints:

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

Example: `my-option-group`

Type: String

Required: Yes

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

OptionGroup

Type: OptionGroup object

Errors

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

OptionGroupAlreadyExistsFault

The option group you are trying to create already exists.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

OptionGroupQuotaExceededFault

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CopyOptionGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CopyOptionGroup
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceOptionGroupIdentifier=my-option-group
   &TargetOptionGroupDescription=New%20option%20group
   &TargetOptionGroupIdentifier=new-option-group
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
   &X-Amz-Date=20140429T175351Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

Sample Response

```
<CopyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CopyOptionGroupResult>
    <OptionGroup>
      <OptionGroupName>new-option-group</OptionGroupName>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <AllowsVpcAndNonVpcInstanceMemberships>false</
AllowsVpcAndNonVpcInstanceMemberships>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>description</OptionGroupDescription>
      <Options>
        <Option>
          <Port>11211</Port>
          <OptionName>MEMCACHED</OptionName>
          <OptionDescription>Innodb Memcached for MySQL</OptionDescription>
          <Persistent>false</Persistent>
          <OptionSettings>
            <OptionSetting>
```

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateBlueGreenDeployment

Creates a blue/green deployment.

A blue/green deployment creates a staging environment that copies the production environment. In a blue/green deployment, the blue environment is the current production environment. The green environment is the staging environment, and it stays in sync with the current production environment.

You can make changes to the databases in the green environment without affecting production workloads. For example, you can upgrade the major or minor DB engine version, change database parameters, or make schema changes in the staging environment. You can thoroughly test changes in the green environment. When ready, you can switch over the environments to promote the green environment to be the new production environment. The switchover typically takes under a minute.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Request Parameters

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

BlueGreenDeploymentName

The name of the blue/green deployment.

Constraints:

- Can't be the same as an existing blue/green deployment name in the same account and Amazon Web Services Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

Source

The Amazon Resource Name (ARN) of the source production database.

Specify the database that you want to clone. The blue/green deployment creates this database in the green environment. You can make updates to the database in the green environment, such as an engine version upgrade. When you are ready, you can switch the database in the green environment to be the production database.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `^arn:[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

Tags.Tag.N

Tags to assign to the blue/green deployment.

Type: Array of Tag objects

Required: No

TargetAllocatedStorage

The amount of storage in gibibytes (GiB) to allocate for the green DB instance. You can choose to increase or decrease the allocated storage on the green DB instance.

This setting doesn't apply to Amazon Aurora blue/green deployments.

Type: Integer

Required: No

TargetDBClusterParameterGroupName

The DB cluster parameter group associated with the Aurora DB cluster in the green environment.

To test parameter changes, specify a DB cluster parameter group that is different from the one associated with the source DB cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z](?!.*--)[0-9A-Za-z-]*[^-]|^default(?!.*--)(?!.*\.\.)[0-9A-Za-z-.]*[^-]`

Required: No

TargetDBInstanceClass

Specify the DB instance class for the databases in the green environment.

This parameter only applies to RDS DB instances, because DB instances within an Aurora DB cluster can have multiple different instance classes. If you're creating a blue/green deployment from an Aurora DB cluster, don't specify this parameter. After the green environment is created, you can individually modify the instance classes of the DB instances within the green DB cluster.

Type: String

Length Constraints: Minimum length of 5. Maximum length of 20.

Pattern: `db\.[0-9a-z]{2,6}\.[0-9a-z]{4,9}`

Required: No

TargetDBParameterGroupName

The DB parameter group associated with the DB instance in the green environment.

To test parameter changes, specify a DB parameter group that is different from the one associated with the source DB instance.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z](?!.*--)[0-9A-Za-z-]*[^-]|^default(?!.*--)(?!.*\.\.)[0-9A-Za-z-.]*[^-]`

Required: No

TargetEngineVersion

The engine version of the database in the green environment.

Specify the engine version to upgrade to in the green environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 64.

Pattern: `[0-9A-Za-z-_.]+`

Required: No

TargetIops

The amount of Provisioned IOPS (input/output operations per second) to allocate for the green DB instance. For information about valid IOPS values, see Amazon RDS DB instance storage in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora blue/green deployments.

Type: Integer

Required: No

TargetStorageThroughput

The storage throughput value for the green DB instance.

This setting applies only to the gp3 storage type.

This setting doesn't apply to Amazon Aurora blue/green deployments.

Type: Integer

Required: No

TargetStorageType

The storage type to associate with the green DB instance.

Valid Values: `gp2 | gp3 | io1 | io2`

This setting doesn't apply to Amazon Aurora blue/green deployments.

Type: String

Required: No

UpgradeTargetStorageConfig

Whether to upgrade the storage file system configuration on the green database. This option migrates the green DB instance from the older 32-bit file system to the preferred configuration. For more information, see Upgrading the storage file system for a DB instance.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

BlueGreenDeployment

Details about a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Type: BlueGreenDeployment object

Errors

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

BlueGreenDeploymentAlreadyExistsFault

A blue/green deployment with the specified name already exists.

HTTP Status Code: 400

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBClusterParameterGroupNotFound

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

HTTP Status Code: 404

DBClusterQuotaExceededFault

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

HTTP Status Code: 403

DBInstanceNotFound

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

HTTP Status Code: 404

DBParameterGroupNotFound

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

HTTP Status Code: 404

InstanceQuotaExceeded

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

SourceClusterNotSupportedFault

The source DB cluster isn't supported for a blue/green deployment.

HTTP Status Code: 400

SourceDatabaseNotSupportedFault

The source DB instance isn't supported for a blue/green deployment.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateBlueGreenDeployment.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=CreateBlueGreenDeployment
   &BlueGreenDeploymentName=my-blue-green-deployment
   &Source=arn%3Aaws%3Ards%3Aus-west-2%3A123456789012%3Adb%3Adatabase-1
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-west-2/rds/aws4_request
   &X-Amz-Date=20230110T005253Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<CreateBlueGreenDeploymentResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateBlueGreenDeploymentResult>
    <BlueGreenDeployment>
      <TagList/>
      <BlueGreenDeploymentName>my-blue-green-deployment</BlueGreenDeploymentName>
      <CreateTime>2023-01-10T18:42:09.330Z</CreateTime>
      <SwitchoverDetails>
        <member>
          <SourceMember>arn:aws:rds:us-west-2:123456789012:db:database-1</SourceMember>
        </member>
      </SwitchoverDetails>
      <Source>arn:aws:rds:us-west-2:123456789012:db:database-1</Source>
      <BlueGreenDeploymentIdentifier>bgd-mdoyy2mn7vbkhhgg</
BlueGreenDeploymentIdentifier>
      <Tasks>
        <member>
          <Name>CREATING_READ_REPLICA_OF_SOURCE</Name>
```

```
          <Status>PENDING</Status>
        </member>
        <member>
          <Name>CONFIGURE_BACKUPS</Name>
          <Status>PENDING</Status>
        </member>
      </Tasks>
      <Status>PROVISIONING</Status>
    </BlueGreenDeployment>
  </CreateBlueGreenDeploymentResult>
  <ResponseMetadata>
    <RequestId>03b87d54-b780-4055-b44d-4a2a129bc8c2</RequestId>
  </ResponseMetadata>
</CreateBlueGreenDeploymentResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateCustomDBEngineVersion

Creates a custom DB engine version (CEV).

Request Parameters

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

Engine

The database engine. RDS Custom for Oracle supports the following values:

- `custom-oracle-ee`
- `custom-oracle-ee-cdb`
- `custom-oracle-se2`
- `custom-oracle-se2-cdb`

Type: String

Length Constraints: Minimum length of 1. Maximum length of 35.

Pattern: `^[A-Za-z0-9-]{1,35}$`

Required: Yes

EngineVersion

The name of your CEV. The name format is 19.*customized_string*. For example, a valid CEV name is `19.my_cev1`. This setting is required for RDS Custom for Oracle, but optional for Amazon RDS. The combination of `Engine` and `EngineVersion` is unique per customer per Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60.

Pattern: `^[a-z0-9_.-]{1,60}$`

Required: Yes

DatabaseInstallationFilesS3BucketName

The name of an Amazon S3 bucket that contains database installation files for your CEV. For example, a valid bucket name is `my-custom-installation-files`.

Type: String

Length Constraints: Minimum length of 3. Maximum length of 63.

Pattern: `.*`

Required: No

DatabaseInstallationFilesS3Prefix

The Amazon S3 directory that contains the database installation files for your CEV. For example, a valid bucket name is `123456789012/cev1`. If this setting isn't specified, no prefix is assumed.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `.*`

Required: No

Description

An optional description of your CEV.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1000.

Pattern: `.*`

Required: No

ImageId

The ID of the Amazon Machine Image (AMI). For RDS Custom for SQL Server, an AMI ID is required to create a CEV. For RDS Custom for Oracle, the default is the most recent AMI available, but you can specify an AMI ID that was used in a different Oracle CEV. Find the AMIs used by your CEVs by calling the DescribeDBEngineVersions operation.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `.*`

Required: No

KMSKeyId

The Amazon KMS key identifier for an encrypted CEV. A symmetric encryption KMS key is required for RDS Custom, but optional for Amazon RDS.

If you have an existing symmetric encryption KMS key in your account, you can use it with RDS Custom. No further action is necessary. If you don't already have a symmetric encryption KMS key in your account, follow the instructions in Creating a symmetric encryption KMS key in the *Amazon Key Management Service Developer Guide*.

You can choose the same symmetric encryption key when you create a CEV and a DB instance, or choose different keys.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `[a-zA-Z0-9_:\-\/]+`

Required: No

Manifest

The CEV manifest, which is a JSON document that describes the installation .zip files stored in Amazon S3. Specify the name/value pairs in a file or a quoted string. RDS Custom applies the patches in the order in which they are listed.

The following JSON fields are valid:

MediaImportTemplateVersion

Version of the CEV manifest. The date is in the format `YYYY-MM-DD`.

databaseInstallationFileNames

Ordered list of installation files for the CEV.

opatchFileNames

Ordered list of OPatch installers used for the Oracle DB engine.

psuRuPatchFileNames

The PSU and RU patches for this CEV.

OtherPatchFileNames

The patches that are not in the list of PSU and RU patches. Amazon RDS applies these patches after applying the PSU and RU patches.

For more information, see Creating the CEV manifest in the *Amazon RDS User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 51000.

Pattern: `[\s\S]*`

Required: No

SourceCustomDbEngineVersionIdentifier

The ARN of a CEV to use as a source for creating a new CEV. You can specify a different Amazon Machine Imagine (AMI) by using either `Source` or `UseAwsProvidedLatestImage`. You can't specify a different JSON manifest when you specify `SourceCustomDbEngineVersionIdentifier`.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `.*`

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

UseAwsProvidedLatestImage

Specifies whether to use the latest service-provided Amazon Machine Image (AMI) for the CEV. If you specify `UseAwsProvidedLatestImage`, you can't also specify `ImageId`.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

CreateTime

The creation time of the DB engine version.

Type: Timestamp

CustomDBEngineVersionManifest

JSON string that lists the installation files and parameters that RDS Custom uses to create a custom engine version (CEV). RDS Custom applies the patches in the order in which they're listed in the manifest. You can set the Oracle home, Oracle base, and UNIX/Linux user and group using the installation parameters. For more information, see JSON fields in the CEV manifest in the *Amazon RDS User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 51000.

Pattern: `[\s\S]*`

DatabaseInstallationFilesS3BucketName

The name of the Amazon S3 bucket that contains your database installation files.

Type: String

DatabaseInstallationFilesS3Prefix

The Amazon S3 directory that contains the database installation files. If not specified, then no prefix is assumed.

Type: String

DBEngineDescription

The description of the database engine.

Type: String

DBEngineMediaType

A value that indicates the source media provider of the AMI based on the usage operation. Applicable for RDS Custom for SQL Server.

Type: String

DBEngineVersionArn

The ARN of the custom engine version.

Type: String

DBEngineVersionDescription

The description of the database engine version.

Type: String

DBParameterGroupFamily

The name of the DB parameter group family for the database engine.

Type: String

DefaultCharacterSet

The default character set for new instances of this engine version, if the `CharacterSetName` parameter of the CreateDBInstance API isn't specified.

Type: CharacterSet object

Engine

The name of the database engine.

Type: String

EngineVersion

The version number of the database engine.

Type: String

ExportableLogTypes.member.N

The types of logs that the database engine has available for export to CloudWatch Logs.

Type: Array of strings

Image

The EC2 image

Type: CustomDBEngineVersionAMI object

KMSKeyId

The Amazon KMS key identifier for an encrypted CEV. This parameter is required for RDS Custom, but optional for Amazon RDS.

Type: String

MajorEngineVersion

The major engine version of the CEV.

Type: String

ServerlessV2FeaturesSupport

Specifies any Aurora Serverless v2 properties or limits that differ between Aurora engine versions. You can test the values of this attribute when deciding which Aurora version to use in a new or upgraded DB cluster. You can also retrieve the version of an existing DB cluster and check whether that version supports certain Aurora Serverless v2 features before you attempt to use those features.

Type: ServerlessV2FeaturesSupport object

Status

The status of the DB engine version, either `available` or `deprecated`.

Type: String

SupportedCACertificateIdentifiers.member.N

A list of the supported CA certificate identifiers.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: Array of strings

SupportedCharacterSets.CharacterSet.N

A list of the character sets supported by this engine for the `CharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedEngineModes.member.N

A list of the supported DB engine modes.

Type: Array of strings

SupportedFeatureNames.member.N

A list of features supported by the DB engine.

The supported features vary by DB engine and DB engine version.

To determine the supported features for a specific DB engine and DB engine version using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine <engine_name> --engine-
version <engine_version>
```

For example, to determine the supported features for RDS for PostgreSQL version 13.3 using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --engine-version
13.3
```

The supported features are listed under `SupportedFeatureNames` in the output.

Type: Array of strings

SupportedNcharCharacterSets.CharacterSet.N

A list of the character sets supported by the Oracle DB engine for the `NcharCharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedTimezones.Timezone.N

A list of the time zones supported by this engine for the `Timezone` parameter of the `CreateDBInstance` action.

Type: Array of Timezone objects

SupportsBabelfish

Indicates whether the engine version supports Babelfish for Aurora PostgreSQL.

Type: Boolean

SupportsCertificateRotationWithoutRestart

Indicates whether the engine version supports rotating the server certificate without rebooting the DB instance.

Type: Boolean

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with a specific DB engine version.

Type: Boolean

SupportsIntegrations

Indicates whether the DB engine version supports zero-ETL integrations with Amazon Redshift.

Type: Boolean

SupportsLimitlessDatabase

Indicates whether the DB engine version supports Aurora Limitless Database.

Type: Boolean

SupportsLocalWriteForwarding

Indicates whether the DB engine version supports forwarding write operations from reader DB instances to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

SupportsLogExportsToCloudwatchLogs

Indicates whether the engine version supports exporting the log types specified by ExportableLogTypes to CloudWatch Logs.

Type: Boolean

SupportsParallelQuery

Indicates whether you can use Aurora parallel query with a specific DB engine version.

Type: Boolean

SupportsReadReplica

Indicates whether the database engine version supports read replicas.

Type: Boolean

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

ValidUpgradeTarget.UpgradeTarget.N

A list of engine versions that this database engine version can be upgraded to.

Type: Array of UpgradeTarget objects

Errors

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

CreateCustomDBEngineVersionFault

An error occurred while trying to create the CEV.

HTTP Status Code: 400

CustomDBEngineVersionAlreadyExistsFault

A CEV with the specified name already exists.

HTTP Status Code: 400

CustomDBEngineVersionQuotaExceededFault

You have exceeded your CEV quota.

HTTP Status Code: 400

Ec2ImagePropertiesNotSupportedFault

The AMI configuration prerequisite has not been met.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateCustomDBEngineVersion.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Engine=custom-oracle-ee
    &EngineVersion=19.cev1
    &DatabaseInstallationFilesS3BucketName=1-custom-installation-files
    &DatabaseInstallationFilesS3Prefix=123456789012/cev1
    &KMSKeyId=12ab3c4d-5678-90e1-2fg3-45h6ijklmnops
    &Description=cev%20description
    &Manifest=%7B%22mediaImportTemplateVersion%22%3A%222020-08--14%22%2C
%22databaseInstallationFileNames%22%3A%5B%22V982063-01.zip%22%5D%2C%22opatchFileNames
%22%3A%5B%22p6880880_190000_Linux-x86-64.zip%22%5D%2C%22psuRuPatchFileNames%22%3A%5B
%22p31720396_190000_Linux-x86-64.zip%22%2C%22p29213893_199000DBRU_Generic.zip%22%2C
%22p28730253_190000_Linux-x86-64.zip%22%2C%22p29374604_199000DBRU_Linux-x86-64.zip
%22%2C%22p28852325_190000_Linux-x86-64.zip%22%2C%22p29997937_190000_Linux-x86-64.zip
%22%2C%22p31335037_190000_Linux-x86-64.zip%22%2C%22p31335142_190000_Generic.zip%22%5D
%7D
```

Sample Response

```
<CreateCustomDBEngineVersionResponse xmlns="http://rds.amazonaws.com/doc/1999-01-01/">
```

```
  <CreateCustomDBEngineVersionResult>
    <DatabaseInstallationFilesS3Prefix>123456789012/cev1</
DatabaseInstallationFilesS3Prefix>
    <MajorEngineVersion>19</MajorEngineVersion>
    <DBEngineVersionArn>arn:aws:rds:us-east-1:123456789012:cev:custom-oracle-
ee/19.cev1/123ab45c-abc1-1234-1234-123a45b12345</DBEngineVersionArn>
    <DBEngineVersionDescription>cev description</DBEngineVersionDescription>
    <SupportsGlobalDatabases>false</SupportsGlobalDatabases>
    <SupportsParallelQuery>false</SupportsParallelQuery>
    <Engine>custom-oracle-ee</Engine>
    <KMSKeyId>arn:aws:kms:us-
east-1:123456789012:key/12ab3c4d-1234-12a3-1aa2-12a3bcdefghi</KMSKeyId>
    <EngineVersion>19.cev1</EngineVersion>
    <SupportsReadReplica>false</SupportsReadReplica>
    <SupportsCluster>false</SupportsCluster>
    <CreateTime>2021-10-13T22:15:11.157Z</CreateTime>
    <DatabaseInstallationFilesS3BucketName>1-custom-installation-files</
DatabaseInstallationFilesS3BucketName>
    <SupportsLogExportsToCloudwatchLogs>false</SupportsLogExportsToCloudwatchLogs>
    <AMIs>
      <member>
        <Id>ami-123a4b5c678901d23</Id>
        <Status>validating</Status>
      </member>
    </AMIs>
    <DBEngineDescription>Oracle Database server EE for RDS Custom</DBEngineDescription>
    <Status>creating</Status>
  </CreateCustomDBEngineVersionResult>
  <ResponseMetadata>
    <RequestId>897d9e88-057a-4695-812c-29cd36ec89d5</RequestId>
  </ResponseMetadata>
</CreateCustomDBEngineVersionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2

- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBCluster

Creates a new Amazon Aurora DB cluster or Multi-AZ DB cluster.

If you create an Aurora DB cluster, the request creates an empty cluster. You must explicitly create the writer instance for your DB cluster using the CreateDBInstance operation. If you create a Multi-AZ DB cluster, the request creates a writer and two reader DB instances for you, each in a different Availability Zone.

You can use the `ReplicationSourceIdentifier` parameter to create an Amazon Aurora DB cluster as a read replica of another DB cluster or Amazon RDS for MySQL or PostgreSQL DB instance. For more information about Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

You can also use the `ReplicationSourceIdentifier` parameter to create a Multi-AZ DB cluster read replica with an RDS for MySQL or PostgreSQL DB instance as the source. For more information about Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterIdentifier

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must contain from 1 to 63 (for Aurora DB clusters) or 1 to 52 (for Multi-AZ DB clusters) letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster1`

Type: String

Required: Yes

Engine

The database engine to use for this DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values:

- `aurora-mysql`
- `aurora-postgresql`
- `mysql`
- `postgres`
- `neptune` - For information about using Amazon Neptune, see the *Amazon Neptune User Guide*.

Type: String

Required: Yes

AllocatedStorage

The amount of storage in gibibytes (GiB) to allocate to each DB instance in the Multi-AZ DB cluster.

Valid for Cluster Type: Multi-AZ DB clusters only

This setting is required to create a Multi-AZ DB cluster.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether minor engine upgrades are applied automatically to the DB cluster during the maintenance window. By default, minor engine upgrades are applied automatically.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB cluster.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZones.AvailabilityZone.N

A list of Availability Zones (AZs) where you specifically want to create DB instances in the DB cluster.

For information on AZs, see Availability Zones in the *Amazon Aurora User Guide*.

Valid for Cluster Type: Aurora DB clusters only

Constraints:

- Can't specify more than three AZs.

Type: Array of strings

Required: No

BacktrackWindow

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

Valid for Cluster Type: Aurora MySQL DB clusters only

Default: `0`

Constraints:

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

Type: Long

Required: No

BackupRetentionPeriod

The number of days for which automated backups are retained.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Default: 1

Constraints:

- Must be a value from 1 to 35.

Type: Integer

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB cluster's server certificate.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide*.

Valid for Cluster Type: Multi-AZ DB clusters

Type: String

Required: No

CharacterSetName

The name of the character set (`CharacterSet`) to associate the DB cluster with.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

ClusterScalabilityType

Specifies the scalability mode of the Aurora DB cluster. When set to `limitless`, the cluster operates as an Aurora Limitless Database. When set to `standard` (the default), the cluster uses normal DB instance creation.

Valid for: Aurora DB clusters only

> **Note**
>
> You can't modify this setting after you create the DB cluster.

Type: String

Valid Values: `standard | limitless`

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the DB cluster to snapshots of the DB cluster. The default is not to copy them.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

DatabaseInsightsMode

The mode of Database Insights to enable for the DB cluster.

If you set this value to `advanced`, you must also set the `PerformanceInsightsEnabled` parameter to `true` and the `PerformanceInsightsRetentionPeriod` parameter to 465.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Valid Values: `standard | advanced`

Required: No

DatabaseName

The name for your database of up to 64 alphanumeric characters. A database named `postgres` is always created. If this parameter is specified, an additional database with this name is created.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DBClusterInstanceClass

The compute and memory capacity of each DB instance in the Multi-AZ DB cluster, for example `db.m6gd.xlarge`. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines.

For the full list of DB instance classes and availability for your engine, see DB instance class in the *Amazon RDS User Guide*.

This setting is required to create a Multi-AZ DB cluster.

Valid for Cluster Type: Multi-AZ DB clusters only

Type: String

Required: No

DBClusterParameterGroupName

The name of the DB cluster parameter group to associate with this DB cluster. If you don't specify a value, then the default DB cluster parameter group for the specified DB engine and version is used.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- If supplied, must match the name of an existing DB cluster parameter group.

Type: String

Required: No

DBSubnetGroupName

A DB subnet group to associate with this DB cluster.

This setting is required to create a Multi-AZ DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must match the name of an existing DB subnet group.

Example: `mydbsubnetgroup`

Type: String

Required: No

DBSystemId

Reserved for future use.

Type: String

Required: No

DeletionProtection

Specifies whether the DB cluster has deletion protection enabled. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

Domain

The Active Directory directory ID to create the DB cluster in.

For Amazon Aurora DB clusters, Amazon RDS can use Kerberos authentication to authenticate users that connect to the DB cluster.

For more information, see Kerberos authentication in the *Amazon Aurora User Guide*.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

The following values are valid for each DB engine:

- Aurora MySQL - `audit | error | general | instance | slowquery | iam-db-auth-error`

- Aurora PostgreSQL - `instance | postgresql | iam-db-auth-error`
- RDS for MySQL - `error | general | slowquery | iam-db-auth-error`
- RDS for PostgreSQL - `postgresql | upgrade | iam-db-auth-error`

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Type: Array of strings

Required: No

EnableGlobalWriteForwarding

Specifies whether to enable this DB cluster to forward write operations to the primary cluster of a global cluster (Aurora global database). By default, write operations are not allowed on Aurora DB clusters that are secondary clusters in an Aurora global database.

You can set this value only on Aurora DB clusters that are members of an Aurora global database. With this parameter enabled, a secondary cluster can forward writes to the current primary cluster, and the resulting changes are replicated back to this cluster. For the primary DB cluster of an Aurora global database, this value is used immediately if the primary is demoted by a global cluster API operation, but it does nothing until then.

Valid for Cluster Type: Aurora DB clusters only

Type: Boolean

Required: No

EnableHttpEndpoint

Specifies whether to enable the HTTP endpoint for the DB cluster. By default, the HTTP endpoint isn't enabled.

When enabled, the HTTP endpoint provides a connectionless web service API (RDS Data API) for running SQL queries on the DB cluster. You can also query your database from inside the RDS console with the RDS query editor.

For more information, see Using RDS Data API in the *Amazon Aurora User Guide*.

Valid for Cluster Type: Aurora DB clusters only

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication in the *Amazon Aurora User Guide* or IAM database authentication for MariaDB, MySQL, and PostgreSQL in the *Amazon RDS User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EnableLimitlessDatabase

Specifies whether to enable Aurora Limitless Database. You must enable Aurora Limitless Database to create a DB shard group.

Valid for: Aurora DB clusters only

> **Note**
>
> This setting is no longer used. Instead use the `ClusterScalabilityType` setting.

Type: Boolean

Required: No

EnableLocalWriteForwarding

Specifies whether read replicas can forward write operations to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to turn on Performance Insights for the DB cluster.

For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB cluster.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB cluster into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, creating the DB cluster will fail if the DB major version is past its end of standard support date.

You can use this setting to enroll your DB cluster into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB cluster past the end of standard support for that engine version. For more information, see the following sections:

- Amazon Aurora - Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*
- Amazon RDS - Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineMode

The DB engine mode of the DB cluster, either `provisioned` or `serverless`.

The `serverless` engine mode only applies for Aurora Serverless v1 DB clusters. Aurora Serverless v2 DB clusters use the `provisioned` engine mode.

For information about limitations and requirements for Serverless DB clusters, see the following sections in the *Amazon Aurora User Guide*:

- Limitations of Aurora Serverless v1
- Requirements for Aurora Serverless v2

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

EngineVersion

The version number of the database engine to use.

To list all of the available engine versions for Aurora MySQL version 2 (5.7-compatible) and version 3 (MySQL 8.0-compatible), use the following command:

```
aws rds describe-db-engine-versions --engine aurora-mysql --query
"DBEngineVersions[].EngineVersion"
```

You can supply either `5.7` or `8.0` to use the default engine version for Aurora MySQL version 2 or version 3, respectively.

To list all of the available engine versions for Aurora PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine aurora-postgresql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for MySQL, use the following command:

```
aws rds describe-db-engine-versions --engine mysql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --query
"DBEngineVersions[].EngineVersion"
```

For information about a specific engine, see the following topics:

- Aurora MySQL - see Database engine updates for Amazon Aurora MySQL in the *Amazon Aurora User Guide*.
- Aurora PostgreSQL - see Amazon Aurora PostgreSQL releases and engine versions in the *Amazon Aurora User Guide*.
- RDS for MySQL - see Amazon RDS for MySQL in the *Amazon RDS User Guide*.
- RDS for PostgreSQL - see Amazon RDS for PostgreSQL in the *Amazon RDS User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

GlobalClusterIdentifier

The global cluster ID of an Aurora cluster that becomes the primary cluster in the new global database cluster.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for each DB instance in the Multi-AZ DB cluster.

For information about valid IOPS values, see Provisioned IOPS storage in the *Amazon RDS User Guide*.

This setting is required to create a Multi-AZ DB cluster.

Valid for Cluster Type: Multi-AZ DB clusters only

Constraints:

- Must be a multiple between .5 and 50 of the storage amount for the DB cluster.

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

When a KMS key isn't specified in `KmsKeyId`:

- If `ReplicationSourceIdentifier` identifies an encrypted source, then Amazon RDS uses the KMS key used to encrypt the source. Otherwise, Amazon RDS uses your default KMS key.
- If the `StorageEncrypted` parameter is enabled and `ReplicationSourceIdentifier` isn't specified, then Amazon RDS uses your default KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

If you create a read replica of an encrypted DB cluster in another Amazon Web Services Region, make sure to set `KmsKeyId` to a KMS key identifier that is valid in the destination Amazon Region. This KMS key is used to encrypt the read replica in that Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUsername

The name of the master user for the DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

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

Type: String

Required: No

MasterUserPassword

The password for the master database user.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must contain from 8 to 41 characters.
- Can contain any printable ASCII character except "/", """, or "@".
- Can't be specified if `ManageMasterUserPassword` is turned on.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB cluster. To turn off collecting Enhanced Monitoring metrics, specify `0`.

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The Amazon Resource Name (ARN) for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs. An example is `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see Setting up and enabling Enhanced Monitoring in the *Amazon RDS User Guide*.

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

NetworkType

The network type of the DB cluster.

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Valid for Cluster Type: Aurora DB clusters only

Valid Values: `IPV4 | DUAL`

Type: String

Required: No

OptionGroupName

The option group to associate the DB cluster with.

DB clusters are associated with a default option group that can't be modified.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your

Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS issues an error.

Type: Integer

Required: No

Port

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `1150-65535`

Default:

- RDS for MySQL and Aurora MySQL - `3306`
- RDS for PostgreSQL and Aurora PostgreSQL - `5432`

Type: Integer

Required: No

PreferredBackupWindow

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region. To view the time blocks available, see Backup window in the *Amazon Aurora User Guide*.

Constraints:

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

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region, occurring on a random day of the week. To see the time blocks available, see Adjusting the Preferred DB Cluster Maintenance Window in the *Amazon Aurora User Guide*.

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- Days must be one of `Mon | Tue | Wed | Thu | Fri | Sat | Sun`.
- Must be in Universal Coordinated Time (UTC).
- Must be at least 30 minutes.

Type: String

Required: No

PreSignedUrl

When you are replicating a DB cluster from one Amazon GovCloud (US) Region to another, an URL that contains a Signature Version 4 signed request for the `CreateDBCluster` operation to be called in the source Amazon Web Services Region where the DB cluster is replicated from. Specify `PreSignedUrl` only when you are performing cross-Region replication from an encrypted DB cluster.

The presigned URL must be a valid request for the `CreateDBCluster` API operation that can run in the source Amazon Web Services Region that contains the encrypted DB cluster to copy.

The presigned URL request must contain the following parameter values:

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

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

> **Note**
>
> If you are using an Amazon SDK tool or the Amazon CLI, you can specify `SourceRegion` (or `--source-region` for the Amazon CLI) instead of specifying `PreSignedUrl` manually. Specifying `SourceRegion` autogenerates a presigned URL that is a valid request for the operation that can run in the source Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

PubliclyAccessible

Specifies whether the DB cluster is publicly accessible.

When the DB cluster is publicly accessible and you connect from outside of the DB cluster's virtual private cloud (VPC), its Domain Name System (DNS) endpoint resolves to the public IP address. When you connect from within the same VPC as the DB cluster, the endpoint resolves to the private IP address. Access to the DB cluster is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB cluster isn't publicly accessible, it is an internal DB cluster with a DNS name that resolves to a private IP address.

Valid for Cluster Type: Multi-AZ DB clusters only

Default: The default behavior varies depending on whether `DBSubnetGroupName` is specified.

If `DBSubnetGroupName` isn't specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the default VPC in the target Region doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the default VPC in the target Region has an internet gateway attached to it, the DB cluster is public.

If `DBSubnetGroupName` is specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the subnets are part of a VPC that doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the subnets are part of a VPC that has an internet gateway attached to it, the DB cluster is public.

Type: Boolean

Required: No

RdsCustomClusterConfiguration

Reserved for future use.

Type: RdsCustomClusterConfiguration object

Required: No

ReplicationSourceIdentifier

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

ScalingConfiguration

For DB clusters in `serverless` DB engine mode, the scaling properties of the DB cluster.

Valid for Cluster Type: Aurora DB clusters only

Type: ScalingConfiguration object

Required: No

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfiguration object

Required: No

StorageEncrypted

Specifies whether the DB cluster is encrypted.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

StorageType

The storage type to associate with the DB cluster.

For information on storage types for Aurora DB clusters, see Storage configurations for Amazon Aurora DB clusters. For information on storage types for Multi-AZ DB clusters, see Settings for creating Multi-AZ DB clusters.

This setting is required to create a Multi-AZ DB cluster.

When specified for a Multi-AZ DB cluster, a value for the `Iops` parameter is required.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values:

- Aurora DB clusters - `aurora | aurora-iopt1`
- Multi-AZ DB clusters - `io1 | io2 | gp3`

Default:

- Aurora DB clusters - `aurora`
- Multi-AZ DB clusters - `io1`

> **Note**
>
> When you create an Aurora DB cluster with the storage type set to `aurora-iopt1`, the storage type is returned in the response. The storage type isn't returned when you set it to `aurora`.

Type: String

Required: No

Tags.Tag.N

Tags to assign to the DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of Tag objects

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

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

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

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

DBClusterAlreadyExistsFault

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

HTTP Status Code: 400

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBClusterParameterGroupNotFound

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

HTTP Status Code: 404

DBClusterQuotaExceededFault

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

HTTP Status Code: 403

DBInstanceNotFound

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

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

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

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

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

HTTP Status Code: 404

DomainNotFoundFault

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

HTTP Status Code: 404

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InsufficientDBInstanceCapacity

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

HTTP Status Code: 400

InsufficientStorageClusterCapacity

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBSubnetGroupFault

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

HTTP Status Code: 400

InvalidDBSubnetGroupStateFault

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

HTTP Status Code: 400

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidVPCNetworkStateFault

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

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

StorageQuotaExceeded

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

HTTP Status Code: 400

Examples

Creating an Aurora DB cluster

This example illustrates one usage of CreateDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=CreateDBCluster
    &DBClusterIdentifier=sample-cluster
    &Engine=aurora
    &MasterUserPassword=<password>
    &MasterUsername=myawsuser
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20150927/us-east-1/rds/aws4_request
    &X-Amz-Date=20220927T164851Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=6a8f4bd6a98f649c75ea04a6b3929ecc75ac09739588391cd7250f5280e716db
```

Sample Response

```
<CreateDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>default</DBSubnetGroup>
      <EngineVersion>5.7</EngineVersion>
      <Endpoint>sample-cluster.cluster-ctrayan0rynq.us-east-1.rds.amazonaws.com</
Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <AvailabilityZones>
        <AvailabilityZone>us-east-1a</AvailabilityZone>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
```

```
        <AvailabilityZone>us-east-1e</AvailabilityZone>
      </AvailabilityZones>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
      <DBClusterMembers/>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBCluster>
  </CreateDBClusterResult>
  <ResponseMetadata>
    <RequestId>46d2b228-7681-11e5-3e8b-9b2c0d5d51a9</RequestId>
  </ResponseMetadata>
</CreateDBClusterResponse>
```

Creating a Multi-AZ DB cluster

This example illustrates one usage of CreateDBCluster.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=CreateDBCluster
    &AvailabilityZones.AvailabilityZone.1=us-west-2a
    &BackupRetentionPeriod=2
    &DatabaseName=mydb
    &DBClusterIdentifier=my-multi-az-cluster
    &DBClusterParameterGroupName=my-multi-az-cpg
    &VpcSecurityGroupIds.VpcSecurityGroupId.1=sg-6921cc28
    &DBSubnetGroupName=mysubnet1
    &Engine=mysql
    &EngineVersion=8.0.26
    &Port=3306
    &MasterUsername=admin
    &MasterUserPassword=<password>
    &PreferredBackupWindow=11:34-12:04
    &PreferredMaintenanceWindow=sat:07:05-sat:07:35
    &StorageEncrypted=true
    &KmsKeyId=123EXAMPLE-abcd-4567-efgEXAMPLE
    &EngineMode=provisioned
    &DeletionProtection=false
```

```
    &EnableHttpEndpoint=false
    &CopyTagsToSnapshot=true
    &DBClusterInstanceClass=db.r6gd.large
    &AllocatedStorage=100
    &StorageType=io1
    &Iops=1000
    &PubliclyAccessible=true
    &AutoMinorVersionUpgrade=true
    &MonitoringInterval=30
    &MonitoringRoleArn=arn:aws:iam:123456789012:role/enhance-monitoring-role
    &EnablePerformanceInsights=true
    &PerformanceInsightsKMSKeyId=123EXAMPLE-abcd-4567-efgEXAMPLE
    &PerformanceInsightsRetentionPeriod=7
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20211026/us-west-2/rds/aws4_request
    &X-Amz-Date=20220927T203712Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=6a8f4bd6a98f649c75ea04a6b3929ecc75ac09739588391cd7250f5280e716db
```

Sample Response

```
<CreateDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>100</AllocatedStorage>
      <DatabaseName>mydb</DatabaseName>
      <AssociatedRoles />
      <AvailabilityZones>
          <AvailabilityZone>us-west-2a</AvailabilityZone>
          <AvailabilityZone>us-west-2b</AvailabilityZone>
          <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <ReadReplicaIdentifiers />
      <Iops>1000</Iops>
      <PerformanceInsightsKMSKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-
abcd-4567-efgEXAMPLE</PerformanceInsightsKMSKeyId>
      <PerformanceInsightsRetentionPeriod>7</PerformanceInsightsRetentionPeriod>
```

```
      <EngineVersion>8.0.mysql_aurora.3.01.0</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <DBClusterMembers>
          <DBClusterMember>
              <DBInstanceIdentifier>my-multi-az-cluster-3</DBInstanceIdentifier>
              <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
              <PromotionTier>1</PromotionTier>
              <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
              <DBInstanceIdentifier>my-multi-az-cluster-instance-2</
DBInstanceIdentifier>
              <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
              <PromotionTier>1</PromotionTier>
              <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
              <DBInstanceIdentifier>my-multi-az-cluster-instance-1</
DBInstanceIdentifier>
              <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
              <PromotionTier>1</PromotionTier>
              <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
      </DBClusterMembers>
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <Port>3306</Port>
      <MonitoringInterval>30</MonitoringInterval>
      <BackupRetentionPeriod>2</BackupRetentionPeriod>
      <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
      <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
      <DbClusterResourceId>cluster-RCPGZXFNIHCTBQLDRJX6CP62VQ</DbClusterResourceId>
      <Status>creating</Status>
      <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <Endpoint>my-multi-az-cluster.cluster-123456789012.us-west-2.rds.amazonaws.com</
Endpoint>
      <EngineMode>provisioned</EngineMode>
      <Engine>mysql</Engine>
      <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <ClusterCreateTime>2021-10-20T00:12:00.867Z</ClusterCreateTime>
```

```
      <PerformanceInsightsEnabled>true</PerformanceInsightsEnabled>
      <MultiAZ>true</MultiAZ>
      <DomainMemberships />
      <MonitoringRoleArn>arn:aws:iam::123456789012:role/enhance-monitoring-role</
MonitoringRoleArn>
      <StorageEncrypted>true</StorageEncrypted>
      <DBSubnetGroup>mysubnet1</DBSubnetGroup>
      <VpcSecurityGroups>
          <VpcSecurityGroupMembership>
              <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
              <Status>active</Status>
          </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <TagList />
      <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
      <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>my-multi-az-cpg</DBClusterParameterGroup>
      <StorageType>io1</StorageType>
      <DBClusterInstanceClass>db.r6gd.large</DBClusterInstanceClass>
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
    </DBCluster>
  </CreateDBClusterResult>
  <ResponseMetadata>
    <RequestId>4c11cdec-1dbb-452c-bfc0-7580e4ba91ce</RequestId>
  </ResponseMetadata>
</CreateDBClusterResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBClusterEndpoint

Creates a new custom endpoint and associates it with an Amazon Aurora DB cluster.

> **Note**
>
> This action applies only to Aurora DB clusters.

Request Parameters

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

DBClusterEndpointIdentifier

The identifier to use for the new endpoint. This parameter is stored as a lowercase string.

Type: String

Required: Yes

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Required: Yes

EndpointType

The type of the endpoint, one of: `READER`, `WRITER`, `ANY`.

Type: String

Required: Yes

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. This parameter is relevant only if the list of static members is empty.

Type: Array of strings

Required: No

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Required: No

Tags.Tag.N

The tags to be assigned to the Amazon RDS resource.

Type: Array of Tag objects

Required: No

Response Elements

The following elements are returned by the service.

CustomEndpointType

The type associated with a custom endpoint. One of: `READER`, `WRITER`, `ANY`.

Type: String

DBClusterEndpointArn

The Amazon Resource Name (ARN) for the endpoint.

Type: String

DBClusterEndpointIdentifier

The identifier associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

DBClusterEndpointResourceIdentifier

A unique system-generated identifier for an endpoint. It remains the same for the whole life of the endpoint.

Type: String

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Endpoint

The DNS address of the endpoint.

Type: String

EndpointType

The type of the endpoint. One of: `READER`, `WRITER`, `CUSTOM`.

Type: String

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. Only relevant if the list of static members is empty.

Type: Array of strings

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Status

The current status of the endpoint. One of: `creating`, `available`, `deleting`, `inactive`, `modifying`. The `inactive` state applies to an endpoint that can't be used for a certain kind of cluster, such as a `writer` endpoint for a read-only secondary cluster in a global database.

Type: String

Errors

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

DBClusterEndpointAlreadyExistsFault

The specified custom endpoint can't be created because it already exists.

HTTP Status Code: 400

DBClusterEndpointQuotaExceededFault

The cluster already has the maximum number of custom endpoints.

HTTP Status Code: 403

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceNotFound

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

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++

- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBClusterParameterGroup

Creates a new DB cluster parameter group.

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

A DB cluster parameter group is initially created with the default parameters for the database engine used by instances in the DB cluster. To provide custom values for any of the parameters, you must modify the group after creating it using `ModifyDBClusterParameterGroup`. Once you've created a DB cluster parameter group, you need to associate it with your DB cluster using `ModifyDBCluster`.

When you associate a new DB cluster parameter group with a running Aurora DB cluster, reboot the DB instances in the DB cluster without failover for the new DB cluster parameter group and associated settings to take effect.

When you associate a new DB cluster parameter group with a running Multi-AZ DB cluster, reboot the DB cluster without failover for the new DB cluster parameter group and associated settings to take effect.

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

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

- Must not match the name of an existing DB cluster parameter group.

> **Note**
>
> This value is stored as a lowercase string.

Type: String

Required: Yes

DBParameterGroupFamily

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

Aurora MySQL

Example: `aurora-mysql5.7`, `aurora-mysql8.0`

Aurora PostgreSQL

Example: `aurora-postgresql14`

RDS for MySQL

Example: `mysql8.0`

RDS for PostgreSQL

Example: `postgres13`

To list all of the available parameter group families for a DB engine, use the following command:

```
aws rds describe-db-engine-versions --query
"DBEngineVersions[].DBParameterGroupFamily" --engine <engine>
```

For example, to list all of the available parameter group families for the Aurora PostgreSQL DB engine, use the following command:

```
aws rds describe-db-engine-versions --query
"DBEngineVersions[].DBParameterGroupFamily" --engine aurora-postgresql
```

> **Note**
>
> The output contains duplicates.

The following are the valid DB engine values:

- `aurora-mysql`
- `aurora-postgresql`
- `mysql`
- `postgres`

Type: String

Required: Yes

Description

The description for the DB cluster parameter group.

Type: String

Required: Yes

Tags.Tag.N

Tags to assign to the DB cluster parameter group.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBClusterParameterGroup

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

This data type is used as a response element in the `DescribeDBClusterParameterGroups` action.

Type: DBClusterParameterGroup object

Errors

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

DBParameterGroupAlreadyExists

A DB parameter group with the same name exists.

HTTP Status Code: 400

DBParameterGroupQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBClusterParameterGroup.

Sample Request

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

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

Sample Response

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin

- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBClusterSnapshot

Creates a snapshot of a DB cluster.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterIdentifier

The identifier of the DB cluster to create a snapshot for. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing DBCluster.

Example: `my-cluster1`

Type: String

Required: Yes

DBClusterSnapshotIdentifier

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

Constraints:

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

Example: `my-cluster1-snapshot1`

Type: String

Required: Yes

Tags.Tag.N

The tags to be assigned to the DB cluster snapshot.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBClusterSnapshot

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the `DescribeDBClusterSnapshots` action.

Type: DBClusterSnapshot object

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBClusterSnapshotAlreadyExistsFault

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

HTTP Status Code: 400

InvalidDBClusterSnapshotStateFault

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBClusterSnapshot.

Sample Request

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

Sample Response

```
<CreateDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBClusterSnapshotResult>
    <DBClusterSnapshot>
      <Port>0</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>aurora</LicenseModel>
```

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBInstance

Creates a new DB instance.

The new DB instance can be an RDS DB instance, or it can be a DB instance in an Aurora DB cluster. For an Aurora DB cluster, you can call this operation multiple times to add more than one DB instance to the cluster.

For more information about creating an RDS DB instance, see Creating an Amazon RDS DB instance in the *Amazon RDS User Guide*.

For more information about creating a DB instance in an Aurora DB cluster, see Creating an Amazon Aurora DB cluster in the *Amazon Aurora User Guide*.

Request Parameters

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

DBInstanceClass

The compute and memory capacity of the DB instance, for example `db.m5.large`. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB instance classes in the *Amazon RDS User Guide* or Aurora DB instance classes in the *Amazon Aurora User Guide*.

Type: String

Required: Yes

DBInstanceIdentifier

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

Constraints:

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

Example: `mydbinstance`

Type: String

Required: Yes

Engine

The database engine to use for this DB instance.

Not every database engine is available in every Amazon Web Services Region.

Valid Values:

- `aurora-mysql` (for Aurora MySQL DB instances)
- `aurora-postgresql` (for Aurora PostgreSQL DB instances)
- `custom-oracle-ee` (for RDS Custom for Oracle DB instances)
- `custom-oracle-ee-cdb` (for RDS Custom for Oracle DB instances)
- `custom-oracle-se2` (for RDS Custom for Oracle DB instances)
- `custom-oracle-se2-cdb` (for RDS Custom for Oracle DB instances)
- `custom-sqlserver-ee` (for RDS Custom for SQL Server DB instances)
- `custom-sqlserver-se` (for RDS Custom for SQL Server DB instances)
- `custom-sqlserver-web` (for RDS Custom for SQL Server DB instances)
- `custom-sqlserver-dev` (for RDS Custom for SQL Server DB instances)
- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

AllocatedStorage

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

This setting doesn't apply to Amazon Aurora DB instances. Aurora cluster volumes automatically grow as the amount of data in your database increases, though you are only charged for the space that you use in an Aurora cluster volume.

Amazon RDS Custom

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

- General Purpose (SSD) storage (gp2, gp3): Must be an integer from 40 to 65536 for RDS Custom for Oracle, 16384 for RDS Custom for SQL Server.
- Provisioned IOPS storage (io1, io2): Must be an integer from 40 to 65536 for RDS Custom for Oracle, 16384 for RDS Custom for SQL Server.

RDS for Db2

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

- General Purpose (SSD) storage (gp3): Must be an integer from 20 to 65536.
- Provisioned IOPS storage (io1, io2): Must be an integer from 100 to 65536.

RDS for MariaDB

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

- General Purpose (SSD) storage (gp2, gp3): Must be an integer from 20 to 65536.
- Provisioned IOPS storage (io1, io2): Must be an integer from 100 to 65536.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

RDS for MySQL

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

- General Purpose (SSD) storage (gp2, gp3): Must be an integer from 20 to 65536.
- Provisioned IOPS storage (io1, io2): Must be an integer from 100 to 65536.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

RDS for Oracle

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

- General Purpose (SSD) storage (gp2, gp3): Must be an integer from 20 to 65536.
- Provisioned IOPS storage (io1, io2): Must be an integer from 100 to 65536.
- Magnetic storage (standard): Must be an integer from 10 to 3072.

RDS for PostgreSQL

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

- General Purpose (SSD) storage (gp2, gp3): Must be an integer from 20 to 65536.
- Provisioned IOPS storage (io1, io2): Must be an integer from 100 to 65536.
- Magnetic storage (standard): Must be an integer from 5 to 3072.

RDS for SQL Server

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

- General Purpose (SSD) storage (gp2, gp3):
  - Enterprise and Standard editions: Must be an integer from 20 to 16384.
  - Web and Express editions: Must be an integer from 20 to 16384.
- Provisioned IOPS storage (io1, io2):
  - Enterprise and Standard editions: Must be an integer from 100 to 16384.
  - Web and Express editions: Must be an integer from 100 to 16384.
- Magnetic storage (standard):
  - Enterprise and Standard editions: Must be an integer from 20 to 1024.
  - Web and Express editions: Must be an integer from 20 to 1024.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether minor engine upgrades are applied automatically to the DB instance during the maintenance window. By default, minor engine upgrades are applied automatically.

If you create an RDS Custom DB instance, you must set `AutoMinorVersionUpgrade` to `false`.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The Availability Zone (AZ) where the database will be created. For information on Amazon Web Services Regions and Availability Zones, see Regions and Availability Zones.

For Amazon Aurora, each Aurora DB cluster hosts copies of its storage in three separate Availability Zones. Specify one of these Availability Zones. Aurora automatically chooses an appropriate Availability Zone if you don't specify one.

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

Constraints:

- The `AvailabilityZone` parameter can't be specified if the DB instance is a Multi-AZ deployment.
- The specified Availability Zone must be in the same Amazon Web Services Region as the current endpoint.

Example: `us-east-1d`

Type: String

Required: No

BackupRetentionPeriod

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

This setting doesn't apply to Amazon Aurora DB instances. The retention period for automated backups is managed by the DB cluster.

Default: 1

Constraints:

- Must be a value from 0 to 35.
- Can't be set to 0 if the DB instance is a source to read replicas.
- Can't be set to 0 for an RDS Custom for Oracle DB instance.

Type: Integer

Required: No

BackupTarget

The location for storing automated backups and manual snapshots.

Valid Values:

- `local` (Dedicated Local Zone)
- `outposts` (Amazon Outposts)
- `region` (Amazon Web Services Region)

Default: `region`

For more information, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

Type: String

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB instance's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CharacterSetName

For supported engines, the character set (`CharacterSet`) to associate the DB instance with.

This setting doesn't apply to the following DB instances:

- Amazon Aurora - The character set is managed by the DB cluster. For more information, see `CreateDBCluster`.

- RDS Custom - However, if you need to change the character set, you can change it on the database itself.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy tags from the DB instance to snapshots of the DB instance. By default, tags are not copied.

This setting doesn't apply to Amazon Aurora DB instances. Copying tags to snapshots is managed by the DB cluster. Setting this value for an Aurora DB instance has no effect on the DB cluster setting.

Type: Boolean

Required: No

CustomIamInstanceProfile

The instance profile associated with the underlying Amazon EC2 instance of an RDS Custom DB instance.

This setting is required for RDS Custom.

Constraints:

- The profile must exist in your account.
- The profile must have an IAM role that Amazon EC2 has permissions to assume.
- The instance profile name and the associated IAM role name must start with the prefix `AWSRDSCustom`.

For the list of permissions required for the IAM role, see Configure IAM and your VPC in the *Amazon RDS User Guide*.

Type: String

Required: No

DatabaseInsightsMode

The mode of Database Insights to enable for the DB instance.

> **Note**
>
> Aurora DB instances inherit this value from the DB cluster, so you can't change this value.

Type: String

Valid Values: `standard | advanced`

Required: No

DBClusterIdentifier

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

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DBName

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

Amazon Aurora MySQL

The name of the database to create when the primary DB instance of the Aurora MySQL DB cluster is created. If this parameter isn't specified for an Aurora MySQL DB cluster, no database is created in the DB cluster.

Constraints:

- Must contain 1 to 64 alphanumeric characters.
- Must begin with a letter. Subsequent characters can be letters, underscores, or digits (0-9).
- Can't be a word reserved by the database engine.

Amazon Aurora PostgreSQL

The name of the database to create when the primary DB instance of the Aurora PostgreSQL DB cluster is created. A database named `postgres` is always created. If this parameter is specified, an additional database with this name is created.

Constraints:

- It must contain 1 to 63 alphanumeric characters.
- Must begin with a letter. Subsequent characters can be letters, underscores, or digits (0 to 9).
- Can't be a word reserved by the database engine.

Amazon RDS Custom for Oracle

The Oracle System ID (SID) of the created RDS Custom DB instance. If you don't specify a value, the default value is `ORCL` for non-CDBs and `RDSCDB` for CDBs.

Default: `ORCL`

Constraints:

- Must contain 1 to 8 alphanumeric characters.
- Must contain a letter.
- Can't be a word reserved by the database engine.

Amazon RDS Custom for SQL Server

Not applicable. Must be null.

RDS for Db2

The name of the database to create when the DB instance is created. If this parameter isn't specified, no database is created in the DB instance. In some cases, we recommend that you don't add a database name. For more information, see Additional considerations in the *Amazon RDS User Guide*.

Constraints:

- Must contain 1 to 64 letters or numbers.
- Must begin with a letter. Subsequent characters can be letters, underscores, or digits (0-9).
- Can't be a word reserved by the specified database engine.

RDS for MariaDB

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

Constraints:

- Must contain 1 to 64 letters or numbers.
- Must begin with a letter. Subsequent characters can be letters, underscores, or digits (0-9).
- Can't be a word reserved by the specified database engine.

RDS for MySQL

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

Constraints:

- Must contain 1 to 64 letters or numbers.
- Must begin with a letter. Subsequent characters can be letters, underscores, or digits (0-9).
- Can't be a word reserved by the specified database engine.

RDS for Oracle

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

Default: `ORCL`

Constraints:

- Can't be longer than 8 characters.

RDS for PostgreSQL

The name of the database to create when the DB instance is created. A database named `postgres` is always created. If this parameter is specified, an additional database with this name is created.

Constraints:

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

RDS for SQL Server

Not applicable. Must be null.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to associate with this DB instance. If you don't specify a value, then Amazon RDS uses the default DB parameter group for the specified DB engine and version.

This setting doesn't apply to RDS Custom DB instances.

Constraints:

- Must be 1 to 255 letters, numbers, or hyphens.
- The first character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

DBSecurityGroups.DBSecurityGroupName.N

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

This setting applies to the legacy EC2-Classic platform, which is no longer used to create new DB instances. Use the `VpcSecurityGroupIds` setting instead.

Type: Array of strings

Required: No

DBSubnetGroupName

A DB subnet group to associate with this DB instance.

Constraints:

- Must match the name of an existing DB subnet group.

Example: `mydbsubnetgroup`

Type: String

Required: No

DBSystemId

The Oracle system identifier (SID), which is the name of the Oracle database instance that manages your database files. In this context, the term "Oracle database instance" refers exclusively to the system global area (SGA) and Oracle background processes. If you don't specify a SID, the value defaults to `RDSCDB`. The Oracle SID is also the name of your CDB.

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

DeletionProtection

Specifies whether the DB instance has deletion protection enabled. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

This setting doesn't apply to Amazon Aurora DB instances. You can enable or disable deletion protection for the DB cluster. For more information, see `CreateDBCluster`. DB instances in a DB cluster can be deleted even when deletion protection is enabled for the DB cluster.

Type: Boolean

Required: No

Domain

The Active Directory directory ID to create the DB instance in. Currently, you can create only Db2, MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances in an Active Directory Domain.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (The domain is managed by the DB cluster.)

- RDS Custom

Type: String

Required: No

DomainAuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user joining the domain.

Example: `arn:aws:secretsmanager:region:account-number:secret:myselfmanagedADtestsecret-123456`

Type: String

Required: No

DomainDnsIps.member.N

The IPv4 DNS IP addresses of your primary and secondary Active Directory domain controllers.

Constraints:

- Two IP addresses must be provided. If there isn't a secondary domain controller, use the IP address of the primary domain controller for both entries in the list.

Example: `123.124.125.126,234.235.236.237`

Type: Array of strings

Required: No

DomainFqdn

The fully qualified domain name (FQDN) of an Active Directory domain.

Constraints:

- Can't be longer than 64 characters.

Example: `mymanagedADtest.mymanagedAD.mydomain`

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (The domain is managed by the DB cluster.)
- RDS Custom

Type: String

Required: No

DomainOu

The Active Directory organizational unit for your DB instance to join.

Constraints:

- Must be in the distinguished name format.
- Can't be longer than 64 characters.

Example:
`OU=mymanagedADtestOU,DC=mymanagedADtest,DC=mymanagedAD,DC=mydomain`

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of log types to enable for exporting to CloudWatch Logs. For more information, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (CloudWatch Logs exports are managed by the DB cluster.)
- RDS Custom

The following values are valid for each DB engine:

- RDS for Db2 - `diag.log | notify.log | iam-db-auth-error`
- RDS for MariaDB - `audit | error | general | slowquery | iam-db-auth-error`

- RDS for Microsoft SQL Server - `agent | error`
- RDS for MySQL - `audit | error | general | slowquery | iam-db-auth-error`
- RDS for Oracle - `alert | audit | listener | trace | oemagent`
- RDS for PostgreSQL - `postgresql | upgrade | iam-db-auth-error`

Type: Array of strings

Required: No

EnableCustomerOwnedIp

Specifies whether to enable a customer-owned IP address (CoIP) for an RDS on Outposts DB instance.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the DB instance from outside of its virtual private cloud (VPC) on your local network.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide*.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (Mapping Amazon IAM accounts to database accounts is managed by the DB cluster.)
- RDS Custom

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to enable Performance Insights for the DB instance. For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB instance.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB instance into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, creating the DB instance will fail if the DB major version is past its end of standard support date.

This setting applies only to RDS for MySQL and RDS for PostgreSQL. For Amazon Aurora DB instances, the life cycle type is managed by the DB cluster.

You can use this setting to enroll your DB instance into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB instance past the end of standard support for that engine version. For more information, see Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*.

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineVersion

The version number of the database engine to use.

This setting doesn't apply to Amazon Aurora DB instances. The version number of the database engine the DB instance uses is managed by the DB cluster.

For a list of valid engine versions, use the `DescribeDBEngineVersions` operation.

The following are the database engines and links to information about the major and minor versions that are available with Amazon RDS. Not every database engine is available for every Amazon Web Services Region.

Amazon RDS Custom for Oracle

A custom engine version (CEV) that you have previously created. This setting is required for RDS Custom for Oracle. The CEV name has the following format: 19.*customized_string*. A valid CEV name is `19.my_cev1`. For more information, see Creating an RDS Custom for Oracle DB instance in the *Amazon RDS User Guide*.

Amazon RDS Custom for SQL Server

See RDS Custom for SQL Server general requirements in the *Amazon RDS User Guide*.

RDS for Db2

For information, see Db2 on Amazon RDS versions in the *Amazon RDS User Guide*.

RDS for MariaDB

For information, see MariaDB on Amazon RDS versions in the *Amazon RDS User Guide*.

RDS for Microsoft SQL Server

For information, see Microsoft SQL Server versions on Amazon RDS in the *Amazon RDS User Guide*.

RDS for MySQL

For information, see MySQL on Amazon RDS versions in the *Amazon RDS User Guide*.

RDS for Oracle

For information, see Oracle Database Engine release notes in the *Amazon RDS User Guide*.

RDS for PostgreSQL

For information, see Amazon RDS for PostgreSQL versions and extensions in the *Amazon RDS User Guide*.

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to initially allocate for the DB instance. For information about valid IOPS values, see Amazon RDS DB instance storage in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora DB instances. Storage is managed by the DB cluster.

Constraints:

- For RDS for Db2, MariaDB, MySQL, Oracle, and PostgreSQL - Must be a multiple between .5 and 50 of the storage amount for the DB instance.
- For RDS for SQL Server - Must be a multiple between 1 and 50 of the storage amount for the DB instance.

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

This setting doesn't apply to Amazon Aurora DB instances. The Amazon KMS key identifier is managed by the DB cluster. For more information, see `CreateDBCluster`.

If `StorageEncrypted` is enabled, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

For Amazon RDS Custom, a KMS key is required for DB instances. For most RDS engines, if you leave this parameter empty while enabling `StorageEncrypted`, the engine uses the default KMS key. However, RDS Custom doesn't use the default key when this parameter is empty. You must explicitly specify a key.

Type: String

Required: No

LicenseModel

The license model information for this DB instance.

> **Note**
>
> License models for RDS for Db2 require additional configuration. The Bring Your Own License (BYOL) model requires a custom parameter group and an Amazon License Manager self-managed license. The Db2 license through Amazon Marketplace model requires an Amazon Marketplace subscription. For more information, see Amazon RDS for Db2 licensing options in the *Amazon RDS User Guide*.
> The default for RDS for Db2 is `bring-your-own-license`.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Valid Values:

- RDS for Db2 - `bring-your-own-license | marketplace-license`
- RDS for MariaDB - `general-public-license`
- RDS for Microsoft SQL Server - `license-included`
- RDS for MySQL - `general-public-license`
- RDS for Oracle - `bring-your-own-license | license-included`
- RDS for PostgreSQL - `postgresql-license`

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUsername

The name for the master user.

This setting doesn't apply to Amazon Aurora DB instances. The name for the master user is managed by the DB cluster.

This setting is required for RDS DB instances.

Constraints:

- Must be 1 to 16 letters, numbers, or underscores.
- First character must be a letter.
- Can't be a reserved word for the chosen database engine.

Type: String

Required: No

MasterUserPassword

The password for the master user.

This setting doesn't apply to Amazon Aurora DB instances. The password for the master user is managed by the DB cluster.

Constraints:

- Can't be specified if `ManageMasterUserPassword` is turned on.
- Can include any printable ASCII character except "/", """, or "@". For RDS for Oracle, can't include the "&" (ampersand) or the "'" (single quotes) character.

Length Constraints:

- RDS for Db2 - Must contain from 8 to 255 characters.
- RDS for MariaDB - Must contain from 8 to 41 characters.
- RDS for Microsoft SQL Server - Must contain from 8 to 128 characters.
- RDS for MySQL - Must contain from 8 to 41 characters.
- RDS for Oracle - Must contain from 8 to 30 characters.
- RDS for PostgreSQL - Must contain from 8 to 128 characters.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

For more information about this setting, including limitations that apply to it, see Managing capacity automatically with Amazon RDS storage autoscaling in the *Amazon RDS User Guide*.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (Storage is managed by the DB cluster.)
- RDS Custom

Type: Integer

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collection of Enhanced Monitoring metrics, specify `0`.

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

This setting doesn't apply to RDS Custom DB instances.

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see Setting Up and Enabling Enhanced Monitoring in the *Amazon RDS User Guide*.

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

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

MultiAZ

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

This setting doesn't apply to Amazon Aurora because the DB instance Availability Zones (AZs) are managed by the DB cluster.

Type: Boolean

Required: No

MultiTenant

Specifies whether to use the multi-tenant configuration or the single-tenant configuration (default). This parameter only applies to RDS for Oracle container database (CDB) engines.

Note the following restrictions:

- The DB engine that you specify in the request must support the multi-tenant configuration. If you attempt to enable the multi-tenant configuration on a DB engine that doesn't support it, the request fails.
- If you specify the multi-tenant configuration when you create your DB instance, you can't later modify this DB instance to use the single-tenant configuration.

Type: Boolean

Required: No

NcharCharacterSetName

The name of the NCHAR character set for the Oracle DB instance.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

NetworkType

The network type of the DB instance.

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Valid Values: `IPV4` | `DUAL`

Type: String

Required: No

OptionGroupName

The option group to associate the DB instance with.

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

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

This setting doesn't apply to RDS Custom DB instances.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS returns an error.

Type: Integer

Required: No

Port

The port number on which the database accepts connections.

This setting doesn't apply to Aurora DB instances. The port number is managed by the cluster.

Valid Values: `1150-65535`

Default:

- RDS for Db2 - `50000`
- RDS for MariaDB - `3306`
- RDS for Microsoft SQL Server - `1433`
- RDS for MySQL - `3306`
- RDS for Oracle - `1521`
- RDS for PostgreSQL - `5432`

Constraints:

- For RDS for Microsoft SQL Server, the value can't be `1234`, `1434`, `3260`, `3343`, `3389`, `47001`, or `49152-49156`.

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter. The default is a 30-minute window

selected at random from an 8-hour block of time for each Amazon Web Services Region. For more information, see Backup window in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora DB instances. The daily time range for creating automated backups is managed by the DB cluster.

Constraints:

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

Type: String

Required: No

PreferredMaintenanceWindow

The time range each week during which system maintenance can occur. For more information, see Amazon RDS Maintenance Window in the *Amazon RDS User Guide.*

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

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- The day values must be `mon | tue | wed | thu | fri | sat | sun`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred backup window.
- Must be at least 30 minutes.

Type: String

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: Array of ProcessorFeature objects

Required: No

PromotionTier

The order of priority in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see Fault Tolerance for an Aurora DB Cluster in the *Amazon Aurora User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Default: 1

Valid Values: `0 - 15`

Type: Integer

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB instance is publicly accessible and you connect from outside of the DB instance's virtual private cloud (VPC), its Domain Name System (DNS) endpoint resolves to the public IP address. When you connect from within the same VPC as the DB instance, the endpoint resolves to the private IP address. Access to the DB instance is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB instance doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether `DBSubnetGroupName` is specified.

If `DBSubnetGroupName` isn't specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the default VPC in the target Region doesn’t have an internet gateway attached to it, the DB instance is private.

- If the default VPC in the target Region has an internet gateway attached to it, the DB instance is public.

If `DBSubnetGroupName` is specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the subnets are part of a VPC that doesn’t have an internet gateway attached to it, the DB instance is private.
- If the subnets are part of a VPC that has an internet gateway attached to it, the DB instance is public.

Type: Boolean

Required: No

StorageEncrypted

Specifes whether the DB instance is encrypted. By default, it isn't encrypted.

For RDS Custom DB instances, either enable this setting or leave it unset. Otherwise, Amazon RDS reports an error.

This setting doesn't apply to Amazon Aurora DB instances. The encryption for DB instances is managed by the DB cluster.

Type: Boolean

Required: No

StorageThroughput

The storage throughput value, in mebibyte per second (MiBps), for the DB instance.

This setting applies only to the `gp3` storage type.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: Integer

Required: No

StorageType

The storage type to associate with the DB instance.

If you specify `io1`, `io2`, or `gp3`, you must also include a value for the `Iops` parameter.

This setting doesn't apply to Amazon Aurora DB instances. Storage is managed by the DB cluster.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

Default: `io1`, if the `Iops` parameter is specified. Otherwise, `gp3`.

Type: String

Required: No

Tags.Tag.N

Tags to assign to the DB instance.

Type: Array of Tag objects

Required: No

TdeCredentialArn

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

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: String

Required: No

TdeCredentialPassword

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

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

Timezone

The time zone of the DB instance. The time zone parameter is currently supported only by RDS for Db2 and RDS for SQL Server.

Type: String

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

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

This setting doesn't apply to Amazon Aurora DB instances. The associated list of EC2 VPC security groups is managed by the DB cluster.

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

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

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

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

BackupPolicyNotFoundFault

This error has been deprecated.

HTTP Status Code: 404

CertificateNotFound

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

HTTP Status Code: 404

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceAlreadyExists

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

HTTP Status Code: 400

DBParameterGroupNotFound

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

HTTP Status Code: 404

DBSecurityGroupNotFound

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

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

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

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

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

HTTP Status Code: 404

DomainNotFoundFault

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

HTTP Status Code: 404

InstanceQuotaExceeded

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

HTTP Status Code: 400

InsufficientDBInstanceCapacity

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidVPCNetworkStateFault

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

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

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

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBInstance
   &AllocatedStorage=15
   &DBInstanceClass=db.m5.large
   &DBInstanceIdentifier=myawsuser-dbi01
   &Engine=MySQL
   &MasterUserPassword=<password>
   &MasterUsername=myawsuser
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140424/us-east-1/rds/aws4_request
   &X-Amz-Date=20140424T194844Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=bee4aabc750bf7dad0cd9e22b952bd6089d91e2a16592c2293e532eeaab8bc77
```

Sample Response

```
<CreateDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>myawsuser-dbi01</DBInstanceIdentifier>

      <PreferredBackupWindow>03:50-04:20</PreferredBackupWindow>
      <PreferredMaintenanceWindow>wed:06:38-wed:07:08</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues>
        <MasterUserPassword>****</MasterUserPassword>
      </PendingModifiedValues>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBParameterGroups>
```

```
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <PubliclyAccessible>true</PubliclyAccessible>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <AllocatedStorage>15</AllocatedStorage>
      <DBInstanceClass>db.m5.large</DBInstanceClass>
      <MasterUsername>myawsuser</MasterUsername>
    </DBInstance>
  </CreateDBInstanceResult>
  <ResponseMetadata>
    <RequestId>523e3218-afc7-11c3-90f5-f90431260ab4</RequestId>
  </ResponseMetadata>
</CreateDBInstanceResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3

- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBInstanceReadReplica

Creates a new DB instance that acts as a read replica for an existing source DB instance or Multi-AZ DB cluster. You can create a read replica for a DB instance running MariaDB, MySQL, Oracle, PostgreSQL, or SQL Server. You can create a read replica for a Multi-AZ DB cluster running MySQL or PostgreSQL. For more information, see Working with read replicas and Migrating from a Multi-AZ DB cluster to a DB instance using a read replica in the *Amazon RDS User Guide*.

Amazon RDS for Db2 supports this operation for standby replicas. To create a standby replica for a DB instance running Db2, you must set `ReplicaMode` to `mounted`.

Amazon Aurora doesn't support this operation. To create a DB instance for an Aurora DB cluster, use the `CreateDBInstance` operation.

RDS creates read replicas with backups disabled. All other attributes (including DB security groups and DB parameter groups) are inherited from the source DB instance or cluster, except as specified.

> **Important**
>
> Your source DB instance or cluster must have backup retention enabled.

Request Parameters

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

DBInstanceIdentifier

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

Type: String

Required: Yes

AllocatedStorage

The amount of storage (in gibibytes) to allocate initially for the read replica. Follow the allocation rules specified in `CreateDBInstance`.

This setting isn't valid for RDS for SQL Server.

> **Note**
>
> Be sure to allocate enough storage for your read replica so that the create operation can succeed. You can also allocate additional storage for future growth.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether to automatically apply minor engine upgrades to the read replica during the maintenance window.

This setting doesn't apply to RDS Custom DB instances.

Default: Inherits the value from the source DB instance.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The Availability Zone (AZ) where the read replica will be created.

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

Example: `us-east-1d`

Type: String

Required: No

BackupTarget

The location where RDS stores automated backups and manual snapshots.

Valid Values:

- `local` for Dedicated Local Zones
- `region` for Amazon Web Services Region

Type: String

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the read replica's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the read replica to snapshots of the read replica. By default, tags aren't copied.

Type: Boolean

Required: No

CustomIamInstanceProfile

The instance profile associated with the underlying Amazon EC2 instance of an RDS Custom DB instance. The instance profile must meet the following requirements:

- The profile must exist in your account.
- The profile must have an IAM role that Amazon EC2 has permissions to assume.
- The instance profile name and the associated IAM role name must start with the prefix `AWSRDSCustom`.

For the list of permissions required for the IAM role, see Configure IAM and your VPC in the *Amazon RDS User Guide*.

This setting is required for RDS Custom DB instances.

Type: String

Required: No

DatabaseInsightsMode

The mode of Database Insights to enable for the read replica.

> **Note**
>
> This setting isn't supported.

Type: String

Valid Values: `standard | advanced`

Required: No

DBInstanceClass

The compute and memory capacity of the read replica, for example db.m4.large. Not all DB instance classes are available in all Amazon Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide*.

Default: Inherits the value from the source DB instance.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to associate with this read replica DB instance.

For the Db2 DB engine, if your source DB instance uses the Bring Your Own License model, then a custom parameter group must be associated with the replica. For a same Amazon Web Services Region replica, if you don't specify a custom parameter group, Amazon RDS associates the custom parameter group associated with the source DB instance. For a cross-Region replica, you must specify a custom parameter group. This custom parameter group must include your IBM Site ID and IBM Customer ID. For more information, see IBM IDs for Bring Your Own License for Db2.

For Single-AZ or Multi-AZ DB instance read replica instances, if you don't specify a value for `DBParameterGroupName`, then Amazon RDS uses the `DBParameterGroup` of the source DB instance for a same Region read replica, or the default `DBParameterGroup` for the specified DB engine for a cross-Region read replica.

For Multi-AZ DB cluster same Region read replica instances, if you don't specify a value for `DBParameterGroupName`, then Amazon RDS uses the default `DBParameterGroup`.

Specifying a parameter group for this operation is only supported for MySQL DB instances for cross-Region read replicas, for Multi-AZ DB cluster read replica instances, for Db2 DB instances, and for Oracle DB instances. It isn't supported for MySQL DB instances for same Region read replicas or for RDS Custom.

Constraints:

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

Type: String

Required: No

DBSubnetGroupName

A DB subnet group for the DB instance. The new DB instance is created in the VPC associated with the DB subnet group. If no DB subnet group is specified, then the new DB instance isn't created in a VPC.

Constraints:

- If supplied, must match the name of an existing DB subnet group.
- The specified DB subnet group must be in the same Amazon Web Services Region in which the operation is running.
- All read replicas in one Amazon Web Services Region that are created from the same source DB instance must either:
  - Specify DB subnet groups from the same VPC. All these read replicas are created in the same VPC.
  - Not specify a DB subnet group. All these read replicas are created outside of any VPC.

Example: `mydbsubnetgroup`

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB instance. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

Type: Boolean

Required: No

Domain

The Active Directory directory ID to create the DB instance in. Currently, only MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances can be created in an Active Directory Domain.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainAuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user joining the domain.

Example: `arn:aws:secretsmanager:region:account-number:secret:myselfmanagedADtestsecret-123456`

Type: String

Required: No

DomainDnsIps.member.N

The IPv4 DNS IP addresses of your primary and secondary Active Directory domain controllers.

Constraints:

- Two IP addresses must be provided. If there isn't a secondary domain controller, use the IP address of the primary domain controller for both entries in the list.

Example: `123.124.125.126,234.235.236.237`

Type: Array of strings

Required: No

DomainFqdn

The fully qualified domain name (FQDN) of an Active Directory domain.

Constraints:

- Can't be longer than 64 characters.

Example: `mymanagedADtest.mymanagedAD.mydomain`

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainOu

The Active Directory organizational unit for your DB instance to join.

Constraints:

- Must be in the distinguished name format.
- Can't be longer than 64 characters.

Example:
`OU=mymanagedADtestOU,DC=mymanagedADtest,DC=mymanagedAD,DC=mydomain`

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the new DB instance is to export to CloudWatch Logs. The values in the list depend on the DB engine being used. For more information, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Array of strings

Required: No

EnableCustomerOwnedIp

Specifies whether to enable a customer-owned IP address (CoIP) for an RDS on Outposts read replica.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the read replica from outside of its virtual private cloud (VPC) on your local network.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information about IAM database authentication, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to enable Performance Insights for the read replica.

For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

Iops

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

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted read replica.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you create an encrypted read replica in the same Amazon Web Services Region as the source DB instance or Multi-AZ DB cluster, don't specify a value for this parameter. A read replica in the same Amazon Web Services Region is always encrypted with the same KMS key as the source DB instance or cluster.

If you create an encrypted read replica in a different Amazon Web Services Region, then you must specify a KMS key identifier for the destination Amazon Web Services Region. KMS keys are specific to the Amazon Web Services Region that they are created in, and you can't use KMS keys from one Amazon Web Services Region in another Amazon Web Services Region.

You can't create an encrypted read replica from an unencrypted DB instance or Multi-AZ DB cluster.

This setting doesn't apply to RDS Custom, which uses the same KMS key as the primary replica.

Type: String

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

For more information about this setting, including limitations that apply to it, see Managing capacity automatically with Amazon RDS storage autoscaling in the *Amazon RDS User Guide*.

Type: Integer

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the read replica. To disable collection of Enhanced Monitoring metrics, specify `0`. The default is `0`.

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

This setting doesn't apply to RDS Custom DB instances.

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

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

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

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

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

MultiAZ

Specifies whether the read replica is in a Multi-AZ deployment.

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

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

Valid Values:

- `IPV4`
- `DUAL`

The network type is determined by the `DBSubnetGroup` specified for read replica. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Type: String

Required: No

OptionGroupName

The option group to associate the DB instance with. If not specified, RDS uses the option group associated with the source DB instance or cluster.

> **Note**
>
> For SQL Server, you must use the option group associated with the source.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you do not specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

This setting doesn't apply to RDS Custom DB instances.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS returns an error.

Type: Integer

Required: No

Port

The port number that the DB instance uses for connections.

Valid Values: `1150-65535`

Default: Inherits the value from the source DB instance.

Type: Integer

Required: No

PreSignedUrl

When you are creating a read replica from one Amazon GovCloud (US) Region to another or from one China Amazon Web Services Region to another, the URL that contains a Signature Version 4 signed request for the `CreateDBInstanceReadReplica` API operation in the source Amazon Web Services Region that contains the source DB instance.

This setting applies only to Amazon GovCloud (US) Regions and China Amazon Web Services Regions. It's ignored in other Amazon Web Services Regions.

This setting applies only when replicating from a source DB *instance*. Source DB clusters aren't supported in Amazon GovCloud (US) Regions and China Amazon Web Services Regions.

You must specify this parameter when you create an encrypted read replica from another Amazon Web Services Region by using the Amazon RDS API. Don't specify `PreSignedUrl` when you are creating an encrypted read replica in the same Amazon Web Services Region.

The presigned URL must be a valid request for the `CreateDBInstanceReadReplica` API operation that can run in the source Amazon Web Services Region that contains the encrypted source DB instance. The presigned URL request must contain the following parameter values:

- `DestinationRegion` - The Amazon Web Services Region that the encrypted read replica is created in. This Amazon Web Services Region is the same one where the `CreateDBInstanceReadReplica` operation is called that contains this presigned URL.

  For example, if you create an encrypted DB instance in the us-west-1 Amazon Web Services Region, from a source DB instance in the us-east-2 Amazon Web Services Region, then you call the `CreateDBInstanceReadReplica` operation in the us-east-1

Amazon Web Services Region and provide a presigned URL that contains a call to the `CreateDBInstanceReadReplica` operation in the us-west-2 Amazon Web Services Region. For this example, the `DestinationRegion` in the presigned URL must be set to the us-east-1 Amazon Web Services Region.

- `KmsKeyId` - The Amazon KMS key identifier for the key to use to encrypt the read replica in the destination Amazon Web Services Region. This is the same identifier for both the `CreateDBInstanceReadReplica` operation that is called in the destination Amazon Web Services Region, and the operation contained in the presigned URL.
- `SourceDBInstanceIdentifier` - The DB instance identifier for the encrypted DB instance to be replicated. This identifier must be in the Amazon Resource Name (ARN) format for the source Amazon Web Services Region. For example, if you are creating an encrypted read replica from a DB instance in the us-west-2 Amazon Web Services Region, then your `SourceDBInstanceIdentifier` looks like the following example: `arn:aws:rds:us-west-2:123456789012:instance:mysql-instance1-20161115`.

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

> **Note**
>
> If you are using an Amazon SDK tool or the Amazon CLI, you can specify `SourceRegion` (or `--source-region` for the Amazon CLI) instead of specifying `PreSignedUrl` manually. Specifying `SourceRegion` autogenerates a presigned URL that is a valid request for the operation that can run in the source Amazon Web Services Region.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

This setting doesn't apply to RDS Custom DB instances.

Type: Array of ProcessorFeature objects

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB cluster is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB cluster's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB cluster's VPC. Access to the DB cluster is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

For more information, see CreateDBInstance.

Type: Boolean

Required: No

ReplicaMode

The open mode of the replica database.

> **Note**
>
> This parameter is only supported for Db2 DB instances and Oracle DB instances.

Db2

Standby DB replicas are included in Db2 Advanced Edition (AE) and Db2 Standard Edition (SE). The main use case for standby replicas is cross-Region disaster recovery. Because it doesn't accept user connections, a standby replica can't serve a read-only workload.

You can create a combination of standby and read-only DB replicas for the same primary DB instance. For more information, see Working with read replicas for Amazon RDS for Db2 in the *Amazon RDS User Guide*.

To create standby DB replicas for RDS for Db2, set this parameter to `mounted`.

Oracle

Mounted DB replicas are included in Oracle Database Enterprise Edition. The main use case for mounted replicas is cross-Region disaster recovery. The primary database doesn't use Active Data Guard to transmit information to the mounted replica. Because it doesn't accept user connections, a mounted replica can't serve a read-only workload.

You can create a combination of mounted and read-only DB replicas for the same primary DB instance. For more information, see Working with read replicas for Amazon RDS for Oracle in the *Amazon RDS User Guide*.

For RDS Custom, you must specify this parameter and set it to `mounted`. The value won't be set by default. After replica creation, you can manage the open mode manually.

Type: String

Valid Values: `open-read-only | mounted`

Required: No

SourceDBClusterIdentifier

The identifier of the Multi-AZ DB cluster that will act as the source for the read replica. Each DB cluster can have up to 15 read replicas.

Constraints:

- Must be the identifier of an existing Multi-AZ DB cluster.
- Can't be specified if the `SourceDBInstanceIdentifier` parameter is also specified.
- The specified DB cluster must have automatic backups enabled, that is, its backup retention period must be greater than 0.
- The source DB cluster must be in the same Amazon Web Services Region as the read replica. Cross-Region replication isn't supported.

Type: String

Required: No

SourceDBInstanceIdentifier

The identifier of the DB instance that will act as the source for the read replica. Each DB instance can have up to 15 read replicas, except for the following engines:

- Db2 - Can have up to three replicas.
- Oracle - Can have up to five read replicas.
- SQL Server - Can have up to five read replicas.

Constraints:

- Must be the identifier of an existing Db2, MariaDB, MySQL, Oracle, PostgreSQL, or SQL Server DB instance.
- Can't be specified if the `SourceDBClusterIdentifier` parameter is also specified.
- For the limitations of Oracle read replicas, see Version and licensing considerations for RDS for Oracle replicas in the *Amazon RDS User Guide*.
- For the limitations of SQL Server read replicas, see Read replica limitations with SQL Server in the *Amazon RDS User Guide*.
- The specified DB instance must have automatic backups enabled, that is, its backup retention period must be greater than 0.
- If the source DB instance is in the same Amazon Web Services Region as the read replica, specify a valid DB instance identifier.
- If the source DB instance is in a different Amazon Web Services Region from the read replica, specify a valid DB instance ARN. For more information, see Constructing an ARN for Amazon RDS in the *Amazon RDS User Guide*. This doesn't apply to SQL Server or RDS Custom, which don't support cross-Region replicas.

Type: String

Required: No

StorageThroughput

Specifies the storage throughput value for the read replica.

This setting doesn't apply to RDS Custom or Amazon Aurora DB instances.

Type: Integer

Required: No

StorageType

The storage type to associate with the read replica.

If you specify `io1`, `io2`, or `gp3`, you must also include a value for the `Iops` parameter.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

Default: `io1` if the `Iops` parameter is specified. Otherwise, `gp3`.

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

UpgradeStorageConfig

Whether to upgrade the storage file system configuration on the read replica. This option migrates the read replica from the old storage file system layout to the preferred layout.

Type: Boolean

Required: No

UseDefaultProcessorFeatures

Specifies whether the DB instance class of the DB instance uses its default processor features.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of Amazon EC2 VPC security groups to associate with the read replica.

This setting doesn't apply to RDS Custom DB instances.

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

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

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

CertificateNotFound

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

HTTP Status Code: 404

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceAlreadyExists

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

HTTP Status Code: 400

DBInstanceNotFound

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

HTTP Status Code: 404

DBParameterGroupNotFound

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

HTTP Status Code: 404

DBSecurityGroupNotFound

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

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

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

HTTP Status Code: 400

DBSubnetGroupNotAllowedFault

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

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

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

HTTP Status Code: 404

DomainNotFoundFault

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

HTTP Status Code: 404

InstanceQuotaExceeded

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

HTTP Status Code: 400

InsufficientDBInstanceCapacity

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBSubnetGroupFault

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

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

InvalidVPCNetworkStateFault

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

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

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

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBInstanceReadReplica.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBInstanceReadReplica
   &DBInstanceIdentifier=mysqldb-rr
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceDBInstanceIdentifier=mysqldb
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T170525Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=a5bc7bb9648272e9967c76fc582b308d3ee37d6c4f7a4eb62c2d885ec595c373
```

Sample Response

```
<CreateDBInstanceReadReplicaResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBInstanceReadReplicaResult>
    <DBInstance>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <MultiAZ>false</MultiAZ>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb-rr</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <ReadReplicaSourceDBInstanceIdentifier>mysqldb</
ReadReplicaSourceDBInstanceIdentifier>
      <OptionGroupMemberships>
```

```
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>pending-apply</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
  </CreateDBInstanceReadReplicaResult>
  <ResponseMetadata>
    <RequestId>ba8dedf0-bb9a-11d3-855b-576787000e19</RequestId>
  </ResponseMetadata>
</CreateDBInstanceReadReplicaResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBParameterGroup

Creates a new DB parameter group.

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

This command doesn't apply to RDS Custom.

Request Parameters

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

DBParameterGroupFamily

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

To list all of the available parameter group families for a DB engine, use the following command:

```
aws rds describe-db-engine-versions --query
"DBEngineVersions[].DBParameterGroupFamily" --engine <engine>
```

For example, to list all of the available parameter group families for the MySQL DB engine, use the following command:

```
aws rds describe-db-engine-versions --query
"DBEngineVersions[].DBParameterGroupFamily" --engine mysql
```

> **Note**
>
> The output contains duplicates.

The following are the valid DB engine values:

- `aurora-mysql`
- `aurora-postgresql`
- `db2-ae`
- `db2-se`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

DBParameterGroupName

The name of the DB parameter group.

Constraints:

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

> **Note**
>
> This value is stored as a lowercase string.

Type: String

Required: Yes

Description

The description for the DB parameter group.

Type: String

Required: Yes

Tags.Tag.N

Tags to assign to the DB parameter group.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBParameterGroup

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the `DescribeDBParameterGroups` action.

Type: DBParameterGroup object

Errors

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

DBParameterGroupAlreadyExists

A DB parameter group with the same name exists.

HTTP Status Code: 400

DBParameterGroupQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBParameterGroup
   &DBParameterGroupFamily=MySQL5.1
   &DBParameterGroupName=mydbparamgroup3
   &Description=My%20new%20DB%20Parameter%20Group
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
   &X-Amz-Date=20140423T201938Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=e9e5e723f627e872e8bccdc6ccc60bdffcf4a32ae6758ef0a3717ffae49097ae
```

Sample Response

```
<CreateDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBParameterGroupResult>
    <DBParameterGroup>
      <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
      <Description>My new DB Parameter Group</Description>
      <DBParameterGroupName>mydbparamgroup3</DBParameterGroupName>
    </DBParameterGroup>
  </CreateDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>7805c127-af22-11c3-96ac-6999cc5f7e72</RequestId>
  </ResponseMetadata>
</CreateDBParameterGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBProxy

Creates a new DB proxy.

Request Parameters

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

Auth.member.N

The authorization mechanism that the proxy uses.

Type: Array of UserAuthConfig objects

Required: Yes

DBProxyName

The identifier for the proxy. This name must be unique for all proxies owned by your Amazon Web Services account in the specified Amazon Web Services Region. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

EngineFamily

The kinds of databases that the proxy can connect to. This value determines which database network protocol the proxy recognizes when it interprets network traffic to and from the database. For Aurora MySQL, RDS for MariaDB, and RDS for MySQL databases, specify `MYSQL`. For Aurora PostgreSQL and RDS for PostgreSQL databases, specify `POSTGRESQL`. For RDS for Microsoft SQL Server, specify `SQLSERVER`.

Type: String

Valid Values: `MYSQL` | `POSTGRESQL` | `SQLSERVER`

Required: Yes

RoleArn

The Amazon Resource Name (ARN) of the IAM role that the proxy uses to access secrets in Amazon Secrets Manager.

Type: String

Required: Yes

VpcSubnetIds.member.N

One or more VPC subnet IDs to associate with the new proxy.

Type: Array of strings

Required: Yes

DebugLogging

Specifies whether the proxy includes detailed information about SQL statements in its logs. This information helps you to debug issues involving SQL behavior or the performance and scalability of the proxy connections. The debug information includes the text of SQL statements that you submit through the proxy. Thus, only enable this setting when needed for debugging, and only when you have security measures in place to safeguard any sensitive information that appears in the logs.

Type: Boolean

Required: No

IdleClientTimeout

The number of seconds that a connection to the proxy can be inactive before the proxy disconnects it. You can set this value higher or lower than the connection timeout limit for the associated database.

Type: Integer

Required: No

RequireTLS

Specifies whether Transport Layer Security (TLS) encryption is required for connections to the proxy. By enabling this setting, you can enforce encrypted TLS connections to the proxy.

Type: Boolean

Required: No

Tags.Tag.N

An optional set of key-value pairs to associate arbitrary data of your choosing with the proxy.

Type: Array of Tag objects

Required: No

VpcSecurityGroupIds.member.N

One or more VPC security group IDs to associate with the new proxy.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBProxy

The `DBProxy` structure corresponding to the new proxy.

Type: DBProxy object

Errors

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

DBProxyAlreadyExistsFault

The specified proxy name must be unique for all proxies owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

DBProxyQuotaExceededFault

Your Amazon account already has the maximum number of proxies in the specified Amazon Region.

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBProxyEndpoint

Creates a `DBProxyEndpoint`. Only applies to proxies that are associated with Aurora DB clusters. You can use DB proxy endpoints to specify read/write or read-only access to the DB cluster. You can also use DB proxy endpoints to access a DB proxy through a different VPC than the proxy's default VPC.

Request Parameters

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

DBProxyEndpointName

The name of the DB proxy endpoint to create.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

DBProxyName

The name of the DB proxy associated with the DB proxy endpoint that you create.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

VpcSubnetIds.member.N

The VPC subnet IDs for the DB proxy endpoint that you create. You can specify a different set of subnet IDs than for the original DB proxy.

Type: Array of strings

Required: Yes

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TargetRole

The role of the DB proxy endpoint. The role determines whether the endpoint can be used for read/write or only read operations. The default is `READ_WRITE`. The only role that proxies for RDS for Microsoft SQL Server support is `READ_WRITE`.

Type: String

Valid Values: `READ_WRITE | READ_ONLY`

Required: No

VpcSecurityGroupIds.member.N

The VPC security group IDs for the DB proxy endpoint that you create. You can specify a different set of security group IDs than for the original DB proxy. The default is the default security group for the VPC.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBProxyEndpoint

The `DBProxyEndpoint` object that is created by the API operation. The DB proxy endpoint that you create might provide capabilities such as read/write or read-only operations, or using a different VPC than the proxy's default VPC.

Type: DBProxyEndpoint object

Errors

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

DBProxyEndpointAlreadyExistsFault

The specified DB proxy endpoint name must be unique for all DB proxy endpoints owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

DBProxyEndpointQuotaExceededFault

The DB proxy already has the maximum number of endpoints.

HTTP Status Code: 400

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBSecurityGroup

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

A DB security group controls access to EC2-Classic DB instances that are not in a VPC.

> **Note**
>
> EC2-Classic was retired on August 15, 2022. If you haven't migrated from EC2-Classic to a VPC, we recommend that you migrate as soon as possible. For more information, see Migrate from EC2-Classic to a VPC in the *Amazon EC2 User Guide*, the blog EC2-Classic Networking is Retiring – Here's How to Prepare, and Moving a DB instance not in a VPC into a VPC in the *Amazon RDS User Guide*.

Request Parameters

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

DBSecurityGroupDescription

The description for the DB security group.

Type: String

Required: Yes

DBSecurityGroupName

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

Constraints:

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

Example: `mysecuritygroup`

Type: String

Required: Yes

Tags.Tag.N

Tags to assign to the DB security group.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBSecurityGroup

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the `DescribeDBSecurityGroups` action.

Type: DBSecurityGroup object

Errors

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

DBSecurityGroupAlreadyExists

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

HTTP Status Code: 400

DBSecurityGroupNotSupported

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

HTTP Status Code: 400

QuotaExceeded.DBSecurityGroup

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBSecurityGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBSecurityGroup
   &DBSecurityGroupDescription=My%20new%20DB%20Security%20Group
   &DBSecurityGroupName=mydbsecuritygroup00
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140424/us-east-1/rds/aws4_request
   &X-Amz-Date=20140424T190716Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=c2f180a3f0f5d73b47f9c229937a78f3569bf14392db8093d9b2e6785609ab45
```

Sample Response

```
<CreateDBSecurityGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBSecurityGroupResult>
    <DBSecurityGroup>
      <EC2SecurityGroups/>
      <DBSecurityGroupDescription>My new DB Security Group</DBSecurityGroupDescription>
      <IPRanges/>
      <OwnerId>803#########</OwnerId>
      <DBSecurityGroupName>mydbsecuritygroup00</DBSecurityGroupName>
    </DBSecurityGroup>
  </CreateDBSecurityGroupResult>
  <ResponseMetadata>
    <RequestId>e68ef6fa-afc1-11c3-845a-476777009d19</RequestId>
  </ResponseMetadata>
</CreateDBSecurityGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBShardGroup

Creates a new DB shard group for Aurora Limitless Database. You must enable Aurora Limitless Database to create a DB shard group.

Valid for: Aurora DB clusters only

Request Parameters

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

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

Required: Yes

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Required: Yes

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: Yes

ComputeRedundancy

Specifies whether to create standby standby DB data access shard for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB data access shard. This is the default value.
- 1 - Creates a DB shard group with a standby DB data access shard in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB data access shard in two different AZs.

Type: Integer

Required: No

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: No

PubliclyAccessible

Specifies whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB shard group's VPC. Access to the DB shard group is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether `DBSubnetGroupName` is specified.

If `DBSubnetGroupName` isn't specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the default VPC in the target Region doesn’t have an internet gateway attached to it, the DB shard group is private.
- If the default VPC in the target Region has an internet gateway attached to it, the DB shard group is public.

If `DBSubnetGroupName` is specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the subnets are part of a VPC that doesn’t have an internet gateway attached to it, the DB shard group is private.
- If the subnets are part of a VPC that has an internet gateway attached to it, the DB shard group is public.

Type: Boolean

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following elements are returned by the service.

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

DBShardGroupArn

The Amazon Resource Name (ARN) for the DB shard group.

Type: String

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

DBShardGroupResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB shard group.

Type: String

Endpoint

The connection endpoint for the DB shard group.

Type: String

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

PubliclyAccessible

Indicates whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB shard group's VPC. Access to the DB shard group is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

For more information, see CreateDBShardGroup.

This setting is only for Aurora Limitless Database.

Type: Boolean

Status

The status of the DB shard group.

Type: String

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBShardGroupAlreadyExists

The specified DB shard group name must be unique in your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

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

HTTP Status Code: 400

MaxDBShardGroupLimitReached

The maximum number of DB shard groups for your Amazon account in the specified Amazon Region has been reached.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

UnsupportedDBEngineVersion

The specified DB engine version isn't supported for Aurora Limitless Database.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBSnapshot

Creates a snapshot of a DB instance. The source DB instance must be in the `available` or `storage-optimization` state.

Request Parameters

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

DBInstanceIdentifier

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

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

DBSnapshotIdentifier

The identifier for the DB snapshot.

Constraints:

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

Example: `my-snapshot-id`

Type: String

Required: Yes

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the `DescribeDBSnapshots` action.

Type: DBSnapshot object

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

DBSnapshotAlreadyExists

`DBSnapshotIdentifier` is already used by an existing snapshot.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBSnapshot.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBSnapshot
   &DBInstanceIdentifier=mysqldb-02
   &DBSnapshotIdentifier=mySQLdb-snap-1
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
   &X-Amz-Date=20140423T161105Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=e9649af6edcfbab4016f04d72e1b7fc16d8734c37477afcf25b3def625484ed2
```

Sample Response

```
<CreateDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Engine>mysql</Engine>
      <Status>creating</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBInstanceIdentifier>mysqldb-02</DBInstanceIdentifier>
      <DBSnapshotIdentifier>mysqldb-snap-1</DBSnapshotIdentifier>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>0</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBSnapshot>
```

```
  </CreateDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>bd80a25a-af09-11c3-ed11-23c32f9aa7d3</RequestId>
  </ResponseMetadata>
</CreateDBSnapshotResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateDBSubnetGroup

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

Request Parameters

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

DBSubnetGroupDescription

The description for the DB subnet group.

Type: String

Required: Yes

DBSubnetGroupName

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

Constraints:

- Must contain no more than 255 letters, numbers, periods, underscores, spaces, or hyphens.
- Must not be default.
- First character must be a letter.

Example: `mydbsubnetgroup`

Type: String

Required: Yes

SubnetIds.SubnetIdentifier.N

The EC2 Subnet IDs for the DB subnet group.

Type: Array of strings

Required: Yes

Tags.Tag.N

Tags to assign to the DB subnet group.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

DBSubnetGroup

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the `DescribeDBSubnetGroups` action.

Type: DBSubnetGroup object

Errors

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

DBSubnetGroupAlreadyExists

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

HTTP Status Code: 400

DBSubnetGroupDoesNotCoverEnoughAZs

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

HTTP Status Code: 400

DBSubnetGroupQuotaExceeded

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

HTTP Status Code: 400

DBSubnetQuotaExceededFault

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

HTTP Status Code: 400

InvalidSubnet

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateDBSubnetGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateDBSubnetGroup
   &DBSubnetGroupDescription=My%20new%20DB%20Subnet%20Group
   &DBSubnetGroupName=myawsuser-dbsubnetgroup
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SubnetIds.member.1=subnet-e4d398a1
   &SubnetIds.member.2=subnet-c2bdb6ba
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T173028Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=f434cd02a766ea034637debf67996a743ca3e098efc9a5881c61e0c6859259d3
```

Sample Response

```
<CreateDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateDBSubnetGroupResult>
    <DBSubnetGroup>
      <VpcId>vpc-33dc97ea</VpcId>
      <SubnetGroupStatus>Complete</SubnetGroupStatus>
      <DBSubnetGroupDescription>My new DB subnet group</DBSubnetGroupDescription>
      <DBSubnetGroupName>myawsuser-dbsubnetgroup</DBSubnetGroupName>
      <Subnets>
```

```
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-e4d398a1</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1b</Name>
            <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-c2bdb6ba</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1c</Name>
            <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
      </Subnets>
    </DBSubnetGroup>
  </CreateDBSubnetGroupResult>
  <ResponseMetadata>
    <RequestId>3a401b3f-bb9e-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateDBSubnetGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateEventSubscription

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

You can specify the type of source (`SourceType`) that you want to be notified of and provide a list of RDS sources (`SourceIds`) that triggers the events. You can also provide a list of event categories (`EventCategories`) for events that you want to be notified of. For example, you can specify `SourceType` = `db-instance`, `SourceIds` = `mydbinstance1`, `mydbinstance2` and `EventCategories` = `Availability`, `Backup`.

If you specify both the `SourceType` and `SourceIds`, such as `SourceType` = `db-instance` and `SourceIds` = `myDBInstance1`, you are notified of all the `db-instance` events for the specified source. If you specify a `SourceType` but do not specify `SourceIds`, you receive notice of the events for that source type for all your RDS sources. If you don't specify either the SourceType or the `SourceIds`, you are notified of events generated from all RDS sources belonging to your customer account.

For more information about subscribing to an event for RDS DB engines, see Subscribing to Amazon RDS event notification in the *Amazon RDS User Guide*.

For more information about subscribing to an event for Aurora DB engines, see Subscribing to Amazon RDS event notification in the *Amazon Aurora User Guide*.

Request Parameters

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

SnsTopicArn

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

> **Note**
>
> RDS doesn't support FIFO (first in, first out) topics. For more information, see Message ordering and deduplication (FIFO topics) in the *Amazon Simple Notification Service Developer Guide*.

Type: String

Required: Yes

SubscriptionName

The name of the subscription.

Constraints: The name must be less than 255 characters.

Type: String

Required: Yes

Enabled

Specifies whether to activate the subscription. If the event notification subscription isn't activated, the subscription is created but not active.

Type: Boolean

Required: No

EventCategories.EventCategory.N

A list of event categories for a particular source type (`SourceType`) that you want to subscribe to. You can see a list of the categories for a given source type in the "Amazon RDS event categories and event messages" section of the *Amazon RDS User Guide* or the *Amazon Aurora User Guide*. You can also see this list by using the `DescribeEventCategories` operation.

Type: Array of strings

Required: No

SourceIds.SourceId.N

The list of identifiers of the event sources for which events are returned. If not specified, then all sources are included in the response. An identifier must begin with a letter and must contain

only ASCII letters, digits, and hyphens. It can't end with a hyphen or contain two consecutive hyphens.

Constraints:

- If `SourceIds` are supplied, `SourceType` must also be provided.
- If the source type is a DB instance, a `DBInstanceIdentifier` value must be supplied.
- If the source type is a DB cluster, a `DBClusterIdentifier` value must be supplied.
- If the source type is a DB parameter group, a `DBParameterGroupName` value must be supplied.
- If the source type is a DB security group, a `DBSecurityGroupName` value must be supplied.
- If the source type is a DB snapshot, a `DBSnapshotIdentifier` value must be supplied.
- If the source type is a DB cluster snapshot, a `DBClusterSnapshotIdentifier` value must be supplied.
- If the source type is an RDS Proxy, a `DBProxyName` value must be supplied.

Type: Array of strings

Required: No

SourceType

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

Valid Values: `db-instance | db-cluster | db-parameter-group | db-security-group | db-snapshot | db-cluster-snapshot | db-proxy | zero-etl | custom-engine-version | blue-green-deployment`

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Type: EventSubscription object

Errors

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

EventSubscriptionQuotaExceeded

You have reached the maximum number of event subscriptions.

HTTP Status Code: 400

SNSInvalidTopic

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

HTTP Status Code: 400

SNSNoAuthorization

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

HTTP Status Code: 400

SNSTopicArnNotFound

The SNS topic ARN does not exist.

HTTP Status Code: 404

SourceNotFound

The requested source could not be found.

HTTP Status Code: 404

SubscriptionAlreadyExist

The supplied subscription name already exists.

HTTP Status Code: 400

SubscriptionCategoryNotFound

The supplied category does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of CreateEventSubscription.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateEventSubscription
   &Enabled=true
   &EventCategories.member.1=failure
   &EventCategories.member.2=configuration%20change
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SnsTopicArn=arn%3Aaws%3Asns%3Aus-east-1%3A802########%3Amytopic
   &SourceType=db-security-group
   &SubscriptionName=myawsuser-secgrp
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T214325Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=7045960f6ab15609571fb05278004256e186b7633ab2a3ae46826d7713e0b461
```

Sample Response

```
<CreateEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateEventSubscriptionResult>
    <EventSubscription>
      <SourceType>db-security-group</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#########</CustomerAwsId>
      <Status>creating</Status>
      <SubscriptionCreationTime>Fri Apr 25 21:43:25 UTC 2014</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>configuration change</EventCategory>
        <EventCategory>failure</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:802#########:mytopic</SnsTopicArn>
    </EventSubscription>
  </CreateEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>f15e9dc3-bbb1-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateEventSubscriptionResponse>
```

Example

This example illustrates one usage of CreateEventSubscription.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateEventSubscription
   &Enabled=true
   &EventCategories.member.1=creation
   &EventCategories.member.2=deletion
   &EventCategories.member.3=failover
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SnsTopicArn=arn%3Aaws%3Asns%3Aus-east-1%3A802#########%3Amytopic
   &SourceType=db-instance
   &SubscriptionName=myawsuser-inst
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
   &X-Amz-Date=20140429T184410Z
```

```
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=1e1879f20ef3aec07135d69cc192426bf1cc5c42fc9d1acc7726bcd93155fb71
```

Sample Response

```
<CreateEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateEventSubscriptionResult>
    <EventSubscription>
      <SourceType>db-instance</SourceType>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#########</CustomerAwsId>
      <Status>creating</Status>
      <SubscriptionCreationTime>Tue Apr 29 18:44:10 UTC 2014</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
        <EventCategory>failover</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>myawsuser-inst</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:802#########:mytopic</SnsTopicArn>
    </EventSubscription>
  </CreateEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>30feb307-bebd-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</CreateEventSubscriptionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin

- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateGlobalCluster

Creates an Aurora global database spread across multiple Amazon Web Services Regions. The global database contains a single primary cluster with read-write capability, and a read-only secondary cluster that receives data from the primary cluster through high-speed replication performed by the Aurora storage subsystem.

You can create a global database that is initially empty, and then create the primary and secondary DB clusters in the global database. Or you can specify an existing Aurora cluster during the create operation, and this cluster becomes the primary cluster of the global database.

> **Note**
>
> This operation applies only to Aurora DB clusters.

Request Parameters

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

DatabaseName

The name for your database of up to 64 alphanumeric characters. If you don't specify a name, Amazon Aurora doesn't create a database in the global database cluster.

Constraints:

- Can't be specified if `SourceDBClusterIdentifier` is specified. In this case, Amazon Aurora uses the database name from the source DB cluster.

Type: String

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the new global database cluster. The global database can't be deleted when deletion protection is enabled.

Type: Boolean

Required: No

Engine

The database engine to use for this global database cluster.

Valid Values: `aurora-mysql | aurora-postgresql`

Constraints:

- Can't be specified if `SourceDBClusterIdentifier` is specified. In this case, Amazon Aurora uses the engine of the source DB cluster.

Type: String

Required: No

EngineLifecycleSupport

The life cycle type for this global database cluster.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your global cluster into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, creating the global cluster will fail if the DB major version is past its end of standard support date.

This setting only applies to Aurora PostgreSQL-based global databases.

You can use this setting to enroll your global cluster into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your global cluster past the end of standard support for that engine version. For more information, see Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*.

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineVersion

The engine version to use for this global database cluster.

Constraints:

- Can't be specified if `SourceDBClusterIdentifier` is specified. In this case, Amazon Aurora uses the engine version of the source DB cluster.

Type: String

Required: No

GlobalClusterIdentifier

The cluster identifier for this global database cluster. This parameter is stored as a lowercase string.

Type: String

Required: No

SourceDBClusterIdentifier

The Amazon Resource Name (ARN) to use as the primary cluster of the global database.

If you provide a value for this parameter, don't specify values for the following settings because Amazon Aurora uses the values from the specified source DB cluster:

- `DatabaseName`
- `Engine`
- `EngineVersion`
- `StorageEncrypted`

Type: String

Required: No

StorageEncrypted

Specifies whether to enable storage encryption for the new global database cluster.

Constraints:

- Can't be specified if `SourceDBClusterIdentifier` is specified. In this case, Amazon Aurora uses the setting from the source DB cluster.

Type: Boolean

Required: No

Tags.Tag.N

Tags to assign to the global cluster.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

GlobalClusterAlreadyExistsFault

The `GlobalClusterIdentifier` already exists. Specify a new global database identifier (unique name) to create a new global database cluster or to rename an existing one.

HTTP Status Code: 400

GlobalClusterQuotaExceededFault

The number of global database clusters for this account is already at the maximum allowed.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateIntegration

Creates a zero-ETL integration with Amazon Redshift.

Request Parameters

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

IntegrationName

The name of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

SourceArn

The Amazon Resource Name (ARN) of the database to use as the source for replication.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:(cluster|db):[a-z][a-z0-9]*(-[a-z0-9]+)*`

Required: Yes

TargetArn

The ARN of the Redshift data warehouse to use as the target for replication.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: Yes

AdditionalEncryptionContext , AdditionalEncryptionContext.entry.N.key (key), AdditionalEncryptionContext.entry.N.value (value)

An optional set of non-secret key–value pairs that contains additional contextual information about the data. For more information, see Encryption context in the *Amazon Key Management Service Developer Guide*.

You can only include this parameter if you specify the `KMSKeyId` parameter.

Type: String to string map

Required: No

DataFilter

Data filtering options for the integration. For more information, see Data filtering for Aurora zero-ETL integrations with Amazon Redshift or Data filtering for Amazon RDS zero-ETL integrations with Amazon Redshift.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Required: No

Description

A description of the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Required: No

KMSKeyId

The Amazon Key Management System (Amazon KMS) key identifier for the key to use to encrypt the integration. If you don't specify an encryption key, RDS uses a default Amazon owned key.

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following elements are returned by the service.

AdditionalEncryptionContext , AdditionalEncryptionContext.entry.N.key (key), AdditionalEncryptionContext.entry.N.value (value)

The encryption context for the integration. For more information, see Encryption context in the *Amazon Key Management Service Developer Guide*.

Type: String to string map

CreateTime

The time when the integration was created, in Universal Coordinated Time (UTC).

Type: Timestamp

DataFilter

Data filters for the integration. These filters determine which tables from the source database are sent to the target Amazon Redshift data warehouse.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Description

A description of the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Errors.IntegrationError.N

Any errors associated with the integration.

Type: Array of IntegrationError objects

IntegrationArn

The ARN of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:integration:[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}`

IntegrationName

The name of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

KMSKeyId

The Amazon Key Management System (Amazon KMS) key identifier for the key used to to encrypt the integration.

Type: String

SourceArn

The Amazon Resource Name (ARN) of the database used as the source for replication.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:(cluster|db):[a-z][a-z0-9]*(-[a-z0-9]+)*`

Status

The current status of the integration.

Type: String

Valid Values: `creating | active | modifying | failed | deleting | syncing | needs_attention`

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

TargetArn

The ARN of the Redshift data warehouse used as the target for replication.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceNotFound

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

HTTP Status Code: 404

IntegrationAlreadyExistsFault

The integration you are trying to create already exists.

HTTP Status Code: 400

IntegrationConflictOperationFault

A conflicting conditional operation is currently in progress against this resource. Typically occurs when there are multiple requests being made to the same resource at the same time, and these requests conflict with each other.

HTTP Status Code: 400

IntegrationQuotaExceededFault

You can't crate any more zero-ETL integrations because the quota has been reached.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateIntegration.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateIntegration
   &IntegrationName=my-integration
   &SourceArn=arn%3Aaws%3Ards%3Aus-east-1%3A123456789012%3Adb%3Asource-db
   &TargetArn=arn%3Aaws%3Aredshift-serverless%3Aus-east-1%3A123456789012%3Anamespace
%3A0844171c-1e01-4d9f-be52-89e6c44083e5
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
```

```
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-east-1/rds/aws4_request
   &X-Amz-Date=20230110T005253Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<CreateIntegrationResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
    <CreateIntegrationResult>
        <SourceArn>arn:aws:rds:us-east-1:123456789012:cluster:source-db</SourceArn>
        <IntegrationName>my-integration</IntegrationName>
        <IntegrationArn>arn:aws:rds:us-east-1:123456789012:integration:f30acbd8-
aaab-4c3c-afb5-09d51d041037</IntegrationArn>
        <TargetArn>arn:aws:redshift-serverless:us-
east-1:123456789012:namespace/0844171c-1e01-4d9f-be52-89e6c44083e5</TargetArn>
        <Tags/>
        <CreateTime>2023-12-14T00:15:21.358Z</CreateTime>
        <KMSKeyId>arn:aws:kms:us-east-1:211223847500:key/eda7134d-cd39-4af1-b62b-
ad2415b6bccc</KMSKeyId>
        <Status>creating</Status>
    </CreateIntegrationResult>
    <ResponseMetadata>
        <RequestId>f5a16865-4415-4054-890c-2f5b2c3c67a8</RequestId>
    </ResponseMetadata>
</CreateIntegrationResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin

- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateOptionGroup

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

This command doesn't apply to RDS Custom.

Request Parameters

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

EngineName

The name of the engine to associate this option group with.

Valid Values:

- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

MajorEngineVersion

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

Type: String

Required: Yes

OptionGroupDescription

The description of the option group.

Type: String

Required: Yes

OptionGroupName

Specifies the name of the option group to be created.

Constraints:

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

Example: `myoptiongroup`

Type: String

Required: Yes

Tags.Tag.N

Tags to assign to the option group.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

OptionGroup

Type: OptionGroup object

Errors

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

OptionGroupAlreadyExistsFault

The option group you are trying to create already exists.

HTTP Status Code: 400

OptionGroupQuotaExceededFault

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of CreateOptionGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=CreateOptionGroup
   &EngineName=mysql
   &MajorEngineVersion=5.6
   &OptionGroupDescription=My%20Option%20Group
   &OptionGroupName=myawsuser-og00
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T174519Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=d3a89afa4511d0c4ecab046d6dc760a72bfe6bb15999cce053adeb2617b60384
```

Sample Response

```
<CreateOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <CreateOptionGroupResult>
    <OptionGroup>
      <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <OptionGroupName>myawsuser-og00</OptionGroupName>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>My Option Group</OptionGroupDescription>
      <Options/>
    </OptionGroup>
  </CreateOptionGroupResult>
  <ResponseMetadata>
    <RequestId>4d7f11f2-bbf0-11d3-ae4f-eec568ed6b36</RequestId>
  </ResponseMetadata>
</CreateOptionGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

CreateTenantDatabase

Creates a tenant database in a DB instance that uses the multi-tenant configuration. Only RDS for Oracle container database (CDB) instances are supported.

Request Parameters

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

DBInstanceIdentifier

The user-supplied DB instance identifier. RDS creates your tenant database in this DB instance. This parameter isn't case-sensitive.

Type: String

Required: Yes

MasterUsername

The name for the master user account in your tenant database. RDS creates this user account in the tenant database and grants privileges to the master user. This parameter is case-sensitive.

Constraints:

- Must be 1 to 16 letters, numbers, or underscores.
- First character must be a letter.
- Can't be a reserved word for the chosen database engine.

Type: String

Required: Yes

TenantDBName

The user-supplied name of the tenant database that you want to create in your DB instance. This parameter has the same constraints as `DBName` in `CreateDBInstance`.

Type: String

Required: Yes

CharacterSetName

The character set for your tenant database. If you don't specify a value, the character set name defaults to `AL32UTF8`.

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUserPassword

The password for the master user in your tenant database.

Constraints:

- Must be 8 to 30 characters.
- Can include any printable ASCII character except forward slash (/), double quote ("), at symbol (@), ampersand (&), or single quote (').
- Can't be specified when `ManageMasterUserPassword` is enabled.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

NcharCharacterSetName

The `NCHAR` value for the tenant database.

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

TenantDatabase

A tenant database in the DB instance. This data type is an element in the response to the `DescribeTenantDatabases` action.

Type: TenantDatabase object

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

TenantDatabaseAlreadyExists

You attempted to either create a tenant database that already exists or modify a tenant database to use the name of an existing tenant database.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface

- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteBlueGreenDeployment

Deletes a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Request Parameters

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

BlueGreenDeploymentIdentifier

The unique identifier of the blue/green deployment to delete. This parameter isn't case-sensitive.

Constraints:

- Must match an existing blue/green deployment identifier.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

DeleteTarget

Specifies whether to delete the resources in the green environment. You can't specify this option if the blue/green deployment status is `SWITCHOVER_COMPLETED`.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

BlueGreenDeployment

Details about a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Type: BlueGreenDeployment object

Errors

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

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

InvalidBlueGreenDeploymentStateFault

The blue/green deployment can't be switched over or deleted because there is an invalid configuration in the green environment.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteBlueGreenDeployment.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DeleteBlueGreenDeployment
   &BlueGreenDeploymentIdentifier=bgd-mdoyy2mn7vbkhhgg
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
```

```
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-west-2/rds/aws4_request
   &X-Amz-Date=20230110T191150Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<DeleteBlueGreenDeploymentResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteBlueGreenDeploymentResult>
    <BlueGreenDeployment>
      <TagList/>
      <BlueGreenDeploymentName>my-blue-green-deployment</BlueGreenDeploymentName>
      <DeleteTime>2023-01-10T19:11:51.293Z</DeleteTime>
      <CreateTime>2023-01-10T18:42:09.330Z</CreateTime>
      <SwitchoverDetails>
        <member>
          <SourceMember>arn:aws:rds:us-west-2:123456789012:db:database-1-old1</
SourceMember>
          <TargetMember>arn:aws:rds:us-west-2:123456789012:db:database-1</TargetMember>
          <Status>SWITCHOVER_COMPLETED</Status>
        </member>
      </SwitchoverDetails>
      <Source>arn:aws:rds:us-west-2:123456789012:db:database-1-old1</Source>
      <BlueGreenDeploymentIdentifier>bgd-mdoyy2mn7vbkhhgg</
BlueGreenDeploymentIdentifier>
      <Tasks>
        <member>
          <Name>CREATING_READ_REPLICA_OF_SOURCE</Name>
          <Status>COMPLETED</Status>
        </member>
        <member>
          <Name>CONFIGURE_BACKUPS</Name>
          <Status>COMPLETED</Status>
        </member>
      </Tasks>
      <Target>arn:aws:rds:us-west-2:123456789012:db:database-1</Target>
      <Status>DELETING</Status>
    </BlueGreenDeployment>
  </DeleteBlueGreenDeploymentResult>
  <ResponseMetadata>
    <RequestId>34deffd3-543a-4c26-9ff1-f859894f43bc</RequestId>
  </ResponseMetadata>
</DeleteBlueGreenDeploymentResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteCustomDBEngineVersion

Deletes a custom engine version. To run this command, make sure you meet the following prerequisites:

- The CEV must not be the default for RDS Custom. If it is, change the default before running this command.
- The CEV must not be associated with an RDS Custom DB instance, RDS Custom instance snapshot, or automated backup of your RDS Custom instance.

Typically, deletion takes a few minutes.

> **Note**
>
> The MediaImport service that imports files from Amazon S3 to create CEVs isn't integrated with Amazon CloudTrail. If you turn on data logging for Amazon RDS in CloudTrail, calls to the `DeleteCustomDbEngineVersion` event aren't logged. However, you might see calls from the API gateway that accesses your Amazon S3 bucket. These calls originate from the MediaImport service for the `DeleteCustomDbEngineVersion` event.

For more information, see Deleting a CEV in the *Amazon RDS User Guide*.

Request Parameters

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

Engine

The database engine. RDS Custom for Oracle supports the following values:

- `custom-oracle-ee`
- `custom-oracle-ee-cdb`
- `custom-oracle-se2`
- `custom-oracle-se2-cdb`

Type: String

Length Constraints: Minimum length of 1. Maximum length of 35.

Pattern: `^[A-Za-z0-9-]{1,35}$`

Required: Yes

EngineVersion

The custom engine version (CEV) for your DB instance. This option is required for RDS Custom, but optional for Amazon RDS. The combination of `Engine` and `EngineVersion` is unique per customer per Amazon Web Services Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60.

Pattern: `^[a-z0-9_.-]{1,60}$`

Required: Yes

Response Elements

The following elements are returned by the service.

CreateTime

The creation time of the DB engine version.

Type: Timestamp

CustomDBEngineVersionManifest

JSON string that lists the installation files and parameters that RDS Custom uses to create a custom engine version (CEV). RDS Custom applies the patches in the order in which they're listed in the manifest. You can set the Oracle home, Oracle base, and UNIX/Linux user and group using the installation parameters. For more information, see JSON fields in the CEV manifest in the *Amazon RDS User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 51000.

Pattern: `[\s\S]*`

DatabaseInstallationFilesS3BucketName

The name of the Amazon S3 bucket that contains your database installation files.

Type: String

DatabaseInstallationFilesS3Prefix

The Amazon S3 directory that contains the database installation files. If not specified, then no prefix is assumed.

Type: String

DBEngineDescription

The description of the database engine.

Type: String

DBEngineMediaType

A value that indicates the source media provider of the AMI based on the usage operation. Applicable for RDS Custom for SQL Server.

Type: String

DBEngineVersionArn

The ARN of the custom engine version.

Type: String

DBEngineVersionDescription

The description of the database engine version.

Type: String

DBParameterGroupFamily

The name of the DB parameter group family for the database engine.

Type: String

DefaultCharacterSet

The default character set for new instances of this engine version, if the `CharacterSetName` parameter of the CreateDBInstance API isn't specified.

Type: CharacterSet object

Engine

The name of the database engine.

Type: String

EngineVersion

The version number of the database engine.

Type: String

ExportableLogTypes.member.N

The types of logs that the database engine has available for export to CloudWatch Logs.

Type: Array of strings

Image

The EC2 image

Type: CustomDBEngineVersionAMI object

KMSKeyId

The Amazon KMS key identifier for an encrypted CEV. This parameter is required for RDS Custom, but optional for Amazon RDS.

Type: String

MajorEngineVersion

The major engine version of the CEV.

Type: String

ServerlessV2FeaturesSupport

Specifies any Aurora Serverless v2 properties or limits that differ between Aurora engine versions. You can test the values of this attribute when deciding which Aurora version to use in a new or upgraded DB cluster. You can also retrieve the version of an existing DB cluster and check whether that version supports certain Aurora Serverless v2 features before you attempt to use those features.

Type: ServerlessV2FeaturesSupport object

Status

The status of the DB engine version, either `available` or `deprecated`.

Type: String

SupportedCACertificateIdentifiers.member.N

A list of the supported CA certificate identifiers.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: Array of strings

SupportedCharacterSets.CharacterSet.N

A list of the character sets supported by this engine for the `CharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedEngineModes.member.N

A list of the supported DB engine modes.

Type: Array of strings

SupportedFeatureNames.member.N

A list of features supported by the DB engine.

The supported features vary by DB engine and DB engine version.

To determine the supported features for a specific DB engine and DB engine version using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine <engine_name> --engine-
version <engine_version>
```

For example, to determine the supported features for RDS for PostgreSQL version 13.3 using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --engine-version
13.3
```

The supported features are listed under `SupportedFeatureNames` in the output.

Type: Array of strings

SupportedNcharCharacterSets.CharacterSet.N

A list of the character sets supported by the Oracle DB engine for the `NcharCharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedTimezones.Timezone.N

A list of the time zones supported by this engine for the `Timezone` parameter of the `CreateDBInstance` action.

Type: Array of Timezone objects

SupportsBabelfish

Indicates whether the engine version supports Babelfish for Aurora PostgreSQL.

Type: Boolean

SupportsCertificateRotationWithoutRestart

Indicates whether the engine version supports rotating the server certificate without rebooting the DB instance.

Type: Boolean

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with a specific DB engine version.

Type: Boolean

SupportsIntegrations

Indicates whether the DB engine version supports zero-ETL integrations with Amazon Redshift.

Type: Boolean

SupportsLimitlessDatabase

Indicates whether the DB engine version supports Aurora Limitless Database.

Type: Boolean

SupportsLocalWriteForwarding

Indicates whether the DB engine version supports forwarding write operations from reader DB instances to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

SupportsLogExportsToCloudwatchLogs

Indicates whether the engine version supports exporting the log types specified by ExportableLogTypes to CloudWatch Logs.

Type: Boolean

SupportsParallelQuery

Indicates whether you can use Aurora parallel query with a specific DB engine version.

Type: Boolean

SupportsReadReplica

Indicates whether the database engine version supports read replicas.

Type: Boolean

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

ValidUpgradeTarget.UpgradeTarget.N

A list of engine versions that this database engine version can be upgraded to.

Type: Array of UpgradeTarget objects

Errors

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

CustomDBEngineVersionNotFoundFault

The specified CEV was not found.

HTTP Status Code: 404

InvalidCustomDBEngineVersionStateFault

You can't delete the CEV.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteCustomDBEngineVersion.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Engine=custom-oracle-ee
    &EngineVersion=19.cev1
    &Operation=DeleteCustomDBEngineVersion
    &Version=1999-01-01
    &AWSAccessKeyId=ABCDEF1GHIJKLMNOPQRSTUV
    &SignatureVersion=2
    &SignatureMethod=HmacSHA1
    &Timestamp=2021-10-13T21%3A37%3A10.000Z
```

Sample Response

```
<DeleteCustomDBEngineVersionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteCustomDBEngineVersionResult>
    <DatabaseInstallationFilesS3Prefix>123456789012/cev1</
DatabaseInstallationFilesS3Prefix>
```

```
    <MajorEngineVersion>19</MajorEngineVersion>
    <DBEngineVersionArn>arn:aws:rds:us-east-1:123456789012:cev:custom-oracle-
ee/19.cev1/123ab45c-abc1-1234-1234-123a45b12345</DBEngineVersionArn>
    <DBEngineVersionDescription>some text</DBEngineVersionDescription>
    <SupportsGlobalDatabases>false</SupportsGlobalDatabases>
    <SupportsParallelQuery>false</SupportsParallelQuery>
    <Engine>custom-oracle-ee</Engine>
    <KMSKeyId>arn:aws:kms:us-
east-1:123456789012:key/12ab3c4d-1234-12a3-1aa2-12a3bcdefghi</KMSKeyId>
    <EngineVersion>19.cev</EngineVersion>
    <SupportsReadReplica>false</SupportsReadReplica>
    <SupportsCluster>false</SupportsCluster>
    <TagList/>
    <CreateTime>2021-10-12T21:51:34.468Z</CreateTime>
    <DatabaseInstallationFilesS3BucketName>1-custom-installation-files</
DatabaseInstallationFilesS3BucketName>
    <SupportsLogExportsToCloudwatchLogs>false</SupportsLogExportsToCloudwatchLogs>
    <AMIs>
      <member>
        <Id>ami-0c65ec39d269b9aed</Id>
        <Status>failed</Status>
      </member>
    </AMIs>
    <DBEngineDescription>Oracle Database server EE for RDS Custom</DBEngineDescription>
    <Status>deleting</Status>
  </DeleteCustomDBEngineVersionResult>
  <ResponseMetadata>
    <RequestId>a1234b56-7890-1234-5678-cde90fg1h2i3</RequestId>
  </ResponseMetadata>
</DeleteCustomDBEngineVersionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBCluster

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

If you're deleting a Multi-AZ DB cluster with read replicas, all cluster members are terminated and read replicas are promoted to standalone instances.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterIdentifier

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

Constraints:

- Must match an existing DBClusterIdentifier.

Type: String

Required: Yes

DeleteAutomatedBackups

Specifies whether to remove automated backups immediately after the DB cluster is deleted. This parameter isn't case-sensitive. The default is to remove automated backups immediately after the DB cluster is deleted, unless the Amazon Backup policy specifies a point-in-time restore rule.

Type: Boolean

Required: No

FinalDBSnapshotIdentifier

The DB cluster snapshot identifier of the new DB cluster snapshot created when `SkipFinalSnapshot` is disabled.

> **Note**
>
> If you specify this parameter and also skip the creation of a final DB cluster snapshot with the `SkipFinalShapshot` parameter, the request results in an error.

Constraints:

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

Type: String

Required: No

SkipFinalSnapshot

Specifies whether to skip the creation of a final DB cluster snapshot before RDS deletes the DB cluster. If you set this value to `true`, RDS doesn't create a final DB cluster snapshot. If you set this value to `false` or don't specify it, RDS creates a DB cluster snapshot before it deletes the DB cluster. By default, this parameter is disabled, so RDS creates a final DB cluster snapshot.

> **Note**
>
> If `SkipFinalSnapshot` is disabled, you must specify a value for the `FinalDBSnapshotIdentifier` parameter.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

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

DBClusterAutomatedBackupQuotaExceededFault

The quota for retained automated backups was exceeded. This prevents you from retaining any additional automated backups. The retained automated backups quota is the same as your DB cluster quota.

HTTP Status Code: 400

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBClusterSnapshotAlreadyExistsFault

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

HTTP Status Code: 400

InvalidDBClusterSnapshotStateFault

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

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Deleting an Aurora DB cluster

This example illustrates one usage of DeleteDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=DeleteDBCluster
    &DBClusterIdentifier=sample-cluster2
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140725/us-east-1/rds/aws4_request
    &X-Amz-Date=20140725T162148Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=815910f78c5a9813e1c15300fcf206e04da071b3586770169765292dc6aa2ed4
```

Sample Response

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

Deleting a Multi-AZ DB cluster

This example illustrates one usage of DeleteDBCluster.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DeleteDBCluster
    &DBClusterIdentifier=my-multi-az-cluster
    &SkipFinalSnapshot=true
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
```

```
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140725/us-west-2/rds/aws4_request
    &X-Amz-Date=20211027T000821Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=815910f78c5a9813e1c15300fcf206e04da071b3586770169765292dc6aa2ed4
```

Sample Response

```
<DeleteDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteDBClusterResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>1000</AllocatedStorage>
      <AssociatedRoles />
      <AvailabilityZones />
      <ReadReplicaIdentifiers />
      <EngineVersion>8.0.26</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <DBClusterMembers />
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <Port>3066</Port>
      <MonitoringInterval>0</MonitoringInterval>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
      <DbClusterResourceId>cluster-XDHARXDLDCRL2VZZXKBCFN3RQI</DbClusterResourceId>
      <LatestRestorableTime>2021-08-17T23:15:00Z</LatestRestorableTime>
      <Status>available</Status>
      <PreferredBackupWindow>22:02-22:32</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <Endpoint>my-multi-az-cluster.cluster-123456789012.us-west-2.rds.amazonaws.com</
Endpoint>
      <EngineMode>provisioned</EngineMode>
      <Engine>mysql</Engine>
      <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <EarliestRestorableTime>2021-08-16T23:15:00Z</EarliestRestorableTime>
      <ClusterCreateTime>2021-08-10T23:02:10.460Z</ClusterCreateTime>
      <PerformanceInsightsEnabled>false</PerformanceInsightsEnabled>
      <MultiAZ>false</MultiAZ>
      <DomainMemberships />
```

```
      <StorageEncrypted>false</StorageEncrypted>
      <DBSubnetGroup>subnetgroup1</DBSubnetGroup>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <TagList />
      <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
      <PreferredMaintenanceWindow>mon:23:02-mon:23:32</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>default.mysql8.0</DBClusterParameterGroup>
      <StorageType>io1</StorageType>
      <DBClusterInstanceClass>db.r6gd.xlarge</DBClusterInstanceClass>
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
    </DBCluster>
  </DeleteDBClusterResult>
  <ResponseMetadata>
    <RequestId>08b84e67-7e89-4302-8563-642b34026159</RequestId>
  </ResponseMetadata>
</DeleteDBClusterResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python

- Amazon SDK for Ruby V3

DeleteDBClusterAutomatedBackup

Deletes automated backups using the `DbClusterResourceId` value of the source DB cluster or the Amazon Resource Name (ARN) of the automated backups.

Request Parameters

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

DbClusterResourceId

The identifier for the source DB cluster, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBClusterAutomatedBackup

An automated backup of a DB cluster. It consists of system backups, transaction logs, and the database cluster properties that existed at the time you deleted the source cluster.

Type: DBClusterAutomatedBackup object

Errors

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

DBClusterAutomatedBackupNotFoundFault

No automated backup for this DB cluster was found.

HTTP Status Code: 404

InvalidDBClusterAutomatedBackupStateFault

The automated backup is in an invalid state. For example, this automated backup is associated with an active cluster.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBClusterEndpoint

Deletes a custom endpoint and removes it from an Amazon Aurora DB cluster.

> **Note**
>
> This action only applies to Aurora DB clusters.

Request Parameters

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

DBClusterEndpointIdentifier

The identifier associated with the custom endpoint. This parameter is stored as a lowercase string.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

CustomEndpointType

The type associated with a custom endpoint. One of: `READER`, `WRITER`, `ANY`.

Type: String

DBClusterEndpointArn

The Amazon Resource Name (ARN) for the endpoint.

Type: String

DBClusterEndpointIdentifier

The identifier associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

DBClusterEndpointResourceIdentifier

A unique system-generated identifier for an endpoint. It remains the same for the whole life of the endpoint.

Type: String

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Endpoint

The DNS address of the endpoint.

Type: String

EndpointType

The type of the endpoint. One of: `READER`, `WRITER`, `CUSTOM`.

Type: String

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. Only relevant if the list of static members is empty.

Type: Array of strings

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Status

The current status of the endpoint. One of: `creating`, `available`, `deleting`, `inactive`, `modifying`. The `inactive` state applies to an endpoint that can't be used for a certain kind of cluster, such as a `writer` endpoint for a read-only secondary cluster in a global database.

Type: String

Errors

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

DBClusterEndpointNotFoundFault

The specified custom endpoint doesn't exist.

HTTP Status Code: 400

InvalidDBClusterEndpointStateFault

The requested operation can't be performed on the endpoint while the endpoint is in this state.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBClusterParameterGroup

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

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

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

Type: String

Required: Yes

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

InvalidDBParameterGroupState

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBClusterParameterGroup.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DeleteDBClusterParameterGroup
    &DBClusterParameterGroupName=sample-cluster-pg
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
    &X-Amz-Date=20160913T172430Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=3f54b5ee720c2644296e98a1c0393a9abd91bc0847dfe7dd9be02ede8fd95ae5
```

Sample Response

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++

- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBClusterSnapshot

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

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

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterSnapshotIdentifier

The identifier of the DB cluster snapshot to delete.

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

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBClusterSnapshot

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the `DescribeDBClusterSnapshots` action.

Type: DBClusterSnapshot object

Errors

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

DBClusterSnapshotNotFoundFault

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

HTTP Status Code: 404

InvalidDBClusterSnapshotStateFault

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBClusterSnapshot.

Sample Request

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

Sample Response

```
<DeleteDBClusterSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBInstance

Deletes a previously provisioned DB instance. When you delete a DB instance, all automated backups for that instance are deleted and can't be recovered. However, manual DB snapshots of the DB instance aren't deleted.

If you request a final DB snapshot, the status of the Amazon RDS DB instance is `deleting` until the DB snapshot is created. This operation can't be canceled or reverted after it begins. To monitor the status of this operation, use `DescribeDBInstance`.

When a DB instance is in a failure state and has a status of `failed`, `incompatible-restore`, or `incompatible-network`, you can only delete it when you skip creation of the final snapshot with the `SkipFinalSnapshot` parameter.

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

- The DB cluster is a read replica of another Amazon Aurora DB cluster.
- The DB instance is the only instance in the DB cluster.

To delete a DB instance in this case, first use the `PromoteReadReplicaDBCluster` operation to promote the DB cluster so that it's no longer a read replica. After the promotion completes, use the `DeleteDBInstance` operation to delete the final instance in the DB cluster.

> **Important**
>
> For RDS Custom DB instances, deleting the DB instance permanently deletes the EC2 instance and the associated EBS volumes. Make sure that you don't terminate or delete these resources before you delete the DB instance. Otherwise, deleting the DB instance and creation of the final snapshot might fail.

Request Parameters

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

DBInstanceIdentifier

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

Constraints:

- Must match the name of an existing DB instance.

Type: String

Required: Yes

DeleteAutomatedBackups

Specifies whether to remove automated backups immediately after the DB instance is deleted. This parameter isn't case-sensitive. The default is to remove automated backups immediately after the DB instance is deleted.

Type: Boolean

Required: No

FinalDBSnapshotIdentifier

The `DBSnapshotIdentifier` of the new `DBSnapshot` created when the `SkipFinalSnapshot` parameter is disabled.

> **Note**
>
> If you enable this parameter and also enable SkipFinalShapshot, the command results in an error.

This setting doesn't apply to RDS Custom.

Constraints:

- Must be 1 to 255 letters or numbers.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.
- Can't be specified when deleting a read replica.

Type: String

Required: No

SkipFinalSnapshot

Specifies whether to skip the creation of a final DB snapshot before deleting the instance. If you enable this parameter, RDS doesn't create a DB snapshot. If you don't enable this parameter, RDS creates a DB snapshot before the DB instance is deleted. By default, skip isn't enabled, and the DB snapshot is created.

> **Note**
>
> If you don't enable this parameter, you must specify the `FinalDBSnapshotIdentifier` parameter.

When a DB instance is in a failure state and has a status of `failed`, `incompatible-restore`, or `incompatible-network`, RDS can delete the instance only if you enable this parameter.

If you delete a read replica or an RDS Custom instance, you must enable this setting.

This setting is required for RDS Custom.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

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

DBInstanceAutomatedBackupQuotaExceeded

The quota for retained automated backups was exceeded. This prevents you from retaining any additional automated backups. The retained automated backups quota is the same as your DB instance quota.

HTTP Status Code: 400

DBInstanceNotFound

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

HTTP Status Code: 404

DBSnapshotAlreadyExists

`DBSnapshotIdentifier` is already used by an existing snapshot.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

SnapshotQuotaExceeded

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteDBInstance
   &DBInstanceIdentifier=mydatabase
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SkipFinalSnapshot=true
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20131109/us-east-1/rds/aws4_request
   &X-Amz-Date=20131109T001924Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=70e774e243c0fbb7ffe84029637005bf543e9e321cdf432c0b272be5687d32d8
```

Sample Response

```
<DeleteDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>deleting</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mydatabase</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <LatestRestorableTime>2013-11-09T00:15:00Z</LatestRestorableTime>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <Endpoint>
        <Port>3306</Port>
        <Address>mydatabase.cf037hpkuvjt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
```

```
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <InstanceCreateTime>2011-04-28T23:33:54.909Z</InstanceCreateTime>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
  </DeleteDBInstanceResult>
  <ResponseMetadata>
    <RequestId>7369556f-b70d-11c3-faca-6ba18376ea1b</RequestId>
  </ResponseMetadata>
</DeleteDBInstanceResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3

- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBInstanceAutomatedBackup

Deletes automated backups using the `DbiResourceId` value of the source DB instance or the Amazon Resource Name (ARN) of the automated backups.

Request Parameters

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

DBInstanceAutomatedBackupsArn

The Amazon Resource Name (ARN) of the automated backups to delete, for example, `arn:aws:rds:us-east-1:123456789012:auto-backup:ab-L2IJCEXJP7XQ7HOJ4SIEXAMPLE`.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

DbiResourceId

The identifier for the source DB instance, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBInstanceAutomatedBackup

An automated backup of a DB instance. It consists of system backups, transaction logs, and the database instance properties that existed at the time you deleted the source instance.

Type: DBInstanceAutomatedBackup object

Errors

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

DBInstanceAutomatedBackupNotFound

No automated backup for this DB instance was found.

HTTP Status Code: 404

InvalidDBInstanceAutomatedBackupState

The automated backup is in an invalid state. For example, this automated backup is associated with an active instance.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBInstanceAutomatedBackup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DeleteDBInstanceAutomatedBackup
&DbiResourceId=db-YVS5NRBNHPGJZ3IT3WADXYSWYU
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-east-1/rds/aws4_request
&X-Amz-Date=20180912T200207Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
```

Example

This example illustrates one usage of DeleteDBInstanceAutomatedBackup.

Sample Response

```
<DeleteDBInstanceAutomatedBackupResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
<DeleteDBInstanceAutomatedBackupResult>
<DBInstanceAutomatedBackup>
<EngineVersion>11.2.0.4.v13</EngineVersion>
<MasterUsername>admin</MasterUsername>
<AllocatedStorage>50</AllocatedStorage>
<InstanceCreateTime>2018-08-17T21:58:30Z</InstanceCreateTime>
<DbiResourceId>db-YVS5NRBNHPGJZ3IT3WADXYSWYU</DbiResourceId>
<DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:myoracle1</DBInstanceArn>
<DBInstanceIdentifier>myoracle1</DBInstanceIdentifier>
<RestoreWindow/>
<Encrypted>false</Encrypted>
<Engine>oracle-ee</Engine>
<Port>1521</Port>
<LicenseModel>bring-your-own-license</LicenseModel>
<IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
<StorageType>magnetic</StorageType>
<OptionGroupName>default:oracle-ee-11-2</OptionGroupName>
<Region>us-east-1</Region>
<Status>deleting</Status>
</DBInstanceAutomatedBackup>
</DeleteDBInstanceAutomatedBackupResult>
<ResponseMetadata>
<RequestId>d1b4b637-3663-49c9-95ef-65e4e2b8e848</RequestId>
</ResponseMetadata>
</DeleteDBInstanceAutomatedBackupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2

- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBParameterGroup

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

Request Parameters

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

DBParameterGroupName

The name of the DB parameter group.

Constraints:

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

Type: String

Required: Yes

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

InvalidDBParameterGroupState

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteDBParameterGroup
   &DBParameterGroupName=mydbparamgroup3
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
   &X-Amz-Date=20140423T203550Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=7364d4d88b4200d14da46aac748781a6da08bc18c5fdc468ee18780e6f84b19e
```

Sample Response

```
<DeleteDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>cad6c267-ba25-11d3-fe11-33d33a9bb7e3</RequestId>
  </ResponseMetadata>
</DeleteDBParameterGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBProxy

Deletes an existing DB proxy.

Request Parameters

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

DBProxyName

The name of the DB proxy to delete.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBProxy

The data structure representing the details of the DB proxy that you delete.

Type: DBProxy object

Errors

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

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBProxyEndpoint

Deletes a `DBProxyEndpoint`. Doing so removes the ability to access the DB proxy using the endpoint that you defined. The endpoint that you delete might have provided capabilities such as read/write or read-only operations, or using a different VPC than the DB proxy's default VPC.

Request Parameters

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

DBProxyEndpointName

The name of the DB proxy endpoint to delete.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

Response Elements

The following element is returned by the service.

DBProxyEndpoint

The data structure representing the details of the DB proxy endpoint that you delete.

Type: DBProxyEndpoint object

Errors

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

DBProxyEndpointNotFoundFault

The DB proxy endpoint doesn't exist.

HTTP Status Code: 404

InvalidDBProxyEndpointStateFault

You can't perform this operation while the DB proxy endpoint is in a particular state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBSecurityGroup

Deletes a DB security group.

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

> **Note**
>
> EC2-Classic was retired on August 15, 2022. If you haven't migrated from EC2-Classic to a VPC, we recommend that you migrate as soon as possible. For more information, see Migrate from EC2-Classic to a VPC in the *Amazon EC2 User Guide*, the blog EC2-Classic Networking is Retiring – Here's How to Prepare, and Moving a DB instance not in a VPC into a VPC in the *Amazon RDS User Guide*.

Request Parameters

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

DBSecurityGroupName

The name of the DB security group to delete.

> **Note**
>
> You can't delete the default DB security group.

Constraints:

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

Type: String

Required: Yes

Errors

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

DBSecurityGroupNotFound

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

HTTP Status Code: 404

InvalidDBSecurityGroupState

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBSecurityGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteDBSecurityGroup
   &DBSecurityGroupName=mydbsecuritygroup
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
   &X-Amz-Date=20140423T203336Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=873c15061fe60b9db8ea63137e5af82b157019696fc3e9764ef2abd9d71c640a
```

Sample Response

```
<DeleteDBSecurityGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
```

```
    <RequestId>7aec7454-ba25-11d3-855b-576787000e19</RequestId>
  </ResponseMetadata>
</DeleteDBSecurityGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBShardGroup

Deletes an Aurora Limitless Database DB shard group.

Request Parameters

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

DBShardGroupIdentifier

The name of the DB shard group to delete.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

Response Elements

The following elements are returned by the service.

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

DBShardGroupArn

The Amazon Resource Name (ARN) for the DB shard group.

Type: String

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

DBShardGroupResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB shard group.

Type: String

Endpoint

The connection endpoint for the DB shard group.

Type: String

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

PubliclyAccessible

Indicates whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC).

It resolves to the public IP address from outside of the DB shard group's VPC. Access to the DB shard group is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

For more information, see CreateDBShardGroup.

This setting is only for Aurora Limitless Database.

Type: Boolean

Status

The status of the DB shard group.

Type: String

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Errors

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

DBShardGroupNotFound

The specified DB shard group name wasn't found.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBShardGroupState

The DB shard group must be in the available state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBSnapshot

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

> **Note**
>
> The DB snapshot must be in the `available` state to be deleted.

Request Parameters

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

DBSnapshotIdentifier

The DB snapshot identifier.

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

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the `DescribeDBSnapshots` action.

Type: DBSnapshot object

Errors

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

DBSnapshotNotFound

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

HTTP Status Code: 404

InvalidDBSnapshotState

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBSnapshot.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteDBSnapshot
   &DBSnapshotIdentifier=mysqldb-snap-02
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20210623/us-east-1/rds/aws4_request
   &X-Amz-Date=20210623T203337Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=619f04acffeb4b80d2f442526b1c9da79d0b3097151c24f28e83e851d6541414
```

Sample Response

```
<DeleteDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Status>deleted</Status>
```

```
      <Engine>mysql</Engine>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
      <EngineVersion>5.6.44</EngineVersion>
      <DBSnapshotIdentifier>mysqldb-snap-02</DBSnapshotIdentifier>
      <SnapshotCreateTime>2021-04-27T08:16:05.356Z</SnapshotCreateTime>
      <OriginalSnapshotCreateTime>2021-04-27T08:16:05.356Z</OriginalSnapshotCreateTime>

      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <InstanceCreateTime>2021-04-21T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBSnapshot>
  </DeleteDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>7b17b2b1-ba25-11d3-a537-cef97546330c</RequestId>
  </ResponseMetadata>
</DeleteDBSnapshotResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteDBSubnetGroup

Deletes a DB subnet group.

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

Request Parameters

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

DBSubnetGroupName

The name of the database subnet group to delete.

> **Note**
>
> You can't delete the default subnet group.

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

Example: `mydbsubnetgroup`

Type: String

Required: Yes

Errors

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

DBSubnetGroupNotFoundFault

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

HTTP Status Code: 404

InvalidDBSubnetGroupStateFault

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

HTTP Status Code: 400

InvalidDBSubnetStateFault

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

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteDBSubnetGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteDBSubnetGroup
   &DBSubnetGroupName=myawsuser-dbsubnetgroup
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T180721Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=0f461da21ec03527fdc98acba8a11c36863a399065f9b4ff891ab7cb5e70de74
```

Sample Response

```
<DeleteDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>6295e5ab-bbf3-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</DeleteDBSubnetGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteEventSubscription

Deletes an RDS event notification subscription.

Request Parameters

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

SubscriptionName

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

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Type: EventSubscription object

Errors

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

InvalidEventSubscriptionState

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

HTTP Status Code: 400

SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DeleteEventSubscription.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteEventSubscription
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SubscriptionName=EventSubscription04
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140423/us-east-1/rds/aws4_request
   &X-Amz-Date=20140423T203337Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=05aa834e364a9e1a279d44cc955694518fc96fff638c74faa2be45783102e785
```

Sample Response

```
<DeleteEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DeleteEventSubscriptionResult>
    <EventSubscription>
      <Enabled>true</Enabled>
      <CustomerAwsId>803#########</CustomerAwsId>
      <SourceType>db-instance</SourceType>
      <Status>deleting</Status>
      <SourceIdsList>
        <SourceId>mysqldb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-22 23:03:19.776</SubscriptionCreationTime>
      <CustSubscriptionId>EventSubscription04</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:803#########:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </DeleteEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>7b4cf02a-ba25-11d3-a691-857dc0addcc9</RequestId>
  </ResponseMetadata>
```

```
</DeleteEventSubscriptionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteGlobalCluster

Deletes a global database cluster. The primary and secondary clusters must already be detached or destroyed first.

> **Note**
>
> This action only applies to Aurora DB clusters.

Request Parameters

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

GlobalClusterIdentifier

The cluster identifier of the global database cluster being deleted.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

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

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteIntegration

Deletes a zero-ETL integration with Amazon Redshift.

Request Parameters

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

IntegrationIdentifier

The unique identifier of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[a-zA-Z0-9_:\-\/]+`

Required: Yes

Response Elements

The following elements are returned by the service.

AdditionalEncryptionContext , AdditionalEncryptionContext.entry.N.key (key), AdditionalEncryptionContext.entry.N.value (value)

The encryption context for the integration. For more information, see Encryption context in the *Amazon Key Management Service Developer Guide*.

Type: String to string map

CreateTime

The time when the integration was created, in Universal Coordinated Time (UTC).

Type: Timestamp

DataFilter

Data filters for the integration. These filters determine which tables from the source database are sent to the target Amazon Redshift data warehouse.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Description

A description of the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Errors.IntegrationError.N

Any errors associated with the integration.

Type: Array of IntegrationError objects

IntegrationArn

The ARN of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:integration:[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}`

IntegrationName

The name of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

KMSKeyId

The Amazon Key Management System (Amazon KMS) key identifier for the key used to to encrypt the integration.

Type: String

SourceArn

The Amazon Resource Name (ARN) of the database used as the source for replication.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:(cluster|db):[a-z][a-z0-9]*(-[a-z0-9]+)*`

Status

The current status of the integration.

Type: String

Valid Values: `creating | active | modifying | failed | deleting | syncing | needs_attention`

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

TargetArn

The ARN of the Redshift data warehouse used as the target for replication.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Errors

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

IntegrationConflictOperationFault

A conflicting conditional operation is currently in progress against this resource. Typically occurs when there are multiple requests being made to the same resource at the same time, and these requests conflict with each other.

HTTP Status Code: 400

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

InvalidIntegrationStateFault

The integration is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of DeleteIntegration.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteIntegration
   &IntegrationIdentifier=f30acbd8-aaab-4c3c-afb5-09d51d041037
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-east-1/rds/aws4_request
   &X-Amz-Date=20230110T191150Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<DeleteIntegrationResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

```
    <DeleteIntegrationResult>
        <SourceArn>arn:aws:rds:us-east-1:123456789012:cluster:source-db</SourceArn>
        <IntegrationName>my-integration</IntegrationName>
        <IntegrationArn>arn:aws:rds:us-east-1:123456789012:integration:f30acbd8-
aaab-4c3c-afb5-09d51d041037</IntegrationArn>
        <TargetArn>arn:aws:redshift-serverless:us-
east-1:123456789012:namespace/0844171c-1e01-4d9f-be52-89e6c44083e5</TargetArn>
        <Tags/>
        <CreateTime>2023-12-14T00:15:21.358Z</CreateTime>
        <KMSKeyId>arn:aws:kms:us-east-1:211223847500:key/eda7134d-cd39-4af1-b62b-
ad2415b6bccc</KMSKeyId>
        <Status>deleting</Status>
    </DeleteIntegrationResult>
    <ResponseMetadata>
        <RequestId>eb348bf0-a8f3-40e8-9e59-6c5c5ed31371</RequestId>
    </ResponseMetadata>
</DeleteIntegrationResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeleteOptionGroup

Deletes an existing option group.

Request Parameters

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

OptionGroupName

The name of the option group to be deleted.

> **Note**
> You can't delete default option groups.

Type: String

Required: Yes

Errors

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

InvalidOptionGroupStateFault

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

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DeleteOptionGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DeleteOptionGroup
   &OptionGroupName=myawsuser-og00
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T181205Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<DeleteOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>0ac9cda2-bbf4-11d3-f92b-31fa5e8dbc99</RequestId>
  </ResponseMetadata>
</DeleteOptionGroupResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python

- Amazon SDK for Ruby V3

DeleteTenantDatabase

Deletes a tenant database from your DB instance. This command only applies to RDS for Oracle container database (CDB) instances.

You can't delete a tenant database when it is the only tenant in the DB instance.

Request Parameters

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

DBInstanceIdentifier

The user-supplied identifier for the DB instance that contains the tenant database that you want to delete.

Type: String

Required: Yes

TenantDBName

The user-supplied name of the tenant database that you want to remove from your DB instance. Amazon RDS deletes the tenant database with this name. This parameter isn't case-sensitive.

Type: String

Required: Yes

FinalDBSnapshotIdentifier

The `DBSnapshotIdentifier` of the new `DBSnapshot` created when the `SkipFinalSnapshot` parameter is disabled.

> **Note**
>
> If you enable this parameter and also enable `SkipFinalShapshot`, the command results in an error.

Type: String

Required: No

SkipFinalSnapshot

Specifies whether to skip the creation of a final DB snapshot before removing the tenant database from your DB instance. If you enable this parameter, RDS doesn't create a DB snapshot. If you don't enable this parameter, RDS creates a DB snapshot before it deletes the tenant database. By default, RDS doesn't skip the final snapshot. If you don't enable this parameter, you must specify the `FinalDBSnapshotIdentifier` parameter.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

TenantDatabase

A tenant database in the DB instance. This data type is an element in the response to the `DescribeTenantDatabases` action.

Type: TenantDatabase object

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

TenantDatabaseNotFound

The specified tenant database wasn't found in the DB instance.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DeregisterDBProxyTargets

Remove the association between one or more `DBProxyTarget` data structures and a `DBProxyTargetGroup`.

Request Parameters

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

DBProxyName

The identifier of the `DBProxy` that is associated with the `DBProxyTargetGroup`.

Type: String

Required: Yes

DBClusterIdentifiers.member.N

One or more DB cluster identifiers.

Type: Array of strings

Required: No

DBInstanceIdentifiers.member.N

One or more DB instance identifiers.

Type: Array of strings

Required: No

TargetGroupName

The identifier of the `DBProxyTargetGroup`.

Type: String

Required: No

Errors

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

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetNotFoundFault

The specified RDS DB instance or Aurora DB cluster isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3

- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeAccountAttributes

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

This command doesn't take any parameters.

Response Elements

The following element is returned by the service.

AccountQuotas.AccountQuota.N

A list of `AccountQuota` objects. Within this list, each quota has a name, a count of usage toward the quota maximum, and a maximum value for the quota.

Type: Array of AccountQuota objects

Errors

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

Examples

Example

This example illustrates one usage of DescribeAccountAttributes.

Sample Request

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

```
        &X-Amz-
Signature=b49545dd3c933bdded80655d433d84bf743261ea1bebb33a7922c5c2c5240cd8
```

Sample Response

```
<DescribeAccountAttributesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeAccountAttributesResult>
    <AccountQuotaList>
      <AccountQuota>
        <AccountQuotaName>DBInstances</AccountQuotaName>
        <Used>22</Used>
        <Max>40</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>ReservedDBInstances</AccountQuotaName>
        <Used>6</Used>
        <Max>40</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>AllocatedStorage</AccountQuotaName>
        <Used>27459</Used>
        <Max>100000</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>DBSecurityGroupsPerVPC</AccountQuotaName>
        <Used>11</Used>
        <Max>25</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>AuthorizationsPerDBSecurityGroup</AccountQuotaName>
        <Used>10</Used>
        <Max>20</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>DBParameterGroups</AccountQuotaName>
        <Used>40</Used>
        <Max>50</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>ManualSnapshots</AccountQuotaName>
        <Used>32</Used>
        <Max>50</Max
```

```
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>EventSubscriptions</AccountQuotaName>
        <Used>3</Used>
        <Max>20</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>DBSubnetGroups</AccountQuotaName>
        <Used>19</Used>
        <Max>20</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>OptionGroups</AccountQuotaName>
        <Used>14</Used>
        <Max>20</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>SubnetsPerDBSubnetGroup</AccountQuotaName>
        <Used>6</Used>
        <Max>20</Max
      </AccountQuota>
      <AccountQuota>
        <AccountQuotaName>ReadReplicasPerMaster</AccountQuotaName>
        <Used>2</Used>
        <Max>5</Max
      </AccountQuota>
      <AccountQuota>
        <Used>1</Used>
        <AccountQuotaName>DBClusterRoles</AccountQuotaName>
        <Max>5</Max>
      </AccountQuota>
    </AccountQuotaList>
  </DescribeAccountAttributesResult>
  <ResponseMetadata>
    <RequestId>0ce48079-68e4-11de-8c8e-eb648410240d</RequestId>
  </ResponseMetadata>
</DescribeAccountAttributesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeBlueGreenDeployments

Describes one or more blue/green deployments.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Request Parameters

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

BlueGreenDeploymentIdentifier

The blue/green deployment identifier. If you specify this parameter, the response only includes information about the specific blue/green deployment. This parameter isn't case-sensitive.

Constraints:

- Must match an existing blue/green deployment identifier.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: No

Filters.Filter.N

A filter that specifies one or more blue/green deployments to describe.

Valid Values:

- `blue-green-deployment-identifier` - Accepts system-generated identifiers for blue/green deployments. The results list only includes information about the blue/green deployments with the specified identifiers.
- `blue-green-deployment-name` - Accepts user-supplied names for blue/green deployments. The results list only includes information about the blue/green deployments with the specified names.
- `source` - Accepts source databases for a blue/green deployment. The results list only includes information about the blue/green deployments with the specified source databases.

- `target` - Accepts target databases for a blue/green deployment. The results list only includes information about the blue/green deployments with the specified target databases.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints:

- Must be a minimum of 20.
- Can't exceed 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

Response Elements

The following elements are returned by the service.

BlueGreenDeployments.member.N

A list of blue/green deployments in the current account and Amazon Web Services Region.

Type: Array of BlueGreenDeployment objects

Marker

A pagination token that can be used in a later `DescribeBlueGreenDeployments` request.

Type: String

Errors

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

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeBlueGreenDeployments.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeBlueGreenDeployments
   &BlueGreenDeploymentIdentifier=bgd-clyvb1zv1geqensv
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-west-2/rds/aws4_request
   &X-Amz-Date=20230110T005253Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<DescribeBlueGreenDeploymentsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeBlueGreenDeploymentsResult>
    <BlueGreenDeployments>
      <member>
```

```
        <TagList/>
        <BlueGreenDeploymentName>my-blue-green-deployment</BlueGreenDeploymentName>
        <CreateTime>2023-01-10T20:08:48.940Z</CreateTime>
        <SwitchoverDetails>
          <member>
            <SourceMember>arn:aws:rds:us-west-2:123456789012:db:database-1</
SourceMember>
            <TargetMember>arn:aws:rds:us-west-2:123456789012:db:database-1-green-
mhv83d</TargetMember>
            <Status>PROVISIONING</Status>
          </member>
        </SwitchoverDetails>
        <Source>arn:aws:rds:us-west-2:123456789012:db:database-1</Source>
        <BlueGreenDeploymentIdentifier>bgd-clyvb1zv1geqensv</
BlueGreenDeploymentIdentifier>
        <Tasks>
          <member>
            <Name>CREATING_READ_REPLICA_OF_SOURCE</Name>
            <Status>IN_PROGRESS</Status>
          </member>
          <member>
            <Name>DB_ENGINE_VERSION_UPGRADE</Name>
            <Status>PENDING</Status>
          </member>
          <member>
            <Name>CONFIGURE_BACKUPS</Name>
            <Status>PENDING</Status>
          </member>
        </Tasks>
        <Target>arn:aws:rds:us-west-2:123456789012:db:database-1-green-mhv83d</Target>
        <Status>PROVISIONING</Status>
      </member>
    </BlueGreenDeployments>
  </DescribeBlueGreenDeploymentsResult>
  <ResponseMetadata>
    <RequestId>a534de7b-dc20-4b16-863a-24f456385d3a</RequestId>
  </ResponseMetadata>
</DescribeBlueGreenDeploymentsResponse>
```


See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeCertificates

Lists the set of certificate authority (CA) certificates provided by Amazon RDS for this Amazon Web Services account.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Request Parameters

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

CertificateIdentifier

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

Constraints:

- Must match an existing CertificateIdentifier.

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

Certificates.Certificate.N

The list of `Certificate` objects for the Amazon Web Services account.

Type: Array of Certificate objects

DefaultCertificateForNewLaunches

The default root CA for new databases created by your Amazon Web Services account. This is either the root CA override set on your Amazon Web Services account or the system default CA for the Region if no override exists. To override the default CA, use the `ModifyCertificates` operation.

Type: String

Marker

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

Type: String

Errors

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

CertificateNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeCertificates.

Sample Request

```
https://rds.amazonaws.com/
   ?Action=DescribeCertificates
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141121/us-west-2/rds/aws4_request
   &X-Amz-Date=20141121T164732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

Sample Response

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

```
      </Certificate>
    </Certificates>
  </DescribeCertificatesResult>
  <ResponseMetadata>
    <RequestId>9135fff3-8509-11e0-bd9b-a7b1ece36d51</RequestId>
  </ResponseMetadata>
</DescribeCertificatesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterAutomatedBackups

Displays backups for both current and deleted DB clusters. For example, use this operation to find details about automated backups for previously deleted clusters. Current clusters are returned for both the `DescribeDBClusterAutomatedBackups` and `DescribeDBClusters` operations.

All parameters are optional.

Request Parameters

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

DBClusterIdentifier

(Optional) The user-supplied DB cluster identifier. If this parameter is specified, it must match the identifier of an existing DB cluster. It returns information from the specific DB cluster's automated backup. This parameter isn't case-sensitive.

Type: String

Required: No

DbClusterResourceId

The resource ID of the DB cluster that is the source of the automated backup. This parameter isn't case-sensitive.

Type: String

Required: No

Filters.Filter.N

A filter that specifies which resources to return based on status.

Supported filters are the following:

- `status`
  - `retained` - Automated backups for deleted clusters and after backup replication is stopped.
- `db-cluster-id` - Accepts DB cluster identifiers and Amazon Resource Names (ARNs). The results list includes only information about the DB cluster automated backups identified by these ARNs.

- `db-cluster-resource-id` - Accepts DB resource identifiers and Amazon Resource Names (ARNs). The results list includes only information about the DB cluster resources identified by these ARNs.

Returns all resources by default. The status for each resource is specified in the response.

Type: Array of Filter objects

Required: No

Marker

The pagination token provided in the previous request. If this parameter is specified the response includes only records beyond the marker, up to `MaxRecords`.

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBClusterAutomatedBackups.DBClusterAutomatedBackup.N

A list of `DBClusterAutomatedBackup` backups.

Type: Array of DBClusterAutomatedBackup objects

Marker

The pagination token provided in the previous request. If this parameter is specified the response includes only records beyond the marker, up to `MaxRecords`.

Type: String

Errors

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

DBClusterAutomatedBackupNotFoundFault

No automated backup for this DB cluster was found.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterBacktracks

Returns information about backtracks for a DB cluster.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

> **Note**
>
> This action only applies to Aurora MySQL DB clusters.

Request Parameters

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

DBClusterIdentifier

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

Constraints:

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

Example: `my-cluster1`

Type: String

Required: Yes

BacktrackIdentifier

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

Constraints:

- Must contain a valid universally unique identifier (UUID). For more information about UUIDs, see Universally unique identifier.

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

Type: String

Required: No

Filters.Filter.N

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

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

  The results list includes information about only the backtracks identified by these values.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBClusterBacktracks.DBClusterBacktrack.N

Contains a list of backtracks for the user.

Type: Array of DBClusterBacktrack objects

Marker

A pagination token that can be used in a later `DescribeDBClusterBacktracks` request.

Type: String

Errors

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

DBClusterBacktrackNotFoundFault

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

HTTP Status Code: 404

DBClusterNotFoundFault

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

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface

- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterEndpoints

Returns information about endpoints for an Amazon Aurora DB cluster.

> **Note**
>
> This action only applies to Aurora DB clusters.

Request Parameters

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

DBClusterEndpointIdentifier

The identifier of the endpoint to describe. This parameter is stored as a lowercase string.

Type: String

Required: No

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Required: No

Filters.Filter.N

A set of name-value pairs that define which endpoints to include in the output. The filters are specified as name-value pairs, in the format `Name=`*`endpoint_type`*`,Values=`*`endpoint_type1`*`,`*`endpoint_type2`*`,...`. `Name` can be one of: `db-cluster-endpoint-type`, `db-cluster-endpoint-custom-type`, `db-cluster-endpoint-id`, `db-cluster-endpoint-status`. `Values` for the `db-cluster-endpoint-type` filter can be one or more of: `reader`, `writer`, `custom`. `Values` for the `db-cluster-endpoint-custom-type` filter can be one or more of: `reader`, `any`. `Values` for the `db-cluster-endpoint-status` filter can be one or more of: `available`, `creating`, `deleting`, `inactive`, `modifying`.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBClusterEndpoints.DBClusterEndpointList.N

Contains the details of the endpoints associated with the cluster and matching any filter conditions.

Type: Array of DBClusterEndpoint objects

Marker

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

Type: String

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterParameterGroups

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

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterParameterGroupName

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

Constraints:

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBClusterParameterGroups.DBClusterParameterGroup.N

A list of DB cluster parameter groups.

Type: Array of DBClusterParameterGroup objects

Marker

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

Type: String

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBClusterParameterGroups.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeDBClusterParameterGroups
   &MaxRecords=30
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20150318/us-east-1/rds/aws4_request
   &X-Amz-Date=20150318T184307Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=d9922fdf06b86b870c072b896745251ea8b52bad64bf90e30b0e46f1bb488cca
```

Sample Response

```
<DescribeDBClusterParameterGroupsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribeDBClusterParameterGroupsResult>
    <DBClusterParameterGroups>
      <DBClusterParameterGroup>
        <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
        <Description>Default cluster parameter group for aurora5.6</Description>
        <DBClusterParameterGroupName>default.aurora5.6</DBClusterParameterGroupName>
      </DBClusterParameterGroup>
      <DBClusterParameterGroup>
        <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
        <Description>Sample group</Description>
        <DBClusterParameterGroupName>samplegroup</DBClusterParameterGroupName>
      </DBClusterParameterGroup>
      <DBClusterParameterGroup>
        <DBParameterGroupFamily>aurora5.6</DBParameterGroupFamily>
```

```
        <Description>Custom group</Description>
        <DBClusterParameterGroupName>custom-group</DBClusterParameterGroupName>
      </DBClusterParameterGroup>
    </DBClusterParameterGroups>
  </DescribeDBClusterParameterGroupsResult>
  <ResponseMetadata>
    <RequestId>9e6503d0-cd9e-11e4-ccf9-7528e6a28483</RequestId>
  </ResponseMetadata>
</DescribeDBClusterParameterGroupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterParameters

Returns the detailed parameter list for a particular DB cluster parameter group.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterParameterGroupName

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

Constraints:

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

Type: String

Required: Yes

Filters.Filter.N

A filter that specifies one or more DB cluster parameters to describe.

The only supported filter is `parameter-name`. The results list only includes information about the DB cluster parameters with these names.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Source

A specific source to return parameters for.

Valid Values:

- `engine-default`
- `system`
- `user`

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

Parameters.Parameter.N

Provides a list of parameters for the DB cluster parameter group.

Type: Array of Parameter objects

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBClusterParameters.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DescribeDBClusterParameters
    &DBClusterParameterGroupName=default.aurora5.6
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20151231/us-west-2/rds/aws4_request
    &X-Amz-Date=20151231T225813Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=cf8b9ab9c4a36bbb5f5043209b1985784a226d132ed61a5c35163c40506e83f7
```

Sample Response

```
<DescribeDBClusterParametersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterParametersResult>
    <Parameters>
      <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
```

```
        <Description>Intended for use with master-to-master replication, and can be
used to control the operation of AUTO_INCREMENT columns</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>1-65535</AllowedValues>
        <ParameterName>auto_increment_increment</ParameterName>
      </Parameter>
      <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>Determines the starting point for the AUTO_INCREMENT column
value</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>1-65535</AllowedValues>
        <ParameterName>auto_increment_offset</ParameterName>
      </Parameter>
      <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>When enabled, this variable causes the master to write a checksum
for each event in the binary log.</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>NONE,CRC32</AllowedValues>
        <ParameterName>binlog_checksum</ParameterName>
      </Parameter>
      <Parameter>
        <ParameterValue>OFF</ParameterValue>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>system</Source>
        <IsModifiable>true</IsModifiable>
        <Description>Binary logging format for replication</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>ROW,STATEMENT,MIXED,OFF</AllowedValues>
        <ParameterName>binlog_format</ParameterName>
      </Parameter>
      <Parameter>
        <ApplyMethod>pending-reboot</ApplyMethod>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>false</IsModifiable>
```

```
        <Description>Whether the server logs full or minimal rows with row-based
 replication.</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>full,minimal,noblob</AllowedValues>
        <ParameterName>binlog_row_image</ParameterName>
      </Parameter>
    </Parameters>
  </DescribeDBClusterParametersResult>
  <ResponseMetadata>
    <RequestId>c4e42d91-cb92-11e5-895a-99e063757579</RequestId>
  </ResponseMetadata>
</DescribeDBClusterParametersResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusters

Describes existing Amazon Aurora DB clusters and Multi-AZ DB clusters. This API supports pagination.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

This operation can also return information for Amazon Neptune DB instances and Amazon DocumentDB instances.

Request Parameters

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

DBClusterIdentifier

The user-supplied DB cluster identifier or the Amazon Resource Name (ARN) of the DB cluster. If this parameter is specified, information for only the specific DB cluster is returned. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match an existing DB cluster identifier.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more DB clusters to describe.

Supported Filters:

- `clone-group-id` - Accepts clone group identifiers. The results list only includes information about the DB clusters associated with these clone groups.
- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list only includes information about the DB clusters identified by these ARNs.

- `db-cluster-resource-id` - Accepts DB cluster resource identifiers. The results list will only include information about the DB clusters identified by these DB cluster resource identifiers.
- `domain` - Accepts Active Directory directory IDs. The results list only includes information about the DB clusters associated with these domains.
- `engine` - Accepts engine names. The results list only includes information about the DB clusters for these engines.

Type: Array of Filter objects

Required: No

IncludeShared

Specifies whether the output includes information about clusters shared from other Amazon Web Services accounts.

Type: Boolean

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBClusters.DBCluster.N

Contains a list of DB clusters for the user.

Type: Array of DBCluster objects

Marker

A pagination token that can be used in a later `DescribeDBClusters` request.

Type: String

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

Examples

Describing an Aurora DB cluster

This example illustrates one usage of DescribeDBClusters.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=DescribeDBClusters
    &MaxRecords=100
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
```

```
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230222/us-east-1/rds/aws4_request
    &X-Amz-Date=20230222T200807Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response

```
<DescribeDBClustersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClustersResult>
    <DBClusters>
      <DBCluster>
        <AssociatedRoles>
          <DBClusterRole>
            <RoleArn>arn:aws:iam::123456789012:role/sample-role</RoleArn>
            <Status>ACTIVE</Status>
          </DBClusterRole>
        </AssociatedRoles>
        <Engine>aurora-mysql</Engine>
        <Status>available</Status>
        <BackupRetentionPeriod>1</BackupRetentionPeriod>
        <DBSubnetGroup>my-subgroup</DBSubnetGroup>
        <EngineVersion>8.0.mysql_aurora.3.01.0</EngineVersion>
        <Endpoint>sample-cluster2.cluster-cbfvmgb0y5fy.us-east-1.rds.amazonaws.com</
Endpoint>
        <DBClusterIdentifier>sample-cluster2</DBClusterIdentifier>
        <PreferredBackupWindow>04:45-05:15</PreferredBackupWindow>
        <PreferredMaintenanceWindow>sat:05:56-sat:06:26</PreferredMaintenanceWindow>
        <DBClusterMembers/>
        <AllocatedStorage>15</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
      </DBCluster>
      <DBCluster>
        <AssociatedRoles />
        <Engine>aurora-mysql</Engine>
        <Status>available</Status>
        <BackupRetentionPeriod>0</BackupRetentionPeriod>
        <DBSubnetGroup>my-subgroup</DBSubnetGroup>
        <EngineVersion>8.0.mysql_aurora.3.01.0</EngineVersion>
        <Endpoint>sample-cluster3.cluster-cefgqfx9y5fy.us-east-1.rds.amazonaws.com</
Endpoint>
        <DBClusterIdentifier>sample-cluster3</DBClusterIdentifier>
```

```
        <PreferredBackupWindow>07:06-07:36</PreferredBackupWindow>
        <PreferredMaintenanceWindow>tue:10:18-tue:10:48</PreferredMaintenanceWindow>
        <DBClusterMembers>
          <DBClusterMember>
            <IsClusterWriter>true</IsClusterWriter>
            <DBInstanceIdentifier>sample-cluster3-master</DBInstanceIdentifier>
          </DBClusterMember>
          <DBClusterMember>
            <IsClusterWriter>false</IsClusterWriter>
            <DBInstanceIdentifier>sample-cluster3-read1</DBInstanceIdentifier>
          </DBClusterMember>
        </DBClusterMembers>
        <AllocatedStorage>15</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
      </DBCluster>
    </DBClusters>
  </DescribeDBClustersResult>
  <ResponseMetadata>
    <RequestId>d682b02c-1383-11b4-a6bb-172dfac7f170</RequestId>
  </ResponseMetadata>
</DescribeDBClustersResponse>
```

Describing a Multi-AZ DB cluster

This example illustrates one usage of DescribeDBClusters.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DescribeDBClusters
    &DBClusterIdentifier=my-multi-az-cluster
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140722/us-west-2/rds/aws4_request
    &X-Amz-Date=20211026T203316Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response


```
<DescribeDBClustersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClustersResult>
    <DBClusters>
      <DBCluster>
        <CrossAccountClone>false</CrossAccountClone>
        <AllocatedStorage>100</AllocatedStorage>
        <DatabaseName>mydb</DatabaseName>
        <AssociatedRoles />
        <AvailabilityZones>
          <AvailabilityZone>us-west-2a</AvailabilityZone>
          <AvailabilityZone>us-west-2b</AvailabilityZone>
          <AvailabilityZone>us-west-2c</AvailabilityZone>
        </AvailabilityZones>
        <ReadReplicaIdentifiers />
        <Iops>1000</Iops>
        <PerformanceInsightsKMSKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-
abcd-4567-efgEXAMPLE</PerformanceInsightsKMSKeyId>
        <PerformanceInsightsRetentionPeriod>7</PerformanceInsightsRetentionPeriod>
        <EngineVersion>8.0.26</EngineVersion>
        <MasterUsername>admin</MasterUsername>
        <DBClusterMembers>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-3</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-2</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-1</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>true</IsClusterWriter>
```

```
          </DBClusterMember>
        </DBClusterMembers>
        <DBActivityStreamStatus>stopped</DBActivityStreamStatus>
        <HttpEndpointEnabled>false</HttpEndpointEnabled>
        <Port>3306</Port>
        <MonitoringInterval>30</MonitoringInterval>
        <BackupRetentionPeriod>2</BackupRetentionPeriod>
        <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
        <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
        <DbClusterResourceId>cluster-TSW4QJNKY3P2DNDRR523BDGEIU</DbClusterResourceId>
        <Status>creating</Status>
        <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
        <DeletionProtection>false</DeletionProtection>
        <Endpoint>my-multi-az-cluster.cluster-123456789012.us-
west-2.rds.amazonaws.com</Endpoint>
        <EngineMode>provisioned</EngineMode>
        <Engine>mysql</Engine>
        <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
        <PubliclyAccessible>true</PubliclyAccessible>
        <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
        <ClusterCreateTime>2021-10-26T20:31:54.943Z</ClusterCreateTime>
        <ActivityStreamStatus>stopped</ActivityStreamStatus>
        <PerformanceInsightsEnabled>true</PerformanceInsightsEnabled>
        <MultiAZ>true</MultiAZ>
        <DomainMemberships />
        <MonitoringRoleArn>arn:aws:iam::123456789012:role/enhance-monitoring-role</
MonitoringRoleArn>
        <StorageEncrypted>true</StorageEncrypted>
        <DBSubnetGroup>mysubnet1</DBSubnetGroup>
        <VpcSecurityGroups>
          <VpcSecurityGroupMembership>
            <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
            <Status>active</Status>
          </VpcSecurityGroupMembership>
        </VpcSecurityGroups>
        <TagList />
        <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
        <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
        <DBClusterParameterGroup>my-cluster-param-1</DBClusterParameterGroup>
        <StorageType>io1</StorageType>
        <DBClusterInstanceClass>db.r6gd.large</DBClusterInstanceClass>
        <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
```

```
        <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
        <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
      </DBCluster>
    </DBClusters>
  </DescribeDBClustersResult>
  <ResponseMetadata>
    <RequestId>ae8b2342-55d7-4cf0-b7b3-f24e681ce7b9</RequestId>
  </ResponseMetadata>
</DescribeDBClustersResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterSnapshotAttributes

Returns a list of DB cluster snapshot attribute names and values for a manual DB cluster snapshot.

When sharing snapshots with other Amazon Web Services accounts, `DescribeDBClusterSnapshotAttributes` returns the `restore` attribute and a list of IDs for the Amazon Web Services accounts that are authorized to copy or restore the manual DB cluster snapshot. If `all` is included in the list of values for the `restore` attribute, then the manual DB cluster snapshot is public and can be copied or restored by all Amazon Web Services accounts.

To add or remove access for an Amazon Web Services account to copy or restore a manual DB cluster snapshot, or to make the manual DB cluster snapshot public or private, use the `ModifyDBClusterSnapshotAttribute` API action.

Request Parameters

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

DBClusterSnapshotIdentifier

The identifier for the DB cluster snapshot to describe the attributes for.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBClusterSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBClusterSnapshotAttributes` API action.

Manual DB cluster snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot. For more information, see the `ModifyDBClusterSnapshotAttribute` API action.

Type: DBClusterSnapshotAttributesResult object

Errors

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

DBClusterSnapshotNotFoundFault

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBClusterSnapshotAttributes.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DescribeDBClusterSnapshotAttributes
    &DBClusterSnapshotIdentifier=manual-cluster-snapshot1
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230227/us-east-1/rds/aws4_request
    &X-Amz-Date=20230227T210706Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=27413f450dfac3d68b2197453e52109bacd3863f9df1a02d6e40022165bb2e09
```

Sample Response

```
<DescribeDBClusterSnapshotAttributesResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribeDBClusterSnapshotAttributesResult>
    <DBClusterSnapshotAttributesResult>
      <DBClusterSnapshotAttributes>
        <DBClusterSnapshotAttribute>
          <AttributeName>restore</AttributeName>
```

```
          <AttributeValues>
            <AttributeValue>012345678901</AttributeValue>
          </AttributeValues>
        </DBClusterSnapshotAttribute>
      </DBClusterSnapshotAttributes>
      <DBSnapshotIdentifier>manual-cluster-snapshot1</DBSnapshotIdentifier>
    </DBClusterSnapshotAttributesResult>
  </DescribeDBClusterSnapshotAttributesResult>
  <ResponseMetadata>
    <RequestId>ae5be4a2-7cee-11e5-a056-f1c189649a47</RequestId>
  </ResponseMetadata>
</DescribeDBClusterSnapshotAttributesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBClusterSnapshots

Returns information about DB cluster snapshots. This API action supports pagination.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterIdentifier

The ID of the DB cluster to retrieve the list of DB cluster snapshots for. This parameter can't be used in conjunction with the `DBClusterSnapshotIdentifier` parameter. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DBCluster.

Type: String

Required: No

DbClusterResourceId

A specific DB cluster resource ID to describe.

Type: String

Required: No

DBClusterSnapshotIdentifier

A specific DB cluster snapshot identifier to describe. This parameter can't be used in conjunction with the `DBClusterIdentifier` parameter. This value is stored as a lowercase string.

Constraints:

- If supplied, must match the identifier of an existing DBClusterSnapshot.
- If this identifier is for an automated snapshot, the `SnapshotType` parameter must also be specified.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more DB cluster snapshots to describe.

Supported filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs).
- `db-cluster-snapshot-id` - Accepts DB cluster snapshot identifiers.
- `snapshot-type` - Accepts types of DB cluster snapshots.
- `engine` - Accepts names of database engines.

Type: Array of Filter objects

Required: No

IncludePublic

Specifies whether to include manual DB cluster snapshots that are public and can be copied or restored by any Amazon Web Services account. By default, the public snapshots are not included.

You can share a manual DB cluster snapshot as public by using the ModifyDBClusterSnapshotAttribute API action.

Type: Boolean

Required: No

IncludeShared

Specifies whether to include shared manual DB cluster snapshots from other Amazon Web Services accounts that this Amazon Web Services account has been given permission to copy or restore. By default, these snapshots are not included.

You can give an Amazon Web Services account permission to restore a manual DB cluster snapshot from another Amazon Web Services account by the `ModifyDBClusterSnapshotAttribute` API action.

Type: Boolean

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

SnapshotType

The type of DB cluster snapshots to be returned. You can specify one of the following values:

- `automated` - Return all DB cluster snapshots that have been automatically taken by Amazon RDS for my Amazon Web Services account.
- `manual` - Return all DB cluster snapshots that have been taken by my Amazon Web Services account.
- `shared` - Return all manual DB cluster snapshots that have been shared to my Amazon Web Services account.
- `public` - Return all DB cluster snapshots that have been marked as public.

If you don't specify a `SnapshotType` value, then both automated and manual DB cluster snapshots are returned. You can include shared DB cluster snapshots with these results by enabling the `IncludeShared` parameter. You can include public DB cluster snapshots with these results by enabling the `IncludePublic` parameter.

The `IncludeShared` and `IncludePublic` parameters don't apply for `SnapshotType` values of `manual` or `automated`. The `IncludePublic` parameter doesn't apply when `SnapshotType` is set to `shared`. The `IncludeShared` parameter doesn't apply when `SnapshotType` is set to `public`.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

DBClusterSnapshots.DBClusterSnapshot.N

Provides a list of DB cluster snapshots for the user.

Type: Array of DBClusterSnapshot objects

Marker

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

Type: String

Errors

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

DBClusterSnapshotNotFoundFault

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBClusterSnapshots.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=DescribeDBClusterSnapshots
    &IncludePublic=false
    &IncludeShared=true
    &MaxRecords=40
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230218/us-east-1/rds/aws4_request
    &X-Amz-Date=20230218T204210Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=913f0ec1dfc684ff9c6ef3eab5885258dbb22017c47b1bcd4fed4680e35aef4b
```

Sample Response

```
<DescribeDBClusterSnapshotsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBClusterSnapshotsResult>
    <DBClusterSnapshots>
      <DBClusterSnapshot>
        <Port>0</Port>
        <Status>available</Status>
        <Engine>aurora-mysql</Engine>
        <SnapshotType>manual</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>sample-cluster-snapshot1</
DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2022-10-12T17:42:48.271Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2023-02-06T22:11:13.826Z</ClusterCreateTime>
        <PercentProgress>100</PercentProgress>
```

```
        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
      </DBClusterSnapshot>
      <DBClusterSnapshot>
        <Port>0</Port>
        <Status>creating</Status>
        <Engine>aurora-mysql</Engine>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>rds:sample2-cluster-2022-10-22-03-12</
DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2022-10-22T03:12:09.445Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample2-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2023-02-16T18:44:13.633Z</ClusterCreateTime>
        <PercentProgress>0</PercentProgress>
        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
      </DBClusterSnapshot>
      <DBClusterSnapshot>
        <Port>0</Port>
        <Status>creating</Status>
        <Engine>aurora-mysql</Engine>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>aurora</LicenseModel>
        <DBClusterSnapshotIdentifier>rds:sample-cluster-2014-10-22-08-27</
DBClusterSnapshotIdentifier>
        <SnapshotCreateTime>2014-10-22T08:27:08.435Z</SnapshotCreateTime>
        <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
        <VpcId>vpc-3fabee54</VpcId>
        <ClusterCreateTime>2014-10-16T20:11:04.016Z</ClusterCreateTime>
        <PercentProgress>0</PercentProgress>
        <AllocatedStorage>1</AllocatedStorage>
        <MasterUsername>awsuser</MasterUsername>
      </DBClusterSnapshot>
     </DBClusterSnapshots>
  </DescribeDBClusterSnapshotsResult>
  <ResponseMetadata>
    <RequestId>3ff63be1-ceef-11e4-840b-459216ffcb55</RequestId>
  </ResponseMetadata>
</DescribeDBClusterSnapshotsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBEngineVersions

Describes the properties of specific versions of DB engines.

Request Parameters

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

DBParameterGroupFamily

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

Constraints:

- If supplied, must match an existing DB parameter group family.

Type: String

Required: No

DefaultOnly

Specifies whether to return only the default version of the specified engine or the engine and major version combination.

Type: Boolean

Required: No

Engine

The database engine to return version details for.

Valid Values:

- `aurora-mysql`
- `aurora-postgresql`
- `custom-oracle-ee`
- `custom-oracle-ee-cdb`
- `custom-oracle-se2`
- `custom-oracle-se2-cdb`
- `db2-ae`
- `db2-se`

- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: No

EngineVersion

A specific database engine version to return details for.

Example: `5.1.49`

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more DB engine versions to describe.

Supported filters:

- `db-parameter-group-family` - Accepts parameter groups family names. The results list only includes information about the DB engine versions for these parameter group families.
- `engine` - Accepts engine names. The results list only includes information about the DB engine versions for these engines.
- `engine-mode` - Accepts DB engine modes. The results list only includes information about the DB engine versions for these engine modes. Valid DB engine modes are the following:
  - `global`

  - `multimaster`
  - `parallelquery`
  - `provisioned`
  - `serverless`
- `engine-version` - Accepts engine versions. The results list only includes information about the DB engine versions for these engine versions.
- `status` - Accepts engine version statuses. The results list only includes information about the DB engine versions for these statuses. Valid statuses are the following:
  - `available`
  - `deprecated`

Type: Array of Filter objects

Required: No

IncludeAll

Specifies whether to also list the engine versions that aren't available. The default is to list only available engine versions.

Type: Boolean

Required: No

ListSupportedCharacterSets

Specifies whether to list the supported character sets for each engine version.

If this parameter is enabled and the requested engine supports the `CharacterSetName` parameter for `CreateDBInstance`, the response includes a list of supported character sets for each engine version.

For RDS Custom, the default is not to list supported character sets. If you enable this parameter, RDS Custom returns no results.

Type: Boolean

Required: No

ListSupportedTimezones

Specifies whether to list the supported time zones for each engine version.

If this parameter is enabled and the requested engine supports the `TimeZone` parameter for `CreateDBInstance`, the response includes a list of supported time zones for each engine version.

For RDS Custom, the default is not to list supported time zones. If you enable this parameter, RDS Custom returns no results.

Type: Boolean

Required: No

Marker

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

Type: String

Required: No

MaxRecords

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so you can retrieve the remaining results.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBEngineVersions.DBEngineVersion.N

A list of `DBEngineVersion` elements.

Type: Array of DBEngineVersion objects

Marker

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

Type: String

Errors

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

Examples

Example

This example illustrates one usage of DescribeDBEngineVersions.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBEngineVersions
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=4772d17a4c43bcd209ff42a0778dd23e73f8434253effd7ac53b89ade3dad45f
```

Sample Response

```
<DescribeDBEngineVersionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBEngineVersionsResult>
    <DBEngineVersions>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
```

```
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.57</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.57</DBEngineVersionDescription>
      </DBEngineVersion>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.61</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.61</DBEngineVersionDescription>
      </DBEngineVersion>
      <DBEngineVersion>
        <Engine>mysql</Engine>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <DBEngineDescription>MySQL Community Edition</DBEngineDescription>
        <EngineVersion>5.1.62</EngineVersion>
        <DBEngineVersionDescription>MySQL 5.1.62</DBEngineVersionDescription>
      </DBEngineVersion>
  </DescribeDBEngineVersionsResult>
  <ResponseMetadata>
    <RequestId>b74d2635-b98c-11d3-fbc7-5c0aad74da7c</RequestId>
  </ResponseMetadata>
</DescribeDBEngineVersionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBInstanceAutomatedBackups

Displays backups for both current and deleted instances. For example, use this operation to find details about automated backups for previously deleted instances. Current instances with retention periods greater than zero (0) are returned for both the `DescribeDBInstanceAutomatedBackups` and `DescribeDBInstances` operations.

All parameters are optional.

Request Parameters

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

DBInstanceAutomatedBackupsArn

The Amazon Resource Name (ARN) of the replicated automated backups, for example, `arn:aws:rds:us-east-1:123456789012:auto-backup:ab-L2IJCEXJP7XQ7HOJ4SIEXAMPLE`.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

DBInstanceIdentifier

(Optional) The user-supplied instance identifier. If this parameter is specified, it must match the identifier of an existing DB instance. It returns information from the specific DB instance's automated backup. This parameter isn't case-sensitive.

Type: String

Required: No

DbiResourceId

The resource ID of the DB instance that is the source of the automated backup. This parameter isn't case-sensitive.

Type: String

Required: No

Filters.Filter.N

A filter that specifies which resources to return based on status.

Supported filters are the following:

- `status`
  - `active` - Automated backups for current instances.
  - `creating` - Automated backups that are waiting for the first automated snapshot to be available.
  - `retained` - Automated backups for deleted instances and after backup replication is stopped.
- `db-instance-id` - Accepts DB instance identifiers and Amazon Resource Names (ARNs). The results list includes only information about the DB instance automated backups identified by these ARNs.
- `dbi-resource-id` - Accepts DB resource identifiers and Amazon Resource Names (ARNs). The results list includes only information about the DB instance resources identified by these ARNs.

Returns all resources by default. The status for each resource is specified in the response.

Type: Array of Filter objects

Required: No

Marker

The pagination token provided in the previous request. If this parameter is specified the response includes only records beyond the marker, up to `MaxRecords`.

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBInstanceAutomatedBackups.DBInstanceAutomatedBackup.N

A list of `DBInstanceAutomatedBackup` instances.

Type: Array of DBInstanceAutomatedBackup objects

Marker

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

Type: String

Errors

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

DBInstanceAutomatedBackupNotFound

No automated backup for this DB instance was found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBInstanceAutomatedBackups.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=DescribeDBInstanceAutomatedBackups
&MaxRecords=100
```

```
&SignatureMethod=HmacSHA256
&SignatureVersion=4
&Version=2014-10-31
&X-Amz-Algorithm=AWS4-HMAC-SHA256
&X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-east-1/rds/aws4_request
&X-Amz-Date=20180912T200207Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=caa44629fa60576c2c282d9b74d47647f9e9f229f6d0e52db1d3be0d095743b0
```

Sample Response

```
<DescribeDBInstanceAutomatedBackupsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
<DescribeDBInstanceAutomatedBackupsResult>
<DBInstanceAutomatedBackups>

 <DBInstanceAutomatedBackup>DeleteDBInstanceAutomatedBackupResultDeleteDBInstanceAutomatedBacku
    <EngineVersion>11.2.0.4.v13</EngineVersion>
    <MasterUsername>admin</MasterUsername>
    <AllocatedStorage>50</AllocatedStorage>
    <InstanceCreateTime>2018-08-17T21:58:30Z</InstanceCreateTime>
    <DbiResourceId>db-IXRXA2XS7KFFA6JWYYWFZEBJDE</DbiResourceId>
    <DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:myoracle1</DBInstanceArn>
    <DBInstanceIdentifier>myoracle1</DBInstanceIdentifier>
    <RestoreWindow/>
    <Encrypted>false</Encrypted>
    <Engine>oracle-ee</Engine>
    <Port>1521</Port>
    <LicenseModel>bring-your-own-license</LicenseModel>
    <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
    <StorageType>magnetic</StorageType>
    <OptionGroupName>default:oracle-ee-11-2</OptionGroupName>
    <Region>us-east-1</Region>
    <Status>creating</Status>
  </DBInstanceAutomatedBackup>
  <DBInstanceAutomatedBackup>
    <EngineVersion>11.2.0.4.v12</EngineVersion>
    <MasterUsername>admin</MasterUsername>
    <AllocatedStorage>50</AllocatedStorage>
    <InstanceCreateTime>2018-08-21T00:32:55Z</InstanceCreateTime>
    <AvailabilityZone>us-east-1d</AvailabilityZone>
    <DbiResourceId>db-YVS5NRBNHPGJZ3IT3WADXYSWYU</DbiResourceId>
    <DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:myoracle2</DBInstanceArn>
```

```
    <DBInstanceIdentifier>myoracle1</DBInstanceIdentifier>
    <RestoreWindow>
      <EarliestTime>2018-08-21T00:33:32.648Z</EarliestTime>
      <LatestTime>2018-08-28T20:16:27Z</LatestTime>
    </RestoreWindow>
    <Encrypted>false</Encrypted>
    <Engine>oracle-ee</Engine>
    <Port>1521</Port>
    <LicenseModel>bring-your-own-license</LicenseModel>
    <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
    <StorageType>magnetic</StorageType>
    <OptionGroupName>default:oracle-ee-11-2</OptionGroupName>
    <Region>us-east-1</Region>
    <Status>active</Status>
  </DBInstanceAutomatedBackup>
</DBInstanceAutomatedBackups>
</DescribeDBInstanceAutomatedBackupsResult>
<ResponseMetadata>
<RequestId>298f362b-e14a-4ee0-9840-4546c276014a</RequestId>
</ResponseMetadata>
</DescribeDBInstanceAutomatedBackupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBInstances

Describes provisioned RDS instances. This API supports pagination.

> **Note**
>
> This operation can also return information for Amazon Neptune DB instances and Amazon DocumentDB instances.

Request Parameters

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

DBInstanceIdentifier

The user-supplied instance identifier or the Amazon Resource Name (ARN) of the DB instance. If this parameter is specified, information from only the specific DB instance is returned. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DB instance.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more DB instances to describe.

Supported Filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list only includes information about the DB instances associated with the DB clusters identified by these ARNs.
- `db-instance-id` - Accepts DB instance identifiers and DB instance Amazon Resource Names (ARNs). The results list only includes information about the DB instances identified by these ARNs.
- `dbi-resource-id` - Accepts DB instance resource identifiers. The results list only includes information about the DB instances identified by these DB instance resource identifiers.

- `domain` - Accepts Active Directory directory IDs. The results list only includes information about the DB instances associated with these domains.
- `engine` - Accepts engine names. The results list only includes information about the DB instances for these engines.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBInstances.DBInstance.N

A list of `DBInstance` instances.

Type: Array of DBInstance objects

Marker

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

Type: String

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBInstances.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeDBInstances
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-east-1/rds/aws4_request
   &X-Amz-Date=20140420T171917Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=caa44629fa60576c2c282d9b74d47647f9e9f229f6d0e52db1d3be0d095743b0
```

Sample Response

```
<DescribeDBInstancesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

```
  <DescribeDBInstancesResult>
    <DBInstances>
      <DBInstance>
        <AllocatedStorage>100</AllocatedStorage>
        <DBParameterGroups>
          <DBParameterGroup>
            <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          </DBParameterGroup>
        </DBParameterGroups>
        <AvailabilityZone>us-east-1b</AvailabilityZone>
        <SecondaryAvailabilityZone>us-east-1a</SecondaryAvailabilityZone>
        <DBSecurityGroups/>
        <Iops>1000</Iops>
        <EnhancedMonitoringResourceArn>arn:aws:logs:us-east-1:1234567890:log-
group:RDSOSMetrics:log-stream:db-IXRXA2XS7KFFA6JWYYWFZEBJDE</
EnhancedMonitoringResourceArn>
        <EngineVersion>5.6.39</EngineVersion>
        <MasterUsername>mysqldbadmin</MasterUsername>
        <InstanceCreateTime>2018-03-28T19:54:07.871Z</InstanceCreateTime>
        <DBInstanceClass>db.m4.xlarge</DBInstanceClass>
        <ReadReplicaDBInstanceIdentifiers/>
        <MonitoringInterval>60</MonitoringInterval>
        <DBInstanceStatus>available</DBInstanceStatus>
        <BackupRetentionPeriod>7</BackupRetentionPeriod>
        <KmsKeyId>arn:aws:kms:us-east-1:1234567890:key/######################</
KmsKeyId>
        <OptionGroupMemberships>
          <OptionGroupMembership>
            <OptionGroupName>default:mysql-5-6</OptionGroupName>
            <Status>in-sync</Status>
          </OptionGroupMembership>
        </OptionGroupMemberships>
        <LatestRestorableTime>2018-03-28T20:10:00Z</LatestRestorableTime>
        <CACertificateIdentifier>rds-ca-2015</CACertificateIdentifier>
        <DbInstancePort>0</DbInstancePort>
        <DbiResourceId>db-IXRXA2XS7KFFA6JWYYWFZEBJDE</DbiResourceId>
        <PreferredBackupWindow>05:27-05:57</PreferredBackupWindow>
        <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
        <DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:mysqldb</DBInstanceArn>
        <Endpoint>
          <HostedZoneId>Z2R2ITUGPM61AM</HostedZoneId>
          <Address>mysqldb.########.us-east-1.rds.amazonaws.com</Address>
          <Port>3306</Port>
```

```
        </Endpoint>
        <Engine>mysql</Engine>
        <PubliclyAccessible>true</PubliclyAccessible>
        <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
        <PerformanceInsightsEnabled>false</PerformanceInsightsEnabled>
        <MultiAZ>true</MultiAZ>
        <MonitoringRoleArn>arn:aws:iam::1234567890:role/rds-monitoring-role</
MonitoringRoleArn>
        <DomainMemberships/>
        <StorageEncrypted>true</StorageEncrypted>
        <DBSubnetGroup>
          <VpcId>vpc-########</VpcId>
          <Subnets>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
              <SubnetAvailabilityZone>
                <Name>us-east-1e</Name>
              </SubnetAvailabilityZone>
            </Subnet>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
              <SubnetAvailabilityZone>
                <Name>us-east-1d</Name>
              </SubnetAvailabilityZone>
            </Subnet>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
              <SubnetAvailabilityZone>
                <Name>us-east-1c</Name>
              </SubnetAvailabilityZone>
            </Subnet>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
              <SubnetAvailabilityZone>
                <Name>us-east-1f</Name>
              </SubnetAvailabilityZone>
            </Subnet>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
```

```
              <SubnetAvailabilityZone>
                <Name>us-east-1a</Name>
              </SubnetAvailabilityZone>
            </Subnet>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
              <SubnetAvailabilityZone>
                <Name>us-east-1b</Name>
              </SubnetAvailabilityZone>
            </Subnet>
          </Subnets>
          <SubnetGroupStatus>Complete</SubnetGroupStatus>
          <DBSubnetGroupDescription>default</DBSubnetGroupDescription>
          <DBSubnetGroupName>default</DBSubnetGroupName>
        </DBSubnetGroup>
        <VpcSecurityGroups>
          <VpcSecurityGroupMembership>
            <VpcSecurityGroupId>sg-########</VpcSecurityGroupId>
            <Status>active</Status>
          </VpcSecurityGroupMembership>
        </VpcSecurityGroups>
        <LicenseModel>general-public-license</LicenseModel>
        <PendingModifiedValues/>
        <PreferredMaintenanceWindow>fri:05:57-fri:06:27</PreferredMaintenanceWindow>
        <StorageType>io1</StorageType>
        <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
        <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      </DBInstance>
      <DBInstance>
        <AllocatedStorage>100</AllocatedStorage>
        <DBParameterGroups>
          <DBParameterGroup>
            <DBParameterGroupName>default.oracle-ee-12.1</DBParameterGroupName>
            <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          </DBParameterGroup>
        </DBParameterGroups>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <SecondaryAvailabilityZone>us-east-1f</SecondaryAvailabilityZone>
        <DBSecurityGroups/>
        <Iops>1000</Iops>
        <EnhancedMonitoringResourceArn>arn:aws:logs:us-east-1:1234567890:log-
group:RDSOSMetrics:log-stream:db-YVS5NRBNHPGJZ3IT3WADXYSWYU</
EnhancedMonitoringResourceArn>
```

```
        <EngineVersion>12.1.0.2.v11</EngineVersion>
        <MasterUsername>oracledbadmin</MasterUsername>
        <InstanceCreateTime>2018-03-28T20:00:48.832Z</InstanceCreateTime>
        <DBInstanceClass>db.m4.xlarge</DBInstanceClass>
        <ReadReplicaDBInstanceIdentifiers/>
        <MonitoringInterval>60</MonitoringInterval>
        <DBInstanceStatus>available</DBInstanceStatus>
        <BackupRetentionPeriod>7</BackupRetentionPeriod>
        <KmsKeyId>arn:aws:kms:us-east-1:1234567890:key/###################</KmsKeyId>
        <OptionGroupMemberships>
          <OptionGroupMembership>
            <OptionGroupName>default:oracle-ee-12-1</OptionGroupName>
            <Status>in-sync</Status>
          </OptionGroupMembership>
        </OptionGroupMemberships>
        <LatestRestorableTime>2018-03-28T20:14:30.818Z</LatestRestorableTime>
        <CACertificateIdentifier>rds-ca-2015</CACertificateIdentifier>
        <DbInstancePort>0</DbInstancePort>
        <DbiResourceId>db-YVS5NRBNHPGJZ3IT3WADXYSWYU</DbiResourceId>
        <PreferredBackupWindow>07:39-08:09</PreferredBackupWindow>
        <DBInstanceIdentifier>oracledb</DBInstanceIdentifier>
        <DBInstanceArn>arn:aws:rds:us-east-1:1234567890:db:oracledb</DBInstanceArn>
        <Endpoint>
          <HostedZoneId>Z2R2ITUGPM61AM</HostedZoneId>
          <Address>oracledb.########.us-east-1.rds.amazonaws.com</Address>
          <Port>1521</Port>
        </Endpoint>
        <Engine>oracle-ee</Engine>
        <PubliclyAccessible>true</PubliclyAccessible>
        <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
        <PerformanceInsightsEnabled>false</PerformanceInsightsEnabled>
        <DBName>ORCL</DBName>
        <MultiAZ>true</MultiAZ>
        <CharacterSetName>AL32UTF8</CharacterSetName>
        <MonitoringRoleArn>arn:aws:iam::1234567890:role/rds-monitoring-role</
MonitoringRoleArn>
        <DomainMemberships/>
        <StorageEncrypted>true</StorageEncrypted>
        <DBSubnetGroup>
          <VpcId>vpc-########</VpcId>
          <Subnets>
            <Subnet>
              <SubnetIdentifier>subnet-########</SubnetIdentifier>
              <SubnetStatus>Active</SubnetStatus>
```

```
            <SubnetAvailabilityZone>
              <Name>us-east-1e</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-########</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
              <Name>us-east-1d</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-########</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
              <Name>us-east-1c</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-########</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
              <Name>us-east-1f</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-########</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
              <Name>us-east-1a</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-########</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetAvailabilityZone>
              <Name>us-east-1b</Name>
            </SubnetAvailabilityZone>
          </Subnet>
        </Subnets>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <DBSubnetGroupDescription>default</DBSubnetGroupDescription>
        <DBSubnetGroupName>default</DBSubnetGroupName>
      </DBSubnetGroup>
```

```
        <VpcSecurityGroups>
          <VpcSecurityGroupMembership>
            <VpcSecurityGroupId>sg-########</VpcSecurityGroupId>
            <Status>active</Status>
          </VpcSecurityGroupMembership>
        </VpcSecurityGroups>
        <LicenseModel>bring-your-own-license</LicenseModel>
        <PendingModifiedValues/>
        <PreferredMaintenanceWindow>tue:08:39-tue:09:09</PreferredMaintenanceWindow>
        <StorageType>io1</StorageType>
        <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
        <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      </DBInstance>
    </DBInstances>
  </DescribeDBInstancesResult>
  <ResponseMetadata>
    <RequestId>298f362b-e14a-4ee0-9840-4546c276014a</RequestId>
  </ResponseMetadata>
</DescribeDBInstancesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBLogFiles

Returns a list of DB log files for the DB instance.

This command doesn't apply to RDS Custom.

Request Parameters

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

DBInstanceIdentifier

The customer-assigned name of the DB instance that contains the log files you want to list.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

FileLastWritten

Filters the available log files for files written since the specified date, in POSIX timestamp format with milliseconds.

Type: Long

Required: No

FilenameContains

Filters the available log files for log file names that contain the specified string.

Type: String

Required: No

FileSize

Filters the available log files for files larger than the specified size.

Type: Long

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

The pagination token provided in the previous request. If this parameter is specified the response includes only records beyond the marker, up to MaxRecords.

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DescribeDBLogFiles.DescribeDBLogFilesDetails.N

The DB log files returned.

Type: Array of DescribeDBLogFilesDetails objects

Marker

A pagination token that can be used in a later `DescribeDBLogFiles` request.

Type: String

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

DBInstanceNotReady

An attempt to download or examine log files didn't succeed because an Aurora Serverless v2 instance was paused.

HTTP Status Code: 503

Examples

Example

This example illustrates one usage of DescribeDBLogFiles.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeDBLogFiles
   &DBInstanceIdentifier=mysqldb
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request
   &X-Amz-Date=20140421T225750Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=9020fd1bcd658614e058cd2eb8c58572cf6c11460b1e96380635ee428a52e8a1
```

Sample Response

```
<DescribeDBLogFilesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBLogFilesResult>
    <DescribeDBLogFiles>
      <DescribeDBLogFilesDetails>
        <LastWritten>1398119101000</LastWritten>
        <LogFileName>error/mysql-error-running.log</LogFileName>
        <Size>1599</Size>
      </DescribeDBLogFilesDetails>
      <DescribeDBLogFilesDetails>
        <LastWritten>1398120900000</LastWritten>
        <LogFileName>error/mysql-error.log</LogFileName>
        <Size>0</Size>
      </DescribeDBLogFilesDetails>
    </DescribeDBLogFiles>
  </DescribeDBLogFilesResult>
  <ResponseMetadata>
    <RequestId>4c6ed648-b9f7-11d3-97bd-7999dd5a8f72</RequestId>
  </ResponseMetadata>
</DescribeDBLogFilesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBMajorEngineVersions

Describes the properties of specific major versions of DB engines.

Request Parameters

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

Engine

The database engine to return major version details for.

Valid Values:

- `aurora-mysql`
- `aurora-postgresql`
- `custom-sqlserver-ee`
- `custom-sqlserver-se`
- `custom-sqlserver-web`
- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

Required: No

MajorEngineVersion

A specific database major engine version to return details for.

Example: `8.4`

Type: String

Length Constraints: Minimum length of 1. Maximum length of 50.

Required: No

Marker

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

Type: String

Length Constraints: Minimum length of 1. Maximum length of 340.

Required: No

MaxRecords

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so you can retrieve the remaining results.

Default: 100

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

Response Elements

The following elements are returned by the service.

DBMajorEngineVersions.DBMajorEngineVersion.N

A list of `DBMajorEngineVersion` elements.

Type: Array of DBMajorEngineVersion objects

Marker

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

Type: String

Errors

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

Examples

Example

This example illustrates one usage of DescribeDBMajorEngineVersions.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBMajorEngineVersions
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=4772d17a4c43bcd209ff42a0778dd23e73f8434253effd7ac53b89ade3dad45f
```

Sample Response

```
<DescribeDBMajorEngineVersionsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
```

```
  <DescribeDBMajorEngineVersionsResult>
    <DBMajorEngineVersions>
      <DBMajorEngineVersion>
        <Engine>mysql</Engine>
        <MajorEngineVersion>8.0</MajorEngineVersion>
      </DBMajorEngineVersion>
      <DBMajorEngineVersion>
        <Engine>mysql</Engine>
        <MajorEngineVersion>8.0</MajorEngineVersion>
        <SupportedEngineLifecycles>
          <LifecycleSupportName>open-source-rds-standard-support</LifecycleSupportName>
          <LifecycleSupportStartDate>2021-08-26T00:00:00+00:00</
LifecycleSupportStartDate>
          <LifecycleSupportEndDate>2026-02-28T23:59:59.999000+00:00</
LifecycleSupportEndDate>
        </SupportedEngineLifecycles>
      </DBMajorEngineVersion>
  </DescribeDBMajorEngineVersionsResult>
  <ResponseMetadata>
    <RequestId>b74d2635-b98c-11d3-fbc7-5c0aad74da7c</RequestId>
  </ResponseMetadata>
</DescribeDBMajorEngineVersionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBParameterGroups

Returns a list of `DBParameterGroup` descriptions. If a `DBParameterGroupName` is specified, the list will contain only the description of the specified DB parameter group.

Request Parameters

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

DBParameterGroupName

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

Constraints:

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBParameterGroups.DBParameterGroup.N

A list of `DBParameterGroup` instances.

Type: Array of DBParameterGroup objects

Marker

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

Type: String

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBParameterGroups.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBParameterGroups
   &DBParameterGroupName=mysql-logs
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=e2753df1cb019f212057b51e8a2ac16dae05b344063355b195b560ef6e76661a
```

Sample Response

```
<DescribeDBParameterGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBParameterGroupsResult>
    <DBParameterGroups>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.1</Description>
        <DBParameterGroupName>default.mysql5.1</DBParameterGroupName>
      </DBParameterGroup>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.5</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.5</Description>
        <DBParameterGroupName>default.mysql5.5</DBParameterGroupName>
      </DBParameterGroup>
      <DBParameterGroup>
        <DBParameterGroupFamily>mysql5.6</DBParameterGroupFamily>
        <Description>Default parameter group for mysql5.6</Description>
        <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
      </DBParameterGroup>
    </DBParameterGroups>
  </DescribeDBParameterGroupsResult>
  <ResponseMetadata>
    <RequestId>b75d527a-b98c-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeDBParameterGroupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBParameters

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

Request Parameters

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

DBParameterGroupName

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

Constraints:

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

Type: String

Required: Yes

Filters.Filter.N

A filter that specifies one or more DB parameters to describe.

The only supported filter is `parameter-name`. The results list only includes information about the DB parameters with these names.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Source

The parameter types to return.

Default: All parameter types returned

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

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

Parameters.Parameter.N

A list of `Parameter` values.

Type: Array of Parameter objects

Errors

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

DBParameterGroupNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBParameters.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeDBParameters
   &DBParameterGroupName=oracle-logs
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request
   &X-Amz-Date=20140421T231357Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=ac9b18d6ae7cab4bf45ed2caa99cd8438101b293c0a84e80c3bab77f7369cc7
```

Sample Response

```
<DescribeDBParametersResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBParametersResult>
    <Marker>bGlzdGVuZXJfbmV0d29ya3M=</Marker>
    <Parameters>
      <Parameter>
        <DataType>integer</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>number of AQ Time Managers to start</Description>
        <ApplyType>dynamic</ApplyType>
        <AllowedValues>0-40</AllowedValues>
        <ParameterName>aq_tm_processes</ParameterName>
      </Parameter>
      <Parameter>
        <ParameterValue>300</ParameterValue>
```

```
        <DataType>integer</DataType>
        <Source>system</Source>
        <IsModifiable>false</IsModifiable>
        <Description>Maximum number of seconds of redos the standby could lose</
Description>
        <ApplyType>dynamic</ApplyType>
        <ParameterName>archive_lag_target</ParameterName>
      </Parameter>
      <Parameter>
        <ParameterValue>/rdsdbdata/admin/{dbName}/adump</ParameterValue>
        <DataType>string</DataType>
        <Source>system</Source>
        <IsModifiable>false</IsModifiable>
        <Description>Directory in which auditing files are to reside</Description>
        <ApplyType>dynamic</ApplyType>
        <ParameterName>audit_file_dest</ParameterName>
      </Parameter>
      <Parameter>
        <DataType>boolean</DataType>
        <Source>engine-default</Source>
        <IsModifiable>false</IsModifiable>
        <Description>enable sys auditing</Description>
        <ApplyType>static</ApplyType>
        <AllowedValues>TRUE,FALSE</AllowedValues>
        <ParameterName>audit_sys_operations</ParameterName>
      </Parameter>
      <Parameter>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>false</IsModifiable>
        <Description>Syslog facility and level</Description>
        <ApplyType>static</ApplyType>
        <ParameterName>audit_syslog_level</ParameterName>
      </Parameter>
      <Parameter>
        <DataType>string</DataType>
        <Source>engine-default</Source>
        <IsModifiable>true</IsModifiable>
        <Description>enable system auditing</Description>
        <ApplyType>static</ApplyType>
        <AllowedValues>DB,OS,NONE,TRUE,FALSE,DB_EXTENDED,XML</AllowedValues>
        <ParameterName>audit_trail</ParameterName>
      </Parameter>
    </Parameters>
```

```
  </DescribeDBParametersResult>
  <ResponseMetadata>
    <RequestId>8c40488f-b9ff-11d3-a15e-7ac49293f4fa</RequestId>
  </ResponseMetadata>
</DescribeDBParametersResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBProxies

Returns information about DB proxies.

Request Parameters

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

DBProxyName

The name of the DB proxy. If you omit this parameter, the output includes information about all DB proxies owned by your Amazon Web Services account ID.

Type: String

Required: No

Filters.Filter.N

This parameter is not currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

Response Elements

The following elements are returned by the service.

DBProxies.member.N

A return value representing an arbitrary number of `DBProxy` data structures.

Type: Array of DBProxy objects

Marker

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

Type: String

Errors

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

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface

- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBProxyEndpoints

Returns information about DB proxy endpoints.

Request Parameters

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

DBProxyEndpointName

The name of a DB proxy endpoint to describe. If you omit this parameter, the output includes information about all DB proxy endpoints associated with the specified proxy.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

DBProxyName

The name of the DB proxy whose endpoints you want to describe. If you omit this parameter, the output includes information about all DB proxy endpoints associated with all your DB proxies.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

Filters.Filter.N

This parameter is not currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

Response Elements

The following elements are returned by the service.

DBProxyEndpoints.member.N

The list of `ProxyEndpoint` objects returned by the API operation.

Type: Array of DBProxyEndpoint objects

Marker

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

Type: String

Errors

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

DBProxyEndpointNotFoundFault

The DB proxy endpoint doesn't exist.

HTTP Status Code: 404

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBProxyTargetGroups

Returns information about DB proxy target groups, represented by `DBProxyTargetGroup` data structures.

Request Parameters

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

DBProxyName

The identifier of the `DBProxy` associated with the target group.

Type: String

Required: Yes

Filters.Filter.N

This parameter is not currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

TargetGroupName

The identifier of the `DBProxyTargetGroup` to describe.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

TargetGroups.member.N

An arbitrary number of `DBProxyTargetGroup` objects, containing details of the corresponding target groups.

Type: Array of DBProxyTargetGroup objects

Errors

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

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBProxyTargets

Returns information about `DBProxyTarget` objects. This API supports pagination.

Request Parameters

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

DBProxyName

The identifier of the `DBProxyTarget` to describe.

Type: String

Required: Yes

Filters.Filter.N

This parameter is not currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

TargetGroupName

The identifier of the `DBProxyTargetGroup` to describe.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

Targets.member.N

An arbitrary number of `DBProxyTarget` objects, containing details of the corresponding targets.

Type: Array of DBProxyTarget objects

Errors

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

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetNotFoundFault

The specified RDS DB instance or Aurora DB cluster isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBRecommendations

Describes the recommendations to resolve the issues for your DB instances, DB clusters, and DB parameter groups.

Request Parameters

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

Filters.Filter.N

A filter that specifies one or more recommendations to describe.

Supported Filters:

- `recommendation-id` - Accepts a list of recommendation identifiers. The results list only includes the recommendations whose identifier is one of the specified filter values.
- `status` - Accepts a list of recommendation statuses.

  Valid values:

  - `active` - The recommendations which are ready for you to apply.
  - `pending` - The applied or scheduled recommendations which are in progress.
  - `resolved` - The recommendations which are completed.
  - `dismissed` - The recommendations that you dismissed.

  The results list only includes the recommendations whose status is one of the specified filter values.
- `severity` - Accepts a list of recommendation severities. The results list only includes the recommendations whose severity is one of the specified filter values.

  Valid values:

  - `high`
  - `medium`
  - `low`
  - `informational`
- `type-id` - Accepts a list of recommendation type identifiers. The results list only includes the recommendations whose type is one of the specified filter values.

- `dbi-resource-id` - Accepts a list of database resource identifiers. The results list only includes the recommendations that generated for the specified databases.
- `cluster-resource-id` - Accepts a list of cluster resource identifiers. The results list only includes the recommendations that generated for the specified clusters.
- `pg-arn` - Accepts a list of parameter group ARNs. The results list only includes the recommendations that generated for the specified parameter groups.
- `cluster-pg-arn` - Accepts a list of cluster parameter group ARNs. The results list only includes the recommendations that generated for the specified cluster parameter groups.

Type: Array of Filter objects

Required: No

LastUpdatedAfter

A filter to include only the recommendations that were updated after this specified time.

Type: Timestamp

Required: No

LastUpdatedBefore

A filter to include only the recommendations that were updated before this specified time.

Type: Timestamp

Required: No

Locale

The language that you choose to return the list of recommendations.

Valid values:

- `en`
- `en_UK`
- `de`
- `es`
- `fr`
- `id`

- `it`
- `ja`
- `ko`
- `pt_BR`
- `zh_TW`
- `zh_CN`

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBRecommendations.member.N

A list of recommendations which is returned from `DescribeDBRecommendations` API request.

Type: Array of DBRecommendation objects

Marker

An optional pagination token provided by a previous `DBRecommendationsMessage` request. This token can be used later in a `DescribeDBRecomendations` request.

Type: String

Errors

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

Examples

Describing all the recommendations in the account

This example illustrates one usage of DescribeDBRecommendations.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
  ?Action=DescribeDBRecommendations
  &SignatureMethod=HmacSHA256
  &SignatureVersion=4
  &Version=2014-10-31
  &X-Amz-Algorithm=AWS4-HMAC-SHA256
  &X-Amz-Credential=AKIADQKE4SARGYLE/20230222/us-east-1/rds/aws4_request
  &X-Amz-Date=20230222T200807Z
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
  &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response

```
<DescribeDBRecommendationsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
<DescribeDBRecommendationsResult>
  <DBRecommendations>
    <member>
      <RecommendationId>15e811d7-ec23-4d94-8d28-74cd2e7729ad</RecommendationId>
      <TypeId>config_recommendation::multi_az_instance</TypeId>
      <Severity>low</Severity>
```

```
        <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</
ResourceArn>
        <Status>active</Status>
        <CreatedTime>2023-10-05T18:04:04.017000+00:00</CreatedTime>
        <UpdatedTime>2023-10-20T18:35:46+00:00</UpdatedTime>
        <Detection>**1 resource** is not a Multi-AZ instance</Detection>
        <Recommendation>Set up Multi-AZ for the impacted DB instances</Recommendation>
        <Description>We recommend that you use Multi-AZ deployment. The Multi-AZ
 deployments enhance the availability and durability of the DB instance. Click Info for
 more details about Multi-AZ deployment and pricing.</Description>
        <RecommendedActions>
          <member>
            <ActionId>806effbdc8853c4bf0e794c0c240ee8e</ActionId>
            <Operation>modifyDbInstance</Operation>
            <Parameters>
              <member>
                <Key>MultiAZ</Key>
                <Value>true</Value>
              </member>
              <member>
                <Key>DBInstanceIdentifier</Key>
                <Value>mariadb-instance</Value>
              </member>
            </Parameters>
            <ApplyModes>
              <member>immediately</member>
              <member>next-maintenance-window</member>
            </ApplyModes>
            <Status>ready</Status>
            <ContextAttributes>
              <member>
                <Key>resourceArn</Key>
                <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
              </member>
            </ContextAttributes>
            <ContextAttributes>
              <member>
                <Key>engineName</Key>
                <Value>mariadb</Value>
              </member>
            </ContextAttributes>
          </member>
        </RecommendedActions>
        <Category>reliability</Category>
```

```
        <Source>RDS</Source>
        <TypeDetection>**[resource-count] resources** are not Multi-AZ instances</
TypeDetection>
        <TypeRecommendation>Set up Multi-AZ for the impacted DB instances</
TypeRecommendation>
        <Impact>Data availability at risk</Impact>
        <AdditionalInfo>In an Amazon RDS Multi-AZ deployment, Amazon RDS automatically
 creates a primary database instance and replicates the data to an instance in a
 different availability zone. When it detects a failure, Amazon RDS automatically fails
 over to a standby instance without manual intervention.</AdditionalInfo>
        <Links>
          <member>
            <Text>Pricing for Amazon RDS Multi-AZ</Text>
            <Url>https://aws.amazon.com/rds/features/multi-az/#Pricing</Url>
          </member>
        </Links>
      </member>
      <member>
        <RecommendationId>8c9132b0-267d-4493-b3c4-aedd0920809d</RecommendationId>
        <TypeId>config_recommendation::enhanced_monitoring_off</TypeId>
        <Severity>low</Severity>
        <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</
ResourceArn>
        <Status>active</Status>
        <CreatedTime>2023-10-05T18:04:03.957000+00:00</CreatedTime>
        <UpdatedTime>2023-10-20T18:35:46+00:00</UpdatedTime>
        <Detection>**1 resource** doesn't have Enhanced Monitoring enabled</Detection>
        <Recommendation>Turn on Enhanced Monitoring</Recommendation>
        <Description>Your database resources don't have Enhanced Monitoring turned on.
 Enhanced Monitoring provides real-time operating system metrics for monitoring and
 troubleshooting.</Description>
        <RecommendedActions>
          <member>
            <ActionId>a2e5e55f28854f9ec12f45c227d85f48</ActionId>
            <Operation>modifyDbInstance</Operation>
            <Parameters>
              <member>
                <Key>MonitoringInterval</Key>
                <Value>60</Value>
              </member>
              <member>
                <Key>DBInstanceIdentifier</Key>
                <Value>mariadb-instance</Value>
              </member>
```

```
            </Parameters>
            <ApplyModes>
              <member>immediately</member>
            </ApplyModes>
            <Status>ready</Status>
            <ContextAttributes>
              <member>
                <Key>resourceArn</Key>
                <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
              </member>
              <member>
                <Key>engineName</Key>
                <Value>mariadb</Value>
              </member>
              <member>
                <Key>recommendedValue</Key>
                <Value>60</Value>
              </member>
            </ContextAttributes>
          </member>
        </RecommendedActions>
        <Category>reliability</Category>
        <Source>RDS</Source>
        <TypeDetection>**[resource-count] resources** don't have Enhanced Monitoring
 enabled</TypeDetection>
        <TypeRecommendation>Turn on Enhanced Monitoring</TypeRecommendation>
        <Impact>Reduced operational visibility</Impact>
        <AdditionalInfo>Enhanced Monitoring for Amazon RDS provides additional
 visibility on the health of your DB instances. We recommend that you turn on Enhanced
 Monitoring. When the Enhanced Monitoring option is turned on for your DB instance, it
 collects vital operating system metrics and process information.</AdditionalInfo>
        <Links>
          <member>
            <Text>Turning Enhanced Monitoring on and off</Text>
            <Url>https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/
USER_Monitoring.OS.html</Url>
          </member>
        </Links>
      </member>
      <member>
        <RecommendationId>bdbda802-2472-406f-a7bc-e17ee5836a76</RecommendationId>
        <TypeId>performance_recommendation::temp_tables_on_disk</TypeId>
        <Severity>high</Severity>
        <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mysql-instance</ResourceArn>
```

```
        <Status>active</Status>
        <CreatedTime>2023-10-05T17:11:07.307000+00:00</CreatedTime>
        <UpdatedTime>2023-10-13T18:40:33+00:00</UpdatedTime>
        <Detection>Instance [resource-name] is creating temporary tables on disk</
Detection>
        <Recommendation>Review memory parameters and tune queries</Recommendation>
        <Description>Based on your usage, we recommend the following:  \n  \n*
 Review memory parameters and tune queries. For example:\n\t* Use the TempTable
 storage engine in MySQL 8.0.\n\t* Tune the database parameters tmp_table_size and
 max_heap_table_size.\n\t* Select only necessary columns and avoid using BLOB and TEXT
 columns.\n\t* Index columns involved in sorting and grouping.\n\t* Reduce the data
 returned by your queries. Investigate them by querying sys.statements_with_temp_table.
\n* [View troubleshooting doc](https://docs.aws.amazon.com/AmazonRDS/latest/
AuroraUserGuide/proactive-insights.temp-tables.html)  \n  \n@> Why do we recommend
 this?  \nWhen temporary data can't fit in memory, the database uses on-disk temporary
 tables. These tables can decrease performance, increase the duration of scheduled
 upgrades, and increase the IOPS rate.  \n  \nWithin 15 minutes, the database created
 more than 2 temporary tables per second and more than 50% of all temporary tables used
 disk.  \n@></Description>
        <RecommendedActions/>
        <Category>performance</Category>
        <Source>RDS</Source>
        <Impact>Database performance degradation</Impact>
        <IssueDetails>
          <PerformanceIssueDetails>
            <StartTime>2023-09-11T19:00:21+00:00</StartTime>
            <Metrics>
              <member>
                <Name>Temporary Tables On Disk</Name>
                <References>
                  <member>
                    <Name>Temp Tables on Disk Rate</Name>
                    <ReferenceDetails>
                      <ScalarReferenceDetails>
                        <Value>2</Value>
                      </ScalarReferenceDetails>
                    </ReferenceDetails>
                  </member>
                </References>
                <StatisticsDetails>==Peak value: 3==  \nMedium severity threshold: 2
 \nHigh severity threshold: -</StatisticsDetails>
                <MetricQuery>
                  <PerformanceInsightsMetricQuery>
                    <Metric>db.Temp.Created_tmp_disk_tables.avg</Metric>
```

```
                </PerformanceInsightsMetricQuery>
              </MetricQuery>
            </member>
            <member>
              <Name>Percentage of the temporary tables created that use disk</Name>
              <References>
                <member>
                  <Name>Temp Tables on Disk Percent</Name>
                  <ReferenceDetails>
                    <ScalarReferenceDetails>
                      <Value>50</Value>
                    </ScalarReferenceDetails>
                  </ReferenceDetails>
                </member>
              </References>
              <StatisticsDetails>==Peak value: 59==  \nMedium severity threshold: 50
\nHigh severity threshold: -</StatisticsDetails>
              <MetricQuery>
                <PerformanceInsightsMetricQuery>
                  <Metric>db.Temp.temp_disk_tables_percent.avg</Metric>
                </PerformanceInsightsMetricQuery>
              </MetricQuery>
            </member>
            <member>
              <Name>Total Created Temporary Tables</Name>
              <StatisticsDetails>==Peak value: -==  \nMedium severity threshold: -
\nHigh severity threshold: -</StatisticsDetails>
              <MetricQuery>
                <PerformanceInsightsMetricQuery>
                  <Metric>db.Temp.Created_tmp_tables.max</Metric>
                </PerformanceInsightsMetricQuery>
              </MetricQuery>
            </member>
          </Metrics>
          <Analysis>Starting on 09/11/2023 19:00:21, your recent on-disk temporary
table usage increased significantly, up to 58.82 percent. The database is creating
up to 3 temporary tables per second on disk, which might impact performance. This
insight appears because both the percentage of temporary tables on disk and the rate
of temporary tables on disk created per second exceeded their thresholds.</Analysis>
        </PerformanceIssueDetails>
      </IssueDetails>
    </member>
  </DBRecommendations>
 </DescribeDBRecommendationsResult>
```

```
</DescribeDBRecommendationsResponse>
```

Filtering the recommendations by last updated time

This example illustrates one usage of DescribeDBRecommendations.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=DescribeDBRecommendations
    &LastUpdatedBefore=2023-10-21
    &LastUpdatedAfter=2023-10-19
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230222/us-east-1/rds/aws4_request
    &X-Amz-Date=20230222T200807Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response

```
<DescribeDBRecommendationsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBRecommendationsResult>
    <DBRecommendations>
      <member>
        <RecommendationId>15e811d7-ec23-4d94-8d28-74cd2e7729ad</RecommendationId>
        <TypeId>config_recommendation::multi_az_instance</TypeId>
        <Severity>low</Severity>
        <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</
ResourceArn>
        <Status>active</Status>
        <CreatedTime>2023-10-05T18:04:04.017000+00:00</CreatedTime>
        <UpdatedTime>2023-10-20T18:35:46+00:00</UpdatedTime>
        <Detection>**1 resource** is not a Multi-AZ instance</Detection>
        <Recommendation>Set up Multi-AZ for the impacted DB instances</Recommendation>
```

```
        <Description>We recommend that you use Multi-AZ deployment. The Multi-AZ
 deployments enhance the availability and durability of the DB instance. Click Info for
 more details about Multi-AZ deployment and pricing.</Description>
        <RecommendedActions>
          <member>
            <ActionId>806effbdc8853c4bf0e794c0c240ee8e</ActionId>
            <Operation>modifyDbInstance</Operation>
            <Parameters>
              <member>
                <Key>MultiAZ</Key>
                <Value>true</Value>
              </member>
              <member>
                <Key>DBInstanceIdentifier</Key>
                <Value>mariadb-instance</Value>
              </member>
            </Parameters>
            <ApplyModes>
              <member>immediately</member>
              <member>next-maintenance-window</member>
            </ApplyModes>
            <Status>ready</Status>
            <ContextAttributes>
              <member>
                <Key>resourceArn</Key>
                <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
              </member>
            </ContextAttributes>
            <ContextAttributes>
              <member>
                <Key>engineName</Key>
                <Value>mariadb</Value>
              </member>
            </ContextAttributes>
          </member>
        </RecommendedActions>
        <Category>reliability</Category>
        <Source>RDS</Source>
        <TypeDetection>**[resource-count] resources** are not Multi-AZ instances</
TypeDetection>
        <TypeRecommendation>Set up Multi-AZ for the impacted DB instances</
TypeRecommendation>
        <Impact>Data availability at risk</Impact>
```

```
        <AdditionalInfo>In an Amazon RDS Multi-AZ deployment, Amazon RDS automatically
 creates a primary database instance and replicates the data to an instance in a
 different availability zone. When it detects a failure, Amazon RDS automatically fails
 over to a standby instance without manual intervention.</AdditionalInfo>
        <Links>
          <member>
            <Text>Pricing for Amazon RDS Multi-AZ</Text>
            <Url>https://aws.amazon.com/rds/features/multi-az/#Pricing</Url>
          </member>
        </Links>
      </member>
      <member>
        <RecommendationId>8c9132b0-267d-4493-b3c4-aedd0920809d</RecommendationId>
        <TypeId>config_recommendation::enhanced_monitoring_off</TypeId>
        <Severity>low</Severity>
        <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</
ResourceArn>
        <Status>active</Status>
        <CreatedTime>2023-10-05T18:04:03.957000+00:00</CreatedTime>
        <UpdatedTime>2023-10-20T18:35:46+00:00</UpdatedTime>
        <Detection>**1 resource** doesn't have Enhanced Monitoring enabled</Detection>
        <Recommendation>Turn on Enhanced Monitoring</Recommendation>
        <Description>Your database resources don't have Enhanced Monitoring turned on.
 Enhanced Monitoring provides real-time operating system metrics for monitoring and
 troubleshooting.</Description>
        <RecommendedActions>
          <member>
            <ActionId>a2e5e55f28854f9ec12f45c227d85f48</ActionId>
            <Operation>modifyDbInstance</Operation>
            <Parameters>
              <member>
                <Key>MonitoringInterval</Key>
                <Value>60</Value>
              </member>
              <member>
                <Key>DBInstanceIdentifier</Key>
                <Value>mariadb-instance</Value>
              </member>
            </Parameters>
            <ApplyModes>
              <member>immediately</member>
            </ApplyModes>
            <Status>ready</Status>
            <ContextAttributes>
```

```
              <member>
                <Key>resourceArn</Key>
                <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
              </member>
              <member>
                <Key>engineName</Key>
                <Value>mariadb</Value>
              </member>
              <member>
                <Key>recommendedValue</Key>
                <Value>60</Value>
              </member>
            </ContextAttributes>
          </member>
        </RecommendedActions>
        <Category>reliability</Category>
        <Source>RDS</Source>
        <TypeDetection>**[resource-count] resources** don't have Enhanced Monitoring
 enabled</TypeDetection>
        <TypeRecommendation>Turn on Enhanced Monitoring</TypeRecommendation>
        <Impact>Reduced operational visibility</Impact>
        <AdditionalInfo>Enhanced Monitoring for Amazon RDS provides additional
 visibility on the health of your DB instances. We recommend that you turn on Enhanced
 Monitoring. When the Enhanced Monitoring option is turned on for your DB instance, it
 collects vital operating system metrics and process information.</AdditionalInfo>
        <Links>
          <member>
            <Text>Turning Enhanced Monitoring on and off</Text>
            <Url>https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/
USER_Monitoring.OS.html</Url>
          </member>
        </Links>
      </member>
    </DBRecommendations>
  </DescribeDBRecommendationsResult>
</DescribeDBRecommendationsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBSecurityGroups

Returns a list of `DBSecurityGroup` descriptions. If a `DBSecurityGroupName` is specified, the list will contain only the descriptions of the specified DB security group.

> **Note**
>
> EC2-Classic was retired on August 15, 2022. If you haven't migrated from EC2-Classic to a VPC, we recommend that you migrate as soon as possible. For more information, see Migrate from EC2-Classic to a VPC in the *Amazon EC2 User Guide*, the blog EC2-Classic Networking is Retiring – Here's How to Prepare, and Moving a DB instance not in a VPC into a VPC in the *Amazon RDS User Guide*.

Request Parameters

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

DBSecurityGroupName

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBSecurityGroups.DBSecurityGroup.N

A list of `DBSecurityGroup` instances.

Type: Array of DBSecurityGroup objects

Marker

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

Type: String

Errors

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

DBSecurityGroupNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBSecurityGroups.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBSecurityGroups
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=b14bcddedcf2fd7ffbbcc45ed2caa99cd848ee309a19070f946ad2a54f5331fe
```

Sample Response

```
<DescribeDBSecurityGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBSecurityGroupsResult>
    <DBSecurityGroups>
      <DBSecurityGroup>
        <EC2SecurityGroups/>
        <DBSecurityGroupDescription>My security group</DBSecurityGroupDescription>
        <IPRanges>
          <IPRange>
            <CIDRIP>192.0.0.0/24</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
          <IPRange>
            <CIDRIP>190.0.1.0/29</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
          <IPRange>
            <CIDRIP>190.0.2.0/29</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
```

```
          <IPRange>
            <CIDRIP>10.0.0.0/8</CIDRIP>
            <Status>authorized</Status>
          </IPRange>
        </IPRanges>
        <OwnerId>803#########</OwnerId>
        <DBSecurityGroupName>my-secgrp</DBSecurityGroupName>
      </DBSecurityGroup>
      <DBSecurityGroup>
        <EC2SecurityGroups/>
        <DBSecurityGroupDescription>default</DBSecurityGroupDescription>
        <IPRanges/>
        <OwnerId>803#########</OwnerId>
        <DBSecurityGroupName>default</DBSecurityGroupName>
      </DBSecurityGroup>
   </DBSecurityGroups>
  </DescribeDBSecurityGroupsResult>
  <ResponseMetadata>
    <RequestId>b76e692c-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeDBSecurityGroupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBShardGroups

Describes existing Aurora Limitless Database DB shard groups.

Request Parameters

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

DBShardGroupIdentifier

The user-supplied DB shard group identifier. If this parameter is specified, information for only the specific DB shard group is returned. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match an existing DB shard group identifier.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

Filters.Filter.N

A filter that specifies one or more DB shard groups to describe.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

Response Elements

The following elements are returned by the service.

DBShardGroups.DBShardGroup.N

Contains a list of DB shard groups for the user.

Type: Array of DBShardGroup objects

Marker

A pagination token that can be used in a later `DescribeDBClusters` request.

Type: String

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBShardGroupNotFound

The specified DB shard group name wasn't found.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBSnapshotAttributes

Returns a list of DB snapshot attribute names and values for a manual DB snapshot.

When sharing snapshots with other Amazon Web Services accounts, `DescribeDBSnapshotAttributes` returns the `restore` attribute and a list of IDs for the Amazon Web Services accounts that are authorized to copy or restore the manual DB snapshot. If `all` is included in the list of values for the `restore` attribute, then the manual DB snapshot is public and can be copied or restored by all Amazon Web Services accounts.

To add or remove access for an Amazon Web Services account to copy or restore a manual DB snapshot, or to make the manual DB snapshot public or private, use the `ModifyDBSnapshotAttribute` API action.

Request Parameters

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

DBSnapshotIdentifier

The identifier for the DB snapshot to describe the attributes for.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBSnapshotAttributes` API action.

Manual DB snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB snapshot. For more information, see the `ModifyDBSnapshotAttribute` API action.

Type: DBSnapshotAttributesResult object

Errors

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

DBSnapshotNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBSnapshotAttributes.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DescribeDBSnapshotAttributes
    &DBSnapshotIdentifier=manual-snapshot1
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20151027/us-east-1/rds/aws4_request
    &X-Amz-Date=20151027T210706Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=27413f450dfac3d68b2197453e52109bacd3863f9df1a02d6e40022165bb2e09
```

Sample Response

```
<DescribeDBSnapshotAttributesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBSnapshotAttributesResult>
    <DBSnapshotAttributesResult>
      <DBSnapshotAttributes>
        <DBSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
```

```
            <AttributeValue>012345678901</AttributeValue>
          </AttributeValues>
        </DBSnapshotAttribute>
      </DBSnapshotAttributes>
      <DBSnapshotIdentifier>manual-snapshot1</DBSnapshotIdentifier>
    </DBSnapshotAttributesResult>
  </DescribeDBSnapshotAttributesResult>
  <ResponseMetadata>
    <RequestId>ae5be4a2-7cee-11e5-a056-f1c189649a47</RequestId>
  </ResponseMetadata>
</DescribeDBSnapshotAttributesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBSnapshots

Returns information about DB snapshots. This API action supports pagination.

Request Parameters

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

DBInstanceIdentifier

The ID of the DB instance to retrieve the list of DB snapshots for. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing DBInstance.

Type: String

Required: No

DbiResourceId

A specific DB resource ID to describe.

Type: String

Required: No

DBSnapshotIdentifier

A specific DB snapshot identifier to describe. This value is stored as a lowercase string.

Constraints:

- If supplied, must match the identifier of an existing DBSnapshot.
- If this identifier is for an automated snapshot, the `SnapshotType` parameter must also be specified.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more DB snapshots to describe.

Supported filters:

- `db-instance-id` - Accepts DB instance identifiers and DB instance Amazon Resource Names (ARNs).
- `db-snapshot-id` - Accepts DB snapshot identifiers.
- `dbi-resource-id` - Accepts identifiers of source DB instances.
- `snapshot-type` - Accepts types of DB snapshots.
- `engine` - Accepts names of database engines.

Type: Array of Filter objects

Required: No

IncludePublic

Specifies whether to include manual DB cluster snapshots that are public and can be copied or restored by any Amazon Web Services account. By default, the public snapshots are not included.

You can share a manual DB snapshot as public by using the ModifyDBSnapshotAttribute API.

This setting doesn't apply to RDS Custom.

Type: Boolean

Required: No

IncludeShared

Specifies whether to include shared manual DB cluster snapshots from other Amazon Web Services accounts that this Amazon Web Services account has been given permission to copy or restore. By default, these snapshots are not included.

You can give an Amazon Web Services account permission to restore a manual DB snapshot from another Amazon Web Services account by using the `ModifyDBSnapshotAttribute` API action.

This setting doesn't apply to RDS Custom.

Type: Boolean

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

SnapshotType

The type of snapshots to be returned. You can specify one of the following values:

- `automated` - Return all DB snapshots that have been automatically taken by Amazon RDS for my Amazon Web Services account.
- `manual` - Return all DB snapshots that have been taken by my Amazon Web Services account.
- `shared` - Return all manual DB snapshots that have been shared to my Amazon Web Services account.
- `public` - Return all DB snapshots that have been marked as public.
- `awsbackup` - Return the DB snapshots managed by the Amazon Backup service.

  For information about Amazon Backup, see the *Amazon Backup Developer Guide.*

  The `awsbackup` type does not apply to Aurora.

If you don't specify a `SnapshotType` value, then both automated and manual snapshots are returned. Shared and public DB snapshots are not included in the returned results by default. You can include shared snapshots with these results by enabling the `IncludeShared` parameter. You can include public snapshots with these results by enabling the `IncludePublic` parameter.

The `IncludeShared` and `IncludePublic` parameters don't apply for `SnapshotType` values of `manual` or `automated`. The `IncludePublic` parameter doesn't apply when `SnapshotType` is set to `shared`. The `IncludeShared` parameter doesn't apply when `SnapshotType` is set to `public`.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

DBSnapshots.DBSnapshot.N

A list of `DBSnapshot` instances.

Type: Array of DBSnapshot objects

Marker

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

Type: String

Errors

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

DBSnapshotNotFound

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBSnapshots.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBSnapshots
   &IncludePublic=false
   &IncludeShared=true
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20210621/us-west-2/rds/aws4_request
   &X-Amz-Date=20210621T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=4aa31bdcf7b5e00dadffbd6dc8448a31871e283ffe270e77890e15487354bcca
```

Sample Response

```
<DescribeDBSnapshotsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBSnapshotsResult>
    <DBSnapshots>
      <DBSnapshot>
        <Port>3306</Port>
        <OptionGroupName>default:mysql-5-6</OptionGroupName>
        <Engine>mysql</Engine>
        <Status>available</Status>
        <SnapshotType>manual</SnapshotType>
        <LicenseModel>general-public-license</LicenseModel>
        <EngineVersion>5.6.44</EngineVersion>
        <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
        <DBSnapshotIdentifier>my-test-restore-snapshot</DBSnapshotIdentifier>
        <SnapshotCreateTime>2021-03-28T19:57:16.707Z</SnapshotCreateTime>
        <OriginalSnapshotCreateTime>2021-03-28T19:57:16.707Z</
OriginalSnapshotCreateTime>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
```

```
        <InstanceCreateTime>2021-01-29T22:58:24.231Z</InstanceCreateTime>
        <PercentProgress>100</PercentProgress>
        <AllocatedStorage>5</AllocatedStorage>
        <MasterUsername>awsmyuser</MasterUsername>
      </DBSnapshot>
      <DBSnapshot>
        <Port>3306</Port>
        <OptionGroupName>default:mysql-5-6</OptionGroupName>
        <Engine>mysql</Engine>
        <Status>available</Status>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>general-public-license</LicenseModel>
         <EngineVersion>5.6.44</EngineVersion>
        <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
        <DBSnapshotIdentifier>rds:my-mysqlexampledb-2021-04-19-10-08</
DBSnapshotIdentifier>
        <SnapshotCreateTime>2021-05-11T06:02:03.422Z</SnapshotCreateTime>
        <OriginalSnapshotCreateTime>2021-04-27T08:16:05.356Z</
OriginalSnapshotCreateTime>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <InstanceCreateTime>2021-01-29T22:58:24.231Z</InstanceCreateTime>
        <PercentProgress>100</PercentProgress>
        <AllocatedStorage>5</AllocatedStorage>
        <MasterUsername>awsmyuser</MasterUsername>
      </DBSnapshot>
      <DBSnapshot>
        <Port>3306</Port>
        <OptionGroupName>default:mysql-5-6</OptionGroupName>
        <Engine>mysql</Engine>
        <Status>available</Status>
        <SnapshotType>automated</SnapshotType>
        <LicenseModel>general-public-license</LicenseModel>
        <EngineVersion>5.6.44</EngineVersion>
        <DBInstanceIdentifier>my-mysqlexampledb</DBInstanceIdentifier>
        <DBSnapshotIdentifier>rds:my-mysqlexampledb-2021-04-20-10-09</
DBSnapshotIdentifier>
        <SnapshotCreateTime>2021-04-20T10:09:15.446Z</SnapshotCreateTime>
        <OriginalSnapshotCreateTime>2021-04-20T10:09:15.446Z</
OriginalSnapshotCreateTime>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <InstanceCreateTime>2021-01-29T22:58:24.231Z</InstanceCreateTime>
        <PercentProgress>100</PercentProgress>
        <AllocatedStorage>5</AllocatedStorage>
        <MasterUsername>awsmyuser</MasterUsername>
```

```
      </DBSnapshot>
    </DBSnapshots>
  </DescribeDBSnapshotsResult>
  <ResponseMetadata>
    <RequestId>b7769930-b98c-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeDBSnapshotsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBSnapshotTenantDatabases

Describes the tenant databases that exist in a DB snapshot. This command only applies to RDS for Oracle DB instances in the multi-tenant configuration.

You can use this command to inspect the tenant databases within a snapshot before restoring it. You can't directly interact with the tenant databases in a DB snapshot. If you restore a snapshot that was taken from DB instance using the multi-tenant configuration, you restore all its tenant databases.

Request Parameters

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

DBInstanceIdentifier

The ID of the DB instance used to create the DB snapshots. This parameter isn't case-sensitive.

Constraints:

- If supplied, must match the identifier of an existing `DBInstance`.

Type: String

Required: No

DbiResourceId

A specific DB resource identifier to describe.

Type: String

Required: No

DBSnapshotIdentifier

The ID of a DB snapshot that contains the tenant databases to describe. This value is stored as a lowercase string.

Constraints:

- If you specify this parameter, the value must match the ID of an existing DB snapshot.
- If you specify an automatic snapshot, you must also specify `SnapshotType`.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more tenant databases to describe.

Supported filters:

- `tenant-db-name` - Tenant database names. The results list only includes information about the tenant databases that match these tenant DB names.
- `tenant-database-resource-id` - Tenant database resource identifiers. The results list only includes information about the tenant databases contained within the DB snapshots.
- `dbi-resource-id` - DB instance resource identifiers. The results list only includes information about snapshots containing tenant databases contained within the DB instances identified by these resource identifiers.
- `db-instance-id` - Accepts DB instance identifiers and DB instance Amazon Resource Names (ARNs).
- `db-snapshot-id` - Accepts DB snapshot identifiers.
- `snapshot-type` - Accepts types of DB snapshots.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

SnapshotType

The type of DB snapshots to be returned. You can specify one of the following values:

- `automated` – All DB snapshots that have been automatically taken by Amazon RDS for my Amazon Web Services account.
- `manual` – All DB snapshots that have been taken by my Amazon Web Services account.
- `shared` – All manual DB snapshots that have been shared to my Amazon Web Services account.
- `public` – All DB snapshots that have been marked as public.
- `awsbackup` – All DB snapshots managed by the Amazon Backup service.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

DBSnapshotTenantDatabases.DBSnapshotTenantDatabase.N

A list of DB snapshot tenant databases.

Type: Array of DBSnapshotTenantDatabase objects

Marker

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

Type: String

Errors

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

DBSnapshotNotFound

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

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeDBSubnetGroups

Returns a list of DBSubnetGroup descriptions. If a DBSubnetGroupName is specified, the list will contain only the descriptions of the specified DBSubnetGroup.

For an overview of CIDR ranges, go to the Wikipedia Tutorial.

Request Parameters

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

DBSubnetGroupName

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

DBSubnetGroups.DBSubnetGroup.N

A list of `DBSubnetGroup` instances.

Type: Array of DBSubnetGroup objects

Marker

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

Type: String

Errors

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

DBSubnetGroupNotFoundFault

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

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeDBSubnetGroups.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeDBSubnetGroups
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=6cc9b2825866148e1d6290b8aa2e9d75b1884b116d8665759942d87ebfbed426
```

Sample Response

```
<DescribeDBSubnetGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeDBSubnetGroupsResult>
    <DBSubnetGroups>
      <DBSubnetGroup>
        <VpcId>vpc-e7abbdce</VpcId>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <DBSubnetGroupDescription>DB subnet group 1</DBSubnetGroupDescription>
        <DBSubnetGroupName>mydbsubnetgroup1</DBSubnetGroupName>
        <Subnets>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-e8b3e5b1</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2a</Name>
              <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-44b2f22e</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2b</Name>
              <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
```

```
        </Subnets>
      </DBSubnetGroup>
      <DBSubnetGroup>
        <VpcId>vpc-c1e17bb8</VpcId>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <DBSubnetGroupDescription>My DB subnet group 2</DBSubnetGroupDescription>
        <DBSubnetGroupName>sub-grp-2</DBSubnetGroupName>
        <Subnets>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-d281ef8a</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2a</Name>
              <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-b381ef9f</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2c</Name>
              <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetIdentifier>subnet-e1e17ebd</SubnetIdentifier>
            <SubnetAvailabilityZone>
              <Name>us-west-2b</Name>
              <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
            </SubnetAvailabilityZone>
          </Subnet>
        </Subnets>
      </DBSubnetGroup>
    </DBSubnetGroups>
  </DescribeDBSubnetGroupsResult>
  <ResponseMetadata>
    <RequestId>b783db3b-b98c-11d3-fbc7-5c0aad74da7c</RequestId>
  </ResponseMetadata>
</DescribeDBSubnetGroupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeEngineDefaultClusterParameters

Returns the default engine and system parameter information for the cluster database engine.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

Request Parameters

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

DBParameterGroupFamily

The name of the DB cluster parameter group family to return engine parameter information for.

Type: String

Required: Yes

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following element is returned by the service.

EngineDefaults

Contains the result of a successful invocation of the `DescribeEngineDefaultParameters` action.

Type: EngineDefaults object

Errors

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

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeEngineDefaultParameters

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

Request Parameters

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

DBParameterGroupFamily

The name of the DB parameter group family.

Valid Values:

- `aurora-mysql5.7`
- `aurora-mysql8.0`
- `aurora-postgresql10`
- `aurora-postgresql11`
- `aurora-postgresql12`
- `aurora-postgresql13`
- `aurora-postgresql14`
- `custom-oracle-ee-19`
- `custom-oracle-ee-cdb-19`
- `db2-ae`
- `db2-se`
- `mariadb10.2`
- `mariadb10.3`
- `mariadb10.4`
- `mariadb10.5`
- `mariadb10.6`
- `mysql5.7`
- `mysql8.0`
- `oracle-ee-19`
- `oracle-ee-cdb-19`
- `oracle-ee-cdb-21`

- oracle-se2-19
- oracle-se2-cdb-19
- oracle-se2-cdb-21
- postgres10
- postgres11
- postgres12
- postgres13
- postgres14
- sqlserver-ee-11.0
- sqlserver-ee-12.0
- sqlserver-ee-13.0
- sqlserver-ee-14.0
- sqlserver-ee-15.0
- sqlserver-ex-11.0
- sqlserver-ex-12.0
- sqlserver-ex-13.0
- sqlserver-ex-14.0
- sqlserver-ex-15.0
- sqlserver-se-11.0
- sqlserver-se-12.0
- sqlserver-se-13.0
- sqlserver-se-14.0
- sqlserver-se-15.0
- sqlserver-web-11.0
- sqlserver-web-12.0
- sqlserver-web-13.0
- sqlserver-web-14.0
- sqlserver-web-15.0

Type: String

Required: Yes

Filters.Filter.N

A filter that specifies one or more parameters to describe.

The only supported filter is `parameter-name`. The results list only includes information about the parameters with these names.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following element is returned by the service.

EngineDefaults

Contains the result of a successful invocation of the `DescribeEngineDefaultParameters` action.

Type: EngineDefaults object

Errors

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

Examples

Example

This example illustrates one usage of DescribeEngineDefaultParameters.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeEngineDefaultParameters
   &DBParameterGroupFamily=mysql5.1
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=747cc243a8a2385b0b06a9e2d145d08b905a39620b2782edd8382ea1712cf826
```

Sample Response

```
<DescribeEngineDefaultParametersResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribeEngineDefaultParametersResult>
    <EngineDefaults>
      <DBParameterGroupFamily>mysql5.1</DBParameterGroupFamily>
      <Marker>bG9nX3FZXJpZ4Nfbm90X3VzaW5nX2luZGV4Z1M=</Marker>
      <Parameters>
        <Parameter>
          <DataType>boolean</DataType>
          <Source>engine-default</Source>
          <IsModifiable>false</IsModifiable>
```

```
          <Description>Controls whether user-defined functions that have only an xxx
 symbol for the main function can be loaded</Description>
          <ApplyType>static</ApplyType>
          <AllowedValues>0,1</AllowedValues>
          <ParameterName>allow-suspicious-udfs</ParameterName>
        </Parameter>
        <Parameter>
          <DataType>integer</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Intended for use with master-to-master replication, and can be
 used to control the operation of AUTO_INCREMENT columns</Description>
          <ApplyType>dynamic</ApplyType>
          <AllowedValues>1-65535</AllowedValues>
          <ParameterName>auto_increment_increment</ParameterName>
        </Parameter>
        <Parameter>
          <DataType>integer</DataType>
          <Source>engine-default</Source>
          <IsModifiable>true</IsModifiable>
          <Description>Determines the starting point for the AUTO_INCREMENT column
 value</Description>
          <ApplyType>dynamic</ApplyType>
          <AllowedValues>1-65535</AllowedValues>
          <ParameterName>auto_increment_offset</ParameterName>
        </Parameter>
      </Parameters>
    </EngineDefaults>
  </DescribeEngineDefaultParametersResult>
  <ResponseMetadata>
    <RequestId>b789ce01-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeEngineDefaultParametersResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++

- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeEventCategories

Displays a list of categories for all event source types, or, if specified, for a specified source type. You can also see this list in the "Amazon RDS event categories and event messages" section of the *Amazon RDS User Guide* or the *Amazon Aurora User Guide*.

Request Parameters

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

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

SourceType

The type of source that is generating the events. For RDS Proxy events, specify `db-proxy`.

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

Type: String

Required: No

Response Elements

The following element is returned by the service.

EventCategoriesMapList.EventCategoriesMap.N

A list of `EventCategoriesMap` data types.

Type: Array of EventCategoriesMap objects

Errors

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

Examples

Example

This example illustrates one usage of DescribeEventCategories.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeEventCategories
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

Sample Response

```
<DescribeEventCategoriesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeEventCategoriesResult>
    <EventCategoriesMapList>
      <EventCategoriesMap>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
          <EventCategory>recovery</EventCategory>
          <EventCategory>restoration</EventCategory>
          <EventCategory>failover</EventCategory>
          <EventCategory>low storage</EventCategory>
          <EventCategory>maintenance</EventCategory>
          <EventCategory>deletion</EventCategory>
          <EventCategory>availability</EventCategory>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>notification</EventCategory>
          <EventCategory>failure</EventCategory>
          <EventCategory>creation</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
```

```
      <EventCategoriesMap>
        <SourceType>db-security-group</SourceType>
        <EventCategories>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>failure</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
      <EventCategoriesMap>
        <SourceType>db-parameter-group</SourceType>
        <EventCategories>
          <EventCategory>configuration change</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
      <EventCategoriesMap>
        <SourceType>db-snapshot</SourceType>
        <EventCategories>
          <EventCategory>deletion</EventCategory>
          <EventCategory>restoration</EventCategory>
          <EventCategory>notification</EventCategory>
          <EventCategory>failure</EventCategory>
          <EventCategory>creation</EventCategory>
        </EventCategories>
      </EventCategoriesMap>
    </EventCategoriesMap>
  </DescribeEventCategoriesResult>
  <ResponseMetadata>
    <RequestId>b79456f2-b98c-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeEventCategoriesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3

- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeEvents

Returns events related to DB instances, DB clusters, DB parameter groups, DB security groups, DB snapshots, DB cluster snapshots, and RDS Proxies for the past 14 days. Events specific to a particular DB instance, DB cluster, DB parameter group, DB security group, DB snapshot, DB cluster snapshot group, or RDS Proxy can be obtained by providing the name as a parameter.

For more information on working with events, see Monitoring Amazon RDS events in the *Amazon RDS User Guide* and Monitoring Amazon Aurora events in the *Amazon Aurora User Guide*.

> **Note**
>
> By default, RDS returns events that were generated in the past hour.

Request Parameters

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

Duration

The number of minutes to retrieve events for.

Default: 60

Type: Integer

Required: No

EndTime

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

Example: 2009-07-08T18:00Z

Type: Timestamp

Required: No

EventCategories.EventCategory.N

A list of event categories that trigger notifications for a event notification subscription.

Type: Array of strings

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

SourceIdentifier

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

Constraints:

- If `SourceIdentifier` is supplied, `SourceType` must also be provided.
- If the source type is a DB instance, a `DBInstanceIdentifier` value must be supplied.

- If the source type is a DB cluster, a `DBClusterIdentifier` value must be supplied.
- If the source type is a DB parameter group, a `DBParameterGroupName` value must be supplied.
- If the source type is a DB security group, a `DBSecurityGroupName` value must be supplied.
- If the source type is a DB snapshot, a `DBSnapshotIdentifier` value must be supplied.
- If the source type is a DB cluster snapshot, a `DBClusterSnapshotIdentifier` value must be supplied.
- If the source type is an RDS Proxy, a `DBProxyName` value must be supplied.
- Can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

SourceType

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

Type: String

Valid Values: `db-instance | db-parameter-group | db-security-group | db-snapshot | db-cluster | db-cluster-snapshot | custom-engine-version | db-proxy | blue-green-deployment`

Required: No

StartTime

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

Example: 2009-07-08T18:00Z

Type: Timestamp

Required: No

Response Elements

The following elements are returned by the service.

Events.Event.N

A list of `Event` instances.

Type: Array of Event objects

Marker

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

Type: String

Errors

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

Examples

Example

This example illustrates one usage of DescribeEvents.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeEvents
   &Duration=1440
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194733Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8e313cabcdbd9766c56a2886b5b298fd944e0b7cfa248953c82705fdd0374f27
```

Sample Response

```
<DescribeEventsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeEventsResult>
    <Events>
      <Event>
        <Message>Backing up DB instance</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T06:23:33.866Z</Date>
        <SourceIdentifier>mypgdbinstance</SourceIdentifier>
      </Event>
      <Event>
        <Message>Finished DB Instance backup</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T06:25:03.928Z</Date>
        <SourceIdentifier>mypgdbinstance</SourceIdentifier>
      </Event>
      <Event>
        <Message>Backing up DB instance</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T07:09:34.594Z</Date>
        <SourceIdentifier>my-mysqlexampledb4</SourceIdentifier>
      </Event>
      <Event>
        <Message>Finished DB Instance backup</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T07:11:05.640Z</Date>
        <SourceIdentifier>my-mysqlexampledb4</SourceIdentifier>
      </Event>
      <Event>
        <Message>Backing up DB instance</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
```

```
        </EventCategories>
        <Date>2014-04-21T09:26:25.988Z</Date>
        <SourceIdentifier>my-oracledb1</SourceIdentifier>
      </Event>
      <Event>
        <Message>Finished DB Instance backup</Message>
        <SourceType>db-instance</SourceType>
        <EventCategories>
          <EventCategory>backup</EventCategory>
        </EventCategories>
        <Date>2014-04-21T09:28:38.048Z</Date>
        <SourceIdentifier>my-oracledb1</SourceIdentifier>
      </Event>
    </Events>
  </DescribeEventsResult>
  <ResponseMetadata>
    <RequestId>b7a8cd43-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeEventsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeEventSubscriptions

Lists all the subscription descriptions for a customer account. The description for a subscription includes `SubscriptionName`, `SNSTopicARN`, `CustomerID`, `SourceType`, `SourceID`, `CreationTime`, and `Status`.

If you specify a `SubscriptionName`, lists the description for that subscription.

Request Parameters

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

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

SubscriptionName

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

Type: String

Required: No

Response Elements

The following elements are returned by the service.

EventSubscriptionsList.EventSubscription.N

A list of EventSubscriptions data types.

Type: Array of EventSubscription objects

Marker

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

Type: String

Errors

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

SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeEventSubscriptions.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeEventSubscriptions
   &MaxRecords=100
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T161907Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=4208679fe967783a1a149c826199080a066085d5a88227a80c6c0cadb3e8c0d4
```

Sample Response

```
<DescribeEventSubscriptionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeEventSubscriptionsResult>
    <EventSubscriptionsList>
      <EventSubscription>
        <Enabled>true</Enabled>
        <CustomerAwsId>802#########</CustomerAwsId>
        <SourceType>db-instance</SourceType>
        <Status>active</Status>
        <SourceIdsList>
          <SourceId>mysqldb-rr</SourceId>
          <SourceId>mysqldb</SourceId>
        </SourceIdsList>
        <SubscriptionCreationTime>2014-04-25 22:01:46.327</SubscriptionCreationTime>
        <EventCategoriesList>
          <EventCategory>creation</EventCategory>
          <EventCategory>deletion</EventCategory>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>low storage</EventCategory>
        </EventCategoriesList>
        <CustSubscriptionId>myawsuser-instance</CustSubscriptionId>
        <SnsTopicArn>arn:aws:sns:us-east-1:802#########:myawsuser-RDS</SnsTopicArn>
      </EventSubscription>
      <EventSubscription>
        <Enabled>true</Enabled>
        <CustomerAwsId>802#########</CustomerAwsId>
```

```
        <SourceType>db-parameter-group</SourceType>
        <Status>active</Status>
        <SourceIdsList>
          <SourceId>mydbparametergroup00</SourceId>
        </SourceIdsList>
        <SubscriptionCreationTime>2014-04-25 21:44:44.68</SubscriptionCreationTime>
        <EventCategoriesList>
          <EventCategory>configuration change</EventCategory>
        </EventCategoriesList>
        <CustSubscriptionId>myawsuser-paramgrp</CustSubscriptionId>
        <SnsTopicArn>arn:aws:sns:us-east-1:802#########:myawsuser-RDS</SnsTopicArn>
      </EventSubscription>
      <EventSubscription>
        <Enabled>true</Enabled>
        <CustomerAwsId>802#########</CustomerAwsId>
        <SourceType>db-security-group</SourceType>
        <Status>active</Status>
        <SubscriptionCreationTime>2014-04-25 21:43:25.542</SubscriptionCreationTime>
        <EventCategoriesList>
          <EventCategory>configuration change</EventCategory>
          <EventCategory>failure</EventCategory>
        </EventCategoriesList>
        <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>
        <SnsTopicArn>arn:aws:sns:us-east-1:802#########:myawsuser-RDS</SnsTopicArn>
      </EventSubscription>
      <EventSubscription>
        <Enabled>true</Enabled>
        <CustomerAwsId>802#########</CustomerAwsId>
        <SourceType>db-snapshot</SourceType>
        <Status>active</Status>
        <SubscriptionCreationTime>2014-04-25 21:41:24.405</SubscriptionCreationTime>
        <EventCategoriesList>
          <EventCategory>creation</EventCategory>
          <EventCategory>failure</EventCategory>
          <EventCategory>deletion</EventCategory>
        </EventCategoriesList>
        <CustSubscriptionId>myawsuser-snapshot</CustSubscriptionId>
        <SnsTopicArn>arn:aws:sns:us-east-1:802#########:myawsuser-RDS</SnsTopicArn>
      </EventSubscription>
    </EventSubscriptionsList>
  </DescribeEventSubscriptionsResult>
  <ResponseMetadata>
    <RequestId>c2c6da4e-bde9-11d3-fe11-33d33a9bb7e3</RequestId>
  </ResponseMetadata>
```

```
</DescribeEventSubscriptionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeExportTasks

Returns information about a snapshot or cluster export to Amazon S3. This API operation supports pagination.

Request Parameters

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

ExportTaskIdentifier

The identifier of the snapshot or cluster export task to be described.

Type: String

Required: No

Filters.Filter.N

Filters specify one or more snapshot or cluster exports to describe. The filters are specified as name-value pairs that define what to include in the output. Filter names and values are case-sensitive.

Supported filters include the following:

- `export-task-identifier` - An identifier for the snapshot or cluster export task.
- `s3-bucket` - The Amazon S3 bucket the data is exported to.
- `source-arn` - The Amazon Resource Name (ARN) of the snapshot or cluster exported to Amazon S3.
- `status` - The status of the export task. Must be lowercase. Valid statuses are the following:
  - `canceled`
  - `canceling`
  - `complete`
  - `failed`
  - `in_progress`
  - `starting`

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

The maximum number of records to include in the response. If more records exist than the specified value, a pagination token called a marker is included in the response. You can use the marker in a later `DescribeExportTasks` request to retrieve the remaining results.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Valid Range: Minimum value of 20. Maximum value of 100.

Required: No

SourceArn

The Amazon Resource Name (ARN) of the snapshot or cluster exported to Amazon S3.

Type: String

Required: No

SourceType

The type of source for the export.

Type: String

Valid Values: `SNAPSHOT | CLUSTER`

Required: No

Response Elements

The following elements are returned by the service.

ExportTasks.ExportTask.N

Information about an export of a snapshot or cluster to Amazon S3.

Type: Array of ExportTask objects

Marker

A pagination token that can be used in a later `DescribeExportTasks` request. A marker is used for pagination to identify the location to begin output for the next response of `DescribeExportTasks`.

Type: String

Errors

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

ExportTaskNotFound

The export task doesn't exist.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3

- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeGlobalClusters

Returns information about Aurora global database clusters. This API supports pagination.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

> **Note**
>
> This action only applies to Aurora DB clusters.

Request Parameters

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

Filters.Filter.N

A filter that specifies one or more global database clusters to describe. This parameter is case-sensitive.

Currently, the only supported filter is `region`.

If used, the request returns information about any global cluster with at least one member (primary or secondary) in the specified Amazon Web Services Regions.

Type: Array of Filter objects

Required: No

GlobalClusterIdentifier

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

Constraints:

- If supplied, must match an existing DBClusterIdentifier.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

GlobalClusters.GlobalClusterMember.N

The list of global clusters returned by this request.

Type: Array of GlobalCluster objects

Marker

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

Type: String

Errors

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

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeIntegrations

Describe one or more zero-ETL integrations with Amazon Redshift.

Request Parameters

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

Filters.Filter.N

A filter that specifies one or more resources to return.

Type: Array of Filter objects

Required: No

IntegrationIdentifier

The unique identifier of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[a-zA-Z0-9_:\-\/]+`

Required: No

Marker

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

Type: String

Length Constraints: Minimum length of 1. Maximum length of 340.

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

Integrations.Integration.N

A list of integrations.

Type: Array of Integration objects

Marker

A pagination token that can be used in a later `DescribeIntegrations` request.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 340.

Errors

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

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeIntegrations.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeIntegration
   &IntegrationIdentifier=f30acbd8-aaab-4c3c-afb5-09d51d041037
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-east-1/rds/aws4_request
   &X-Amz-Date=20230110T005253Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<DescribeIntegrationsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
    <DescribeIntegrationsResult>
        <Integrations>
            <Integration>
                <SourceArn>arn:aws:rds:us-east-1:123456789012:cluster:serverless-
source-cluster</SourceArn>
                <IntegrationName>my-integration</IntegrationName>
                <IntegrationCreateTime>2023-12-14T00:15:21.358Z</IntegrationCreateTime>
                <IntegrationArn>arn:aws:rds:us-
east-1:123456789012:integration:f30acbd8-aaab-4c3c-afb5-09d51d041037</IntegrationArn>
                <TargetArn>arn:aws:redshift-serverless:us-
east-1:123456789012:namespace/0844171c-1e01-4d9f-be52-89e6c44083e5</TargetArn>
                <Tags/>
                <CreateTime>2023-12-14T00:15:21.358Z</CreateTime>
                <KMSKeyId>arn:aws:kms:us-east-1:211223847500:key/eda7134d-cd39-4af1-
b62b-ad2415b6bccc</KMSKeyId>
                <Status>creating</Status>
            </Integration>
        </Integrations>
    </DescribeIntegrationsResult>
    <ResponseMetadata>
        <RequestId>6e131503-e920-4c3d-b934-a401a69c3b24</RequestId>
    </ResponseMetadata>
</DescribeIntegrationsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeOptionGroupOptions

Describes all available options for the specified engine.

Request Parameters

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

EngineName

The name of the engine to describe options for.

Valid Values:

- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

MajorEngineVersion

If specified, filters the results to include only options for the specified major engine version.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

OptionGroupOptions.OptionGroupOption.N

List of available option group options.

Type: Array of OptionGroupOption objects

Errors

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

Examples

Example

This example illustrates one usage of DescribeOptionGroupOptions.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeOptionGroupOptions
   &EngineName=oracle-se1
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194733Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=3792d1669ce65ba1ba6a85b2e4057235e46dd3d0072663c17f4b4439fd8af702
```

Sample Response

```
<DescribeOptionGroupOptionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeOptionGroupOptionsResult>
    <OptionGroupOptions>
      <OptionGroupOption>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <PortRequired>false</PortRequired>
        <Persistent>false</Persistent>
        <OptionsDependedOn>
          <OptionName>XMLDB</OptionName>
        </OptionsDependedOn>
        <OptionsConflictsWith/>
        <Permanent>false</Permanent>
```

```
        <Description>Oracle Application Express Runtime Environment</Description>
        <Name>APEX</Name>
        <OptionGroupOptionSettings/>
        <EngineName>oracle-se1</EngineName>
        <MinimumRequiredMinorEngineVersion>0.2.v4</MinimumRequiredMinorEngineVersion>
      </OptionGroupOption>
      <OptionGroupOption>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <PortRequired>false</PortRequired>
        <Persistent>false</Persistent>
        <OptionsDependedOn>
          <OptionName>APEX</OptionName>
        </OptionsDependedOn>
        <OptionsConflictsWith/>
        <Permanent>false</Permanent>
        <Description>Oracle Application Express Development Environment</Description>
        <Name>APEX-DEV</Name>
        <OptionGroupOptionSettings/>
        <EngineName>oracle-se1</EngineName>
        <MinimumRequiredMinorEngineVersion>0.2.v4</MinimumRequiredMinorEngineVersion>
      </OptionGroupOption>
      <OptionGroupOption>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <PortRequired>true</PortRequired>
        <Persistent>false</Persistent>
        <OptionsDependedOn/>
        <OptionsConflictsWith/>
        <Permanent>false</Permanent>
        <Description>Oracle Enterprise Manager (Database Control only)</Description>
        <DefaultPort>1158</DefaultPort>
        <Name>OEM</Name>
        <OptionGroupOptionSettings/>
        <EngineName>oracle-se1</EngineName>
        <MinimumRequiredMinorEngineVersion>0.2.v3</MinimumRequiredMinorEngineVersion>
      </OptionGroupOption>
    </OptionGroupOptions>
  </DescribeOptionGroupOptionsResult>
  <ResponseMetadata>
    <RequestId>b7b26a8f-b98c-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeOptionGroupOptionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeOptionGroups

Describes the available option groups.

Request Parameters

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

EngineName

A filter to only include option groups associated with this database engine.

Valid Values:

- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

MajorEngineVersion

Filters the list of option groups to only include groups associated with a specific database engine version. If specified, then EngineName must also be specified.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

OptionGroupName

The name of the option group to describe. Can't be supplied together with EngineName or MajorEngineVersion.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

OptionGroupsList.OptionGroup.N

List of option groups.

Type: Array of OptionGroup objects

Errors

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

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeOptionGroups.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeOptionGroups
   &MaxRecords=100
   &OptionGroupName=myawsuser-grp1
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-east-1/rds/aws4_request
   &X-Amz-Date=20140421T231357Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
```

```
    &X-Amz-Signature=fabfbeb85c44e3f151d44211790c5135a9074fdb8d85ec117788ac6cfab6c5bc
```

Sample Response

```
<DescribeOptionGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeOptionGroupsResult>
    <OptionGroupsList>
      <OptionGroup>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>5.6</MajorEngineVersion>
        <OptionGroupName>myawsuser-grp1</OptionGroupName>
        <EngineName>mysql</EngineName>
        <OptionGroupDescription>my test option group</OptionGroupDescription>
        <Options/>
      </OptionGroup>
    </OptionGroupsList>
  </DescribeOptionGroupsResult>
  <ResponseMetadata>
    <RequestId>8c6201fc-b9ff-11d3-f92b-31fa5e8dbc99</RequestId>
  </ResponseMetadata>
</DescribeOptionGroupsResponse>
```

Example

This example illustrates one usage of DescribeOptionGroups.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=DescribeOptionGroups
    &MaxRecords=100
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140613/us-west-2/rds/aws4_request
    &X-Amz-Date=20140613T223341Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=5ae331adcd684c27d66e0b794a51933effe32a4c026eba2e994ae483ee47a0ba
```

Sample Response


```
<DescribeOptionGroupsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeOptionGroupsResult>
    <OptionGroupsList>
      <OptionGroup>
        <OptionGroupName>default:mysql-5-5</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>5.5</MajorEngineVersion>
        <EngineName>mysql</EngineName>
        <OptionGroupDescription>Default option group MySQL 5.5</OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:postgres-9-3</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>9.3</MajorEngineVersion>
        <EngineName>postgres</EngineName>
        <OptionGroupDescription>Default option group for postgres 9.3</
OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:sqlserver-ex-10-50</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>10.50</MajorEngineVersion>
        <EngineName>sqlserver-ex</EngineName>
        <OptionGroupDescription>Default option group for sqlserver-ex 10.50</
OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:sqlserver-se-10-50-mirrored</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>10.50</MajorEngineVersion>
        <EngineName>sqlserver-se</EngineName>
        <OptionGroupDescription>Default Mirroring-enabled option group for sqlserver-se
 10.50</OptionGroupDescription>
        <Options>
```

```
          <Option>
            <OptionName>Mirroring</OptionName>
            <OptionDescription>SQLServer Database Mirroring</OptionDescription>
            <Persistent>false</Persistent>
            <Permanent>false</Permanent>
            <OptionSettings/>
            <VpcSecurityGroupMemberships/>
            <DBSecurityGroupMemberships/>
          </Option>
        </Options>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>default:sqlserver-se-11-00</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>11.00</MajorEngineVersion>
        <EngineName>sqlserver-se</EngineName>
        <OptionGroupDescription>Default option group for sqlserver-se 11.00</
OptionGroupDescription>
        <Options/>
      </OptionGroup>
      <OptionGroup>
        <OptionGroupName>myawsuser-opt-grp</OptionGroupName>
        <AllowsVpcAndNonVpcInstanceMemberships>false</
AllowsVpcAndNonVpcInstanceMemberships>
        <MajorEngineVersion>11.2</MajorEngineVersion>
        <EngineName>oracle-ee</EngineName>
        <OptionGroupDescription>test option group</OptionGroupDescription>
        <Options>
          <Option>
            <OptionName>NATIVE_NETWORK_ENCRYPTION</OptionName>
            <OptionDescription>Oracle Advanced Security - Native Network Encryption</
OptionDescription>
            <Persistent>false</Persistent>
            <Permanent>false</Permanent>
            <OptionSettings>
              <OptionSetting>
                <DataType>STRING</DataType>
                <IsModifiable>true</IsModifiable>
                <IsCollection>true</IsCollection>
                <Description>Specifies list of checksumming algorithms in order of
 intended use</Description>
                <Name>SQLNET.CRYPTO_CHECKSUM_TYPES_SERVER</Name>
                <Value>SHA1,MD5</Value>
```

```
                <ApplyType>STATIC</ApplyType>
                <DefaultValue>SHA1,MD5</DefaultValue>
                <AllowedValues>SHA1,MD5</AllowedValues>
              </OptionSetting>
              <OptionSetting>
                <DataType>STRING</DataType>
                <IsModifiable>true</IsModifiable>
                <IsCollection>true</IsCollection>
                <Description>Specifies list of encryption algorithms in order of
 intended use</Description>
                <Name>SQLNET.ENCRYPTION_TYPES_SERVER</Name>

 <Value>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
Value>
                <ApplyType>STATIC</ApplyType>

 <DefaultValue>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
DefaultValue>

 <AllowedValues>RC4_256,AES256,AES192,3DES168,RC4_128,AES128,3DES112,RC4_56,DES,RC4_40,DES40</
AllowedValues>
              </OptionSetting>
              <OptionSetting>
                <DataType>STRING</DataType>
                <IsModifiable>true</IsModifiable>
                <IsCollection>false</IsCollection>
                <Description>Specifies the desired encryption behavior</Description>
                <Name>SQLNET.ENCRYPTION_SERVER</Name>
                <Value>REQUESTED</Value>
                <ApplyType>STATIC</ApplyType>
                <DefaultValue>REQUESTED</DefaultValue>
                <AllowedValues>ACCEPTED,REJECTED,REQUESTED,REQUIRED</AllowedValues>
              </OptionSetting>
              <OptionSetting>
                <DataType>STRING</DataType>
                <IsModifiable>true</IsModifiable>
                <IsCollection>false</IsCollection>
                <Description>Specifies the desired data integrity behavior</
Description>
                <Name>SQLNET.CRYPTO_CHECKSUM_SERVER</Name>
                <Value>REQUESTED</Value>
                <ApplyType>STATIC</ApplyType>
                <DefaultValue>REQUESTED</DefaultValue>
                <AllowedValues>ACCEPTED,REJECTED,REQUESTED,REQUIRED</AllowedValues>
```

```
              </OptionSetting>
            </OptionSettings>
            <VpcSecurityGroupMemberships/>
            <DBSecurityGroupMemberships/>
          </Option>
          <Option>
            <OptionName>XMLDB</OptionName>
            <OptionDescription>Oracle XMLDB Repository</OptionDescription>
            <Persistent>false</Persistent>
            <Permanent>false</Permanent>
            <OptionSettings/>
            <VpcSecurityGroupMemberships/>
            <DBSecurityGroupMemberships/>
          </Option>
          <Option>
            <Port>1158</Port>
            <OptionName>OEM</OptionName>
            <OptionDescription>Oracle Enterprise Manager (Database Control only)</
OptionDescription>
            <Persistent>false</Persistent>
            <Permanent>false</Permanent>
            <OptionSettings/>
            <VpcSecurityGroupMemberships/>
            <DBSecurityGroupMemberships>
              <DBSecurityGroup>
                <Status>authorized</Status>
                <DBSecurityGroupName>sg-db-sec-grp</DBSecurityGroupName>
              </DBSecurityGroup>
            </DBSecurityGroupMemberships>
          </Option>
        </Options>
      </OptionGroup>
          <Option>
            <OptionName>APEX</OptionName>
            <OptionDescription>Oracle Application Express Runtime Environment</
OptionDescription>
            <Persistent>false</Persistent>
            <Permanent>false</Permanent>
            <OptionSettings/>
            <VpcSecurityGroupMemberships/>
            <DBSecurityGroupMemberships/>
          </Option>
        </Options>
      </OptionGroup>
```

```
    </OptionGroupsList>
  </DescribeOptionGroupsResult>
  <ResponseMetadata>
    <RequestId>b2ce0772-f55a-11e3-bd0f-bb88ac05a37c</RequestId>
  </ResponseMetadata>
</DescribeOptionGroupsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeOrderableDBInstanceOptions

Describes the orderable DB instance options for a specified DB engine.

Request Parameters

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

Engine

The name of the database engine to describe DB instance options for.

Valid Values:

- `aurora-mysql`
- `aurora-postgresql`
- `custom-oracle-ee`
- `custom-oracle-ee-cdb`
- `custom-oracle-se2`
- `custom-oracle-se2-cdb`
- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: Yes

AvailabilityZoneGroup

The Availability Zone group associated with a Local Zone. Specify this parameter to retrieve available options for the Local Zones in the group.

Omit this parameter to show the available options in the specified Amazon Web Services Region.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DBInstanceClass

A filter to include only the available options for the specified DB instance class.

Type: String

Required: No

EngineVersion

A filter to include only the available options for the specified engine version.

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

LicenseModel

A filter to include only the available options for the specified license model.

RDS Custom supports only the BYOL licensing model.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 1000.

Type: Integer

Required: No

Vpc

Specifies whether to show only VPC or non-VPC offerings. RDS Custom supports only VPC offerings.

RDS Custom supports only VPC offerings. If you describe non-VPC offerings for RDS Custom, the output shows VPC offerings.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

OrderableDBInstanceOptions.OrderableDBInstanceOption.N

An `OrderableDBInstanceOption` structure containing information about orderable options for the DB instance.

Type: Array of OrderableDBInstanceOption objects

Errors

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

Examples

Example

This example illustrates one usage of DescribeOrderableDBInstanceOptions.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeOrderableDBInstanceOptions
   &Engine=mysql
   &EngineVersion=8.0.26
   &DBInstanceClass=db.r6gd.large
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140421/us-west-2/rds/aws4_request
   &X-Amz-Date=20211020T205537Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=b49545dd3c933bdded80655d433d84bf743261ea1bebb33a7922c5c2c5240cd8
```

Sample Response


```
<DescribeOrderableDBInstanceOptionsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribeOrderableDBInstanceOptionsResult>
    <Marker>ZGIubTEuc21hbGwKZ2VuZXJhbC1wdWJsaWMtbGljZW5zZQo1LjEuNjkKTg==</Marker>
    <OrderableDBInstanceOptions>
      <OrderableDBInstanceOption>
        <MultiAZCapable>true</MultiAZCapable>
        <Engine>mysql</Engine>
        <LicenseModel>general-public-license</LicenseModel>
        <ReadReplicaCapable>true</ReadReplicaCapable>
        <Vpc>false</Vpc>
        <EngineVersion>5.1.57</EngineVersion>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-west-2a</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2b</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2c</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
        </AvailabilityZones>
        <DBInstanceClass>db.m1.large</DBInstanceClass>
      </OrderableDBInstanceOption>
      <OrderableDBInstanceOption>
        <MultiAZCapable>true</MultiAZCapable>
        <Engine>mysql</Engine>
        <LicenseModel>general-public-license</LicenseModel>
        <ReadReplicaCapable>true</ReadReplicaCapable>
        <Vpc>true</Vpc>
        <EngineVersion>5.1.57</EngineVersion>
        <AvailabilityZones>
          <AvailabilityZone>
            <Name>us-west-2a</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
```

```
            <Name>us-west-2b</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
          <AvailabilityZone>
            <Name>us-west-2c</Name>
            <ProvisionedIopsCapable>true</ProvisionedIopsCapable>
          </AvailabilityZone>
        </AvailabilityZones>
        <DBInstanceClass>db.m1.large</DBInstanceClass>
      </OrderableDBInstanceOption>
    </OrderableDBInstanceOptions>
  </DescribeOrderableDBInstanceOptionsResult>
  <ResponseMetadata>
    <RequestId>b7ceb73e-b98c-11d3-a907-5a2c468b9cb0</RequestId>
  </ResponseMetadata>
</DescribeOrderableDBInstanceOptionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribePendingMaintenanceActions

Returns a list of resources (for example, DB instances) that have at least one pending maintenance action.

This API follows an eventual consistency model. This means that the result of the `DescribePendingMaintenanceActions` command might not be immediately visible to all subsequent RDS commands. Keep this in mind when you use `DescribePendingMaintenanceActions` immediately after using a previous API command such as `ApplyPendingMaintenanceActions`.

Request Parameters

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

Filters.Filter.N

A filter that specifies one or more resources to return pending maintenance actions for.

Supported filters:

- `db-cluster-id` - Accepts DB cluster identifiers and DB cluster Amazon Resource Names (ARNs). The results list only includes pending maintenance actions for the DB clusters identified by these ARNs.
- `db-instance-id` - Accepts DB instance identifiers and DB instance ARNs. The results list only includes pending maintenance actions for the DB instances identified by these ARNs.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

ResourceIdentifier

The ARN of a resource to return pending maintenance actions for.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

PendingMaintenanceActions.ResourcePendingMaintenanceActions.N

A list of the pending maintenance actions for the resource.

Type: Array of ResourcePendingMaintenanceActions objects

Errors

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

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribePendingMaintenanceActions.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribePendingMaintenanceActions
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141216/us-west-2/rds/aws4_request
   &X-Amz-Date=20140421T194732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

Sample Response

```
<DescribePendingMaintenanceActionsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribePendingMaintenanceActionsResult>
    <PendingMaintenanceActions>
      <ResourcePendingMaintenanceActions>
        <ResourceIdentifier>arn:aws:rds:us-east-1:123456781234:db:my-instance</
ResourceIdentifier>
        <PendingMaintenanceActionDetails>
          <PendingMaintenanceAction>
            <Action>system-update</Action>
          </PendingMaintenanceAction>
        </PendingMaintenanceActionDetails>
      </ResourcePendingMaintenanceActions>
```

```
      <ResourcePendingMaintenanceActions>
        <ResourceIdentifier>arn:aws:rds:us-east-1:123456781234:db:another-instance</
ResourceIdentifier>
        <PendingMaintenanceActionDetails>
          <PendingMaintenanceAction>
            <Action>system-update</Action>
          </PendingMaintenanceAction>
        </PendingMaintenanceActionDetails>
      </ResourcePendingMaintenanceActions>
    </PendingMaintenanceActions>
  </DescribePendingMaintenanceActionsResult>
  <ResponseMetadata>
    <RequestId>dcfe0682-870c-11e4-9833-b3ad657ea9da</RequestId>
  </ResponseMetadata>
</DescribePendingMaintenanceActionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeReservedDBInstances

Returns information about reserved DB instances for this account, or about a specified reserved DB instance.

Request Parameters

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

DBInstanceClass

The DB instance class filter value. Specify this parameter to show only those reservations matching the specified DB instances class.

Type: String

Required: No

Duration

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

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

LeaseId

The lease identifier filter value. Specify this parameter to show only the reservation that matches the specified lease ID.

> **Note**
>
> Amazon Support might request the lease ID for an issue related to a reserved DB instance.

Type: String

Required: No

Marker

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

Type: String

Required: No

MaxRecords

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so you can retrieve the remaining results.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

MultiAZ

Specifies whether to show only those reservations that support Multi-AZ.

Type: Boolean

Required: No

OfferingType

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

Valid Values: `"Partial Upfront" | "All Upfront" | "No Upfront"`

Type: String

Required: No

ProductDescription

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

Type: String

Required: No

ReservedDBInstanceId

The reserved DB instance identifier filter value. Specify this parameter to show only the reservation that matches the specified reservation ID.

Type: String

Required: No

ReservedDBInstancesOfferingId

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

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

ReservedDBInstances.ReservedDBInstance.N

A list of reserved DB instances.

Type: Array of ReservedDBInstance objects

Errors

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

ReservedDBInstanceNotFound

The specified reserved DB Instance not found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeReservedDBInstances.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=DescribeReservedDBInstances
   &ReservedDBInstanceId=customerSpecifiedID
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140420/us-west-2/rds/aws4_request
   &X-Amz-Date=20140420T162211Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=3312d17a4c43bcd209bc22a0778dd23e73f8434254abbd7ac53b89ade3dae88e
```

Sample Response

```
<DescribeReservedDBInstancesResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeReservedDBInstancesResult>
    <ReservedDBInstances>
      <ReservedDBInstance>
        <OfferingType>Partial Upfront</OfferingType>
        <CurrencyCode>USD</CurrencyCode>
        <RecurringCharges/>
        <ProductDescription>mysql</ProductDescription>
        <ReservedDBInstancesOfferingId>649fd0c8-cf6d-47a0-bfa6-060f8e75e95f</
ReservedDBInstancesOfferingId>
        <MultiAZ>false</MultiAZ>
        <State>active</State>
        <ReservedDBInstanceId>myreservationid</ReservedDBInstanceId>
        <DBInstanceCount>1</DBInstanceCount>
        <StartTime>2014-05-15T00:25:14.131Z</StartTime>
        <Duration>31536000</Duration>
        <FixedPrice>227.5</FixedPrice>
        <UsagePrice>0.046</UsagePrice>
        <DBInstanceClass>db.m1.small</DBInstanceClass>
      </ReservedDBInstance>
  </DescribeReservedDBInstancesResult>
  <ResponseMetadata>
    <RequestId>c695119b-2961-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</DescribeReservedDBInstancesResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3

- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeReservedDBInstancesOfferings

Lists available reserved DB instance offerings.

Request Parameters

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

DBInstanceClass

The DB instance class filter value. Specify this parameter to show only the available offerings matching the specified DB instance class.

Type: String

Required: No

Duration

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

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

Type: String

Required: No

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

The maximum number of records to include in the response. If more than the `MaxRecords` value is available, a pagination token called a marker is included in the response so you can retrieve the remaining results.

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

MultiAZ

Specifies whether to show only those reservations that support Multi-AZ.

Type: Boolean

Required: No

OfferingType

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

Valid Values: `"Partial Upfront" | "All Upfront" | "No Upfront"`

Type: String

Required: No

ProductDescription

Product description filter value. Specify this parameter to show only the available offerings that contain the specified product description.

> **Note**
>
> The results show offerings that partially match the filter value.

Type: String

Required: No

ReservedDBInstancesOfferingId

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

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

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

ReservedDBInstancesOfferings.ReservedDBInstancesOffering.N

A list of reserved DB instance offerings.

Type: Array of ReservedDBInstancesOffering objects

Errors

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

ReservedDBInstancesOfferingNotFound

Specified offering does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DescribeReservedDBInstancesOfferings.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeReservedDBInstancesOfferings
   &ReservedDBInstancesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140411/us-east-1/rds/aws4_request
   &X-Amz-Date=20140411T203327Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=545f04acffeb4b80d2e778526b1c9da79d0b3097151c24f28e83e851d65422e2
```

Sample Response

```
<DescribeReservedDBInstancesOfferingsResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <DescribeReservedDBInstancesOfferingsResult>
    <ReservedDBInstancesOfferings>
      <ReservedDBInstancesOffering>
        <Duration>31536000</Duration>
        <OfferingType>Partial Upfront</OfferingType>
        <CurrencyCode>USD</CurrencyCode>
        <RecurringCharges>
          <RecurringCharge>
            <RecurringChargeFrequency>Hourly</RecurringChargeFrequency>
            <RecurringChargeAmount>0.123</RecurringChargeAmount>
          </RecurringCharge>
        </RecurringCharges>
        <FixedPrice>162.0</FixedPrice>
        <ProductDescription>mysql</ProductDescription>
        <UsagePrice>0.0</UsagePrice>
        <MultiAZ>false</MultiAZ>
        <ReservedDBInstancesOfferingId>SampleOfferingId</ReservedDBInstancesOfferingId>
```

```
        <DBInstanceClass>db.m1.small</DBInstanceClass>
      </ReservedDBInstancesOffering>
    </ReservedDBInstancesOfferings>
  </DescribeReservedDBInstancesOfferingsResult>
  <ResponseMetadata>
    <RequestId>521b420a-2961-11e1-bd06-6fe008f046c3</RequestId>
  </ResponseMetadata>
</DescribeReservedDBInstancesOfferingsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeSourceRegions

Returns a list of the source Amazon Web Services Regions where the current Amazon Web Services Region can create a read replica, copy a DB snapshot from, or replicate automated backups from.

Use this operation to determine whether cross-Region features are supported between other Regions and your current Region. This operation supports pagination.

To return information about the Regions that are enabled for your account, or all Regions, use the EC2 operation `DescribeRegions`. For more information, see DescribeRegions in the *Amazon EC2 API Reference*.

Request Parameters

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

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Default: 100

Constraints: Minimum 20, maximum 100.

Type: Integer

Required: No

RegionName

The source Amazon Web Services Region name. For example, `us-east-1`.

Constraints:

- Must specify a valid Amazon Web Services Region name.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

SourceRegions.SourceRegion.N

A list of `SourceRegion` instances that contains each source Amazon Web Services Region that the current Amazon Web Services Region can get a read replica or a DB snapshot from.

Type: Array of SourceRegion objects

Errors

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

Examples

Example

This example illustrates one usage of DescribeSourceRegions.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=DescribeSourceRegions
   &MaxRecords=10
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140429/us-east-1/rds/aws4_request
   &X-Amz-Date=20140429T175351Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=9164337efa99caf850e874a1cb7ef62f3cea29d0b448b9e0e7c53b288ddffed2
```

Sample Response

```
<DescribeSourceRegionsResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DescribeSourceRegionsResult>
    <SourceRegions>
      <SourceRegion>
        <RegionName>ap-northeast-1</RegionName>
        <EndPoint>https://rds.ap-northeast-1.amazonaws.com</EndPoint>
        <Status>available</Status>
      </SourceRegion>
      <SourceRegion>
        <RegionName>ap-southeast-2</RegionName>
        <EndPoint>https://rds.ap-southeast-2.amazonaws.com</EndPoint>
        <Status>available</Status>
      </SourceRegion>
    </SourceRegions>
  </DescribeSourceRegionsResult>
  <ResponseMetadata>
    <RequestId>01b2685a-b978-11d3-f272-7cd6cce12cc5</RequestId>
  </ResponseMetadata>
</DescribeSourceRegionsResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeTenantDatabases

Describes the tenant databases in a DB instance that uses the multi-tenant configuration. Only RDS for Oracle CDB instances are supported.

Request Parameters

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

DBInstanceIdentifier

The user-supplied DB instance identifier, which must match the identifier of an existing instance owned by the Amazon Web Services account. This parameter isn't case-sensitive.

Type: String

Required: No

Filters.Filter.N

A filter that specifies one or more database tenants to describe.

Supported filters:

- `tenant-db-name` - Tenant database names. The results list only includes information about the tenant databases that match these tenant DB names.
- `tenant-database-resource-id` - Tenant database resource identifiers.
- `dbi-resource-id` - DB instance resource identifiers. The results list only includes information about the tenants contained within the DB instances identified by these resource identifiers.

Type: Array of Filter objects

Required: No

Marker

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

Type: String

Required: No

MaxRecords

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

Type: Integer

Required: No

TenantDBName

The user-supplied tenant database name, which must match the name of an existing tenant database on the specified DB instance owned by your Amazon Web Services account. This parameter isn't case-sensitive.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

Marker

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

Type: String

TenantDatabases.TenantDatabase.N

An array of the tenant databases requested by the `DescribeTenantDatabases` operation.

Type: Array of TenantDatabase objects

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DescribeValidDBInstanceModifications

You can call `DescribeValidDBInstanceModifications` to learn what modifications you can make to your DB instance. You can use this information when you call `ModifyDBInstance`.

This command doesn't apply to RDS Custom.

Request Parameters

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

DBInstanceIdentifier

The customer identifier or the ARN of your DB instance.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

ValidDBInstanceModificationsMessage

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the `DescribeValidDBInstanceModifications` action. You can use this information when you call `ModifyDBInstance`.

Type: ValidDBInstanceModificationsMessage object

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DisableHttpEndpoint

Disables the HTTP endpoint for the specified DB cluster. Disabling this endpoint disables RDS Data API.

For more information, see Using RDS Data API in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation applies only to Aurora Serverless v2 and provisioned DB clusters. To disable the HTTP endpoint for Aurora Serverless v1 DB clusters, use the `EnableHttpEndpoint` parameter of the `ModifyDBCluster` operation.

Request Parameters

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

ResourceArn

The Amazon Resource Name (ARN) of the DB cluster.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

HttpEndpointEnabled

Indicates whether the HTTP endpoint is enabled or disabled for the DB cluster.

Type: Boolean

ResourceArn

The ARN of the DB cluster.

Type: String

Errors

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

InvalidResourceStateFault

The operation can't be performed because another operation is in progress.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

DownloadDBLogFilePortion

Downloads all or a portion of the specified log file, up to 1 MB in size.

This command doesn't apply to RDS Custom.

> **Note**
>
> This operation uses resources on database instances. Because of this, we recommend publishing database logs to CloudWatch and then using the GetLogEvents operation. For more information, see GetLogEvents in the *Amazon CloudWatch Logs API Reference*.

Request Parameters

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

DBInstanceIdentifier

The customer-assigned name of the DB instance that contains the log files you want to list.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

LogFileName

The name of the log file to be downloaded.

Type: String

Required: Yes

Marker

The pagination token provided in the previous request or "0". If the Marker parameter is specified the response includes only records beyond the marker until the end of the file or up to NumberOfLines.

Type: String

Required: No

NumberOfLines

The number of lines to download. If the number of lines specified results in a file over 1 MB in size, the file is truncated at 1 MB in size.

If the NumberOfLines parameter is specified, then the block of lines returned can be from the beginning or the end of the log file, depending on the value of the Marker parameter.

- If neither Marker or NumberOfLines are specified, the entire log file is returned up to a maximum of 10000 lines, starting with the most recent log entries first.
- If NumberOfLines is specified and Marker isn't specified, then the most recent lines from the end of the log file are returned.
- If Marker is specified as "0", then the specified number of lines from the beginning of the log file are returned.
- You can download the log file in blocks of lines by specifying the size of the block using the NumberOfLines parameter, and by specifying a value of "0" for the Marker parameter in your first request. Include the Marker value returned in the response as the Marker value for the next request, continuing until the AdditionalDataPending response element returns false.

Type: Integer

Required: No

Response Elements

The following elements are returned by the service.

AdditionalDataPending

A Boolean value that, if true, indicates there is more data to be downloaded.

Type: Boolean

LogFileData

Entries from the specified log file.

Type: String

Marker

A pagination token that can be used in a later `DownloadDBLogFilePortion` request.

Type: String

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

DBInstanceNotReady

An attempt to download or examine log files didn't succeed because an Aurora Serverless v2 instance was paused.

HTTP Status Code: 503

DBLogFileNotFoundFault

`LogFileName` doesn't refer to an existing DB log file.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of DownloadDBLogFilePortion.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
  ?Action=DownloadDBLogFilePortion
  &DBInstanceIdentifier=myexampledb
  &LogFileName=log%2FERROR
  &Marker=0
```

```
  &NumberOfLines=50
  &Version=2014-10-31
  &X-Amz-Algorithm=AWS4-HMAC-SHA256
  &X-Amz-Credential=AKIADQKE4SARGYLE/20140127/us-west-2/rds/aws4_request
  &X-Amz-Date=20140127T235259Z
  &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
  &X-Amz-Signature=2171c5a8e91a70202e77de7e81df75787f3bbd6b4ea97f7a426205474fcc446f
```

Sample Response

```
<DownloadDBLogFilePortionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <DownloadDBLogFilePortionResult>
    <Marker>0:4485</Marker>
    <LogFileData>??2014-01-26 23:59:00.01 spid54      Microsoft SQL Server 2012 -
 11.0.2100.60 (X64)

    Feb 10 2012 19:39:15

    Copyright (c) Microsoft Corporation

    Web Edition (64-bit) on Windows NT 6.1 &lt;X64&gt; (Build 7601: Service Pack 1)
 (Hypervisor)



2014-01-26 23:59:00.01 spid54      (c) Microsoft Corporation.

2014-01-26 23:59:00.01 spid54      All rights reserved.

2014-01-26 23:59:00.01 spid54      Server process ID is 2976.

2014-01-26 23:59:00.01 spid54      System Manufacturer: 'Xen', System Model: 'HVM
 domU'.

2014-01-26 23:59:00.01 spid54      Authentication mode is MIXED.

2014-01-26 23:59:00.01 spid54      Logging SQL Server messages in file 'D:\RDSDBDATA
\Log\ERROR'.

2014-01-26 23:59:00.01 spid54      The service account is 'WORKGROUP\AMAZONA-NUQUUMV$'.
 This is an informational message; no user action is required.
```

```
2014-01-26 23:59:00.01 spid54      The error log has been reinitialized. See the
 previous log for older entries.

2014-01-27 00:00:56.42 spid25s     This instance of SQL Server has been using a process
 ID of 2976 since 10/21/2013 2:16:50 AM (local) 10/21/2013 2:16:50 AM (UTC). This is an
 informational message only; no user action is required.

2014-01-27 09:35:15.43 spid71      I/O is frozen on database model. No user action is
 required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid72      I/O is frozen on database msdb. No user action is
 required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid74      I/O is frozen on database rdsadmin. No user action
 is required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:15.44 spid73      I/O is frozen on database master. No user action is
 required. However, if I/O is not resumed promptly, you could cancel the backup.

2014-01-27 09:35:25.57 spid73      I/O was resumed on database master. No user action
 is required.

2014-01-27 09:35:25.57 spid74      I/O was resumed on database rdsadmin. No user action
 is required.

2014-01-27 09:35:25.57 spid71      I/O was resumed on database model. No user action is
 required.

2014-01-27 09:35:25.57 spid72      I/O was resumed on database msdb. No user action is
 required.


</LogFileData>
    <AdditionalDataPending>false</AdditionalDataPending>
  </DownloadDBLogFilePortionResult>
  <ResponseMetadata>
    <RequestId>27143425-87ae-11e3-acc9-fb64b157268e</RequestId>
  </ResponseMetadata>
</DownloadDBLogFilePortionResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

EnableHttpEndpoint

Enables the HTTP endpoint for the DB cluster. By default, the HTTP endpoint isn't enabled.

When enabled, this endpoint provides a connectionless web service API (RDS Data API) for running SQL queries on the Aurora DB cluster. You can also query your database from inside the RDS console with the RDS query editor.

For more information, see Using RDS Data API in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation applies only to Aurora Serverless v2 and provisioned DB clusters. To enable the HTTP endpoint for Aurora Serverless v1 DB clusters, use the `EnableHttpEndpoint` parameter of the `ModifyDBCluster` operation.

Request Parameters

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

ResourceArn

The Amazon Resource Name (ARN) of the DB cluster.

Type: String

Required: Yes

Response Elements

The following elements are returned by the service.

HttpEndpointEnabled

Indicates whether the HTTP endpoint is enabled or disabled for the DB cluster.

Type: Boolean

ResourceArn

The ARN of the DB cluster.

Type: String

Errors

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

InvalidResourceStateFault

The operation can't be performed because another operation is in progress.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

FailoverDBCluster

Forces a failover for a DB cluster.

For an Aurora DB cluster, failover for a DB cluster promotes one of the Aurora Replicas (read-only instances) in the DB cluster to be the primary DB instance (the cluster writer).

For a Multi-AZ DB cluster, after RDS terminates the primary DB instance, the internal monitoring system detects that the primary DB instance is unhealthy and promotes a readable standby (read-only instances) in the DB cluster to be the primary DB instance (the cluster writer). Failover times are typically less than 35 seconds.

An Amazon Aurora DB cluster automatically fails over to an Aurora Replica, if one exists, when the primary DB instance fails. A Multi-AZ DB cluster automatically fails over to a readable standby DB instance when the primary DB instance fails.

To simulate a failure of a primary instance for testing, you can force a failover. Because each instance in a DB cluster has its own endpoint address, make sure to clean up and re-establish any existing connections that use those endpoint addresses when the failover is complete.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

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

DBClusterIdentifier

The identifier of the DB cluster to force a failover for. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing DB cluster.

Type: String

Required: Yes

TargetDBInstanceIdentifier

The name of the DB instance to promote to the primary DB instance.

Specify the DB instance identifier for an Aurora Replica or a Multi-AZ readable standby in the DB cluster, for example `mydbcluster-replica1`.

This setting isn't supported for RDS for MySQL Multi-AZ DB clusters.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of FailoverDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=FailoverDBCluster
    &DBClusterIdentifier=sample-cluster
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20150323/us-east-1/rds/aws4_request
    &X-Amz-Date=20150323T170232Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=9be705fa28a68244d5072722463a29a322f9ef8eb58a63c40a6f6547174dec44
```

Sample Response


```
<FailoverDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <FailoverDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <LatestRestorableTime>2015-03-23T17:00:54.893Z</LatestRestorableTime>
      <Engine>aurora</Engine>
      <Status>available</Status>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-922dc2fd</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>sample-group</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster.cluster-c1axbpgwvdfo.us-east-1.rds.amazonaws.com</
Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <PreferredBackupWindow>05:47-06:17</PreferredBackupWindow>
      <PreferredMaintenanceWindow>mon:10:16-mon:10:46</PreferredMaintenanceWindow>
      <EarliestRestorableTime>2015-03-04T23:08:59.159Z</EarliestRestorableTime>
      <DBClusterMembers>
        <DBClusterMember>
          <IsClusterWriter>false</IsClusterWriter>
          <DBInstanceIdentifier>sample-replica1</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
        </DBClusterMember>
        <DBClusterMember>
          <IsClusterWriter>true</IsClusterWriter>
          <DBInstanceIdentifier>sample-primary</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
        </DBClusterMember>
      </DBClusterMembers>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>awsuser</MasterUsername>
    </DBCluster>
  </FailoverDBClusterResult>
  <ResponseMetadata>
    <RequestId>659c3dba-d17e-11e4-9fd0-35e9d88e2515</RequestId>
```

```
  </ResponseMetadata>
</FailoverDBClusterResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

FailoverGlobalCluster

Promotes the specified secondary DB cluster to be the primary DB cluster in the global database cluster to fail over or switch over a global database. Switchover operations were previously called "managed planned failovers."

> **Note**
>
> Although this operation can be used either to fail over or to switch over a global database cluster, its intended use is for global database failover. To switch over a global database cluster, we recommend that you use the SwitchoverGlobalCluster operation instead.

How you use this operation depends on whether you are failing over or switching over your global database cluster:

- Failing over - Specify the `AllowDataLoss` parameter and don't specify the `Switchover` parameter.
- Switching over - Specify the `Switchover` parameter or omit it, but don't specify the `AllowDataLoss` parameter.

About failing over and switching over

While failing over and switching over a global database cluster both change the primary DB cluster, you use these operations for different reasons:

- *Failing over* - Use this operation to respond to an unplanned event, such as a Regional disaster in the primary Region. Failing over can result in a loss of write transaction data that wasn't replicated to the chosen secondary before the failover event occurred. However, the recovery process that promotes a DB instance on the chosen seconday DB cluster to be the primary writer DB instance guarantees that the data is in a transactionally consistent state.

  For more information about failing over an Amazon Aurora global database, see Performing managed failovers for Aurora global databases in the *Amazon Aurora User Guide*.
- *Switching over* - Use this operation on a healthy global database cluster for planned events, such as Regional rotation or to fail back to the original primary DB cluster after a failover operation. With this operation, there is no data loss.

For more information about switching over an Amazon Aurora global database, see Performing switchovers for Aurora global databases in the *Amazon Aurora User Guide*.

Request Parameters

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

GlobalClusterIdentifier

The identifier of the global database cluster (Aurora global database) this operation should apply to. The identifier is the unique key assigned by the user when the Aurora global database is created. In other words, it's the name of the Aurora global database.

Constraints:

- Must match the identifier of an existing global database cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

TargetDbClusterIdentifier

The identifier of the secondary Aurora DB cluster that you want to promote to the primary for the global database cluster. Use the Amazon Resource Name (ARN) for the identifier so that Aurora can locate the cluster in its Amazon Web Services Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

AllowDataLoss

Specifies whether to allow data loss for this global database cluster operation. Allowing data loss triggers a global failover operation.

If you don't specify `AllowDataLoss`, the global database cluster operation defaults to a switchover.

Constraints:

- Can't be specified together with the `Switchover` parameter.

Type: Boolean

Required: No

Switchover

Specifies whether to switch over this global database cluster.

Constraints:

- Can't be specified together with the `AllowDataLoss` parameter.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

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

DBClusterNotFoundFault

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

HTTP Status Code: 404

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ListTagsForResource

Lists all tags on an Amazon RDS resource.

For an overview on tagging an Amazon RDS resource, see Tagging Amazon RDS Resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS Resources in the *Amazon Aurora User Guide*.

Request Parameters

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

ResourceName

The Amazon RDS resource with tags to be listed. This value is an Amazon Resource Name (ARN). For information about creating an ARN, see Constructing an ARN for Amazon RDS in the *Amazon RDS User Guide*.

Type: String

Required: Yes

Filters.Filter.N

This parameter isn't currently supported.

Type: Array of Filter objects

Required: No

Response Elements

The following element is returned by the service.

TagList.Tag.N

List of tags returned by the `ListTagsForResource` operation.

Type: Array of Tag objects

Errors

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

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

DBClusterNotFoundFault

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

HTTP Status Code: 404

DBInstanceNotFound

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

HTTP Status Code: 404

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBSnapshotNotFound

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

HTTP Status Code: 404

DBSnapshotTenantDatabaseNotFoundFault

The specified snapshot tenant database wasn't found.

HTTP Status Code: 404

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

TenantDatabaseNotFound

The specified tenant database wasn't found in the DB instance.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of ListTagsForResource.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ListTagsForResource
    &ResourceName=arn%3Aaws%3Ards%3Aus-west-2%3A12345678910%3Adb%3Asample-sql
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20160304/us-west-2/rds/aws4_request
    &X-Amz-Date=20160304T205529Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=ad333e422a92110b6340a28a684f0ed78606cc48b29b25682df0173e04b93b85
```

Sample Response

```
<ListTagsForResourceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ListTagsForResourceResult>
    <TagList>
      <Tag>
        <Value>development-team</Value>
```

```
        <Key>owner</Key>
      </Tag>
      <Tag>
        <Value>test</Value>
        <Key>environment</Key>
      </Tag>
    </TagList>
  </ListTagsForResourceResult>
  <ResponseMetadata>
    <RequestId>71217a3c-e24b-11e5-a5e9-cad172f9e6c1</RequestId>
  </ResponseMetadata>
</ListTagsForResourceResponse>
```

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyActivityStream

Changes the audit policy state of a database activity stream to either locked (default) or unlocked. A locked policy is read-only, whereas an unlocked policy is read/write. If your activity stream is started and locked, you can unlock it, customize your audit policy, and then lock your activity stream. Restarting the activity stream isn't required. For more information, see Modifying a database activity stream in the *Amazon RDS User Guide*.

This operation is supported for RDS for Oracle and Microsoft SQL Server.

Request Parameters

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

AuditPolicyState

The audit policy state. When a policy is unlocked, it is read/write. When it is locked, it is read-only. You can edit your audit policy only when the activity stream is unlocked or stopped.

Type: String

Valid Values: `locked | unlocked`

Required: No

ResourceArn

The Amazon Resource Name (ARN) of the RDS for Oracle or Microsoft SQL Server DB instance. For example, `arn:aws:rds:us-east-1:12345667890:db:my-orcl-db`.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

EngineNativeAuditFieldsIncluded

Indicates whether engine-native audit fields are included in the database activity stream.

Type: Boolean

KinesisStreamName

The name of the Amazon Kinesis data stream to be used for the database activity stream.

Type: String

KmsKeyId

The Amazon KMS key identifier for encryption of messages in the database activity stream.

Type: String

Mode

The mode of the database activity stream.

Type: String

Valid Values: `sync | async`

PolicyStatus

The status of the modification to the policy state of the database activity stream.

Type: String

Valid Values: `locked | unlocked | locking-policy | unlocking-policy`

Status

The status of the modification to the database activity stream.

Type: String

Valid Values: `stopped | starting | started | stopping`

Errors

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

DBInstanceNotFound

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

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyCertificates

Override the system-default Secure Sockets Layer/Transport Layer Security (SSL/TLS) certificate for Amazon RDS for new DB instances, or remove the override.

By using this operation, you can specify an RDS-approved SSL/TLS certificate for new DB instances that is different from the default certificate provided by RDS. You can also use this operation to remove the override, so that new DB instances use the default certificate provided by RDS.

You might need to override the default certificate in the following situations:

- You already migrated your applications to support the latest certificate authority (CA) certificate, but the new CA certificate is not yet the RDS default CA certificate for the specified Amazon Web Services Region.
- RDS has already moved to a new default CA certificate for the specified Amazon Region, but you are still in the process of supporting the new CA certificate. In this case, you temporarily need additional time to finish your application changes.

For more information about rotating your SSL/TLS certificate for RDS DB engines, see Rotating Your SSL/TLS Certificate in the *Amazon RDS User Guide*.

For more information about rotating your SSL/TLS certificate for Aurora DB engines, see Rotating Your SSL/TLS Certificate in the *Amazon Aurora User Guide*.

Request Parameters

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

CertificateIdentifier

The new default certificate identifier to override the current one with.

To determine the valid values, use the `describe-certificates` Amazon CLI command or the `DescribeCertificates` API operation.

Type: String

Required: No

RemoveCustomerOverride

Specifies whether to remove the override for the default certificate. If the override is removed, the default certificate is the system default.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

Certificate

A CA certificate for an Amazon Web Services account.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: Certificate object

Errors

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

CertificateNotFound

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

HTTP Status Code: 404

See Also

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

- Amazon Command Line Interface
- Amazon SDK for .NET

- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyCurrentDBClusterCapacity

Set the capacity of an Aurora Serverless v1 DB cluster to a specific value.

Aurora Serverless v1 scales seamlessly based on the workload on the DB cluster. In some cases, the capacity might not scale fast enough to meet a sudden change in workload, such as a large number of new transactions. Call `ModifyCurrentDBClusterCapacity` to set the capacity explicitly.

After this call sets the DB cluster capacity, Aurora Serverless v1 can automatically scale the DB cluster based on the cooldown period for scaling up and the cooldown period for scaling down.

For more information about Aurora Serverless v1, see Using Amazon Aurora Serverless v1 in the *Amazon Aurora User Guide*.

> **Important**
>
> If you call `ModifyCurrentDBClusterCapacity` with the default `TimeoutAction`, connections that prevent Aurora Serverless v1 from finding a scaling point might be dropped. For more information about scaling points, see Autoscaling for Aurora Serverless v1 in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only applies to Aurora Serverless v1 DB clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The DB cluster identifier for the cluster being modified. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing DB cluster.

Type: String

Required: Yes

Capacity

The DB cluster capacity.

When you change the capacity of a paused Aurora Serverless v1 DB cluster, it automatically resumes.

Constraints:

- For Aurora MySQL, valid capacity values are 1, 2, 4, 8, 16, 32, 64, 128, and 256.
- For Aurora PostgreSQL, valid capacity values are 2, 4, 8, 16, 32, 64, 192, and 384.

Type: Integer

Required: No

SecondsBeforeTimeout

The amount of time, in seconds, that Aurora Serverless v1 tries to find a scaling point to perform seamless scaling before enforcing the timeout action. The default is 300.

Specify a value between 10 and 600 seconds.

Type: Integer

Required: No

TimeoutAction

The action to take when the timeout is reached, either `ForceApplyCapacityChange` or `RollbackCapacityChange`.

`ForceApplyCapacityChange`, the default, sets the capacity to the specified value as soon as possible.

`RollbackCapacityChange` ignores the capacity change if a scaling point isn't found in the timeout period.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

CurrentCapacity

The current capacity of the DB cluster.

Type: Integer

DBClusterIdentifier

A user-supplied DB cluster identifier. This identifier is the unique key that identifies a DB cluster.

Type: String

PendingCapacity

A value that specifies the capacity that the DB cluster scales to next.

Type: Integer

SecondsBeforeTimeout

The number of seconds before a call to `ModifyCurrentDBClusterCapacity` times out.

Type: Integer

TimeoutAction

The timeout action of a call to `ModifyCurrentDBClusterCapacity`, either `ForceApplyCapacityChange` or `RollbackCapacityChange`.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

InvalidDBClusterCapacityFault

`Capacity` isn't a valid Aurora Serverless DB cluster capacity. Valid capacity values are 2, 4, 8, 16, 32, 64, 128, and 256.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyCustomDBEngineVersion

Modifies the status of a custom engine version (CEV). You can find CEVs to modify by calling `DescribeDBEngineVersions`.

> **Note**
>
> The MediaImport service that imports files from Amazon S3 to create CEVs isn't integrated with Amazon CloudTrail. If you turn on data logging for Amazon RDS in CloudTrail, calls to the `ModifyCustomDbEngineVersion` event aren't logged. However, you might see calls from the API gateway that accesses your Amazon S3 bucket. These calls originate from the MediaImport service for the `ModifyCustomDbEngineVersion` event.

For more information, see Modifying CEV status in the *Amazon RDS User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

Engine

The database engine. RDS Custom for Oracle supports the following values:

- `custom-oracle-ee`
- `custom-oracle-ee-cdb`
- `custom-oracle-se2`
- `custom-oracle-se2-cdb`

Type: String

Length Constraints: Minimum length of 1. Maximum length of 35.

Pattern: `^[A-Za-z0-9-]{1,35}$`

Required: Yes

EngineVersion

The custom engine version (CEV) that you want to modify. This option is required for RDS Custom for Oracle, but optional for Amazon RDS. The combination of `Engine` and `EngineVersion` is unique per customer per Amazon Web Services Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60.

Pattern: `^[a-z0-9_.-]{1,60}$`

Required: Yes

Description

An optional description of your CEV.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 1000.

Pattern: `.*`

Required: No

Status

The availability status to be assigned to the CEV. Valid values are as follows:

available

You can use this CEV to create a new RDS Custom DB instance.

inactive

You can create a new RDS Custom instance by restoring a DB snapshot with this CEV. You can't patch or create new instances with this CEV.

You can change any status to any status. A typical reason to change status is to prevent the accidental use of a CEV, or to make a deprecated CEV eligible for use again. For example, you might change the status of your CEV from `available` to `inactive`, and from `inactive` back to `available`. To change the availability status of the CEV, it must not currently be in use by an RDS Custom instance, snapshot, or automated backup.

Type: String

Valid Values: `available | inactive | inactive-except-restore`

Required: No

Response Elements

The following elements are returned by the service.

CreateTime

The creation time of the DB engine version.

Type: Timestamp

CustomDBEngineVersionManifest

JSON string that lists the installation files and parameters that RDS Custom uses to create a custom engine version (CEV). RDS Custom applies the patches in the order in which they're listed in the manifest. You can set the Oracle home, Oracle base, and UNIX/Linux user and group using the installation parameters. For more information, see JSON fields in the CEV manifest in the *Amazon RDS User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 51000.

Pattern: `[\s\S]*`

DatabaseInstallationFilesS3BucketName

The name of the Amazon S3 bucket that contains your database installation files.

Type: String

DatabaseInstallationFilesS3Prefix

The Amazon S3 directory that contains the database installation files. If not specified, then no prefix is assumed.

Type: String

DBEngineDescription

The description of the database engine.

Type: String

DBEngineMediaType

A value that indicates the source media provider of the AMI based on the usage operation. Applicable for RDS Custom for SQL Server.

Type: String

DBEngineVersionArn

The ARN of the custom engine version.

Type: String

DBEngineVersionDescription

The description of the database engine version.

Type: String

DBParameterGroupFamily

The name of the DB parameter group family for the database engine.

Type: String

DefaultCharacterSet

The default character set for new instances of this engine version, if the `CharacterSetName` parameter of the CreateDBInstance API isn't specified.

Type: CharacterSet object

Engine

The name of the database engine.

Type: String

EngineVersion

The version number of the database engine.

Type: String

ExportableLogTypes.member.N

The types of logs that the database engine has available for export to CloudWatch Logs.

Type: Array of strings

Image

The EC2 image

Type: CustomDBEngineVersionAMI object

KMSKeyId

The Amazon KMS key identifier for an encrypted CEV. This parameter is required for RDS Custom, but optional for Amazon RDS.

Type: String

MajorEngineVersion

The major engine version of the CEV.

Type: String

ServerlessV2FeaturesSupport

Specifies any Aurora Serverless v2 properties or limits that differ between Aurora engine versions. You can test the values of this attribute when deciding which Aurora version to use in a new or upgraded DB cluster. You can also retrieve the version of an existing DB cluster and check whether that version supports certain Aurora Serverless v2 features before you attempt to use those features.

Type: ServerlessV2FeaturesSupport object

Status

The status of the DB engine version, either `available` or `deprecated`.

Type: String

SupportedCACertificateIdentifiers.member.N

A list of the supported CA certificate identifiers.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: Array of strings

SupportedCharacterSets.CharacterSet.N

A list of the character sets supported by this engine for the `CharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedEngineModes.member.N

A list of the supported DB engine modes.

Type: Array of strings

SupportedFeatureNames.member.N

A list of features supported by the DB engine.

The supported features vary by DB engine and DB engine version.

To determine the supported features for a specific DB engine and DB engine version using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine <engine_name> --engine-
version <engine_version>
```

For example, to determine the supported features for RDS for PostgreSQL version 13.3 using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --engine-version
13.3
```

The supported features are listed under `SupportedFeatureNames` in the output.

Type: Array of strings

SupportedNcharCharacterSets.CharacterSet.N

A list of the character sets supported by the Oracle DB engine for the `NcharCharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

SupportedTimezones.Timezone.N

A list of the time zones supported by this engine for the `Timezone` parameter of the `CreateDBInstance` action.

Type: Array of Timezone objects

SupportsBabelfish

Indicates whether the engine version supports Babelfish for Aurora PostgreSQL.

Type: Boolean

SupportsCertificateRotationWithoutRestart

Indicates whether the engine version supports rotating the server certificate without rebooting the DB instance.

Type: Boolean

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with a specific DB engine version.

Type: Boolean

SupportsIntegrations

Indicates whether the DB engine version supports zero-ETL integrations with Amazon Redshift.

Type: Boolean

SupportsLimitlessDatabase

Indicates whether the DB engine version supports Aurora Limitless Database.

Type: Boolean

SupportsLocalWriteForwarding

Indicates whether the DB engine version supports forwarding write operations from reader DB instances to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

SupportsLogExportsToCloudwatchLogs

Indicates whether the engine version supports exporting the log types specified by ExportableLogTypes to CloudWatch Logs.

Type: Boolean

SupportsParallelQuery

Indicates whether you can use Aurora parallel query with a specific DB engine version.

Type: Boolean

SupportsReadReplica

Indicates whether the database engine version supports read replicas.

Type: Boolean

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

ValidUpgradeTarget.UpgradeTarget.N

A list of engine versions that this database engine version can be upgraded to.

Type: Array of UpgradeTarget objects

Errors

For information about the errors that are common to all actions, see Common Errors.

CustomDBEngineVersionNotFoundFault

The specified CEV was not found.

HTTP Status Code: 404

InvalidCustomDBEngineVersionStateFault

You can't delete the CEV.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyCustomDBEngineVersion.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Engine=19.cev1
   &EngineVersion=custom-oracle-ee
   &Description=test
   &Status=available
   &Operation=ModifyCustomDBEngineVersion
   &Version=1999-01-01
   &AWSAccessKeyId=ABCDEF1JKLMNOPQRSTUV
   &SignatureVersion=2
   &SignatureMethod=HmacSHA1
   &Timestamp=2021-10-13T21%3A38%3A59.000Z
   &Signature=vJeEgn2kGiAyCI7uRVAOXqGPiHc%3D
```

Sample Response

```
<ModifyCustomDBEngineVersionResponse xmlns="http://rds.amazonaws.com/doc/1999-01-01/">
  <ModifyCustomDBEngineVersionResult>
    <DatabaseInstallationFilesS3Prefix>123456789012/cev1</
DatabaseInstallationFilesS3Prefix>
    <MajorEngineVersion>19</MajorEngineVersion>
    <DBEngineVersionArn>arn:aws:rds:us-east-1:123456789012:cev:custom-oracle-
ee/19.cev1/123ab45c-abc1-1234-1234-123a45b12345</DBEngineVersionArn>
 <DBEngineVersionDescription>foo</DBEngineVersionDescription>
    <SupportsGlobalDatabases>false</SupportsGlobalDatabases>
    <SupportsParallelQuery>false</SupportsParallelQuery>
    <Engine>custom-oracle-ee</Engine>
    <KMSKeyId>arn:aws:kms:us-
east-1:123456789012:key/12ab3c4d-1234-12a3-1aa2-12a3bcdefghi</KMSKeyId>
    <EngineVersion>19.cev1</EngineVersion>
    <SupportsReadReplica>false</SupportsReadReplica>
    <SupportsCluster>false</SupportsCluster>
    <CreateTime>2021-07-03T00:41:23.515Z</CreateTime>
    <DatabaseInstallationFilesS3BucketName>1-custom-installation-files</
DatabaseInstallationFilesS3BucketName>
    <SupportsLogExportsToCloudwatchLogs>false</SupportsLogExportsToCloudwatchLogs>
    <AMIs>
      <member>
        <Id>ami-0230ab8f4967332aa</Id>
        <Status>active</Status>
      </member>
```

```
    </AMIs>
    <DBEngineDescription>Oracle Database server EE for Custom</DBEngineDescription>
    <Status>available</Status>
  </ModifyCustomDBEngineVersionResult>
  <ResponseMetadata>
    <RequestId>052dff47-5a11-48e6-82d1-77158ecf4cc9</RequestId>
  </ResponseMetadata>
</ModifyCustomDBEngineVersionResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBCluster

Modifies the settings of an Amazon Aurora DB cluster or a Multi-AZ DB cluster. You can change one or more settings by specifying these parameters and the new values in the request.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The DB cluster identifier for the cluster being modified. This parameter isn't case-sensitive.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must match the identifier of an existing DB cluster.

Type: String

Required: Yes

AllocatedStorage

The amount of storage in gibibytes (GiB) to allocate to each DB instance in the Multi-AZ DB cluster.

Valid for Cluster Type: Multi-AZ DB clusters only

Type: Integer

Required: No

AllowEngineModeChange

Specifies whether engine mode changes from `serverless` to `provisioned` are allowed.

Valid for Cluster Type: Aurora Serverless v1 DB clusters only

Constraints:

- You must allow engine mode changes when specifying a different value for the `EngineMode` parameter from the DB cluster's current engine mode.

Type: Boolean

Required: No

AllowMajorVersionUpgrade

Specifies whether major version upgrades are allowed.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- You must allow major version upgrades when specifying a value for the `EngineVersion` parameter that is a different major version than the DB cluster's current version.

Type: Boolean

Required: No

ApplyImmediately

Specifies whether the modifications in this request are asynchronously applied as soon as possible, regardless of the `PreferredMaintenanceWindow` setting for the DB cluster. If this parameter is disabled, changes to the DB cluster are applied during the next maintenance window.

Most modifications can be applied immediately or during the next scheduled maintenance window. Some modifications, such as turning on deletion protection and changing the master password, are applied immediately—regardless of when you choose to apply them.

By default, this parameter is disabled.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

AutoMinorVersionUpgrade

Specifies whether minor engine upgrades are applied automatically to the DB cluster during the maintenance window. By default, minor engine upgrades are applied automatically.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

Type: String

Length Constraints: Minimum length of 43. Maximum length of 350.

Pattern: `^arn:aws[a-z-]*:backup:[-a-z0-9]+:[0-9]{12}:[-a-z]+:([a-z0-9\-]+:)?[a-z][a-z0-9\-]{0,255}$`

Required: No

BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to `0`.

Valid for Cluster Type: Aurora MySQL DB clusters only

Default: `0`

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

BackupRetentionPeriod

The number of days for which automated backups are retained. Specify a minimum value of 1.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Default: 1

Constraints:

- Must be a value from 1 to 35.

Type: Integer

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB cluster's server certificate.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide*.

Valid for Cluster Type: Multi-AZ DB clusters

Type: String

Required: No

CloudwatchLogsExportConfiguration

The configuration setting for the log types to be enabled for export to CloudWatch Logs for a specific DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

The following values are valid for each DB engine:

- Aurora MySQL - `audit | error | general | instance | slowquery | iam-db-auth-error`
- Aurora PostgreSQL - `instance | postgresql | iam-db-auth-error`
- RDS for MySQL - `error | general | slowquery | iam-db-auth-error`
- RDS for PostgreSQL - `postgresql | upgrade | iam-db-auth-error`

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Type: CloudwatchLogsExportConfiguration object

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the DB cluster to snapshots of the DB cluster. The default is not to copy them.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

DatabaseInsightsMode

Specifies the mode of Database Insights to enable for the DB cluster.

If you change the value from `standard` to `advanced`, you must set the `PerformanceInsightsEnabled` parameter to `true` and the `PerformanceInsightsRetentionPeriod` parameter to 465.

If you change the value from `advanced` to `standard`, you must set the `PerformanceInsightsEnabled` parameter to `false`.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Valid Values: `standard | advanced`

Required: No

DBClusterInstanceClass

The compute and memory capacity of each DB instance in the Multi-AZ DB cluster, for example `db.m6gd.xlarge`. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines.

For the full list of DB instance classes and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide*.

Valid for Cluster Type: Multi-AZ DB clusters only

Type: String

Required: No

DBClusterParameterGroupName

The name of the DB cluster parameter group to use for the DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DBInstanceParameterGroupName

The name of the DB parameter group to apply to all instances of the DB cluster.

> **Note**
>
> When you apply a parameter group using the `DBInstanceParameterGroupName` parameter, the DB cluster isn't rebooted automatically. Also, parameter changes are applied immediately rather than during the next maintenance window.

Valid for Cluster Type: Aurora DB clusters only

Default: The existing name setting

Constraints:

- The DB parameter group must be in the same DB parameter group family as this DB cluster.
- The `DBInstanceParameterGroupName` parameter is valid in combination with the `AllowMajorVersionUpgrade` parameter for a major version upgrade only.

Type: String

Required: No

DeletionProtection

Specifies whether the DB cluster has deletion protection enabled. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

Domain

The Active Directory directory ID to move the DB cluster to. Specify none to remove the cluster from its current domain. The domain must be created prior to this operation.

For more information, see Kerberos Authentication in the *Amazon Aurora User Guide*.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

EnableGlobalWriteForwarding

Specifies whether to enable this DB cluster to forward write operations to the primary cluster of a global cluster (Aurora global database). By default, write operations are not allowed on Aurora DB clusters that are secondary clusters in an Aurora global database.

You can set this value only on Aurora DB clusters that are members of an Aurora global database. With this parameter enabled, a secondary cluster can forward writes to the current primary cluster, and the resulting changes are replicated back to this cluster. For the primary DB cluster of an Aurora global database, this value is used immediately if the primary is demoted by a global cluster API operation, but it does nothing until then.

Valid for Cluster Type: Aurora DB clusters only

Type: Boolean

Required: No

EnableHttpEndpoint

Specifies whether to enable the HTTP endpoint for an Aurora Serverless v1 DB cluster. By default, the HTTP endpoint isn't enabled.

When enabled, the HTTP endpoint provides a connectionless web service API (RDS Data API) for running SQL queries on the Aurora Serverless v1 DB cluster. You can also query your database from inside the RDS console with the RDS query editor.

For more information, see Using RDS Data API in the *Amazon Aurora User Guide*.

> **Note**
>
> This parameter applies only to Aurora Serverless v1 DB clusters. To enable or disable the HTTP endpoint for an Aurora Serverless v2 or provisioned DB cluster, use the `EnableHttpEndpoint` and `DisableHttpEndpoint` operations.

Valid for Cluster Type: Aurora DB clusters only

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication in the *Amazon Aurora User Guide* or IAM database authentication for MariaDB, MySQL, and PostgreSQL in the *Amazon RDS User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EnableLimitlessDatabase

Specifies whether to enable Aurora Limitless Database. You must enable Aurora Limitless Database to create a DB shard group.

Valid for: Aurora DB clusters only

> **Note**
>
> This setting is no longer used. Instead use the `ClusterScalabilityType` setting when you create your Aurora Limitless Database DB cluster.

Type: Boolean

Required: No

EnableLocalWriteForwarding

Specifies whether read replicas can forward write operations to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to turn on Performance Insights for the DB cluster.

For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EngineMode

The DB engine mode of the DB cluster, either `provisioned` or `serverless`.

> **Note**
>
> The DB engine mode can be modified only from `serverless` to `provisioned`.

For more information, see CreateDBCluster.

Valid for Cluster Type: Aurora DB clusters only

Type: String

Required: No

EngineVersion

The version number of the database engine to which you want to upgrade. Changing this parameter results in an outage. The change is applied during the next maintenance window unless `ApplyImmediately` is enabled.

If the cluster that you're modifying has one or more read replicas, all replicas must be running an engine version that's the same or later than the version you specify.

To list all of the available engine versions for Aurora MySQL, use the following command:

```
aws rds describe-db-engine-versions --engine aurora-mysql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for Aurora PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine aurora-postgresql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for MySQL, use the following command:

```
aws rds describe-db-engine-versions --engine mysql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --query
"DBEngineVersions[].EngineVersion"
```

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for each DB instance in the Multi-AZ DB cluster.

For information about valid IOPS values, see Amazon RDS Provisioned IOPS storage in the *Amazon RDS User Guide*.

Valid for Cluster Type: Multi-AZ DB clusters only

Constraints:

- Must be a multiple between .5 and 50 of the storage amount for the DB cluster.

Type: Integer

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

If the DB cluster doesn't manage the master user password with Amazon Secrets Manager, you can turn on this management. In this case, you can't specify `MasterUserPassword`.

If the DB cluster already manages the master user password with Amazon Secrets Manager, and you specify that the master user password is not managed with Amazon Secrets Manager, then you must specify `MasterUserPassword`. In this case, RDS deletes the secret and uses the new password for the master user specified by `MasterUserPassword`.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

MasterUserPassword

The new password for the master database user.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must contain from 8 to 41 characters.
- Can contain any printable ASCII character except "/", """, or "@".
- Can't be specified if `ManageMasterUserPassword` is turned on.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if both of the following conditions are met:

- The DB cluster doesn't manage the master user password in Amazon Secrets Manager.

  If the DB cluster already manages the master user password in Amazon Secrets Manager, you can't change the KMS key that is used to encrypt the secret.
- You are turning on `ManageMasterUserPassword` to manage the master user password in Amazon Secrets Manager.

  If you are turning on `ManageMasterUserPassword` and don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB cluster. To turn off collecting Enhanced Monitoring metrics, specify `0`.

If `MonitoringRoleArn` is specified, also set `MonitoringInterval` to a value other than `0`.

Valid for Cluster Type: Multi-AZ DB clusters only

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The Amazon Resource Name (ARN) for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs. An example is `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see To create an IAM role for Amazon RDS Enhanced Monitoring in the *Amazon RDS User Guide.*

If `MonitoringInterval` is set to a value other than `0`, supply a `MonitoringRoleArn` value.

Valid for Cluster Type: Multi-AZ DB clusters only

Type: String

Required: No

NetworkType

The network type of the DB cluster.

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Valid for Cluster Type: Aurora DB clusters only

Valid Values: `IPV4 | DUAL`

Type: String

Required: No

NewDBClusterIdentifier

The new DB cluster identifier for the DB cluster when renaming a DB cluster. This value is stored as a lowercase string.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- The first character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster2`

Type: String

Required: No

OptionGroupName

The option group to associate the DB cluster with.

DB clusters are associated with a default option group that can't be modified.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS issues an error.

Type: Integer

Required: No

Port

The port number on which the DB cluster accepts connections.

Valid for Cluster Type: Aurora DB clusters only

Valid Values: `1150-65535`

Default: The same port as the original DB cluster.

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region. To view the time blocks available, see Backup window in the *Amazon Aurora User Guide*.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).

- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region, occurring on a random day of the week. To see the time blocks available, see Adjusting the Preferred DB Cluster Maintenance Window in the *Amazon Aurora User Guide*.

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- Days must be one of `Mon | Tue | Wed | Thu | Fri | Sat | Sun`.
- Must be in Universal Coordinated Time (UTC).
- Must be at least 30 minutes.

Type: String

Required: No

RotateMasterUserPassword

Specifies whether to rotate the secret managed by Amazon Secrets Manager for the master user password.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB cluster. The secret value contains the updated password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Constraints:

- You must apply the change immediately when rotating the master user password.

Type: Boolean

Required: No

ScalingConfiguration

The scaling properties of the DB cluster. You can only modify scaling properties for DB clusters in `serverless` DB engine mode.

Valid for Cluster Type: Aurora DB clusters only

Type: ScalingConfiguration object

Required: No

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfiguration object

Required: No

StorageType

The storage type to associate with the DB cluster.

For information on storage types for Aurora DB clusters, see Storage configurations for Amazon Aurora DB clusters. For information on storage types for Multi-AZ DB clusters, see Settings for creating Multi-AZ DB clusters.

When specified for a Multi-AZ DB cluster, a value for the `Iops` parameter is required.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values:

- Aurora DB clusters - `aurora | aurora-iopt1`
- Multi-AZ DB clusters - `io1 | io2 | gp3`

Default:

- Aurora DB clusters - `aurora`
- Multi-AZ DB clusters - `io1`

Type: String

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of EC2 VPC security groups to associate with this DB cluster.

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterAlreadyExistsFault

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBClusterParameterGroupNotFound

`DBClusterParameterGroupName` doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

DBInstanceAlreadyExists

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBSecurityGroupState

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

InvalidDBSubnetGroupStateFault

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotAvailableFault

The `aurora-iopt1` storage type isn't available, because you modified the DB cluster to use this storage type less than one month ago.

HTTP Status Code: 400

Examples

Modifying an Aurora DB cluster

This example illustrates one usage of ModifyDBCluster.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBCluster
    &DBClusterIdentifier=sample-cluster3
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140725/us-west-2/rds/aws4_request
    &X-Amz-Date=20140725T161457Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=d6d1c65c2e94f5800ab411a3f7336625820b103713b6c063430900514e21d784
```

Sample Response

```
<ModifyDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBClusterResult>
    <DBCluster>
      <Engine>aurora5.6</Engine>
      <Status>available</Status>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <DBSubnetGroup>my-subgroup</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster3.cluster-cefgqfx9y5fy.us-east-1.rds.amazonaws.com</
Endpoint>
```

```
      <DBClusterIdentifier>sample-cluster3</DBClusterIdentifier>
      <PreferredBackupWindow>07:06-07:36</PreferredBackupWindow>
      <PreferredMaintenanceWindow>tue:10:18-tue:10:48</PreferredMaintenanceWindow>
      <DBClusterMembers>
        <DBClusterMember>
          <IsClusterWriter>true</IsClusterWriter>
          <DBInstanceIdentifier>sample-cluster3-master</DBInstanceIdentifier>
        </DBClusterMember>
        <DBClusterMember>
          <IsClusterWriter>false</IsClusterWriter>
          <DBInstanceIdentifier>sample-cluster3-read1</DBInstanceIdentifier>
        </DBClusterMember>
      </DBClusterMembers>
      <AllocatedStorage>15</AllocatedStorage>
      <MasterUsername>awsuser</MasterUsername>
    </DBCluster>
  </ModifyDBClusterResult>
  <ResponseMetadata>
    <RequestId>d2cd0e2f-1416-11e4-9210-cf99df4125d0</RequestId>
  </ResponseMetadata>
</ModifyDBClusterResponse>
```

Modifying a Multi-AZ DB cluster

This example illustrates one usage of ModifyDBCluster.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBCluster
    &DBClusterIdentifier=my-multi-az-cluster
    &DBClusterInstanceClass=db.m6gd.large
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20211026/us-west-2/rds/aws4_request
    &X-Amz-Date=20211027T000032Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=d6d1c65c2e94f5800ab411a3f7336625820b103713b6c063430900514e21d784
```

Sample Response


```
<ModifyDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBClusterResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>100</AllocatedStorage>
      <DatabaseName>mydb</DatabaseName>
        <AssociatedRoles />
        <AvailabilityZones>
          <AvailabilityZone>us-west-2a</AvailabilityZone>
          <AvailabilityZone>us-west-2b</AvailabilityZone>
          <AvailabilityZone>us-west-2c</AvailabilityZone>
        </AvailabilityZones>
        <ReadReplicaIdentifiers />
        <Iops>1000</Iops>
        <PerformanceInsightsKMSKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-
abcd-4567-efgEXAMPLE</PerformanceInsightsKMSKeyId>
        <PerformanceInsightsRetentionPeriod>7</PerformanceInsightsRetentionPeriod>
        <EngineVersion>8.0.26</EngineVersion>
        <MasterUsername>admin</MasterUsername>
        <DBClusterMembers>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-3</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-2</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>false</IsClusterWriter>
          </DBClusterMember>
          <DBClusterMember>
            <DBInstanceIdentifier>my-multi-az-cluster-instance-1</
DBInstanceIdentifier>
            <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
            <PromotionTier>1</PromotionTier>
            <IsClusterWriter>true</IsClusterWriter>
          </DBClusterMember>
```

```
        </DBClusterMembers>
        <HttpEndpointEnabled>false</HttpEndpointEnabled>
        <Port>3306</Port>
        <MonitoringInterval>30</MonitoringInterval>
        <BackupRetentionPeriod>2</BackupRetentionPeriod>
        <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
        <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
        <DbClusterResourceId>cluster-TSW4QJNKY3P2DNDRR523BDGEIU</DbClusterResourceId>
        <Status>available</Status>
        <LatestRestorableTime>2021-10-26T23:55:00Z</LatestRestorableTime>
        <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
        <DeletionProtection>false</DeletionProtection>
        <Endpoint>my-multi-az-cluster.cluster-123456789012.us-
west-2.rds.amazonaws.com</Endpoint>
        <EngineMode>provisioned</EngineMode>
        <Engine>mysql</Engine>
        <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
        <PubliclyAccessible>true</PubliclyAccessible>
        <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
        <EarliestRestorableTime>2021-10-26T20:42:03.375Z</EarliestRestorableTime>
        <ClusterCreateTime>2021-10-26T20:31:54.943Z</ClusterCreateTime>
        <PerformanceInsightsEnabled>true</PerformanceInsightsEnabled>
        <MultiAZ>true</MultiAZ>
        <DomainMemberships />
        <MonitoringRoleArn>arn:aws:iam::123456789012:role/enhance-monitoring-role</
MonitoringRoleArn>
        <StorageEncrypted>true</StorageEncrypted>
        <DBSubnetGroup>mysubnet1</DBSubnetGroup>
        <VpcSecurityGroups>
          <VpcSecurityGroupMembership>
            <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
            <Status>active</Status>
          </VpcSecurityGroupMembership>
        </VpcSecurityGroups>
        <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
        <TagList />
        <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
        <DBClusterParameterGroup>my-multi-az-cpg</DBClusterParameterGroup>
        <StorageType>io1</StorageType>
        <DBClusterInstanceClass>db.m6gd.large</DBClusterInstanceClass>
        <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
        <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
```

```
        <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
      </DBCluster>
  </ModifyDBClusterResult>
  <ResponseMetadata>
    <RequestId>69673d54-e48e-4ba4-9333-c5a6c1e7526a</RequestId>
  </ResponseMetadata>
</ModifyDBClusterResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBClusterEndpoint

Modifies the properties of an endpoint in an Amazon Aurora DB cluster.

> **Note**
>
> This operation only applies to Aurora DB clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterEndpointIdentifier

The identifier of the endpoint to modify. This parameter is stored as a lowercase string.

Type: String

Required: Yes

EndpointType

The type of the endpoint. One of: `READER`, `WRITER`, `ANY`.

Type: String

Required: No

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. Only relevant if the list of static members is empty.

Type: Array of strings

Required: No

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Required: No

Response Elements

The following elements are returned by the service.

CustomEndpointType

The type associated with a custom endpoint. One of: `READER`, `WRITER`, `ANY`.

Type: String

DBClusterEndpointArn

The Amazon Resource Name (ARN) for the endpoint.

Type: String

DBClusterEndpointIdentifier

The identifier associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

DBClusterEndpointResourceIdentifier

A unique system-generated identifier for an endpoint. It remains the same for the whole life of the endpoint.

Type: String

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Endpoint

The DNS address of the endpoint.

Type: String

EndpointType

The type of the endpoint. One of: `READER`, `WRITER`, `CUSTOM`.

Type: String

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. Only relevant if the list of static members is empty.

Type: Array of strings

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Status

The current status of the endpoint. One of: `creating`, `available`, `deleting`, `inactive`, `modifying`. The `inactive` state applies to an endpoint that can't be used for a certain kind of cluster, such as a `writer` endpoint for a read-only secondary cluster in a global database.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterEndpointNotFoundFault

The specified custom endpoint doesn't exist.

HTTP Status Code: 400

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBClusterEndpointStateFault

The requested operation can't be performed on the endpoint while the endpoint is in this state.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBClusterParameterGroup

Modifies the parameters of a DB cluster parameter group. To modify more than one parameter, submit a list of the following: `ParameterName`, `ParameterValue`, and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

> **Important**
>
> After you create a DB cluster parameter group, you should wait at least 5 minutes before creating your first DB cluster that uses that DB cluster parameter group as the default parameter group. This allows Amazon RDS to fully complete the create operation before the parameter group is used as the default for a new DB cluster. This is especially important for parameters that are critical when creating the default database for a DB cluster, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the Amazon RDS console or the `DescribeDBClusterParameters` operation to verify that your DB cluster parameter group has been created or modified.
> If the modified DB cluster parameter group is used by an Aurora Serverless v1 cluster, Aurora applies the update immediately. The cluster restart might interrupt your workload. In that case, your application must reopen any connections and retry any transactions that were active when the parameter changes took effect.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterParameterGroupName

The name of the DB cluster parameter group to modify.

Type: String

Required: Yes

Parameters.Parameter.N

A list of parameters in the DB cluster parameter group to modify.

Valid Values (for the application method): `immediate | pending-reboot`

> **Note**
>
> You can use the `immediate` value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters.
> When the application method is `immediate`, changes to dynamic parameters are applied immediately to the DB clusters associated with the parameter group. When the application method is `pending-reboot`, changes to dynamic and static parameters are applied after a reboot without failover to the DB clusters associated with the parameter group.

Type: Array of Parameter objects

Required: Yes

Response Elements

The following element is returned by the service.

DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

- Must be 1 to 255 letters or numbers.
- First character must be a letter
- Can't end with a hyphen or contain two consecutive hyphens

> **Note**
>
> This value is stored as a lowercase string.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

InvalidDBParameterGroupState

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBClusterParameterGroup.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBClusterParameterGroup
    &DBClusterParameterGroupName=sample-cluster-pg
    &Parameters.member.1.ApplyMethod=pending-reboot
    &Parameters.member.1.ParameterName=binlog_format
    &Parameters.member.1.ParameterValue=MIXED
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
    &X-Amz-Date=20160913T173245Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=cfb4f35de32455f77405636315dd431f2e236a1a997f94e0f6e00183d1f5156e
```

Sample Response

```
<ModifyDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <ModifyDBClusterParameterGroupResult>
    <DBClusterParameterGroupName>sample-cluster-pg</DBClusterParameterGroupName>
  </ModifyDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>1534d6a1-79d8-11e6-9b94-838991bd50c6</RequestId>
  </ResponseMetadata>
</ModifyDBClusterParameterGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBClusterSnapshotAttribute

Adds an attribute and values to, or removes an attribute and values from, a manual DB cluster snapshot.

To share a manual DB cluster snapshot with other Amazon Web Services accounts, specify `restore` as the `AttributeName` and use the `ValuesToAdd` parameter to add a list of IDs of the Amazon Web Services accounts that are authorized to restore the manual DB cluster snapshot. Use the value `all` to make the manual DB cluster snapshot public, which means that it can be copied or restored by all Amazon Web Services accounts.

> **Note**
>
> Don't add the `all` value for any manual DB cluster snapshots that contain private information that you don't want available to all Amazon accounts.

If a manual DB cluster snapshot is encrypted, it can be shared, but only by specifying a list of authorized Amazon Web Services account IDs for the `ValuesToAdd` parameter. You can't use `all` as a value for that parameter in this case.

To view which Amazon Web Services accounts have access to copy or restore a manual DB cluster snapshot, or whether a manual DB cluster snapshot is public or private, use the DescribeDBClusterSnapshotAttributes API operation. The accounts are returned as values for the `restore` attribute.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

AttributeName

The name of the DB cluster snapshot attribute to modify.

To manage authorization for other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot, set this value to `restore`.

> **Note**
>
> To view the list of attributes available to modify, use the DescribeDBClusterSnapshotAttributes API operation.

Type: String

Required: Yes

DBClusterSnapshotIdentifier

The identifier for the DB cluster snapshot to modify the attributes for.

Type: String

Required: Yes

ValuesToAdd.AttributeValue.N

A list of DB cluster snapshot attributes to add to the attribute specified by `AttributeName`.

To authorize other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot, set this list to include one or more Amazon Web Services account IDs, or `all` to make the manual DB cluster snapshot restorable by any Amazon Web Services account. Do not add the `all` value for any manual DB cluster snapshots that contain private information that you don't want available to all Amazon Web Services accounts.

Type: Array of strings

Required: No

ValuesToRemove.AttributeValue.N

A list of DB cluster snapshot attributes to remove from the attribute specified by `AttributeName`.

To remove authorization for other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot, set this list to include one or more Amazon Web Services account identifiers, or `all` to remove authorization for any Amazon Web Services account to copy or restore the DB cluster snapshot. If you specify `all`, an Amazon Web Services account whose account ID is explicitly added to the `restore` attribute can still copy or restore a manual DB cluster snapshot.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBClusterSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBClusterSnapshotAttributes` API action.

Manual DB cluster snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot. For more information, see the `ModifyDBClusterSnapshotAttribute` API action.

Type: DBClusterSnapshotAttributesResult object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterSnapshotNotFoundFault

`DBClusterSnapshotIdentifier` doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

InvalidDBClusterSnapshotStateFault

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

SharedSnapshotQuotaExceeded

You have exceeded the maximum number of accounts that you can share a manual DB snapshot with.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBClusterSnapshotAttribute.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBClusterSnapshotAttribute
    &AttributeName=restore
    &DBClusterSnapshotIdentifier=manual-cluster-snapshot1
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &ValuesToAdd.member.1=123451234512
    &ValuesToAdd.member.2=123456789012
    &ValuesToRemove.member.1=all
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20150922/us-west-2/rds/aws4_request
    &X-Amz-Date=20150922T220515Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=ef38f1ce3dab4e1dbf113d8d2a265c67d17ece1999ffd36be85714ed36dddbb3
```

Sample Response

```
<ModifyDBClusterSnapshotAttributeResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <ModifyDBClusterSnapshotAttributeResult>
    <DBClusterSnapshotAttributesResult>
      <DBClusterSnapshotAttributes>
        <DBClusterSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
            <AttributeValue>123451234512</AttributeValue>
            <AttributeValue>123456789012</AttributeValue>
          </AttributeValues>
        </DBClusterSnapshotAttribute>
      </DBClusterSnapshotAttributes>
      <DBClusterSnapshotIdentifier>manual-cluster-snapshot1</DBSnapshotIdentifier>
    </DBClusterSnapshotAttributesResult>
```

```
  </ModifyDBClusterSnapshotAttributeResult>
  <ResponseMetadata>
    <RequestId>0122a108-2276-11e5-9cc3-0f535cff56aa</RequestId>
  </ResponseMetadata>
</ModifyDBClusterSnapshotAttributeResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBInstance

Modifies settings for a DB instance. You can change one or more database configuration parameters by specifying these parameters and the new values in the request. To learn what modifications you can make to your DB instance, call `DescribeValidDBInstanceModifications` before you call `ModifyDBInstance`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The identifier of DB instance to modify. This value is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing DB instance.

Type: String

Required: Yes

AllocatedStorage

The new amount of storage in gibibytes (GiB) to allocate for the DB instance.

For RDS for Db2, MariaDB, RDS for MySQL, RDS for Oracle, and RDS for PostgreSQL, the value supplied must be at least 10% greater than the current value. Values that are not at least 10% greater than the existing value are rounded up so that they are 10% greater than the current value.

For the valid values for allocated storage for each engine, see `CreateDBInstance`.

Constraints:

- When you increase the allocated storage for a DB instance that uses Provisioned IOPS (gp3, `io1`, or `io2` storage type), you must also specify the `Iops` parameter. You can use the current value for `Iops`.

Type: Integer

Required: No

AllowMajorVersionUpgrade

Specifies whether major version upgrades are allowed. Changing this parameter doesn't result in an outage and the change is asynchronously applied as soon as possible.

This setting doesn't apply to RDS Custom DB instances.

Constraints:

- Major version upgrades must be allowed when specifying a value for the `EngineVersion` parameter that's a different major version than the DB instance's current version.

Type: Boolean

Required: No

ApplyImmediately

Specifies whether the modifications in this request and any pending modifications are asynchronously applied as soon as possible, regardless of the `PreferredMaintenanceWindow` setting for the DB instance. By default, this parameter is disabled.

If this parameter is disabled, changes to the DB instance are applied during the next maintenance window. Some parameter changes can cause an outage and are applied on the next call to RebootDBInstance, or the next failure reboot. Review the table of parameters in Modifying a DB Instance in the *Amazon RDS User Guide* to see the impact of enabling or disabling `ApplyImmediately` for each modified parameter and to determine when the changes are applied.

Type: Boolean

Required: No

AutomationMode

The automation mode of the RDS Custom DB instance. If `full`, the DB instance automates monitoring and instance recovery. If `all paused`, the instance pauses automation for the duration set by `ResumeFullAutomationModeMinutes`.

Type: String

Valid Values: `full | all-paused`

Required: No

AutoMinorVersionUpgrade

Specifies whether minor version upgrades are applied automatically to the DB instance during the maintenance window. An outage occurs when all the following conditions are met:

- The automatic upgrade is enabled for the maintenance window.
- A newer minor version is available.
- RDS has enabled automatic patching for the engine version.

If any of the preceding conditions isn't met, Amazon RDS applies the change as soon as possible and doesn't cause an outage.

For an RDS Custom DB instance, don't enable this setting. Otherwise, the operation returns an error.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Length Constraints: Minimum length of 43. Maximum length of 350.

Pattern: `^arn:aws[a-z-]*:backup:[-a-z0-9]+:[0-9]{12}:[-a-z]+:([a-z0-9\-]+:)?[a-z][a-z0-9\-]{0,255}$`

Required: No

BackupRetentionPeriod

The number of days to retain automated backups. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

> **Note**
>
> Enabling and disabling backups can result in a brief I/O suspension that lasts from a few seconds to a few minutes, depending on the size and class of your DB instance.

These changes are applied during the next maintenance window unless the `ApplyImmediately` parameter is enabled for this request. If you change the parameter from one non-zero value to another non-zero value, the change is asynchronously applied as soon as possible.

This setting doesn't apply to Amazon Aurora DB instances. The retention period for automated backups is managed by the DB cluster. For more information, see `ModifyDBCluster`.

Default: Uses existing setting

Constraints:

- Must be a value from 0 to 35.
- Can't be set to 0 if the DB instance is a source to read replicas.
- Can't be set to 0 for an RDS Custom for Oracle DB instance.

Type: Integer

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB instance's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CertificateRotationRestart

Specifies whether the DB instance is restarted when you rotate your SSL/TLS certificate.

By default, the DB instance is restarted when you rotate your SSL/TLS certificate. The certificate is not updated until the DB instance is restarted.

> **Important**
>
> Set this parameter only if you are *not* using SSL/TLS to connect to the DB instance.

If you are using SSL/TLS to connect to the DB instance, follow the appropriate instructions for your DB engine to rotate your SSL/TLS certificate:

- For more information about rotating your SSL/TLS certificate for RDS DB engines, see Rotating Your SSL/TLS Certificate. in the *Amazon RDS User Guide.*
- For more information about rotating your SSL/TLS certificate for Aurora DB engines, see Rotating Your SSL/TLS Certificate in the *Amazon Aurora User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

CloudwatchLogsExportConfiguration

The log types to be enabled for export to CloudWatch Logs for a specific DB instance.

A change to the `CloudwatchLogsExportConfiguration` parameter is always applied to the DB instance immediately. Therefore, the `ApplyImmediately` parameter has no effect.

This setting doesn't apply to RDS Custom DB instances.

The following values are valid for each DB engine:

- Aurora MySQL - `audit | error | general | slowquery | iam-db-auth-error`
- Aurora PostgreSQL - `postgresql | iam-db-auth-error`
- RDS for MySQL - `error | general | slowquery | iam-db-auth-error`
- RDS for PostgreSQL - `postgresql | upgrade | iam-db-auth-error`

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Type: CloudwatchLogsExportConfiguration object

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the DB instance to snapshots of the DB instance. By default, tags aren't copied.

This setting doesn't apply to Amazon Aurora DB instances. Copying tags to snapshots is managed by the DB cluster. Setting this value for an Aurora DB instance has no effect on the DB cluster setting. For more information, see `ModifyDBCluster`.

Type: Boolean

Required: No

DatabaseInsightsMode

Specifies the mode of Database Insights to enable for the DB instance.

> **Note**
>
> Aurora DB instances inherit this value from the DB cluster, so you can't change this value.

Type: String

Valid Values: `standard | advanced`

Required: No

DBInstanceClass

The new compute and memory capacity of the DB instance, for example `db.m4.large`. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide* or Aurora DB instance classes in the *Amazon Aurora User*

Guide. For RDS Custom, see DB instance class support for RDS Custom for Oracle and DB instance class support for RDS Custom for SQL Server.

If you modify the DB instance class, an outage occurs during the change. The change is applied during the next maintenance window, unless you specify `ApplyImmediately` in your request.

Default: Uses existing setting

Constraints:

- If you are modifying the DB instance class and upgrading the engine version at the same time, the currently running engine version must be supported on the specified DB instance class. Otherwise, the operation returns an error. In this case, first run the operation to upgrade the engine version, and then run it again to modify the DB instance class.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to apply to the DB instance.

Changing this setting doesn't result in an outage. The parameter group name itself is changed immediately, but the actual parameter changes are not applied until you reboot the instance without failover. In this case, the DB instance isn't rebooted automatically, and the parameter changes aren't applied during the next maintenance window. However, if you modify dynamic parameters in the newly associated DB parameter group, these changes are applied immediately without a reboot.

This setting doesn't apply to RDS Custom DB instances.

Default: Uses existing setting

Constraints:

- Must be in the same DB parameter group family as the DB instance.

Type: String

Required: No

DBPortNumber

The port number on which the database accepts connections.

The value of the `DBPortNumber` parameter must not match any of the port values specified for options in the option group for the DB instance.

If you change the `DBPortNumber` value, your database restarts regardless of the value of the `ApplyImmediately` parameter.

This setting doesn't apply to RDS Custom DB instances.

Valid Values: `1150-65535`

Default:

- Amazon Aurora - `3306`
- RDS for Db2 - `50000`
- RDS for MariaDB - `3306`
- RDS for Microsoft SQL Server - `1433`
- RDS for MySQL - `3306`
- RDS for Oracle - `1521`
- RDS for PostgreSQL - `5432`

Constraints:

- For RDS for Microsoft SQL Server, the value can't be `1234`, `1434`, `3260`, `3343`, `3389`, `47001`, or `49152-49156`.

Type: Integer

Required: No

DBSecurityGroups.DBSecurityGroupName.N

A list of DB security groups to authorize on this DB instance. Changing this setting doesn't result in an outage and the change is asynchronously applied as soon as possible.

This setting doesn't apply to RDS Custom DB instances.

Constraints:

- If supplied, must match existing DB security groups.

Type: Array of strings

Required: No

DBSubnetGroupName

The new DB subnet group for the DB instance. You can use this parameter to move your DB instance to a different VPC. If your DB instance isn't in a VPC, you can also use this parameter to move your DB instance into a VPC. For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide*.

Changing the subnet group causes an outage during the change. The change is applied during the next maintenance window, unless you enable `ApplyImmediately`.

This setting doesn't apply to RDS Custom DB instances.

Constraints:

- If supplied, must match existing DB subnet group.

Example: `mydbsubnetgroup`

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

DeletionProtection

Specifies whether the DB instance has deletion protection enabled. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

This setting doesn't apply to Amazon Aurora DB instances. You can enable or disable deletion protection for the DB cluster. For more information, see `ModifyDBCluster`. DB instances in a DB cluster can be deleted even when deletion protection is enabled for the DB cluster.

Type: Boolean

Required: No

DisableDomain

Specifies whether to remove the DB instance from the Active Directory domain.

Type: Boolean

Required: No

Domain

The Active Directory directory ID to move the DB instance to. Specify none to remove the instance from its current domain. You must create the domain before this operation. Currently, you can create only Db2, MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances in an Active Directory Domain.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainAuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user joining the domain.

Example: `arn:aws:secretsmanager:region:account-number:secret:myselfmanagedADtestsecret-123456`

Type: String

Required: No

DomainDnsIps.member.N

The IPv4 DNS IP addresses of your primary and secondary Active Directory domain controllers.

Constraints:

- Two IP addresses must be provided. If there isn't a secondary domain controller, use the IP address of the primary domain controller for both entries in the list.

Example: `123.124.125.126,234.235.236.237`

Type: Array of strings

Required: No

DomainFqdn

The fully qualified domain name (FQDN) of an Active Directory domain.

Constraints:

- Can't be longer than 64 characters.

Example: `mymanagedADtest.mymanagedAD.mydomain`

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainOu

The Active Directory organizational unit for your DB instance to join.

Constraints:

- Must be in the distinguished name format.
- Can't be longer than 64 characters.

Example:
`OU=mymanagedADtestOU,DC=mymanagedADtest,DC=mymanagedAD,DC=mydomain`

Type: String

Required: No

EnableCustomerOwnedIp

Specifies whether to enable a customer-owned IP address (CoIP) for an RDS on Outposts DB instance.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the DB instance from outside of its virtual private cloud (VPC) on your local network.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

This setting doesn't apply to Amazon Aurora. Mapping Amazon IAM accounts to database accounts is managed by the DB cluster.

For more information about IAM database authentication, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide.*

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to enable Performance Insights for the DB instance.

For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

Engine

The target Oracle DB engine when you convert a non-CDB to a CDB. This intermediate step is necessary to upgrade an Oracle Database 19c non-CDB to an Oracle Database 21c CDB.

Note the following requirements:

- Make sure that you specify `oracle-ee-cdb` or `oracle-se2-cdb`.
- Make sure that your DB engine runs Oracle Database 19c with an April 2021 or later RU.

Note the following limitations:

- You can't convert a CDB to a non-CDB.
- You can't convert a replica database.
- You can't convert a non-CDB to a CDB and upgrade the engine version in the same command.
- You can't convert the existing custom parameter or option group when it has options or parameters that are permanent or persistent. In this situation, the DB instance reverts to the default option and parameter group. To avoid reverting to the default, specify a new parameter group with `--db-parameter-group-name` and a new option group with `--option-group-name`.

Type: String

Required: No

EngineVersion

The version number of the database engine to upgrade to. Changing this parameter results in an outage and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is enabled for this request.

For major version upgrades, if a nondefault DB parameter group is currently in use, a new DB parameter group in the DB parameter group family for the new engine version must be specified. The new DB parameter group can be the default for that DB parameter group family.

If you specify only a major version, Amazon RDS updates the DB instance to the default minor version if the current minor version is lower. For information about valid engine versions, see `CreateDBInstance`, or call `DescribeDBEngineVersions`.

If the instance that you're modifying is acting as a read replica, the engine version that you specify must be the same or higher than the version that the source DB instance or cluster is running.

In RDS Custom for Oracle, this parameter is supported for read replicas only if they are in the `PATCH_DB_FAILURE` lifecycle.

Constraints:

- If you are upgrading the engine version and modifying the DB instance class at the same time, the currently running engine version must be supported on the specified DB instance class. Otherwise, the operation returns an error. In this case, first run the operation to upgrade the engine version, and then run it again to modify the DB instance class.

Type: String

Required: No

Iops

The new Provisioned IOPS (I/O operations per second) value for the RDS instance.

Changing this setting doesn't result in an outage and the change is applied during the next maintenance window unless the `ApplyImmediately` parameter is enabled for this request. If you are migrating from Provisioned IOPS to standard storage, set this value to 0. The DB instance will require a reboot for the change in storage type to take effect.

If you choose to migrate your DB instance from using standard storage to Provisioned IOPS (io1), or from Provisioned IOPS to standard storage, the process can take time. The duration of the migration depends on several factors such as database load, storage size, storage type (standard or Provisioned IOPS), amount of IOPS provisioned (if any), and the number of prior scale storage operations. Typical migration times are under 24 hours, but the process can take up to several days in some cases. During the migration, the DB instance is available for use, but might experience performance degradation. While the migration takes place, nightly backups for the instance are suspended. No other Amazon RDS operations can take place for the instance, including modifying the instance, rebooting the instance, deleting the instance, creating a read replica for the instance, and creating a DB snapshot of the instance.

Constraints:

- For RDS for MariaDB, RDS for MySQL, RDS for Oracle, and RDS for PostgreSQL - The value supplied must be at least 10% greater than the current value. Values that are not at least 10% greater than the existing value are rounded up so that they are 10% greater than the current value.

- When you increase the Provisioned IOPS, you must also specify the `AllocatedStorage` parameter. You can use the current value for `AllocatedStorage`.

Default: Uses existing setting

Type: Integer

Required: No

LicenseModel

The license model for the DB instance.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Valid Values:

- RDS for Db2 - `bring-your-own-license`
- RDS for MariaDB - `general-public-license`
- RDS for Microsoft SQL Server - `license-included`
- RDS for MySQL - `general-public-license`
- RDS for Oracle - `bring-your-own-license | license-included`
- RDS for PostgreSQL - `postgresql-license`

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

If the DB instance doesn't manage the master user password with Amazon Secrets Manager, you can turn on this management. In this case, you can't specify `MasterUserPassword`.

If the DB instance already manages the master user password with Amazon Secrets Manager, and you specify that the master user password is not managed with Amazon Secrets Manager, then you must specify `MasterUserPassword`. In this case, Amazon RDS deletes the secret and uses the new password for the master user specified by `MasterUserPassword`.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.
- Can't specify for RDS for Oracle CDB instances in the multi-tenant configuration. Use `ModifyTenantDatabase` instead.
- Can't specify the parameters `ManageMasterUserPassword` and `MultiTenant` in the same operation.

Type: Boolean

Required: No

MasterUserPassword

The new password for the master user.

Changing this parameter doesn't result in an outage and the change is asynchronously applied as soon as possible. Between the time of the request and the completion of the request, the `MasterUserPassword` element exists in the `PendingModifiedValues` element of the operation response.

> **Note**
>
> Amazon RDS API operations never return the password, so this operation provides a way to regain access to a primary instance user if the password is lost. This includes restoring privileges that might have been accidentally revoked.

This setting doesn't apply to the following DB instances:

- Amazon Aurora

  The password for the master user is managed by the DB cluster. For more information, see `ModifyDBCluster`.
- RDS Custom
- RDS for Oracle CDBs in the multi-tenant configuration

  Specify the master password in `ModifyTenantDatabase` instead.

Default: Uses existing setting

Constraints:

- Can't be specified if `ManageMasterUserPassword` is turned on.
- Can include any printable ASCII character except "/", """, or "@". For RDS for Oracle, can't include the "&" (ampersand) or the "'" (single quotes) character.

Length Constraints:

- RDS for Db2 - Must contain from 8 to 255 characters.
- RDS for MariaDB - Must contain from 8 to 41 characters.
- RDS for Microsoft SQL Server - Must contain from 8 to 128 characters.
- RDS for MySQL - Must contain from 8 to 41 characters.
- RDS for Oracle - Must contain from 8 to 30 characters.
- RDS for PostgreSQL - Must contain from 8 to 128 characters.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if both of the following conditions are met:

- The DB instance doesn't manage the master user password in Amazon Secrets Manager.

  If the DB instance already manages the master user password in Amazon Secrets Manager, you can't change the KMS key used to encrypt the secret.
- You are turning on `ManageMasterUserPassword` to manage the master user password in Amazon Secrets Manager.

  If you are turning on `ManageMasterUserPassword` and don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

For more information about this setting, including limitations that apply to it, see Managing capacity automatically with Amazon RDS storage autoscaling in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Type: Integer

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collection of Enhanced Monitoring metrics, specify `0`.

If `MonitoringRoleArn` is specified, set `MonitoringInterval` to a value other than `0`.

This setting doesn't apply to RDS Custom DB instances.

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see To create an IAM role for Amazon RDS Enhanced Monitoring in the *Amazon RDS User Guide.*

If `MonitoringInterval` is set to a value other than `0`, supply a `MonitoringRoleArn` value.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

MultiAZ

Specifies whether the DB instance is a Multi-AZ deployment. Changing this parameter doesn't result in an outage. The change is applied during the next maintenance window unless the `ApplyImmediately` parameter is enabled for this request.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

MultiTenant

Specifies whether the to convert your DB instance from the single-tenant configuration to the multi-tenant configuration. This parameter is supported only for RDS for Oracle CDB instances.

During the conversion, RDS creates an initial tenant database and associates the DB name, master user name, character set, and national character set metadata with this database. The tags associated with the instance also propagate to the initial tenant database. You can add more tenant databases to your DB instance by using the `CreateTenantDatabase` operation.

> **Important**
>
> The conversion to the multi-tenant configuration is permanent and irreversible, so you can't later convert back to the single-tenant configuration. When you specify this parameter, you must also specify `ApplyImmediately`.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Valid Values: `IPV4 | DUAL`

Type: String

Required: No

NewDBInstanceIdentifier

The new identifier for the DB instance when renaming a DB instance. When you change the DB instance identifier, an instance reboot occurs immediately if you enable `ApplyImmediately`, or will occur during the next maintenance window if you disable `ApplyImmediately`. This value is stored as a lowercase string.

This setting doesn't apply to RDS Custom DB instances.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- The first character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `mydbinstance`

Type: String

Required: No

OptionGroupName

The option group to associate the DB instance with.

Changing this parameter doesn't result in an outage, with one exception. If the parameter change results in an option group that enables OEM, it can cause a brief period, lasting less than a second, during which new connections are rejected but existing connections aren't interrupted.

The change is applied during the next maintenance window unless the `ApplyImmediately` parameter is enabled for this request.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance after it is associated with a DB instance.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

This setting doesn't apply to RDS Custom DB instances.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS returns an error.

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod` parameter. Changing this parameter doesn't result in an outage and the change is asynchronously applied as soon as possible. The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region. For more information, see Backup window in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora DB instances. The daily time range for creating automated backups is managed by the DB cluster. For more information, see `ModifyDBCluster`.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur, which might result in an outage. Changing this parameter doesn't result in an outage, except in the following situation, and the change is asynchronously applied as soon as possible. If there are pending actions that cause a reboot, and the maintenance window is changed to include the current time, then changing this parameter causes a reboot of the DB instance. If you change this window to the current time, there must be at least 30 minutes between the current time and end of the window to ensure pending changes are applied.

For more information, see Amazon RDS Maintenance Window in the *Amazon RDS User Guide.*

Default: Uses existing setting

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- The day values must be `mon | tue | wed | thu | fri | sat | sun`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred backup window.
- Must be at least 30 minutes.

Type: String

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

This setting doesn't apply to RDS Custom DB instances.

Type: Array of ProcessorFeature objects

Required: No

PromotionTier

The order of priority in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see Fault Tolerance for an Aurora DB Cluster in the *Amazon Aurora User Guide*.

This setting doesn't apply to RDS Custom DB instances.

Default: 1

Valid Values: `0 - 15`

Type: Integer

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB instance is publicly accessible and you connect from outside of the DB instance's virtual private cloud (VPC), its Domain Name System (DNS) endpoint resolves to the public IP address. When you connect from within the same VPC as the DB instance, the endpoint resolves to the private IP address. Access to the DB instance is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB instance doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

`PubliclyAccessible` only applies to DB instances in a VPC. The DB instance must be part of a public subnet and `PubliclyAccessible` must be enabled for it to be publicly accessible.

Changes to the `PubliclyAccessible` parameter are applied immediately regardless of the value of the `ApplyImmediately` parameter.

Type: Boolean

Required: No

ReplicaMode

The open mode of a replica database.

> **Note**
>
> This parameter is only supported for Db2 DB instances and Oracle DB instances.

Db2

Standby DB replicas are included in Db2 Advanced Edition (AE) and Db2 Standard Edition (SE). The main use case for standby replicas is cross-Region disaster recovery. Because it doesn't accept user connections, a standby replica can't serve a read-only workload.

You can create a combination of standby and read-only DB replicas for the same primary DB instance. For more information, see Working with read replicas for Amazon RDS for Db2 in the *Amazon RDS User Guide*.

To create standby DB replicas for RDS for Db2, set this parameter to `mounted`.

Oracle

Mounted DB replicas are included in Oracle Database Enterprise Edition. The main use case for mounted replicas is cross-Region disaster recovery. The primary database doesn't use Active Data Guard to transmit information to the mounted replica. Because it doesn't accept user connections, a mounted replica can't serve a read-only workload.

You can create a combination of mounted and read-only DB replicas for the same primary DB instance. For more information, see Working with read replicas for Amazon RDS for Oracle in the *Amazon RDS User Guide*.

For RDS Custom, you must specify this parameter and set it to `mounted`. The value won't be set by default. After replica creation, you can manage the open mode manually.

Type: String

Valid Values: `open-read-only | mounted`

Required: No

ResumeFullAutomationModeMinutes

The number of minutes to pause the automation. When the time period ends, RDS Custom resumes full automation.

Default: `60`

Constraints:

- Must be at least 60.
- Must be no more than 1,440.

Type: Integer

Required: No

RotateMasterUserPassword

Specifies whether to rotate the secret managed by Amazon Secrets Manager for the master user password.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance. The secret value contains the updated password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- You must apply the change immediately when rotating the master user password.

Type: Boolean

Required: No

StorageThroughput

The storage throughput value for the DB instance.

This setting applies only to the `gp3` storage type.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: Integer

Required: No

StorageType

The storage type to associate with the DB instance.

If you specify `io1`, `io2`, or `gp3` you must also include a value for the `Iops` parameter.

If you choose to migrate your DB instance from using standard storage to gp2 (General Purpose SSD), gp3, or Provisioned IOPS (io1), or from these storage types to standard storage, the process can take time. The duration of the migration depends on several factors such as database load, storage size, storage type (standard or Provisioned IOPS), amount of IOPS provisioned (if any), and the number of prior scale storage operations. Typical migration times are under 24 hours, but the process can take up to several days in some cases. During the migration, the DB instance is available for use, but might experience performance degradation. While the migration takes place, nightly backups for the instance are suspended. No other Amazon RDS operations can take place for the instance, including modifying the instance, rebooting the instance, deleting the instance, creating a read replica for the instance, and creating a DB snapshot of the instance.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

Default: `io1`, if the `Iops` parameter is specified. Otherwise, `gp2`.

Type: String

Required: No

TdeCredentialArn

The ARN from the key store with which to associate the instance for TDE encryption.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

TdeCredentialPassword

The password for the given ARN from the key store in order to access the device.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

UseDefaultProcessorFeatures

Specifies whether the DB instance class of the DB instance uses its default processor features.

This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of Amazon EC2 VPC security groups to associate with this DB instance. This change is asynchronously applied as soon as possible.

This setting doesn't apply to the following DB instances:

- Amazon Aurora (The associated list of EC2 VPC security groups is managed by the DB cluster. For more information, see `ModifyDBCluster`.)
- RDS Custom

Constraints:

- If supplied, must match existing VPC security group IDs.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

BackupPolicyNotFoundFault

This error has been deprecated.

HTTP Status Code: 404

CertificateNotFound

`CertificateIdentifier` doesn't refer to an existing certificate.

HTTP Status Code: 404

DBInstanceAlreadyExists

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

DBSecurityGroupNotFound

`DBSecurityGroupName` doesn't refer to an existing DB security group.

HTTP Status Code: 404

DBUpgradeDependencyFailure

The DB upgrade failed because a resource the DB depends on can't be modified.

HTTP Status Code: 400

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBSecurityGroupState

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ModifyDBInstance
   &AllocatedStorage=20
   &DBInstanceIdentifier=myawsuser-dbi04
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T192732Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=1dc9dd716f4855e9bdf188c70f1cf9f6251b070b68b81103b59ec70c3e7854b3
```

Sample Response


```
<ModifyDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>available</DBInstanceStatus>
      <MultiAZ>true</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>myawsuser-dbi04</DBInstanceIdentifier>
      <PreferredBackupWindow>10:03-10:33</PreferredBackupWindow>
      <PreferredMaintenanceWindow>wed:03:32-wed:04:02</PreferredMaintenanceWindow>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <LatestRestorableTime>2014-04-25T19:25:00Z</LatestRestorableTime>
      <Engine>mysql</Engine>
      <PendingModifiedValues>
        <AllocatedStorage>20</AllocatedStorage>
      </PendingModifiedValues>
      <LicenseModel>general-public-license</LicenseModel>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <Endpoint>
        <Port>3306</Port>
        <Address>myawsuser-dbi04.cg037hpkuyjt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <EngineVersion>5.6.13</EngineVersion>
      <SecondaryAvailabilityZone>us-east-1b</SecondaryAvailabilityZone>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
```

```
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>myawsuser_db04</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <InstanceCreateTime>2014-04-25T18:07:51.508Z</InstanceCreateTime>
      <AllocatedStorage>15</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.small</DBInstanceClass>
    </DBInstance>
  </ModifyDBInstanceResult>
  <ResponseMetadata>
    <RequestId>f643f1ac-bbfe-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</ModifyDBInstanceResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBParameterGroup

Modifies the parameters of a DB parameter group. To modify more than one parameter, submit a list of the following: `ParameterName`, `ParameterValue`, and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

> **Important**
>
> After you modify a DB parameter group, you should wait at least 5 minutes before creating your first DB instance that uses that DB parameter group as the default parameter group. This allows Amazon RDS to fully complete the modify operation before the parameter group is used as the default for a new DB instance. This is especially important for parameters that are critical when creating the default database for a DB instance, such as the character set for the default database defined by the `character_set_database` parameter. You can use the *Parameter Groups* option of the Amazon RDS console or the *DescribeDBParameters* command to verify that your DB parameter group has been created or modified.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBParameterGroupName

The name of the DB parameter group.

Constraints:

- If supplied, must match the name of an existing `DBParameterGroup`.

Type: String

Required: Yes

Parameters.Parameter.N

An array of parameter names, values, and the application methods for the parameter update. At least one parameter name, value, and application method must be supplied; later arguments are optional. A maximum of 20 parameters can be modified in a single request.

Valid Values (for the application method): `immediate | pending-reboot`

You can use the `immediate` value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters.

When the application method is `immediate`, changes to dynamic parameters are applied immediately to the DB instances associated with the parameter group.

When the application method is `pending-reboot`, changes to dynamic and static parameters are applied after a reboot without failover to the DB instances associated with the parameter group.

> **Note**
>
> You can't use `pending-reboot` with dynamic parameters on RDS for SQL Server DB instances. Use `immediate`.

For more information on modifying DB parameters, see Working with DB parameter groups in the *Amazon RDS User Guide*.

Type: Array of Parameter objects

Required: Yes

Response Elements

The following element is returned by the service.

DBParameterGroupName

The name of the DB parameter group.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

InvalidDBParameterGroupState

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ModifyDBParameterGroup
   &DBParameterGroupName=mydbparametergroup01
   &Parameters.member.1.ApplyMethod=immediate
   &Parameters.member.1.ParameterName=binlog_cache_size
   &Parameters.member.1.ParameterValue=65536
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T193811Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=afd9acfee876360dd294189465aca26502343d405292dc6e43b1961ad4d1d7e2
```

Sample Response

```
<ModifyDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBParameterGroupResult>
    <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
  </ModifyDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>12d7435e-bba0-11d3-fe11-33d33a9bb7e3</RequestId>
```

```
  </ResponseMetadata>
</ModifyDBParameterGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBProxy

Changes the settings for an existing DB proxy.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBProxyName

The identifier for the `DBProxy` to modify.

Type: String

Required: Yes

Auth.member.N

The new authentication settings for the `DBProxy`.

Type: Array of UserAuthConfig objects

Required: No

DebugLogging

Whether the proxy includes detailed information about SQL statements in its logs. This information helps you to debug issues involving SQL behavior or the performance and scalability of the proxy connections. The debug information includes the text of SQL statements that you submit through the proxy. Thus, only enable this setting when needed for debugging, and only when you have security measures in place to safeguard any sensitive information that appears in the logs.

Type: Boolean

Required: No

IdleClientTimeout

The number of seconds that a connection to the proxy can be inactive before the proxy disconnects it. You can set this value higher or lower than the connection timeout limit for the associated database.

Type: Integer

Required: No

NewDBProxyName

The new identifier for the `DBProxy`. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

RequireTLS

Whether Transport Layer Security (TLS) encryption is required for connections to the proxy. By enabling this setting, you can enforce encrypted TLS connections to the proxy, even if the associated database doesn't use TLS.

Type: Boolean

Required: No

RoleArn

The Amazon Resource Name (ARN) of the IAM role that the proxy uses to access secrets in Amazon Secrets Manager.

Type: String

Required: No

SecurityGroups.member.N

The new list of security groups for the `DBProxy`.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBProxy

The `DBProxy` object representing the new settings for the proxy.

Type: DBProxy object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBProxyAlreadyExistsFault

The specified proxy name must be unique for all proxies owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBProxyEndpoint

Changes the settings for an existing DB proxy endpoint.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBProxyEndpointName

The name of the DB proxy sociated with the DB proxy endpoint that you want to modify.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

NewDBProxyEndpointName

The new identifier for the `DBProxyEndpoint`. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

VpcSecurityGroupIds.member.N

The VPC security group IDs for the DB proxy endpoint. When the DB proxy endpoint uses a different VPC than the original proxy, you also specify a different set of security group IDs than for the original proxy.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBProxyEndpoint

The `DBProxyEndpoint` object representing the new settings for the DB proxy endpoint.

Type: DBProxyEndpoint object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBProxyEndpointAlreadyExistsFault

The specified DB proxy endpoint name must be unique for all DB proxy endpoints owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

DBProxyEndpointNotFoundFault

The DB proxy endpoint doesn't exist.

HTTP Status Code: 404

InvalidDBProxyEndpointStateFault

You can't perform this operation while the DB proxy endpoint is in a particular state.

HTTP Status Code: 400

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBProxyTargetGroup

Modifies the properties of a `DBProxyTargetGroup`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBProxyName

The name of the proxy.

Type: String

Required: Yes

TargetGroupName

The name of the target group to modify.

Type: String

Required: Yes

ConnectionPoolConfig

The settings that determine the size and behavior of the connection pool for the target group.

Type: ConnectionPoolConfiguration object

Required: No

NewName

The new name for the modified `DBProxyTarget`. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

You can't rename the `default` target group.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBProxyTargetGroup

The settings of the modified `DBProxyTarget`.

Type: DBProxyTargetGroup object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET

- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBRecommendation

Updates the recommendation status and recommended action status for the specified recommendation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

RecommendationId

The identifier of the recommendation to update.

Type: String

Required: Yes

Locale

The language of the modified recommendation.

Type: String

Required: No

RecommendedActionUpdates.member.N

The list of recommended action status to update. You can update multiple recommended actions at one time.

Type: Array of RecommendedActionUpdate objects

Required: No

Status

The recommendation status to update.

Valid values:

- active
- dismissed

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBRecommendation

The recommendation for your DB instances, DB clusters, and DB parameter groups.

Type: DBRecommendation object

Errors

For information about the errors that are common to all actions, see Common Errors.

Examples

Modifying the recommended action status for a recommendation

This example illustrates one usage of ModifyDBRecommendation.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=ModifyDBRecommendation
    &RecommendationId=15e811d7-ec23-4d94-8d28-74cd2e7729ad
    &RecommendedActionUpdates.member.1.ActionId=806effbdc8853c4bf0e794c0c240ee8e
    &RecommendedActionUpdates.member.1.Status=applied
    &Locale=es
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230222/us-east-1/rds/aws4_request
    &X-Amz-Date=20230222T200807Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response


```
<ModifyDBRecommendationResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBRecommendationResult>
    <DBRecommendation>
      <RecommendationId>15e811d7-ec23-4d94-8d28-74cd2e7729ad</RecommendationId>
      <TypeId>config_recommendation::multi_az_instance</TypeId>
      <Severity>low</Severity>
      <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</ResourceArn>
      <Status>pending</Status>
      <CreatedTime>2023-10-05T18:04:04.017000+00:00</CreatedTime>
      <UpdatedTime>2023-10-20T19:17:18+00:00</UpdatedTime>
      <Detection>**1 resource** is not a Multi-AZ instance</Detection>
      <Recommendation>Set up Multi-AZ for the impacted DB instances</Recommendation>
      <Description>We recommend that you use Multi-AZ deployment. The Multi-AZ
 deployments enhance the availability and durability of the DB instance. Click Info for
 more details about Multi-AZ deployment and pricing.</Description>
      <RecommendedActions>
        <member>
          <ActionId>806effbdc8853c4bf0e794c0c240ee8e</ActionId>
          <Operation>modifyDbInstance</Operation>
          <Parameters>
            <member>
              <Key>MultiAZ</Key>
              <Value>true</Value>
            </member>
            <member>
              <Key>DBInstanceIdentifier</Key>
              <Value>mariadb-instance</Value>
            </member>
          </Parameters>
          <ApplyModes>
            <member>immediately</member>
            <member>next-maintenance-window</member>
          </ApplyModes>
          <Status>applied</Status>
          <ContextAttributes>
            <member>
              <Key>resourceArn</Key>
              <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
            </member>
            <member>
              <Key>engineName</Key>
```

```
              <Value>mariadb</Value>
            </member>
          </ContextAttributes>
        </member>
      </RecommendedActions>
      <Category>reliability</Category>
      <Source>RDS</Source>
      <TypeDetection>**[resource-count] resources** are not Multi-AZ instances</
TypeDetection>
      <TypeRecommendation>Set up Multi-AZ for the impacted DB instances</
TypeRecommendation>
      <Impact>Data availability at risk</Impact>
      <AdditionalInfo>In an Amazon RDS Multi-AZ deployment, Amazon RDS automatically
 creates a primary database instance and replicates the data to an instance in a
 different availability zone. When it detects a failure, Amazon RDS automatically fails
 over to a standby instance without manual intervention.</AdditionalInfo>
      <Links>
        <member>
          <Text>Pricing for Amazon RDS Multi-AZ</Text>
          <Url>https://aws.amazon.com/rds/features/multi-az/#Pricing</Url>
        </member>
      </Links>
    </DBRecommendation>
  </ModifyDBRecommendationResult>
</ModifyDBRecommendationResponse>
```

Modifying the recommendation status for the specified recommendation ID

This example illustrates one usage of ModifyDBRecommendation.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=ModifyDBRecommendation
    &RecommendationId=8c9132b0-267d-4493-b3c4-aedd0920809d
    &Status=dismissed
    &Locale=es
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
```

```
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230222/us-east-1/rds/aws4_request
    &X-Amz-Date=20230222T200807Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=2d4f2b9e8abc31122b5546f94c0499bba47de813cb875f9b9c78e8e19c9afe1b
```

Sample Response

```
<ModifyDBRecommendationResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBRecommendationResult>
    <DBRecommendation>
      <RecommendationId>8c9132b0-267d-4493-b3c4-aedd0920809d</RecommendationId>
      <TypeId>config_recommendation::enhanced_monitoring_off</TypeId>
      <Severity>low</Severity>
      <ResourceArn>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</ResourceArn>
      <Status>dismissed</Status>
      <CreatedTime>2023-10-05T18:04:03.957000+00:00</CreatedTime>
      <UpdatedTime>2023-10-20T19:20:22+00:00</UpdatedTime>
      <Detection>**1 resource** doesn't have Enhanced Monitoring enabled</Detection>
      <Recommendation>Turn on Enhanced Monitoring</Recommendation>
      <Description>Your database resources don't have Enhanced Monitoring turned on.
 Enhanced Monitoring provides real-time operating system metrics for monitoring and
 troubleshooting.</Description>
      <RecommendedActions>
        <member>
          <ActionId>a2e5e55f28854f9ec12f45c227d85f48</ActionId>
          <Operation>modifyDbInstance</Operation>
          <Parameters>
            <member>
              <Key>MonitoringInterval</Key>
              <Value>60</Value>
            </member>
            <member>
              <Key>DBInstanceIdentifier</Key>
              <Value>mariadb-instance</Value>
            </member>
          </Parameters>
          <ApplyModes>
            <mmeber>immediately</mmeber>
          </ApplyModes>
          <Status>ready</Status>
```

```
          <ContextAttributes>
            <member>
              <Key>resourceArn</Key>
              <Value>arn:aws:rds:us-west-2:636812126935:db:mariadb-instance</Value>
            </member>
            <member>
              <Key>engineName</Key>
              <Value>mariadb</Value>
            </member>
            <member>
              <Key>recommendedValue</Key>
              <Value>60</Value>
            </member>
          </ContextAttributes>
        </member>
      </RecommendedActions>
      <Category>reliability</Category>
      <Source>RDS</Source>
      <TypeDetection>**[resource-count] resources** don't have Enhanced Monitoring
 enabled</TypeDetection>
      <TypeRecommendation>Turn on Enhanced Monitoring</TypeRecommendation>
      <Impact>Reduced operational visibility</Impact>
      <AdditionalInfo>Enhanced Monitoring for Amazon RDS provides additional visibility
 on the health of your DB instances. We recommend that you turn on Enhanced Monitoring.
 When the Enhanced Monitoring option is turned on for your DB instance, it collects
 vital operating system metrics and process information.</AdditionalInfo>
      <Links>
        <member>
          <Text>Turning Enhanced Monitoring on and off</Text>
          <Url>https://docs.aws.amazon.com/AmazonRDS/latest/UserGuide/
USER_Monitoring.OS.html</Url>
        </member>
      </Links>
    </DBRecommendation>
  </ModifyDBRecommendationResult>
</ModifyDBRecommendationResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBShardGroup

Modifies the settings of an Aurora Limitless Database DB shard group. You can change one or more settings by specifying these parameters and the new values in the request.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBShardGroupIdentifier

The name of the DB shard group to modify.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

Required: No

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: No

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: No

Response Elements

The following elements are returned by the service.

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

DBShardGroupArn

The Amazon Resource Name (ARN) for the DB shard group.

Type: String

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

DBShardGroupResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB shard group.

Type: String

Endpoint

The connection endpoint for the DB shard group.

Type: String

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

PubliclyAccessible

Indicates whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB shard group's VPC. Access to the DB shard group is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

For more information, see CreateDBShardGroup.

This setting is only for Aurora Limitless Database.

Type: Boolean

Status

The status of the DB shard group.

Type: String

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Errors

For information about the errors that are common to all actions, see Common Errors.

DBShardGroupAlreadyExists

The specified DB shard group name must be unique in your Amazon account in the specified Amazon Region.

HTTP Status Code: 400

DBShardGroupNotFound

The specified DB shard group name wasn't found.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++

- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBSnapshot

Updates a manual DB snapshot with a new engine version. The snapshot can be encrypted or unencrypted, but not shared or public.

Amazon RDS supports upgrading DB snapshots for MySQL, PostgreSQL, and Oracle. This operation doesn't apply to RDS Custom or RDS for Db2.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBSnapshotIdentifier

The identifier of the DB snapshot to modify.

Type: String

Required: Yes

EngineVersion

The engine version to upgrade the DB snapshot to.

The following are the database engines and engine versions that are available when you upgrade a DB snapshot.

MySQL

For the list of engine versions that are available for upgrading a DB snapshot, see Upgrading a MySQL DB snapshot engine version in the *Amazon RDS User Guide.*

Oracle

- `19.0.0.0.ru-2022-01.rur-2022-01.r1` (supported for 12.2.0.1 DB snapshots)
- `19.0.0.0.ru-2022-07.rur-2022-07.r1` (supported for 12.1.0.2 DB snapshots)
- `12.1.0.2.v8` (supported for 12.1.0.1 DB snapshots)
- `11.2.0.4.v12` (supported for 11.2.0.2 DB snapshots)
- `11.2.0.4.v11` (supported for 11.2.0.3 DB snapshots)

PostgreSQL

For the list of engine versions that are available for upgrading a DB snapshot, see Upgrading a PostgreSQL DB snapshot engine version in the *Amazon RDS User Guide.*

Type: String

Required: No

OptionGroupName

The option group to identify with the upgraded DB snapshot.

You can specify this parameter when you upgrade an Oracle DB snapshot. The same option group considerations apply when upgrading a DB snapshot as when upgrading a DB instance. For more information, see Option group considerations in the *Amazon RDS User Guide.*

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the `DescribeDBSnapshots` action.

Type: DBSnapshot object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of ModifyDBSnapshot.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBSnapshot
    &DBSnapshotIdentifier=mysnapshot1
    &EngineVersion=5.6.44
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20161228/us-west-2/rds/aws4_request
    &X-Amz-Date=20210628T220515Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=eb44f1ce3dab4e1dbf113d8d2a265d88d17ece1999ffd36be85714ed36cbdbe3
```

Sample Response

```
<ModifyDBSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBSnapshotResult>
    <DBSnapshot>
      <Port>3306</Port>
      <OptionGroupName>default:mysql-5-6</OptionGroupName>
      <Engine>mysql</Engine>
      <Status>available</Status>
      <SnapshotType>manual</SnapshotType>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.44</EngineVersion>
      <DBInstanceIdentifier>mysqldb-sample</DBInstanceIdentifier>
      <DBSnapshotIdentifier>mysnapshot1</DBSnapshotIdentifier>
      <SnapshotCreateTime>2021-04-20T10:09:15.446Z</SnapshotCreateTime>
      <OriginalSnapshotCreateTime>2021-04-20T10:09:15.446Z</OriginalSnapshotCreateTime>
      <AvailabilityZone>us-west-2b</AvailabilityZone>
      <InstanceCreateTime>2016-12-28T22:24:26.573Z</InstanceCreateTime>
      <PercentProgress>100</PercentProgress>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
```

```
    </DBSnapshot>
  </ModifyDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>aa80a25a-af09-11d4-ed11-23c32f9aa7d3</RequestId>
  </ResponseMetadata>
</ModifyDBSnapshotResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBSnapshotAttribute

Adds an attribute and values to, or removes an attribute and values from, a manual DB snapshot.

To share a manual DB snapshot with other Amazon Web Services accounts, specify `restore` as the `AttributeName` and use the `ValuesToAdd` parameter to add a list of IDs of the Amazon Web Services accounts that are authorized to restore the manual DB snapshot. Uses the value `all` to make the manual DB snapshot public, which means it can be copied or restored by all Amazon Web Services accounts.

> **Note**
>
> Don't add the `all` value for any manual DB snapshots that contain private information that you don't want available to all Amazon accounts.

If the manual DB snapshot is encrypted, it can be shared, but only by specifying a list of authorized Amazon Web Services account IDs for the `ValuesToAdd` parameter. You can't use `all` as a value for that parameter in this case.

To view which Amazon Web Services accounts have access to copy or restore a manual DB snapshot, or whether a manual DB snapshot public or private, use the DescribeDBSnapshotAttributes API operation. The accounts are returned as values for the `restore` attribute.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

AttributeName

The name of the DB snapshot attribute to modify.

To manage authorization for other Amazon Web Services accounts to copy or restore a manual DB snapshot, set this value to `restore`.

> **Note**
>
> To view the list of attributes available to modify, use the DescribeDBSnapshotAttributes API operation.

Type: String

Required: Yes

DBSnapshotIdentifier

The identifier for the DB snapshot to modify the attributes for.

Type: String

Required: Yes

ValuesToAdd.AttributeValue.N

A list of DB snapshot attributes to add to the attribute specified by `AttributeName`.

To authorize other Amazon Web Services accounts to copy or restore a manual snapshot, set this list to include one or more Amazon Web Services account IDs, or `all` to make the manual DB snapshot restorable by any Amazon Web Services account. Do not add the `all` value for any manual DB snapshots that contain private information that you don't want available to all Amazon Web Services accounts.

Type: Array of strings

Required: No

ValuesToRemove.AttributeValue.N

A list of DB snapshot attributes to remove from the attribute specified by `AttributeName`.

To remove authorization for other Amazon Web Services accounts to copy or restore a manual snapshot, set this list to include one or more Amazon Web Services account identifiers, or `all` to remove authorization for any Amazon Web Services account to copy or restore the DB snapshot. If you specify `all`, an Amazon Web Services account whose account ID is explicitly added to the `restore` attribute can still copy or restore the manual DB snapshot.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBSnapshotAttributes` API action.

Manual DB snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB snapshot. For more information, see the `ModifyDBSnapshotAttribute` API action.

Type: DBSnapshotAttributesResult object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

InvalidDBSnapshotState

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

SharedSnapshotQuotaExceeded

You have exceeded the maximum number of accounts that you can share a manual DB snapshot with.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBSnapshotAttribute.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ModifyDBSnapshotAttribute
    &AttributeName=restore
    &DBSnapshotIdentifier=manual-snapshot1
    &SignatureMethod=HmacSHA256&SignatureVersion=4
    &ValuesToAdd.member.1=123451234512
    &ValuesToAdd.member.2=123456789012
    &ValuesToRemove.member.1=all
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20150922/us-west-2/rds/aws4_request
    &X-Amz-Date=20150922T220515Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=ef38f1ce3dab4e1dbf113d8d2a265c67d17ece1999ffd36be85714ed36dddbb3
```

Sample Response

```
<ModifyDBSnapshotAttributeResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBSnapshotAttributeResult>
    <DBSnapshotAttributesResult>
      <DBSnapshotAttributes>
        <DBSnapshotAttribute>
          <AttributeName>restore</AttributeName>
          <AttributeValues>
            <AttributeValue>123451234512</AttributeValue>
            <AttributeValue>123456789012</AttributeValue>
          </AttributeValues>
        </DBSnapshotAttribute>
      </DBSnapshotAttributes>
      <DBSnapshotIdentifier>manual-snapshot1</DBSnapshotIdentifier>
    </DBSnapshotAttributesResult>
  </ModifyDBSnapshotAttributeResult>
  <ResponseMetadata>
    <RequestId>0122a108-2276-11e5-9cc3-0f535cff56aa</RequestId>
  </ResponseMetadata>
</ModifyDBSnapshotAttributeResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyDBSubnetGroup

Modifies an existing DB subnet group. DB subnet groups must contain at least one subnet in at least two AZs in the Amazon Web Services Region.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBSubnetGroupName

The name for the DB subnet group. This value is stored as a lowercase string. You can't modify the default subnet group.

Constraints: Must match the name of an existing DBSubnetGroup. Must not be default.

Example: `mydbsubnetgroup`

Type: String

Required: Yes

SubnetIds.SubnetIdentifier.N

The EC2 subnet IDs for the DB subnet group.

Type: Array of strings

Required: Yes

DBSubnetGroupDescription

The description for the DB subnet group.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBSubnetGroup

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the `DescribeDBSubnetGroups` action.

Type: DBSubnetGroup object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DBSubnetQuotaExceededFault

The request would result in the user exceeding the allowed number of subnets in a DB subnet groups.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

SubnetAlreadyInUse

The DB subnet is already in use in the Availability Zone.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyDBSubnetGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ModifyDBSubnetGroup
   &DBSubnetGroupDescription=A%20new%20Description
   &DBSubnetGroupName=myawsuser-sngrp
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SubnetIds.member.1=subnet-e4d398a1
   &SubnetIds.member.2=subnet-c2bdb6ba
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140425/us-east-1/rds/aws4_request
   &X-Amz-Date=20140425T200214Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=213c429d925cb1608fc13a1dde48715bcac3b0794536ee90beac34203265f9af
```

Sample Response

```
<ModifyDBSubnetGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyDBSubnetGroupResult>
    <DBSubnetGroup>
      <VpcId>vpc-33ac97ea</VpcId>
      <SubnetGroupStatus>Complete</SubnetGroupStatus>
      <DBSubnetGroupDescription>A new Description</DBSubnetGroupDescription>
      <DBSubnetGroupName>myawsuser-sngrp</DBSubnetGroupName>
      <Subnets>
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-e4d398a1</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1b</Name>
            <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
```

```
        <Subnet>
          <SubnetStatus>Active</SubnetStatus>
          <SubnetIdentifier>subnet-c2bdb6ba</SubnetIdentifier>
          <SubnetAvailabilityZone>
            <Name>us-east-1c</Name>
            <ProvisionedIopsCapable>false</ProvisionedIopsCapable>
          </SubnetAvailabilityZone>
        </Subnet>
      </Subnets>
    </DBSubnetGroup>
  </ModifyDBSubnetGroupResult>
  <ResponseMetadata>
    <RequestId>6dd028be-bba3-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</ModifyDBSubnetGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyEventSubscription

Modifies an existing RDS event notification subscription. You can't modify the source identifiers using this call. To change source identifiers for a subscription, use the `AddSourceIdentifierToSubscription` and `RemoveSourceIdentifierFromSubscription` calls.

You can see a list of the event categories for a given source type (`SourceType`) in Events in the *Amazon RDS User Guide* or by using the `DescribeEventCategories` operation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

SubscriptionName

The name of the RDS event notification subscription.

Type: String

Required: Yes

Enabled

Specifies whether to activate the subscription.

Type: Boolean

Required: No

EventCategories.EventCategory.N

A list of event categories for a source type (`SourceType`) that you want to subscribe to. You can see a list of the categories for a given source type in Events in the *Amazon RDS User Guide* or by using the `DescribeEventCategories` operation.

Type: Array of strings

Required: No

SnsTopicArn

The Amazon Resource Name (ARN) of the SNS topic created for event notification. The ARN is created by Amazon SNS when you create a topic and subscribe to it.

Type: String

Required: No

SourceType

The type of source that is generating the events. For example, if you want to be notified of events generated by a DB instance, you would set this parameter to db-instance. For RDS Proxy events, specify `db-proxy`. If this value isn't specified, all events are returned.

Valid Values: `db-instance | db-cluster | db-parameter-group | db-security-group | db-snapshot | db-cluster-snapshot | db-proxy | zero-etl | custom-engine-version | blue-green-deployment`

Type: String

Required: No

Response Elements

The following element is returned by the service.

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Type: EventSubscription object

Errors

For information about the errors that are common to all actions, see Common Errors.

EventSubscriptionQuotaExceeded

You have reached the maximum number of event subscriptions.

HTTP Status Code: 400

SNSInvalidTopic

SNS has responded that there is a problem with the SNS topic specified.

HTTP Status Code: 400

SNSNoAuthorization

You do not have permission to publish to the SNS topic ARN.

HTTP Status Code: 400

SNSTopicArnNotFound

The SNS topic ARN does not exist.

HTTP Status Code: 404

SubscriptionCategoryNotFound

The supplied category does not exist.

HTTP Status Code: 404

SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of ModifyEventSubscription.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=ModifyEventSubscription
   &Enabled=true
   &EventCategories.member.1=creation
   &EventCategories.member.2=deletion
   &EventCategories.member.3=failover
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SnsTopicArn=arn%3Aaws%3Asns%3Aus-west-2%3A802#########%3Amy-rds-events
   &SourceIds.member.1=myexampledb&SourceType=db-instance
   &SubscriptionName=ES-myuser01
```

```
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-west-2/rds/aws4_request
    &X-Amz-Date=20140428T183020Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=3d85bdfaf13861e93a9528824d9876ed87e6e01aaf43a962ce6f2a39247cf33a
```

Sample Response

```
<ModifyEventSubscriptionResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyEventSubscriptionResult>
    <EventSubscription>
      <CustomerAwsId>802#########</CustomerAwsId>
      <Enabled>true</Enabled>
      <SourceType>db-instance</SourceType>
      <Status>modifying</Status>
      <SourceIdsList>
        <SourceId>myexampledb</SourceId>
      </SourceIdsList>
      <SubscriptionCreationTime>2014-04-28 18:24:52.735</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>creation</EventCategory>
        <EventCategory>deletion</EventCategory>
        <EventCategory>failover</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>ES-myuser01</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-west-2:802#########:my-rds-events</SnsTopicArn>
    </EventSubscription>
  </ModifyEventSubscriptionResult>
  <ResponseMetadata>
    <RequestId>1798605b-be02-11d3-f73c-899ec2766c3b</RequestId>
  </ResponseMetadata>
</ModifyEventSubscriptionResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET

- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyGlobalCluster

Modifies a setting for an Amazon Aurora global database cluster. You can change one or more database configuration parameters by specifying these parameters and the new values in the request. For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only applies to Aurora global database clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

AllowMajorVersionUpgrade

Specifies whether to allow major version upgrades.

Constraints: Must be enabled if you specify a value for the `EngineVersion` parameter that's a different major version than the global cluster's current version.

If you upgrade the major version of a global database, the cluster and DB instance parameter groups are set to the default parameter groups for the new version. Apply any custom parameter groups after completing the upgrade.

Type: Boolean

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the global database cluster. The global database cluster can't be deleted when deletion protection is enabled.

Type: Boolean

Required: No

EngineVersion

The version number of the database engine to which you want to upgrade.

To list all of the available engine versions for `aurora-mysql` (for MySQL-based Aurora global databases), use the following command:

```
aws rds describe-db-engine-versions --engine aurora-mysql --query '*[]|
[?SupportsGlobalDatabases == `true`].[EngineVersion]'
```

To list all of the available engine versions for `aurora-postgresql` (for PostgreSQL-based Aurora global databases), use the following command:

```
aws rds describe-db-engine-versions --engine aurora-postgresql --query
'*[]|[?SupportsGlobalDatabases == `true`].[EngineVersion]'
```

Type: String

Required: No

GlobalClusterIdentifier

The cluster identifier for the global cluster to modify. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing global database cluster.

Type: String

Required: No

NewGlobalClusterIdentifier

The new cluster identifier for the global database cluster. This value is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- The first character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster2`

Type: String

Required: No

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

GlobalClusterAlreadyExistsFault

The `GlobalClusterIdentifier` already exists. Specify a new global database identifier (unique name) to create a new global database cluster or to rename an existing one.

HTTP Status Code: 400

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyIntegration

Modifies a zero-ETL integration with Amazon Redshift.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

IntegrationIdentifier

The unique identifier of the integration to modify.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[a-zA-Z0-9_:\-\/]+`

Required: Yes

DataFilter

A new data filter for the integration. For more information, see Data filtering for Aurora zero-ETL integrations with Amazon Redshift or Data filtering for Amazon RDS zero-ETL integrations with Amazon Redshift.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Required: No

Description

A new description for the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Required: No

IntegrationName

A new name for the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

Response Elements

The following elements are returned by the service.

AdditionalEncryptionContext , AdditionalEncryptionContext.entry.N.key (key), AdditionalEncryptionContext.entry.N.value (value)

The encryption context for the integration. For more information, see Encryption context in the *Amazon Key Management Service Developer Guide*.

Type: String to string map

CreateTime

The time when the integration was created, in Universal Coordinated Time (UTC).

Type: Timestamp

DataFilter

Data filters for the integration. These filters determine which tables from the source database are sent to the target Amazon Redshift data warehouse.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Description

A description of the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Errors.IntegrationError.N

Any errors associated with the integration.

Type: Array of IntegrationError objects

IntegrationArn

The ARN of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:integration:[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}`

IntegrationName

The name of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

KMSKeyId

The Amazon Key Management System (Amazon KMS) key identifier for the key used to to encrypt the integration.

Type: String

SourceArn

The Amazon Resource Name (ARN) of the database used as the source for replication.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:(cluster|db):[a-z][a-z0-9]*(-[a-z0-9]+)*`

Status

The current status of the integration.

Type: String

Valid Values: `creating | active | modifying | failed | deleting | syncing | needs_attention`

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

TargetArn

The ARN of the Redshift data warehouse used as the target for replication.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Errors

For information about the errors that are common to all actions, see Common Errors.

IntegrationConflictOperationFault

A conflicting conditional operation is currently in progress against this resource. Typically occurs when there are multiple requests being made to the same resource at the same time, and these requests conflict with each other.

HTTP Status Code: 400

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

InvalidIntegrationStateFault

The integration is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ModifyIntegration.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ModifyIntegration
   &IntegrationIdentifier=a1b2c3d4-5678-90ab-cdef-EXAMPLE11111
   &IntegrationName=my-renamed-integration
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T183020Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=3d85bdfaf13861e93a9528824d9876ed87e6e01aaf43a962ce6f2a39247cf33a
```

Sample Response

```
<ModifyIntegrationResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
    <ModifyIntegrationResult>
        <SourceArn>arn:aws:rds:us-east-1:123456789012:cluster:my-cluster</SourceArn>
        <IntegrationName>my-renamed-integration</IntegrationName>
        <IntegrationArn>arn:aws:rds:us-
east-1:123456789012:integration:a1b2c3d4-5678-90ab-cdef-EXAMPLE11111</IntegrationArn>
        <TargetArn>arn:aws:redshift-serverless:us-east-1:123456789012:namespace/
a1b2c3d4-5678-90ab-cdef-EXAMPLE22222</TargetArn>
        <Tags/>
```

```
        <DataFilter>include: *.*</DataFilter>
        <CreateTime>2023-12-28T17:20:20.629Z</CreateTime>
        <KMSKeyId>arn:aws:kms:us-east-1:123456789012:key/a1b2c3d4-5678-90ab-cdef-
EXAMPLEaaaaa</KMSKeyId>
        <Status>active</Status>
    </ModifyIntegrationResult>
    <ResponseMetadata>
        <RequestId>7581f213-c5a1-42a5-b2cd-e151a1e1c129</RequestId>
    </ResponseMetadata>
</ModifyIntegrationResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyOptionGroup

Modifies an existing option group.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

OptionGroupName

The name of the option group to be modified.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance once it is associated with a DB instance

Type: String

Required: Yes

ApplyImmediately

Specifies whether to apply the change immediately or during the next maintenance window for each instance associated with the option group.

Type: Boolean

Required: No

OptionsToInclude.OptionConfiguration.N

Options in this list are added to the option group or, if already present, the specified configuration is used to update the existing configuration.

Type: Array of OptionConfiguration objects

Required: No

OptionsToRemove.member.N

Options in this list are removed from the option group.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

OptionGroup

Type: OptionGroup object

Errors

For information about the errors that are common to all actions, see Common Errors.

InvalidOptionGroupStateFault

The option group isn't in the *available* state.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of ModifyOptionGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=ModifyOptionGroup
    &ApplyImmediately=true
    &OptionGroupName=myawsuser-og02
    &OptionsToInclude.member.1.DBSecurityGroupMemberships.member.1=default
```

```
    &OptionsToInclude.member.1.OptionName=MEMCACHED
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140501/us-east-1/rds/aws4_request
    &X-Amz-Date=20140501T230529Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=4b278baae6294738704a9948e355af0e9bd4fa0913d5b35b0a9a3c916925aced
```

Sample Response

```
<ModifyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyOptionGroupResult>
    <OptionGroup>
      <OptionGroupName>myawsuser-og02</OptionGroupName>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <AllowsVpcAndNonVpcInstanceMemberships>false</
AllowsVpcAndNonVpcInstanceMemberships>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>my second og</OptionGroupDescription>
      <Options>
        <Option>
          <Port>11211</Port>
          <OptionName>MEMCACHED</OptionName>
          <OptionDescription>Innodb Memcached for MySQL</OptionDescription>
          <Persistent>false</Persistent>
          <OptionSettings>
            <OptionSetting>
              <DataType>BOOLEAN</DataType>
              <IsModifiable>true</IsModifiable>
              <IsCollection>false</IsCollection>
              <Description>If enabled when there is no more memory to store items,
 memcached will return an error rather than evicting items.</Description>
              <Name>ERROR_ON_MEMORY_EXHAUSTED</Name>
              <Value>0</Value>
              <ApplyType>STATIC</ApplyType>
              <AllowedValues>0,1</AllowedValues>
              <DefaultValue>0</DefaultValue>
            </OptionSetting>
            <OptionSetting>
              <DataType>INTEGER</DataType>
```

```
              <IsModifiable>true</IsModifiable>
              <IsCollection>false</IsCollection>
              <Description>The backlog queue configures how many network connections
 can be waiting to be processed by memcached</Description>
              <Name>BACKLOG_QUEUE_LIMIT</Name>
              <Value>1024</Value>
              <ApplyType>STATIC</ApplyType>
              <AllowedValues>1-2048</AllowedValues>
              <DefaultValue>1024</DefaultValue>
            </OptionSetting>
          </OptionSettings>
          <VpcSecurityGroupMemberships/>
          <Permanent>false</Permanent>
          <DBSecurityGroupMemberships>
            <DBSecurityGroup>
              <Status>authorized</Status>
              <DBSecurityGroupName>default</DBSecurityGroupName>
            </DBSecurityGroup>
          </DBSecurityGroupMemberships>
        </Option>
      </Options>
    </OptionGroup>
  </ModifyOptionGroupResult>
  <ResponseMetadata>
    <RequestId>073cfb45-c184-11d3-a537-cef97546330c</RequestId>
  </ResponseMetadata>
</ModifyOptionGroupResponse>
```

Example

This example illustrates one usage of ModifyOptionGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=ModifyOptionGroup
    &ApplyImmediately=true
    &OptionGroupName=myawsuser-og02
    &OptionsToRemove.OptionName=MEMCACHED
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
```

```
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20140501/us-east-1/rds/aws4_request
    &X-Amz-Date=20140501T231731Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=fd7ee924d39f1014488eb3444a8fdfb028e958b97703f95845a5addc435c1399
```

Sample Response

```
<ModifyOptionGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ModifyOptionGroupResult>
    <OptionGroup>
      <OptionGroupName>myawsuser-og02</OptionGroupName>
      <AllowsVpcAndNonVpcInstanceMemberships>true</
AllowsVpcAndNonVpcInstanceMemberships>
      <MajorEngineVersion>5.6</MajorEngineVersion>
      <EngineName>mysql</EngineName>
      <OptionGroupDescription>my second og</OptionGroupDescription>
      <Options/>
    </OptionGroup>
  </ModifyOptionGroupResult>
  <ResponseMetadata>
    <RequestId>b5f134f3-c185-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</ModifyOptionGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3

- Amazon SDK for Python
- Amazon SDK for Ruby V3

ModifyTenantDatabase

Modifies an existing tenant database in a DB instance. You can change the tenant database name or the master user password. This operation is supported only for RDS for Oracle CDB instances using the multi-tenant configuration.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The identifier of the DB instance that contains the tenant database that you are modifying. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing DB instance.

Type: String

Required: Yes

TenantDBName

The user-supplied name of the tenant database that you want to modify. This parameter isn’t case-sensitive.

Constraints:

- Must match the identifier of an existing tenant database.

Type: String

Required: Yes

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

If the tenant database doesn't manage the master user password with Amazon Secrets Manager, you can turn on this management. In this case, you can't specify `MasterUserPassword`.

If the tenant database already manages the master user password with Amazon Secrets Manager, and you specify that the master user password is not managed with Amazon Secrets Manager, then you must specify `MasterUserPassword`. In this case, Amazon RDS deletes the secret and uses the new password for the master user specified by `MasterUserPassword`.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUserPassword

The new password for the master user of the specified tenant database in your DB instance.

> **Note**
>
> Amazon RDS operations never return the password, so this action provides a way to regain access to a tenant database user if the password is lost. This includes restoring privileges that might have been accidentally revoked.

Constraints:

- Can include any printable ASCII character except `/`, `"` (double quote), `@`, `&` (ampersand), and `'` (single quote).

Length constraints:

- Must contain between 8 and 30 characters.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if both of the following conditions are met:

- The tenant database doesn't manage the master user password in Amazon Secrets Manager.

  If the tenant database already manages the master user password in Amazon Secrets Manager, you can't change the KMS key used to encrypt the secret.
- You're turning on `ManageMasterUserPassword` to manage the master user password in Amazon Secrets Manager.

  If you're turning on `ManageMasterUserPassword` and don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a self-managed KMS key.

The Amazon KMS key identifier is any of the following:

- Key ARN
- Key ID
- Alias ARN
- Alias name for the KMS key

To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

A default KMS key exists for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

NewTenantDBName

The new name of the tenant database when renaming a tenant database. This parameter isn’t case-sensitive.

Constraints:

- Can't be the string null or any other reserved word.
- Can't be longer than 8 characters.

Type: String

Required: No

RotateMasterUserPassword

Specifies whether to rotate the secret managed by Amazon Secrets Manager for the master user password.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance. The secret value contains the updated password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- You must apply the change immediately when rotating the master user password.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

TenantDatabase

A tenant database in the DB instance. This data type is an element in the response to the `DescribeTenantDatabases` action.

Type: TenantDatabase object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

TenantDatabaseAlreadyExists

You attempted to either create a tenant database that already exists or modify a tenant database to use the name of an existing tenant database.

HTTP Status Code: 400

TenantDatabaseNotFound

The specified tenant database wasn't found in the DB instance.

HTTP Status Code: 404

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

PromoteReadReplica

Promotes a read replica DB instance to a standalone DB instance.

> **Note**
>
> - Backup duration is a function of the amount of changes to the database since the previous backup. If you plan to promote a read replica to a standalone instance, we recommend that you enable backups and complete at least one backup prior to promotion. In addition, a read replica cannot be promoted to a standalone instance when it is in the `backing-up` status. If you have enabled backups on your read replica, configure the automated backup window so that daily backups do not interfere with read replica promotion.
> - This command doesn't apply to Aurora MySQL, Aurora PostgreSQL, or RDS Custom.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The DB instance identifier. This value is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing read replica DB instance.

Example: `mydbinstance`

Type: String

Required: Yes

BackupRetentionPeriod

The number of days for which automated backups are retained. Setting this parameter to a positive number enables backups. Setting this parameter to 0 disables automated backups.

Default: 1

Constraints:

- Must be a value from 0 to 35.
- Can't be set to 0 if the DB instance is a source to read replicas.

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region. To see the time blocks available, see Adjusting the Preferred Maintenance Window in the *Amazon RDS User Guide.*

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`,

`RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of PromoteReadReplica.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=PromoteReadReplica
   &BackupRetentionPeriod=7
   &DBInstanceIdentifier=mysqldb-rr
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T221536Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=c0b2cfc3db8334b6ef86922f664e05ab306754e30e408d9fd3c8e58069a9b386
```

Sample Response


```
<PromoteReadReplicaResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <PromoteReadReplicaResult>
    <DBInstance>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <DBInstanceStatus>modifying</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb-rr</DBInstanceIdentifier>
      <PreferredBackupWindow>08:25-08:55</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <StatusInfos>
        <DBInstanceStatusInfo>
          <Status>replicating</Status>
          <StatusType>read replication</StatusType>
          <Normal>true</Normal>
        </DBInstanceStatusInfo>
      </StatusInfos>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues>
        <BackupRetentionPeriod>7</BackupRetentionPeriod>
      </PendingModifiedValues>
      <LicenseModel>general-public-license</LicenseModel>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <Endpoint>
        <Port>3306</Port>
        <Address>mysqldb-rr.cg029hpkxcjt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <EngineVersion>5.6.13</EngineVersion>
      <ReadReplicaSourceDBInstanceIdentifier>mysqldb</
ReadReplicaSourceDBInstanceIdentifier>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
```

```
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <DBName>mysqldb</DBName>
      <InstanceCreateTime>2014-04-25T17:12:34.460Z</InstanceCreateTime>
      <AllocatedStorage>100</AllocatedStorage>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
      <MasterUsername>myawsuser</MasterUsername>
    </DBInstance>
  </PromoteReadReplicaResult>
  <ResponseMetadata>
    <RequestId>8e8c0d64-be21-11d3-a71c-13dc2f771e41</RequestId>
  </ResponseMetadata>
</PromoteReadReplicaResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

PromoteReadReplicaDBCluster

Promotes a read replica DB cluster to a standalone DB cluster.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The identifier of the DB cluster read replica to promote. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing DB cluster read replica.

Example: `my-cluster-replica1`

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of PromoteReadReplicaDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=PromoteReadReplicaDBCluster
   &DBClusterIdentifier=my-cluster-replica1
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20160328/us-east-1/rds/aws4_request
```

```
&X-Amz-Date=20160328T221226Z
&X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
&X-Amz-Signature=e2b2cfc3db7766b6ef86922f664e05ab306754e30e408d9fd3c8e58069a9b386
```

Sample Response

```
<PromoteReadReplicaDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <PromoteReadReplicaDBClusterResult>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora</Engine>
      <Status>creating</Status>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>default</DBSubnetGroup>
      <EngineVersion>5.6.10a</EngineVersion>
      <Endpoint>sample-cluster.cluster-ctrayan0rynq.us-east-1.rds.amazonaws.com</
Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <AvailabilityZones>
        <AvailabilityZone>us-east-1a</AvailabilityZone>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <AvailabilityZone>us-east-1e</AvailabilityZone>
      </AvailabilityZones>
      <DBClusterIdentifier>my-cluster-replica1</DBClusterIdentifier>
      <PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
        <DBClusterMembers>
          <DBClusterMember>
            <IsClusterWriter>true</IsClusterWriter>
            <DBInstanceIdentifier>my-cluster1-master</DBInstanceIdentifier>
          </DBClusterMember>
          <DBClusterMember>
            <IsClusterWriter>false</IsClusterWriter>
            <DBInstanceIdentifier>my-cluster1-read1</DBInstanceIdentifier>
          </DBClusterMember>
```

```
        </DBClusterMembers>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBCluster>
  </PromoteReadReplicaDBClusterResult>
  <ResponseMetadata>
    <RequestId>8e8c0d64-be21-11d3-a71c-13dc2f771e41</RequestId>
  </ResponseMetadata>
</PromoteReadReplicaDBClusterResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

PurchaseReservedDBInstancesOffering

Purchases a reserved DB instance offering.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

ReservedDBInstancesOfferingId

The ID of the Reserved DB instance offering to purchase.

Example: 438012d3-4052-4cc7-b2e3-8d3372e0e706

Type: String

Required: Yes

DBInstanceCount

The number of instances to reserve.

Default: 1

Type: Integer

Required: No

ReservedDBInstanceId

Customer-specified identifier to track this reservation.

Example: myreservationID

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Response Elements

The following element is returned by the service.

ReservedDBInstance

This data type is used as a response element in the `DescribeReservedDBInstances` and `PurchaseReservedDBInstancesOffering` actions.

Type: ReservedDBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

ReservedDBInstanceAlreadyExists

User already has a reservation with the given identifier.

HTTP Status Code: 404

ReservedDBInstanceQuotaExceeded

Request would exceed the user's DB Instance quota.

HTTP Status Code: 400

ReservedDBInstancesOfferingNotFound

Specified offering does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of PurchaseReservedDBInstancesOffering.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=PurchaseReservedDBInstancesOffering
   &ReservedDBInstanceId=myreservationID
   &ReservedDBInstancesOfferingId=438012d3-4052-4cc7-b2e3-8d3372e0e706
   &DBInstanceCount=10
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140415/us-east-1/rds/aws4_request
   &X-Amz-Date=20140415T232655Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=c2ac761e8c8f54a8c0727f5a87ad0a766fbb0024510b9aa34ea6d1f7df52fb11
```

Sample Response

```
<PurchaseReservedDBInstancesOfferingResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <PurchaseReservedDBInstancesOfferingResult>
    <ReservedDBInstance>
      <OfferingType>Partial Upfront</OfferingType>
      <CurrencyCode>USD</CurrencyCode>
      <RecurringCharges/>
      <ProductDescription>mysql</ProductDescription>
      <ReservedDBInstancesOfferingId>438012d3-4052-4cc7-b2e3-8d3372e0e706</
ReservedDBInstancesOfferingId>
      <MultiAZ>true</MultiAZ>
      <State>payment-pending</State>
      <ReservedDBInstanceId>myreservationID</ReservedDBInstanceId>
      <DBInstanceCount>10</DBInstanceCount>
      <StartTime>2014-05-18T23:24:56.577Z</StartTime>
      <Duration>31536000</Duration>
      <FixedPrice>123.0</FixedPrice>
      <UsagePrice>0.123</UsagePrice>
      <DBInstanceClass>db.m1.small</DBInstanceClass>
    </ReservedDBInstance>
  </PurchaseReservedDBInstancesOfferingResult>
  <ResponseMetadata>
    <RequestId>7f099901-29cf-11e1-bd06-6fe008f046c3</RequestId>
```

```
  </ResponseMetadata>
</PurchaseReservedDBInstancesOfferingResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RebootDBCluster

You might need to reboot your DB cluster, usually for maintenance reasons. For example, if you make certain modifications, or if you change the DB cluster parameter group associated with the DB cluster, reboot the DB cluster for the changes to take effect.

Rebooting a DB cluster restarts the database engine service. Rebooting a DB cluster results in a momentary outage, during which the DB cluster status is set to rebooting.

Use this operation only for a non-Aurora Multi-AZ DB cluster.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The DB cluster identifier. This parameter is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing DBCluster.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`,

`RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RebootDBCluster.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=RebootDBCluster
   &DBClusterIdentifier=my-multi-az-cluster
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20211014/us-west-2/rds/aws4_request
   &X-Amz-Date=20211020T204924Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=1c48f44c14183cff26fde7d912946f87f3bb9d715f66448f457a8f9e99602af5
```

Sample Response

```
<RebootDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RebootDBClusterResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>100</AllocatedStorage>
      <DatabaseName>mydb</DatabaseName>
      <AssociatedRoles />
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <ReadReplicaIdentifiers />
      <Iops>1000</Iops>
      <PerformanceInsightsKMSKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-
abcd-4567-efgEXAMPLE</PerformanceInsightsKMSKeyId>
      <PerformanceInsightsRetentionPeriod>7</PerformanceInsightsRetentionPeriod>
      <EngineVersion>8.0.26</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <DBClusterMembers>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-3</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
```

```
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-2</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-1</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>true</IsClusterWriter>
        </DBClusterMember>
      </DBClusterMembers>
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <Port>3306</Port>
      <MonitoringInterval>30</MonitoringInterval>
      <BackupRetentionPeriod>2</BackupRetentionPeriod>
      <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
      <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
      <DbClusterResourceId>cluster-RCPGZXFNIHCTBQLDRJX6CP62VQ</DbClusterResourceId>
      <LatestRestorableTime>2021-10-20T20:45:00Z</LatestRestorableTime>
      <Status>available</Status>
      <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <Endpoint>my-multi-az-cluster.cluster-123456789012.us-west-2.rds.amazonaws.com</
Endpoint>
      <EngineMode>provisioned</EngineMode>
      <Engine>mysql</Engine>
      <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <EarliestRestorableTime>2021-10-20T00:21:43.013Z</EarliestRestorableTime>
      <ClusterCreateTime>2021-10-20T00:12:00.867Z</ClusterCreateTime>
      <PerformanceInsightsEnabled>true</PerformanceInsightsEnabled>
      <MultiAZ>true</MultiAZ>
      <DomainMemberships />
      <MonitoringRoleArn>arn:aws:iam::123456789012:role/enhance-monitoring-role</
MonitoringRoleArn>
      <StorageEncrypted>true</StorageEncrypted>
      <DBSubnetGroup>mysubnet1</DBSubnetGroup>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
```

```
          <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <TagList />
      <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
      <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>my-multi-az-cluster-cpg</DBClusterParameterGroup>
      <StorageType>io1</StorageType>
      <DBClusterInstanceClass>db.r6gd.large</DBClusterInstanceClass>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
    </DBCluster>
  </RebootDBClusterResult>
  <ResponseMetadata>
    <RequestId>056383d9-2d62-415d-b1bb-098b4cc86b5d</RequestId>
  </ResponseMetadata>
</RebootDBClusterResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RebootDBInstance

You might need to reboot your DB instance, usually for maintenance reasons. For example, if you make certain modifications, or if you change the DB parameter group associated with the DB instance, you must reboot the instance for the changes to take effect.

Rebooting a DB instance restarts the database engine service. Rebooting a DB instance results in a momentary outage, during which the DB instance status is set to rebooting.

For more information about rebooting, see Rebooting a DB Instance in the *Amazon RDS User Guide.*

This command doesn't apply to RDS Custom.

If your DB instance is part of a Multi-AZ DB cluster, you can reboot the DB cluster with the `RebootDBCluster` operation.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The DB instance identifier. This parameter is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing DBInstance.

Type: String

Required: Yes

ForceFailover

Specifies whether the reboot is conducted through a Multi-AZ failover.

Constraint: You can't enable force failover if the instance isn't configured for Multi-AZ.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RebootDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=RebootDBInstance
   &DBInstanceIdentifier=mysqldb
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T222011Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=1c48f44c14183cff26fde7d912946f87f3bb9d715f66448f457a8f9e99602af5
```

Sample Response

```
<RebootDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RebootDBInstanceResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>rebooting</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <AvailabilityZone>us-east-1a</AvailabilityZone>
      <ReadReplicaDBInstanceIdentifiers/>
      <LatestRestorableTime>2014-04-28T22:15:00Z</LatestRestorableTime>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <Endpoint>
        <Port>3306</Port>
        <Address>mysqldb.cb036hpkmopt.us-east-1.rds.amazonaws.com</Address>
      </Endpoint>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
```

```
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <InstanceCreateTime>2014-04-21T22:24:26.573Z</InstanceCreateTime>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
  </RebootDBInstanceResult>
  <ResponseMetadata>
    <RequestId>33c99cd2-be22-11d3-abdb-7cb19376fb1c</RequestId>
  </ResponseMetadata>
</RebootDBInstanceResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python

- Amazon SDK for Ruby V3

RebootDBShardGroup

You might need to reboot your DB shard group, usually for maintenance reasons. For example, if you make certain modifications, reboot the DB shard group for the changes to take effect.

This operation applies only to Aurora Limitless Database DBb shard groups.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBShardGroupIdentifier

The name of the DB shard group to reboot.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: Yes

Response Elements

The following elements are returned by the service.

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

DBShardGroupArn

The Amazon Resource Name (ARN) for the DB shard group.

Type: String

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

DBShardGroupResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB shard group.

Type: String

Endpoint

The connection endpoint for the DB shard group.

Type: String

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

PubliclyAccessible

Indicates whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC).

It resolves to the public IP address from outside of the DB shard group's VPC. Access to the DB shard group is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

For more information, see CreateDBShardGroup.

This setting is only for Aurora Limitless Database.

Type: Boolean

Status

The status of the DB shard group.

Type: String

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Errors

For information about the errors that are common to all actions, see Common Errors.

DBShardGroupNotFound

The specified DB shard group name wasn't found.

HTTP Status Code: 404

InvalidDBShardGroupState

The DB shard group must be in the available state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RegisterDBProxyTargets

Associate one or more `DBProxyTarget` data structures with a `DBProxyTargetGroup`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBProxyName

The identifier of the `DBProxy` that is associated with the `DBProxyTargetGroup`.

Type: String

Required: Yes

DBClusterIdentifiers.member.N

One or more DB cluster identifiers.

Type: Array of strings

Required: No

DBInstanceIdentifiers.member.N

One or more DB instance identifiers.

Type: Array of strings

Required: No

TargetGroupName

The identifier of the `DBProxyTargetGroup`.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBProxyTargets.member.N

One or more `DBProxyTarget` objects that are created when you register targets with a target group.

Type: Array of DBProxyTarget objects

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetAlreadyRegisteredFault

The proxy is already associated with the specified RDS DB instance or Aurora DB cluster.

HTTP Status Code: 400

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

InsufficientAvailableIPsInSubnetFault

The requested operation can't be performed because there aren't enough available IP addresses in the proxy's subnets. Add more CIDR blocks to the VPC or remove IP address that aren't required from the subnets.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBProxyStateFault

The requested operation can't be performed while the proxy is in this state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python

- Amazon SDK for Ruby V3

RemoveFromGlobalCluster

Detaches an Aurora secondary cluster from an Aurora global database cluster. The cluster becomes a standalone cluster with read-write capability instead of being read-only and receiving data from a primary cluster in a different Region.

> **Note**
>
> This operation only applies to Aurora DB clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DbClusterIdentifier

The Amazon Resource Name (ARN) identifying the cluster that was detached from the Aurora global database cluster.

Type: String

Required: No

GlobalClusterIdentifier

The cluster identifier to detach from the Aurora global database cluster.

Type: String

Required: No

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RemoveRoleFromDBCluster

Removes the asssociation of an Amazon Identity and Access Management (IAM) role from a DB cluster.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The name of the DB cluster to disassociate the IAM role from.

Type: String

Required: Yes

RoleArn

The Amazon Resource Name (ARN) of the IAM role to disassociate from the Aurora DB cluster, for example `arn:aws:iam::123456789012:role/AuroraAccessRole`.

Type: String

Required: Yes

FeatureName

The name of the feature for the DB cluster that the IAM role is to be disassociated from. For information about supported feature names, see DBEngineVersion.

Type: String

Required: No

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBClusterRoleNotFound

The specified IAM role Amazon Resource Name (ARN) isn't associated with the specified DB cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RemoveRoleFromDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=RemoveRoleFromDBCluster
    &DBClusterIdentifier=sample-cluster
    &RoleArn=arn%3Aaws%3Aiam%3A%3A123456789012%3Arole%2Fsample-role
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20161012/us-east-1/rds/aws4_request
    &X-Amz-Date=20161012T204525Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=cd7d5005d56a505b4e2a878c297e6f8a3cc26b19a335ede018ba41f3185c92a2
```

Sample Response

```
<RemoveRoleFromDBClusterResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
```

```
  <ResponseMetadata>
    <RequestId>ccfca75a-90bc-11e6-8533-cd6377e421f8</RequestId>
  </ResponseMetadata>
</RemoveRoleFromDBClusterResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RemoveRoleFromDBInstance

Disassociates an Amazon Identity and Access Management (IAM) role from a DB instance.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The name of the DB instance to disassociate the IAM role from.

Type: String

Required: Yes

FeatureName

The name of the feature for the DB instance that the IAM role is to be disassociated from. For information about supported feature names, see `DBEngineVersion`.

Type: String

Required: Yes

RoleArn

The Amazon Resource Name (ARN) of the IAM role to disassociate from the DB instance, for example, `arn:aws:iam::123456789012:role/AccessRole`.

Type: String

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBInstanceRoleNotFound

The specified `RoleArn` value doesn't match the specified feature for the DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RemoveRoleFromDBInstance.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=RemoveRoleFromDBInstance
    &DBInstanceIdentifier=sample-instance
    &RoleArn=arn%3Aaws%3Aiam%3A%3A123456789012%3Arole%2Fsample-role
    &FeatureName=s3Import
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin

- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RemoveSourceIdentifierFromSubscription

Removes a source identifier from an existing RDS event notification subscription.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

SourceIdentifier

The source identifier to be removed from the subscription, such as the **DB instance identifier** for a DB instance or the name of a security group.

Type: String

Required: Yes

SubscriptionName

The name of the RDS event notification subscription you want to remove a source identifier from.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Type: EventSubscription object

Errors

For information about the errors that are common to all actions, see Common Errors.

SourceNotFound

The requested source could not be found.

HTTP Status Code: 404

SubscriptionNotFound

The subscription name does not exist.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of RemoveSourceIdentifierFromSubscription.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=RemoveSourceIdentifierFromSubscription
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceIdentifier=si-sample
   &SubscriptionName=myawsuser-secgrp
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T222718Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=4419f0015657ee120d781849ffdc6642eeafeee42bf1d18c4b2ed8eb732f7bf8
```

Sample Response

```
<RemoveSourceIdentifierFromSubscriptionResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RemoveSourceIdentifierFromSubscriptionResult>
    <EventSubscription>
      <Enabled>true</Enabled>
```

```
      <CustomerAwsId>802#########</CustomerAwsId>
      <SourceType>db-security-group</SourceType>
      <Status>active</Status>
      <SubscriptionCreationTime>2014-04-25 21:43:25.542</SubscriptionCreationTime>
      <EventCategoriesList>
        <EventCategory>configuration change</EventCategory>
        <EventCategory>failure</EventCategory>
      </EventCategoriesList>
      <CustSubscriptionId>myawsuser-secgrp</CustSubscriptionId>
      <SnsTopicArn>arn:aws:sns:us-east-1:802#########:myawsuser-RDS</SnsTopicArn>
    </EventSubscription>
  </RemoveSourceIdentifierFromSubscriptionResult>
  <ResponseMetadata>
    <RequestId>326cdeb9-be23-11d3-91a5-a90441261bc4</RequestId>
  </ResponseMetadata>
</RemoveSourceIdentifierFromSubscriptionResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RemoveTagsFromResource

Removes metadata tags from an Amazon RDS resource.

For an overview on tagging an Amazon RDS resource, see Tagging Amazon RDS Resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS Resources in the *Amazon Aurora User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

ResourceName

The Amazon RDS resource that the tags are removed from. This value is an Amazon Resource Name (ARN). For information about creating an ARN, see Constructing an ARN for Amazon RDS in the *Amazon RDS User Guide.*

Type: String

Required: Yes

TagKeys.member.N

The tag key (name) of the tag to be removed.

Type: Array of strings

Required: Yes

Errors

For information about the errors that are common to all actions, see Common Errors.

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBProxyNotFoundFault

The specified proxy name doesn't correspond to a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBProxyTargetGroupNotFoundFault

The specified target group isn't available for a proxy owned by your Amazon account in the specified Amazon Region.

HTTP Status Code: 404

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

DBSnapshotTenantDatabaseNotFoundFault

The specified snapshot tenant database wasn't found.

HTTP Status Code: 404

IntegrationNotFoundFault

The specified integration could not be found.

HTTP Status Code: 404

TenantDatabaseNotFound

The specified tenant database wasn't found in the DB instance.

HTTP Status Code: 404

Examples

Example

This example illustrates one usage of RemoveTagsFromResource.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=RemoveTagsFromResource
    &ResourceName=arn%3Aaws%3Ards%3Aus-west-2%3A123456789012%3Adb%3Asample
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &TagKeys.member.1=InstanceType
    &TagKeys.member.2=Owner
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
    &X-Amz-Date=20160913T174918Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=4c72f307a75444461bd9b9ccb7de361fec75b8adad66a52824226320d0a33ca8
```

Sample Response

```
<RemoveTagsFromResourceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResponseMetadata>
    <RequestId>126d40cc-79da-11e6-b8e4-29f0c684be5d</RequestId>
  </ResponseMetadata>
</RemoveTagsFromResourceResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ResetDBClusterParameterGroup

Modifies the parameters of a DB cluster parameter group to the default value. To reset specific parameters submit a list of the following: `ParameterName` and `ApplyMethod`. To reset the entire DB cluster parameter group, specify the `DBClusterParameterGroupName` and `ResetAllParameters` parameters.

When resetting the entire group, dynamic parameters are updated immediately and static parameters are set to `pending-reboot` to take effect on the next DB instance restart or `RebootDBInstance` request. You must call `RebootDBInstance` for every DB instance in your DB cluster that you want the updated static parameter to apply to.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterParameterGroupName

The name of the DB cluster parameter group to reset.

Type: String

Required: Yes

Parameters.Parameter.N

A list of parameter names in the DB cluster parameter group to reset to the default values. You can't use this parameter if the `ResetAllParameters` parameter is enabled.

Type: Array of Parameter objects

Required: No

ResetAllParameters

Specifies whether to reset all parameters in the DB cluster parameter group to their default values. You can't use this parameter if there is a list of parameter names specified for the `Parameters` parameter.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

DBClusterParameterGroupName

The name of the DB cluster parameter group.

Constraints:

- Must be 1 to 255 letters or numbers.
- First character must be a letter
- Can't end with a hyphen or contain two consecutive hyphens

> **Note**
>
> This value is stored as a lowercase string.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

InvalidDBParameterGroupState

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ResetDBClusterParameterGroup.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=ResetDBClusterParameterGroup
    &DBClusterParameterGroupName=sample-cluster-pg
    &Parameters.member.1.ApplyMethod=pending-reboot
    &Parameters.member.1.ParameterName=binlog_format
    &Parameters.member.2.ApplyMethod=pending-reboot
    &Parameters.member.2.ParameterName=innodb_support_xa
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20160913/us-west-2/rds/aws4_request
    &X-Amz-Date=20160913T230026Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=7cca4504082065e227696f2dd904fab2f39633bc7d120258c4bedd35da3ade7f
```

Sample Response

```
<ResetDBClusterParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResetDBClusterParameterGroupResult>
    <DBClusterParameterGroupName>sample-cluster-pg</DBClusterParameterGroupName>
  </ResetDBClusterParameterGroupResult>
  <ResponseMetadata>
    <RequestId>dc2c61eb-7a05-11e6-b83b-cd70a540d79f</RequestId>
  </ResponseMetadata>
</ResetDBClusterParameterGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface

- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

ResetDBParameterGroup

Modifies the parameters of a DB parameter group to the engine/system default value. To reset specific parameters, provide a list of the following: `ParameterName` and `ApplyMethod`. To reset the entire DB parameter group, specify the `DBParameterGroup` name and `ResetAllParameters` parameters. When resetting the entire group, dynamic parameters are updated immediately and static parameters are set to `pending-reboot` to take effect on the next DB instance restart or `RebootDBInstance` request.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBParameterGroupName

The name of the DB parameter group.

Constraints:

- Must match the name of an existing `DBParameterGroup`.

Type: String

Required: Yes

Parameters.Parameter.N

To reset the entire DB parameter group, specify the `DBParameterGroup` name and `ResetAllParameters` parameters. To reset specific parameters, provide a list of the following: `ParameterName` and `ApplyMethod`. A maximum of 20 parameters can be modified in a single request.

MySQL

Valid Values (for Apply method): `immediate` | `pending-reboot`

You can use the immediate value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters, and changes are applied when DB instance reboots.

MariaDB

Valid Values (for Apply method): `immediate` | `pending-reboot`

You can use the immediate value with dynamic parameters only. You can use the `pending-reboot` value for both dynamic and static parameters, and changes are applied when DB instance reboots.

Oracle

Valid Values (for Apply method): `pending-reboot`

Type: Array of Parameter objects

Required: No

ResetAllParameters

Specifies whether to reset all parameters in the DB parameter group to default values. By default, all parameters in the DB parameter group are reset to default values.

Type: Boolean

Required: No

Response Elements

The following element is returned by the service.

DBParameterGroupName

The name of the DB parameter group.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

InvalidDBParameterGroupState

The DB parameter group is in use or is in an invalid state. If you are attempting to delete the parameter group, you can't delete it when the parameter group is in this state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of ResetDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ResetDBParameterGroup
   &DBParameterGroupName=mydbparametergroup01
   &ResetAllParameters=true
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T225714Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=709d1418c91c5ef4129d4665e5c2820002a9665699acf4204683c778f03c3573
```

Sample Response

```
<ResetDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResetDBParameterGroupResult>
    <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
  </ResetDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>610909c6-be27-11d3-a71c-13dc2f771e41</RequestId>
  </ResponseMetadata>
</ResetDBParameterGroupResponse>
```

Example

This example illustrates one usage of ResetDBParameterGroup.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=ResetDBParameterGroup
   &DBParameterGroupName=mydbparametergroup01
   &Parameters.member.1.ApplyMethod=immediate
   &Parameters.member.1.ParameterName=bulk_insert_buffer_size
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T230509Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=d343dd7fcc3789d30295b5e3fc67262f28af15d71fcaf978921f0e8846b2d1e6
```

Sample Response

```
<ResetDBParameterGroupResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <ResetDBParameterGroupResult>
    <DBParameterGroupName>mydbparametergroup01</DBParameterGroupName>
  </ResetDBParameterGroupResult>
  <ResponseMetadata>
    <RequestId>7acb72cf-be28-11d3-a4fc-e3b7f6c20c5f</RequestId>
  </ResponseMetadata>
</ResetDBParameterGroupResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++

- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBClusterFromS3

Creates an Amazon Aurora DB cluster from MySQL data stored in an Amazon S3 bucket. Amazon RDS must be authorized to access the Amazon S3 bucket and the data must be created using the Percona XtraBackup utility as described in Migrating Data from MySQL by Using an Amazon S3 Bucket in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only restores the DB cluster, not the DB instances for that DB cluster. You must invoke the `CreateDBInstance` operation to create DB instances for the restored DB cluster, specifying the identifier of the restored DB cluster in `DBClusterIdentifier`. You can create DB instances only after the `RestoreDBClusterFromS3` operation has completed and the DB cluster is available.

For more information on Amazon Aurora, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only applies to Aurora DB clusters. The source DB engine must be MySQL.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The name of the DB cluster to create from the source data in the Amazon S3 bucket. This parameter isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `my-cluster1`

Type: String

Required: Yes

Engine

The name of the database engine to be used for this DB cluster.

Valid Values: `aurora-mysql` (for Aurora MySQL)

Type: String

Required: Yes

MasterUsername

The name of the master user for the restored DB cluster.

Constraints:

- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Can't be a reserved word for the chosen database engine.

Type: String

Required: Yes

S3BucketName

The name of the Amazon S3 bucket that contains the data used to create the Amazon Aurora DB cluster.

Type: String

Required: Yes

S3IngestionRoleArn

The Amazon Resource Name (ARN) of the Amazon Identity and Access Management (IAM) role that authorizes Amazon RDS to access the Amazon S3 bucket on your behalf.

Type: String

Required: Yes

SourceEngine

The identifier for the database engine that was backed up to create the files stored in the Amazon S3 bucket.

Valid Values: `mysql`

Type: String

Required: Yes

SourceEngineVersion

The version of the database that the backup files were created from.

MySQL versions 5.7 and 8.0 are supported.

Example: `5.7.40`, `8.0.28`

Type: String

Required: Yes

AvailabilityZones.AvailabilityZone.N

A list of Availability Zones (AZs) where instances in the restored DB cluster can be created.

Type: Array of strings

Required: No

BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

> **Note**
>
> Currently, Backtrack is only supported for Aurora MySQL DB clusters.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Type: Long

Required: No

BackupRetentionPeriod

The number of days for which automated backups of the restored DB cluster are retained. You must specify a minimum value of 1.

Default: 1

Constraints:

- Must be a value from 1 to 35

Type: Integer

Required: No

CharacterSetName

A value that indicates that the restored DB cluster should be associated with the specified CharacterSet.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the restored DB cluster to snapshots of the restored DB cluster. The default is not to copy them.

Type: Boolean

Required: No

DatabaseName

The database name for the restored DB cluster.

Type: String

Required: No

DBClusterParameterGroupName

The name of the DB cluster parameter group to associate with the restored DB cluster. If this argument is omitted, the default parameter group for the engine version is used.

Constraints:

- If supplied, must match the name of an existing DBClusterParameterGroup.

Type: String

Required: No

DBSubnetGroupName

A DB subnet group to associate with the restored DB cluster.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mydbsubnetgroup`

Type: String

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB cluster. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled.

Type: Boolean

Required: No

Domain

Specify the Active Directory directory ID to restore the DB cluster in. The domain must be created prior to this operation.

For Amazon Aurora DB clusters, Amazon RDS can use Kerberos Authentication to authenticate users that connect to the DB cluster. For more information, see Kerberos Authentication in the *Amazon Aurora User Guide*.

Type: String

Required: No

DomainIAMRoleName

Specify the name of the IAM role to be used when making API calls to the Directory Service.

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the restored DB cluster is to export to CloudWatch Logs. The values in the list depend on the DB engine being used.

Aurora MySQL

Possible values are `audit`, `error`, `general`, `instance`, `slowquery`, and `iam-db-auth-error`.

Aurora PostgreSQL

Possible value are `instance`, `postgresql`, and `iam-db-auth-error`.

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Type: Array of strings

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication in the *Amazon Aurora User Guide*.

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB cluster.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB cluster into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB cluster to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB cluster into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB cluster past the end of standard support for that engine version. For more information, see the following sections:

- Amazon Aurora - Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*
- Amazon RDS - Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineVersion

The version number of the database engine to use.

To list all of the available engine versions for `aurora-mysql` (Aurora MySQL), use the following command:

```
aws rds describe-db-engine-versions --engine aurora-mysql --query
"DBEngineVersions[].EngineVersion"
```

Aurora MySQL

Examples: `5.7.mysql_aurora.2.12.0`, `8.0.mysql_aurora.3.04.0`

Type: String

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If the StorageEncrypted parameter is enabled, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS will use your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUserPassword

The password for the master database user. This password can contain any printable ASCII character except "/", """, or "@".

Constraints:

- Must contain from 8 to 41 characters.
- Can't be specified if `ManageMasterUserPassword` is turned on.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

NetworkType

The network type of the DB cluster.

Valid Values:

- `IPV4`

- DUAL

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Type: String

Required: No

OptionGroupName

A value that indicates that the restored DB cluster should be associated with the specified option group.

Permanent options can't be removed from an option group. An option group can't be removed from a DB cluster once it is associated with a DB cluster.

Type: String

Required: No

Port

The port number on which the instances in the restored DB cluster accept connections.

Default: `3306`

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled using the `BackupRetentionPeriod` parameter.

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region. To view the time blocks available, see Backup window in the *Amazon Aurora User Guide*.

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Format: `ddd:hh24:mi-ddd:hh24:mi`

The default is a 30-minute window selected at random from an 8-hour block of time for each Amazon Web Services Region, occurring on a random day of the week. To see the time blocks available, see Adjusting the Preferred Maintenance Window in the *Amazon Aurora User Guide*.

Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.

Constraints: Minimum 30-minute window.

Type: String

Required: No

S3Prefix

The prefix for all of the file names that contain the data used to create the Amazon Aurora DB cluster. If you do not specify a **SourceS3Prefix** value, then the Amazon Aurora DB cluster is created by using all of the files in the Amazon S3 bucket.

Type: String

Required: No

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfiguration object

Required: No

StorageEncrypted

Specifies whether the restored DB cluster is encrypted.

Type: Boolean

Required: No

StorageType

Specifies the storage type to be associated with the DB cluster.

Valid Values: `aurora`, `aurora-iopt1`

Default: `aurora`

Valid for: Aurora DB clusters only

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of EC2 VPC security groups to associate with the restored DB cluster.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterAlreadyExistsFault

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBClusterParameterGroupNotFound

`DBClusterParameterGroupName` doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

DBClusterQuotaExceededFault

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InsufficientStorageClusterCapacity

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBSubnetGroupStateFault

The DB subnet group cannot be deleted because it's in use.

HTTP Status Code: 400

InvalidS3BucketFault

The specified Amazon S3 bucket name can't be found or Amazon RDS isn't authorized to access the specified Amazon S3 bucket. Verify the **SourceS3BucketName** and **S3IngestionRoleArn** values and try again.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RestoreDBClusterFromS3.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=RestoreDBClusterFromS3
    &DBClusterIdentifier=sample-cluster
    &Engine=aurora-mysql
    &S3BucketName=s3-ingestion-sample
    &SourceEngine=mysql
    &SourceEngineVersion=8.0.mysql_aurora.3.04.0
    &MasterUsername=myawsuser
    &MasterUserPassword=<password>
    &S3IngestionRoleArn=arn:aws:iam:123456789012:role/sample-role
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &SnapshotIdentifier=sample-snapshot
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230223/us-east-1/rds/aws4_request
    &X-Amz-Date=20230223T165638Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=c59effef9b7b96f6a8dfed7873611df555364594f7f9acf9cd14d353114771fd
```

Sample Response

```
<RestoreDBClusterFromS3Response xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RestoreDBClusterFromS3Result>
    <DBCluster>
      <Port>3306</Port>
      <Engine>aurora-mysql</Engine>
      <Status>creating</Status>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <Status>active</Status>
          <VpcSecurityGroupId>sg-2103dc23</VpcSecurityGroupId>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <DBSubnetGroup>default</DBSubnetGroup>
      <EngineVersion>8.0.mysql_aurora.3.04.0</EngineVersion>
      <Endpoint>sample-cluster.cluster-ctrayan0rynq.us-east-1.rds.amazonaws.com</
Endpoint>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
```

```
      <AvailabilityZones>
        <AvailabilityZone>us-east-1a</AvailabilityZone>
        <AvailabilityZone>us-east-1c</AvailabilityZone>
        <AvailabilityZone>us-east-1e</AvailabilityZone>
      </AvailabilityZones>
      <DBClusterIdentifier>sample-cluster</DBClusterIdentifier>
      <PreferredBackupWindow>04:22-04:52</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:06:44-fri:07:14</PreferredMaintenanceWindow>
      <DBClusterMembers/>
      <AllocatedStorage>1</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
    </DBCluster>
  </RestoreDBClusterFromS3Result>
  <ResponseMetadata>
    <RequestId>46d2b228-7681-11e5-3e8b-9b2c0d5d51a9</RequestId>
  </ResponseMetadata>
</RestoreDBClusterFromS3Response>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBClusterFromSnapshot

Creates a new DB cluster from a DB snapshot or DB cluster snapshot.

The target DB cluster is created from the source snapshot with a default configuration. If you don't specify a security group, the new DB cluster is associated with the default security group.

> **Note**
>
> This operation only restores the DB cluster, not the DB instances for that DB cluster. You must invoke the `CreateDBInstance` operation to create DB instances for the restored DB cluster, specifying the identifier of the restored DB cluster in `DBClusterIdentifier`. You can create DB instances only after the `RestoreDBClusterFromSnapshot` operation has completed and the DB cluster is available.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The name of the DB cluster to create from the DB snapshot or DB cluster snapshot. This parameter isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens
- First character must be a letter
- Can't end with a hyphen or contain two consecutive hyphens

Example: `my-snapshot-id`

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: Yes

Engine

The database engine to use for the new DB cluster.

Default: The same as source

Constraint: Must be compatible with the engine of the source

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: Yes

SnapshotIdentifier

The identifier for the DB snapshot or DB cluster snapshot to restore from.

You can use either the name or the Amazon Resource Name (ARN) to specify a DB cluster snapshot. However, you can use only the ARN to specify a DB snapshot.

Constraints:

- Must match the identifier of an existing Snapshot.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: Yes

AvailabilityZones.AvailabilityZone.N

Provides the list of Availability Zones (AZs) where instances in the restored DB cluster can be created.

Valid for: Aurora DB clusters only

Type: Array of strings

Required: No

BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

> **Note**
>
> Currently, Backtrack is only supported for Aurora MySQL DB clusters.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Valid for: Aurora DB clusters only

Type: Long

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the restored DB cluster to snapshots of the restored DB cluster. The default is not to copy them.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

DatabaseName

The database name for the restored DB cluster.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DBClusterInstanceClass

The compute and memory capacity of the each DB instance in the Multi-AZ DB cluster, for example db.m6gd.xlarge. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines.

For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide.*

Valid for: Multi-AZ DB clusters only

Type: String

Required: No

DBClusterParameterGroupName

The name of the DB cluster parameter group to associate with this DB cluster. If this argument is omitted, the default DB cluster parameter group for the specified engine is used.

Constraints:

- If supplied, must match the name of an existing default DB cluster parameter group.
- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DBSubnetGroupName

The name of the DB subnet group to use for the new DB cluster.

Constraints: If supplied, must match the name of an existing DB subnet group.

Example: `mydbsubnetgroup`

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB cluster. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

Domain

The Active Directory directory ID to restore the DB cluster in. The domain must be created prior to this operation. Currently, only MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances can be created in an Active Directory Domain.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

Valid for: Aurora DB clusters only

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to be used when making API calls to the Directory Service.

Valid for: Aurora DB clusters only

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the restored DB cluster is to export to Amazon CloudWatch Logs. The values in the list depend on the DB engine being used.

RDS for MySQL

Possible values are `error`, `general`, `slowquery`, and `iam-db-auth-error`.

RDS for PostgreSQL

Possible values are `postgresql`, `upgrade`, and `iam-db-auth-error`.

Aurora MySQL

Possible values are `audit`, `error`, `general`, `instance`, `slowquery`, and `iam-db-auth-error`.

Aurora PostgreSQL

Possible value are `instance`, `postgresql`, and `iam-db-auth-error`.

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication in the *Amazon Aurora User Guide* or IAM database authentication for MariaDB, MySQL, and PostgreSQL in the *Amazon RDS User Guide*.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to turn on Performance Insights for the DB cluster.

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB cluster.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB cluster into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB cluster to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB cluster into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB cluster past the end of standard support for that engine version. For more information, see the following sections:

- Amazon Aurora - Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*
- Amazon RDS - Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineMode

The DB engine mode of the DB cluster, either `provisioned` or `serverless`.

For more information, see CreateDBCluster.

Valid for: Aurora DB clusters only

Type: String

Required: No

EngineVersion

The version of the database engine to use for the new DB cluster. If you don't specify an engine version, the default version for the database engine in the Amazon Web Services Region is used.

To list all of the available engine versions for Aurora MySQL, use the following command:

```
aws rds describe-db-engine-versions --engine aurora-mysql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for Aurora PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine aurora-postgresql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for MySQL, use the following command:

```
aws rds describe-db-engine-versions --engine mysql --query
"DBEngineVersions[].EngineVersion"
```

To list all of the available engine versions for RDS for PostgreSQL, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --query
"DBEngineVersions[].EngineVersion"
```

Aurora MySQL

See Database engine updates for Amazon Aurora MySQL in the *Amazon Aurora User Guide*.

Aurora PostgreSQL

See Amazon Aurora PostgreSQL releases and engine versions in the *Amazon Aurora User Guide*.

MySQL

See Amazon RDS for MySQL in the *Amazon RDS User Guide.*

PostgreSQL

See Amazon RDS for PostgreSQL versions and extensions in the *Amazon RDS User Guide.*

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for each DB instance in the Multi-AZ DB cluster.

For information about valid IOPS values, see Amazon RDS Provisioned IOPS storage in the *Amazon RDS User Guide*.

Constraints: Must be a multiple between .5 and 50 of the storage amount for the DB instance.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier to use when restoring an encrypted DB cluster from a DB snapshot or DB cluster snapshot.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

When you don't specify a value for the `KmsKeyId` parameter, then the following occurs:

- If the DB snapshot or DB cluster snapshot in `SnapshotIdentifier` is encrypted, then the restored DB cluster is encrypted using the KMS key that was used to encrypt the DB snapshot or DB cluster snapshot.
- If the DB snapshot or DB cluster snapshot in `SnapshotIdentifier` isn't encrypted, then the restored DB cluster isn't encrypted.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB cluster. To turn off collecting Enhanced Monitoring metrics, specify `0`.

If `MonitoringRoleArn` is specified, also set `MonitoringInterval` to a value other than `0`.

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The Amazon Resource Name (ARN) for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs. An example is `arn:aws:iam:123456789012:role/emaccess`.

If `MonitoringInterval` is set to a value other than `0`, supply a `MonitoringRoleArn` value.

Type: String

Required: No

NetworkType

The network type of the DB cluster.

Valid Values:

- `IPV4`
- `DUAL`

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Valid for: Aurora DB clusters only

Type: String

Required: No

OptionGroupName

The name of the option group to use for the restored DB cluster.

DB clusters are associated with a default option group that can't be modified.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS issues an error.

Type: Integer

Required: No

Port

The port number on which the new DB cluster accepts connections.

Constraints: This value must be `1150-65535`

Default: The same port as the original DB cluster.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Integer

Required: No

PubliclyAccessible

Specifies whether the DB cluster is publicly accessible.

When the DB cluster is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB cluster's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB cluster's VPC. Access to the DB cluster is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB cluster isn't publicly accessible, it is an internal DB cluster with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether `DBSubnetGroupName` is specified.

If `DBSubnetGroupName` isn't specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the default VPC in the target Region doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the default VPC in the target Region has an internet gateway attached to it, the DB cluster is public.

If `DBSubnetGroupName` is specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the subnets are part of a VPC that doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the subnets are part of a VPC that has an internet gateway attached to it, the DB cluster is public.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

RdsCustomClusterConfiguration

Reserved for future use.

Type: RdsCustomClusterConfiguration object

Required: No

ScalingConfiguration

For DB clusters in `serverless` DB engine mode, the scaling properties of the DB cluster.

Valid for: Aurora DB clusters only

Type: ScalingConfiguration object

Required: No

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfiguration object

Required: No

StorageType

Specifies the storage type to be associated with the DB cluster.

When specified for a Multi-AZ DB cluster, a value for the `Iops` parameter is required.

Valid Values: `aurora`, `aurora-iopt1` (Aurora DB clusters); `io1` (Multi-AZ DB clusters)

Default: `aurora` (Aurora DB clusters); `io1` (Multi-AZ DB clusters)

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

Tags.Tag.N

The tags to be assigned to the restored DB cluster.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of Tag objects

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of VPC security groups that the new DB cluster will belong to.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterAlreadyExistsFault

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

DBClusterParameterGroupNotFound

`DBClusterParameterGroupName` doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

DBClusterQuotaExceededFault

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

DBClusterSnapshotNotFoundFault

`DBClusterSnapshotIdentifier` doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InsufficientDBClusterCapacityFault

The DB cluster doesn't have enough capacity for the current operation.

HTTP Status Code: 403

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InsufficientStorageClusterCapacity

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

InvalidDBClusterSnapshotStateFault

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidDBSnapshotState

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

InvalidRestoreFault

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

Examples

Creating a new Aurora DB cluster from a snapshot

This example illustrates one usage of RestoreDBClusterFromSnapshot.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=RestoreDBClusterFromSnapshot
    &DBClusterIdentifier=sample-restored
    &Engine=aurora-mysql
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &SnapshotIdentifier=sample-snapshot-1
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230213/us-west-2/rds/aws4_request
    &X-Amz-Date=20230213T223701Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=65d0d03242d99a16ef3712142bfcd52ac63fd2f68fbb5efd7edfb1e89138da57
```

Sample Response

```
<RestoreDBClusterFromSnapshotResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RestoreDBClusterFromSnapshotResult>
    <DBCluster>
      <AllocatedStorage>1</AllocatedStorage>
      <DatabaseName>sample</DatabaseName>
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <PreferredBackupWindow>10:37-11:07</PreferredBackupWindow>
```

```
      <Endpoint>sample-restored.cluster-cnubrrevfka6.us-west-2.rds.amazonaws.com</
Endpoint>
      <Engine>aurora-mysql</Engine>
      <ReaderEndpoint>sample-restored.cluster-ro-cnubrrevfka6.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <ReadReplicaIdentifiers/>
      <EngineVersion>8.0.mysql_aurora.3.01.0</EngineVersion>
      <MasterUsername>mymasteruser</MasterUsername>
      <DBClusterMembers/>
      <StorageEncrypted>false</StorageEncrypted>
      <DBSubnetGroup>default</DBSubnetGroup>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-178c1671</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <HostedZoneId>Z1PVIF0B346C1W</HostedZoneId>
      <Port>3306</Port>
      <PreferredMaintenanceWindow>tue:11:51-tue:12:21</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <DBClusterIdentifier>sample-restored</DBClusterIdentifier>
      <DbClusterResourceId>cluster-BOCABDT6N5UVQW273AOXAX234Y</DbClusterResourceId>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:sample-restored</
DBClusterArn>
      <Status>creating</Status>
    </DBCluster>
  </RestoreDBClusterFromSnapshotResult>
  <ResponseMetadata>
    <RequestId>955ebc45-7a02-11e6-a5e1-0785f9b8437a</RequestId>
  </ResponseMetadata>
</RestoreDBClusterFromSnapshotResponse>
```

Creating a new Multi-AZ DB cluster from a snapshot

This example illustrates one usage of RestoreDBClusterFromSnapshot.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=RestoreDBClusterFromSnapshot
    &DBClusterIdentifier=my-multi-az-cluster
```

```
    &SnapshotIdentifier=multi-az-cluster-snap
    &Engine=mysql
    &DBClusterInstanceClass=db.r6gd.large
    &StorageType=io1
    &Iops=1000
    &PubliclyAccessible=true
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20221026/us-west-2/rds/aws4_request
    &X-Amz-Date=20221027T000254Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=65d0d03242d99a16ef3712142bfcd52ac63fd2f68fbb5efd7edfb1e89138da57
```

Sample Response

```
<RestoreDBClusterFromSnapshotResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RestoreDBClusterFromSnapshotResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>100</AllocatedStorage>
      <DatabaseName>mydb</DatabaseName>
      <AssociatedRoles />
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <ReadReplicaIdentifiers />
      <Iops>1000</Iops>
      <EngineVersion>8.0.26</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <DBClusterMembers>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-3</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-2</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
```

```
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-1</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
      </DBClusterMembers>
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <Port>3306</Port>
      <BackupRetentionPeriod>2</BackupRetentionPeriod>
      <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
      <DBClusterIdentifier>my-multi-az-cluster</DBClusterIdentifier>
      <DbClusterResourceId>cluster-XZR2FQ3N4FO4I2U5GUZT64OO44</DbClusterResourceId>
      <Status>creating</Status>
      <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <Endpoint>my-multi-az-cluster.cluster-123456789012.us-west-2.rds.amazonaws.com</
Endpoint>
      <EngineMode>provisioned</EngineMode>
      <Engine>mysql</Engine>
      <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <ClusterCreateTime>2021-10-27T00:02:56.955Z</ClusterCreateTime>
      <MultiAZ>true</MultiAZ>
      <DomainMemberships />
      <StorageEncrypted>true</StorageEncrypted>
      <DBSubnetGroup>default</DBSubnetGroup>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <TagList />
      <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
      <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>default.mysql8.0</DBClusterParameterGroup>
      <StorageType>io1</StorageType>
      <DBClusterInstanceClass>db.r6gd.large</DBClusterInstanceClass>
```

```
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
    </DBCluster>
  </RestoreDBClusterFromSnapshotResult>
  <ResponseMetadata>
    <RequestId>2b06bd55-7f19-43b3-bdad-cb50e4478b48</RequestId>
  </ResponseMetadata>
</RestoreDBClusterFromSnapshotResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBClusterToPointInTime

Restores a DB cluster to an arbitrary point in time. Users can restore to any point in time before `LatestRestorableTime` for up to `BackupRetentionPeriod` days. The target DB cluster is created from the source DB cluster with the same configuration as the original DB cluster, except that the new DB cluster is created with the default DB security group. Unless the `RestoreType` is set to `copy-on-write`, the restore may occur in a different Availability Zone (AZ) from the original DB cluster. The AZ where RDS restores the DB cluster depends on the AZs in the specified subnet group.

> **Note**
>
> For Aurora, this operation only restores the DB cluster, not the DB instances for that DB cluster. You must invoke the `CreateDBInstance` operation to create DB instances for the restored DB cluster, specifying the identifier of the restored DB cluster in `DBClusterIdentifier`. You can create DB instances only after the `RestoreDBClusterToPointInTime` operation has completed and the DB cluster is available.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide*.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The name of the new DB cluster to be created.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens
- First character must be a letter
- Can't end with a hyphen or contain two consecutive hyphens

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: Yes

BacktrackWindow

The target backtrack window, in seconds. To disable backtracking, set this value to 0.

Default: 0

Constraints:

- If specified, this value must be set to a number from 0 to 259,200 (72 hours).

Valid for: Aurora MySQL DB clusters only

Type: Long

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the restored DB cluster to snapshots of the restored DB cluster. The default is not to copy them.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

DBClusterInstanceClass

The compute and memory capacity of the each DB instance in the Multi-AZ DB cluster, for example db.m6gd.xlarge. Not all DB instance classes are available in all Amazon Regions, or for all database engines.

For the full list of DB instance classes, and availability for your engine, see DB instance class in the *Amazon RDS User Guide*.

Valid for: Multi-AZ DB clusters only

Type: String

Required: No

DBClusterParameterGroupName

The name of the custom DB cluster parameter group to associate with this DB cluster.

If the `DBClusterParameterGroupName` parameter is omitted, the default DB cluster parameter group for the specified engine is used.

Constraints:

- If supplied, must match the name of an existing DB cluster parameter group.
- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DBSubnetGroupName

The DB subnet group name to use for the new DB cluster.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mydbsubnetgroup`

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB cluster. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

Domain

The Active Directory directory ID to restore the DB cluster in. The domain must be created prior to this operation.

For Amazon Aurora DB clusters, Amazon RDS can use Kerberos Authentication to authenticate users that connect to the DB cluster. For more information, see Kerberos Authentication in the *Amazon Aurora User Guide*.

Valid for: Aurora DB clusters only

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to be used when making API calls to the Directory Service.

Valid for: Aurora DB clusters only

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the restored DB cluster is to export to CloudWatch Logs. The values in the list depend on the DB engine being used.

RDS for MySQL

Possible values are `error`, `general`, `slowquery`, and `iam-db-auth-error`.

RDS for PostgreSQL

Possible values are `postgresql`, `upgrade`, and `iam-db-auth-error`.

Aurora MySQL

Possible values are `audit`, `error`, `general`, `instance`, `slowquery`, and `iam-db-auth-error`.

Aurora PostgreSQL

Possible value are `instance`, `postgresql`, and `iam-db-auth-error`.

For more information about exporting CloudWatch Logs for Amazon RDS, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information, see IAM Database Authentication in the *Amazon Aurora User Guide* or IAM database authentication for MariaDB, MySQL, and PostgreSQL in the *Amazon RDS User Guide*.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to turn on Performance Insights for the DB cluster.

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB cluster.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB cluster into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB cluster to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB cluster into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB cluster past the end of standard support for that engine version. For more information, see the following sections:

- Amazon Aurora - Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*
- Amazon RDS - Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*

Valid for Cluster Type: Aurora DB clusters and Multi-AZ DB clusters

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineMode

The engine mode of the new cluster. Specify `provisioned` or `serverless`, depending on the type of the cluster you are creating. You can create an Aurora Serverless v1 clone from a provisioned cluster, or a provisioned clone from an Aurora Serverless v1 cluster. To create a

clone that is an Aurora Serverless v1 cluster, the original cluster must be an Aurora Serverless v1 cluster or an encrypted provisioned cluster. To create a full copy that is an Aurora Serverless v1 cluster, specify the engine mode `serverless`.

Valid for: Aurora DB clusters only

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to be initially allocated for each DB instance in the Multi-AZ DB cluster.

For information about valid IOPS values, see Amazon RDS Provisioned IOPS storage in the *Amazon RDS User Guide*.

Constraints: Must be a multiple between .5 and 50 of the storage amount for the DB instance.

Valid for: Multi-AZ DB clusters only

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier to use when restoring an encrypted DB cluster from an encrypted DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

You can restore to a new DB cluster and encrypt the new DB cluster with a KMS key that is different from the KMS key used to encrypt the source DB cluster. The new DB cluster is encrypted with the KMS key identified by the `KmsKeyId` parameter.

If you don't specify a value for the `KmsKeyId` parameter, then the following occurs:

- If the DB cluster is encrypted, then the restored DB cluster is encrypted using the KMS key that was used to encrypt the source DB cluster.

- If the DB cluster isn't encrypted, then the restored DB cluster isn't encrypted.

If `DBClusterIdentifier` refers to a DB cluster that isn't encrypted, then the restore request is rejected.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB cluster. To turn off collecting Enhanced Monitoring metrics, specify `0`.

If `MonitoringRoleArn` is specified, also set `MonitoringInterval` to a value other than `0`.

Valid Values: `0 | 1 | 5 | 10 | 15 | 30 | 60`

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The Amazon Resource Name (ARN) for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs. An example is `arn:aws:iam:123456789012:role/emaccess`.

If `MonitoringInterval` is set to a value other than `0`, supply a `MonitoringRoleArn` value.

Type: String

Required: No

NetworkType

The network type of the DB cluster.

Valid Values:

- `IPV4`
- `DUAL`

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Valid for: Aurora DB clusters only

Type: String

Required: No

OptionGroupName

The name of the option group for the new DB cluster.

DB clusters are associated with a default option group that can't be modified.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you don't specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

If you specify a retention period that isn't valid, such as 94, Amazon RDS issues an error.

Type: Integer

Required: No

Port

The port number on which the new DB cluster accepts connections.

Constraints: A value from `1150-65535`.

Default: The default port for the engine.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Integer

Required: No

PubliclyAccessible

Specifies whether the DB cluster is publicly accessible.

When the DB cluster is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB cluster's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB cluster's VPC. Access to the DB cluster is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB cluster isn't publicly accessible, it is an internal DB cluster with a DNS name that resolves to a private IP address.

Default: The default behavior varies depending on whether `DBSubnetGroupName` is specified.

If `DBSubnetGroupName` isn't specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the default VPC in the target Region doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the default VPC in the target Region has an internet gateway attached to it, the DB cluster is public.

If `DBSubnetGroupName` is specified, and `PubliclyAccessible` isn't specified, the following applies:

- If the subnets are part of a VPC that doesn’t have an internet gateway attached to it, the DB cluster is private.
- If the subnets are part of a VPC that has an internet gateway attached to it, the DB cluster is public.

Valid for: Multi-AZ DB clusters only

Type: Boolean

Required: No

RdsCustomClusterConfiguration

Reserved for future use.

Type: RdsCustomClusterConfiguration object

Required: No

RestoreToTime

The date and time to restore the DB cluster to.

Valid Values: Value must be a time in Universal Coordinated Time (UTC) format

Constraints:

- Must be before the latest restorable time for the DB instance
- Must be specified if `UseLatestRestorableTime` parameter isn't provided
- Can't be specified if the `UseLatestRestorableTime` parameter is enabled
- Can't be specified if the `RestoreType` parameter is `copy-on-write`

Example: `2015-03-07T23:45:00Z`

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Timestamp

Required: No

RestoreType

The type of restore to be performed. You can specify one of the following values:

- `full-copy` - The new DB cluster is restored as a full copy of the source DB cluster.
- `copy-on-write` - The new DB cluster is restored as a clone of the source DB cluster.

If you don't specify a `RestoreType` value, then the new DB cluster is restored as a full copy of the source DB cluster.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

ScalingConfiguration

For DB clusters in `serverless` DB engine mode, the scaling properties of the DB cluster.

Valid for: Aurora DB clusters only

Type: ScalingConfiguration object

Required: No

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfiguration object

Required: No

SourceDBClusterIdentifier

The identifier of the source DB cluster from which to restore.

Constraints:

- Must match the identifier of an existing DBCluster.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

SourceDbClusterResourceId

The resource ID of the source DB cluster from which to restore.

Type: String

Required: No

StorageType

Specifies the storage type to be associated with the DB cluster.

When specified for a Multi-AZ DB cluster, a value for the `Iops` parameter is required.

Valid Values: `aurora`, `aurora-iopt1` (Aurora DB clusters); `io1` (Multi-AZ DB clusters)

Default: `aurora` (Aurora DB clusters); `io1` (Multi-AZ DB clusters)

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

UseLatestRestorableTime

Specifies whether to restore the DB cluster to the latest restorable backup time. By default, the DB cluster isn't restored to the latest restorable backup time.

Constraints: Can't be specified if `RestoreToTime` parameter is provided.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of VPC security groups that the new DB cluster belongs to.

Valid for: Aurora DB clusters and Multi-AZ DB clusters

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`,

`ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterAlreadyExistsFault

The user already has a DB cluster with the given identifier.

HTTP Status Code: 400

DBClusterAutomatedBackupNotFoundFault

No automated backup for this DB cluster was found.

HTTP Status Code: 404

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBClusterParameterGroupNotFound

`DBClusterParameterGroupName` doesn't refer to an existing DB cluster parameter group.

HTTP Status Code: 404

DBClusterQuotaExceededFault

The user attempted to create a new DB cluster and the user has already reached the maximum allowed DB cluster quota.

HTTP Status Code: 403

DBClusterSnapshotNotFoundFault

`DBClusterSnapshotIdentifier` doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InsufficientDBClusterCapacityFault

The DB cluster doesn't have enough capacity for the current operation.

HTTP Status Code: 403

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InsufficientStorageClusterCapacity

There is insufficient storage available for the current action. You might be able to resolve this error by updating your subnet group to use different Availability Zones that have more storage available.

HTTP Status Code: 400

InvalidDBClusterSnapshotStateFault

The supplied value isn't a valid DB cluster snapshot state.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBSnapshotState

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

InvalidRestoreFault

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

Examples

Restoring an Aurora DB cluster to a point in time

This example illustrates one usage of RestoreDBClusterToPointInTime.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=RestoreDBClusterToPointInTime
    &DBClusterIdentifier=sample-restored-1
    &RestoreToTime=2023-02-13T18%3A45%3A00Z
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &SourceDBClusterIdentifier=sample-cluster
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20230213/us-west-2/rds/aws4_request
    &X-Amz-Date=20230213T224930Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=e3b88945052247e82eaeaca6e269e7f6e18a36147b45c3b077bc600472e70de6
```

Sample Response

```
<RestoreDBClusterToPointInTimeResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RestoreDBClusterToPointInTimeResult>
    <DBCluster>
      <AllocatedStorage>1</AllocatedStorage>
      <DatabaseName>sample</DatabaseName>
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2c</AvailabilityZone>
      </AvailabilityZones>
      <PreferredBackupWindow>10:37-11:07</PreferredBackupWindow>
      <Endpoint>sample-restored-1.cluster-cnubrrfwfkg6.us-west-2.rds.amazonaws.com</
Endpoint>
      <Engine>aurora-mysql</Engine>
      <ReaderEndpoint>sample-restored-1.cluster-ro-cnubrrfwfkg6.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <ReadReplicaIdentifiers/>
      <EngineVersion>8.0.mysql_aurora.3.01.0</EngineVersion>
```

```
      <MasterUsername>mymasteruser</MasterUsername>
      <DBClusterMembers/>
      <StorageEncrypted>false</StorageEncrypted>
      <DBSubnetGroup>default</DBSubnetGroup>
      <HostedZoneId>Z1PVIF0B622C1W</HostedZoneId>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-187c1671</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <Port>3306</Port>
      <PreferredMaintenanceWindow>tue:11:51-tue:12:21</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>default.aurora5.6</DBClusterParameterGroup>
      <BackupRetentionPeriod>1</BackupRetentionPeriod>
      <DBClusterIdentifier>sample-restored-1</DBClusterIdentifier>
      <DbClusterResourceId>cluster-U5ZXU3237H7YVCVKISDIXSQKUQ</DbClusterResourceId>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:sample-restored-1</
DBClusterArn>
      <Status>creating</Status>
    </DBCluster>
  </RestoreDBClusterToPointInTimeResult>
  <ResponseMetadata>
    <RequestId>54b75eef-7a04-15b6-aaa0-75ef834084a0</RequestId>
  </ResponseMetadata>
</RestoreDBClusterToPointInTimeResponse>
```

Restoring a Multi-AZ DB cluster to a point in time

This example illustrates one usage of RestoreDBClusterToPointInTime.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
    ?Action=RestoreDBClusterToPointInTime
    &DBClusterIdentifier=my-multi-az-cluster-pit
    &SourceDBClusterIdentifier=my-multi-az-cluster
    &UseLatestRestorableTime=true
    &DBClusterInstanceClass=db.r6gd.large
    &StorageType=io1
    &Iops=1000
    &PubliclyAccessible=true
    &Version=2014-10-31
```

```
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20221026/us-west-2/rds/aws4_request
    &X-Amz-Date=20221027T000601Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=e3b88945052247e82eaeaca6e269e7f6e18a36147b45c3b077bc600472e70de6
```

Sample Response

```
<RestoreDBClusterToPointInTimeResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RestoreDBClusterToPointInTimeResult>
    <DBCluster>
      <CrossAccountClone>false</CrossAccountClone>
      <AllocatedStorage>100</AllocatedStorage>
      <DatabaseName>mydb</DatabaseName>
      <AssociatedRoles />
      <AvailabilityZones>
        <AvailabilityZone>us-west-2a</AvailabilityZone>
        <AvailabilityZone>us-west-2b</AvailabilityZone>
        <AvailabilityZone>us-west-2d</AvailabilityZone>
      </AvailabilityZones>
      <ReadReplicaIdentifiers />
      <Iops>1000</Iops>
      <EngineVersion>8.0.26</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <DBClusterMembers>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-3</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-2</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
        </DBClusterMember>
        <DBClusterMember>
          <DBInstanceIdentifier>my-multi-az-cluster-instance-1</DBInstanceIdentifier>
          <DBClusterParameterGroupStatus>in-sync</DBClusterParameterGroupStatus>
          <PromotionTier>1</PromotionTier>
          <IsClusterWriter>false</IsClusterWriter>
```

```
        </DBClusterMember>
      </DBClusterMembers>
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <Port>3306</Port>
      <BackupRetentionPeriod>2</BackupRetentionPeriod>
      <KmsKeyId>arn:aws:kms:us-west-2:123456789012:key/123EXAMPLE-abcd-4567-
efgEXAMPLE</KmsKeyId>
      <DBClusterIdentifier>my-multi-az-cluster-pit</DBClusterIdentifier>
      <DbClusterResourceId>cluster-SA2CL64NMV4KTUP6PI4TJWLOM4</DbClusterResourceId>
      <Status>creating</Status>
      <PreferredBackupWindow>11:34-12:04</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <Endpoint>my-multi-az-cluster.cluster-123456789012.us-west-2.rds.amazonaws.com</
Endpoint>
      <EngineMode>provisioned</EngineMode>
      <Engine>mysql</Engine>
      <ReaderEndpoint>my-multi-az-cluster.cluster-ro-123456789012.us-
west-2.rds.amazonaws.com</ReaderEndpoint>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <ClusterCreateTime>2021-10-27T00:06:04.033Z</ClusterCreateTime>
      <MultiAZ>true</MultiAZ>
      <DomainMemberships />
      <StorageEncrypted>true</StorageEncrypted>
      <DBSubnetGroup>default</DBSubnetGroup>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-6921cc28</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <HostedZoneId>Z3GZ3VYA3PGHTQ</HostedZoneId>
      <TagList />
      <PreferredMaintenanceWindow>sat:07:05-sat:07:35</PreferredMaintenanceWindow>
      <DBClusterParameterGroup>my-cluster-param-1</DBClusterParameterGroup>
      <StorageType>io1</StorageType>
      <DBClusterInstanceClass>db.r6gd.large</DBClusterInstanceClass>
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <DBClusterArn>arn:aws:rds:us-west-2:123456789012:cluster:my-multi-az-cluster</
DBClusterArn>
    </DBCluster>
  </RestoreDBClusterToPointInTimeResult>
  <ResponseMetadata>
```

```
    <RequestId>ec5c848f-3f6a-4c98-9b45-2da58c4e4a96</RequestId>
  </ResponseMetadata>
</RestoreDBClusterToPointInTimeResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBInstanceFromDBSnapshot

Creates a new DB instance from a DB snapshot. The target database is created from the source database restore point with most of the source's original configuration, including the default security group and DB parameter group. By default, the new DB instance is created as a Single-AZ deployment, except when the instance is a SQL Server instance that has an option group associated with mirroring. In this case, the instance becomes a Multi-AZ deployment, not a Single-AZ deployment.

If you want to replace your original DB instance with the new, restored DB instance, then rename your original DB instance before you call the `RestoreDBInstanceFromDBSnapshot` operation. RDS doesn't allow two DB instances with the same name. After you have renamed your original DB instance with a different identifier, then you can pass the original name of the DB instance as the `DBInstanceIdentifier` in the call to the `RestoreDBInstanceFromDBSnapshot` operation. The result is that you replace the original DB instance with the DB instance created from the snapshot.

If you are restoring from a shared manual DB snapshot, the `DBSnapshotIdentifier` must be the ARN of the shared DB snapshot.

To restore from a DB snapshot with an unsupported engine version, you must first upgrade the engine version of the snapshot. For more information about upgrading a RDS for MySQL DB snapshot engine version, see Upgrading a MySQL DB snapshot engine version. For more information about upgrading a RDS for PostgreSQL DB snapshot engine version, Upgrading a PostgreSQL DB snapshot engine version.

> **Note**
>
> This command doesn't apply to Aurora MySQL and Aurora PostgreSQL. For Aurora, use `RestoreDBClusterFromSnapshot`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The name of the DB instance to create from the DB snapshot. This parameter isn't case-sensitive.

Constraints:

- Must contain from 1 to 63 numbers, letters, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `my-snapshot-id`

Type: String

Required: Yes

AllocatedStorage

The amount of storage (in gibibytes) to allocate initially for the DB instance. Follow the allocation rules specified in CreateDBInstance.

This setting isn't valid for RDS for SQL Server.

> **Note**
>
> Be sure to allocate enough storage for your new DB instance so that the restore operation can succeed. You can also allocate additional storage for future growth.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether to automatically apply minor version upgrades to the DB instance during the maintenance window.

If you restore an RDS Custom DB instance, you must disable this parameter.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The Availability Zone (AZ) where the DB instance will be created.

Default: A random, system-chosen Availability Zone.

Constraint: You can't specify the `AvailabilityZone` parameter if the DB instance is a Multi-AZ deployment.

Example: `us-east-1a`

Type: String

Required: No

BackupTarget

Specifies where automated backups and manual snapshots are stored for the restored DB instance.

Possible values are `local` (Dedicated Local Zone), `outposts` (Amazon Outposts), and `region` (Amazon Web Services Region). The default is `region`.

For more information, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

Type: String

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB instance's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the restored DB instance to snapshots of the DB instance.

In most cases, tags aren't copied by default. However, when you restore a DB instance from a DB snapshot, RDS checks whether you specify new tags. If yes, the new tags are added to the restored DB instance. If there are no new tags, RDS looks for the tags from the source DB instance for the DB snapshot, and then adds those tags to the restored DB instance.

For more information, see Copying tags to DB instance snapshots in the *Amazon RDS User Guide*.

Type: Boolean

Required: No

CustomIamInstanceProfile

The instance profile associated with the underlying Amazon EC2 instance of an RDS Custom DB instance. The instance profile must meet the following requirements:

- The profile must exist in your account.
- The profile must have an IAM role that Amazon EC2 has permissions to assume.
- The instance profile name and the associated IAM role name must start with the prefix `AWSRDSCustom`.

For the list of permissions required for the IAM role, see Configure IAM and your VPC in the *Amazon RDS User Guide*.

This setting is required for RDS Custom.

Type: String

Required: No

DBClusterSnapshotIdentifier

The identifier for the Multi-AZ DB cluster snapshot to restore from.

For more information on Multi-AZ DB clusters, see Multi-AZ DB cluster deployments in the *Amazon RDS User Guide*.

Constraints:

- Must match the identifier of an existing Multi-AZ DB cluster snapshot.
- Can't be specified when `DBSnapshotIdentifier` is specified.
- Must be specified when `DBSnapshotIdentifier` isn't specified.
- If you are restoring from a shared manual Multi-AZ DB cluster snapshot, the `DBClusterSnapshotIdentifier` must be the ARN of the shared snapshot.
- Can't be the identifier of an Aurora DB cluster snapshot.

Type: String

Required: No

DBInstanceClass

The compute and memory capacity of the Amazon RDS DB instance, for example db.m4.large. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide.*

Default: The same DBInstanceClass as the original DB instance.

Type: String

Required: No

DBName

The name of the database for the restored DB instance.

This parameter only applies to RDS for Oracle and RDS for SQL Server DB instances. It doesn't apply to the other engines or to RDS Custom DB instances.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to associate with this DB instance.

If you don't specify a value for `DBParameterGroupName`, then RDS uses the default `DBParameterGroup` for the specified DB engine.

This setting doesn't apply to RDS Custom.

Constraints:

- If supplied, must match the name of an existing DB parameter group.
- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

DBSnapshotIdentifier

The identifier for the DB snapshot to restore from.

Constraints:

- Must match the identifier of an existing DB snapshot.
- Can't be specified when `DBClusterSnapshotIdentifier` is specified.
- Must be specified when `DBClusterSnapshotIdentifier` isn't specified.
- If you are restoring from a shared manual DB snapshot, the `DBSnapshotIdentifier` must be the ARN of the shared DB snapshot.

Type: String

Required: No

DBSubnetGroupName

The name of the DB subnet group to use for the new instance.

Constraints:

- If supplied, must match the name of an existing DB subnet group.

Example: `mydbsubnetgroup`

Type: String

Required: No

DedicatedLogVolume

Specifies whether to enable a dedicated log volume (DLV) for the DB instance.

Type: Boolean

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB instance. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

Type: Boolean

Required: No

Domain

The Active Directory directory ID to restore the DB instance in. The domain/ must be created prior to this operation. Currently, you can create only Db2, MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances in an Active Directory Domain.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

DomainAuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user joining the domain.

Constraints:

- Can't be longer than 64 characters.

Example: `arn:aws:secretsmanager:region:account-number:secret:myselfmanagedADtestsecret-123456`

Type: String

Required: No

DomainDnsIps.member.N

The IPv4 DNS IP addresses of your primary and secondary Active Directory domain controllers.

Constraints:

- Two IP addresses must be provided. If there isn't a secondary domain controller, use the IP address of the primary domain controller for both entries in the list.

Example: `123.124.125.126,234.235.236.237`

Type: Array of strings

Required: No

DomainFqdn

The fully qualified domain name (FQDN) of an Active Directory domain.

Constraints:

- Can't be longer than 64 characters.

Example: `mymanagedADtest.mymanagedAD.mydomain`

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainOu

The Active Directory organizational unit for your DB instance to join.

Constraints:

- Must be in the distinguished name format.
- Can't be longer than 64 characters.

Example:
`OU=mymanagedADtestOU,DC=mymanagedADtest,DC=mymanagedAD,DC=mydomain`

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs for the restored DB instance to export to CloudWatch Logs. The values in the list depend on the DB engine. For more information, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom.

Type: Array of strings

Required: No

EnableCustomerOwnedIp

Specifies whether to enable a customer-owned IP address (CoIP) for an RDS on Outposts DB instance.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the DB instance from outside of its virtual private cloud (VPC) on your local network.

This setting doesn't apply to RDS Custom.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping is disabled.

For more information about IAM database authentication, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide.*

This setting doesn't apply to RDS Custom.

Type: Boolean

Required: No

Engine

The database engine to use for the new instance.

This setting doesn't apply to RDS Custom.

Default: The same as source

Constraint: Must be compatible with the engine of the source. For example, you can restore a MariaDB 10.1 DB instance from a MySQL 5.6 snapshot.

Valid Values:

- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Type: String

Required: No

EngineLifecycleSupport

The life cycle type for this DB instance.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB instance into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB instance to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB instance into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB instance past the end of standard support for that engine version. For more information, see Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*.

This setting applies only to RDS for MySQL and RDS for PostgreSQL. For Amazon Aurora DB instances, the life cycle type is managed by the DB cluster.

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

Iops

Specifies the amount of provisioned IOPS for the DB instance, expressed in I/O operations per second. If this parameter isn't specified, the IOPS value is taken from the backup. If this parameter is set to 0, the new instance is converted to a non-PIOPS instance. The conversion takes additional time, though your DB instance is available for connections before the conversion starts.

The provisioned IOPS value must follow the requirements for your database engine. For more information, see Amazon RDS Provisioned IOPS storage in the *Amazon RDS User Guide.*

Constraints: Must be an integer greater than 1000.

Type: Integer

Required: No

LicenseModel

License model information for the restored DB instance.

> **Note**
>
> License models for RDS for Db2 require additional configuration. The Bring Your Own License (BYOL) model requires a custom parameter group and an Amazon License Manager self-managed license. The Db2 license through Amazon Marketplace model requires an Amazon Marketplace subscription. For more information, see Amazon RDS for Db2 licensing options in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Valid Values:

- RDS for Db2 - `bring-your-own-license | marketplace-license`
- RDS for MariaDB - `general-public-license`
- RDS for Microsoft SQL Server - `license-included`
- RDS for MySQL - `general-public-license`
- RDS for Oracle - `bring-your-own-license | license-included`
- RDS for PostgreSQL - `postgresql-license`

Default: Same as the source.

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager in the restored DB instance.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide*.

Constraints:

- Applies to RDS for Oracle only.

Type: Boolean

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

MultiAZ

Specifies whether the DB instance is a Multi-AZ deployment.

This setting doesn't apply to RDS Custom.

Constraint: You can't specify the `AvailabilityZone` parameter if the DB instance is a Multi-AZ deployment.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

Valid Values:

- `IPV4`
- `DUAL`

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Type: String

Required: No

OptionGroupName

The name of the option group to be used for the restored DB instance.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance after it is associated with a DB instance.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

Port

The port number on which the database accepts connections.

Default: The same port as the original DB instance

Constraints: Value must be `1150-65535`

Type: Integer

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

This setting doesn't apply to RDS Custom.

Type: Array of ProcessorFeature objects

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB instance is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB instance's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB instance's VPC. Access to the DB instance is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB instance doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

For more information, see CreateDBInstance.

Type: Boolean

Required: No

StorageThroughput

Specifies the storage throughput value for the DB instance.

This setting doesn't apply to RDS Custom or Amazon Aurora.

Type: Integer

Required: No

StorageType

Specifies the storage type to be associated with the DB instance.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

If you specify `io1`, `io2`, or `gp3`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified, otherwise `gp3`

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TdeCredentialArn

The ARN from the key store with which to associate the instance for TDE encryption.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

TdeCredentialPassword

The password for the given ARN from the key store in order to access the device.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

UseDefaultProcessorFeatures

Specifies whether the DB instance class of the DB instance uses its default processor features.

This setting doesn't apply to RDS Custom.

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of EC2 VPC security groups to associate with this DB instance.

Default: The default EC2 VPC security group for the DB subnet group's VPC.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

BackupPolicyNotFoundFault

This error has been deprecated.

HTTP Status Code: 404

CertificateNotFound

`CertificateIdentifier` doesn't refer to an existing certificate.

HTTP Status Code: 404

DBClusterSnapshotNotFoundFault

`DBClusterSnapshotIdentifier` doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

DBInstanceAlreadyExists

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

DBSecurityGroupNotFound

`DBSecurityGroupName` doesn't refer to an existing DB security group.

HTTP Status Code: 404

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InstanceQuotaExceeded

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InvalidDBSnapshotState

The state of the DB snapshot doesn't allow deletion.

HTTP Status Code: 400

InvalidRestoreFault

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RestoreDBInstanceFromDBSnapshot.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=RestoreDBInstanceFromDBSnapshot
   &DBInstanceIdentifier=mysqldb-restored
   &DBSnapshotIdentifier=rds%3Amysqldb-2014-04-22-08-15
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T232655Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=78ac761e8c8f54a8c0727f4e67ad0a766fbb0024510b9aa34ea6d1f7df52fe92
```

Sample Response

```
<RestoreDBInstanceFromDBSnapshotResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RestoreDBInstanceFromDBSnapshotResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <MultiAZ>false</MultiAZ>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb-restored</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <EngineVersion>5.6.13</EngineVersion>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <OptionGroupMemberships>
        <OptionGroupMembership>
```

```
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>pending-apply</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
  </RestoreDBInstanceFromDBSnapshotResult>
  <ResponseMetadata>
    <RequestId>863fd73e-be2b-11d3-855b-576787000e19</RequestId>
  </ResponseMetadata>
</RestoreDBInstanceFromDBSnapshotResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBInstanceFromS3

Amazon Relational Database Service (Amazon RDS) supports importing MySQL databases by using backup files. You can create a backup of your on-premises database, store it on Amazon Simple Storage Service (Amazon S3), and then restore the backup file onto a new Amazon RDS DB instance running MySQL. For more information, see Importing Data into an Amazon RDS MySQL DB Instance in the *Amazon RDS User Guide.*

This operation doesn't apply to RDS Custom.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceClass

The compute and memory capacity of the DB instance, for example db.m4.large. Not all DB instance classes are available in all Amazon Web Services Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide.*

Importing from Amazon S3 isn't supported on the db.t2.micro DB instance class.

Type: String

Required: Yes

DBInstanceIdentifier

The DB instance identifier. This parameter is stored as a lowercase string.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Example: `mydbinstance`

Type: String

Required: Yes

Engine

The name of the database engine to be used for this instance.

Valid Values: `mysql`

Type: String

Required: Yes

S3BucketName

The name of your Amazon S3 bucket that contains your database backup file.

Type: String

Required: Yes

S3IngestionRoleArn

An Amazon Identity and Access Management (IAM) role with a trust policy and a permissions policy that allows Amazon RDS to access your Amazon S3 bucket. For information about this role, see Creating an IAM role manually in the *Amazon RDS User Guide.*

Type: String

Required: Yes

SourceEngine

The name of the engine of your source database.

Valid Values: `mysql`

Type: String

Required: Yes

SourceEngineVersion

The version of the database that the backup files were created from.

MySQL versions 5.6 and 5.7 are supported.

Example: `5.6.40`

Type: String

Required: Yes

AllocatedStorage

The amount of storage (in gibibytes) to allocate initially for the DB instance. Follow the allocation rules specified in `CreateDBInstance`.

This setting isn't valid for RDS for SQL Server.

> **Note**
>
> Be sure to allocate enough storage for your new DB instance so that the restore operation can succeed. You can also allocate additional storage for future growth.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether to automatically apply minor engine upgrades to the DB instance during the maintenance window. By default, minor engine upgrades are not applied automatically.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The Availability Zone that the DB instance is created in. For information about Amazon Web Services Regions and Availability Zones, see Regions and Availability Zones in the *Amazon RDS User Guide.*

Default: A random, system-chosen Availability Zone in the endpoint's Amazon Web Services Region.

Example: `us-east-1d`

Constraint: The `AvailabilityZone` parameter can't be specified if the DB instance is a Multi-AZ deployment. The specified Availability Zone must be in the same Amazon Web Services Region as the current endpoint.

Type: String

Required: No

BackupRetentionPeriod

The number of days for which automated backups are retained. Setting this parameter to a positive number enables backups. For more information, see `CreateDBInstance`.

Type: Integer

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB instance's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the DB instance to snapshots of the DB instance. By default, tags are not copied.

Type: Boolean

Required: No

DatabaseInsightsMode

Specifies the mode of Database Insights to enable for the DB instance.

> **Note**
>
> Aurora DB instances inherit this value from the DB cluster, so you can't change this value.

Type: String

Valid Values: `standard | advanced`

Required: No

DBName

The name of the database to create when the DB instance is created. Follow the naming rules specified in `CreateDBInstance`.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to associate with this DB instance.

If you do not specify a value for `DBParameterGroupName`, then the default `DBParameterGroup` for the specified DB engine is used.

Type: String

Required: No

DBSecurityGroups.DBSecurityGroupName.N

A list of DB security groups to associate with this DB instance.

Default: The default DB security group for the database engine.

Type: Array of strings

Required: No

DBSubnetGroupName

A DB subnet group to associate with this DB instance.

Constraints: If supplied, must match the name of an existing DBSubnetGroup.

Example: `mydbsubnetgroup`

Type: String

Required: No

DedicatedLogVolume

Specifies whether to enable a dedicated log volume (DLV) for the DB instance.

Type: Boolean

Required: No

DeletionProtection

Specifies whether to enable deletion protection for the DB instance. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

Type: Boolean

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the restored DB instance is to export to CloudWatch Logs. The values in the list depend on the DB engine being used. For more information, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

Type: Array of strings

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

For more information about IAM database authentication, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide.*

Type: Boolean

Required: No

EnablePerformanceInsights

Specifies whether to enable Performance Insights for the DB instance.

For more information, see Using Amazon Performance Insights in the *Amazon RDS User Guide*.

Type: Boolean

Required: No

EngineLifecycleSupport

The life cycle type for this DB instance.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB instance into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB instance to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB instance into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB instance past the end of standard support for that engine version. For more information, see Amazon RDS Extended Support Amazon RDS in the *Amazon RDS User Guide*.

This setting applies only to RDS for MySQL and RDS for PostgreSQL. For Amazon Aurora DB instances, the life cycle type is managed by the DB cluster.

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

EngineVersion

The version number of the database engine to use. Choose the latest minor version of your database engine. For information about engine versions, see `CreateDBInstance`, or call `DescribeDBEngineVersions`.

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to allocate initially for the DB instance. For information about valid IOPS values, see Amazon RDS Provisioned IOPS storage in the *Amazon RDS User Guide.*

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier for an encrypted DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If the `StorageEncrypted` parameter is enabled, and you do not specify a value for the `KmsKeyId` parameter, then Amazon RDS will use your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

LicenseModel

The license model for this DB instance. Use `general-public-license`.

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Constraints:

- Can't manage the master user password with Amazon Secrets Manager if `MasterUserPassword` is specified.

Type: Boolean

Required: No

MasterUsername

The name for the master user.

Constraints:

- Must be 1 to 16 letters or numbers.
- First character must be a letter.
- Can't be a reserved word for the chosen database engine.

Type: String

Required: No

MasterUserPassword

The password for the master user.

Constraints:

- Can't be specified if `ManageMasterUserPassword` is turned on.
- Can include any printable ASCII character except "/", """, or "@". For RDS for Oracle, can't include the "&" (ampersand) or the "'" (single quotes) character.

Length Constraints:

- RDS for Db2 - Must contain from 8 to 128 characters.
- RDS for MariaDB - Must contain from 8 to 41 characters.
- RDS for Microsoft SQL Server - Must contain from 8 to 128 characters.

- RDS for MySQL - Must contain from 8 to 41 characters.
- RDS for Oracle - Must contain from 8 to 30 characters.
- RDS for PostgreSQL - Must contain from 8 to 128 characters.

Type: String

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

For more information about this setting, including limitations that apply to it, see Managing capacity automatically with Amazon RDS storage autoscaling in the *Amazon RDS User Guide*.

Type: Integer

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance. To disable collecting Enhanced Monitoring metrics, specify 0.

If `MonitoringRoleArn` is specified, then you must also set `MonitoringInterval` to a value other than 0.

Valid Values: 0, 1, 5, 10, 15, 30, 60

Default: `0`

Type: Integer

Required: No

MonitoringRoleArn

The ARN for the IAM role that permits RDS to send enhanced monitoring metrics to Amazon CloudWatch Logs. For example, `arn:aws:iam:123456789012:role/emaccess`. For information on creating a monitoring role, see Setting Up and Enabling Enhanced Monitoring in the *Amazon RDS User Guide.*

If `MonitoringInterval` is set to a value other than 0, then you must supply a `MonitoringRoleArn` value.

Type: String

Required: No

MultiAZ

Specifies whether the DB instance is a Multi-AZ deployment. If the DB instance is a Multi-AZ deployment, you can't set the `AvailabilityZone` parameter.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

Valid Values:

- `IPV4`
- `DUAL`

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Type: String

Required: No

OptionGroupName

The name of the option group to associate with this DB instance. If this argument is omitted, the default option group for the specified engine is used.

Type: String

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

If you do not specify a value for `PerformanceInsightsKMSKeyId`, then Amazon RDS uses your default KMS key. There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data. The default is 7 days. The following values are valid:

- 7
- *month* * 31, where *month* is a number of months from 1-23
- 731

For example, the following values are valid:

- 93 (3 months * 31)
- 341 (11 months * 31)
- 589 (19 months * 31)
- 731

If you specify a retention period such as 94, which isn't a valid value, RDS issues an error.

Type: Integer

Required: No

Port

The port number on which the database accepts connections.

Type: Integer

Valid Values: `1150-65535`

Default: `3306`

Type: Integer

Required: No

PreferredBackupWindow

The time range each day during which automated backups are created if automated backups are enabled. For more information, see Backup window in the *Amazon RDS User Guide.*

Constraints:

- Must be in the format `hh24:mi-hh24:mi`.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred maintenance window.
- Must be at least 30 minutes.

Type: String

Required: No

PreferredMaintenanceWindow

The time range each week during which system maintenance can occur, in Universal Coordinated Time (UTC). For more information, see Amazon RDS Maintenance Window in the *Amazon RDS User Guide.*

Constraints:

- Must be in the format `ddd:hh24:mi-ddd:hh24:mi`.
- Valid Days: Mon, Tue, Wed, Thu, Fri, Sat, Sun.
- Must be in Universal Coordinated Time (UTC).
- Must not conflict with the preferred backup window.
- Must be at least 30 minutes.

Type: String

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

Type: Array of ProcessorFeature objects

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB instance is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB instance's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB instance's VPC. Access to the DB instance is ultimately controlled by the security group it uses. That public access is not permitted if the security group assigned to the DB instance doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

For more information, see CreateDBInstance.

Type: Boolean

Required: No

S3Prefix

The prefix of your Amazon S3 bucket.

Type: String

Required: No

StorageEncrypted

Specifies whether the new DB instance is encrypted or not.

Type: Boolean

Required: No

StorageThroughput

Specifies the storage throughput value for the DB instance.

This setting doesn't apply to RDS Custom or Amazon Aurora.

Type: Integer

Required: No

StorageType

Specifies the storage type to be associated with the DB instance.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

If you specify `io1`, `io2`, or `gp3`, you must also include a value for the `Iops` parameter.

Default: `io1` if the `Iops` parameter is specified; otherwise `gp2`

Type: String

Required: No

Tags.Tag.N

A list of tags to associate with this DB instance. For more information, see Tagging Amazon RDS Resources in the *Amazon RDS User Guide.*

Type: Array of Tag objects

Required: No

UseDefaultProcessorFeatures

Specifies whether the DB instance class of the DB instance uses its default processor features.

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of VPC security groups to associate with this DB instance.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

BackupPolicyNotFoundFault

This error has been deprecated.

HTTP Status Code: 404

CertificateNotFound

`CertificateIdentifier` doesn't refer to an existing certificate.

HTTP Status Code: 404

DBInstanceAlreadyExists

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

DBSecurityGroupNotFound

`DBSecurityGroupName` doesn't refer to an existing DB security group.

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

InstanceQuotaExceeded

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InvalidS3BucketFault

The specified Amazon S3 bucket name can't be found or Amazon RDS isn't authorized to access the specified Amazon S3 bucket. Verify the **SourceS3BucketName** and **S3IngestionRoleArn** values and try again.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RestoreDBInstanceToPointInTime

Restores a DB instance to an arbitrary point in time. You can restore to any point in time before the time identified by the `LatestRestorableTime` property. You can restore to a point up to the number of days specified by the `BackupRetentionPeriod` property.

The target database is created with most of the original configuration, but in a system-selected Availability Zone, with the default security group, the default subnet group, and the default DB parameter group. By default, the new DB instance is created as a single-AZ deployment except when the instance is a SQL Server instance that has an option group that is associated with mirroring; in this case, the instance becomes a mirrored deployment and not a single-AZ deployment.

> **Note**
>
> This operation doesn't apply to Aurora MySQL and Aurora PostgreSQL. For Aurora, use `RestoreDBClusterToPointInTime`.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

TargetDBInstanceIdentifier

The name of the new DB instance to create.

Constraints:

- Must contain from 1 to 63 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: Yes

AllocatedStorage

The amount of storage (in gibibytes) to allocate initially for the DB instance. Follow the allocation rules specified in `CreateDBInstance`.

This setting isn't valid for RDS for SQL Server.

> **Note**
>
> Be sure to allocate enough storage for your new DB instance so that the restore operation can succeed. You can also allocate additional storage for future growth.

Type: Integer

Required: No

AutoMinorVersionUpgrade

Specifies whether minor version upgrades are applied automatically to the DB instance during the maintenance window.

This setting doesn't apply to RDS Custom.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The Availability Zone (AZ) where the DB instance will be created.

Default: A random, system-chosen Availability Zone.

Constraints:

- You can't specify the `AvailabilityZone` parameter if the DB instance is a Multi-AZ deployment.

Example: `us-east-1a`

Type: String

Required: No

BackupTarget

The location for storing automated backups and manual snapshots for the restored DB instance.

Valid Values:

- `local` (Dedicated Local Zone)
- `outposts` (Amazon Outposts)
- `region` (Amazon Web Services Region)

Default: `region`

For more information, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

Type: String

Required: No

CACertificateIdentifier

The CA certificate identifier to use for the DB instance's server certificate.

This setting doesn't apply to RDS Custom DB instances.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CopyTagsToSnapshot

Specifies whether to copy all tags from the restored DB instance to snapshots of the DB instance. By default, tags are not copied.

Type: Boolean

Required: No

CustomIamInstanceProfile

The instance profile associated with the underlying Amazon EC2 instance of an RDS Custom DB instance. The instance profile must meet the following requirements:

- The profile must exist in your account.
- The profile must have an IAM role that Amazon EC2 has permissions to assume.
- The instance profile name and the associated IAM role name must start with the prefix `AWSRDSCustom`.

For the list of permissions required for the IAM role, see Configure IAM and your VPC in the *Amazon RDS User Guide*.

This setting is required for RDS Custom.

Type: String

Required: No

DBInstanceClass

The compute and memory capacity of the Amazon RDS DB instance, for example db.m4.large. Not all DB instance classes are available in all Amazon Regions, or for all database engines. For the full list of DB instance classes, and availability for your engine, see DB Instance Class in the *Amazon RDS User Guide*.

Default: The same DB instance class as the original DB instance.

Type: String

Required: No

DBName

The database name for the restored DB instance.

This parameter doesn't apply to the following DB instances:

- RDS Custom
- RDS for Db2
- RDS for MariaDB
- RDS for MySQL

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group to associate with this DB instance.

If you do not specify a value for `DBParameterGroupName`, then the default `DBParameterGroup` for the specified DB engine is used.

This setting doesn't apply to RDS Custom.

Constraints:

- If supplied, must match the name of an existing DB parameter group.
- Must be 1 to 255 letters, numbers, or hyphens.
- First character must be a letter.
- Can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

DBSubnetGroupName

The DB subnet group name to use for the new instance.

Constraints:

- If supplied, must match the name of an existing DB subnet group.

Example: `mydbsubnetgroup`

Type: String

Required: No

DedicatedLogVolume

Specifies whether to enable a dedicated log volume (DLV) for the DB instance.

Type: Boolean

Required: No

DeletionProtection

Specifies whether the DB instance has deletion protection enabled. The database can't be deleted when deletion protection is enabled. By default, deletion protection isn't enabled. For more information, see Deleting a DB Instance.

Type: Boolean

Required: No

Domain

The Active Directory directory ID to restore the DB instance in. Create the domain before running this command. Currently, you can create only the MySQL, Microsoft SQL Server, Oracle, and PostgreSQL DB instances in an Active Directory Domain.

This setting doesn't apply to RDS Custom.

For more information, see Kerberos Authentication in the *Amazon RDS User Guide*.

Type: String

Required: No

DomainAuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user joining the domain.

Constraints:

- Can't be longer than 64 characters.

Example: `arn:aws:secretsmanager:region:account-number:secret:myselfmanagedADtestsecret-123456`

Type: String

Required: No

DomainDnsIps.member.N

The IPv4 DNS IP addresses of your primary and secondary Active Directory domain controllers.

Constraints:

- Two IP addresses must be provided. If there isn't a secondary domain controller, use the IP address of the primary domain controller for both entries in the list.

Example: `123.124.125.126,234.235.236.237`

Type: Array of strings

Required: No

DomainFqdn

The fully qualified domain name (FQDN) of an Active Directory domain.

Constraints:

- Can't be longer than 64 characters.

Example: `mymanagedADtest.mymanagedAD.mydomain`

Type: String

Required: No

DomainIAMRoleName

The name of the IAM role to use when making API calls to the Directory Service.

This setting doesn't apply to RDS Custom DB instances.

Type: String

Required: No

DomainOu

The Active Directory organizational unit for your DB instance to join.

Constraints:

- Must be in the distinguished name format.
- Can't be longer than 64 characters.

Example:
`OU=mymanagedADtestOU,DC=mymanagedADtest,DC=mymanagedAD,DC=mydomain`

Type: String

Required: No

EnableCloudwatchLogsExports.member.N

The list of logs that the restored DB instance is to export to CloudWatch Logs. The values in the list depend on the DB engine being used. For more information, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom.

Type: Array of strings

Required: No

EnableCustomerOwnedIp

Specifies whether to enable a customer-owned IP address (CoIP) for an RDS on Outposts DB instance.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the DB instance from outside of its virtual private cloud (VPC) on your local network.

This setting doesn't apply to RDS Custom.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

EnableIAMDatabaseAuthentication

Specifies whether to enable mapping of Amazon Identity and Access Management (IAM) accounts to database accounts. By default, mapping isn't enabled.

This setting doesn't apply to RDS Custom.

For more information about IAM database authentication, see IAM Database Authentication for MySQL and PostgreSQL in the *Amazon RDS User Guide.*

Type: Boolean

Required: No

Engine

The database engine to use for the new instance.

This setting doesn't apply to RDS Custom.

Valid Values:

- `db2-ae`
- `db2-se`
- `mariadb`
- `mysql`
- `oracle-ee`
- `oracle-ee-cdb`
- `oracle-se2`
- `oracle-se2-cdb`
- `postgres`
- `sqlserver-ee`
- `sqlserver-se`
- `sqlserver-ex`
- `sqlserver-web`

Default: The same as source

Constraints:

- Must be compatible with the engine of the source.

Type: String

Required: No

EngineLifecycleSupport

The life cycle type for this DB instance.

> **Note**
>
> By default, this value is set to `open-source-rds-extended-support`, which enrolls your DB instance into Amazon RDS Extended Support. At the end of standard support, you can avoid charges for Extended Support by setting the value to `open-source-rds-extended-support-disabled`. In this case, RDS automatically upgrades your restored DB instance to a higher engine version, if the major engine version is past its end of standard support date.

You can use this setting to enroll your DB instance into Amazon RDS Extended Support. With RDS Extended Support, you can run the selected major engine version on your DB instance past the end of standard support for that engine version. For more information, see Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide*.

This setting applies only to RDS for MySQL and RDS for PostgreSQL. For Amazon Aurora DB instances, the life cycle type is managed by the DB cluster.

Valid Values: `open-source-rds-extended-support | open-source-rds-extended-support-disabled`

Default: `open-source-rds-extended-support`

Type: String

Required: No

Iops

The amount of Provisioned IOPS (input/output operations per second) to initially allocate for the DB instance.

This setting doesn't apply to SQL Server.

Constraints:

- Must be an integer greater than 1000.

Type: Integer

Required: No

LicenseModel

The license model information for the restored DB instance.

> **Note**
>
> License models for RDS for Db2 require additional configuration. The Bring Your Own License (BYOL) model requires a custom parameter group and an Amazon License Manager self-managed license. The Db2 license through Amazon Marketplace model requires an Amazon Marketplace subscription. For more information, see Amazon RDS for Db2 licensing options in the *Amazon RDS User Guide*.

This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Valid Values:

- RDS for Db2 - `bring-your-own-license | marketplace-license`
- RDS for MariaDB - `general-public-license`
- RDS for Microsoft SQL Server - `license-included`
- RDS for MySQL - `general-public-license`
- RDS for Oracle - `bring-your-own-license | license-included`
- RDS for PostgreSQL - `postgresql-license`

Default: Same as the source.

Type: String

Required: No

ManageMasterUserPassword

Specifies whether to manage the master user password with Amazon Secrets Manager in the restored DB instance.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide*.

Constraints:

- Applies to RDS for Oracle only.

Type: Boolean

Required: No

MasterUserSecretKmsKeyId

The Amazon KMS key identifier to encrypt a secret that is automatically generated and managed in Amazon Secrets Manager.

This setting is valid only if the master user password is managed by RDS in Amazon Secrets Manager for the DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. To use a KMS key in a different Amazon Web Services account, specify the key ARN or alias ARN.

If you don't specify `MasterUserSecretKmsKeyId`, then the `aws/secretsmanager` KMS key is used to encrypt the secret. If the secret is in a different Amazon Web Services account, then you can't use the `aws/secretsmanager` KMS key to encrypt the secret, and you must use a customer managed KMS key.

There is a default KMS key for your Amazon Web Services account. Your Amazon Web Services account has a different default KMS key for each Amazon Web Services Region.

Type: String

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

For more information about this setting, including limitations that apply to it, see Managing capacity automatically with Amazon RDS storage autoscaling in the *Amazon RDS User Guide*.

This setting doesn't apply to RDS Custom.

Type: Integer

Required: No

MultiAZ

Secifies whether the DB instance is a Multi-AZ deployment.

This setting doesn't apply to RDS Custom.

Constraints:

- You can't specify the `AvailabilityZone` parameter if the DB instance is a Multi-AZ deployment.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Valid Values:

- `IPV4`
- `DUAL`

Type: String

Required: No

OptionGroupName

The name of the option group to use for the restored DB instance.

Permanent options, such as the TDE option for Oracle Advanced Security TDE, can't be removed from an option group, and that option group can't be removed from a DB instance after it is associated with a DB instance

This setting doesn't apply to RDS Custom.

Type: String

Required: No

Port

The port number on which the database accepts connections.

Default: The same port as the original DB instance.

Constraints:

- The value must be `1150-65535`.

Type: Integer

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

This setting doesn't apply to RDS Custom.

Type: Array of ProcessorFeature objects

Required: No

PubliclyAccessible

Specifies whether the DB instance is publicly accessible.

When the DB cluster is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB cluster's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB cluster's VPC. Access to the DB cluster is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

For more information, see CreateDBInstance.

Type: Boolean

Required: No

RestoreTime

The date and time to restore from.

Constraints:

- Must be a time in Universal Coordinated Time (UTC) format.

- Must be before the latest restorable time for the DB instance.
- Can't be specified if the `UseLatestRestorableTime` parameter is enabled.

Example: `2009-09-07T23:45:00Z`

Type: Timestamp

Required: No

SourceDBInstanceAutomatedBackupsArn

The Amazon Resource Name (ARN) of the replicated automated backups from which to restore, for example, `arn:aws:rds:us-east-1:123456789012:auto-backup:ab-L2IJCEXJP7XQ7HOJ4SIEXAMPLE`.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

SourceDBInstanceIdentifier

The identifier of the source DB instance from which to restore.

Constraints:

- Must match the identifier of an existing DB instance.

Type: String

Required: No

SourceDbiResourceId

The resource ID of the source DB instance from which to restore.

Type: String

Required: No

StorageThroughput

The storage throughput value for the DB instance.

This setting doesn't apply to RDS Custom or Amazon Aurora.

Type: Integer

Required: No

StorageType

The storage type to associate with the DB instance.

Valid Values: `gp2 | gp3 | io1 | io2 | standard`

Default: `io1`, if the `Iops` parameter is specified. Otherwise, `gp3`.

Constraints:

- If you specify `io1`, `io2`, or `gp3`, you must also include a value for the `Iops` parameter.

Type: String

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TdeCredentialArn

The ARN from the key store with which to associate the instance for TDE encryption.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

TdeCredentialPassword

The password for the given ARN from the key store in order to access the device.

This setting doesn't apply to RDS Custom.

Type: String

Required: No

UseDefaultProcessorFeatures

Specifies whether the DB instance class of the DB instance uses its default processor features.

This setting doesn't apply to RDS Custom.

Type: Boolean

Required: No

UseLatestRestorableTime

Specifies whether the DB instance is restored from the latest backup time. By default, the DB instance isn't restored from the latest backup time.

Constraints:

- Can't be specified if the `RestoreTime` parameter is provided.

Type: Boolean

Required: No

VpcSecurityGroupIds.VpcSecurityGroupId.N

A list of EC2 VPC security groups to associate with this DB instance.

Default: The default EC2 VPC security group for the DB subnet group's VPC.

Type: Array of strings

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`,

`ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

BackupPolicyNotFoundFault

This error has been deprecated.

HTTP Status Code: 404

CertificateNotFound

`CertificateIdentifier` doesn't refer to an existing certificate.

HTTP Status Code: 404

DBInstanceAlreadyExists

The user already has a DB instance with the given identifier.

HTTP Status Code: 400

DBInstanceAutomatedBackupNotFound

No automated backup for this DB instance was found.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBParameterGroupNotFound

`DBParameterGroupName` doesn't refer to an existing DB parameter group.

HTTP Status Code: 404

DBSecurityGroupNotFound

`DBSecurityGroupName` doesn't refer to an existing DB security group.

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

DomainNotFoundFault

`Domain` doesn't refer to an existing Active Directory domain.

HTTP Status Code: 404

InstanceQuotaExceeded

The request would result in the user exceeding the allowed number of DB instances.

HTTP Status Code: 400

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidRestoreFault

Cannot restore from VPC backup to non-VPC DB instance.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

NetworkTypeNotSupported

The network type is invalid for the DB instance. Valid nework type values are `IPV4` and `DUAL`.

HTTP Status Code: 400

OptionGroupNotFoundFault

The specified option group could not be found.

HTTP Status Code: 404

PointInTimeRestoreNotEnabled

`SourceDBInstanceIdentifier` refers to a DB instance with `BackupRetentionPeriod` equal to 0.

HTTP Status Code: 400

ProvisionedIopsNotAvailableInAZFault

Provisioned IOPS not available in the specified Availability Zone.

HTTP Status Code: 400

StorageQuotaExceeded

The request would result in the user exceeding the allowed amount of storage available across all DB instances.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

TenantDatabaseQuotaExceeded

You attempted to create more tenant databases than are permitted in your Amazon account.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RestoreDBInstanceToPointInTime.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=RestoreDBInstanceToPointInTime
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &SourceDBInstanceIdentifier=mysqldb
   &TargetDBInstanceIdentifier=mysqldb-pitr
   &UseLatestRestorableTime=true
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T233051Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=087a8eb41cb1ab0fc9ec1575f23e73757ffc6a1e42d7d2b30b9cc0be988cff97
```

Sample Response


```
<RestoreDBInstanceToPointInTimeResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <RestoreDBInstanceToPointInTimeResult>
    <DBInstance>
      <BackupRetentionPeriod>7</BackupRetentionPeriod>
      <DBInstanceStatus>creating</DBInstanceStatus>
      <MultiAZ>false</MultiAZ>
      <VpcSecurityGroups/>
      <DBInstanceIdentifier>mysqldb-pitr</DBInstanceIdentifier>
      <PreferredBackupWindow>08:14-08:44</PreferredBackupWindow>
      <PreferredMaintenanceWindow>fri:04:50-fri:05:20</PreferredMaintenanceWindow>
      <ReadReplicaDBInstanceIdentifiers/>
      <Engine>mysql</Engine>
      <PendingModifiedValues/>
      <LicenseModel>general-public-license</LicenseModel>
      <DBParameterGroups>
        <DBParameterGroup>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
          <DBParameterGroupName>default.mysql5.6</DBParameterGroupName>
        </DBParameterGroup>
      </DBParameterGroups>
      <EngineVersion>5.6.13</EngineVersion>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:mysql-5-6</OptionGroupName>
          <Status>pending-apply</Status>
        </OptionGroupMembership>
      </OptionGroupMemberships>
      <PubliclyAccessible>true</PubliclyAccessible>
      <DBSecurityGroups>
        <DBSecurityGroup>
          <Status>active</Status>
          <DBSecurityGroupName>default</DBSecurityGroupName>
        </DBSecurityGroup>
      </DBSecurityGroups>
      <DBName>mysqldb</DBName>
      <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
      <AllocatedStorage>100</AllocatedStorage>
      <MasterUsername>myawsuser</MasterUsername>
      <DBInstanceClass>db.m1.medium</DBInstanceClass>
    </DBInstance>
```

```
  </RestoreDBInstanceToPointInTimeResult>
  <ResponseMetadata>
    <RequestId>13447c70-be2c-11d3-f4c6-37db295f7674</RequestId>
  </ResponseMetadata>
</RestoreDBInstanceToPointInTimeResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

RevokeDBSecurityGroupIngress

Revokes ingress from a DBSecurityGroup for previously authorized IP ranges or EC2 or VPC security groups. Required parameters for this API are one of CIDRIP, EC2SecurityGroupId for VPC, or (EC2SecurityGroupOwnerId and either EC2SecurityGroupName or EC2SecurityGroupId).

> **Note**
>
> EC2-Classic was retired on August 15, 2022. If you haven't migrated from EC2-Classic to a VPC, we recommend that you migrate as soon as possible. For more information, see Migrate from EC2-Classic to a VPC in the *Amazon EC2 User Guide*, the blog EC2-Classic Networking is Retiring – Here's How to Prepare, and Moving a DB instance not in a VPC into a VPC in the *Amazon RDS User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBSecurityGroupName

The name of the DB security group to revoke ingress from.

Type: String

Required: Yes

CIDRIP

The IP range to revoke access from. Must be a valid CIDR range. If `CIDRIP` is specified, `EC2SecurityGroupName`, `EC2SecurityGroupId` and `EC2SecurityGroupOwnerId` can't be provided.

Type: String

Required: No

EC2SecurityGroupId

The id of the EC2 security group to revoke access from. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, EC2SecurityGroupOwnerId and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

EC2SecurityGroupName

The name of the EC2 security group to revoke access from. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, EC2SecurityGroupOwnerId and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

EC2SecurityGroupOwnerId

The Amazon Web Services account number of the owner of the EC2 security group specified in the `EC2SecurityGroupName` parameter. The Amazon access key ID isn't an acceptable value. For VPC DB security groups, `EC2SecurityGroupId` must be provided. Otherwise, EC2SecurityGroupOwnerId and either `EC2SecurityGroupName` or `EC2SecurityGroupId` must be provided.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBSecurityGroup

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the `DescribeDBSecurityGroups` action.

Type: DBSecurityGroup object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

DBSecurityGroupNotFound

`DBSecurityGroupName` doesn't refer to an existing DB security group.

HTTP Status Code: 404

InvalidDBSecurityGroupState

The state of the DB security group doesn't allow deletion.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of RevokeDBSecurityGroupIngress.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
   ?Action=RevokeDBSecurityGroupIngress
   &CIDRIP=192.0.0.1%2F32
   &DBSecurityGroupName=mydbsecuritygroup01
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20140428/us-east-1/rds/aws4_request
   &X-Amz-Date=20140428T233956Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=d9edabccacae36138704fb2b3cf6755ef08123862191b19d74582497b75e544a
```

Sample Response

```
<RevokeDBSecurityGroupIngressResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <RevokeDBSecurityGroupIngressResult>
    <DBSecurityGroup>
      <EC2SecurityGroups/>
      <DBSecurityGroupDescription>My new DBSecurityGroup</DBSecurityGroupDescription>
      <IPRanges>
        <IPRange>
          <CIDRIP>192.0.0.1/32</CIDRIP>
          <Status>revoking</Status>
        </IPRange>
      </IPRanges>
      <OwnerId>803#########</OwnerId>
      <DBSecurityGroupName>mydbsecuritygroup01</DBSecurityGroupName>
    </DBSecurityGroup>
  </RevokeDBSecurityGroupIngressResult>
  <ResponseMetadata>
    <RequestId>579d8ba0-be2d-11d3-ae4f-eec568ed6b36</RequestId>
  </ResponseMetadata>
</RevokeDBSecurityGroupIngressResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StartActivityStream

Starts a database activity stream to monitor activity on the database. For more information, see Monitoring Amazon Aurora with Database Activity Streams in the *Amazon Aurora User Guide* or Monitoring Amazon RDS with Database Activity Streams in the *Amazon RDS User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

KmsKeyId

The Amazon KMS key identifier for encrypting messages in the database activity stream. The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: Yes

Mode

Specifies the mode of the database activity stream. Database events such as a change or access generate an activity stream event. The database session can handle these events either synchronously or asynchronously.

Type: String

Valid Values: `sync | async`

Required: Yes

ResourceArn

The Amazon Resource Name (ARN) of the DB cluster, for example, `arn:aws:rds:us-east-1:12345667890:cluster:das-cluster`.

Type: String

Required: Yes

ApplyImmediately

Specifies whether or not the database activity stream is to start as soon as possible, regardless of the maintenance window for the database.

Type: Boolean

Required: No

EngineNativeAuditFieldsIncluded

Specifies whether the database activity stream includes engine-native audit fields. This option applies to an Oracle or Microsoft SQL Server DB instance. By default, no engine-native audit fields are included.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

ApplyImmediately

Indicates whether or not the database activity stream will start as soon as possible, regardless of the maintenance window for the database.

Type: Boolean

EngineNativeAuditFieldsIncluded

Indicates whether engine-native audit fields are included in the database activity stream.

Type: Boolean

KinesisStreamName

The name of the Amazon Kinesis data stream to be used for the database activity stream.

Type: String

KmsKeyId

The Amazon KMS key identifier for encryption of messages in the database activity stream.

Type: String

Mode

The mode of the database activity stream.

Type: String

Valid Values: `sync | async`

Status

The status of the database activity stream.

Type: String

Valid Values: `stopped | starting | started | stopping`

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StartDBCluster

Starts an Amazon Aurora DB cluster that was stopped using the Amazon console, the stop-db-cluster Amazon CLI command, or the `StopDBCluster` operation.

For more information, see Stopping and Starting an Aurora Cluster in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only applies to Aurora DB clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The DB cluster identifier of the Amazon Aurora DB cluster to be started. This parameter is stored as a lowercase string.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of StartDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=StartDBCluster
    &DBClusterIdentifier=mydbcluster
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20131016/us-west-1/rds/aws4_request
    &X-Amz-Date=20131016T233051Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=087a8eb41cb1ab5f99e81575f23e73757ffc6a1e42d7d2b30b9cc0be988cff97
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StartDBInstance

Starts an Amazon RDS DB instance that was stopped using the Amazon console, the stop-db-instance Amazon CLI command, or the `StopDBInstance` operation.

For more information, see Starting an Amazon RDS DB instance That Was Previously Stopped in the *Amazon RDS User Guide.*

> **Note**
>
> This command doesn't apply to RDS Custom, Aurora MySQL, and Aurora PostgreSQL. For Aurora DB clusters, use `StartDBCluster` instead.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The user-supplied instance identifier.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

AuthorizationNotFound

The specified CIDR IP range or Amazon EC2 security group might not be authorized for the specified DB security group.

Or, RDS might not be authorized to perform necessary actions using IAM on your behalf.

HTTP Status Code: 404

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBSubnetGroupDoesNotCoverEnoughAZs

Subnets in the DB subnet group should cover at least two Availability Zones unless there is only one Availability Zone.

HTTP Status Code: 400

DBSubnetGroupNotFoundFault

`DBSubnetGroupName` doesn't refer to an existing DB subnet group.

HTTP Status Code: 404

InsufficientDBInstanceCapacity

The specified DB instance class isn't available in the specified Availability Zone.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

InvalidSubnet

The requested subnet is invalid, or multiple subnets were requested that are not all in a common VPC.

HTTP Status Code: 400

InvalidVPCNetworkStateFault

The DB subnet group doesn't cover all Availability Zones after it's created because of users' change.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of StartDBInstance.

Sample Request

```
https://rds.amazonaws.com/
    ?Action=StartDBInstance
    &DBInstanceIdentifier=mydbinstance
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4EXAMPLE/20131016/us-west-1/rds/aws4_request
    &X-Amz-Date=20131016T233051Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=6e25c542bf96fe24b28c12976ec92d2f856ab1d2a158e21c35441a736e4fde2b
```

Sample Response


```
<StartDBInstanceResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
  <StartDBInstanceResult>
    <DBInstance>
      <AllocatedStorage>100</AllocatedStorage>
      <EnabledCloudwatchLogsExports>
        <member>alert</member>
        <member>audit</member>
        <member>listener</member>
        <member>trace</member>
      </EnabledCloudwatchLogsExports>
      <AssociatedRoles/>
      <DBParameterGroups>
        <DBParameterGroup>
          <DBParameterGroupName>default.oracle-ee-19</DBParameterGroupName>
          <ParameterApplyStatus>in-sync</ParameterApplyStatus>
        </DBParameterGroup>
      </DBParameterGroups>
      <AvailabilityZone>us-east-1b</AvailabilityZone>
      <DBSecurityGroups/>
      <Iops>1000</Iops>
      <PerformanceInsightsKMSKeyId>arn:aws:kms:us-
east-1:123456789012:key/87c22544-4cac-4640-99de-cfdaa8760ad0</
PerformanceInsightsKMSKeyId>
      <EnhancedMonitoringResourceArn>arn:aws:logs:us-east-1:123456789012:log-
group:RDSOSMetrics:log-stream:db-LENX3LYCR6OKTGWZZEXAMPLE</
EnhancedMonitoringResourceArn>
      <PerformanceInsightsRetentionPeriod>7</PerformanceInsightsRetentionPeriod>
      <EngineVersion>19.0.0.0.ru-2019-10.rur-2019-10.r1</EngineVersion>
      <MasterUsername>admin</MasterUsername>
      <InstanceCreateTime>2019-11-23T17:27:58.540Z</InstanceCreateTime>
      <DBInstanceClass>db.t3.medium</DBInstanceClass>
      <HttpEndpointEnabled>false</HttpEndpointEnabled>
      <ReadReplicaDBInstanceIdentifiers/>
      <CustomerOwnedIpEnabled>false</CustomerOwnedIpEnabled>
      <MonitoringInterval>60</MonitoringInterval>
      <DBInstanceStatus>starting</DBInstanceStatus>
      <BackupRetentionPeriod>0</BackupRetentionPeriod>
      <OptionGroupMemberships>
        <OptionGroupMembership>
          <OptionGroupName>default:oracle-ee-19</OptionGroupName>
          <Status>in-sync</Status>
        </OptionGroupMembership>
```

```
      </OptionGroupMemberships>
      <CACertificateIdentifier>rds-ca-2019</CACertificateIdentifier>
      <DbInstancePort>0</DbInstancePort>
      <DbiResourceId>db-LENX3LYCR6OKTGWZEXAMPLE</DbiResourceId>
      <PreferredBackupWindow>08:31-09:01</PreferredBackupWindow>
      <DeletionProtection>false</DeletionProtection>
      <DBInstanceIdentifier>mydbinstance</DBInstanceIdentifier>
      <DBInstanceArn>arn:aws:rds:us-east-1:123456789012:db:mydbinstance</DBInstanceArn>
      <Endpoint>
        <HostedZoneId>Z2R2ITUGPM61AM</HostedZoneId>
        <Address>mydbinstance.123example.us-east-1.rds.amazonaws.com</Address>
        <Port>1521</Port>
      </Endpoint>
      <Engine>oracle-ee</Engine>
      <MaxAllocatedStorage>1000</MaxAllocatedStorage>
      <PubliclyAccessible>true</PubliclyAccessible>
      <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
      <PerformanceInsightsEnabled>true</PerformanceInsightsEnabled>
      <DBName>DBOR</DBName>
      <MultiAZ>false</MultiAZ>
      <DomainMemberships/>
      <CharacterSetName>AL32UTF8</CharacterSetName>
      <MonitoringRoleArn>arn:aws:iam::123456789012:role/rds-monitoring-role</
MonitoringRoleArn>
      <StorageEncrypted>false</StorageEncrypted>
      <DBSubnetGroup>
        <VpcId>vpc-67a0bc1c</VpcId>
        <Subnets>
          <Subnet>
            <SubnetIdentifier>subnet-example1</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1a</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-example12</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1e</Name>
            </SubnetAvailabilityZone>
          </Subnet>
```

```
          <Subnet>
            <SubnetIdentifier>subnet-example3</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1f</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-example4</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1d</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-example5</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1b</Name>
            </SubnetAvailabilityZone>
          </Subnet>
          <Subnet>
            <SubnetIdentifier>subnet-example6</SubnetIdentifier>
            <SubnetStatus>Active</SubnetStatus>
            <SubnetOutpost/>
            <SubnetAvailabilityZone>
              <Name>us-east-1c</Name>
            </SubnetAvailabilityZone>
          </Subnet>
        </Subnets>
        <SubnetGroupStatus>Complete</SubnetGroupStatus>
        <DBSubnetGroupDescription>Created from the RDS Management Console</
DBSubnetGroupDescription>
        <DBSubnetGroupName>default-vpc-67a0bc1c</DBSubnetGroupName>
      </DBSubnetGroup>
      <TagList>
        <Tag>
          <Value>hr</Value>
          <Key>department</Key>
        </Tag>
        <Tag>
```

```
          <Value>rds</Value>
          <Key>type</Key>
        </Tag>
      </TagList>
      <VpcSecurityGroups>
        <VpcSecurityGroupMembership>
          <VpcSecurityGroupId>sg-0417e54f</VpcSecurityGroupId>
          <Status>active</Status>
        </VpcSecurityGroupMembership>
      </VpcSecurityGroups>
      <NcharCharacterSetName>AL16UTF16</NcharCharacterSetName>
      <LicenseModel>bring-your-own-license</LicenseModel>
      <PendingModifiedValues/>
      <PreferredMaintenanceWindow>sun:05:12-sun:05:42</PreferredMaintenanceWindow>
      <StorageType>io1</StorageType>
      <AutoMinorVersionUpgrade>false</AutoMinorVersionUpgrade>
      <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
    </DBInstance>
  </StartDBInstanceResult>
  <ResponseMetadata>
    <RequestId>9d4d8c94-7b81-4a64-8518-EXAMPLE</RequestId>
  </ResponseMetadata>
</StartDBInstanceResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StartDBInstanceAutomatedBackupsReplication

Enables replication of automated backups to a different Amazon Web Services Region.

This command doesn't apply to RDS Custom.

For more information, see Replicating Automated Backups to Another Amazon Web Services Region in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

SourceDBInstanceArn

The Amazon Resource Name (ARN) of the source DB instance for the replicated automated backups, for example, `arn:aws:rds:us-west-2:123456789012:db:mydatabase`.

Type: String

Required: Yes

BackupRetentionPeriod

The retention period for the replicated automated backups.

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key identifier for encryption of the replicated automated backups. The KMS key ID is the Amazon Resource Name (ARN) for the KMS encryption key in the destination Amazon Web Services Region, for example, `arn:aws:kms:us-east-1:123456789012:key/AKIAIOSFODNN7EXAMPLE`.

Type: String

Required: No

PreSignedUrl

In an Amazon GovCloud (US) Region, an URL that contains a Signature Version 4 signed request for the `StartDBInstanceAutomatedBackupsReplication` operation to call in the Amazon

Web Services Region of the source DB instance. The presigned URL must be a valid request for the `StartDBInstanceAutomatedBackupsReplication` API operation that can run in the Amazon Web Services Region that contains the source DB instance.

This setting applies only to Amazon GovCloud (US) Regions. It's ignored in other Amazon Web Services Regions.

To learn how to generate a Signature Version 4 signed request, see Authenticating Requests: Using Query Parameters (Amazon Signature Version 4) and Signature Version 4 Signing Process.

> **Note**
>
> If you are using an Amazon SDK tool or the Amazon CLI, you can specify `SourceRegion` (or `--source-region` for the Amazon CLI) instead of specifying `PreSignedUrl` manually. Specifying `SourceRegion` autogenerates a presigned URL that is a valid request for the operation that can run in the source Amazon Web Services Region.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBInstanceAutomatedBackup

An automated backup of a DB instance. It consists of system backups, transaction logs, and the database instance properties that existed at the time you deleted the source instance.

Type: DBInstanceAutomatedBackup object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceAutomatedBackupQuotaExceeded

The quota for retained automated backups was exceeded. This prevents you from retaining any additional automated backups. The retained automated backups quota is the same as your DB instance quota.

HTTP Status Code: 400

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

StorageTypeNotSupported

The specified `StorageType` can't be associated with the DB instance.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StartExportTask

Starts an export of DB snapshot or DB cluster data to Amazon S3. The provided IAM role must have access to the S3 bucket.

You can't export snapshot data from RDS Custom DB instances. For more information, see Supported Regions and DB engines for exporting snapshots to S3 in Amazon RDS.

For more information on exporting DB snapshot data, see Exporting DB snapshot data to Amazon S3 in the *Amazon RDS User Guide* or Exporting DB cluster snapshot data to Amazon S3 in the *Amazon Aurora User Guide*.

For more information on exporting DB cluster data, see Exporting DB cluster data to Amazon S3 in the *Amazon Aurora User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

ExportTaskIdentifier

A unique identifier for the export task. This ID isn't an identifier for the Amazon S3 bucket where the data is to be exported.

Type: String

Required: Yes

IamRoleArn

The name of the IAM role to use for writing to the Amazon S3 bucket when exporting a snapshot or cluster.

In the IAM policy attached to your IAM role, include the following required actions to allow the transfer of files from Amazon RDS or Amazon Aurora to an S3 bucket:

- s3:PutObject*
- s3:GetObject*
- s3:ListBucket
- s3:DeleteObject*
- s3:GetBucketLocation

In the policy, include the resources to identify the S3 bucket and objects in the bucket. The following list of resources shows the Amazon Resource Name (ARN) format for accessing S3:

- `arn:aws:s3:::`*`your-s3-bucket`*
- `arn:aws:s3:::`*`your-s3-bucket/*`*

Type: String

Required: Yes

KmsKeyId

The ID of the Amazon KMS key to use to encrypt the data exported to Amazon S3. The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key. The caller of this operation must be authorized to run the following operations. These can be set in the Amazon KMS key policy:

- kms:CreateGrant
- kms:DescribeKey

Type: String

Required: Yes

S3BucketName

The name of the Amazon S3 bucket to export the snapshot or cluster data to.

Type: String

Required: Yes

SourceArn

The Amazon Resource Name (ARN) of the snapshot or cluster to export to Amazon S3.

Type: String

Required: Yes

ExportOnly.member.N

The data to be exported from the snapshot or cluster. If this parameter isn't provided, all of the data is exported.

Valid Values:

- `database` - Export all the data from a specified database.
- `database.table` *table-name* - Export a table of the snapshot or cluster. This format is valid only for RDS for MySQL, RDS for MariaDB, and Aurora MySQL.
- `database.schema` *schema-name* - Export a database schema of the snapshot or cluster. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.
- `database.schema.table` *table-name* - Export a table of the database schema. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.

Type: Array of strings

Required: No

S3Prefix

The Amazon S3 bucket prefix to use as the file name and path of the exported data.

Type: String

Required: No

Response Elements

The following elements are returned by the service.

ExportOnly.member.N

The data exported from the snapshot or cluster.

Valid Values:

- `database` - Export all the data from a specified database.
- `database.table` *table-name* - Export a table of the snapshot or cluster. This format is valid only for RDS for MySQL, RDS for MariaDB, and Aurora MySQL.
- `database.schema` *schema-name* - Export a database schema of the snapshot or cluster. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.
- `database.schema.table` *table-name* - Export a table of the database schema. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.

Type: Array of strings

ExportTaskIdentifier

A unique identifier for the snapshot or cluster export task. This ID isn't an identifier for the Amazon S3 bucket where the data is exported.

Type: String

FailureCause

The reason the export failed, if it failed.

Type: String

IamRoleArn

The name of the IAM role that is used to write to Amazon S3 when exporting a snapshot or cluster.

Type: String

KmsKeyId

The key identifier of the Amazon KMS key that is used to encrypt the data when it's exported to Amazon S3. The KMS key identifier is its key ARN, key ID, alias ARN, or alias name. The IAM role used for the export must have encryption and decryption permissions to use this KMS key.

Type: String

PercentProgress

The progress of the snapshot or cluster export task as a percentage.

Type: Integer

S3Bucket

The Amazon S3 bucket where the snapshot or cluster is exported to.

Type: String

S3Prefix

The Amazon S3 bucket prefix that is the file name and path of the exported data.

Type: String

SnapshotTime

The time when the snapshot was created.

Type: Timestamp

SourceArn

The Amazon Resource Name (ARN) of the snapshot or cluster exported to Amazon S3.

Type: String

SourceType

The type of source for the export.

Type: String

Valid Values: `SNAPSHOT | CLUSTER`

Status

The progress status of the export task. The status can be one of the following:

- `CANCELED`
- `CANCELING`
- `COMPLETE`
- `FAILED`
- `IN_PROGRESS`
- `STARTING`

Type: String

TaskEndTime

The time when the snapshot or cluster export task ended.

Type: Timestamp

TaskStartTime

The time when the snapshot or cluster export task started.

Type: Timestamp

TotalExtractedDataInGB

The total amount of data exported, in gigabytes.

Type: Integer

WarningMessage

A warning about the snapshot or cluster export task.

Type: String

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBClusterSnapshotNotFoundFault

`DBClusterSnapshotIdentifier` doesn't refer to an existing DB cluster snapshot.

HTTP Status Code: 404

DBSnapshotNotFound

`DBSnapshotIdentifier` doesn't refer to an existing DB snapshot.

HTTP Status Code: 404

ExportTaskAlreadyExists

You can't start an export task that's already running.

HTTP Status Code: 400

IamRoleMissingPermissions

The IAM role requires additional permissions to export to an Amazon S3 bucket.

HTTP Status Code: 400

IamRoleNotFound

The IAM role is missing for exporting to an Amazon S3 bucket.

HTTP Status Code: 404

InvalidExportOnly

The export is invalid for exporting to an Amazon S3 bucket.

HTTP Status Code: 400

InvalidExportSourceState

The state of the export snapshot is invalid for exporting to an Amazon S3 bucket.

HTTP Status Code: 400

InvalidS3BucketFault

The specified Amazon S3 bucket name can't be found or Amazon RDS isn't authorized to access the specified Amazon S3 bucket. Verify the **SourceS3BucketName** and **S3IngestionRoleArn** values and try again.

HTTP Status Code: 400

KMSKeyNotAccessibleFault

An error occurred accessing an Amazon KMS key.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2

- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StopActivityStream

Stops a database activity stream that was started using the Amazon console, the `start-activity-stream` Amazon CLI command, or the `StartActivityStream` operation.

For more information, see Monitoring Amazon Aurora with Database Activity Streams in the *Amazon Aurora User Guide* or Monitoring Amazon RDS with Database Activity Streams in the *Amazon RDS User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

ResourceArn

The Amazon Resource Name (ARN) of the DB cluster for the database activity stream. For example, `arn:aws:rds:us-east-1:12345667890:cluster:das-cluster`.

Type: String

Required: Yes

ApplyImmediately

Specifies whether or not the database activity stream is to stop as soon as possible, regardless of the maintenance window for the database.

Type: Boolean

Required: No

Response Elements

The following elements are returned by the service.

KinesisStreamName

The name of the Amazon Kinesis data stream used for the database activity stream.

Type: String

KmsKeyId

The Amazon KMS key identifier used for encrypting messages in the database activity stream.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Status

The status of the database activity stream.

Type: String

Valid Values: `stopped | starting | started | stopping`

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

ResourceNotFoundFault

The specified resource ID was not found.

HTTP Status Code: 404

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StopDBCluster

Stops an Amazon Aurora DB cluster. When you stop a DB cluster, Aurora retains the DB cluster's metadata, including its endpoints and DB parameter groups. Aurora also retains the transaction logs so you can do a point-in-time restore if necessary.

For more information, see Stopping and Starting an Aurora Cluster in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation only applies to Aurora DB clusters.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBClusterIdentifier

The DB cluster identifier of the Amazon Aurora DB cluster to be stopped. This parameter is stored as a lowercase string.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: DBCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of StopDBCluster.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
    ?Action=StopDBCluster
    &DBClusterIdentifier=mydbcluster
    &SignatureMethod=HmacSHA256
    &SignatureVersion=4
    &Version=2014-10-31
    &X-Amz-Algorithm=AWS4-HMAC-SHA256
    &X-Amz-Credential=AKIADQKE4SARGYLE/20131016/us-west-1/rds/aws4_request
    &X-Amz-Date=20131016T233051Z
    &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
    &X-Amz-Signature=087a8eb41cb1ab5f99e81575f23e73757ffc6a1e42d7d2b30b9cc0be988cff97
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StopDBInstance

Stops an Amazon RDS DB instance temporarily. When you stop a DB instance, Amazon RDS retains the DB instance's metadata, including its endpoint, DB parameter group, and option group membership. Amazon RDS also retains the transaction logs so you can do a point-in-time restore if necessary. The instance restarts automatically after 7 days.

For more information, see Stopping an Amazon RDS DB Instance Temporarily in the *Amazon RDS User Guide.*

> **Note**
>
> This command doesn't apply to RDS Custom, Aurora MySQL, and Aurora PostgreSQL. For Aurora clusters, use `StopDBCluster` instead.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The user-supplied instance identifier.

Type: String

Required: Yes

DBSnapshotIdentifier

The user-supplied instance identifier of the DB Snapshot created immediately before the DB instance is stopped.

Type: String

Required: No

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

DBSnapshotAlreadyExists

`DBSnapshotIdentifier` is already used by an existing snapshot.

HTTP Status Code: 400

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

SnapshotQuotaExceeded

The request would result in the user exceeding the allowed number of DB snapshots.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

StopDBInstanceAutomatedBackupsReplication

Stops automated backup replication for a DB instance.

This command doesn't apply to RDS Custom, Aurora MySQL, and Aurora PostgreSQL.

For more information, see Replicating Automated Backups to Another Amazon Web Services Region in the *Amazon RDS User Guide.*

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

SourceDBInstanceArn

The Amazon Resource Name (ARN) of the source DB instance for which to stop replicating automate backups, for example, `arn:aws:rds:us-west-2:123456789012:db:mydatabase`.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBInstanceAutomatedBackup

An automated backup of a DB instance. It consists of system backups, transaction logs, and the database instance properties that existed at the time you deleted the source instance.

Type: DBInstanceAutomatedBackup object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

SwitchoverBlueGreenDeployment

Switches over a blue/green deployment.

Before you switch over, production traffic is routed to the databases in the blue environment. After you switch over, production traffic is routed to the databases in the green environment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

BlueGreenDeploymentIdentifier

The resource ID of the blue/green deployment.

Constraints:

- Must match an existing blue/green deployment resource ID.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

SwitchoverTimeout

The amount of time, in seconds, for the switchover to complete.

Default: 300

If the switchover takes longer than the specified duration, then any changes are rolled back, and no changes are made to the environments.

Type: Integer

Valid Range: Minimum value of 30.

Required: No

Response Elements

The following element is returned by the service.

BlueGreenDeployment

Details about a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Type: BlueGreenDeployment object

Errors

For information about the errors that are common to all actions, see Common Errors.

BlueGreenDeploymentNotFoundFault

`BlueGreenDeploymentIdentifier` doesn't refer to an existing blue/green deployment.

HTTP Status Code: 404

InvalidBlueGreenDeploymentStateFault

The blue/green deployment can't be switched over or deleted because there is an invalid configuration in the green environment.

HTTP Status Code: 400

Examples

Example

This example illustrates one usage of SwitchoverBlueGreenDeployment.

Sample Request

```
https://rds.us-west-2.amazonaws.com/
   ?Action=SwitchoverBlueGreenDeployment
   &BlueGreenDeploymentIdentifier=bgd-mdoyy2mn7vbkhhgg
   &SwitchoverTimeout=400
   &SignatureMethod=HmacSHA256
   &SignatureVersion=4
   &Version=2014-10-31
   &X-Amz-Algorithm=AWS4-HMAC-SHA256
   &X-Amz-Credential=AKIADQKE4SARGYLE/20141031/us-west-2/rds/aws4_request
   &X-Amz-Date=20230110T190520Z
   &X-Amz-SignedHeaders=content-type;host;user-agent;x-amz-content-sha256;x-amz-date
   &X-Amz-Signature=8a684aebe6d5219bb3572316a341963324d6ef339bd0dcfa5854f1a01d401214
```

Sample Response

```
<SwitchoverBlueGreenDeploymentResponse xmlns="http://rds.amazonaws.com/
doc/2014-10-31/">
  <SwitchoverBlueGreenDeploymentResult>
    <BlueGreenDeployment>
      <TagList/>
      <BlueGreenDeploymentName>my-blue-green-deployment</BlueGreenDeploymentName>
      <CreateTime>2023-01-10T18:42:09.330Z</CreateTime>
      <SwitchoverDetails>
        <member>
          <SourceMember>arn:aws:rds:us-west-2:123456789012:db:database-1</SourceMember>
          <TargetMember>arn:aws:rds:us-west-2:123456789012:db:database-1-green-7jtrw5</
TargetMember>
          <Status>AVAILABLE</Status>
        </member>
      </SwitchoverDetails>
      <Source>arn:aws:rds:us-west-2:123456789012:db:database-1</Source>
      <BlueGreenDeploymentIdentifier>bgd-mdoyy2mn7vbkhhgg</
BlueGreenDeploymentIdentifier>
      <Tasks>
        <member>
          <Name>CREATING_READ_REPLICA_OF_SOURCE</Name>
          <Status>COMPLETED</Status>
        </member>
        <member>
          <Name>CONFIGURE_BACKUPS</Name>
          <Status>COMPLETED</Status>
```

```
        </member>
      </Tasks>
      <Target>arn:aws:rds:us-west-2:123456789012:db:database-1-green-7jtrw5</Target>
      <Status>SWITCHOVER_IN_PROGRESS</Status>
    </BlueGreenDeployment>
  </SwitchoverBlueGreenDeploymentResult>
  <ResponseMetadata>
    <RequestId>c4f69d85-87e5-4fbb-b6b8-ccdb17404af6</RequestId>
  </ResponseMetadata>
</SwitchoverBlueGreenDeploymentResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

SwitchoverGlobalCluster

Switches over the specified secondary DB cluster to be the new primary DB cluster in the global database cluster. Switchover operations were previously called "managed planned failovers."

Aurora promotes the specified secondary cluster to assume full read/write capabilities and demotes the current primary cluster to a secondary (read-only) cluster, maintaining the orginal replication topology. All secondary clusters are synchronized with the primary at the beginning of the process so the new primary continues operations for the Aurora global database without losing any data. Your database is unavailable for a short time while the primary and selected secondary clusters are assuming their new roles. For more information about switching over an Aurora global database, see Performing switchovers for Amazon Aurora global databases in the *Amazon Aurora User Guide*.

> **Note**
>
> This operation is intended for controlled environments, for operations such as "regional rotation" or to fall back to the original primary after a global database failover.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

GlobalClusterIdentifier

The identifier of the global database cluster to switch over. This parameter isn't case-sensitive.

Constraints:

- Must match the identifier of an existing global database cluster (Aurora global database).

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

TargetDbClusterIdentifier

The identifier of the secondary Aurora DB cluster to promote to the new primary for the global database cluster. Use the Amazon Resource Name (ARN) for the identifier so that Aurora can locate the cluster in its Amazon Web Services Region.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: Yes

Response Elements

The following element is returned by the service.

GlobalCluster

A data type representing an Aurora global database.

Type: GlobalCluster object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBClusterNotFoundFault

`DBClusterIdentifier` doesn't refer to an existing DB cluster.

HTTP Status Code: 404

GlobalClusterNotFoundFault

The `GlobalClusterIdentifier` doesn't refer to an existing global database cluster.

HTTP Status Code: 404

InvalidDBClusterStateFault

The requested operation can't be performed while the cluster is in this state.

HTTP Status Code: 400

InvalidGlobalClusterStateFault

The global cluster is in an invalid state and can't perform the requested operation.

HTTP Status Code: 400

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

SwitchoverReadReplica

Switches over an Oracle standby database in an Oracle Data Guard environment, making it the new primary database. Issue this command in the Region that hosts the current standby database.

Request Parameters

For information about the parameters that are common to all actions, see Common Parameters.

DBInstanceIdentifier

The DB instance identifier of the current standby database. This value is stored as a lowercase string.

Constraints:

- Must match the identifier of an existing Oracle read replica DB instance.

Type: String

Required: Yes

Response Elements

The following element is returned by the service.

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Type: DBInstance object

Errors

For information about the errors that are common to all actions, see Common Errors.

DBInstanceNotFound

`DBInstanceIdentifier` doesn't refer to an existing DB instance.

HTTP Status Code: 404

InvalidDBInstanceState

The DB instance isn't in a valid state.

HTTP Status Code: 400

Examples

Example

The following example shows one use of SwitchoverReadReplica.

Sample Request

```
https://rds.us-east-1.amazonaws.com/
?Action=SwitchoverReadReplica
&DBInstanceIdentifier=new-primary
&Version=2014-10-31
&Signature=12345678caef670d84c14ffba62e107842557f934f1e68e5d38a2d219ae70527
```

Sample Response

```
<SwitchoverReadReplicaResponse xmlns="http://rds.amazonaws.com/doc/2014-10-31/">
    <SwitchoverReadReplicaResult>
        <DBInstance>
            <AllocatedStorage>20</AllocatedStorage>
            <ReadReplicaSourceDBInstanceIdentifier>bystanders-old-primary</
ReadReplicaSourceDBInstanceIdentifier>
            <AssociatedRoles/>
            <DBParameterGroups>
                <DBParameterGroup>
                    <DBParameterGroupName>default.oracle-ee-19</DBParameterGroupName>
                    <ParameterApplyStatus>in-sync</ParameterApplyStatus>
                </DBParameterGroup>
            </DBParameterGroups>
```

```
            <AvailabilityZone>us-west-2c</AvailabilityZone>
            <DBSecurityGroups/>
            <StatusInfos>
                <DBInstanceStatusInfo>
                    <Normal>true</Normal>
                    <StatusType>read replication</StatusType>
                    <Status>replicating</Status>
                </DBInstanceStatusInfo>
            </StatusInfos>
            <EngineVersion>19.0.0.0.ru-2021-10.rur-2021-10.r1</EngineVersion>
            <MasterUsername>masteruser</MasterUsername>
            <InstanceCreateTime>2022-01-09T11:55:29.005Z</InstanceCreateTime>
            <DBInstanceClass>db.m4.xlarge</DBInstanceClass>
            <StorageThroughput>0</StorageThroughput>
            <HttpEndpointEnabled>false</HttpEndpointEnabled>
            <ReadReplicaDBInstanceIdentifiers/>
            <CustomerOwnedIpEnabled>false</CustomerOwnedIpEnabled>
            <MonitoringInterval>0</MonitoringInterval>
            <DBInstanceStatus>available</DBInstanceStatus>
            <BackupRetentionPeriod>1</BackupRetentionPeriod>
            <OptionGroupMemberships>
                <OptionGroupMembership>
                    <OptionGroupName>default:oracle-ee-19</OptionGroupName>
                    <Status>in-sync</Status>
                </OptionGroupMembership>
            </OptionGroupMemberships>
            <BackupTarget>region</BackupTarget>
            <CACertificateIdentifier>rds-ca-2019</CACertificateIdentifier>
            <DbInstancePort>0</DbInstancePort>
            <DbiResourceId>db-ABCDEFG12H3I4J5KLMNOPQR6ST</DbiResourceId>
            <PreferredBackupWindow>11:11-11:11</PreferredBackupWindow>
            <DeletionProtection>false</DeletionProtection>
            <DBInstanceIdentifier>new-primary</DBInstanceIdentifier>
            <DBInstanceArn>arn:aws:rds:us-west-2:123456789012:db:new-primary</
DBInstanceArn>
            <Endpoint>
                <HostedZoneId>ABCD7F8REH8UF3</HostedZoneId>
                <Address>new-primary.abcdefgh0ijk.us-west-2.rds.amazonaws.com</Address>
                <Port>1521</Port>
            </Endpoint>
            <Engine>oracle-ee</Engine>
            <PubliclyAccessible>true</PubliclyAccessible>
            <IAMDatabaseAuthenticationEnabled>false</IAMDatabaseAuthenticationEnabled>
            <NetworkType>IPV4</NetworkType>
```

```
            <PerformanceInsightsEnabled>false</PerformanceInsightsEnabled>
            <ReplicaMode>open-read-only</ReplicaMode>
            <DBName>ORCL</DBName>
            <MultiAZ>false</MultiAZ>
            <DomainMemberships/>
            <CharacterSetName>AL32UTF8</CharacterSetName>
            <StorageEncrypted>false</StorageEncrypted>
            <DBSubnetGroup>
                <VpcId>vpc-2f206b57</VpcId>
                <Subnets>
                    <Subnet>
                        <SubnetIdentifier>subnet-ac26e0e6</SubnetIdentifier>
                        <SubnetStatus>Active</SubnetStatus>
                        <SubnetOutpost/>
                        <SubnetAvailabilityZone>
                            <Name>us-west-2a</Name>
                        </SubnetAvailabilityZone>
                    </Subnet>
                    <Subnet>
                        <SubnetIdentifier>subnet-1a2bcde3</SubnetIdentifier>
                        <SubnetStatus>Active</SubnetStatus>
                        <SubnetOutpost/>
                        <SubnetAvailabilityZone>
                            <Name>us-west-2b</Name>
                        </SubnetAvailabilityZone>
                    </Subnet>
                    <Subnet>
                        <SubnetIdentifier>subnet-a1b2c3de</SubnetIdentifier>
                        <SubnetStatus>Active</SubnetStatus>
                        <SubnetOutpost/>
                        <SubnetAvailabilityZone><Name>us-west-2d</Name>
                        </SubnetAvailabilityZone>
                    </Subnet>
                    <Subnet>
                        <SubnetIdentifier>subnet-a12345b6</SubnetIdentifier>
                        <SubnetStatus>Active</SubnetStatus>
                        <SubnetOutpost/>
                        <SubnetAvailabilityZone>
                            <Name>us-west-2c</Name>
                        </SubnetAvailabilityZone>
                    </Subnet>
                </Subnets>
                <SubnetGroupStatus>Complete</SubnetGroupStatus>
                <DBSubnetGroupDescription>default</DBSubnetGroupDescription>
```

```
                <DBSubnetGroupName>default</DBSubnetGroupName>
            </DBSubnetGroup>
            <VpcSecurityGroups>
                <VpcSecurityGroupMembership>
                    <VpcSecurityGroupId>ab-12c3d45e</VpcSecurityGroupId>
                    <Status>active</Status>
                </VpcSecurityGroupMembership>
            </VpcSecurityGroups>
            <TagList/>
            <NcharCharacterSetName>AL16UTF16</NcharCharacterSetName>
            <LicenseModel>bring-your-own-license</LicenseModel>
            <PendingModifiedValues/>
            <PreferredMaintenanceWindow>tue:07:56-tue:08:26</
PreferredMaintenanceWindow>
            <StorageType>gp2</StorageType>
            <AutoMinorVersionUpgrade>true</AutoMinorVersionUpgrade>
            <CopyTagsToSnapshot>false</CopyTagsToSnapshot>
        </DBInstance>
    </SwitchoverReadReplicaResult>
    <ResponseMetadata>
        <RequestId>abcd12ef-34g5-41d6-aed9-b6366d786923</RequestId>
    </ResponseMetadata>
</SwitchoverReadReplicaResponse>
```

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon Command Line Interface
- Amazon SDK for .NET
- Amazon SDK for C++
- Amazon SDK for Go v2
- Amazon SDK for Java V2
- Amazon SDK for JavaScript V3
- Amazon SDK for Kotlin
- Amazon SDK for PHP V3
- Amazon SDK for Python
- Amazon SDK for Ruby V3

Data Types

The Amazon Relational Database Service API contains several data types that various actions use. This section describes each data type in detail.

> **Note**
>
> The order of each element in a data type structure is not guaranteed. Applications should not assume a particular order.

The following data types are supported:

- AccountQuota
- AvailabilityZone
- AvailableProcessorFeature
- BlueGreenDeployment
- BlueGreenDeploymentTask
- Certificate
- CertificateDetails
- CharacterSet
- CloudwatchLogsExportConfiguration
- ClusterPendingModifiedValues
- ConnectionPoolConfiguration
- ConnectionPoolConfigurationInfo
- ContextAttribute
- CustomDBEngineVersionAMI
- DBCluster
- DBClusterAutomatedBackup
- DBClusterBacktrack
- DBClusterEndpoint
- DBClusterMember
- DBClusterOptionGroupStatus

- DBClusterParameterGroup
- DBClusterRole
- DBClusterSnapshot
- DBClusterSnapshotAttribute
- DBClusterSnapshotAttributesResult
- DBClusterStatusInfo
- DBEngineVersion
- DBInstance
- DBInstanceAutomatedBackup
- DBInstanceAutomatedBackupsReplication
- DBInstanceRole
- DBInstanceStatusInfo
- DBMajorEngineVersion
- DBParameterGroup
- DBParameterGroupStatus
- DBProxy
- DBProxyEndpoint
- DBProxyTarget
- DBProxyTargetGroup
- DBRecommendation
- DBSecurityGroup
- DBSecurityGroupMembership
- DBShardGroup
- DBSnapshot
- DBSnapshotAttribute
- DBSnapshotAttributesResult
- DBSnapshotTenantDatabase
- DBSubnetGroup
- DescribeDBLogFilesDetails
- DocLink

- DomainMembership
- DoubleRange
- EC2SecurityGroup
- Endpoint
- EngineDefaults
- Event
- EventCategoriesMap
- EventSubscription
- ExportTask
- FailoverState
- Filter
- GlobalCluster
- GlobalClusterMember
- Integration
- IntegrationError
- IPRange
- IssueDetails
- LimitlessDatabase
- MasterUserSecret
- Metric
- MetricQuery
- MetricReference
- MinimumEngineVersionPerAllowedValue
- Option
- OptionConfiguration
- OptionGroup
- OptionGroupMembership
- OptionGroupOption
- OptionGroupOptionSetting
- OptionSetting

- OptionVersion
- OrderableDBInstanceOption
- Outpost
- Parameter
- PendingCloudwatchLogsExports
- PendingMaintenanceAction
- PendingModifiedValues
- PerformanceInsightsMetricDimensionGroup
- PerformanceInsightsMetricQuery
- PerformanceIssueDetails
- ProcessorFeature
- Range
- RdsCustomClusterConfiguration
- RecommendedAction
- RecommendedActionParameter
- RecommendedActionUpdate
- RecurringCharge
- ReferenceDetails
- ReservedDBInstance
- ReservedDBInstancesOffering
- ResourcePendingMaintenanceActions
- RestoreWindow
- ScalarReferenceDetails
- ScalingConfiguration
- ScalingConfigurationInfo
- ServerlessV2FeaturesSupport
- ServerlessV2ScalingConfiguration
- ServerlessV2ScalingConfigurationInfo
- SourceRegion
- Subnet

- SupportedEngineLifecycle
- SwitchoverDetail
- Tag
- TargetHealth
- TenantDatabase
- TenantDatabasePendingModifiedValues
- Timezone
- UpgradeTarget
- UserAuthConfig
- UserAuthConfigInfo
- ValidDBInstanceModificationsMessage
- ValidStorageOptions
- VpcSecurityGroupMembership

AccountQuota

Describes a quota for an Amazon Web Services account.

The following are account quotas:

- `AllocatedStorage` - The total allocated storage per account, in GiB. The used value is the total allocated storage in the account, in GiB.
- `AuthorizationsPerDBSecurityGroup` - The number of ingress rules per DB security group. The used value is the highest number of ingress rules in a DB security group in the account. Other DB security groups in the account might have a lower number of ingress rules.
- `CustomEndpointsPerDBCluster` - The number of custom endpoints per DB cluster. The used value is the highest number of custom endpoints in a DB clusters in the account. Other DB clusters in the account might have a lower number of custom endpoints.
- `DBClusterParameterGroups` - The number of DB cluster parameter groups per account, excluding default parameter groups. The used value is the count of nondefault DB cluster parameter groups in the account.
- `DBClusterRoles` - The number of associated Amazon Identity and Access Management (IAM) roles per DB cluster. The used value is the highest number of associated IAM roles for a DB cluster in the account. Other DB clusters in the account might have a lower number of associated IAM roles.
- `DBClusters` - The number of DB clusters per account. The used value is the count of DB clusters in the account.
- `DBInstanceRoles` - The number of associated IAM roles per DB instance. The used value is the highest number of associated IAM roles for a DB instance in the account. Other DB instances in the account might have a lower number of associated IAM roles.
- `DBInstances` - The number of DB instances per account. The used value is the count of the DB instances in the account.

  Amazon RDS DB instances, Amazon Aurora DB instances, Amazon Neptune instances, and Amazon DocumentDB instances apply to this quota.
- `DBParameterGroups` - The number of DB parameter groups per account, excluding default parameter groups. The used value is the count of nondefault DB parameter groups in the account.

- `DBSecurityGroups` - The number of DB security groups (not VPC security groups) per account, excluding the default security group. The used value is the count of nondefault DB security groups in the account.
- `DBSubnetGroups` - The number of DB subnet groups per account. The used value is the count of the DB subnet groups in the account.
- `EventSubscriptions` - The number of event subscriptions per account. The used value is the count of the event subscriptions in the account.
- `ManualClusterSnapshots` - The number of manual DB cluster snapshots per account. The used value is the count of the manual DB cluster snapshots in the account.
- `ManualSnapshots` - The number of manual DB instance snapshots per account. The used value is the count of the manual DB instance snapshots in the account.
- `OptionGroups` - The number of DB option groups per account, excluding default option groups. The used value is the count of nondefault DB option groups in the account.
- `ReadReplicasPerMaster` - The number of read replicas per DB instance. The used value is the highest number of read replicas for a DB instance in the account. Other DB instances in the account might have a lower number of read replicas.
- `ReservedDBInstances` - The number of reserved DB instances per account. The used value is the count of the active reserved DB instances in the account.
- `SubnetsPerDBSubnetGroup` - The number of subnets per DB subnet group. The used value is highest number of subnets for a DB subnet group in the account. Other DB subnet groups in the account might have a lower number of subnets.

For more information, see Quotas for Amazon RDS in the *Amazon RDS User Guide* and Quotas for Amazon Aurora in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AccountQuotaName

The name of the Amazon RDS quota for this Amazon Web Services account.

Type: String

Required: No

Max

The maximum allowed value for the quota.

Type: Long

Required: No

Used

The amount currently used toward the quota maximum.

Type: Long

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

AvailabilityZone

Contains Availability Zone information.

This data type is used as an element in the `OrderableDBInstanceOption` data type.

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 Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

AvailableProcessorFeature

Contains the available processor feature information for the DB instance class of a DB instance.

For more information, see Configuring the Processor of the DB Instance Class in the *Amazon RDS User Guide.*

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowedValues

The allowed values for the processor feature of the DB instance class.

Type: String

Required: No

DefaultValue

The default value for the processor feature of the DB instance class.

Type: String

Required: No

Name

The name of the processor feature. Valid names are `coreCount` and `threadsPerCore`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

BlueGreenDeployment

Details about a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Contents

> **Note**
> In the following list, the required parameters are described first.

BlueGreenDeploymentIdentifier

The unique identifier of the blue/green deployment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: No

BlueGreenDeploymentName

The user-supplied name of the blue/green deployment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 60.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

CreateTime

The time when the blue/green deployment was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

DeleteTime

The time when the blue/green deployment was deleted, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

Source

The source database for the blue/green deployment.

Before switchover, the source database is the production database in the blue environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `^arn:[A-Za-z][0-9A-Za-z-:._]*`

Required: No

Status

The status of the blue/green deployment.

Valid Values:

- `PROVISIONING` - Resources are being created in the green environment.
- `AVAILABLE` - Resources are available in the green environment.
- `SWITCHOVER_IN_PROGRESS` - The deployment is being switched from the blue environment to the green environment.
- `SWITCHOVER_COMPLETED` - Switchover from the blue environment to the green environment is complete.
- `INVALID_CONFIGURATION` - Resources in the green environment are invalid, so switchover isn't possible.
- `SWITCHOVER_FAILED` - Switchover was attempted but failed.
- `DELETING` - The blue/green deployment is being deleted.

Type: String

Required: No

StatusDetails

Additional information about the status of the blue/green deployment.

Type: String

Required: No

SwitchoverDetails.member.N

The details about each source and target resource in the blue/green deployment.

Type: Array of SwitchoverDetail objects

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

Target

The target database for the blue/green deployment.

Before switchover, the target database is the clone database in the green environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `^arn:[A-Za-z][0-9A-Za-z-:._]*`

Required: No

Tasks.member.N

Either tasks to be performed or tasks that have been completed on the target database before switchover.

Type: Array of BlueGreenDeploymentTask objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

BlueGreenDeploymentTask

Details about a task for a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Name

The name of the blue/green deployment task.

Type: String

Required: No

Status

The status of the blue/green deployment task.

Valid Values:

- `PENDING` - The resource is being prepared for deployment.
- `IN_PROGRESS` - The resource is being deployed.
- `COMPLETED` - The resource has been deployed.
- `FAILED` - Deployment of the resource failed.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Certificate

A CA certificate for an Amazon Web Services account.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CertificateArn

The Amazon Resource Name (ARN) for the certificate.

Type: String

Required: No

CertificateIdentifier

The unique key that identifies a certificate.

Type: String

Required: No

CertificateType

The type of the certificate.

Type: String

Required: No

CustomerOverride

Indicates whether there is an override for the default certificate identifier.

Type: Boolean

Required: No

CustomerOverrideValidTill

If there is an override for the default certificate identifier, when the override expires.

Type: Timestamp

Required: No

Thumbprint

The thumbprint of the certificate.

Type: String

Required: No

ValidFrom

The starting date from which the certificate is valid.

Type: Timestamp

Required: No

ValidTill

The final date that the certificate continues to be valid.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

CertificateDetails

The details of the DB instance's server certificate.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CAIdentifier

The CA identifier of the CA certificate used for the DB instance's server certificate.

Type: String

Required: No

ValidTill

The expiration date of the DB instance's server certificate.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

CharacterSet

This data type is used as a response element in the action `DescribeDBEngineVersions`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CharacterSetDescription

The description of the character set.

Type: String

Required: No

CharacterSetName

The name of the character set.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

CloudwatchLogsExportConfiguration

The configuration setting for the log types to be enabled for export to CloudWatch Logs for a specific DB instance or DB cluster.

The `EnableLogTypes` and `DisableLogTypes` arrays determine which logs will be exported (or not exported) to CloudWatch Logs. The values within these arrays depend on the DB engine being used.

For more information about exporting CloudWatch Logs for Amazon RDS DB instances, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon RDS User Guide*.

For more information about exporting CloudWatch Logs for Amazon Aurora DB clusters, see Publishing Database Logs to Amazon CloudWatch Logs in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DisableLogTypes.member.N

The list of log types to disable.

The following values are valid for each DB engine:

- Aurora MySQL - `audit | error | general | slowquery`
- Aurora PostgreSQL - `postgresql`
- RDS for MySQL - `error | general | slowquery`
- RDS for PostgreSQL - `postgresql | upgrade`

Type: Array of strings

Required: No

EnableLogTypes.member.N

The list of log types to enable.

The following values are valid for each DB engine:

- Aurora MySQL - `audit | error | general | slowquery`
- Aurora PostgreSQL - `postgresql`
- RDS for MySQL - `error | general | slowquery`
- RDS for PostgreSQL - `postgresql | upgrade`

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ClusterPendingModifiedValues

This data type is used as a response element in the `ModifyDBCluster` operation and contains changes that will be applied during the next maintenance window.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

The allocated storage size in gibibytes (GiB) for all database engines except Amazon Aurora. For Aurora, `AllocatedStorage` always returns 1, because Aurora DB cluster storage size isn't fixed, but instead automatically adjusts as needed.

Type: Integer

Required: No

BackupRetentionPeriod

The number of days for which automatic DB snapshots are retained.

Type: Integer

Required: No

CertificateDetails

The details of the DB instance's server certificate.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: CertificateDetails object

Required: No

DBClusterIdentifier

The DBClusterIdentifier value for the DB cluster.

Type: String

Required: No

EngineVersion

The database engine version.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

Iops

The Provisioned IOPS (I/O operations per second) value. This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

MasterUserPassword

The master credentials for the DB cluster.

Type: String

Required: No

PendingCloudwatchLogsExports

A list of the log types whose configuration is still pending. In other words, these log types are in the process of being activated or deactivated.

Type: PendingCloudwatchLogsExports object

Required: No

RdsCustomClusterConfiguration

Reserved for future use.

Type: RdsCustomClusterConfiguration object

Required: No

StorageType

The storage type for the DB cluster.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ConnectionPoolConfiguration

Specifies the settings that control the size and behavior of the connection pool associated with a `DBProxyTargetGroup`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ConnectionBorrowTimeout

The number of seconds for a proxy to wait for a connection to become available in the connection pool. This setting only applies when the proxy has opened its maximum number of connections and all connections are busy with client sessions.

Default: `120`

Constraints:

- Must be between 0 and 300.

Type: Integer

Required: No

InitQuery

Add an initialization query, or modify the current one. You can specify one or more SQL statements for the proxy to run when opening each new database connection. The setting is typically used with SET statements to make sure that each connection has identical settings. Make sure the query added here is valid. This is an optional field, so you can choose to leave it empty. For including multiple variables in a single SET statement, use a comma separator.

For example: `SET variable1=value1, variable2=value2`

Default: no initialization query

> **Important**
>
> Since you can access initialization query as part of target group configuration, it is not protected by authentication or cryptographic methods. Anyone with access to view or manage your proxy target group configuration can view the initialization query. You should not add sensitive data, such as passwords or long-lived encryption keys, to this option.

Type: String

Required: No

MaxConnectionsPercent

The maximum size of the connection pool for each target in a target group. The value is expressed as a percentage of the `max_connections` setting for the RDS DB instance or Aurora DB cluster used by the target group.

If you specify `MaxIdleConnectionsPercent`, then you must also include a value for this parameter.

Default: `10` for RDS for Microsoft SQL Server, and `100` for all other engines

Constraints:

- Must be between 1 and 100.

Type: Integer

Required: No

MaxIdleConnectionsPercent

A value that controls how actively the proxy closes idle database connections in the connection pool. The value is expressed as a percentage of the `max_connections` setting for the RDS DB instance or Aurora DB cluster used by the target group. With a high value, the proxy leaves a high percentage of idle database connections open. A low value causes the proxy to close more idle connections and return them to the database.

If you specify this parameter, then you must also include a value for `MaxConnectionsPercent`.

Default: The default value is half of the value of `MaxConnectionsPercent`. For example, if `MaxConnectionsPercent` is 80, then the default value of `MaxIdleConnectionsPercent` is 40. If the value of `MaxConnectionsPercent` isn't specified, then for SQL Server, `MaxIdleConnectionsPercent` is 5, and for all other engines, the default is `50`.

Constraints:

- Must be between 0 and the value of `MaxConnectionsPercent`.

Type: Integer

Required: No

SessionPinningFilters.member.N

Each item in the list represents a class of SQL operations that normally cause all later statements in a session using a proxy to be pinned to the same underlying database connection. Including an item in the list exempts that class of SQL operations from the pinning behavior.

Default: no session pinning filters

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ConnectionPoolConfigurationInfo

Displays the settings that control the size and behavior of the connection pool associated with a `DBProxyTarget`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ConnectionBorrowTimeout

The number of seconds for a proxy to wait for a connection to become available in the connection pool. Only applies when the proxy has opened its maximum number of connections and all connections are busy with client sessions.

Type: Integer

Required: No

InitQuery

One or more SQL statements for the proxy to run when opening each new database connection. The setting is typically used with SET statements to make sure that each connection has identical settings. The query added here must be valid. For including multiple variables in a single SET statement, use a comma separator. This is an optional field.

For example: `SET variable1=value1, variable2=value2`

> **Important**
>
> Since you can access initialization query as part of target group configuration, it is not protected by authentication or cryptographic methods. Anyone with access to view or manage your proxy target group configuration can view the initialization query. You should not add sensitive data, such as passwords or long-lived encryption keys, to this option.

Type: String

Required: No

MaxConnectionsPercent

The maximum size of the connection pool for each target in a target group. The value is expressed as a percentage of the `max_connections` setting for the RDS DB instance or Aurora DB cluster used by the target group.

Type: Integer

Required: No

MaxIdleConnectionsPercent

Controls how actively the proxy closes idle database connections in the connection pool. The value is expressed as a percentage of the `max_connections` setting for the RDS DB instance or Aurora DB cluster used by the target group. With a high value, the proxy leaves a high percentage of idle database connections open. A low value causes the proxy to close more idle connections and return them to the database.

Type: Integer

Required: No

SessionPinningFilters.member.N

Each item in the list represents a class of SQL operations that normally cause all later statements in a session using a proxy to be pinned to the same underlying database connection. Including an item in the list exempts that class of SQL operations from the pinning behavior. This setting is only supported for MySQL engine family databases. Currently, the only allowed value is `EXCLUDE_VARIABLE_SETS`.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++

- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ContextAttribute

The additional attributes of `RecommendedAction` data type.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Key

The key of `ContextAttribute`.

Type: String

Required: No

Value

The value of `ContextAttribute`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

CustomDBEngineVersionAMI

A value that indicates the AMI information.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ImageId

A value that indicates the ID of the AMI.

Type: String

Required: No

Status

A value that indicates the status of a custom engine version (CEV).

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBCluster

Contains the details of an Amazon Aurora DB cluster or Multi-AZ DB cluster.

For an Amazon Aurora DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `PromoteReadReplicaDBCluster`, `RestoreDBClusterFromS3`, `RestoreDBClusterFromSnapshot`, `RestoreDBClusterToPointInTime`, `StartDBCluster`, and `StopDBCluster`.

For a Multi-AZ DB cluster, this data type is used as a response element in the operations `CreateDBCluster`, `DeleteDBCluster`, `DescribeDBClusters`, `FailoverDBCluster`, `ModifyDBCluster`, `RebootDBCluster`, `RestoreDBClusterFromSnapshot`, and `RestoreDBClusterToPointInTime`.

For more information on Amazon Aurora DB clusters, see What is Amazon Aurora? in the *Amazon Aurora User Guide.*

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ActivityStreamKinesisStreamName

The name of the Amazon Kinesis data stream used for the database activity stream.

Type: String

Required: No

ActivityStreamKmsKeyId

The Amazon KMS key identifier used for encrypting messages in the database activity stream.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

ActivityStreamMode

The mode of the database activity stream. Database events such as a change or access generate an activity stream event. The database session can handle these events either synchronously or asynchronously.

Type: String

Valid Values: `sync | async`

Required: No

ActivityStreamStatus

The status of the database activity stream.

Type: String

Valid Values: `stopped | starting | started | stopping`

Required: No

AllocatedStorage

`AllocatedStorage` specifies the allocated storage size in gibibytes (GiB). For Aurora, `AllocatedStorage` can vary because Aurora DB cluster storage size adjusts as needed.

Type: Integer

Required: No

AssociatedRoles.DBClusterRole.N

A list of the Amazon Identity and Access Management (IAM) roles that are associated with the DB cluster. IAM roles that are associated with a DB cluster grant permission for the DB cluster to access other Amazon Web Services on your behalf.

Type: Array of DBClusterRole objects

Required: No

AutomaticRestartTime

The time when a stopped DB cluster is restarted automatically.

Type: Timestamp

Required: No

AutoMinorVersionUpgrade

Indicates whether minor version patches are applied automatically.

This setting is for Aurora DB clusters and Multi-AZ DB clusters.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZones.AvailabilityZone.N

The list of Availability Zones (AZs) where instances in the DB cluster can be created.

Type: Array of strings

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

Type: String

Required: No

BacktrackConsumedChangeRecords

The number of change records stored for Backtrack.

Type: Long

Required: No

BacktrackWindow

The target backtrack window, in seconds. If this value is set to `0`, backtracking is disabled for the DB cluster. Otherwise, backtracking is enabled.

Type: Long

Required: No

BackupRetentionPeriod

The number of days for which automatic DB snapshots are retained.

Type: Integer

Required: No

Capacity

The current capacity of an Aurora Serverless v1 DB cluster. The capacity is `0` (zero) when the cluster is paused.

For more information about Aurora Serverless v1, see Using Amazon Aurora Serverless v1 in the *Amazon Aurora User Guide*.

Type: Integer

Required: No

CertificateDetails

The details of the DB instance's server certificate.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: CertificateDetails object

Required: No

CharacterSetName

If present, specifies the name of the character set that this cluster is associated with.

Type: String

Required: No

CloneGroupId

The ID of the clone group with which the DB cluster is associated. For newly created clusters, the ID is typically null.

If you clone a DB cluster when the ID is null, the operation populates the ID value for the source cluster and the clone because both clusters become part of the same clone group. Even if you delete the clone cluster, the clone group ID remains for the lifetime of the source cluster to show that it was used in a cloning operation.

For PITR, the clone group ID is inherited from the source cluster. For snapshot restore operations, the clone group ID isn't inherited from the source cluster.

Type: String

Required: No

ClusterCreateTime

The time when the DB cluster was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

ClusterScalabilityType

The scalability mode of the Aurora DB cluster. When set to `limitless`, the cluster operates as an Aurora Limitless Database. When set to `standard` (the default), the cluster uses normal DB instance creation.

Type: String

Valid Values: `standard | limitless`

Required: No

CopyTagsToSnapshot

Indicates whether tags are copied from the DB cluster to snapshots of the DB cluster.

Type: Boolean

Required: No

CrossAccountClone

Indicates whether the DB cluster is a clone of a DB cluster owned by a different Amazon Web Services account.

Type: Boolean

Required: No

CustomEndpoints.member.N

The custom endpoints associated with the DB cluster.

Type: Array of strings

Required: No

DatabaseInsightsMode

The mode of Database Insights that is enabled for the DB cluster.

Type: String

Valid Values: `standard | advanced`

Required: No

DatabaseName

The name of the initial database that was specified for the DB cluster when it was created, if one was provided. This same name is returned for the life of the DB cluster.

Type: String

Required: No

DBClusterArn

The Amazon Resource Name (ARN) for the DB cluster.

Type: String

Required: No

DBClusterIdentifier

The user-supplied identifier for the DB cluster. This identifier is the unique key that identifies a DB cluster.

Type: String

Required: No

DBClusterInstanceClass

The name of the compute and memory capacity class of the DB instance.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: String

Required: No

DBClusterMembers.DBClusterMember.N

The list of DB instances that make up the DB cluster.

Type: Array of DBClusterMember objects

Required: No

DBClusterOptionGroupMemberships.DBClusterOptionGroup.N

The list of option group memberships for this DB cluster.

Type: Array of DBClusterOptionGroupStatus objects

Required: No

DBClusterParameterGroup

The name of the DB cluster parameter group for the DB cluster.

Type: String

Required: No

DbClusterResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB cluster. This identifier is found in Amazon CloudTrail log entries whenever the KMS key for the DB cluster is accessed.

Type: String

Required: No

DBSubnetGroup

Information about the subnet group associated with the DB cluster, including the name, description, and subnets in the subnet group.

Type: String

Required: No

DBSystemId

Reserved for future use.

Type: String

Required: No

DeletionProtection

Indicates whether the DB cluster has deletion protection enabled. The database can't be deleted when deletion protection is enabled.

Type: Boolean

Required: No

DomainMemberships.DomainMembership.N

The Active Directory Domain membership records associated with the DB cluster.

Type: Array of DomainMembership objects

Required: No

EarliestBacktrackTime

The earliest time to which a DB cluster can be backtracked.

Type: Timestamp

Required: No

EarliestRestorableTime

The earliest time to which a database can be restored with point-in-time restore.

Type: Timestamp

Required: No

EnabledCloudwatchLogsExports.member.N

A list of log types that this DB cluster is configured to export to CloudWatch Logs.

Log types vary by DB engine. For information about the log types for each DB engine, see Amazon RDS Database Log Files in the *Amazon Aurora User Guide.*

Type: Array of strings

Required: No

Endpoint

The connection endpoint for the primary instance of the DB cluster.

Type: String

Required: No

Engine

The database engine used for this DB cluster.

Type: String

Required: No

EngineLifecycleSupport

The lifecycle type for the DB cluster.

For more information, see CreateDBCluster.

Type: String

Required: No

EngineMode

The DB engine mode of the DB cluster, either `provisioned` or `serverless`.

For more information, see CreateDBCluster.

Type: String

Required: No

EngineVersion

The version of the database engine.

Type: String

Required: No

GlobalClusterIdentifier

Contains a user-supplied global database cluster identifier. This identifier is the unique key that identifies a global database cluster.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `[A-Za-z][0-9A-Za-z-:._]*`

Required: No

GlobalWriteForwardingRequested

Indicates whether write forwarding is enabled for a secondary cluster in an Aurora global database. Because write forwarding takes time to enable, check the value of `GlobalWriteForwardingStatus` to confirm that the request has completed before using the write forwarding feature for this cluster.

Type: Boolean

Required: No

GlobalWriteForwardingStatus

The status of write forwarding for a secondary cluster in an Aurora global database.

Type: String

Valid Values: `enabled | disabled | enabling | disabling | unknown`

Required: No

HostedZoneId

The ID that Amazon Route 53 assigns when you create a hosted zone.

Type: String

Required: No

HttpEndpointEnabled

Indicates whether the HTTP endpoint is enabled for an Aurora DB cluster.

When enabled, the HTTP endpoint provides a connectionless web service API (RDS Data API) for running SQL queries on the DB cluster. You can also query your database from inside the RDS console with the RDS query editor.

For more information, see Using RDS Data API in the *Amazon Aurora User Guide*.

Type: Boolean

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether the mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

IOOptimizedNextAllowedModificationTime

The next time you can modify the DB cluster to use the `aurora-iopt1` storage type.

This setting is only for Aurora DB clusters.

Type: Timestamp

Required: No

Iops

The Provisioned IOPS (I/O operations per second) value.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

KmsKeyId

If `StorageEncrypted` is enabled, the Amazon KMS key identifier for the encrypted DB cluster.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LatestRestorableTime

The latest time to which a database can be restored with point-in-time restore.

Type: Timestamp

Required: No

LimitlessDatabase

The details for Aurora Limitless Database.

Type: LimitlessDatabase object

Required: No

LocalWriteForwardingStatus

Indicates whether an Aurora DB cluster has in-cluster write forwarding enabled, not enabled, requested, or is in the process of enabling it.

Type: String

Valid Values: `enabled | disabled | enabling | disabling | requested`

Required: No

MasterUsername

The master username for the DB cluster.

Type: String

Required: No

MasterUserSecret

The secret managed by RDS in Amazon Secrets Manager for the master user password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Type: MasterUserSecret object

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB cluster.

This setting is only for -Aurora DB clusters and Multi-AZ DB clusters.

Type: Integer

Required: No

MonitoringRoleArn

The ARN for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs.

This setting is only for Aurora DB clusters and Multi-AZ DB clusters.

Type: String

Required: No

MultiAZ

Indicates whether the DB cluster has instances in multiple Availability Zones.

Type: Boolean

Required: No

NetworkType

The network type of the DB instance.

The network type is determined by the `DBSubnetGroup` specified for the DB cluster. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

This setting is only for Aurora DB clusters.

Valid Values: `IPV4 | DUAL`

Type: String

Required: No

PendingModifiedValues

Information about pending changes to the DB cluster. This information is returned only when there are pending changes. Specific changes are identified by subelements.

Type: ClusterPendingModifiedValues object

Required: No

PercentProgress

The progress of the operation as a percentage.

Type: String

Required: No

PerformanceInsightsEnabled

Indicates whether Performance Insights is enabled for the DB cluster.

This setting is only for Aurora DB clusters and Multi-AZ DB clusters.

Type: Boolean

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

This setting is only for Aurora DB clusters and Multi-AZ DB clusters.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

This setting is only for Aurora DB clusters and Multi-AZ DB clusters.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

Type: Integer

Required: No

Port

The port that the database engine is listening on.

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod`.

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Type: String

Required: No

PubliclyAccessible

Indicates whether the DB cluster is publicly accessible.

When the DB cluster is publicly accessible and you connect from outside of the DB cluster's virtual private cloud (VPC), its Domain Name System (DNS) endpoint resolves to the public IP address. When you connect from within the same VPC as the DB cluster, the endpoint resolves to the private IP address. Access to the DB cluster is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB cluster isn't publicly accessible, it is an internal DB cluster with a DNS name that resolves to a private IP address.

For more information, see CreateDBCluster.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Boolean

Required: No

RdsCustomClusterConfiguration

Reserved for future use.

Type: RdsCustomClusterConfiguration object

Required: No

ReaderEndpoint

The reader endpoint for the DB cluster. The reader endpoint for a DB cluster load-balances connections across the Aurora Replicas that are available in a DB cluster. As clients request new connections to the reader endpoint, Aurora distributes the connection requests among the Aurora Replicas in the DB cluster. This functionality can help balance your read workload across multiple Aurora Replicas in your DB cluster.

If a failover occurs, and the Aurora Replica that you are connected to is promoted to be the primary instance, your connection is dropped. To continue sending your read workload to other Aurora Replicas in the cluster, you can then reconnect to the reader endpoint.

Type: String

Required: No

ReadReplicaIdentifiers.ReadReplicaIdentifier.N

Contains one or more identifiers of the read replicas associated with this DB cluster.

Type: Array of strings

Required: No

ReplicationSourceIdentifier

The identifier of the source DB cluster if this DB cluster is a read replica.

Type: String

Required: No

ScalingConfigurationInfo

The scaling configuration for an Aurora DB cluster in `serverless` DB engine mode.

For more information, see Using Amazon Aurora Serverless v1 in the *Amazon Aurora User Guide*.

Type: ScalingConfigurationInfo object

Required: No

ServerlessV2ScalingConfiguration

The scaling configuration for an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Type: ServerlessV2ScalingConfigurationInfo object

Required: No

Status

The current state of this DB cluster.

Type: String

Required: No

StatusInfos.DBClusterStatusInfo.N

Reserved for future use.

Type: Array of DBClusterStatusInfo objects

Required: No

StorageEncrypted

Indicates whether the DB cluster is encrypted.

Type: Boolean

Required: No

StorageThroughput

The storage throughput for the DB cluster. The throughput is automatically set based on the IOPS that you provision, and is not configurable.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

StorageType

The storage type associated with the DB cluster.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

VpcSecurityGroups.VpcSecurityGroupMembership.N

The list of VPC security groups that the DB cluster belongs to.

Type: Array of VpcSecurityGroupMembership objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterAutomatedBackup

An automated backup of a DB cluster. It consists of system backups, transaction logs, and the database cluster properties that existed at the time you deleted the source cluster.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

For all database engines except Amazon Aurora, `AllocatedStorage` specifies the allocated storage size in gibibytes (GiB). For Aurora, `AllocatedStorage` always returns 1, because Aurora DB cluster storage size isn't fixed, but instead automatically adjusts as needed.

Type: Integer

Required: No

AvailabilityZones.AvailabilityZone.N

The Availability Zones where instances in the DB cluster can be created. For information on Amazon Web Services Regions and Availability Zones, see Regions and Availability Zones.

Type: Array of strings

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

Type: String

Required: No

BackupRetentionPeriod

The retention period for the automated backups.

Type: Integer

Required: No

ClusterCreateTime

The time when the DB cluster was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

DBClusterArn

The Amazon Resource Name (ARN) for the source DB cluster.

Type: String

Required: No

DBClusterAutomatedBackupsArn

The Amazon Resource Name (ARN) for the automated backups.

Type: String

Required: No

DBClusterIdentifier

The identifier for the source DB cluster, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

DbClusterResourceId

The resource ID for the source DB cluster, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

Engine

The name of the database engine for this automated backup.

Type: String

Required: No

EngineMode

The engine mode of the database engine for the automated backup.

Type: String

Required: No

EngineVersion

The version of the database engine for the automated backup.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

Iops

The IOPS (I/O operations per second) value for the automated backup.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key ID for an automated backup.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LicenseModel

The license model information for this DB cluster automated backup.

Type: String

Required: No

MasterUsername

The master user name of the automated backup.

Type: String

Required: No

Port

The port number that the automated backup used for connections.

Default: Inherits from the source DB cluster

Valid Values: `1150-65535`

Type: Integer

Required: No

Region

The Amazon Web Services Region associated with the automated backup.

Type: String

Required: No

RestoreWindow

Earliest and latest time an instance can be restored to:

Type: RestoreWindow object

Required: No

Status

A list of status information for an automated backup:

- `retained` - Automated backups for deleted clusters.

Type: String

Required: No

StorageEncrypted

Indicates whether the source DB cluster is encrypted.

Type: Boolean

Required: No

StorageThroughput

The storage throughput for the automated backup. The throughput is automatically set based on the IOPS that you provision, and is not configurable.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

StorageType

The storage type associated with the DB cluster.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: String

Required: No

VpcId

The VPC ID associated with the DB cluster.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterBacktrack

This data type is used as a response element in the `DescribeDBClusterBacktracks` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

BacktrackedFrom

The timestamp of the time from which the DB cluster was backtracked.

Type: Timestamp

Required: No

BacktrackIdentifier

Contains the backtrack identifier.

Type: String

Required: No

BacktrackRequestCreationTime

The timestamp of the time at which the backtrack was requested.

Type: Timestamp

Required: No

BacktrackTo

The timestamp of the time to which the DB cluster was backtracked.

Type: Timestamp

Required: No

DBClusterIdentifier

Contains a user-supplied DB cluster identifier. This identifier is the unique key that identifies a DB cluster.

Type: String

Required: No

Status

The status of the backtrack. This property returns one of the following values:

- `applying` - The backtrack is currently being applied to or rolled back from the DB cluster.
- `completed` - The backtrack has successfully been applied to or rolled back from the DB cluster.
- `failed` - An error occurred while the backtrack was applied to or rolled back from the DB cluster.
- `pending` - The backtrack is currently pending application to or rollback from the DB cluster.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterEndpoint

This data type represents the information you need to connect to an Amazon Aurora DB cluster. This data type is used as a response element in the following actions:

- `CreateDBClusterEndpoint`
- `DescribeDBClusterEndpoints`
- `ModifyDBClusterEndpoint`
- `DeleteDBClusterEndpoint`

For the data structure that represents Amazon RDS DB instance endpoints, see `Endpoint`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CustomEndpointType

The type associated with a custom endpoint. One of: `READER`, `WRITER`, `ANY`.

Type: String

Required: No

DBClusterEndpointArn

The Amazon Resource Name (ARN) for the endpoint.

Type: String

Required: No

DBClusterEndpointIdentifier

The identifier associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Required: No

DBClusterEndpointResourceIdentifier

A unique system-generated identifier for an endpoint. It remains the same for the whole life of the endpoint.

Type: String

Required: No

DBClusterIdentifier

The DB cluster identifier of the DB cluster associated with the endpoint. This parameter is stored as a lowercase string.

Type: String

Required: No

Endpoint

The DNS address of the endpoint.

Type: String

Required: No

EndpointType

The type of the endpoint. One of: `READER`, `WRITER`, `CUSTOM`.

Type: String

Required: No

ExcludedMembers.member.N

List of DB instance identifiers that aren't part of the custom endpoint group. All other eligible instances are reachable through the custom endpoint. Only relevant if the list of static members is empty.

Type: Array of strings

Required: No

StaticMembers.member.N

List of DB instance identifiers that are part of the custom endpoint group.

Type: Array of strings

Required: No

Status

The current status of the endpoint. One of: `creating`, `available`, `deleting`, `inactive`, `modifying`. The `inactive` state applies to an endpoint that can't be used for a certain kind of cluster, such as a `writer` endpoint for a read-only secondary cluster in a global database.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterMember

Contains information about an instance that is part of a DB cluster.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBClusterParameterGroupStatus

Specifies the status of the DB cluster parameter group for this member of the DB cluster.

Type: String

Required: No

DBInstanceIdentifier

Specifies the instance identifier for this member of the DB cluster.

Type: String

Required: No

IsClusterWriter

Indicates whether the cluster member is the primary DB instance for the DB cluster.

Type: Boolean

Required: No

PromotionTier

A value that specifies the order in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see Fault Tolerance for an Aurora DB Cluster in the *Amazon Aurora User Guide*.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterOptionGroupStatus

Contains status information for a DB cluster option group.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBClusterOptionGroupName

Specifies the name of the DB cluster option group.

Type: String

Required: No

Status

Specifies the status of the DB cluster option group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterParameterGroup

Contains the details of an Amazon RDS DB cluster parameter group.

This data type is used as a response element in the `DescribeDBClusterParameterGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBClusterParameterGroupArn

The Amazon Resource Name (ARN) for the DB cluster parameter group.

Type: String

Required: No

DBClusterParameterGroupName

The name of the DB cluster parameter group.

Type: String

Required: No

DBParameterGroupFamily

The name of the DB parameter group family that this DB cluster parameter group is compatible with.

Type: String

Required: No

Description

Provides the customer-specified description for this DB cluster parameter group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterRole

Describes an Amazon Identity and Access Management (IAM) role that is associated with a DB cluster.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

FeatureName

The name of the feature associated with the Amazon Identity and Access Management (IAM) role. For information about supported feature names, see DBEngineVersion.

Type: String

Required: No

RoleArn

The Amazon Resource Name (ARN) of the IAM role that is associated with the DB cluster.

Type: String

Required: No

Status

Describes the state of association between the IAM role and the DB cluster. The Status property returns one of the following values:

- `ACTIVE` - the IAM role ARN is associated with the DB cluster and can be used to access other Amazon Web Services on your behalf.
- `PENDING` - the IAM role ARN is being associated with the DB cluster.
- `INVALID` - the IAM role ARN is associated with the DB cluster, but the DB cluster is unable to assume the IAM role in order to access other Amazon Web Services on your behalf.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterSnapshot

Contains the details for an Amazon RDS DB cluster snapshot

This data type is used as a response element in the `DescribeDBClusterSnapshots` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

The allocated storage size of the DB cluster snapshot in gibibytes (GiB).

Type: Integer

Required: No

AvailabilityZones.AvailabilityZone.N

The list of Availability Zones (AZs) where instances in the DB cluster snapshot can be restored.

Type: Array of strings

Required: No

ClusterCreateTime

The time when the DB cluster was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

DBClusterIdentifier

The DB cluster identifier of the DB cluster that this DB cluster snapshot was created from.

Type: String

Required: No

DbClusterResourceId

The resource ID of the DB cluster that this DB cluster snapshot was created from.

Type: String

Required: No

DBClusterSnapshotArn

The Amazon Resource Name (ARN) for the DB cluster snapshot.

Type: String

Required: No

DBClusterSnapshotIdentifier

The identifier for the DB cluster snapshot.

Type: String

Required: No

DBSystemId

Reserved for future use.

Type: String

Required: No

Engine

The name of the database engine for this DB cluster snapshot.

Type: String

Required: No

EngineMode

The engine mode of the database engine for this DB cluster snapshot.

Type: String

Required: No

EngineVersion

The version of the database engine for this DB cluster snapshot.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

KmsKeyId

If `StorageEncrypted` is true, the Amazon KMS key identifier for the encrypted DB cluster snapshot.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LicenseModel

The license model information for this DB cluster snapshot.

Type: String

Required: No

MasterUsername

The master username for this DB cluster snapshot.

Type: String

Required: No

PercentProgress

The percentage of the estimated data that has been transferred.

Type: Integer

Required: No

Port

The port that the DB cluster was listening on at the time of the snapshot.

Type: Integer

Required: No

SnapshotCreateTime

The time when the snapshot was taken, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

SnapshotType

The type of the DB cluster snapshot.

Type: String

Required: No

SourceDBClusterSnapshotArn

If the DB cluster snapshot was copied from a source DB cluster snapshot, the Amazon Resource Name (ARN) for the source DB cluster snapshot, otherwise, a null value.

Type: String

Required: No

Status

The status of this DB cluster snapshot. Valid statuses are the following:

- `available`
- `copying`
- `creating`

Type: String

Required: No

StorageEncrypted

Indicates whether the DB cluster snapshot is encrypted.

Type: Boolean

Required: No

StorageThroughput

The storage throughput for the DB cluster snapshot. The throughput is automatically set based on the IOPS that you provision, and is not configurable.

This setting is only for non-Aurora Multi-AZ DB clusters.

Type: Integer

Required: No

StorageType

The storage type associated with the DB cluster snapshot.

This setting is only for Aurora DB clusters.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

VpcId

The VPC ID associated with the DB cluster snapshot.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterSnapshotAttribute

Contains the name and values of a manual DB cluster snapshot attribute.

Manual DB cluster snapshot attributes are used to authorize other Amazon Web Services accounts to restore a manual DB cluster snapshot. For more information, see the `ModifyDBClusterSnapshotAttribute` API action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AttributeName

The name of the manual DB cluster snapshot attribute.

The attribute named `restore` refers to the list of Amazon Web Services accounts that have permission to copy or restore the manual DB cluster snapshot. For more information, see the `ModifyDBClusterSnapshotAttribute` API action.

Type: String

Required: No

AttributeValues.AttributeValue.N

The value(s) for the manual DB cluster snapshot attribute.

If the `AttributeName` field is set to `restore`, then this element returns a list of IDs of the Amazon Web Services accounts that are authorized to copy or restore the manual DB cluster snapshot. If a value of `all` is in the list, then the manual DB cluster snapshot is public and available for any Amazon Web Services account to copy or restore.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBClusterSnapshotAttributes` API action.

Manual DB cluster snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB cluster snapshot. For more information, see the `ModifyDBClusterSnapshotAttribute` API action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBClusterSnapshotAttributes.DBClusterSnapshotAttribute.N

The list of attributes and values for the manual DB cluster snapshot.

Type: Array of DBClusterSnapshotAttribute objects

Required: No

DBClusterSnapshotIdentifier

The identifier of the manual DB cluster snapshot that the attributes apply to.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBClusterStatusInfo

Reserved for future use.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Message

Reserved for future use.

Type: String

Required: No

Normal

Reserved for future use.

Type: Boolean

Required: No

Status

Reserved for future use.

Type: String

Required: No

StatusType

Reserved for future use.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBEngineVersion

This data type is used as a response element in the action `DescribeDBEngineVersions`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CreateTime

The creation time of the DB engine version.

Type: Timestamp

Required: No

CustomDBEngineVersionManifest

JSON string that lists the installation files and parameters that RDS Custom uses to create a custom engine version (CEV). RDS Custom applies the patches in the order in which they're listed in the manifest. You can set the Oracle home, Oracle base, and UNIX/Linux user and group using the installation parameters. For more information, see JSON fields in the CEV manifest in the *Amazon RDS User Guide*.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 51000.

Pattern: `[\s\S]*`

Required: No

DatabaseInstallationFilesS3BucketName

The name of the Amazon S3 bucket that contains your database installation files.

Type: String

Required: No

DatabaseInstallationFilesS3Prefix

The Amazon S3 directory that contains the database installation files. If not specified, then no prefix is assumed.

Type: String

Required: No

DBEngineDescription

The description of the database engine.

Type: String

Required: No

DBEngineMediaType

A value that indicates the source media provider of the AMI based on the usage operation. Applicable for RDS Custom for SQL Server.

Type: String

Required: No

DBEngineVersionArn

The ARN of the custom engine version.

Type: String

Required: No

DBEngineVersionDescription

The description of the database engine version.

Type: String

Required: No

DBParameterGroupFamily

The name of the DB parameter group family for the database engine.

Type: String

Required: No

DefaultCharacterSet

The default character set for new instances of this engine version, if the `CharacterSetName` parameter of the CreateDBInstance API isn't specified.

Type: CharacterSet object

Required: No

Engine

The name of the database engine.

Type: String

Required: No

EngineVersion

The version number of the database engine.

Type: String

Required: No

ExportableLogTypes.member.N

The types of logs that the database engine has available for export to CloudWatch Logs.

Type: Array of strings

Required: No

Image

The EC2 image

Type: CustomDBEngineVersionAMI object

Required: No

KMSKeyId

The Amazon KMS key identifier for an encrypted CEV. This parameter is required for RDS Custom, but optional for Amazon RDS.

Type: String

Required: No

MajorEngineVersion

The major engine version of the CEV.

Type: String

Required: No

ServerlessV2FeaturesSupport

Specifies any Aurora Serverless v2 properties or limits that differ between Aurora engine versions. You can test the values of this attribute when deciding which Aurora version to use in a new or upgraded DB cluster. You can also retrieve the version of an existing DB cluster and check whether that version supports certain Aurora Serverless v2 features before you attempt to use those features.

Type: ServerlessV2FeaturesSupport object

Required: No

Status

The status of the DB engine version, either `available` or `deprecated`.

Type: String

Required: No

SupportedCACertificateIdentifiers.member.N

A list of the supported CA certificate identifiers.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: Array of strings

Required: No

SupportedCharacterSets.CharacterSet.N

A list of the character sets supported by this engine for the `CharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

Required: No

SupportedEngineModes.member.N

A list of the supported DB engine modes.

Type: Array of strings

Required: No

SupportedFeatureNames.member.N

A list of features supported by the DB engine.

The supported features vary by DB engine and DB engine version.

To determine the supported features for a specific DB engine and DB engine version using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine <engine_name> --engine-
version <engine_version>
```

For example, to determine the supported features for RDS for PostgreSQL version 13.3 using the Amazon CLI, use the following command:

```
aws rds describe-db-engine-versions --engine postgres --engine-version
13.3
```

The supported features are listed under `SupportedFeatureNames` in the output.

Type: Array of strings

Required: No

SupportedNcharCharacterSets.CharacterSet.N

A list of the character sets supported by the Oracle DB engine for the `NcharCharacterSetName` parameter of the `CreateDBInstance` operation.

Type: Array of CharacterSet objects

Required: No

SupportedTimezones.Timezone.N

A list of the time zones supported by this engine for the `Timezone` parameter of the `CreateDBInstance` action.

Type: Array of Timezone objects

Required: No

SupportsBabelfish

Indicates whether the engine version supports Babelfish for Aurora PostgreSQL.

Type: Boolean

Required: No

SupportsCertificateRotationWithoutRestart

Indicates whether the engine version supports rotating the server certificate without rebooting the DB instance.

Type: Boolean

Required: No

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with a specific DB engine version.

Type: Boolean

Required: No

SupportsIntegrations

Indicates whether the DB engine version supports zero-ETL integrations with Amazon Redshift.

Type: Boolean

Required: No

SupportsLimitlessDatabase

Indicates whether the DB engine version supports Aurora Limitless Database.

Type: Boolean

Required: No

SupportsLocalWriteForwarding

Indicates whether the DB engine version supports forwarding write operations from reader DB instances to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

Required: No

SupportsLogExportsToCloudwatchLogs

Indicates whether the engine version supports exporting the log types specified by ExportableLogTypes to CloudWatch Logs.

Type: Boolean

Required: No

SupportsParallelQuery

Indicates whether you can use Aurora parallel query with a specific DB engine version.

Type: Boolean

Required: No

SupportsReadReplica

Indicates whether the database engine version supports read replicas.

Type: Boolean

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

ValidUpgradeTarget.UpgradeTarget.N

A list of engine versions that this database engine version can be upgraded to.

Type: Array of UpgradeTarget objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBInstance

Contains the details of an Amazon RDS DB instance.

This data type is used as a response element in the operations `CreateDBInstance`, `CreateDBInstanceReadReplica`, `DeleteDBInstance`, `DescribeDBInstances`, `ModifyDBInstance`, `PromoteReadReplica`, `RebootDBInstance`, `RestoreDBInstanceFromDBSnapshot`, `RestoreDBInstanceFromS3`, `RestoreDBInstanceToPointInTime`, `StartDBInstance`, and `StopDBInstance`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ActivityStreamEngineNativeAuditFieldsIncluded

Indicates whether engine-native audit fields are included in the database activity stream.

Type: Boolean

Required: No

ActivityStreamKinesisStreamName

The name of the Amazon Kinesis data stream used for the database activity stream.

Type: String

Required: No

ActivityStreamKmsKeyId

The Amazon KMS key identifier used for encrypting messages in the database activity stream. The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

ActivityStreamMode

The mode of the database activity stream. Database events such as a change or access generate an activity stream event. RDS for Oracle always handles these events asynchronously.

Type: String

Valid Values: `sync | async`

Required: No

ActivityStreamPolicyStatus

The status of the policy state of the activity stream.

Type: String

Valid Values: `locked | unlocked | locking-policy | unlocking-policy`

Required: No

ActivityStreamStatus

The status of the database activity stream.

Type: String

Valid Values: `stopped | starting | started | stopping`

Required: No

AllocatedStorage

The amount of storage in gibibytes (GiB) allocated for the DB instance.

Type: Integer

Required: No

AssociatedRoles.DBInstanceRole.N

The Amazon Identity and Access Management (IAM) roles associated with the DB instance.

Type: Array of DBInstanceRole objects

Required: No

AutomaticRestartTime

The time when a stopped DB instance is restarted automatically.

Type: Timestamp

Required: No

AutomationMode

The automation mode of the RDS Custom DB instance: `full` or `all paused`. If `full`, the DB instance automates monitoring and instance recovery. If `all paused`, the instance pauses automation for the duration set by `--resume-full-automation-mode-minutes`.

Type: String

Valid Values: `full | all-paused`

Required: No

AutoMinorVersionUpgrade

Indicates whether minor version patches are applied automatically.

For more information about automatic minor version upgrades, see Automatically upgrading the minor engine version.

Type: Boolean

Required: No

AvailabilityZone

The name of the Availability Zone where the DB instance is located.

Type: String

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

Type: String

Required: No

BackupRetentionPeriod

The number of days for which automatic DB snapshots are retained.

Type: Integer

Required: No

BackupTarget

The location where automated backups and manual snapshots are stored: Dedicated Local Zones, Amazon Outposts or the Amazon Web Services Region.

Type: String

Required: No

CACertificateIdentifier

The identifier of the CA certificate for this DB instance.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

CertificateDetails

The details of the DB instance's server certificate.

Type: CertificateDetails object

Required: No

CharacterSetName

If present, specifies the name of the character set that this instance is associated with.

Type: String

Required: No

CopyTagsToSnapshot

Indicates whether tags are copied from the DB instance to snapshots of the DB instance.

This setting doesn't apply to Amazon Aurora DB instances. Copying tags to snapshots is managed by the DB cluster. Setting this value for an Aurora DB instance has no effect on the DB cluster setting. For more information, see `DBCluster`.

Type: Boolean

Required: No

CustomerOwnedIpEnabled

Indicates whether a customer-owned IP address (CoIP) is enabled for an RDS on Outposts DB instance.

A *CoIP* provides local or external connectivity to resources in your Outpost subnets through your on-premises network. For some use cases, a CoIP can provide lower latency for connections to the DB instance from outside of its virtual private cloud (VPC) on your local network.

For more information about RDS on Outposts, see Working with Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide*.

For more information about CoIPs, see Customer-owned IP addresses in the *Amazon Outposts User Guide*.

Type: Boolean

Required: No

CustomIamInstanceProfile

The instance profile associated with the underlying Amazon EC2 instance of an RDS Custom DB instance. The instance profile must meet the following requirements:

- The profile must exist in your account.
- The profile must have an IAM role that Amazon EC2 has permissions to assume.
- The instance profile name and the associated IAM role name must start with the prefix `AWSRDSCustom`.

For the list of permissions required for the IAM role, see Configure IAM and your VPC in the *Amazon RDS User Guide*.

Type: String

Required: No

DatabaseInsightsMode

The mode of Database Insights that is enabled for the instance.

Type: String

Valid Values: `standard | advanced`

Required: No

DBClusterIdentifier

If the DB instance is a member of a DB cluster, indicates the name of the DB cluster that the DB instance is a member of.

Type: String

Required: No

DBInstanceArn

The Amazon Resource Name (ARN) for the DB instance.

Type: String

Required: No

DBInstanceAutomatedBackupsReplications.DBInstanceAutomatedBackupsReplication.N

The list of replicated automated backups associated with the DB instance.

Type: Array of DBInstanceAutomatedBackupsReplication objects

Required: No

DBInstanceClass

The name of the compute and memory capacity class of the DB instance.

Type: String

Required: No

DBInstanceIdentifier

The user-supplied database identifier. This identifier is the unique key that identifies a DB instance.

Type: String

Required: No

DbInstancePort

The port that the DB instance listens on. If the DB instance is part of a DB cluster, this can be a different port than the DB cluster port.

Type: Integer

Required: No

DBInstanceStatus

The current state of this database.

For information about DB instance statuses, see Viewing DB instance status in the *Amazon RDS User Guide.*

Type: String

Required: No

DbiResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB instance. This identifier is found in Amazon CloudTrail log entries whenever the Amazon KMS key for the DB instance is accessed.

Type: String

Required: No

DBName

The initial database name that you provided (if required) when you created the DB instance. This name is returned for the life of your DB instance. For an RDS for Oracle CDB instance, the name identifies the PDB rather than the CDB.

Type: String

Required: No

DBParameterGroups.DBParameterGroup.N

The list of DB parameter groups applied to this DB instance.

Type: Array of DBParameterGroupStatus objects

Required: No

DBSecurityGroups.DBSecurityGroup.N

A list of DB security group elements containing `DBSecurityGroup.Name` and `DBSecurityGroup.Status` subelements.

Type: Array of DBSecurityGroupMembership objects

Required: No

DBSubnetGroup

Information about the subnet group associated with the DB instance, including the name, description, and subnets in the subnet group.

Type: DBSubnetGroup object

Required: No

DBSystemId

The Oracle system ID (Oracle SID) for a container database (CDB). The Oracle SID is also the name of the CDB. This setting is only valid for RDS Custom DB instances.

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

DeletionProtection

Indicates whether the DB instance has deletion protection enabled. The database can't be deleted when deletion protection is enabled. For more information, see Deleting a DB Instance.

Type: Boolean

Required: No

DomainMemberships.DomainMembership.N

The Active Directory Domain membership records associated with the DB instance.

Type: Array of DomainMembership objects

Required: No

EnabledCloudwatchLogsExports.member.N

A list of log types that this DB instance is configured to export to CloudWatch Logs.

Log types vary by DB engine. For information about the log types for each DB engine, see Monitoring Amazon RDS log files in the *Amazon RDS User Guide.*

Type: Array of strings

Required: No

Endpoint

The connection endpoint for the DB instance.

> **Note**
>
> The endpoint might not be shown for instances with the status of `creating`.

Type: Endpoint object

Required: No

Engine

The database engine used for this DB instance.

Type: String

Required: No

EngineLifecycleSupport

The lifecycle type for the DB instance.

For more information, see CreateDBInstance.

Type: String

Required: No

EngineVersion

The version of the database engine.

Type: String

Required: No

EnhancedMonitoringResourceArn

The Amazon Resource Name (ARN) of the Amazon CloudWatch Logs log stream that receives the Enhanced Monitoring metrics data for the DB instance.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled for the DB instance.

For a list of engine versions that support IAM database authentication, see IAM database authentication in the *Amazon RDS User Guide* and IAM database authentication in Aurora in the *Amazon Aurora User Guide*.

Type: Boolean

Required: No

InstanceCreateTime

The date and time when the DB instance was created.

Type: Timestamp

Required: No

Iops

The Provisioned IOPS (I/O operations per second) value for the DB instance.

Type: Integer

Required: No

IsStorageConfigUpgradeAvailable

Indicates whether an upgrade is recommended for the storage file system configuration on the DB instance. To migrate to the preferred configuration, you can either create a blue/green deployment, or create a read replica from the DB instance. For more information, see Upgrading the storage file system for a DB instance.

Type: Boolean

Required: No

KmsKeyId

If `StorageEncrypted` is enabled, the Amazon KMS key identifier for the encrypted DB instance.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LatestRestorableTime

The latest time to which a database in this DB instance can be restored with point-in-time restore.

Type: Timestamp

Required: No

LicenseModel

The license model information for this DB instance. This setting doesn't apply to Amazon Aurora or RDS Custom DB instances.

Type: String

Required: No

ListenerEndpoint

The listener connection endpoint for SQL Server Always On.

Type: Endpoint object

Required: No

MasterUsername

The master username for the DB instance.

Type: String

Required: No

MasterUserSecret

The secret managed by RDS in Amazon Secrets Manager for the master user password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide.*

Type: MasterUserSecret object

Required: No

MaxAllocatedStorage

The upper limit in gibibytes (GiB) to which Amazon RDS can automatically scale the storage of the DB instance.

Type: Integer

Required: No

MonitoringInterval

The interval, in seconds, between points when Enhanced Monitoring metrics are collected for the DB instance.

Type: Integer

Required: No

MonitoringRoleArn

The ARN for the IAM role that permits RDS to send Enhanced Monitoring metrics to Amazon CloudWatch Logs.

Type: String

Required: No

MultiAZ

Indicates whether the DB instance is a Multi-AZ deployment. This setting doesn't apply to RDS Custom DB instances.

Type: Boolean

Required: No

MultiTenant

Specifies whether the DB instance is in the multi-tenant configuration (TRUE) or the single-tenant configuration (FALSE).

Type: Boolean

Required: No

NcharCharacterSetName

The name of the NCHAR character set for the Oracle DB instance. This character set specifies the Unicode encoding for data stored in table columns of type NCHAR, NCLOB, or NVARCHAR2.

Type: String

Required: No

NetworkType

The network type of the DB instance.

The network type is determined by the `DBSubnetGroup` specified for the DB instance. A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide* and Working with a DB instance in a VPC in the *Amazon Aurora User Guide.*

Valid Values: `IPV4` | `DUAL`

Type: String

Required: No

OptionGroupMemberships.OptionGroupMembership.N

The list of option group memberships for this DB instance.

Type: Array of OptionGroupMembership objects

Required: No

PendingModifiedValues

Information about pending changes to the DB instance. This information is returned only when there are pending changes. Specific changes are identified by subelements.

Type: PendingModifiedValues object

Required: No

PercentProgress

The progress of the storage optimization operation as a percentage.

Type: String

Required: No

PerformanceInsightsEnabled

Indicates whether Performance Insights is enabled for the DB instance.

Type: Boolean

Required: No

PerformanceInsightsKMSKeyId

The Amazon KMS key identifier for encryption of Performance Insights data.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

PerformanceInsightsRetentionPeriod

The number of days to retain Performance Insights data.

Valid Values:

- 7
- *month* * 31, where *month* is a number of months from 1-23. Examples: 93 (3 months * 31), 341 (11 months * 31), 589 (19 months * 31)
- 731

Default: 7 days

Type: Integer

Required: No

PreferredBackupWindow

The daily time range during which automated backups are created if automated backups are enabled, as determined by the `BackupRetentionPeriod`.

Type: String

Required: No

PreferredMaintenanceWindow

The weekly time range during which system maintenance can occur, in Universal Coordinated Time (UTC).

Type: String

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

Type: Array of ProcessorFeature objects

Required: No

PromotionTier

The order of priority in which an Aurora Replica is promoted to the primary instance after a failure of the existing primary instance. For more information, see Fault Tolerance for an Aurora DB Cluster in the *Amazon Aurora User Guide*.

Type: Integer

Required: No

PubliclyAccessible

Indicates whether the DB instance is publicly accessible.

When the DB instance is publicly accessible and you connect from outside of the DB instance's virtual private cloud (VPC), its Domain Name System (DNS) endpoint resolves to the public IP address. When you connect from within the same VPC as the DB instance, the endpoint resolves to the private IP address. Access to the DB cluster is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB cluster doesn't permit it.

When the DB instance isn't publicly accessible, it is an internal DB instance with a DNS name that resolves to a private IP address.

For more information, see CreateDBInstance.

Type: Boolean

Required: No

ReadReplicaDBClusterIdentifiers.ReadReplicaDBClusterIdentifier.N

The identifiers of Aurora DB clusters to which the RDS DB instance is replicated as a read replica. For example, when you create an Aurora read replica of an RDS for MySQL DB instance, the Aurora MySQL DB cluster for the Aurora read replica is shown. This output doesn't contain information about cross-Region Aurora read replicas.

> **Note**
>
> Currently, each RDS DB instance can have only one Aurora read replica.

Type: Array of strings

Required: No

ReadReplicaDBInstanceIdentifiers.ReadReplicaDBInstanceIdentifier.N

The identifiers of the read replicas associated with this DB instance.

Type: Array of strings

Required: No

ReadReplicaSourceDBClusterIdentifier

The identifier of the source DB cluster if this DB instance is a read replica.

Type: String

Required: No

ReadReplicaSourceDBInstanceIdentifier

The identifier of the source DB instance if this DB instance is a read replica.

Type: String

Required: No

ReplicaMode

The open mode of a Db2 or an Oracle read replica. The default is `open-read-only`. For more information, see Working with read replicas for Amazon RDS for Db2 and Working with read replicas for Amazon RDS for Oracle in the *Amazon RDS User Guide*.

> **Note**
>
> This attribute is only supported in RDS for Db2, RDS for Oracle, and RDS Custom for Oracle.

Type: String

Valid Values: `open-read-only | mounted`

Required: No

ResumeFullAutomationModeTime

The number of minutes to pause the automation. When the time period ends, RDS Custom resumes full automation. The minimum value is 60 (default). The maximum value is 1,440.

Type: Timestamp

Required: No

SecondaryAvailabilityZone

If present, specifies the name of the secondary Availability Zone for a DB instance with multi-AZ support.

Type: String

Required: No

StatusInfos.DBInstanceStatusInfo.N

The status of a read replica. If the DB instance isn't a read replica, the value is blank.

Type: Array of DBInstanceStatusInfo objects

Required: No

StorageEncrypted

Indicates whether the DB instance is encrypted.

Type: Boolean

Required: No

StorageThroughput

The storage throughput for the DB instance.

This setting applies only to the gp3 storage type.

Type: Integer

Required: No

StorageType

The storage type associated with the DB instance.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TdeCredentialArn

The ARN from the key store with which the instance is associated for TDE encryption.

Type: String

Required: No

Timezone

The time zone of the DB instance. In most cases, the `Timezone` element is empty. `Timezone` content appears only for RDS for Db2 and RDS for SQL Server DB instances that were created with a time zone specified.

Type: String

Required: No

VpcSecurityGroups.VpcSecurityGroupMembership.N

The list of Amazon EC2 VPC security groups that the DB instance belongs to.

Type: Array of VpcSecurityGroupMembership objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBInstanceAutomatedBackup

An automated backup of a DB instance. It consists of system backups, transaction logs, and the database instance properties that existed at the time you deleted the source instance.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

The allocated storage size for the the automated backup in gibibytes (GiB).

Type: Integer

Required: No

AvailabilityZone

The Availability Zone that the automated backup was created in. For information on Amazon Web Services Regions and Availability Zones, see Regions and Availability Zones.

Type: String

Required: No

AwsBackupRecoveryPointArn

The Amazon Resource Name (ARN) of the recovery point in Amazon Backup.

Type: String

Required: No

BackupRetentionPeriod

The retention period for the automated backups.

Type: Integer

Required: No

BackupTarget

The location where automated backups are stored: Dedicated Local Zones, Amazon Outposts or the Amazon Web Services Region.

Type: String

Required: No

DBInstanceArn

The Amazon Resource Name (ARN) for the automated backups.

Type: String

Required: No

DBInstanceAutomatedBackupsArn

The Amazon Resource Name (ARN) for the replicated automated backups.

Type: String

Required: No

DBInstanceAutomatedBackupsReplications.DBInstanceAutomatedBackupsReplication.N

The list of replications to different Amazon Web Services Regions associated with the automated backup.

Type: Array of DBInstanceAutomatedBackupsReplication objects

Required: No

DBInstanceIdentifier

The identifier for the source DB instance, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

DbiResourceId

The resource ID for the source DB instance, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

Encrypted

Indicates whether the automated backup is encrypted.

Type: Boolean

Required: No

Engine

The name of the database engine for this automated backup.

Type: String

Required: No

EngineVersion

The version of the database engine for the automated backup.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

True if mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled, and otherwise false.

Type: Boolean

Required: No

InstanceCreateTime

The date and time when the DB instance was created.

Type: Timestamp

Required: No

Iops

The IOPS (I/O operations per second) value for the automated backup.

Type: Integer

Required: No

KmsKeyId

The Amazon KMS key ID for an automated backup.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LicenseModel

The license model information for the automated backup.

Type: String

Required: No

MasterUsername

The master user name of an automated backup.

Type: String

Required: No

MultiTenant

Specifies whether the automatic backup is for a DB instance in the multi-tenant configuration (TRUE) or the single-tenant configuration (FALSE).

Type: Boolean

Required: No

OptionGroupName

The option group the automated backup is associated with. If omitted, the default option group for the engine specified is used.

Type: String

Required: No

Port

The port number that the automated backup used for connections.

Default: Inherits from the source DB instance

Valid Values: `1150-65535`

Type: Integer

Required: No

Region

The Amazon Web Services Region associated with the automated backup.

Type: String

Required: No

RestoreWindow

The earliest and latest time a DB instance can be restored to.

Type: RestoreWindow object

Required: No

Status

A list of status information for an automated backup:

- `active` - Automated backups for current instances.
- `retained` - Automated backups for deleted instances.
- `creating` - Automated backups that are waiting for the first automated snapshot to be available.

Type: String

Required: No

StorageThroughput

The storage throughput for the automated backup.

Type: Integer

Required: No

StorageType

The storage type associated with the automated backup.

Type: String

Required: No

TdeCredentialArn

The ARN from the key store with which the automated backup is associated for TDE encryption.

Type: String

Required: No

Timezone

The time zone of the automated backup. In most cases, the `Timezone` element is empty. `Timezone` content appears only for Microsoft SQL Server DB instances that were created with a time zone specified.

Type: String

Required: No

VpcId

The VPC ID associated with the DB instance.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBInstanceAutomatedBackupsReplication

Automated backups of a DB instance replicated to another Amazon Web Services Region. They consist of system backups, transaction logs, and database instance properties.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBInstanceAutomatedBackupsArn

The Amazon Resource Name (ARN) of the replicated automated backups.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBInstanceRole

Information about an Amazon Identity and Access Management (IAM) role that is associated with a DB instance.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

FeatureName

The name of the feature associated with the Amazon Identity and Access Management (IAM) role. For information about supported feature names, see `DBEngineVersion`.

Type: String

Required: No

RoleArn

The Amazon Resource Name (ARN) of the IAM role that is associated with the DB instance.

Type: String

Required: No

Status

Information about the state of association between the IAM role and the DB instance. The Status property returns one of the following values:

- `ACTIVE` - the IAM role ARN is associated with the DB instance and can be used to access other Amazon services on your behalf.
- `PENDING` - the IAM role ARN is being associated with the DB instance.
- `INVALID` - the IAM role ARN is associated with the DB instance, but the DB instance is unable to assume the IAM role in order to access other Amazon services on your behalf.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBInstanceStatusInfo

Provides a list of status information for a DB instance.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Message

Details of the error if there is an error for the instance. If the instance isn't in an error state, this value is blank.

Type: String

Required: No

Normal

Indicates whether the instance is operating normally (TRUE) or is in an error state (FALSE).

Type: Boolean

Required: No

Status

The status of the DB instance. For a StatusType of read replica, the values can be replicating, replication stop point set, replication stop point reached, error, stopped, or terminated.

Type: String

Required: No

StatusType

This value is currently "read replication."

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBMajorEngineVersion

This data type is used as a response element in the operation `DescribeDBMajorEngineVersions`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Engine

The name of the database engine.

Type: String

Required: No

MajorEngineVersion

The major version number of the database engine.

Type: String

Required: No

SupportedEngineLifecycles.SupportedEngineLifecycle.N

A list of the lifecycles supported by this engine for the `DescribeDBMajorEngineVersions` operation.

Type: Array of SupportedEngineLifecycle objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBParameterGroup

Contains the details of an Amazon RDS DB parameter group.

This data type is used as a response element in the `DescribeDBParameterGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBParameterGroupArn

The Amazon Resource Name (ARN) for the DB parameter group.

Type: String

Required: No

DBParameterGroupFamily

The name of the DB parameter group family that this DB parameter group is compatible with.

Type: String

Required: No

DBParameterGroupName

The name of the DB parameter group.

Type: String

Required: No

Description

Provides the customer-specified description for this DB parameter group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBParameterGroupStatus

The status of the DB parameter group.

This data type is used as a response element in the following actions:

- `CreateDBInstance`
- `CreateDBInstanceReadReplica`
- `DeleteDBInstance`
- `ModifyDBInstance`
- `RebootDBInstance`
- `RestoreDBInstanceFromDBSnapshot`

Contents

> **Note**
> In the following list, the required parameters are described first.

DBParameterGroupName

The name of the DB parameter group.

Type: String

Required: No

ParameterApplyStatus

The status of parameter updates. Valid values are:

- `applying`: The parameter group change is being applied to the database.
- `failed-to-apply`: The parameter group is in an invalid state.
- `in-sync`: The parameter group change is synchronized with the database.
- `pending-database-upgrade`: The parameter group change will be applied after the DB instance is upgraded.

- `pending-reboot`: The parameter group change will be applied after the DB instance reboots.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBProxy

The data structure representing a proxy managed by the RDS Proxy.

This data type is used as a response element in the `DescribeDBProxies` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Auth.member.N

One or more data structures specifying the authorization mechanism to connect to the associated RDS DB instance or Aurora DB cluster.

Type: Array of UserAuthConfigInfo objects

Required: No

CreatedDate

The date and time when the proxy was first created.

Type: Timestamp

Required: No

DBProxyArn

The Amazon Resource Name (ARN) for the proxy.

Type: String

Required: No

DBProxyName

The identifier for the proxy. This name must be unique for all proxies owned by your Amazon Web Services account in the specified Amazon Web Services Region.

Type: String

Required: No

DebugLogging

Indicates whether the proxy includes detailed information about SQL statements in its logs. This information helps you to debug issues involving SQL behavior or the performance and scalability of the proxy connections. The debug information includes the text of SQL statements that you submit through the proxy. Thus, only enable this setting when needed for debugging, and only when you have security measures in place to safeguard any sensitive information that appears in the logs.

Type: Boolean

Required: No

Endpoint

The endpoint that you can use to connect to the DB proxy. You include the endpoint value in the connection string for a database client application.

Type: String

Required: No

EngineFamily

The kinds of databases that the proxy can connect to. This value determines which database network protocol the proxy recognizes when it interprets network traffic to and from the database. `MYSQL` supports Aurora MySQL, RDS for MariaDB, and RDS for MySQL databases. `POSTGRESQL` supports Aurora PostgreSQL and RDS for PostgreSQL databases. `SQLSERVER` supports RDS for Microsoft SQL Server databases.

Type: String

Required: No

IdleClientTimeout

The number of seconds a connection to the proxy can have no activity before the proxy drops the client connection. The proxy keeps the underlying database connection open and puts it back into the connection pool for reuse by later connection requests.

Default: 1800 (30 minutes)

Constraints: 1 to 28,800

Type: Integer

Required: No

RequireTLS

Indicates whether Transport Layer Security (TLS) encryption is required for connections to the proxy.

Type: Boolean

Required: No

RoleArn

The Amazon Resource Name (ARN) for the IAM role that the proxy uses to access Amazon Secrets Manager.

Type: String

Required: No

Status

The current status of this proxy. A status of `available` means the proxy is ready to handle requests. Other values indicate that you must wait for the proxy to be ready, or take some action to resolve an issue.

Type: String

Valid Values: `available | modifying | incompatible-network | insufficient-resource-limits | creating | deleting | suspended | suspending | reactivating`

Required: No

UpdatedDate

The date and time when the proxy was last updated.

Type: Timestamp

Required: No

VpcId

Provides the VPC ID of the DB proxy.

Type: String

Required: No

VpcSecurityGroupIds.member.N

Provides a list of VPC security groups that the proxy belongs to.

Type: Array of strings

Required: No

VpcSubnetIds.member.N

The EC2 subnet IDs for the proxy.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBProxyEndpoint

The data structure representing an endpoint associated with a DB proxy. RDS automatically creates one endpoint for each DB proxy. For Aurora DB clusters, you can associate additional endpoints with the same DB proxy. These endpoints can be read/write or read-only. They can also reside in different VPCs than the associated DB proxy.

This data type is used as a response element in the `DescribeDBProxyEndpoints` operation.

Contents

> **Note**
> In the following list, the required parameters are described first.

CreatedDate

The date and time when the DB proxy endpoint was first created.

Type: Timestamp

Required: No

DBProxyEndpointArn

The Amazon Resource Name (ARN) for the DB proxy endpoint.

Type: String

Required: No

DBProxyEndpointName

The name for the DB proxy endpoint. An identifier must begin with a letter and must contain only ASCII letters, digits, and hyphens; it can't end with a hyphen or contain two consecutive hyphens.

Type: String

Required: No

DBProxyName

The identifier for the DB proxy that is associated with this DB proxy endpoint.

Type: String

Required: No

Endpoint

The endpoint that you can use to connect to the DB proxy. You include the endpoint value in the connection string for a database client application.

Type: String

Required: No

IsDefault

Indicates whether this endpoint is the default endpoint for the associated DB proxy. Default DB proxy endpoints always have read/write capability. Other endpoints that you associate with the DB proxy can be either read/write or read-only.

Type: Boolean

Required: No

Status

The current status of this DB proxy endpoint. A status of `available` means the endpoint is ready to handle requests. Other values indicate that you must wait for the endpoint to be ready, or take some action to resolve an issue.

Type: String

Valid Values: `available | modifying | incompatible-network | insufficient-resource-limits | creating | deleting`

Required: No

TargetRole

A value that indicates whether the DB proxy endpoint can be used for read/write or read-only operations.

Type: String

Valid Values: `READ_WRITE | READ_ONLY`

Required: No

VpcId

Provides the VPC ID of the DB proxy endpoint.

Type: String

Required: No

VpcSecurityGroupIds.member.N

Provides a list of VPC security groups that the DB proxy endpoint belongs to.

Type: Array of strings

Required: No

VpcSubnetIds.member.N

The EC2 subnet IDs for the DB proxy endpoint.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBProxyTarget

Contains the details for an RDS Proxy target. It represents an RDS DB instance or Aurora DB cluster that the proxy can connect to. One or more targets are associated with an RDS Proxy target group.

This data type is used as a response element in the `DescribeDBProxyTargets` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Endpoint

The writer endpoint for the RDS DB instance or Aurora DB cluster.

Type: String

Required: No

Port

The port that the RDS Proxy uses to connect to the target RDS DB instance or Aurora DB cluster.

Type: Integer

Required: No

RdsResourceId

The identifier representing the target. It can be the instance identifier for an RDS DB instance, or the cluster identifier for an Aurora DB cluster.

Type: String

Required: No

Role

A value that indicates whether the target of the proxy can be used for read/write or read-only operations.

Type: String

Valid Values: `READ_WRITE | READ_ONLY | UNKNOWN`

Required: No

TargetArn

The Amazon Resource Name (ARN) for the RDS DB instance or Aurora DB cluster.

Type: String

Required: No

TargetHealth

Information about the connection health of the RDS Proxy target.

Type: TargetHealth object

Required: No

TrackedClusterId

The DB cluster identifier when the target represents an Aurora DB cluster. This field is blank when the target represents an RDS DB instance.

Type: String

Required: No

Type

Specifies the kind of database, such as an RDS DB instance or an Aurora DB cluster, that the target represents.

Type: String

Valid Values: `RDS_INSTANCE | RDS_SERVERLESS_ENDPOINT | TRACKED_CLUSTER`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBProxyTargetGroup

Represents a set of RDS DB instances, Aurora DB clusters, or both that a proxy can connect to. Currently, each target group is associated with exactly one RDS DB instance or Aurora DB cluster.

This data type is used as a response element in the `DescribeDBProxyTargetGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ConnectionPoolConfig

The settings that determine the size and behavior of the connection pool for the target group.

Type: ConnectionPoolConfigurationInfo object

Required: No

CreatedDate

The date and time when the target group was first created.

Type: Timestamp

Required: No

DBProxyName

The identifier for the RDS proxy associated with this target group.

Type: String

Required: No

IsDefault

Indicates whether this target group is the first one used for connection requests by the associated proxy. Because each proxy is currently associated with a single target group, currently this setting is always `true`.

Type: Boolean

Required: No

Status

The current status of this target group. A status of `available` means the target group is correctly associated with a database. Other values indicate that you must wait for the target group to be ready, or take some action to resolve an issue.

Type: String

Required: No

TargetGroupArn

The Amazon Resource Name (ARN) representing the target group.

Type: String

Required: No

TargetGroupName

The identifier for the target group. This name must be unique for all target groups owned by your Amazon Web Services account in the specified Amazon Web Services Region.

Type: String

Required: No

UpdatedDate

The date and time when the target group was last updated.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++

- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBRecommendation

The recommendation for your DB instances, DB clusters, and DB parameter groups.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AdditionalInfo

Additional information about the recommendation. The information might contain markdown.

Type: String

Required: No

Category

The category of the recommendation.

Valid values:

- `performance efficiency`
- `security`
- `reliability`
- `cost optimization`
- `operational excellence`
- `sustainability`

Type: String

Required: No

CreatedTime

The time when the recommendation was created. For example, `2023-09-28T01:13:53.931000+00:00`.

Type: Timestamp

Required: No

Description

A detailed description of the recommendation. The description might contain markdown.

Type: String

Required: No

Detection

A short description of the issue identified for this recommendation. The description might contain markdown.

Type: String

Required: No

Impact

A short description that explains the possible impact of an issue.

Type: String

Required: No

IssueDetails

Details of the issue that caused the recommendation.

Type: IssueDetails object

Required: No

Links.member.N

A link to documentation that provides additional information about the recommendation.

Type: Array of DocLink objects

Required: No

Reason

The reason why this recommendation was created. The information might contain markdown.

Type: String

Required: No

Recommendation

A short description of the recommendation to resolve an issue. The description might contain markdown.

Type: String

Required: No

RecommendationId

The unique identifier of the recommendation.

Type: String

Required: No

RecommendedActions.member.N

A list of recommended actions.

Type: Array of RecommendedAction objects

Required: No

ResourceArn

The Amazon Resource Name (ARN) of the RDS resource associated with the recommendation.

Type: String

Required: No

Severity

The severity level of the recommendation. The severity level can help you decide the urgency with which to address the recommendation.

Valid values:

- `high`
- `medium`
- `low`

- `informational`

Type: String

Required: No

Source

The Amazon service that generated the recommendations.

Type: String

Required: No

Status

The current status of the recommendation.

Valid values:

- `active` - The recommendations which are ready for you to apply.
- `pending` - The applied or scheduled recommendations which are in progress.
- `resolved` - The recommendations which are completed.
- `dismissed` - The recommendations that you dismissed.

Type: String

Required: No

TypeDetection

A short description of the recommendation type. The description might contain markdown.

Type: String

Required: No

TypeId

A value that indicates the type of recommendation. This value determines how the description is rendered.

Type: String

Required: No

TypeRecommendation

A short description that summarizes the recommendation to fix all the issues of the recommendation type. The description might contain markdown.

Type: String

Required: No

UpdatedTime

The time when the recommendation was last updated.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSecurityGroup

Contains the details for an Amazon RDS DB security group.

This data type is used as a response element in the `DescribeDBSecurityGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBSecurityGroupArn

The Amazon Resource Name (ARN) for the DB security group.

Type: String

Required: No

DBSecurityGroupDescription

Provides the description of the DB security group.

Type: String

Required: No

DBSecurityGroupName

Specifies the name of the DB security group.

Type: String

Required: No

EC2SecurityGroups.EC2SecurityGroup.N

Contains a list of `EC2SecurityGroup` elements.

Type: Array of EC2SecurityGroup objects

Required: No

IPRanges.IPRange.N

Contains a list of `IPRange` elements.

Type: Array of IPRange objects

Required: No

OwnerId

Provides the Amazon ID of the owner of a specific DB security group.

Type: String

Required: No

VpcId

Provides the VpcId of the DB security group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSecurityGroupMembership

This data type is used as a response element in the following actions:

- `ModifyDBInstance`
- `RebootDBInstance`
- `RestoreDBInstanceFromDBSnapshot`
- `RestoreDBInstanceToPointInTime`

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBSecurityGroupName

The name of the DB security group.

Type: String

Required: No

Status

The status of the DB security group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2

- Amazon SDK for Ruby V3

DBShardGroup

Contains the details for an Amazon RDS DB shard group.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ComputeRedundancy

Specifies whether to create standby DB shard groups for the DB shard group. Valid values are the following:

- 0 - Creates a DB shard group without a standby DB shard group. This is the default value.
- 1 - Creates a DB shard group with a standby DB shard group in a different Availability Zone (AZ).
- 2 - Creates a DB shard group with two standby DB shard groups in two different AZs.

Type: Integer

Required: No

DBClusterIdentifier

The name of the primary DB cluster for the DB shard group.

Type: String

Required: No

DBShardGroupArn

The Amazon Resource Name (ARN) for the DB shard group.

Type: String

Required: No

DBShardGroupIdentifier

The name of the DB shard group.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

DBShardGroupResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB shard group.

Type: String

Required: No

Endpoint

The connection endpoint for the DB shard group.

Type: String

Required: No

MaxACU

The maximum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: No

MinACU

The minimum capacity of the DB shard group in Aurora capacity units (ACUs).

Type: Double

Required: No

PubliclyAccessible

Indicates whether the DB shard group is publicly accessible.

When the DB shard group is publicly accessible, its Domain Name System (DNS) endpoint resolves to the private IP address from within the DB shard group's virtual private cloud (VPC). It resolves to the public IP address from outside of the DB shard group's VPC. Access to the

DB shard group is ultimately controlled by the security group it uses. That public access isn't permitted if the security group assigned to the DB shard group doesn't permit it.

When the DB shard group isn't publicly accessible, it is an internal DB shard group with a DNS name that resolves to a private IP address.

For more information, see CreateDBShardGroup.

This setting is only for Aurora Limitless Database.

Type: Boolean

Required: No

Status

The status of the DB shard group.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSnapshot

Contains the details of an Amazon RDS DB snapshot.

This data type is used as a response element in the `DescribeDBSnapshots` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

Specifies the allocated storage size in gibibytes (GiB).

Type: Integer

Required: No

AvailabilityZone

Specifies the name of the Availability Zone the DB instance was located in at the time of the DB snapshot.

Type: String

Required: No

DBInstanceIdentifier

Specifies the DB instance identifier of the DB instance this DB snapshot was created from.

Type: String

Required: No

DbiResourceId

The identifier for the source DB instance, which can't be changed and which is unique to an Amazon Web Services Region.

Type: String

Required: No

DBSnapshotArn

The Amazon Resource Name (ARN) for the DB snapshot.

Type: String

Required: No

DBSnapshotIdentifier

Specifies the identifier for the DB snapshot.

Type: String

Required: No

DBSystemId

The Oracle system identifier (SID), which is the name of the Oracle database instance that manages your database files. The Oracle SID is also the name of your CDB.

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.

Type: Boolean

Required: No

Encrypted

Indicates whether the DB snapshot is encrypted.

Type: Boolean

Required: No

Engine

Specifies the name of the database engine.

Type: String

Required: No

EngineVersion

Specifies the version of the database engine.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

InstanceCreateTime

Specifies the time in Coordinated Universal Time (UTC) when the DB instance, from which the snapshot was taken, was created.

Type: Timestamp

Required: No

Iops

Specifies the Provisioned IOPS (I/O operations per second) value of the DB instance at the time of the snapshot.

Type: Integer

Required: No

KmsKeyId

If `Encrypted` is true, the Amazon KMS key identifier for the encrypted DB snapshot.

The Amazon KMS key identifier is the key ARN, key ID, alias ARN, or alias name for the KMS key.

Type: String

Required: No

LicenseModel

License model information for the restored DB instance.

Type: String

Required: No

MasterUsername

Provides the master username for the DB snapshot.

Type: String

Required: No

MultiTenant

Indicates whether the snapshot is of a DB instance using the multi-tenant configuration (TRUE) or the single-tenant configuration (FALSE).

Type: Boolean

Required: No

OptionGroupName

Provides the option group name for the DB snapshot.

Type: String

Required: No

OriginalSnapshotCreateTime

Specifies the time of the CreateDBSnapshot operation in Coordinated Universal Time (UTC). Doesn't change when the snapshot is copied.

Type: Timestamp

Required: No

PercentProgress

The percentage of the estimated data that has been transferred.

Type: Integer

Required: No

Port

Specifies the port that the database engine was listening on at the time of the snapshot.

Type: Integer

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance when the DB snapshot was created.

Type: Array of ProcessorFeature objects

Required: No

SnapshotAvailabilityZone

Specifies the name of the Availability Zone where RDS stores the DB snapshot. This value is valid only for snapshots that RDS stores on a Dedicated Local Zone.

Type: String

Required: No

SnapshotCreateTime

Specifies when the snapshot was taken in Coordinated Universal Time (UTC). Changes for the copy when the snapshot is copied.

Type: Timestamp

Required: No

SnapshotDatabaseTime

The timestamp of the most recent transaction applied to the database that you're backing up. Thus, if you restore a snapshot, SnapshotDatabaseTime is the most recent transaction in the restored DB instance. In contrast, originalSnapshotCreateTime specifies the system time that the snapshot completed.

If you back up a read replica, you can determine the replica lag by comparing SnapshotDatabaseTime with originalSnapshotCreateTime. For example, if

originalSnapshotCreateTime is two hours later than SnapshotDatabaseTime, then the replica lag is two hours.

Type: Timestamp

Required: No

SnapshotTarget

Specifies where manual snapshots are stored: Dedicated Local Zones, Amazon Outposts or the Amazon Web Services Region.

Type: String

Required: No

SnapshotType

Provides the type of the DB snapshot.

Type: String

Required: No

SourceDBSnapshotIdentifier

The DB snapshot Amazon Resource Name (ARN) that the DB snapshot was copied from. It only has a value in the case of a cross-account or cross-Region copy.

Type: String

Required: No

SourceRegion

The Amazon Web Services Region that the DB snapshot was created in or copied from.

Type: String

Required: No

Status

Specifies the status of this DB snapshot.

Type: String

Required: No

StorageThroughput

Specifies the storage throughput for the DB snapshot.

Type: Integer

Required: No

StorageType

Specifies the storage type associated with DB snapshot.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TdeCredentialArn

The ARN from the key store with which to associate the instance for TDE encryption.

Type: String

Required: No

Timezone

The time zone of the DB snapshot. In most cases, the `Timezone` element is empty. `Timezone` content appears only for snapshots taken from Microsoft SQL Server DB instances that were created with a time zone specified.

Type: String

Required: No

VpcId

Provides the VPC ID associated with the DB snapshot.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSnapshotAttribute

Contains the name and values of a manual DB snapshot attribute

Manual DB snapshot attributes are used to authorize other Amazon Web Services accounts to restore a manual DB snapshot. For more information, see the `ModifyDBSnapshotAttribute` API.

Contents

> **Note**
> In the following list, the required parameters are described first.

AttributeName

The name of the manual DB snapshot attribute.

The attribute named `restore` refers to the list of Amazon Web Services accounts that have permission to copy or restore the manual DB cluster snapshot. For more information, see the `ModifyDBSnapshotAttribute` API action.

Type: String

Required: No

AttributeValues.AttributeValue.N

The value or values for the manual DB snapshot attribute.

If the `AttributeName` field is set to `restore`, then this element returns a list of IDs of the Amazon Web Services accounts that are authorized to copy or restore the manual DB snapshot. If a value of `all` is in the list, then the manual DB snapshot is public and available for any Amazon Web Services account to copy or restore.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSnapshotAttributesResult

Contains the results of a successful call to the `DescribeDBSnapshotAttributes` API action.

Manual DB snapshot attributes are used to authorize other Amazon Web Services accounts to copy or restore a manual DB snapshot. For more information, see the `ModifyDBSnapshotAttribute` API action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBSnapshotAttributes.DBSnapshotAttribute.N

The list of attributes and values for the manual DB snapshot.

Type: Array of DBSnapshotAttribute objects

Required: No

DBSnapshotIdentifier

The identifier of the manual DB snapshot that the attributes apply to.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSnapshotTenantDatabase

Contains the details of a tenant database in a snapshot of a DB instance.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CharacterSetName

The name of the character set of a tenant database.

Type: String

Required: No

DBInstanceIdentifier

The ID for the DB instance that contains the tenant databases.

Type: String

Required: No

DbiResourceId

The resource identifier of the source CDB instance. This identifier can't be changed and is unique to an Amazon Web Services Region.

Type: String

Required: No

DBSnapshotIdentifier

The identifier for the snapshot of the DB instance.

Type: String

Required: No

DBSnapshotTenantDatabaseARN

The Amazon Resource Name (ARN) for the snapshot tenant database.

Type: String

Required: No

EngineName

The name of the database engine.

Type: String

Required: No

MasterUsername

The master username of the tenant database.

Type: String

Required: No

NcharCharacterSetName

The NCHAR character set name of the tenant database.

Type: String

Required: No

SnapshotType

The type of DB snapshot.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TenantDatabaseCreateTime

The time the DB snapshot was taken, specified in Coordinated Universal Time (UTC). If you copy the snapshot, the creation time changes.

Type: Timestamp

Required: No

TenantDatabaseResourceId

The resource ID of the tenant database.

Type: String

Required: No

TenantDBName

The name of the tenant database.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DBSubnetGroup

Contains the details of an Amazon RDS DB subnet group.

This data type is used as a response element in the `DescribeDBSubnetGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBSubnetGroupArn

The Amazon Resource Name (ARN) for the DB subnet group.

Type: String

Required: No

DBSubnetGroupDescription

Provides the description of the DB subnet group.

Type: String

Required: No

DBSubnetGroupName

The name of the DB subnet group.

Type: String

Required: No

SubnetGroupStatus

Provides the status of the DB subnet group.

Type: String

Required: No

Subnets.Subnet.N

Contains a list of `Subnet` elements. The list of subnets shown here might not reflect the current state of your VPC. For the most up-to-date information, we recommend checking your VPC configuration directly.

Type: Array of Subnet objects

Required: No

SupportedNetworkTypes.member.N

The network type of the DB subnet group.

Valid values:

- `IPV4`
- `DUAL`

A `DBSubnetGroup` can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Type: Array of strings

Required: No

VpcId

Provides the VpcId of the DB subnet group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2

- Amazon SDK for Ruby V3

DescribeDBLogFilesDetails

This data type is used as a response element to `DescribeDBLogFiles`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

LastWritten

A POSIX timestamp when the last log entry was written.

Type: Long

Required: No

LogFileName

The name of the log file for the specified DB instance.

Type: String

Required: No

Size

The size, in bytes, of the log file for the specified DB instance.

Type: Long

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2

- Amazon SDK for Ruby V3

DocLink

A link to documentation that provides additional information for a recommendation.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Text

The text with the link to documentation for the recommendation.

Type: String

Required: No

Url

The URL for the documentation for the recommendation.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DomainMembership

An Active Directory Domain membership record associated with the DB instance or cluster.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AuthSecretArn

The ARN for the Secrets Manager secret with the credentials for the user that's a member of the domain.

Type: String

Required: No

DnsIps.member.N

The IPv4 DNS IP addresses of the primary and secondary Active Directory domain controllers.

Type: Array of strings

Required: No

Domain

The identifier of the Active Directory Domain.

Type: String

Required: No

FQDN

The fully qualified domain name (FQDN) of the Active Directory Domain.

Type: String

Required: No

IAMRoleName

The name of the IAM role used when making API calls to the Directory Service.

Type: String

Required: No

OU

The Active Directory organizational unit for the DB instance or cluster.

Type: String

Required: No

Status

The status of the Active Directory Domain membership for the DB instance or cluster. Values include `joined`, `pending-join`, `failed`, and so on.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

DoubleRange

A range of double values.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

From

The minimum value in the range.

Type: Double

Required: No

To

The maximum value in the range.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

EC2SecurityGroup

This data type is used as a response element in the following actions:

- `AuthorizeDBSecurityGroupIngress`
- `DescribeDBSecurityGroups`
- `RevokeDBSecurityGroupIngress`

Contents

> **Note**
> In the following list, the required parameters are described first.

EC2SecurityGroupId

Specifies the id of the EC2 security group.

Type: String

Required: No

EC2SecurityGroupName

Specifies the name of the EC2 security group.

Type: String

Required: No

EC2SecurityGroupOwnerId

Specifies the Amazon ID of the owner of the EC2 security group specified in the `EC2SecurityGroupName` field.

Type: String

Required: No

Status

Provides the status of the EC2 security group. Status can be "authorizing", "authorized", "revoking", and "revoked".

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Endpoint

This data type represents the information you need to connect to an Amazon RDS DB instance. This data type is used as a response element in the following actions:

- `CreateDBInstance`
- `DescribeDBInstances`
- `DeleteDBInstance`

For the data structure that represents Amazon Aurora DB cluster endpoints, see `DBClusterEndpoint`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Address

Specifies the DNS address of the DB instance.

Type: String

Required: No

HostedZoneId

Specifies the ID that Amazon Route 53 assigns when you create a hosted zone.

Type: String

Required: No

Port

Specifies the port that the database engine is listening on.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

EngineDefaults

Contains the result of a successful invocation of the `DescribeEngineDefaultParameters` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBParameterGroupFamily

Specifies the name of the DB parameter group family that the engine default parameters apply to.

Type: String

Required: No

Marker

An optional pagination token provided by a previous EngineDefaults request. If this parameter is specified, the response includes only records beyond the marker, up to the value specified by `MaxRecords` .

Type: String

Required: No

Parameters.Parameter.N

Contains a list of engine default parameters.

Type: Array of Parameter objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Event

This data type is used as a response element in the DescribeEvents action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Date

Specifies the date and time of the event.

Type: Timestamp

Required: No

EventCategories.EventCategory.N

Specifies the category for the event.

Type: Array of strings

Required: No

Message

Provides the text of this event.

Type: String

Required: No

SourceArn

The Amazon Resource Name (ARN) for the event.

Type: String

Required: No

SourceIdentifier

Provides the identifier for the source of the event.

Type: String

Required: No

SourceType

Specifies the source type for this event.

Type: String

Valid Values: `db-instance | db-parameter-group | db-security-group | db-snapshot | db-cluster | db-cluster-snapshot | custom-engine-version | db-proxy | blue-green-deployment`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

EventCategoriesMap

Contains the results of a successful invocation of the DescribeEventCategories operation.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

EventCategories.EventCategory.N

The event categories for the specified source type

Type: Array of strings

Required: No

SourceType

The source type that the returned categories belong to

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

EventSubscription

Contains the results of a successful invocation of the `DescribeEventSubscriptions` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CustomerAwsId

The Amazon customer account associated with the RDS event notification subscription.

Type: String

Required: No

CustSubscriptionId

The RDS event notification subscription Id.

Type: String

Required: No

Enabled

Specifies whether the subscription is enabled. True indicates the subscription is enabled.

Type: Boolean

Required: No

EventCategoriesList.EventCategory.N

A list of event categories for the RDS event notification subscription.

Type: Array of strings

Required: No

EventSubscriptionArn

The Amazon Resource Name (ARN) for the event subscription.

Type: String

Required: No

SnsTopicArn

The topic ARN of the RDS event notification subscription.

Type: String

Required: No

SourceIdsList.SourceId.N

A list of source IDs for the RDS event notification subscription.

Type: Array of strings

Required: No

SourceType

The source type for the RDS event notification subscription.

Type: String

Required: No

Status

The status of the RDS event notification subscription.

Constraints:

Can be one of the following: creating | modifying | deleting | active | no-permission | topic-not-exist

The status "no-permission" indicates that RDS no longer has permission to post to the SNS topic. The status "topic-not-exist" indicates that the topic was deleted after the subscription was created.

Type: String

Required: No

SubscriptionCreationTime

The time the RDS event notification subscription was created.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ExportTask

Contains the details of a snapshot or cluster export to Amazon S3.

This data type is used as a response element in the `DescribeExportTasks` operation.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ExportOnly.member.N

The data exported from the snapshot or cluster.

Valid Values:

- `database` - Export all the data from a specified database.
- `database.table` *table-name* - Export a table of the snapshot or cluster. This format is valid only for RDS for MySQL, RDS for MariaDB, and Aurora MySQL.
- `database.schema` *schema-name* - Export a database schema of the snapshot or cluster. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.
- `database.schema.table` *table-name* - Export a table of the database schema. This format is valid only for RDS for PostgreSQL and Aurora PostgreSQL.

Type: Array of strings

Required: No

ExportTaskIdentifier

A unique identifier for the snapshot or cluster export task. This ID isn't an identifier for the Amazon S3 bucket where the data is exported.

Type: String

Required: No

FailureCause

The reason the export failed, if it failed.

Type: String

Required: No

IamRoleArn

The name of the IAM role that is used to write to Amazon S3 when exporting a snapshot or cluster.

Type: String

Required: No

KmsKeyId

The key identifier of the Amazon KMS key that is used to encrypt the data when it's exported to Amazon S3. The KMS key identifier is its key ARN, key ID, alias ARN, or alias name. The IAM role used for the export must have encryption and decryption permissions to use this KMS key.

Type: String

Required: No

PercentProgress

The progress of the snapshot or cluster export task as a percentage.

Type: Integer

Required: No

S3Bucket

The Amazon S3 bucket where the snapshot or cluster is exported to.

Type: String

Required: No

S3Prefix

The Amazon S3 bucket prefix that is the file name and path of the exported data.

Type: String

Required: No

SnapshotTime

The time when the snapshot was created.

Type: Timestamp

Required: No

SourceArn

The Amazon Resource Name (ARN) of the snapshot or cluster exported to Amazon S3.

Type: String

Required: No

SourceType

The type of source for the export.

Type: String

Valid Values: `SNAPSHOT` | `CLUSTER`

Required: No

Status

The progress status of the export task. The status can be one of the following:

- `CANCELED`
- `CANCELING`
- `COMPLETE`
- `FAILED`
- `IN_PROGRESS`
- `STARTING`

Type: String

Required: No

TaskEndTime

The time when the snapshot or cluster export task ended.

Type: Timestamp

Required: No

TaskStartTime

The time when the snapshot or cluster export task started.

Type: Timestamp

Required: No

TotalExtractedDataInGB

The total amount of data exported, in gigabytes.

Type: Integer

Required: No

WarningMessage

A warning about the snapshot or cluster export task.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

FailoverState

Contains the state of scheduled or in-process operations on a global cluster (Aurora global database). This data type is empty unless a switchover or failover operation is scheduled or is in progress on the Aurora global database.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

FromDbClusterArn

The Amazon Resource Name (ARN) of the Aurora DB cluster that is currently being demoted, and which is associated with this state.

Type: String

Required: No

IsDataLossAllowed

Indicates whether the operation is a global switchover or a global failover. If data loss is allowed, then the operation is a global failover. Otherwise, it's a switchover.

Type: Boolean

Required: No

Status

The current status of the global cluster. Possible values are as follows:

- pending The service received a request to switch over or fail over the global cluster. The global cluster's primary DB cluster and the specified secondary DB cluster are being verified before the operation starts.
- failing-over Aurora is promoting the chosen secondary Aurora DB cluster to become the new primary DB cluster to fail over the global cluster.

- cancelling The request to switch over or fail over the global cluster was cancelled and the primary Aurora DB cluster and the selected secondary Aurora DB cluster are returning to their previous states.
- switching-over This status covers the range of Aurora internal operations that take place during the switchover process, such as demoting the primary Aurora DB cluster, promoting the secondary Aurora DB cluster, and synchronizing replicas.

Type: String

Valid Values: `pending | failing-over | cancelling`

Required: No

ToDbClusterArn

The Amazon Resource Name (ARN) of the Aurora DB cluster that is currently being promoted, and which is associated with this state.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Filter

A filter name and value pair that is used to return a more specific list of results from a describe operation. Filters can be used to match a set of resources by specific criteria, such as IDs. The filters supported by a describe operation are documented with the describe operation.

> **Note**
>
> Currently, wildcards are not supported in filters.

The following actions can be filtered:

- `DescribeDBClusterBacktracks`
- `DescribeDBClusterEndpoints`
- `DescribeDBClusters`
- `DescribeDBInstances`
- `DescribeDBRecommendations`
- `DescribeDBShardGroups`
- `DescribePendingMaintenanceActions`

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Name

The name of the filter. Filter names are case-sensitive.

Type: String

Required: Yes

Values.Value.N

One or more filter values. Filter values are case-sensitive.

Type: Array of strings

Required: Yes

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

GlobalCluster

A data type representing an Aurora global database.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DatabaseName

The default database name within the new global database cluster.

Type: String

Required: No

DeletionProtection

The deletion protection setting for the new global database cluster.

Type: Boolean

Required: No

Endpoint

The writer endpoint for the new global database cluster. This endpoint always points to the writer DB instance in the current primary cluster.

Type: String

Required: No

Engine

The Aurora database engine used by the global database cluster.

Type: String

Required: No

EngineLifecycleSupport

The lifecycle type for the global cluster.

For more information, see CreateGlobalCluster.

Type: String

Required: No

EngineVersion

Indicates the database engine version.

Type: String

Required: No

FailoverState

A data object containing all properties for the current state of an in-process or pending switchover or failover process for this global cluster (Aurora global database). This object is empty unless the `SwitchoverGlobalCluster` or `FailoverGlobalCluster` operation was called on this global cluster.

Type: FailoverState object

Required: No

GlobalClusterArn

The Amazon Resource Name (ARN) for the global database cluster.

Type: String

Required: No

GlobalClusterIdentifier

Contains a user-supplied global database cluster identifier. This identifier is the unique key that identifies a global database cluster.

Type: String

Required: No

GlobalClusterMembers.GlobalClusterMember.N

The list of primary and secondary clusters within the global database cluster.

Type: Array of GlobalClusterMember objects

Required: No

GlobalClusterResourceId

The Amazon Web Services Region-unique, immutable identifier for the global database cluster. This identifier is found in Amazon CloudTrail log entries whenever the Amazon KMS key for the DB cluster is accessed.

Type: String

Required: No

Status

Specifies the current state of this global database cluster.

Type: String

Required: No

StorageEncrypted

The storage encryption setting for the global database cluster.

Type: Boolean

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

GlobalClusterMember

A data structure with information about any primary and secondary clusters associated with a global cluster (Aurora global database).

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBClusterArn

The Amazon Resource Name (ARN) for each Aurora DB cluster in the global cluster.

Type: String

Required: No

GlobalWriteForwardingStatus

The status of write forwarding for a secondary cluster in the global cluster.

Type: String

Valid Values: `enabled | disabled | enabling | disabling | unknown`

Required: No

IsWriter

Indicates whether the Aurora DB cluster is the primary cluster (that is, has read-write capability) for the global cluster with which it is associated.

Type: Boolean

Required: No

Readers.member.N

The Amazon Resource Name (ARN) for each read-only secondary cluster associated with the global cluster.

Type: Array of strings

Required: No

SynchronizationStatus

The status of synchronization of each Aurora DB cluster in the global cluster.

Type: String

Valid Values: `connected | pending-resync`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Integration

A zero-ETL integration with Amazon Redshift.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AdditionalEncryptionContext , AdditionalEncryptionContext.entry.N.key (key) , AdditionalEncryptionContext.entry.N.value (value)

The encryption context for the integration. For more information, see Encryption context in the *Amazon Key Management Service Developer Guide*.

Type: String to string map

Required: No

CreateTime

The time when the integration was created, in Universal Coordinated Time (UTC).

Type: Timestamp

Required: No

DataFilter

Data filters for the integration. These filters determine which tables from the source database are sent to the target Amazon Redshift data warehouse.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 25600.

Pattern: `[a-zA-Z0-9_ "\\\-$,*.:?+\/]*`

Required: No

Description

A description of the integration.

Type: String

Length Constraints: Minimum length of 0. Maximum length of 1000.

Pattern: `.*`

Required: No

Errors.IntegrationError.N

Any errors associated with the integration.

Type: Array of IntegrationError objects

Required: No

IntegrationArn

The ARN of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:integration:[0-9a-f]{8}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{4}-[0-9a-f]{12}`

Required: No

IntegrationName

The name of the integration.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 63.

Pattern: `[a-zA-Z][a-zA-Z0-9]*(-[a-zA-Z0-9]+)*`

Required: No

KMSKeyId

The Amazon Key Management System (Amazon KMS) key identifier for the key used to to encrypt the integration.

Type: String

Required: No

SourceArn

The Amazon Resource Name (ARN) of the database used as the source for replication.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 255.

Pattern: `arn:aws[a-z\-]*:rds(-[a-z]*)?:[a-z0-9\-]*:[0-9]*:(cluster|db):[a-z][a-z0-9]*(-[a-z0-9]+)*`

Required: No

Status

The current status of the integration.

Type: String

Valid Values: `creating | active | modifying | failed | deleting | syncing | needs_attention`

Required: No

Tags.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TargetArn

The ARN of the Redshift data warehouse used as the target for replication.

Type: String

Length Constraints: Minimum length of 20. Maximum length of 2048.

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

IntegrationError

An error associated with a zero-ETL integration with Amazon Redshift.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ErrorCode

The error code associated with the integration.

Type: String

Required: Yes

ErrorMessage

A message explaining the error.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

IPRange

This data type is used as a response element in the `DescribeDBSecurityGroups` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CIDRIP

The IP range.

Type: String

Required: No

Status

The status of the IP range. Status can be "authorizing", "authorized", "revoking", and "revoked".

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

IssueDetails

The details of an issue with your DB instances, DB clusters, and DB parameter groups.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

PerformanceIssueDetails

A detailed description of the issue when the recommendation category is `performance`.

Type: PerformanceIssueDetails object

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

LimitlessDatabase

Contains details for Aurora Limitless Database.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MinRequiredACU

The minimum required capacity for Aurora Limitless Database in Aurora capacity units (ACUs).

Type: Double

Required: No

Status

The status of Aurora Limitless Database.

Type: String

Valid Values: `active | not-in-use | enabled | disabled | enabling | disabling | modifying-max-capacity | error`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

MasterUserSecret

Contains the secret managed by RDS in Amazon Secrets Manager for the master user password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Contents

> **Note**
>
> In the following list, the required parameters are described first.

KmsKeyId

The Amazon KMS key identifier that is used to encrypt the secret.

Type: String

Required: No

SecretArn

The Amazon Resource Name (ARN) of the secret.

Type: String

Required: No

SecretStatus

The status of the secret.

The possible status values include the following:

- `creating` - The secret is being created.
- `active` - The secret is available for normal use and rotation.
- `rotating` - The secret is being rotated.
- `impaired` - The secret can be used to access database credentials, but it can't be rotated. A secret might have this status if, for example, permissions are changed so that RDS can no longer access either the secret or the KMS key for the secret.

When a secret has this status, you can correct the condition that caused the status. Alternatively, modify the DB instance to turn off automatic management of database credentials, and then modify the DB instance again to turn on automatic management of database credentials.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Metric

The representation of a metric.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MetricQuery

The query to retrieve metric data points.

Type: MetricQuery object

Required: No

Name

The name of a metric.

Type: String

Required: No

References.member.N

A list of metric references (thresholds).

Type: Array of MetricReference objects

Required: No

StatisticsDetails

The details of different statistics for a metric. The description might contain markdown.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

MetricQuery

The query to retrieve metric data points.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

PerformanceInsightsMetricQuery

The Performance Insights query that you can use to retrieve Performance Insights metric data points.

Type: PerformanceInsightsMetricQuery object

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

MetricReference

The reference (threshold) for a metric.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Name

The name of the metric reference.

Type: String

Required: No

ReferenceDetails

The details of a performance issue.

Type: ReferenceDetails object

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

MinimumEngineVersionPerAllowedValue

The minimum DB engine version required for each corresponding allowed value for an option setting.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowedValue

The allowed value for an option setting.

Type: String

Required: No

MinimumEngineVersion

The minimum DB engine version required for the allowed value.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Option

The details of an option.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

DBSecurityGroupMemberships.DBSecurityGroup.N

If the option requires access to a port, then this DB security group allows access to the port.

Type: Array of DBSecurityGroupMembership objects

Required: No

OptionDescription

The description of the option.

Type: String

Required: No

OptionName

The name of the option.

Type: String

Required: No

OptionSettings.OptionSetting.N

The option settings for this option.

Type: Array of OptionSetting objects

Required: No

OptionVersion

The version of the option.

Type: String

Required: No

Permanent

Indicates whether this option is permanent.

Type: Boolean

Required: No

Persistent

Indicates whether this option is persistent.

Type: Boolean

Required: No

Port

If required, the port configured for this option to use.

Type: Integer

Required: No

VpcSecurityGroupMemberships.VpcSecurityGroupMembership.N

If the option requires access to a port, then this VPC security group allows access to the port.

Type: Array of VpcSecurityGroupMembership objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionConfiguration

A list of all available options for an option group.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

OptionName

The configuration of options to include in a group.

Type: String

Required: Yes

DBSecurityGroupMemberships.DBSecurityGroupName.N

A list of DB security groups used for this option.

Type: Array of strings

Required: No

OptionSettings.OptionSetting.N

The option settings to include in an option group.

Type: Array of OptionSetting objects

Required: No

OptionVersion

The version for the option.

Type: String

Required: No

Port

The optional port for the option.

Type: Integer

Required: No

VpcSecurityGroupMemberships.VpcSecurityGroupId.N

A list of VPC security group names used for this option.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionGroup

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowsVpcAndNonVpcInstanceMemberships

Indicates whether this option group can be applied to both VPC and non-VPC instances. The value `true` indicates the option group can be applied to both VPC and non-VPC instances.

Type: Boolean

Required: No

CopyTimestamp

Indicates when the option group was copied.

Type: Timestamp

Required: No

EngineName

Indicates the name of the engine that this option group can be applied to.

Type: String

Required: No

MajorEngineVersion

Indicates the major engine version associated with this option group.

Type: String

Required: No

OptionGroupArn

Specifies the Amazon Resource Name (ARN) for the option group.

Type: String

Required: No

OptionGroupDescription

Provides a description of the option group.

Type: String

Required: No

OptionGroupName

Specifies the name of the option group.

Type: String

Required: No

Options.Option.N

Indicates what options are available in the option group.

Type: Array of Option objects

Required: No

SourceAccountId

Specifies the Amazon Web Services account ID for the option group from which this option group is copied.

Type: String

Required: No

SourceOptionGroup

Specifies the name of the option group from which this option group is copied.

Type: String

Required: No

VpcId

If **AllowsVpcAndNonVpcInstanceMemberships** is `false`, this field is blank. If **AllowsVpcAndNonVpcInstanceMemberships** is `true` and this field is blank, then this option group can be applied to both VPC and non-VPC instances. If this field contains a value, then this option group can only be applied to instances that are in the VPC indicated by this field.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionGroupMembership

Provides information on the option groups the DB instance is a member of.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

OptionGroupName

The name of the option group that the instance belongs to.

Type: String

Required: No

Status

The status of the DB instance's option group membership. Valid values are: `in-sync`, `pending-apply`, `pending-removal`, `pending-maintenance-apply`, `pending-maintenance-removal`, `applying`, `removing`, and `failed`.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionGroupOption

Available option.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CopyableCrossAccount

Indicates whether the option can be copied across Amazon Web Services accounts.

Type: Boolean

Required: No

DefaultPort

If the option requires a port, specifies the default port for the option.

Type: Integer

Required: No

Description

The description of the option.

Type: String

Required: No

EngineName

The name of the engine that this option can be applied to.

Type: String

Required: No

MajorEngineVersion

Indicates the major engine version that the option is available for.

Type: String

Required: No

MinimumRequiredMinorEngineVersion

The minimum required engine version for the option to be applied.

Type: String

Required: No

Name

The name of the option.

Type: String

Required: No

OptionGroupOptionSettings.OptionGroupOptionSetting.N

The option settings that are available (and the default value) for each option in an option group.

Type: Array of OptionGroupOptionSetting objects

Required: No

OptionGroupOptionVersions.OptionVersion.N

The versions that are available for the option.

Type: Array of OptionVersion objects

Required: No

OptionsConflictsWith.OptionConflictName.N

The options that conflict with this option.

Type: Array of strings

Required: No

OptionsDependedOn.OptionName.N

The options that are prerequisites for this option.

Type: Array of strings

Required: No

Permanent

Permanent options can never be removed from an option group. An option group containing a permanent option can't be removed from a DB instance.

Type: Boolean

Required: No

Persistent

Persistent options can't be removed from an option group while DB instances are associated with the option group. If you disassociate all DB instances from the option group, your can remove the persistent option from the option group.

Type: Boolean

Required: No

PortRequired

Indicates whether the option requires a port.

Type: Boolean

Required: No

RequiresAutoMinorEngineVersionUpgrade

If true, you must enable the Auto Minor Version Upgrade setting for your DB instance before you can use this option. You can enable Auto Minor Version Upgrade when you first create your DB instance, or by modifying your DB instance later.

Type: Boolean

Required: No

SupportsOptionVersionDowngrade

If true, you can change the option to an earlier version of the option. This only applies to options that have different versions available.

Type: Boolean

Required: No

VpcOnly

If true, you can only use this option with a DB instance that is in a VPC.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionGroupOptionSetting

Option group option settings are used to display settings available for each option with their default values and other information. These values are used with the DescribeOptionGroupOptions action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowedValues

Indicates the acceptable values for the option group option.

Type: String

Required: No

ApplyType

The DB engine specific parameter type for the option group option.

Type: String

Required: No

DefaultValue

The default value for the option group option.

Type: String

Required: No

IsModifiable

Indicates whether this option group option can be changed from the default value.

Type: Boolean

Required: No

IsRequired

Indicates whether a value must be specified for this option setting of the option group option.

Type: Boolean

Required: No

MinimumEngineVersionPerAllowedValue.MinimumEngineVersionPerAllowedValue.N

The minimum DB engine version required for the corresponding allowed value for this option setting.

Type: Array of MinimumEngineVersionPerAllowedValue objects

Required: No

SettingDescription

The description of the option group option.

Type: String

Required: No

SettingName

The name of the option group option.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionSetting

Option settings are the actual settings being applied or configured for that option. It is used when you modify an option group or describe option groups. For example, the NATIVE_NETWORK_ENCRYPTION option has a setting called SQLNET.ENCRYPTION_SERVER that can have several different values.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowedValues

The allowed values of the option setting.

Type: String

Required: No

ApplyType

The DB engine specific parameter type.

Type: String

Required: No

DataType

The data type of the option setting.

Type: String

Required: No

DefaultValue

The default value of the option setting.

Type: String

Required: No

Description

The description of the option setting.

Type: String

Required: No

IsCollection

Indicates whether the option setting is part of a collection.

Type: Boolean

Required: No

IsModifiable

Indicates whether the option setting can be modified from the default.

Type: Boolean

Required: No

Name

The name of the option that has settings that you can set.

Type: String

Required: No

Value

The current value of the option setting.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OptionVersion

The version for an option. Option group option versions are returned by the `DescribeOptionGroupOptions` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

IsDefault

Indicates whether the version is the default version of the option.

Type: Boolean

Required: No

Version

The version of the option.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

OrderableDBInstanceOption

Contains a list of available options for a DB instance.

This data type is used as a response element in the `DescribeOrderableDBInstanceOptions` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AvailabilityZoneGroup

The Availability Zone group for a DB instance.

Type: String

Required: No

AvailabilityZones.AvailabilityZone.N

A list of Availability Zones for a DB instance.

Type: Array of AvailabilityZone objects

Required: No

AvailableProcessorFeatures.AvailableProcessorFeature.N

A list of the available processor features for the DB instance class of a DB instance.

Type: Array of AvailableProcessorFeature objects

Required: No

DBInstanceClass

The DB instance class for a DB instance.

Type: String

Required: No

Engine

The engine type of a DB instance.

Type: String

Required: No

EngineVersion

The engine version of a DB instance.

Type: String

Required: No

LicenseModel

The license model for a DB instance.

Type: String

Required: No

MaxIopsPerDbInstance

Maximum total provisioned IOPS for a DB instance.

Type: Integer

Required: No

MaxIopsPerGib

Maximum provisioned IOPS per GiB for a DB instance.

Type: Double

Required: No

MaxStorageSize

Maximum storage size for a DB instance.

Type: Integer

Required: No

MaxStorageThroughputPerDbInstance

Maximum storage throughput for a DB instance.

Type: Integer

Required: No

MaxStorageThroughputPerIops

Maximum storage throughput to provisioned IOPS ratio for a DB instance.

Type: Double

Required: No

MinIopsPerDbInstance

Minimum total provisioned IOPS for a DB instance.

Type: Integer

Required: No

MinIopsPerGib

Minimum provisioned IOPS per GiB for a DB instance.

Type: Double

Required: No

MinStorageSize

Minimum storage size for a DB instance.

Type: Integer

Required: No

MinStorageThroughputPerDbInstance

Minimum storage throughput for a DB instance.

Type: Integer

Required: No

MinStorageThroughputPerIops

Minimum storage throughput to provisioned IOPS ratio for a DB instance.

Type: Double

Required: No

MultiAZCapable

Indicates whether a DB instance is Multi-AZ capable.

Type: Boolean

Required: No

OutpostCapable

Indicates whether a DB instance supports RDS on Outposts.

For more information about RDS on Outposts, see Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide.*

Type: Boolean

Required: No

ReadReplicaCapable

Indicates whether a DB instance can have a read replica.

Type: Boolean

Required: No

StorageType

The storage type for a DB instance.

Type: String

Required: No

SupportedActivityStreamModes.member.N

The list of supported modes for Database Activity Streams. Aurora PostgreSQL returns the value `[sync, async]`. Aurora MySQL and RDS for Oracle return `[async]` only. If Database Activity Streams isn't supported, the return value is an empty list.

Type: Array of strings

Required: No

SupportedEngineModes.member.N

A list of the supported DB engine modes.

Type: Array of strings

Required: No

SupportedNetworkTypes.member.N

The network types supported by the DB instance (`IPV4` or `DUAL`).

A DB instance can support only the IPv4 protocol or the IPv4 and the IPv6 protocols (`DUAL`).

For more information, see Working with a DB instance in a VPC in the *Amazon RDS User Guide.*

Type: Array of strings

Required: No

SupportsClusters

Indicates whether DB instances can be configured as a Multi-AZ DB cluster.

For more information on Multi-AZ DB clusters, see Multi-AZ deployments with two readable standby DB instances in the *Amazon RDS User Guide.*

Type: Boolean

Required: No

SupportsDedicatedLogVolume

Indicates whether a DB instance supports using a dedicated log volume (DLV).

Type: Boolean

Required: No

SupportsEnhancedMonitoring

Indicates whether a DB instance supports Enhanced Monitoring at intervals from 1 to 60 seconds.

Type: Boolean

Required: No

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with a specific combination of other DB engine attributes.

Type: Boolean

Required: No

SupportsIAMDatabaseAuthentication

Indicates whether a DB instance supports IAM database authentication.

Type: Boolean

Required: No

SupportsIops

Indicates whether a DB instance supports provisioned IOPS.

Type: Boolean

Required: No

SupportsKerberosAuthentication

Indicates whether a DB instance supports Kerberos Authentication.

Type: Boolean

Required: No

SupportsPerformanceInsights

Indicates whether a DB instance supports Performance Insights.

Type: Boolean

Required: No

SupportsStorageAutoscaling

Indicates whether Amazon RDS can automatically scale storage for DB instances that use the specified DB instance class.

Type: Boolean

Required: No

SupportsStorageEncryption

Indicates whether a DB instance supports encrypted storage.

Type: Boolean

Required: No

SupportsStorageThroughput

Indicates whether a DB instance supports storage throughput.

Type: Boolean

Required: No

Vpc

Indicates whether a DB instance is in a VPC.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2

- Amazon SDK for Ruby V3

Outpost

A data type that represents an Outpost.

For more information about RDS on Outposts, see Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide.*

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Arn

The Amazon Resource Name (ARN) of the Outpost.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Parameter

This data type is used as a request parameter in the `ModifyDBParameterGroup` and `ResetDBParameterGroup` actions.

This data type is used as a response element in the `DescribeEngineDefaultParameters` and `DescribeDBParameters` actions.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllowedValues

Specifies the valid range of values for the parameter.

Type: String

Required: No

ApplyMethod

Indicates when to apply parameter updates.

Type: String

Valid Values: `immediate | pending-reboot`

Required: No

ApplyType

Specifies the engine specific parameters type.

Type: String

Required: No

DataType

Specifies the valid data type for the parameter.

Type: String

Required: No

Description

Provides a description of the parameter.

Type: String

Required: No

IsModifiable

Indicates whether (`true`) or not (`false`) the parameter can be modified. Some parameters have security or operational implications that prevent them from being changed.

Type: Boolean

Required: No

MinimumEngineVersion

The earliest engine version to which the parameter can apply.

Type: String

Required: No

ParameterName

The name of the parameter.

Type: String

Required: No

ParameterValue

The value of the parameter.

Type: String

Required: No

Source

The source of the parameter value.

Type: String

Required: No

SupportedEngineModes.member.N

The valid DB engine modes.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PendingCloudwatchLogsExports

A list of the log types whose configuration is still pending. In other words, these log types are in the process of being activated or deactivated.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

LogTypesToDisable.member.N

Log types that are in the process of being enabled. After they are enabled, these log types are exported to CloudWatch Logs.

Type: Array of strings

Required: No

LogTypesToEnable.member.N

Log types that are in the process of being deactivated. After they are deactivated, these log types aren't exported to CloudWatch Logs.

Type: Array of strings

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PendingMaintenanceAction

Provides information about a pending maintenance action for a resource.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Action

The type of pending maintenance action that is available for the resource.

For more information about maintenance actions, see Maintaining a DB instance.

Valid Values:

- `ca-certificate-rotation`
- `db-upgrade`
- `hardware-maintenance`
- `os-upgrade`
- `system-update`

For more information about these actions, see Maintenance actions for Amazon Aurora or Maintenance actions for Amazon RDS.

Type: String

Required: No

AutoAppliedAfterDate

The date of the maintenance window when the action is applied. The maintenance action is applied to the resource during its first maintenance window after this date.

Type: Timestamp

Required: No

CurrentApplyDate

The effective date when the pending maintenance action is applied to the resource. This date takes into account opt-in requests received from the `ApplyPendingMaintenanceAction` API, the `AutoAppliedAfterDate`, and the `ForcedApplyDate`. This value is blank if an opt-in request has not been received and nothing has been specified as `AutoAppliedAfterDate` or `ForcedApplyDate`.

Type: Timestamp

Required: No

Description

A description providing more detail about the maintenance action.

Type: String

Required: No

ForcedApplyDate

The date when the maintenance action is automatically applied.

On this date, the maintenance action is applied to the resource as soon as possible, regardless of the maintenance window for the resource. There might be a delay of one or more days from this date before the maintenance action is applied.

Type: Timestamp

Required: No

OptInStatus

Indicates the type of opt-in request that has been received for the resource.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PendingModifiedValues

This data type is used as a response element in the `ModifyDBInstance` operation and contains changes that will be applied during the next maintenance window.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AllocatedStorage

The allocated storage size for the DB instance specified in gibibytes (GiB).

Type: Integer

Required: No

AutomationMode

The automation mode of the RDS Custom DB instance: `full` or `all-paused`. If `full`, the DB instance automates monitoring and instance recovery. If `all-paused`, the instance pauses automation for the duration set by `--resume-full-automation-mode-minutes`.

Type: String

Valid Values: `full | all-paused`

Required: No

BackupRetentionPeriod

The number of days for which automated backups are retained.

Type: Integer

Required: No

CACertificateIdentifier

The identifier of the CA certificate for the DB instance.

For more information, see Using SSL/TLS to encrypt a connection to a DB instance in the *Amazon RDS User Guide* and Using SSL/TLS to encrypt a connection to a DB cluster in the *Amazon Aurora User Guide*.

Type: String

Required: No

DBInstanceClass

The name of the compute and memory capacity class for the DB instance.

Type: String

Required: No

DBInstanceIdentifier

The database identifier for the DB instance.

Type: String

Required: No

DBSubnetGroupName

The DB subnet group for the DB instance.

Type: String

Required: No

DedicatedLogVolume

Indicates whether the DB instance has a dedicated log volume (DLV) enabled.>

Type: Boolean

Required: No

Engine

The database engine of the DB instance.

Type: String

Required: No

EngineVersion

The database engine version.

Type: String

Required: No

IAMDatabaseAuthenticationEnabled

Indicates whether mapping of Amazon Identity and Access Management (IAM) accounts to database accounts is enabled.

Type: Boolean

Required: No

Iops

The Provisioned IOPS value for the DB instance.

Type: Integer

Required: No

LicenseModel

The license model for the DB instance.

Valid values: `license-included` | `bring-your-own-license` | `general-public-license`

Type: String

Required: No

MasterUserPassword

The master credentials for the DB instance.

Type: String

Required: No

MultiAZ

Indicates whether the Single-AZ DB instance will change to a Multi-AZ deployment.

Type: Boolean

Required: No

MultiTenant

Indicates whether the DB instance will change to the multi-tenant configuration (TRUE) or the single-tenant configuration (FALSE).

Type: Boolean

Required: No

PendingCloudwatchLogsExports

A list of the log types whose configuration is still pending. In other words, these log types are in the process of being activated or deactivated.

Type: PendingCloudwatchLogsExports object

Required: No

Port

The port for the DB instance.

Type: Integer

Required: No

ProcessorFeatures.ProcessorFeature.N

The number of CPU cores and the number of threads per core for the DB instance class of the DB instance.

Type: Array of ProcessorFeature objects

Required: No

ResumeFullAutomationModeTime

The number of minutes to pause the automation. When the time period ends, RDS Custom resumes full automation. The minimum value is 60 (default). The maximum value is 1,440.

Type: Timestamp

Required: No

StorageThroughput

The storage throughput of the DB instance.

Type: Integer

Required: No

StorageType

The storage type of the DB instance.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PerformanceInsightsMetricDimensionGroup

A logical grouping of Performance Insights metrics for a related subject area. For example, the `db.sql` dimension group consists of the following dimensions:

- `db.sql.id` - The hash of a running SQL statement, generated by Performance Insights.
- `db.sql.db_id` - Either the SQL ID generated by the database engine, or a value generated by Performance Insights that begins with `pi-`.
- `db.sql.statement` - The full text of the SQL statement that is running, for example, `SELECT * FROM employees`.
- `db.sql_tokenized.id` - The hash of the SQL digest generated by Performance Insights.

> **Note**
>
> Each response element returns a maximum of 500 bytes. For larger elements, such as SQL statements, only the first 500 bytes are returned.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Dimensions.member.N

A list of specific dimensions from a dimension group. If this list isn't included, then all of the dimensions in the group were requested, or are present in the response.

Type: Array of strings

Required: No

Group

The available dimension groups for Performance Insights metric type.

Type: String

Required: No

Limit

The maximum number of items to fetch for this dimension group.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PerformanceInsightsMetricQuery

A single Performance Insights metric query to process. You must provide the metric to the query. If other parameters aren't specified, Performance Insights returns all data points for the specified metric. Optionally, you can request the data points to be aggregated by dimension group (`GroupBy`) and return only those data points that match your criteria (`Filter`).

Constraints:

- Must be a valid Performance Insights query.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

GroupBy

A specification for how to aggregate the data points from a query result. You must specify a valid dimension group. Performance Insights will return all of the dimensions within that group, unless you provide the names of specific dimensions within that group. You can also request that Performance Insights return a limited number of values for a dimension.

Type: PerformanceInsightsMetricDimensionGroup object

Required: No

Metric

The name of a Performance Insights metric to be measured.

Valid Values:

- `db.load.avg` - A scaled representation of the number of active sessions for the database engine.
- `db.sampledload.avg` - The raw number of active sessions for the database engine.
- The counter metrics listed in Performance Insights operating system counters in the *Amazon Aurora User Guide*.

If the number of active sessions is less than an internal Performance Insights threshold, `db.load.avg` and `db.sampledload.avg` are the same value. If the number of active sessions is greater than the internal threshold, Performance Insights samples the active sessions, with `db.load.avg` showing the scaled values, `db.sampledload.avg` showing the raw values, and `db.sampledload.avg` less than `db.load.avg`. For most use cases, you can query `db.load.avg` only.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

PerformanceIssueDetails

Details of the performance issue.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Analysis

The analysis of the performance issue. The information might contain markdown.

Type: String

Required: No

EndTime

The time when the performance issue stopped.

Type: Timestamp

Required: No

Metrics.member.N

The metrics that are relevant to the performance issue.

Type: Array of Metric objects

Required: No

StartTime

The time when the performance issue started.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ProcessorFeature

Contains the processor features of a DB instance class.

To specify the number of CPU cores, use the `coreCount` feature name for the `Name` parameter. To specify the number of threads per core, use the `threadsPerCore` feature name for the `Name` parameter.

You can set the processor features of the DB instance class for a DB instance when you call one of the following actions:

- `CreateDBInstance`
- `ModifyDBInstance`
- `RestoreDBInstanceFromDBSnapshot`
- `RestoreDBInstanceFromS3`
- `RestoreDBInstanceToPointInTime`

You can view the valid processor values for a particular instance class by calling the `DescribeOrderableDBInstanceOptions` action and specifying the instance class for the `DBInstanceClass` parameter.

In addition, you can use the following actions for DB instance class processor information:

- `DescribeDBInstances`
- `DescribeDBSnapshots`
- `DescribeValidDBInstanceModifications`

If you call `DescribeDBInstances`, `ProcessorFeature` returns non-null values only if the following conditions are met:

- You are accessing an Oracle DB instance.
- Your Oracle DB instance class supports configuring the number of CPU cores and threads per core.
- The current number CPU cores and threads is set to a non-default value.

For more information, see Configuring the processor for a DB instance class in RDS for Oracle in the *Amazon RDS User Guide.*

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Name

The name of the processor feature. Valid names are `coreCount` and `threadsPerCore`.

Type: String

Required: No

Value

The value of a processor feature.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Range

A range of integer values.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

From

The minimum value in the range.

Type: Integer

Required: No

Step

The step value for the range. For example, if you have a range of 5,000 to 10,000, with a step value of 1,000, the valid values start at 5,000 and step up by 1,000. Even though 7,500 is within the range, it isn't a valid value for the range. The valid values are 5,000, 6,000, 7,000, 8,000...

Type: Integer

Required: No

To

The maximum value in the range.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RdsCustomClusterConfiguration

Reserved for future use.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

InterconnectSubnetId

Reserved for future use.

Type: String

Required: No

ReplicaMode

Reserved for future use.

Type: String

Valid Values: `open-read-only | mounted`

Required: No

TransitGatewayMulticastDomainId

Reserved for future use.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RecommendedAction

The recommended actions to apply to resolve the issues associated with your DB instances, DB clusters, and DB parameter groups.

Contents

> **Note**
> In the following list, the required parameters are described first.

ActionId

The unique identifier of the recommended action.

Type: String

Required: No

ApplyModes.member.N

The methods to apply the recommended action.

Valid values:

- `manual` - The action requires you to resolve the recommendation manually.
- `immediately` - The action is applied immediately.
- `next-maintainance-window` - The action is applied during the next scheduled maintainance.

Type: Array of strings

Required: No

ContextAttributes.member.N

The supporting attributes to explain the recommended action.

Type: Array of ContextAttribute objects

Required: No

Description

A detailed description of the action. The description might contain markdown.

Type: String

Required: No

IssueDetails

The details of the issue.

Type: IssueDetails object

Required: No

Operation

An API operation for the action.

Type: String

Required: No

Parameters.member.N

The parameters for the API operation.

Type: Array of RecommendedActionParameter objects

Required: No

Status

The status of the action.

- `ready`
- `applied`
- `scheduled`
- `resolved`

Type: String

Required: No

Title

A short description to summarize the action. The description might contain markdown.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RecommendedActionParameter

A single parameter to use with the `RecommendedAction` API operation to apply the action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Key

The key of the parameter to use with the `RecommendedAction` API operation.

Type: String

Required: No

Value

The value of the parameter to use with the `RecommendedAction` API operation.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RecommendedActionUpdate

The recommended status to update for the specified recommendation action ID.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ActionId

A unique identifier of the updated recommendation action.

Type: String

Required: Yes

Status

The status of the updated recommendation action.

- `applied`
- `scheduled`

Type: String

Required: Yes

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RecurringCharge

This data type is used as a response element in the `DescribeReservedDBInstances` and `DescribeReservedDBInstancesOfferings` actions.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

RecurringChargeAmount

The amount of the recurring charge.

Type: Double

Required: No

RecurringChargeFrequency

The frequency of the recurring charge.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ReferenceDetails

The reference details of a metric.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

ScalarReferenceDetails

The metric reference details when the reference is a scalar.

Type: ScalarReferenceDetails object

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ReservedDBInstance

This data type is used as a response element in the `DescribeReservedDBInstances` and `PurchaseReservedDBInstancesOffering` actions.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CurrencyCode

The currency code for the reserved DB instance.

Type: String

Required: No

DBInstanceClass

The DB instance class for the reserved DB instance.

Type: String

Required: No

DBInstanceCount

The number of reserved DB instances.

Type: Integer

Required: No

Duration

The duration of the reservation in seconds.

Type: Integer

Required: No

FixedPrice

The fixed price charged for this reserved DB instance.

Type: Double

Required: No

LeaseId

The unique identifier for the lease associated with the reserved DB instance.

> **Note**
>
> Amazon Support might request the lease ID for an issue related to a reserved DB instance.

Type: String

Required: No

MultiAZ

Indicates whether the reservation applies to Multi-AZ deployments.

Type: Boolean

Required: No

OfferingType

The offering type of this reserved DB instance.

Type: String

Required: No

ProductDescription

The description of the reserved DB instance.

Type: String

Required: No

RecurringCharges.RecurringCharge.N

The recurring price charged to run this reserved DB instance.

Type: Array of RecurringCharge objects

Required: No

ReservedDBInstanceArn

The Amazon Resource Name (ARN) for the reserved DB instance.

Type: String

Required: No

ReservedDBInstanceId

The unique identifier for the reservation.

Type: String

Required: No

ReservedDBInstancesOfferingId

The offering identifier.

Type: String

Required: No

StartTime

The time the reservation started.

Type: Timestamp

Required: No

State

The state of the reserved DB instance.

Type: String

Required: No

UsagePrice

The hourly price charged for this reserved DB instance.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ReservedDBInstancesOffering

This data type is used as a response element in the `DescribeReservedDBInstancesOfferings` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CurrencyCode

The currency code for the reserved DB instance offering.

Type: String

Required: No

DBInstanceClass

The DB instance class for the reserved DB instance.

Type: String

Required: No

Duration

The duration of the offering in seconds.

Type: Integer

Required: No

FixedPrice

The fixed price charged for this offering.

Type: Double

Required: No

MultiAZ

Indicates whether the offering applies to Multi-AZ deployments.

Type: Boolean

Required: No

OfferingType

The offering type.

Type: String

Required: No

ProductDescription

The database engine used by the offering.

Type: String

Required: No

RecurringCharges.RecurringCharge.N

The recurring price charged to run this reserved DB instance.

Type: Array of RecurringCharge objects

Required: No

ReservedDBInstancesOfferingId

The offering identifier.

Type: String

Required: No

UsagePrice

The hourly price charged for this offering.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ResourcePendingMaintenanceActions

Describes the pending maintenance actions for a resource.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

PendingMaintenanceActionDetails.PendingMaintenanceAction.N

A list that provides details about the pending maintenance actions for the resource.

Type: Array of PendingMaintenanceAction objects

Required: No

ResourceIdentifier

The ARN of the resource that has pending maintenance actions.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

RestoreWindow

Earliest and latest time an instance can be restored to:

Contents

> **Note**
>
> In the following list, the required parameters are described first.

EarliestTime

The earliest time you can restore an instance to.

Type: Timestamp

Required: No

LatestTime

The latest time you can restore an instance to.

Type: Timestamp

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ScalarReferenceDetails

The metric reference details when the reference is a scalar.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Value

The value of a scalar reference.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v1 DB cluster.

For more information, see Using Amazon Aurora Serverless v1 in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AutoPause

Indicates whether to allow or disallow automatic pause for an Aurora DB cluster in `serverless` DB engine mode. A DB cluster can be paused only when it's idle (it has no connections).

> **Note**
>
> If a DB cluster is paused for more than seven days, the DB cluster might be backed up with a snapshot. In this case, the DB cluster is restored when there is a request to connect to it.

Type: Boolean

Required: No

MaxCapacity

The maximum capacity for an Aurora DB cluster in `serverless` DB engine mode.

For Aurora MySQL, valid capacity values are 1, 2, 4, 8, 16, 32, 64, 128, and 256.

For Aurora PostgreSQL, valid capacity values are 2, 4, 8, 16, 32, 64, 192, and 384.

The maximum capacity must be greater than or equal to the minimum capacity.

Type: Integer

Required: No

MinCapacity

The minimum capacity for an Aurora DB cluster in `serverless` DB engine mode.

For Aurora MySQL, valid capacity values are 1, 2, 4, 8, 16, 32, 64, 128, and 256.

For Aurora PostgreSQL, valid capacity values are 2, 4, 8, 16, 32, 64, 192, and 384.

The minimum capacity must be less than or equal to the maximum capacity.

Type: Integer

Required: No

SecondsBeforeTimeout

The amount of time, in seconds, that Aurora Serverless v1 tries to find a scaling point to perform seamless scaling before enforcing the timeout action. The default is 300.

Specify a value between 60 and 600 seconds.

Type: Integer

Required: No

SecondsUntilAutoPause

The time, in seconds, before an Aurora DB cluster in `serverless` mode is paused.

Specify a value between 300 and 86,400 seconds.

Type: Integer

Required: No

TimeoutAction

The action to take when the timeout is reached, either `ForceApplyCapacityChange` or `RollbackCapacityChange`.

`ForceApplyCapacityChange` sets the capacity to the specified value as soon as possible.

`RollbackCapacityChange`, the default, ignores the capacity change if a scaling point isn't found in the timeout period.

> **Important**
>
> If you specify `ForceApplyCapacityChange`, connections that prevent Aurora Serverless v1 from finding a scaling point might be dropped.

For more information, see Autoscaling for Aurora Serverless v1 in the *Amazon Aurora User Guide*.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ScalingConfigurationInfo

The scaling configuration for an Aurora DB cluster in `serverless` DB engine mode.

For more information, see Using Amazon Aurora Serverless v1 in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AutoPause

Indicates whether automatic pause is allowed for the Aurora DB cluster in `serverless` DB engine mode.

When the value is set to false for an Aurora Serverless v1 DB cluster, the DB cluster automatically resumes.

Type: Boolean

Required: No

MaxCapacity

The maximum capacity for an Aurora DB cluster in `serverless` DB engine mode.

Type: Integer

Required: No

MinCapacity

The minimum capacity for an Aurora DB cluster in `serverless` DB engine mode.

Type: Integer

Required: No

SecondsBeforeTimeout

The number of seconds before scaling times out. What happens when an attempted scaling action times out is determined by the `TimeoutAction` setting.

Type: Integer

Required: No

SecondsUntilAutoPause

The remaining amount of time, in seconds, before the Aurora DB cluster in `serverless` mode is paused. A DB cluster can be paused only when it's idle (it has no connections).

Type: Integer

Required: No

TimeoutAction

The action that occurs when Aurora times out while attempting to change the capacity of an Aurora Serverless v1 cluster. The value is either `ForceApplyCapacityChange` or `RollbackCapacityChange`.

`ForceApplyCapacityChange`, the default, sets the capacity to the specified value as soon as possible.

`RollbackCapacityChange` ignores the capacity change if a scaling point isn't found in the timeout period.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ServerlessV2FeaturesSupport

Specifies any Aurora Serverless v2 properties or limits that differ between Aurora engine versions. You can test the values of this attribute when deciding which Aurora version to use in a new or upgraded DB cluster. You can also retrieve the version of an existing DB cluster and check whether that version supports certain Aurora Serverless v2 features before you attempt to use those features.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MaxCapacity

Specifies the upper Aurora Serverless v2 capacity limit for a particular engine version. Depending on the engine version, the maximum capacity for an Aurora Serverless v2 cluster might be 256 or 128.

Type: Double

Required: No

MinCapacity

If the minimum capacity is 0 ACUs, the engine version supports the automatic pause/resume feature of Aurora Serverless v2.

Type: Double

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++

- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ServerlessV2ScalingConfiguration

Contains the scaling configuration of an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MaxCapacity

The maximum number of Aurora capacity units (ACUs) for a DB instance in an Aurora Serverless v2 cluster. You can specify ACU values in half-step increments, such as 32, 32.5, 33, and so on. The largest value that you can use is 256 for recent Aurora versions, or 128 for older versions.

Type: Double

Required: No

MinCapacity

The minimum number of Aurora capacity units (ACUs) for a DB instance in an Aurora Serverless v2 cluster. You can specify ACU values in half-step increments, such as 8, 8.5, 9, and so on. For Aurora versions that support the Aurora Serverless v2 auto-pause feature, the smallest value that you can use is 0. For versions that don't support Aurora Serverless v2 auto-pause, the smallest value that you can use is 0.5.

Type: Double

Required: No

SecondsUntilAutoPause

Specifies the number of seconds an Aurora Serverless v2 DB instance must be idle before Aurora attempts to automatically pause it.

Specify a value between 300 seconds (five minutes) and 86,400 seconds (one day). The default is 300 seconds.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ServerlessV2ScalingConfigurationInfo

The scaling configuration for an Aurora Serverless v2 DB cluster.

For more information, see Using Amazon Aurora Serverless v2 in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MaxCapacity

The maximum number of Aurora capacity units (ACUs) for a DB instance in an Aurora Serverless v2 cluster. You can specify ACU values in half-step increments, such as 32, 32.5, 33, and so on. The largest value that you can use is 256 for recent Aurora versions, or 128 for older versions.

Type: Double

Required: No

MinCapacity

The minimum number of Aurora capacity units (ACUs) for a DB instance in an Aurora Serverless v2 cluster. You can specify ACU values in half-step increments, such as 8, 8.5, 9, and so on. For Aurora versions that support the Aurora Serverless v2 auto-pause feature, the smallest value that you can use is 0. For versions that don't support Aurora Serverless v2 auto-pause, the smallest value that you can use is 0.5.

Type: Double

Required: No

SecondsUntilAutoPause

The number of seconds an Aurora Serverless v2 DB instance must be idle before Aurora attempts to automatically pause it. This property is only shown when the minimum capacity for the cluster is set to 0 ACUs. Changing the minimum capacity to a nonzero value removes this property. If you later change the minimum capacity back to 0 ACUs, this property is reset to its default value unless you specify it again.

This value ranges between 300 seconds (five minutes) and 86,400 seconds (one day). The default is 300 seconds.

Type: Integer

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

SourceRegion

Contains an Amazon Web Services Region name as the result of a successful call to the `DescribeSourceRegions` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Endpoint

The endpoint for the source Amazon Web Services Region endpoint.

Type: String

Required: No

RegionName

The name of the source Amazon Web Services Region.

Type: String

Required: No

Status

The status of the source Amazon Web Services Region.

Type: String

Required: No

SupportsDBInstanceAutomatedBackupsReplication

Indicates whether the source Amazon Web Services Region supports replicating automated backups to the current Amazon Web Services Region.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Subnet

This data type is used as a response element for the `DescribeDBSubnetGroups` operation.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

SubnetAvailabilityZone

Contains Availability Zone information.

This data type is used as an element in the `OrderableDBInstanceOption` data type.

Type: AvailabilityZone object

Required: No

SubnetIdentifier

The identifier of the subnet.

Type: String

Required: No

SubnetOutpost

If the subnet is associated with an Outpost, this value specifies the Outpost.

For more information about RDS on Outposts, see Amazon RDS on Amazon Outposts in the *Amazon RDS User Guide.*

Type: Outpost object

Required: No

SubnetStatus

The status of the subnet.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

SupportedEngineLifecycle

This data type is used as a response element in the operation `DescribeDBMajorEngineVersions`.

You can use the information that this data type returns to plan for upgrades.

This data type only returns information for the open source engines Amazon RDS for MariaDB, Amazon RDS for MySQL, Amazon RDS for PostgreSQL, Aurora MySQL, and Aurora PostgreSQL.

Contents

> **Note**
> In the following list, the required parameters are described first.

LifecycleSupportEndDate

The end date for the type of support returned by `LifecycleSupportName`.

Type: Timestamp

Required: Yes

LifecycleSupportName

The type of lifecycle support that the engine version is in.

This parameter returns the following values:

- `open-source-rds-standard-support` - Indicates RDS standard support or Aurora standard support.
- `open-source-rds-extended-support` - Indicates Amazon RDS Extended Support.

For Amazon RDS for MySQL, Amazon RDS for PostgreSQL, Aurora MySQL, and Aurora PostgreSQL, this parameter returns both `open-source-rds-standard-support` and `open-source-rds-extended-support`.

For Amazon RDS for MariaDB, this parameter only returns the value `open-source-rds-standard-support`.

For information about Amazon RDS Extended Support, see Amazon RDS Extended Support with Amazon RDS in the *Amazon RDS User Guide* and Amazon RDS Extended Support with Amazon Aurora in the *Amazon Aurora User Guide*.

Type: String

Valid Values: `open-source-rds-standard-support | open-source-rds-extended-support`

Required: Yes

LifecycleSupportStartDate

The start date for the type of support returned by `LifecycleSupportName`.

Type: Timestamp

Required: Yes

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

SwitchoverDetail

Contains the details about a blue/green deployment.

For more information, see Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon RDS User Guide* and Using Amazon RDS Blue/Green Deployments for database updates in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

SourceMember

The Amazon Resource Name (ARN) of a resource in the blue environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `^arn:[A-Za-z][0-9A-Za-z-:._]*`

Required: No

Status

The switchover status of a resource in a blue/green deployment.

Values:

- `PROVISIONING` - The resource is being prepared to switch over.
- `AVAILABLE` - The resource is ready to switch over.
- `SWITCHOVER_IN_PROGRESS` - The resource is being switched over.
- `SWITCHOVER_COMPLETED` - The resource has been switched over.
- `SWITCHOVER_FAILED` - The resource attempted to switch over but failed.
- `MISSING_SOURCE` - The source resource has been deleted.
- `MISSING_TARGET` - The target resource has been deleted.

Type: String

Required: No

TargetMember

The Amazon Resource Name (ARN) of a resource in the green environment.

Type: String

Length Constraints: Minimum length of 1. Maximum length of 2048.

Pattern: `^arn:[A-Za-z][0-9A-Za-z-:._]*`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Tag

Metadata assigned to an Amazon RDS resource consisting of a key-value pair.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Key

A key is the required name of the tag. The string value can be from 1 to 128 Unicode characters in length and can't be prefixed with `aws:` or `rds:`. The string can only contain only the set of Unicode letters, digits, white-space, '_', '.', ':', '/', '=', '+', '-', '@' (Java regex: "^([\\p{L}\\p{Z}\\p{N}_.:/=+\\-@]*)$").

Type: String

Required: No

Value

A value is the optional value of the tag. The string value can be from 1 to 256 Unicode characters in length and can't be prefixed with `aws:` or `rds:`. The string can only contain only the set of Unicode letters, digits, white-space, '_', '.', ':', '/', '=', '+', '-', '@' (Java regex: "^([\\p{L}\\p{Z}\\p{N}_.:/=+\\-@]*)$").

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

TargetHealth

Information about the connection health of an RDS Proxy target.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Description

A description of the health of the RDS Proxy target. If the `State` is `AVAILABLE`, a description is not included.

Type: String

Required: No

Reason

The reason for the current health `State` of the RDS Proxy target.

Type: String

Valid Values: `UNREACHABLE | CONNECTION_FAILED | AUTH_FAILURE | PENDING_PROXY_CAPACITY | INVALID_REPLICATION_STATE`

Required: No

State

The current state of the connection health lifecycle for the RDS Proxy target. The following is a typical lifecycle example for the states of an RDS Proxy target:

`registering` > `unavailable` > `available` > `unavailable` > `available`

Type: String

Valid Values: `REGISTERING | AVAILABLE | UNAVAILABLE`

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

TenantDatabase

A tenant database in the DB instance. This data type is an element in the response to the `DescribeTenantDatabases` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

CharacterSetName

The character set of the tenant database.

Type: String

Required: No

DBInstanceIdentifier

The ID of the DB instance that contains the tenant database.

Type: String

Required: No

DbiResourceId

The Amazon Web Services Region-unique, immutable identifier for the DB instance.

Type: String

Required: No

DeletionProtection

Specifies whether deletion protection is enabled for the DB instance.

Type: Boolean

Required: No

MasterUsername

The master username of the tenant database.

Type: String

Required: No

MasterUserSecret

Contains the secret managed by RDS in Amazon Secrets Manager for the master user password.

For more information, see Password management with Amazon Secrets Manager in the *Amazon RDS User Guide* and Password management with Amazon Secrets Manager in the *Amazon Aurora User Guide.*

Type: MasterUserSecret object

Required: No

NcharCharacterSetName

The NCHAR character set name of the tenant database.

Type: String

Required: No

PendingModifiedValues

Information about pending changes for a tenant database.

Type: TenantDatabasePendingModifiedValues object

Required: No

Status

The status of the tenant database.

Type: String

Required: No

TagList.Tag.N

A list of tags.

For more information, see Tagging Amazon RDS resources in the *Amazon RDS User Guide* or Tagging Amazon Aurora and Amazon RDS resources in the *Amazon Aurora User Guide*.

Type: Array of Tag objects

Required: No

TenantDatabaseARN

The Amazon Resource Name (ARN) for the tenant database.

Type: String

Required: No

TenantDatabaseCreateTime

The creation time of the tenant database.

Type: Timestamp

Required: No

TenantDatabaseResourceId

The Amazon Web Services Region-unique, immutable identifier for the tenant database.

Type: String

Required: No

TenantDBName

The database name of the tenant database.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++

- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

TenantDatabasePendingModifiedValues

A response element in the `ModifyTenantDatabase` operation that describes changes that will be applied. Specific changes are identified by subelements.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

MasterUserPassword

The master password for the tenant database.

Type: String

Required: No

TenantDBName

The name of the tenant database.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Timezone

A time zone associated with a `DBInstance` or a `DBSnapshot`. This data type is an element in the response to the `DescribeDBInstances`, the `DescribeDBSnapshots`, and the `DescribeDBEngineVersions` actions.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

TimezoneName

The name of the time zone.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

UpgradeTarget

The version of the database engine that a DB instance can be upgraded to.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AutoUpgrade

Indicates whether the target version is applied to any source DB instances that have `AutoMinorVersionUpgrade` set to true.

This parameter is dynamic, and is set by RDS.

Type: Boolean

Required: No

Description

The version of the database engine that a DB instance can be upgraded to.

Type: String

Required: No

Engine

The name of the upgrade target database engine.

Type: String

Required: No

EngineVersion

The version number of the upgrade target database engine.

Type: String

Required: No

IsMajorVersionUpgrade

Indicates whether upgrading to the target version requires upgrading the major version of the database engine.

Type: Boolean

Required: No

SupportedEngineModes.member.N

A list of the supported DB engine modes for the target engine version.

Type: Array of strings

Required: No

SupportsBabelfish

Indicates whether you can use Babelfish for Aurora PostgreSQL with the target engine version.

Type: Boolean

Required: No

SupportsGlobalDatabases

Indicates whether you can use Aurora global databases with the target engine version.

Type: Boolean

Required: No

SupportsIntegrations

Indicates whether the DB engine version supports zero-ETL integrations with Amazon Redshift.

Type: Boolean

Required: No

SupportsLimitlessDatabase

Indicates whether the DB engine version supports Aurora Limitless Database.

Type: Boolean

Required: No

SupportsLocalWriteForwarding

Indicates whether the target engine version supports forwarding write operations from reader DB instances to the writer DB instance in the DB cluster. By default, write operations aren't allowed on reader DB instances.

Valid for: Aurora DB clusters only

Type: Boolean

Required: No

SupportsParallelQuery

Indicates whether you can use Aurora parallel query with the target engine version.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

UserAuthConfig

Specifies the details of authentication used by a proxy to log in as a specific database user.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AuthScheme

The type of authentication that the proxy uses for connections from the proxy to the underlying database.

Type: String

Valid Values: `SECRETS`

Required: No

ClientPasswordAuthType

The type of authentication the proxy uses for connections from clients. The following values are defaults for the corresponding engines:

- RDS for MySQL: `MYSQL_CACHING_SHA2_PASSWORD`
- RDS for SQL Server: `SQL_SERVER_AUTHENTICATION`
- RDS for PostgreSQL: `POSTGRES_SCRAM_SHA2_256`

Type: String

Valid Values: `MYSQL_NATIVE_PASSWORD | MYSQL_CACHING_SHA2_PASSWORD | POSTGRES_SCRAM_SHA_256 | POSTGRES_MD5 | SQL_SERVER_AUTHENTICATION`

Required: No

Description

A user-specified description about the authentication used by a proxy to log in as a specific database user.

Type: String

Required: No

IAMAuth

A value that indicates whether to require or disallow Amazon Identity and Access Management (IAM) authentication for connections to the proxy. The `ENABLED` value is valid only for proxies with RDS for Microsoft SQL Server.

Type: String

Valid Values: `DISABLED | REQUIRED | ENABLED`

Required: No

SecretArn

The Amazon Resource Name (ARN) representing the secret that the proxy uses to authenticate to the RDS DB instance or Aurora DB cluster. These secrets are stored within Amazon Secrets Manager.

Type: String

Required: No

UserName

The name of the database user to which the proxy connects.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

UserAuthConfigInfo

Returns the details of authentication used by a proxy to log in as a specific database user.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

AuthScheme

The type of authentication that the proxy uses for connections from the proxy to the underlying database.

Type: String

Valid Values: `SECRETS`

Required: No

ClientPasswordAuthType

The type of authentication the proxy uses for connections from clients.

Type: String

Valid Values: `MYSQL_NATIVE_PASSWORD | MYSQL_CACHING_SHA2_PASSWORD | POSTGRES_SCRAM_SHA_256 | POSTGRES_MD5 | SQL_SERVER_AUTHENTICATION`

Required: No

Description

A user-specified description about the authentication used by a proxy to log in as a specific database user.

Type: String

Required: No

IAMAuth

Whether to require or disallow Amazon Identity and Access Management (IAM) authentication for connections to the proxy.

Type: String

Valid Values: `DISABLED | REQUIRED | ENABLED`

Required: No

SecretArn

The Amazon Resource Name (ARN) representing the secret that the proxy uses to authenticate to the RDS DB instance or Aurora DB cluster. These secrets are stored within Amazon Secrets Manager.

Type: String

Required: No

UserName

The name of the database user to which the proxy connects.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ValidDBInstanceModificationsMessage

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the `DescribeValidDBInstanceModifications` action. You can use this information when you call `ModifyDBInstance`.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Storage.ValidStorageOptions.N

Valid storage options for your DB instance.

Type: Array of ValidStorageOptions objects

Required: No

SupportsDedicatedLogVolume

Indicates whether a DB instance supports using a dedicated log volume (DLV).

Type: Boolean

Required: No

ValidProcessorFeatures.AvailableProcessorFeature.N

Valid processor features for your DB instance.

Type: Array of AvailableProcessorFeature objects

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

ValidStorageOptions

Information about valid modifications that you can make to your DB instance. Contains the result of a successful call to the `DescribeValidDBInstanceModifications` action.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

IopsToStorageRatio.DoubleRange.N

The valid range of Provisioned IOPS to gibibytes of storage multiplier. For example, 3-10, which means that provisioned IOPS can be between 3 and 10 times storage.

Type: Array of DoubleRange objects

Required: No

ProvisionedIops.Range.N

The valid range of provisioned IOPS. For example, 1000-256,000.

Type: Array of Range objects

Required: No

ProvisionedStorageThroughput.Range.N

The valid range of provisioned storage throughput. For example, 500-4,000 mebibytes per second (MiBps).

Type: Array of Range objects

Required: No

StorageSize.Range.N

The valid range of storage in gibibytes (GiB). For example, 100 to 16,384.

Type: Array of Range objects

Required: No

StorageThroughputToIopsRatio.DoubleRange.N

The valid range of storage throughput to provisioned IOPS ratios. For example, 0-0.25.

Type: Array of DoubleRange objects

Required: No

StorageType

The valid storage types for your DB instance. For example: gp2, gp3, io1, io2.

Type: String

Required: No

SupportsStorageAutoscaling

Indicates whether or not Amazon RDS can automatically scale storage for DB instances that use the new instance class.

Type: Boolean

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

VpcSecurityGroupMembership

This data type is used as a response element for queries on VPC security group membership.

Contents

> **Note**
>
> In the following list, the required parameters are described first.

Status

The membership status of the VPC security group.

Currently, the only valid status is `active`.

Type: String

Required: No

VpcSecurityGroupId

The name of the VPC security group.

Type: String

Required: No

See Also

For more information about using this API in one of the language-specific Amazon SDKs, see the following:

- Amazon SDK for C++
- Amazon SDK for Java V2
- Amazon SDK for Ruby V3

Common Parameters

The following list contains the parameters that all actions use for signing Signature Version 4 requests with a query string. Any action-specific parameters are listed in the topic for that action. For more information about Signature Version 4, see Signing Amazon API requests in the *IAM User Guide*.

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 Create a signed Amazon API request in the *IAM User Guide*.

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 Elements of an Amazon API request signature in the *IAM User Guide*.

Type: string

Required: Conditional

X-Amz-Security-Token

The temporary security token that was obtained through a call to Amazon Security Token Service (Amazon STS). For a list of services that support temporary security credentials from Amazon STS, see Amazon Web Services services that work with IAM in the *IAM User Guide*.

Condition: If you're using temporary security credentials from Amazon STS, 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 Create a signed Amazon API request in the *IAM User Guide*.

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 Amazon 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 Amazon 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 Amazon 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 Amazon query string is malformed or does not adhere to Amazon 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) Amazon 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

NotAuthorized

You do not have permission to perform this action.

HTTP Status Code: 400

OptInRequired

The Amazon 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 Amazon service.

HTTP Status Code: 400