

Relational Database Service

API Reference

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1 Before You Start

1.1 Overview

Welcome to *Relational Database Service API Reference*. RDS is an online relational database service based on the cloud computing platform. RDS is reliable, scalable, and easy to manage, and immediately ready for use. RDS provides a comprehensive performance monitoring system, multi-level security protection measures, and a professional database management platform, allowing you to easily set up and scale a relational database.

This document describes how to use application programming interfaces (APIs) to perform operations on RDS DB instances, such as DB instance creation, backup and restoration, query, parameter modifications, and deletion. For details about all supported operations, see [API Overview](#).

1.2 API Calling

RDS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see [Calling APIs](#).

1.3 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the OMS endpoints, see [Regions and Endpoints](#).

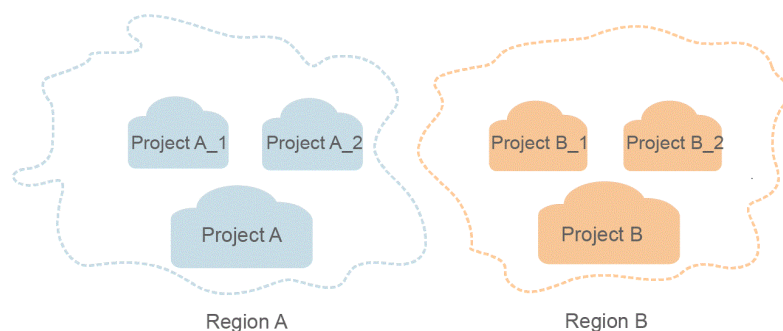
1.4 Constraints

- The numbers of RDS DB instances that you can create are determined by your quota. To view or increase the quota, see [Managing Quotas](#).
- For more constraints, see API description.

1.5 Concepts

- **Account**
An account is created after your registration. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity and should not be used directly to perform routine management. For security purposes, create IAM users and grant them permissions for routine management.
- **IAM User**
An IAM user is created using an account to use cloud services. Each IAM user has its own identity credentials (password and access keys).
The account name, username, and password will be required for API authentication.
- **Region**
A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.
- **AZ**
An AZ contains one or more physical data centers. Each AZ has independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Within an AZ, computing, network, storage, and other resources are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to support cross-AZ high-availability systems.
- **Project**
Projects group and isolate resources (including compute, storage, and network resources) across physical regions. A default project is provided for each region, and subprojects can be created under each default project. Users can be granted permissions to access all resources in a specific project. For more refined access control, create subprojects under a project and purchase resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

Figure 1-1 Project isolating model



- **Enterprise Project**
Enterprise projects group and manage resources across regions. Resources in enterprise projects are logically isolated from each other. An enterprise project can contain resources in multiple regions, and resources can be directly transferred between enterprise projects.

1.6 Selecting an API Type

Table 1-1 API type description

| Version | Recommended | Description |
|---------|-------------|---|
| v3 | Yes | APIs for RDS with customized specifications |

2 API Overview

RDS APIs enable you to use all RDS functions, including creating DB instances and backing up and restoring data.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API, and uses the IAM API for obtaining a user token as an example to describe how to call an API. The obtained token is used to authenticate the calling of other APIs.

Request URI

A request URI consists of the following:

{URI-scheme}://{Endpoint}/{resource-path}?{query-string}

Although a request URI is included in a request header, most programming languages or frameworks require the request URI to be separately transmitted, rather than being conveyed in a request message.

Table 3-1 Parameters in a URI

| Parameter | Description |
|---------------|---|
| URI-scheme | Protocol used to transmit requests. All APIs use HTTPS. |
| Endpoint | Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . |
| resource-path | Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens . |
| query-string | Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of "Parameter name=Parameter value". For example, ?limit=10 indicates that a maximum of 10 data records will be displayed. |

 **NOTE**

To simplify the URI display in this document, each API is provided only with a resource-path and a request method. The **URI-scheme** of all APIs is **HTTPS**, and the endpoints of all APIs in the same region are identical.

Request Methods

The HTTP protocol defines the following request methods that can be used to send a request to the server:

Table 3-2 HTTP methods

| Method | Description |
|--------|--|
| GET | Requests the server to return specified resources. |
| PUT | Requests the server to update specified resources. |
| POST | Requests the server to add resources or perform special operations. |
| DELETE | Requests the server to delete specified resources, for example, an object. |

For example, in the case of the API used to obtain a user token, the request method is POST. The request is as follows:

```
POST https://{{Endpoint}}/v3/auth/tokens
```

Request Header

You can also add additional fields to a request, such as the fields required by a specified URI or an HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Table 3-3 lists common request header fields.

Table 3-3 Common request headers

| Name | Description | Mandatory | Example |
|----------------|---|---|--|
| Host | Specifies the requested server information, which can be obtained from the URL of the service API. The value is in the <i>hostname[:port]</i> format. If the port number is not specified, the default port is used. The default port number for https is 443 . | No This parameter is mandatory for AK/SK authentication. | code.test.com or code.test.com:443 |
| Content-Type | Specifies the MIME type of the request body. You are advised to use the default value application/json . For APIs used to upload objects or images, the value can vary depending on the flow type. | Yes | application/json |
| Content-Length | Specifies the length of the request body. The unit is byte. | No | 3495 |
| X-Project-Id | Specifies the project ID. Obtain the project ID by following the instructions in Obtaining a Project ID . | No | e9993fc787d94b6c886cb aa340f9c0f4 |

| Name | Description | Mandatory | Example |
|--------------|--|--|--|
| X-Auth-Token | <p>Specifies the user token.</p> <p>The user token is a response to the API used to obtain a user token. This API is the only one that does not require authentication.</p> <p>After the request is processed, the value of X-Subject-Token in the message header is the token value.</p> | <p>No</p> <p>This parameter is mandatory for token authentication.</p> | <p>The following is part of an example token:</p> <p>MIIPAgYJKoZlhvcNAQc-Co...ggg1BBIINPXsidG9rZ</p> |

The API used to obtain a user token does not require authentication. Therefore, only the **Content-Type** field needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://{{Endpoint}}/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

This part is optional. The body of a request is often sent in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. If the request body contains Chinese characters, these characters must be coded in UTF-8.

The request body varies between APIs. Certain APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

In the case of the API used to obtain a user token, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace **username**, **domainname**, ********* (login password), and **xxxxxxxxxxxxxxxxxxxx** (project name) with actual values. You can obtain the values from [Regions and Endpoints](#).

NOTE

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see Obtaining a User Token.

```
POST https://{{Endpoint}}/v3/auth/tokens
Content-Type: application/json
```

```
{
  "auth": {
    "identity": {
      "methods": [
```

```

    "password"
  ],
  "password": {
    "user": {
      "name": "username",
      "password": "*****",
      "domain": {
        "name": "domainname"
      }
    }
  }
},
"scope": {
  "project": {
    "name": "xxxxxxxxxxxxxxxxxxxxx"
  }
}
}
}

```

If all data required for the API request is available, you can send the request to call the API through [curl](#), [Postman](#), or coding. In the response to the API used to obtain a user token, **x-subject-token** is the desired user token. This token can then be used to authenticate the calling of other APIs.

3.2 Authentication

Token-based Authentication

 NOTE

The validity period of a token is 24 hours. When using a token for authentication, cache it to prevent frequently calling the IAM API used to obtain a user token.

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API.

```

{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
          "password": "*****",
          "domain": {
            "name": "domainname"
          }
        }
      }
    }
  },
  "scope": {
    "project": {
      "name": "xxxxxxx"
    }
  }
}

```

After a token is obtained, add the **X-Auth-Token** header field must be added to requests to specify the token when calling other APIs. For example, if the token is **ABCDEFJ....**, **X-Auth-Token: ABCDEFJ....** can be added to a request as follows:

```
POST https://{{Endpoint}}/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

4 Obtaining an API Version

4.1 Querying API Versions

Function

This API is used to query the supported RDS API versions.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET https://{Endpoint}/rds/
- Parameter description
None

Request

None

Response

- Normal response

Table 4-1 Parameter description

| Name | Type | Description |
|----------|------------------|---|
| versions | Array of objects | Indicates the list of detailed API version information. For details, see Table 4-2 . |

Table 4-2 versions field data structure description

| Name | Type | Description |
|---------|------------------|--|
| id | String | Indicates the API version. <ul style="list-style-type: none"> v3: indicates the API v3 version. |
| links | Array of objects | Indicates the API link information. The value is empty when the version is v3. For details, see Table 4-3 . |
| status | String | Indicates the version status. |
| updated | String | Indicates the version update time. The format is yyyy-mm-dd Thh:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the Coordinated Universal Time (UTC). |

Table 4-3 links field data structure description

| Name | Type | Description |
|------|--------|---|
| href | String | Indicates the API URL and the value is "". |
| rel | String | Its value is self , indicating that href is a local link. |

- Example normal response

```
{
  "versions": [{
    "id": "v3",
    "links": [],
    "status": "CURRENT",
    "updated": "2017-02-07T17:34:02Z"
  }]
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

4.2 Querying a Specified API Version

Function

This API is used to query the specified API version.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/rds/{version}`
- Parameter description

Table 4-4 Parameter description

| Name | Mandatory | Description |
|---------|-----------|--|
| version | Yes | Specifies the API version. It is case-sensitive. For details, see id in Table 4-2 in section Querying API Versions . |

Request

None

Response

- Normal response

Table 4-5 Parameter description

| Name | Type | Description |
|----------|--------|---|
| versions | Object | Indicates the list of detailed API version information. For details, see Table 4-6 . |
| version | Object | Indicates the list of detailed API version information. For details, see Table 4-6 . |

Table 4-6 versions field data structure description

| Name | Type | Description |
|---------|--------|---|
| id | String | Indicates the API version. |
| links | Array | Indicates the API version link information. Its value is empty. For details, see Table 4-7 . |
| status | String | Indicates the version status. |
| updated | String | Indicates the version update time. The format is yyyy-mm-dd Thh:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the UTC. |

Table 4-7 links field data structure description

| Name | Type | Description |
|------|--------|--|
| href | String | Indicates the API URL and the value is "". |

| Name | Type | Description |
|------|--------|---|
| rel | String | Its value is self , indicating that href is a local link. |

- Example normal response

```
{
  "version": {
    "id": "v3",
    "links": [],
    "status": "CURRENT",
    "updated": "2017-02-07T17:34:02Z"
  },
  "versions": {
    "id": "v3",
    "links": [],
    "status": "CURRENT",
    "updated": "2017-02-07T17:34:02Z"
  }
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5 API v3 (Recommended)

5.1 Querying Version Information About a DB Engine

Function

This API is used to query the database version information of a specified DB engine.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/datastores/{database_name}`
- Parameter description

Table 5-1 Parameter description

| Name | Mandatory | Description |
|---------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| database_name | Yes | Specifies the DB engine. Its value can be any of the following and is case-insensitive: <ul style="list-style-type: none"> • MySQL • PostgreSQL • SQLServer |

Request

None

Response

- Normal response

Table 5-2 Parameter description

| Name | Type | Description |
|------------|------------------|--|
| dataStores | Array of objects | Indicates the list of database versions. For details, see Table 5-3 . |

Table 5-3 dataStores field data structure description

| Name | Type | Description |
|------|--------|---|
| id | String | Indicates the database version ID. Its value is unique. |
| name | String | Indicates the database version number. Only the major version number (two digits) is returned. For example, if the version number is MySQL 5.6.X, only 5.6 is returned. |

- Example normal response

```
{
  "dataStores": [{
    "id": "87620726-6802-46c0-9028-a8785e1f1922",
    "name": "5.7"
  }, {
    "id": "e8a8b8cc-63f8-4fb5-8d4a-24c502317a62",
    "name": "5.6"
  }
]}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.2 Querying Database Specifications

Function

This API is used to query the database specifications of a specified DB engine version.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/flavors/{database_name}?version_name={version_name}`
- Parameter description

Table 5-4 Parameter description

| Name | Mandatory | Description |
|---------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| database_name | Yes | Specifies the DB engine name. Its value can be any of the following and is case-insensitive: <ul style="list-style-type: none"> • MySQL • PostgreSQL • SQLServer |
| version_name | No | Specifies the database version. For details about how to obtain the database version, see section Querying Version Information About a DB Engine . |
| spec_code | No | Specifies the specification code. |

Request

None

Response

- Normal response

Table 5-5 Parameter description

| Name | Type | Description |
|---------|------------------|--|
| flavors | Array of objects | Indicates the DB instance specifications information list. For details, see Table 5-6 . |

Table 5-6 flavors field data structure description

| Name | Type | Description |
|---------------|---------------------|---|
| vcpus | String | Indicates the CPU size. For example, the value 1 indicates 1 vCPU. |
| ram | Integer | Indicates the memory size in GB. |
| spec_code | String | Indicates the resource specification code. Use rds.mysql.m1.xlarge.rr as an example. <ul style="list-style-type: none"> • rds: indicates the RDS product. • mysql: indicates the DB engine. • m1.xlarge: indicates the high memory performance specifications. • rr: indicates the read replica (.ha indicates primary/standby DB instances). |
| instance_mode | String | Indicates the DB instance type. Its value can be any of the following: <ul style="list-style-type: none"> • ha: indicates primary/standby DB instances. • replica: indicates read replicas. • single: indicates single DB instances. |
| az_status | Map<String, String> | Indicates the status of the AZ to which the DB instance specifications belong. Its value can be any of the following: <ul style="list-style-type: none"> • normal: indicates that the AZ is on sale. • unsupported: indicates that the DB instance specifications are not supported by the AZ. • sellout: indicates that the DB instance specifications are sold out. |

- Example normal response

```
{
  "flavors": [{
    "vcpus": "1",
    "ram": 2,
    "id": "2988b9cc-2aac-3a94-898c-14666702f129",
    "spec_code": "rds.mysql.c2.medium.ha",
```



```

        "version_name": "{5.6,5.7,8.0}",
        "instance_mode": "ha",
        "az_status": {
            "az1": "normal",
            "az2": "normal"
        }
    },
    {
        "vcpus": "1",
        "ram": 2,
        "id": "2988b9cc-2aac-3a94-898c-14666702f130",
        "spec_code": "rds.mysql.c2.medium.rr",
        "version_name": "{5.6,5.7,8.0}",
        "instance_mode": "replica",
        "az_status": {
            "az1": "normal",
            "az2": "normal"
        }
    }
]
}

```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.3 Querying the Storage Type of a Database

Function

This API is used to query the storage type of a specified DB engine version.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET https://{Endpoint}/v3/{project_id}/storage-type/{database_name}?version_name={version_name}&ha_mode={ha_mode}
- Example
- Parameter description

Table 5-7 Parameter description

| Name | Mandatory | Description |
|---------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| database_name | Yes | Specifies the DB engine name. Its value can be any of the following and is case-insensitive: <ul style="list-style-type: none"> MySQL PostgreSQL SQLServer |
| version_name | Yes | Specifies the database version. For details about how to obtain the database version, see section Querying Version Information About a DB Engine . |
| ha_mode | No | Specifies the HA mode. The value options are as follows: <ul style="list-style-type: none"> single ha replica |

Request

None

Response

- Normal response

Table 5-8 Parameter description

| Name | Type | Description |
|--------------|------------------|--|
| storage_type | Array of objects | Indicates the DB instance specifications information list. For details, see Table 5-9 . |

Table 5-9 storage_type field data structure description

| Name | Type | Description |
|-----------|---------------------|---|
| name | String | Indicates the storage type. Its value can be any of the following: <ul style="list-style-type: none"> ● ULTRAHIGH: indicates the SSD type. |
| az_status | Map<String, String> | Indicates the status of the AZ to which the DB instance specifications belong. Its value can be any of the following: <ul style="list-style-type: none"> ● normal: indicates that the AZ is on sale. ● unsupported: indicates that the DB instance specifications are not supported by the AZ. ● sellout: indicates that the DB instance specifications are sold out. |

- Example normal response

```
{
  "storage_type": [{
    "name": "COMMON",
    "az_status": {
      "az1": "normal",
      "az2": "normal"
    }
  },
  {
    "name": "ULTRAHIGH",
    "az_status": {
      "az1": "normal",
      "az2": "normal"
    }
  }
]
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4 DB Instance Management

5.4.1 Creating a DB Instance

Function

This API is used to create a single RDS DB instance, primary/standby DB instances, or a read replica.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances`
- Parameter description

Table 5-10 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

Table 5-11 Parameter description (creating single, primary/standby, and distributed DB instances)

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| name | Yes | String | Specifies the DB instance name. DB instances of the same type can have same names under the same tenant. The value must be 4 to 64 characters in length and start with a letter. It is case-sensitive and can contain only letters, digits, hyphens (-), and underscores (_). |

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|--|
| datastore | Yes | Object | Specifies the database information. For details, see Table 5-13 . |
| ha | No | Object | Specifies the HA configuration parameters, which are used when creating primary/standby DB instances. For details, see Table 5-14 . |
| configuration_id | No | String | Specifies the parameter template ID. For details, see id in Table 5-79 in section Obtaining a Parameter Template List . |

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| port | No | String | <p>Specifies the database port information.</p> <ul style="list-style-type: none"> • The MySQL database port ranges from 1024 to 65535 (excluding 12017 and 33071, which are occupied by the RDS system and cannot be used). • The PostgreSQL database port ranges from 2100 to 9500. • The Microsoft SQL Server database port is 1433 or ranges from 2100 to 9500 (excluding 5355 and 5985). <p>If this parameter is not set, the default value is as follows:</p> <ul style="list-style-type: none"> • For MySQL, the default value is 3306. • For PostgreSQL, the default value is 5432. • For Microsoft SQL Server, the default value is 1433. |

| Name | Mandatory | Type | Description |
|-----------------|-----------|--------|---|
| password | No | String | <p>Specifies the database password.</p> <p>Valid value:</p> <ul style="list-style-type: none"> The password must consist of 8 to 32 characters and contain at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?). <p>You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking.</p> |
| backup_strategy | No | Object | <p>Specifies the advanced backup policy.</p> <p>For details, see Table 5-15.</p> |
| flavor_ref | Yes | String | <p>Specifies the specification code. The value cannot be empty.</p> <p>For details, see spec_code in Table 5-6 in section Querying Database Specifications.</p> |
| volume | Yes | Object | <p>Specifies the volume information.</p> <p>For details, see Table 5-16.</p> |
| region | Yes | String | Specifies the region ID. |

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|--|
| availability_zone | Yes | String | Specifies the AZ ID. If the DB instance is not a single instance, you need to specify an AZ for each node of the instance and separate the AZs with commas (,). For details, see the example. |
| vpc_id | Yes | String | Specifies the VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details. |
| subnet_id | Yes | String | Specifies the network ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|--|
| data_vip | No | String | <p>Specifies the floating IP address of a DB instance. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the subnet CIDR block on the displayed page. Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |
| security_group_id | Yes | String | <p>Specifies the security group which the RDS DB instance belongs to. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console. Choose Access Control > Security Groups in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page. Method 2: See the "Querying Security Groups" section in the <i>Virtual Private Cloud API Reference</i>. |
| charge_info | No | Object | <p>Specifies the billing information.</p> <p>For details, see Table 5-17.</p> |

| Name | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| time_zone | No | String | <p>Specifies the UTC time zone.</p> <ul style="list-style-type: none"> If this parameter is not specified, the time zone of each engine is as follows: <ul style="list-style-type: none"> RDS for MySQL uses UTC by default. RDS for PostgreSQL uses UTC by default. RDS for SQL Server uses UTC by default. For MySQL or PostgreSQL, if this parameter is specified, the value ranges from UTC-12:00 to UTC+12:00 at the full hour. For example, the parameter can be UTC+08:00 rather than UTC+08:30. For Microsoft SQL Server, refer to Table 5-18 when specifying this parameter. The time zone is expressed as a character string. |

Table 5-12 Parameter description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| name | Yes | String | <p>Specifies the DB instance name.</p> <p>The value must be 4 to 64 characters in length and start with a letter. It is case-sensitive and can contain only letters, digits, hyphens (-), and underscores (_).</p> |

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|--|
| replica_of_id | Yes | String | Specifies the primary DB instance ID for creating a read replica. For details, see id in Table 5-49 in section Querying Details About DB Instances . |
| flavor_ref | Yes | String | Specifies the specification code. The value cannot be empty. For details, see spec_code in Table 5-6 in section Querying Database Specifications . |
| volume | Yes | Object | Specifies the volume information. For details, see Table 5-16 . |
| region | No | String | Specifies the region ID. Currently, read replicas can be created only in the same region as that of the primary DB instance. |
| availability_zone | Yes | String | Specifies the AZ ID. |
| charge_info | No | Object | Specifies the billing information. For details, see Table 5-17 . |

Table 5-13 datastore field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| type | Yes | String | Specifies the DB engine. Value: <ul style="list-style-type: none"> • MySQL • PostgreSQL • SQLServer |

| Name | Mandatory | Type | Description |
|---------|-----------|--------|---|
| version | Yes | String | <p>Specifies the database version.</p> <ul style="list-style-type: none"> • MySQL databases support 5.6, 5.7, and 8.0. Example value: 5.7 • PostgreSQL databases support PostgreSQL 1.0 (Enhanced Edition), 9.5, 9.6, 10, 11, and 12. Example value: 9.6 • Microsoft SQL Server databases only support 2017 Enterprise Edition, 2017 Standard Edition, 2017 Web Edition, 2014 Standard Edition, 2014 Enterprise Edition, 2016 Standard Edition, 2016 Enterprise Edition, 2012 Enterprise Edition, 2012 Standard Edition, 2012 Web Edition, 2008 R2 Enterprise Edition, 2008 R2 Web Edition, 2014 Web Edition, and 2016 Web Edition. Example value: 2014_SE <p>For details about supported database versions, see section Querying Version Information About a DB Engine.</p> |

Table 5-14 ha field data structure description

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|---|
| mode | Yes | String | Specifies the DB instance type. The value is Ha (primary/standby DB instances) and is case-insensitive. |
| replication_mode | Yes | String | <p>Specifies the replication mode for the standby DB instance.</p> <p>Value:</p> <ul style="list-style-type: none"> • For MySQL, the value is async or semisync. • For PostgreSQL, the value is async or sync. • For Microsoft SQL Server, the value is sync. <p>NOTE</p> <ul style="list-style-type: none"> • async indicates the asynchronous replication mode. • semisync indicates the semi-synchronous replication mode. • sync indicates the synchronous replication mode. |

Table 5-15 backup_strategy field data structure description

| Name | Mandatory | Type | Description |
|------------|-----------|---------|---|
| start_time | Yes | String | <p>Specifies the backup time window. Automated backups will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> • 08:15-09:15 • 23:00-00:00 |
| keep_days | No | Integer | <p>Specifies the retention days for specific backup files.</p> <p>The value range is from 0 to 732. If this parameter is not specified or set to 0, the automated backup policy is disabled. To extend the retention period, contact customer service. Automated backups can be retained for up to 2562 days.</p> <p>NOTICE Primary/standby DB instances of Microsoft SQL Server do not support disabling the automated backup policy.</p> |

Table 5-16 volume field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|---------|---|
| type | Yes | String | Specifies the volume type. Its value can be any of the following and is case-sensitive: <ul style="list-style-type: none"> • ULTRAHIGH: indicates the SSD type. |
| size | Yes | Integer | Specifies the volume size. Its value must be a multiple of 10 and the value range is from 40 GB to 4000 GB. <p>NOTE For read replicas, this parameter is invalid. The volume size is the same as that of the primary DB instance by default.</p> |

Table 5-17 charge_info field data structure description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|-----------------------------|
| charge_mode | Yes | String | Specifies the billing mode. |

Table 5-18 Mapping between time zones and UTC offsets

| Time Zone | Standard Time Offset | Remarks |
|------------------------------|----------------------|-----------------------------|
| Afghanistan Standard Time | UTC+04:30 | Kabul |
| Alaskan Standard Time | UTC-09:00 | Alaska |
| Arabian Standard Time | UTC+04:00 | Abu Dhabi, Muscat |
| Atlantic Standard Time | UTC-04:00 | Atlantic Time (Canada) |
| AUS Central Standard Time | UTC+09:30 | Darwin |
| AUS Eastern Standard Time | UTC+10:00 | Canberra, Melbourne, Sydney |
| Belarus Standard Time | UTC+03:00 | Minsk |
| Canada Central Standard Time | UTC-06:00 | Saskatchewan |

| Time Zone | Standard Time Offset | Remarks |
|---------------------------------|----------------------|---|
| Cape Verde Standard Time | UTC-01:00 | Cape Verde Is. |
| Cen. Australia Standard Time | UTC+09:30 | Adelaide |
| Central America Standard Time | UTC-06:00 | Central America |
| Central Asia Standard Time | UTC+06:00 | Astana |
| Central Brazilian Standard Time | UTC-04:00 | Cuiaba |
| Central European Standard Time | UTC+01:00 | Belgrade, Bratislava, Budapest, Ljubljana, Prague |
| Central European Standard Time | UTC+01:00 | Sarajevo, Skopje, Warsaw, Zagreb |
| Central Pacific Standard Time | UTC+11:00 | Solomon Islands, New Caledonia |
| Central Standard Time | UTC-06:00 | Central Time (US and Canada) |
| China Standard Time | UTC+08:00 | Beijing, Chongqing, Hong Kong, and Urumqi |
| E. Africa Standard Time | UTC+03:00 | Nairobi |
| E. Australia Standard Time | UTC+10:00 | Brisbane |
| E. Europe Standard Time | UTC+02:00 | Chisinau |
| E. South America Standard Time | UTC-03:00 | Brasilia |
| Eastern Standard Time | UTC-05:00 | Eastern Time (US and Canada) |
| Georgian Standard Time | UTC+04:00 | Tbilisi |
| GMT Standard Time | UTC | Dublin, Edinburgh, Lisbon, London |
| Greenland Standard Time | UTC-03:00 | Greenland |
| Greenwich Standard Time | UTC | Monrovia, Reykjavik |
| GTB Standard Time | UTC+02:00 | Athens, Bucharest |

| Time Zone | Standard Time Offset | Remarks |
|----------------------------|----------------------|-------------------------------------|
| Hawaiian Standard Time | UTC-10:00 | Hawaii |
| India Standard Time | UTC+05:30 | Chennai, Kolkata, Mumbai, New Delhi |
| Jordan Standard Time | UTC+02:00 | Amman |
| Korea Standard Time | UTC+09:00 | Seoul |
| Middle East Standard Time | UTC+02:00 | Beirut |
| Mountain Standard Time | UTC-07:00 | Mountain Time (US and Canada) |
| US Mountain Standard Time | UTC-07:00 | Arizona |
| New Zealand Standard Time | UTC+12:00 | Auckland, Wellington |
| Newfoundland Standard Time | UTC-03:30 | Newfoundland |
| Pacific SA Standard Time | UTC-03:00 | Santiago |
| Pacific Standard Time | UTC-08:00 | Pacific Time (US and Canada) |
| Russian Standard Time | UTC+03:00 | Moscow, St. Petersburg, Volgograd |
| SA Pacific Standard Time | UTC-05:00 | Bogota, Lima, Quito, Rio Branco |
| SE Asia Standard Time | UTC+07:00 | Bangkok, Hanoi, Jakarta |
| China Standard Time | UTC+08:00 | Kuala Lumpur, Singapore |
| Tokyo Standard Time | UTC+09:00 | Osaka, Sapporo, Tokyo |
| US Eastern Standard Time | UTC-05:00 | Indiana (East) |
| UTC | UTC | Coordinated Universal Time |
| UTC-02 | UTC-02:00 | Coordinated Universal Time-02 |
| UTC-08 | UTC-08:00 | Coordinated Universal Time-08 |
| UTC-09 | UTC-09:00 | Coordinated Universal Time-09 |

| Time Zone | Standard Time Offset | Remarks |
|---------------------------------|----------------------|--|
| UTC-11 | UTC-11:00 | Coordinated Universal Time-11 |
| UTC+12 | UTC+12:00 | Coordinated Universal Time+12 |
| W. Australia Standard Time | UTC+08:00 | Perth |
| W. Central Africa Standard Time | UTC+01:00 | West Central Africa |
| W. Europe Standard Time | UTC+01:00 | Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna |

- Request example

Creating a single DB instance:

```
{
  "name": "rds-instance-rep2",
  "datastore": {
    "type": "MySQL",
    "version": "5.6"
  },
  "flavor_ref": "rds.mysql.s1.large",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 100
  },
  "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
  "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
  "data_vip": "192.168.0.147",
  "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
  "port": 8635,
  "backup_strategy": {
    "start_time": "08:15-09:15",
    "keep_days": 12
  },
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "password": "Test@12345678",
  "configuration_id": "452408-ef4b-44c5-94be-305145fg"
}
```

Creating primary/standby DB instances:

```
{
  "name": "rds-instance-rep2",
  "datastore": {
    "type": "MySQL",
    "version": "5.6"
  },
  "ha": {
    "mode": "ha",
```

```

    "replication_mode": "semisync"
  },
  "flavor_ref": "rds.mysql.s1.large.ha",
  "volume": {
    "type": "ULTRAHIGH",
    "size": 100
  },
  "region": "aaa",
  "availability_zone": "bbb,ccc",
  "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
  "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
  "data_vip": "192.168.0.147",
  "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
  "port": 8635,
  "backup_strategy": {
    "start_time": "08:15-09:15",
    "keep_days": 12
  },
  "charge_info": {
    "charge_mode": "postPaid"
  },
  "password": "Test@12345678",
  "configuration_id": "452408-ef4b-44c5-94be-305145fg"
}

```

Creating a read replica:

```

{
  "name": "rds-instance-rep2",
  "replica_of_id": "afdsad-fds-fdsagin01",
  "flavor_ref": "rds.mysql.s1.large.rr",
  "volume": {
    "type": "ULTRAHIGH"
  },
  "region": "aaa",
  "availability_zone": "bbb"
}

```

Response

- Normal response

Table 5-19 Parameter description

| Name | Type | Description |
|----------|--------|---|
| instance | Object | Indicates the DB instance information. For details, see Table 5-20 . |
| job_id | String | Indicates the ID of the DB instance creation task. |

Table 5-20 instance field data structure description

| Name | Type | Description |
|------------------|--------|---|
| id | String | Indicates the DB instance ID. |
| name | String | Indicates the DB instance name. Indicates the DB instance name. DB instances of the same type can have same names under the same tenant. The value must be 4 to 64 characters in length and start with a letter. It is case-insensitive and can contain only letters, digits, hyphens (-), and underscores (_). |
| status | String | Indicates the DB instance status. For example, BUILD indicates that the DB instance is being created. |
| datastore | Object | Indicates the database information. For details, see Table 5-21 . |
| ha | Object | Indicates the HA configuration parameters. This parameter is returned only when primary/standby DB instances are created. For details, see Table 5-22 . |
| configuration_id | String | Indicates the parameter template ID. This parameter is returned only when a custom parameter template is used during DB instance creation. |

| Name | Type | Description |
|-------------------|--------|--|
| port | String | Indicates the database port, which is the same as the request parameter. |
| backup_strategy | Object | Indicates the automated backup policy. For details, see Table 5-23 . |
| flavor_ref | String | Indicates the specification code. The value cannot be empty. For details, see spec_code in Table 5-6 in section Querying Database Specifications . |
| volume | Object | Indicates the volume information. For details, see Table 5-24 . |
| region | String | Indicates the region ID. |
| availability_zone | String | Indicates the AZ ID. |
| vpc_id | String | Indicates the VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details. |

| Name | Type | Description |
|-------------------|--------|--|
| subnet_id | String | <p>Indicates the network ID. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |
| security_group_id | String | <p>Indicates the security group which the RDS DB instance belongs to. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console. Choose Access Control > Security Groups in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page. Method 2: See the "Querying Security Groups" section in the <i>Virtual Private Cloud API Reference</i>. |
| charge_info | Object | <p>Indicates the billing information.</p> <p>For details, see Table 5-25.</p> |

Table 5-21 datastore field data structure description

| Name | Type | Description |
|---------|--------|--|
| type | String | Indicates the DB engine. Value: <ul style="list-style-type: none"> • MySQL • PostgreSQL • SQLServer |
| version | String | Indicates the database version. For details about supported database versions, see section Querying Version Information About a DB Engine . |

Table 5-22 ha field data structure description

| Name | Type | Description |
|------------------|--------|---|
| mode | String | Indicates the DB instance type. The value is Ha (primary/standby DB instances). |
| replication_mode | String | Indicates the replication mode for the standby DB instance. This parameter is valid when the mode is Ha . Value: <ul style="list-style-type: none"> • For MySQL, the value is async or semisync. • For PostgreSQL, the value is async or sync. • For Microsoft SQL Server, the value is sync. NOTE <ul style="list-style-type: none"> • async indicates the asynchronous replication mode. • semisync indicates the semi-synchronous replication mode. • sync indicates the synchronous replication mode. |

Table 5-23 backupStrategy field data structure description

| Name | Type | Description |
|------------|---------|---|
| start_time | String | <p>Specifies the backup time window. Automated backups will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> The HH value must be 1 greater than the hh value. The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> 08:15-09:15 23:00-00:00 <p>If backup_strategy in the request body is empty, 02:00-03:00 is returned for start_time by default.</p> |
| keep_days | Integer | <p>Indicates the retention days for specific backup files.</p> <p>The value range is from 0 to 732. If this parameter is not specified or set to 0, the automated backup policy is disabled. To extend the retention period, contact customer service. Automated backups can be retained for up to 2562 days.</p> <p>If backup_strategy in the request body is empty, 7 is returned for keep_days by default.</p> |

Table 5-24 volume field data structure description

| Name | Type | Description |
|------|--------|---|
| type | String | <p>Indicates the volume type.</p> <p>Its value can be any of the following and is case-sensitive:</p> <ul style="list-style-type: none"> ULTRAHIGH: indicates the SSD type. |

| Name | Type | Description |
|------|---------|---|
| size | Integer | Indicates the volume size. Its value range is from 40 GB to 4000 GB. The value must be a multiple of 10. |

Table 5-25 chargeInfo field data structure description

| Name | Type | Description |
|-------------|--------|------------------------------------|
| charge_mode | String | Indicates the billing information. |

- Example normal response

Creating a single MySQL DB instance:

```
{
  "instance": {
    "id": "dsfae23fsfdsae3435in01",
    "name": "trove-instance-rep2",
    "datastore": {
      "type": "MySQL",
      "version": "5.6"
    },
    "flavor_ref": "rds.mysql.s1.large",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 100
    },
    "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
    "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
    "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
    "port": "8635",
    "backup_strategy": {
      "start_time": "08:15-09:15",
      "keep_days": 3
    },
    "configuration_id": "452408-44c5-94be-305145fg",
    "charge_info": {
      "charge_mode": "postPaid"
    }
  },
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"
}
```

Creating primary/standby DB instances:

```
{
  "instance": {
    "id": "dsfae23fsfdsae3435in01",
    "name": "trove-instance-rep2",
    "datastore": {
      "type": "MySQL",
      "version": "5.6"
    },
    "ha": {
      "mode": "ha",
      "replication_mode": "semisync"
    }
  }
}
```

```

    },
    "flavor_ref": "rds.mysql.s1.large.ha",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 100
    },
    "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
    "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
    "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
    "port": "8635",
    "backup_strategy": {
      "start_time": "08:15-09:15",
      "keep_days": 3
    },
    "configuration_id": "452408-44c5-94be-305145fg",
    "charge_info": {
      "charge_mode": "postPaid"
    },
  },
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"
}

```

Creating a read replica:

```

{
  "instance":{
    "id": "dsfae23fsfdsae3435in01",
    "name": "trove-instance-rep2",
    "flavor_ref": "rds.mysql.s1.large.rr",
    "volume": {
      "type": "ULTRAHIGH",
      "size": 100
    },
    "region": "",
    "availability_zone": "",
    "vpc_id": "490a4a08-ef4b-44c5-94be-3051ef9e4fce",
    "subnet_id": "0e2eda62-1d42-4d64-a9d1-4e9aa9cd994f",
    "security_group_id": "2a1f7fc8-3307-42a7-aa6f-42c8b9b8f8c5",
    "port": "8635",
    "configuration_id": "452408-44c5-94be-305145fg"
  },
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"
}

```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.2 Changing DB Instance Specifications

Function

This API is used to change DB instance specifications.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

 **NOTE**

Services will be interrupted for 5 to 10 minutes when you change DB instance specifications. Exercise caution when performing this operation.

Constraints

- The new DB instance specifications must be different from the original DB instance specifications.
- The instance class can be modified only for DB instances whose status is **Available**.
- The specifications of a DB instance can be changed only to the specifications of the same DB instance type. (For example, the specifications of a single DB instance cannot be changed to those of primary/standby DB instances.)

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/action`
- Parameter description

Table 5-26 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-27 Parameter description

| Name | Mandatory | Type | Description |
|---------------|-----------|--------|---|
| resize_flavor | Yes | Object | For details, see Table 5-28 . |

Table 5-28 resize_flavor field data structure description

| Name | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| spec_code | Yes | String | Specifies the resource specification code. Use rds.mysql.m1.xlarge as an example. rds indicates RDS, mysql indicates the DB engine, and m1.xlarge indicates the performance specification (large-memory). The parameter containing rr indicates the read replica specifications. The parameter not containing rr indicates the single or primary/standby DB instance specifications. |

– Request example

MySQL:

```
{
  "resize_flavor": {
    "spec_code": "rds.mysql.m1.xlarge"
  }
}
```

PostgreSQL:

```
{
  "resize_flavor": {
    "spec_code": "rds.pg.c2.medium.ha"
  }
}
```

Microsoft SQL Server:

```
{
  "resize_flavor": {
    "spec_code": "rds.mssql.2014.se.s3.large.2"
  }
}
```

```
}
}
```

Response

- **Pay-per-use**
 - Normal response

Table 5-29 Parameter description

| Name | Type | Description |
|--------|--------|------------------------|
| job_id | String | Indicates the task ID. |

- Example normal response


```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

- **Yearly/Monthly**
 - Normal response

Table 5-30 Parameter description

| Name | Type | Description |
|----------|--------|-------------------------|
| order_id | String | Indicates the order ID. |

- Example normal response


```
{
  "order_id": "CS2009151216NO2U1"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.3 Scaling Up Storage Space of a DB Instance

Function

This API is used to scale up storage space of a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The sizes of the primary and standby DB instances are the same. When you scale the primary DB instance, its standby DB instance is also scaled.
- The DB instances can be scaled when they are in the **Available** state.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/action`
- Parameter description

Table 5-31 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-32 Parameter description

| Name | Mandatory | Type | Description |
|----------------|-----------|--------|---|
| enlarge_volume | Yes | Object | Specifies the target storage space after scaling up. For details, see Table 5-33 . |

Table 5-33 enlarge_volume field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|---------|---|
| size | Yes | Integer | The minimum start value of each scaling is 10 GB. A DB instance can be scaled up only by a multiple of 10 GB. Value range: 40 GB to 4000 GB |

- Request example

```
{
  "enlarge_volume": {
    "size": 400
  }
}
```

Response

- Pay-per-use**
 - Normal response

Table 5-34 Parameter description

| Name | Type | Description |
|--------|--------|------------------------|
| job_id | String | Indicates the task ID. |

- Example normal response


```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

- Yearly/Monthly**
 - Normal response

Table 5-35 Parameter description

| Name | Type | Description |
|----------|--------|-------------------------|
| order_id | String | Indicates the order ID. |

- Example normal response


```
{
  "order_id": "CS2009151216NO2U2"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.4 Changing a Single DB Instance to Primary/Standby DB Instances

Function

This API is used to change a single DB instance to primary/standby DB instances.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Single DB instances with certain specifications cannot be changed to primary/standby DB instances.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/action`
- Parameter description

Table 5-36 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-37 Parameter description

| Name | Mandatory | Type | Description |
|--------------|-----------|--------|---|
| single_to_ha | Yes | Object | For details, see Table 5-38 . |

Table 5-38 single_to_ha field data structure description

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|--|
| az_code_new_node | Yes | String | Specifies the AZ code of the DB instance node. |
| password | No | String | This parameter is mandatory only when a Microsoft SQL Server DB instance type is changed from single to primary/standby. |

- Request example

```
{
  "single_to_ha": {
    "az_code_new_node": "az2xahz",
    "password": "Test@1234567"
  }
}
```

Response

- Normal response

Table 5-39 Parameter description

| Name | Type | Description |
|--------|--------|------------------------|
| job_id | String | Indicates the task ID. |

- Example normal response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.5 Rebooting a DB Instance

Function

This API is used to reboot a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

NOTICE

The RDS DB instance will be unavailable during the reboot process. Exercise caution when performing this operation.

Constraints

The DB instance cannot reboot when it is being created, scaled, backed up, restored, or its instance class or port is being changed.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/action`
- Parameter description

Table 5-40 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-41 Parameter description

| Name | Mandatory | Type | Description |
|---------|-----------|------|-------------------------------|
| restart | Yes | None | This parameter is left blank. |

- Request example

```
{
  "restart": {}
}
```

Response

- Normal response

Table 5-42 Parameter description

| Name | Type | Description |
|--------|--------|------------------------|
| job_id | String | Indicates the task ID. |

- Example normal response

```
{
  "job_id": "2b414788a6004883a02390e2eb0ea227"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.6 Querying the Available SQL Server Character Set

Function

This API is used to query the SQL Server character set list.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET https://{Endpoint}/v3/{project_id}/collations
- Parameter description

Table 5-43 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

None

Response

- Normal response

Table 5-44 Parameter description

| Name | Type | Description |
|----------|--------------|---|
| charSets | List<String> | Indicates the character set information list. |

- Example normal response


```
{
  "charSets": ["Chinese_PRC_CI_AS", "SQL_Latin1_General_CP1_CI_AS", "French_BIN",
"Chinese_PRC_Stroke_BIN", "Chinese_PRC_CI_AI"]
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.7 Deleting a DB Instance

Function

This API is used to delete a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}`
- Parameter description

Table 5-45 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID compliant with the UUID format. |

Request

None

Response

- Normal response

Table 5-46 Parameter description

| Name | Type | Description |
|--------|--------|---|
| job_id | String | Indicates the ID of the instance deletion task. |

- Example normal response

```
{
  "job_id": "dff1d289-4d03-4942-8b9f-463ea07c000d"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.8 Querying Details About DB Instances

Function

This API is used to query DB instances according to search criteria.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format

GET `https://{Endpoint}/v3/{project_id}/instances?`

`id={id}&name={name}&type={type}&datastore_type={datastore_type}&vpc_id={vpc_id}&subnet_id={subnet_id}&offset={offset}&limit={limit}&tags={key}={value}`

- Parameter description

Table 5-47 Parameter description

| Name | Type | Mandatory | Description |
|------------|--------|-----------|---|
| project_id | String | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| id | String | No | Specifies the DB instance ID. The asterisk (*) is reserved for the system. If the instance ID starts with *, it indicates that fuzzy match is performed based on the value following * Otherwise, the exact match is performed based on the instance ID. The value cannot contain only asterisks (*). |
| name | String | No | Specifies the DB instance name. The asterisk (*) is reserved for the system. If the instance name starts with *, it indicates that fuzzy match is performed based on the value following * Otherwise, the exact match is performed based on the instance name. The value cannot contain only asterisks (*). |

| Name | Type | Mandatory | Description |
|----------------|---------|-----------|---|
| type | String | No | Specifies the instance type-based query. The value is Single , Ha , Replica , or Enterprise , which corresponds to single instance, primary/standby instance, read replica, and distributed instance (enterprise) respectively. |
| datastore_type | String | No | Specifies the database type. Its value can be any of the following and is case-sensitive: <ul style="list-style-type: none"> MySQL PostgreSQL SQLServer |
| vpc_id | String | No | Specifies the VPC ID. <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details. |
| subnet_id | String | No | Specifies the network ID of the subnet. <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |
| offset | Integer | No | Specifies the index position. If offset is set to N , the resource query starts from the $N+1$ piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value must be a positive number. |
| limit | Integer | No | Specifies the number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . |

Request

None

Response

- Normal response

Table 5-48 Parameter description

| Name | Type | Description |
|-------------|------------------|---|
| instances | Array of objects | Indicates the DB instance information. For details, see Table 5-49 . |
| total_count | Integer | Indicates the total number of records. |

Table 5-49 instances field data structure description

| Name | Type | Description |
|------|--------|---|
| id | String | Indicates the DB instance ID. |
| name | String | Indicates the created DB instance name. |

| Name | Type | Description |
|-------------------|--------------|--|
| status | String | <p>Indicates the DB instance status.</p> <p>Value:</p> <p>If the value is BUILD, the DB instance is being created.</p> <p>If the value is ACTIVE, the DB instance is normal.</p> <p>If the value is FAILED, the DB instance is abnormal.</p> <p>If the value is MODIFYING, the DB instance is being scaled up.</p> <p>If the value is REBOOTING, the DB instance is being rebooted.</p> <p>If the value is RESTORING, the DB instance is being restored.</p> <p>If the value is MODIFYING INSTANCE TYPE, the DB instance is changing from primary to standby.</p> <p>If the value is SWITCHOVER, the primary/standby switchover is being performed.</p> <p>If the value is MIGRATING, the DB instance is being migrated.</p> <p>If the value is BACKING UP, the DB instance is being backed up.</p> <p>If the value is MODIFYING DATABASE PORT, the database port is being changed.</p> |
| private_ips | List<String> | <p>Indicates the private IP address list. It is a blank string until an ECS is created.</p> |
| private_dns_names | List<String> | <p>Indicates the private domain name list of the DB instance. After a DB instance is created, you need to manually apply for a private domain name.</p> |
| public_ips | List<String> | <p>Indicates the public IP address list.</p> |

| Name | Type | Description |
|-----------|---------|--|
| port | Integer | <p>Indicates the database port number.</p> <ul style="list-style-type: none"> • The MySQL database port ranges from 1024 to 65535 (excluding 12017 and 33071, which are occupied by the RDS system and cannot be used). • The PostgreSQL database port ranges from 2100 to 9500. • The Microsoft SQL Server database port is 1433 or ranges from 2100 to 9500 (excluding 5355 and 5985). <p>If this parameter is not set, the default value is as follows:</p> <ul style="list-style-type: none"> • For MySQL, the default value is 3306. • For PostgreSQL, the default value is 5432. • For Microsoft SQL Server, the default value is 1433. |
| type | String | <p>The value is Single, Ha, Replica, or Enterprise, which corresponds to single instance, primary/standby instance, read replica, and distributed instance (enterprise), respectively.</p> |
| ha | Object | <p>Indicates the primary/standby DB instance information. Returned only when you obtain a primary/standby DB instance list.</p> <p>For details, see Table 5-50.</p> |
| region | String | <p>Indicates the region where the DB instance is deployed.</p> |
| datastore | Object | <p>Indicates the database information.</p> <p>For details, see Table 5-51.</p> |

| Name | Type | Description |
|--------------------|------------------|--|
| created | String | Indicates the creation time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, if the time zone offset is one hour, the value of Z is +0100 . The value is empty when the DB instance is being created. After the DB instance is created, the value is not empty. |
| updated | String | Indicates the update time. The format is the same as that of the created field. The value is empty when the DB instance is being created. After the DB instance is created, the value is not empty. |
| db_user_name | String | Indicates the default username. |
| vpc_id | String | Indicates the VPC ID. |
| subnet_id | String | Indicates the network ID of the subnet. |
| security_group_id | String | Indicates the security group ID. |
| flavor_ref | String | Indicates the specification code. |
| volume | Object | Indicates the volume information. For details, see Table 5-52 . |
| switch_strategy | String | Indicates the database switchover policy. The value can be reliability or availability , indicating the reliability first and availability first, respectively. |
| backup_strategy | Object | Indicates the backup policy. For details, see Table 5-53 . |
| maintenance_window | String | Indicates the start time of the maintenance time window in the UTC format. |
| nodes | Array of objects | Indicates the primary/standby DB instance information. For details, see Table 5-54 . |

| Name | Type | Description |
|------------------|------------------|---|
| related_instance | Array of objects | Indicates the list of associated DB instances. For details, see Table 5-55 . |
| time_zone | String | Indicates the time zone. |

Table 5-50 ha field data structure description

| Name | Type | Description |
|------------------|--------|---|
| replication_mode | String | Indicates the replication mode for the standby DB instance. The value cannot be empty. <ul style="list-style-type: none"> For MySQL, the value is async or semisync. For PostgreSQL, the value is async or sync. For Microsoft SQL Server, the value is sync. NOTE <ul style="list-style-type: none"> async indicates the asynchronous replication mode. semisync indicates the semi-synchronous replication mode. sync indicates the synchronous replication mode. |

Table 5-51 datastore field data structure description

| Name | Type | Description |
|---------|--------|---------------------------------|
| type | String | Indicates the DB engine. |
| version | String | Indicates the database version. |

Table 5-52 volume field data structure description

| Name | Type | Description |
|------|---------|----------------------------|
| type | String | Indicates the volume type. |
| size | Integer | Indicates the volume size. |

Table 5-53 backup_strategy field data structure description

| Name | Type | Description |
|------------|---------|--|
| start_time | String | Indicates the backup time window. Automated backups will be triggered during the backup time window. The time is in the UTC format. |
| keep_days | Integer | Indicates the number of days to retain the generated backup files. The value ranges from 0 to 732. If the value is 0 , the automated backup policy is not configured or has been disabled. To extend the retention period, contact customer service. Automated backups can be retained for up to 2562 days. |

Table 5-54 nodes field data structure description

| Name | Type | Description |
|-------------------|--------|--|
| id | String | Indicates the node ID. |
| name | String | Indicates the node name. |
| role | String | Indicates the node type. The value can be master , slave , or readreplica , indicating the primary node, standby node, and read replica node, respectively. |
| status | String | Indicates the node status. |
| availability_zone | String | Indicates the AZ. |

Table 5-55 related_instance field data structure description

| Name | Type | Description |
|------|--------|--|
| id | String | Indicates the associated DB instance ID. |
| type | String | Indicates the associated DB instance type. <ul style="list-style-type: none"> • replica_of: indicates the primary DB instance. • replica: indicates read replicas. |

- Example normal response
Query DB instances based on search criteria.

- Query all DB instances.
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.9 Binding and Unbinding an EIP

Function

This API is used to bind an EIP to a DB instance for public access or unbind an EIP from the DB instance as required.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

An EIP cannot be bound to or unbound from a DB instance that is being created, modified, restored, or rebooted.

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/public-ip`
- Parameter description

Table 5-56 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-57 Parameter description

| Name | Mandatory | Type | Description |
|--------------|-----------|---------|--|
| public_ip | No | String | <p>NOTICE When is_bind is true, public_ip is mandatory.</p> <p>Specifies the EIP to be bound. The value must be in the standard IP address format.</p> |
| public_ip_id | No | String | <p>NOTICE When is_bind is true, public_ip_id is mandatory.</p> <p>Specifies the EIP ID. The value must be in the standard UUID format.</p> |
| is_bind | Yes | Boolean | <ul style="list-style-type: none"> • true: Bind an EIP. • false: Unbind an EIP. |

- Request example

```
{
  "public_ip": "10.145.51.214",
  "public_ip_id": "8403e9cd-a7fa-4288-8b15-c7ceac1etest",
  "is_bind": true
}
```

Response

- Normal response
None
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.10 Resetting a Database Password

Function

This API is used to reset the password if you forget the password of your database account when using RDS. If an error occurs on the root account, for example, the root account is lost or deleted, you can restore the root account rights through resetting the password.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

The password cannot be reset if the DB instance is in any of the following statuses: creating, rebooting, upgrading, changing instance class, creating users, or deleting users.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/password`
- Parameter description

Table 5-58 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-59 Parameter description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| db_user_pwd | Yes | String | <p>Specifies the database password.</p> <p>Valid value:</p> <p>The value cannot be left blank. It consists of 8 to 32 characters and contains at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters.</p> <ul style="list-style-type: none"> For MySQL DB instances, the special characters can be any of the following: ~!@#%^*-_ = +?, <p>You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking.</p> |

- Request example

```
{
  "db_user_pwd": "Test_2345674"
}
```

Response

- Normal response
None
- Example normal response

```
{}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.11 Changing the Failover Priority

Function

This API is used to change the failover priority for primary/standby DB instances to meet different service requirements. You can select **Reliability First** or **Availability First**.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API is supported for MySQL only.
- This API is supported for primary/standby DB instances only.
- The password cannot be reset if the DB instance is in any of the following statuses: creating, upgrading, creating users, or deleting users.

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/failover/strategy`
- Parameter description

Table 5-60 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-61 Parameter description

| Name | Mandatory | Type | Description |
|----------------|-----------|--------|--|
| repairStrategy | Yes | String | <p>Specifies the failover priority. Valid value:</p> <ul style="list-style-type: none"> • reliability: Data reliability is preferentially ensured during the failover to minimize the amount of lost data. It is recommended for services that require high data consistency. • availability: Data availability is preferentially ensured during the failover to recover services quickly. It is recommended for services that have high requirements on the database online duration. |

- Request example

```
{
  "repairStrategy": "availability"
}
```

Response

- Normal response
None
- Example normal response
{}

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.12 Manually Switching Primary/Standby DB Instances

Function

This API is used to manually switch primary/standby DB instances as required.

- Before calling an API, you need to understand the API in [Authentication](#).

- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API is supported for MySQL and PostgreSQL.
- This API is supported for primary/standby DB instances only.
- Primary/standby DB instances cannot be manually switched if they are in any of the following statuses:
 - MySQL and PostgreSQL: creating, rebooting, upgrading, changing instance class, restoring, changing port, or creating database account
 - MySQL: deleting database account

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/failover`
- Parameter description

Table 5-62 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description
None
- Request example

```
{
```

Response

- Normal response

| Name | Description |
|------------|-------------------------------|
| workflowId | Indicates the task ID. |
| instanceId | Indicates the DB instance ID. |
| nodeId | Indicates the node ID. |

- Example normal response

```
{
  "workflowId": "072beb09-0573-40bf-bfe8-4be5cec9e85a",
```

```
"instanceId":"794c38e5309344818f4b33b86ebce9b4in03",
"nodeId":"b94ba815747040f1b0d641cd13364a06no03"
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.13 Changing the Data Synchronize Model of Primary/Standby DB Instances

Function

This API is used to change the data synchronize model of primary/standby DB instances based on service requirements.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API is supported for MySQL only.
- This API is supported for primary/standby DB instances only.
- The synchronize model cannot be changed if the DB instance is in any of the following statuses: creating, upgrading, changing instance class, creating users, or deleting users.

URI

- URI format
PUT https://{Endpoint}/v3/{project_id}/instances/{instance_id}/failover/mode
- Parameter description

Table 5-63 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-64 Parameter description

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| mode | Yes | String | Specifies the synchronize model. For MySQL, the value can be any of the following: <ul style="list-style-type: none"> async: asynchronous semisync: semi-synchronous |

- Request example

```
{
  "mode": "semisync"
}
```

Response

- Normal response

| Name | Description |
|-----------------|---------------------------------|
| workflowId | Indicates the task ID. |
| instanceId | Indicates the DB instance ID. |
| replicationMode | Indicates the replication mode. |

- Example normal response

```
{
  "instanceId": "c8a7d0abe94840dda99bc437e9442982in01",
  "replicationMode": "semisync",
  "workflowId": "7b55d6ca-dc8e-4844-a9da-6c53a1506db3"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.14 Migrating a Standby DB Instance

Function

This API is used to migrate a standby DB instance based on service requirements.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API is supported for MySQL only.
- This API is supported for primary/standby DB instances only.
- The standby DB instance cannot be migrated if the primary DB instance is in any of the following statuses: creating, rebooting, upgrading, changing instance class, changing port, creating users, or deleting users.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/migrateslave`
- Parameter description

Table 5-65 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-66 Parameter description

| Name | Mandatory | Type | Description |
|--------|-----------|--------|--|
| nodeId | Yes | String | Specifies the ID of the standby node. |
| azCode | Yes | String | Specifies the code of the AZ to which the standby DB instance is to be migrated. |

- Request example

```
{
  "nodeId": "0119b1068b874cb4a5202989a06b6094no01",
  "azCode": "az2xahz"
}
```

Response

- Normal response

| Name | Description |
|------------|------------------------|
| workflowId | Indicates the task ID. |

- Example normal response

```
{
  "workflowId": "7b55d6ca-dc8e-4844-a9da-6c53a1506db3"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.4.15 Configuring the Maintenance Window

Function

This API is used to change the maintenance window as required. To prevent service interruption, the maintenance window should fall within the off-peak hours.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/ops-window`
- Parameter description

Table 5-67 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-68 Parameter description

| Name | Mandatory | Type | Description |
|------------|-----------|--------|---|
| start_time | Yes | String | Specifies the start time (UTC). |
| end_time | Yes | String | Specifies the end time (UTC). NOTE The gap between the start time and end time must be four hours. |

- Request example

```
{
  "start_time": "22:00",
  "end_time": "02:00"
}
```

Response

- Example normal response

```
{}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

5.5 Database Security

5.5.1 Configuring SSL

Function

This API is used to configure SSL to encrypt connections.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

SSL cannot be configured when a DB instance is being created, rebooted, or upgraded, its specifications are being modified, or database users are being created or deleted.

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/ssl`
- Parameter description

Table 5-69 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-70 Parameter description

| Name | Mandatory | Type | Description |
|------------|-----------|---------|---|
| ssl_option | Yes | boolean | Specifies whether to enable SSL. <ul style="list-style-type: none"> true: SSL is enabled. false: SSL is disabled. |

- Request example

```
{
  "ssl_option": true
}
```

Response

- Example normal response

```
{}
```
- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.5.2 Changing a Database Port

Function

This API is used to change a database port.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

The database port cannot be changed when a DB instance is being created or rebooted, its specifications are being modified, database users are being created or deleted, or backups are being created for the DB instance.

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/port`
- Parameter description

Table 5-71 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-72 Parameter description

| Name | Mandatory | Type | Description |
|------|-----------|---------|--|
| port | Yes | Integer | Specifies the port number. The MySQL port number ranges from 1024 to 65535, excluding 12017 and 33071. |

- Request example

```
{
  "port": 8836
}
```

Response

- Normal response

| Name | Description |
|------------|------------------------|
| workflowId | Indicates the task ID. |

- Example normal response

```
{
  "workflowId":"83abc7bc-2c70-4534-8565-351187b37715"
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

5.5.3 Changing a Security Group

Function

This API is used to change the security group of a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

The synchronize model cannot be changed if the DB instance is in any of the following statuses: creating, upgrading, changing instance class, creating users, or deleting users.

URI

- URI format
PUT https://{Endpoint}/v3/{project_id}/instances/{instance_id}/security-group
- Parameter description

Table 5-73 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-74 Parameter description

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|----------------------------------|
| security_group_id | Yes | String | Specifies the security group ID. |

- Request example

```
{
  "security_group_id": "23423klj432lk0sdf0234eaa"
}
```

Response

- Normal response

| Name | Description |
|------------|------------------------|
| workflowId | Indicates the task ID. |

- Example normal response

```
{
  "workflowId": "83abc7bc-2c70-4534-8565-351187b37715"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

5.5.4 Changing a Private IP Address

Function

This API is used to change the private IP address of a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

The private IP address of a DB instance cannot be changed when the instance is being created, rebooted, or upgraded, its specifications are being modified, or database users are being created or deleted.

URI

- URI format
PUT https://{Endpoint}/v3/{project_id}/instances/{instance_id}/ip
- Parameter description

Table 5-75 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-76 Parameter description

| Name | Mandatory | Type | Description |
|--------|-----------|--------|-----------------------------------|
| new_ip | Yes | String | Indicates the private IP address. |

- Request example

```
{
  "new_ip": "192.168.0.213"
}
```

Response

- Normal response

| Name | Description |
|------------|------------------------|
| workflowId | Indicates the task ID. |

- Example normal response

```
{
  "workflowId": "83abc7bc-2c70-4534-8565-351187b37715"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

5.6 Parameter Configuration

5.6.1 Obtaining a Parameter Template List

Function

This API is used to obtain the parameter template list, including default parameter templates of all databases and those created by users.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/configurations`

- Parameter description

Table 5-77 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

None

Response

- Normal response

Table 5-78 Parameter description

| Name | Type | Description |
|----------------|------------------|---|
| configurations | Array of objects | Indicates the parameter template list. For details, see Table 5-79 . |

Table 5-79 configurations field data structure description

| Name | Type | Description |
|--------------------------------|--------|---|
| id | String | Indicates the parameter template ID. |
| name | String | Indicates the parameter template name. |
| description | String | Indicates the parameter template description. |
| datastore_v ersion_ name | String | Indicates the database version name. |
| datastore_ name | String | Indicates the database name. |

| Name | Type | Description |
|--------------|---------|---|
| created | String | Indicates the creation time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| updated | String | Indicates the update time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| user_defined | Boolean | Indicates whether the parameter template is created by users. <ul style="list-style-type: none"> ● false: The parameter template is a default parameter template. ● true: The parameter template is a custom template. |

- Example normal response

```
{
  "configurations": [{
    "id": "887ea0d1bb0843c49e8d8e5a09a95652pr01",
    "name": "configuration_test",
    "description": "configuration_test",
    "datastore_version_name": "5.6",
    "datastore_name": "mysql",
    "created": "2019-05-15T11:53:34+0000",
    "updated": "2019-05-15T11:53:34+0000",
    "user_defined": true
  },
  {
    "id": "3bc1e9cc0d34404b9225ed7a58fb284epr01",
    "name": "Default-MySQL-5.7",
    "description": "Default parameter group for MySQL 5.7",
    "datastore_version_name": "5.7",
    "datastore_name": "mysql",
    "created": "2019-05-27T03:38:51+0000",
    "updated": "2019-05-27T03:38:51+0000",
    "user_defined": false
  }
  ]
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.2 Creating a Parameter Template

Function

This API is used to create a parameter template and configure the name, description, DB engine, and parameter values in the parameter template.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.
- The name of the created parameter template cannot be the same as that of the default or an existing parameter template.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/configurations`
- Parameter description

Table 5-80 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

- Parameter description

Table 5-81 Parameter description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------------------|---|
| name | Yes | String | Specifies the parameter template name. It contains a maximum of 64 characters and can contain only uppercase letters, lowercase letters, digits, hyphens (-), underscores (_), and periods (.). |
| description | No | String | Specifies the parameter template description. It contains a maximum of 256 characters and cannot contain the following special characters: >!<"&'= Its value is left blank by default. |
| values | No | Map<String,String> | Specifies the parameter values defined by users based on the default parameter templates. By default, the parameter values cannot be changed. For details, see Table 5-82 . |
| datastore | Yes | Object | Specifies the database object. For details, see Table 5-83 . |

Table 5-82 values field data structure description

| Name | Mandatory | Type | Description |
|-------|-----------|--------|--|
| key | No | String | Specifies the parameter name. For example, in " max_connections ": "10", the key is max_connections . If key is left blank, the parameter value cannot be changed. If key is not empty, the parameter value cannot be empty, either. |
| value | No | String | Specifies the parameter value. For example, in " max_connections ": "10", the value is 10 . |

Table 5-83 datastore field data structure description

| Name | Mandatory | Type | Description |
|---------|-----------|--------|--|
| type | Yes | String | Specifies the DB engine. Its value can be any of the following and is case-insensitive: <ul style="list-style-type: none"> MySQL PostgreSQL SQLServer |
| version | Yes | String | Specifies the database version. For details, see Constraints . Example values: <ul style="list-style-type: none"> MySQL: 5.7 PostgreSQL: 9.5 |

- Request example

```
{
  "name": "configuration_test",
  "description": "configuration_test",
  "values": {
    "max_connections": "10",
    "autocommit": "OFF"
  },
  "datastore": {
    "type": "mysql",
    "version": "5.6"
  }
}
```

Response

- Normal response

Table 5-84 Parameter description

| Name | Type | Description |
|---------------|--------|---|
| configuration | Object | Indicates the parameter template information. For details, see Table 5-85 . |

Table 5-85 configuration field data structure description

| Name | Type | Description |
|------|--------|--------------------------------------|
| id | String | Indicates the parameter template ID. |

| Name | Type | Description |
|------------------------|--------|---|
| name | String | Indicates the parameter template name. |
| datastore_version_name | String | Indicates the database version name. |
| datastore_name | String | Indicates the database name. |
| description | String | Indicates the parameter template description. |
| created | String | Indicates the creation time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| updated | String | Indicates the update time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |

- Example normal response

```
{
  "configuration": {
    "id": "463b4b58-d0e8-4e2b-9560-5dea4552fde9",
    "name": "configuration_test",
    "datastore_version_name": "5.6",
    "datastore_name": "mysql",
    "description": "configuration_test",
    "created": "2017-04-09T08:27:56+0800",
    "updated": "2017-04-09T08:27:56+0800"
  }
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.3 Modifying a Parameter Template

Function

This API is used to modify a specified parameter template, including the name, description, and values of specified parameters in the parameter template.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.
- The modified parameter template name must be different from the name of an existing or a default parameter template. Default parameter templates cannot be modified.
- The values of the edited parameters must be within the default value range of the specified database version. For details about the range of parameter values, see "Modifying Parameters in a Parameter Template" in the *Relational Database Service User Guide*.
- The parameter values to be changed cannot be left blank at the same time.

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/configurations/{config_id}`
- Parameter description

Table 5-86 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| config_id | Yes | Specifies the parameter template ID. |

Request

- Parameter description

NOTICE

At least one parameter in the request body must be specified. Otherwise, the request fails to be delivered.

Table 5-87 Parameter description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------------------|---|
| name | No | String | Specifies the parameter template name. It contains a maximum of 64 characters and can contain only uppercase letters, lowercase letters, digits, hyphens (-), underscores (_), and periods (.). |
| description | No | String | Specifies the parameter template description. It contains a maximum of 256 characters and does not support the following special characters: !<>='&" Its value is left blank by default. |
| values | No | Map<String,String> | Specifies the parameter values defined by users based on the default parameter templates. If this parameter is left blank, the parameter value cannot be changed. For details, see Table 5-88 . |

Table 5-88 values field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| key | No | String | Specifies the parameter name. For example, in "max_connections": "10" , the key is max_connections . If key is not empty, the parameter value cannot be empty, either. |

| Name | Mandatory | Type | Description |
|-------|-----------|--------|--|
| value | No | String | Specifies the parameter value. For example, in "max_connections": "10" , the value is 10 . |

- Request example

```
{
  "name": "configuration_test",
  "description": "configuration_test",
  "values": {
    "max_connections": "10",
    "autocommit": "OFF"
  }
}
```

Response

- Normal response
None
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.4 Applying a Parameter Template

Function

This API is used to apply a parameter template to one or more DB instances.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.

URI

- URI format
PUT https://{Endpoint}/v3/{project_id}/configurations/{config_id}/apply
- Parameter description

Table 5-89 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| config_id | Yes | Specifies the parameter template ID. |

Request

- Parameter description

Table 5-90 Parameter description

| Name | Mandatory | Type | Description |
|--------------|-----------|------------------|---|
| instance_ids | Yes | Array of strings | Specifies the DB instance ID list object. |

- Request example

```
{
  "instance_ids": ["73ea2bf70c73497f89ee0ad4ee008aa2in01",
    "fe5f5a07539c431181fc78220713aebein01"]
}
```

Response

- Normal response

Table 5-91 Parameter description

| Name | Type | Description |
|--------------------|------------------|---|
| configuration_id | String | Specifies the parameter template ID. |
| configuration_name | String | Specifies the parameter template name. |
| apply_results | Array of objects | Specifies the result of applying the parameter template. For details, see Table 5-92 . |

| Name | Type | Description |
|---------|---------|--|
| success | Boolean | <p>Indicates whether each parameter template is applied to DB instances successfully.</p> <ul style="list-style-type: none"> • true: Each parameter template is applied to DB instances successfully. • false: One or more parameter templates failed to be applied. |

Table 5-92 apply_results field data structure description

| Name | Type | Description |
|------------------|---------|--|
| instance_id | String | Indicates the DB instance ID. |
| instance_name | String | Indicates the DB instance name. |
| restart_required | Boolean | <p>Indicates whether a reboot is required.</p> <ul style="list-style-type: none"> • true: A reboot is required. • false: A reboot is not required. |
| success | Boolean | <p>Indicates whether each parameter template is applied to DB instances successfully.</p> <ul style="list-style-type: none"> • true: The application is successful. • false: The application failed. |

- Example normal response

```
{
  "configuration_id": "cf49bbd7d2384878bc3808733c9e9d8bpr01",
  "configuration_name": "paramsGroup-bcf9",
  "apply_results": [{
    "instance_id": "fe5f5a07539c431181fc78220713aebein01",
    "instance_name": "zyy1",
    "restart_required": false,
    "success": false
  }, {
```

```

    "instance_id": "73ea2bf70c73497f89ee0ad4ee008aa2in01",
    "instance_name": "zyy2",
    "restart_required": false,
    "success": false
  }],
  "success": false
}

```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.5 Modifying Parameters of a Specified DB Instance

Function

This API is used to modify parameters in the parameter template of a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The values of the edited parameters must be within the default value range of the specified database version. For details about the range of parameter values, see "Modifying Parameters in a Parameter Template" in the *Relational Database Service User Guide*.

URI

- URI format
PUT https://{{Endpoint}}/v3/{project_id}/instances/{instance_id}/configurations
- Parameter description

Table 5-93 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-94 Parameter description

| Name | Mandatory | Type | Description |
|--------|-----------|--------------------|---|
| values | Yes | Map<String,String> | Specifies the parameter values defined by users based on the default parameter templates. For details, see Table 5-95 . |

Table 5-95 values field data structure description

| Name | Mandatory | Type | Description |
|-------|-----------|--------|--|
| key | Yes | String | Specifies the parameter name. For example, in " max_connections ": " 10 ", the key is max_connections . |
| value | Yes | String | Specifies the parameter value. For example, in " max_connections ": " 10 ", the value is 10 . |

- Request example

```
{
  "values": {
    "xxx": "10",
    "yyy": "OFF"
  }
}
```

Response

- Normal response

Table 5-96 Parameter description

| Name | Type | Description |
|------------------|---------|---|
| restart_required | Boolean | Indicates whether a reboot is required. <ul style="list-style-type: none"> true: A reboot is required. false: A reboot is not required. |

- Example normal response

```
{
  "restart_required": false
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.6 Obtaining the Parameter Template of a Specified DB Instance

Function

This API is used to obtain information about the parameter template of a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/configurations`
- Parameter description

Table 5-97 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID compliant with the UUID format. |

Request

None

Response

- Normal response

Table 5-98 Parameter description

| Name | Type | Description |
|--------------------------|------------------|---|
| datastore_version_name | String | Indicates the database version name. |
| datastore_name | String | Indicates the database name. |
| created | String | Indicates the creation time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| updated | String | Indicates the update time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| configuration_parameters | Array of objects | Indicates the parameters defined by users based on the default parameter templates. For details, see Table 5-99 . |

Table 5-99 configuration_parameters field data structure description

| Name | Type | Description |
|------------------|---------|---|
| name | String | Indicates the parameter name. |
| value | String | Indicates the parameter value. |
| restart_required | Boolean | Indicates whether a reboot is required. <ul style="list-style-type: none"> • false: A reboot is not required. • true: A reboot is required. |

| Name | Type | Description |
|-------------|---------|---|
| readonly | Boolean | Indicates whether the parameter is read-only. <ul style="list-style-type: none"> • false: The parameter is not read-only. • true: The parameter is read-only. |
| value_range | String | Indicates the parameter value range. If the type is Integer, the value is 0 or 1 . If the type is Boolean, the value is true or false . |
| type | String | Indicates the parameter type, which can be integer , string , boolean , list , or float . |
| description | String | Indicates the parameter description. |

- Example normal response

```
{
  "datastore_version_name": "5.7",
  "datastore_name": "mysql",
  "created": "2018-10-11 11:40:44",
  "updated": "2018-10-11 11:40:44",
  "configuration_parameters": [{
    "name": "auto_increment_increment",
    "value": "1",
    "restart_required": false,
    "readonly": false,
    "value_range": "1-65535",
    "type": "integer",
    "description": "auto_increment_increment and auto_increment_offset are used for
master-to-master replication and to control the operations of the AUTO_INCREMENT
column."
  }]
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.7 Obtaining Parameters in a Specified Parameter Template

Function

This API is used to obtain parameters of a specified parameter template.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/configurations/{config_id}`
- Parameter description

Table 5-100 Parameter description

| Name | Mandatory | Description |
|------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| config_id | Yes | Specifies the parameter template ID. When this parameter is empty (not space), the URL of the parameter template list is obtained. For details, see Obtaining a Parameter Template List . |

Request

None

Response

- Normal response

Table 5-101 Parameter description

| Name | Type | Description |
|------------------------|--------|--|
| id | String | Indicates the parameter template ID. |
| name | String | Indicates the parameter template name. |
| datastore_version_name | String | Indicates the database version name. |
| datastore_name | String | Indicates the database name. |

| Name | Type | Description |
|--------------------------|------------------|---|
| description | String | Indicates the parameter template description. |
| created | String | Indicates the creation time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| updated | String | Indicates the update time in the following format: yyyy-MM-ddTHH:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| configuration_parameters | Array of objects | Indicates the parameters defined by users based on the default parameter templates. For details, see Table 5-102 . |

Table 5-102 configuration_parameters field data structure description

| Name | Type | Description |
|------------------|---------|--|
| name | String | Indicates the parameter name. |
| value | String | Indicates the parameter value. |
| restart_required | Boolean | Indicates whether a restart is required. <ul style="list-style-type: none"> ● false: indicates that a restart is not required. ● true: indicates that a restart is required. |

| Name | Type | Description |
|-------------|---------|---|
| readonly | Boolean | Indicates whether the parameter is read-only. <ul style="list-style-type: none"> • false: indicates that the parameter is not read-only. • true: indicates that the parameter is read-only. |
| value_range | String | Indicates the parameter value range. For example, the value of integer is 0–1, and the value of boolean is true or false . |
| type | String | Indicates the parameter type, which can be integer , string , boolean , list , or float . |
| description | String | Indicates the parameter description. |

- Example normal response

```

{
  "id": "07fc12a8e0e94df7a3fcf53d0b5e1605pr01",
  "name": "default-mysql-5.6",
  "datastore_version_name": "5.6",
  "datastore_name": "mysql",
  "description": "Default parameter group for mysql 5.6",
  "created": "2017-05-05T04:40:51+0800",
  "updated": "2017-05-05T04:40:51+0800",
  "configuration_parameters": [
    {
      "name": "auto_increment_increment",
      "value": "1",
      "restart_required": false,
      "readonly": true,
      "value_range": "1-65535",
      "type": "integer",
      "description": "auto_increment_increment and auto_increment_offset are intended
for use with master-to-master replication, and can be used to control the operation of
AUTO_INCREMENT columns."
    },
    {
      "name": "autocommit",
      "value": "ON",
      "restart_required": false,
      "readonly": true,
      "value_range": "ON|OFF",
      "type": "boolean",
      "description": "The autocommit mode. If set to ON, all changes to a table take effect
immediately. If set to OFF, you must use COMMIT to accept a transaction or ROLLBACK to
cancel it. "
    }
  ]
}

```

```
}
]
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.6.8 Deleting a Parameter Template

Function

This API is used to delete a specified parameter template.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The following DB engines are supported: MySQL and PostgreSQL.
- Default parameter templates cannot be deleted.

URI

- URI format
DELETE https://{Endpoint}/v3/{project_id}/configurations/{config_id}
- Parameter description

Table 5-103 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| config_id | Yes | Specifies the parameter template ID. |

Request

None

Response

- Normal response
None
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7 Backup and Restoration

5.7.1 Setting an Automated Backup Policy

Function

This API is used to set an automated backup policy.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
PUT `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/backups/policy`
- Parameter description

Table 5-104 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-105 Parameter description

| Name | Mandatory | Type | Description |
|---------------|-----------|--------|--|
| backup_policy | Yes | Object | Specifies the backup policy objects, including the backup retention period (days) and backup start time. For details, see Table 5-106 . |

Table 5-106 backup_policy field data structure description

| Name | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| keep_days | Yes | Integer | <p>Specifies the number of days to retain the generated backup files.</p> <p>The value range is from 0 to 732. The value 0 indicates that the automated backup policy is disabled. To extend the retention period, contact customer service.</p> <p>Automated backups can be retained for up to 2562 days.</p> <p>NOTICE</p> <p>Once the automated backup policy is disabled, automated backups are no longer created and all incremental backups are deleted immediately. Operations related to the incremental backups, including downloads, replications, restorations, and rebuilds, may fail.</p> |

| Name | Mandatory | Type | Description |
|------------|-----------|--------|--|
| start_time | No | String | <p>Specifies the backup time window. Automated backups will be triggered during the backup time window. This parameter is mandatory except that the automated backup policy is disabled.</p> <p>The value must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> • 08:15-09:15 • 23:00-00:00 |

| Name | Mandatory | Type | Description |
|--------|-----------|--------|--|
| period | No | String | <p>Specifies the backup cycle configuration. Data will be automatically backed up on the selected days every week. This parameter is mandatory except that the automated backup policy is disabled.</p> <p>Value range: The value is a number separated by commas (,), indicating the days of the week.</p> <p>For example, the value 1,2,3,4 indicates that the backup period is Monday, Tuesday, Wednesday, and Thursday.</p> |

- Request example

Modifying the automated backup policy:

```
{
  "backup_policy": {
    "keep_days": 7,
    "start_time": "19:00-20:00",
    "period": "1,2"
  }
}
```

Disabling the automated backup policy:

```
{
  "backup_policy": {
    "keep_days": 0
  }
}
```

Response

- Normal response
None
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.2 Obtaining an Automated Backup Policy

Function

This API is used to obtain an automated backup policy.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/backups/policy`
- Parameter description

Table 5-107 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

None

Response

- Normal response

Table 5-108 Parameter description

| Name | Type | Description |
|---------------|--------|--|
| backup_policy | Object | Indicates the backup policy objects, including the backup retention period (days) and backup start time. For details, see Table 5-109 . |

Table 5-109 backup_policy field data structure description

| Name | Type | Description |
|------------|---------|---|
| keep_days | Integer | Indicates the number of days to retain the backup files. |
| start_time | String | Indicates the backup time window. Automated backups will be triggered during the backup time window. |
| period | String | Indicates the backup cycle configuration. Data will be automatically backed up on the selected days every week. |

- Example normal response

When the automated backup policy is disabled:

```
{
  "backup_policy": {
    "keep_days": 0
  }
}
```

When the automated backup policy is enabled:

```
{
  "backup_policy": {
    "keep_days": 7,
    "start_time": "19:00-20:00",
    "period": "1,2"
  }
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.3 Creating a Manual Backup

Function

This API is used to create a manual backup.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Read replicas do not support manual backup creation.
- The backup name must be unique.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/backups`
- Parameter description

Table 5-110 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

- Parameter description

Table 5-111 Parameter description

| Name | Mandatory | Type | Description |
|-------------|-----------|------------------|--|
| instance_id | Yes | String | Specifies the DB instance ID. |
| name | Yes | String | Specifies the backup name. It must be 4 to 64 characters in length and start with a letter. It is case-sensitive and can contain only letters, digits, hyphens (-), and underscores (_). The backup name must be unique. |
| description | No | String | Specifies the backup description. It contains a maximum of 256 characters and cannot contain the following special characters: >! <"&'= |
| databases | No | Array of objects | Specifies a list of self-built Microsoft SQL Server databases that are partially backed up. (Only Microsoft SQL Server support partial backups.) For details, see Table 5-112 . |

Table 5-112 databases field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| name | Yes | String | Specifies the names of self-built databases. |

- Request example

Creating a manual backup for a MySQL or PostgreSQL DB instance:

```
{
  "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01",
  "name": "backup",
  "description": "manual backup"
}
```

Creating a manual backup for a Microsoft SQL Server DB instance:

```
{
  "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin04",
  "name": "backup",
  "description": "manual backup",
  "databases": [{
    "name": "db1"
  }, {
    "name": "db2"
  }]
}
```

Response

- Normal response

Table 5-113 Parameter description

| Name | Type | Description |
|--------|--------|---|
| backup | Object | Indicates the backup information. For details, see Table 5-114 . |

Table 5-114 backup field data structure description

| Name | Type | Description |
|-------------|--------|-------------------------------|
| id | String | Indicates the backup ID. |
| instance_id | String | Indicates the DB instance ID. |
| name | String | Indicates the backup name. |

| Name | Type | Description |
|-------------|------------------|--|
| description | String | Indicates the backup description. |
| databases | Array of objects | Indicates a list of self-built Microsoft SQL Server databases that are partially backed up. (Only Microsoft SQL Server support partial backups.) For details, see Table 5-112 . |
| begin_time | String | Indicates the backup start time in the "yyyy-mm-ddThh:mm:ssZ" format, where "T" indicates the start time of the time field, and "Z" indicates the time zone offset. |
| status | String | Indicates the backup status. Value: <ul style="list-style-type: none"> ● BUILDING: Backup in progress ● COMPLETED: Backup completed ● FAILED: Backup failed ● DELETING: Backup being deleted |
| type | String | Indicates the backup type. Value: <ul style="list-style-type: none"> ● auto: automated full backup ● manual: manual full backup ● fragment: differential full backup ● incremental: automated incremental backup |

- Example normal response
Creating a manual backup for a MySQL or PostgreSQL DB instance:

```
{
  "backup": {
    "id": "2f4ddb93-b901-4b08-93d8-1d2e472f30fe",
    "name": "backupDemo",
    "description": "This is a description",
    "begin_time": "2016-09-12T01:17:05",
    "status": "BUILDING",
    "type": "manual",
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01"
  }
}
```

Creating a manual backup for a Microsoft SQL Server DB instance:

```
{
  "backup": {
    "id": "2f4ddb93-b901-4b08-93d8-1d2e472f30fe",
    "name": "backupDemo",
    "description": "This is a description",
    "begin_time": "2016-09-12T01:17:05",
    "status": "BUILDING",
    "type": "manual",
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01",
    "databases": [{
      "name": "db1"
    }]
  }
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.4 Obtaining Details About Backups

Function

This API is used to obtain details about backups.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

This API is used to query full and incremental backups of MySQL and PostgreSQL databases.

URI

- URI format
GET [https://{{Endpoint}}/v3/{{project_id}}/backups?
instance_id={{instance_id}}&backup_id={{backup_id}}&backup_type={{backup_typ}}](https://{{Endpoint}}/v3/{{project_id}}/backups?instance_id={{instance_id}}&backup_id={{backup_id}}&backup_type={{backup_typ}})

e}&offset={offset}&limit={limit}&begin_time={begin_time}&end_time={end_time}

- Parameter description

Table 5-115 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| backup_id | No | Specifies the backup ID. |
| backup_type | No | Specifies the backup type. Value: <ul style="list-style-type: none"> • auto: automated full backup • manual: manual full backup • fragment: differential full backup • incremental: automated incremental backup |
| offset | No | Specifies the index position. If offset is set to <i>N</i> , the resource query starts from the <i>N</i> +1 piece of data. The value is 0 by default, indicating that the query starts from the first piece of data. The value must be a positive number. |
| limit | No | Specifies the number of records to be queried. The default value is 100 . The value cannot be a negative number. The minimum value is 1 and the maximum value is 100 . |

| Name | Mandatory | Description |
|------------|-----------|---|
| begin_time | No | <p>Specifies the start time for obtaining the backup list. The format of the start time is "yyyy-mm-ddThh:mm:ssZ".</p> <p>T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800.</p> <p>NOTE When begin_time is not empty, end_time is mandatory.</p> |
| end_time | No | <p>Specifies the end time for obtaining the backup list. The format of the end time is "yyyy-mm-ddThh:mm:ssZ" and the end time must be later than the start time.</p> <p>T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800.</p> <p>NOTE When end_time is not empty, begin_time is mandatory.</p> |

Request

None

Response

- Normal response

Table 5-116 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| backups | Array of objects | Indicates the backup list. For details, see Table 5-117 . |
| total_count | Integer | Indicates the total number of records. |

Table 5-117 backups field data structure description

| Name | Type | Description |
|------------|--------|--|
| id | String | Indicates the backup ID. |
| name | String | Indicates the backup name. |
| type | String | Indicates the backup type. Value: <ul style="list-style-type: none"> • auto: automated full backup • manual: manual full backup • fragment: differential full backup • incremental: automated incremental backup |
| size | Long | Indicates the backup size in KB. |
| status | String | Indicates the backup status. Value: <ul style="list-style-type: none"> • BUILDING: Backup in progress • COMPLETED: Backup completed • FAILED: Backup failed • DELETING: Backup being deleted |
| begin_time | String | Indicates the backup start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |

| Name | Type | Description |
|---------------------|------------------|---|
| end_time | String | <p>Indicates the backup end time.</p> <ul style="list-style-type: none"> For a full backup, it indicates the full backup end time. For a MySQL incremental backup, it indicates the time when the last transaction in the backup file is submitted. <p>The format is yyyy-mm-ddThh:mm:ssZ. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800.</p> |
| datastore | Object | <p>Indicates the database version. For details, see Table 5-118.</p> |
| databases | Array of objects | <p>Indicates a list of self-built Microsoft SQL Server databases that support partial backups. For details, see Table 5-119.</p> |
| instance_id | String | <p>Indicates the ID of the DB instance for which the backup is created.</p> |
| associated_with_ddm | Boolean | <p>Indicates whether a DDM instance has been associated.</p> |

Table 5-118 datastore field data structure description

| Name | Type | Description |
|---------|--------|---|
| type | String | <p>Indicates the DB engine. Its value can be any of the following and is case-insensitive:</p> <ul style="list-style-type: none"> MySQL PostgreSQL SQLServer |
| version | String | <p>Indicates the database version.</p> |

Table 5-119 databases field data structure description

| Name | Type | Description |
|------|--------|--|
| name | String | Indicates the name of the self-built database. |

- Example normal response

Obtaining a backup list of a MySQL DB instance:

```
{
  "backups": [{
    "id": "43e4feaab48f11e89039fa163ebaa7e4br01",
    "name": "xxxx.xxx",
    "type": "auto",
    "size": 2803,
    "status": "COMPLETED",
    "begin_time": "2018-08-06T12:41:14+0800",
    "end_time": "2018-08-06T12:43:14+0800",
    "datastore": {
      "type": "MySQL",
      "version": "5.6"
    },
    "instance_id": "a48e43ff268f4c0e879652d65e63d0fbin01",
    "associated_with_ddm": false
  }],
  "total_count": 1
}
```

Obtaining a backup list of a PostgreSQL DB instance:

```
{
  "backups": [{
    "id": "43e4feaab48f11e89039fa163ebaa7e4br03",
    "name": "xxxx.xxx",
    "type": "incremental",
    "size": 2803,
    "status": "COMPLETED",
    "begin_time": "2018-08-06T12:41:14+0800",
    "end_time": "2018-08-06T12:43:14+0800",
    "datastore": {
      "type": "PostgreSQL",
      "version": "9.6"
    },
    "instance_id": "a48e43ff268f4c0e879652d65e63d0fbin03 ",
    "associated_with_ddm": false
  }],
  "total_count": 1
}
```

Obtaining a backup list of a Microsoft SQL Server DB instance:

```
{
  "backups": [{
    "id": "43e4feaab48f11e89039fa163ebaa7e4br04",
    "name": "xxxx.xxx",
    "type": "manual",
    "size": 2803,
    "status": "COMPLETED",
    "begin_time": "2018-08-06T12:41:14+0800",
    "end_time": "2018-08-06T12:43:14+0800",
    "datastore": {
```

```

        "type": "SQLServer",
        "version": "2014_WEB"
    },
    "databases": [{
        "name": "user01"
    }, {
        "name": "user02"
    }],
    "instance_id": "a48e43ff268f4c0e879652d65e63d0fbin04",
    "associated_with_ddm": false
}],
    "total_count": 1
}
    
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.5 Obtaining the Link for Downloading a Backup File

Function

This API is used to obtain the link for downloading a backup file.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

This API is used to query full and incremental backups of MySQL and PostgreSQL databases.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/backup-files?backup_id={backup_id}`
- Parameter description

Table 5-120 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

| Name | Mandatory | Description |
|-----------|-----------|--------------------------|
| backup_id | Yes | Specifies the backup ID. |

Request

None

Response

- Normal response

Table 5-121 Parameter description

| Name | Type | Description |
|--------|------------------|--|
| files | Array of objects | Indicates the list of backup files. For details, see Table 5-122 . |
| bucket | String | Indicates the name of the bucket where the file is located. |

Table 5-122 files field data structure description

| Name | Type | Description |
|-------------------|--------|---|
| name | String | Indicates the file name. |
| size | Long | Indicates the file size in KB. |
| download_link | String | Indicates the link for downloading the backup file. |
| link_expired_time | String | Indicates the link expiration time. The format is "yyyy-mm-ddThh:mm:ssZ". T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0000 . |

- Example normal response

```
{
  "files": [
    {
      "name": "43e4feaab48f11e89039fa163ebaa7e4br01.xxx",
      "size": 2803,
      "download_link": "https://obs.domainname.com/rdsbucket.username.1/xxxxxx",
      "link_expired_time": "2018-08-016T10:15:14+0000"
    }
  ]
}
```

```
    ],
    "bucket": "rdsbucket.bucketname"
  }
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.6 Deleting a Manual Backup

Function

This API is used to delete a manual backup.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
DELETE [https://{Endpoint}/v3/{project_id}/backups/{backup_id}](#)
- Parameter description

Table 5-123 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| backup_id | Yes | Specifies the ID of the manual backup. |

Request

None

Response

- Normal response
None

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.7 Querying the Restoration Time Range

Function

This API is used to query the restoration time range of a DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/restore-time?date=2020-12-26`
- Parameter description

Table 5-124 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| date | No | Specifies the date to be queried. The value is in the yyyy-mm-dd format, and the time zone is UTC. |

Request

None

Response

- Normal response

Table 5-125 Parameter description

| Name | Type | Description |
|--------------|------------------|---|
| restore_time | Array of objects | Indicates the list of restoration time ranges. For details, see Table 5-126 . |

Table 5-126 restore_time field data structure description

| Name | Type | Description |
|------------|---------|--|
| start_time | Integer | Indicates the start time of the restoration time range in the UNIX timestamp format. The unit is millisecond and the time zone is UTC. |
| end_time | Integer | Indicates the end time of the restoration time range in the UNIX timestamp format. The unit is millisecond and the time zone is UTC. |

- Example normal response

```
{
  "restore_time": [
    {
      "start_time": 1532001446987,
      "end_time": 1532742139000
    }
  ]
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.8 Restoring Data to a New DB Instance

Function

This API is used to restore data to a new DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- The DB engine of the original DB instance must be the same as that of the target DB instance. For example, if the original DB instance is running MySQL, the target DB instance must also run MySQL.
- All DB engine versions of the original and new DB instances must be consistent.
- The total volume size of the new DB instance must be greater than or equal to that of the original DB instance.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances`
- Parameter description

Table 5-127 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

- Parameter description

Table 5-128 Parameter description

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|---|
| name | Yes | String | Specifies the DB instance name. The value must be 4 to 64 characters in length and start with a letter. It is case-insensitive and can contain only letters, digits, hyphens (-), and underscores (_). |
| ha | No | Object | Specifies the HA configuration parameters, which are used when creating primary/standby DB instances. For details, see Table 5-129 . |
| configuration_id | No | String | Specifies the parameter template ID. |

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| port | No | String | <p>Specifies the database port information.</p> <ul style="list-style-type: none"> • The MySQL database port ranges from 1024 to 65535 (excluding 12017 and 33071, which are occupied by the RDS system and cannot be used). • The PostgreSQL database port ranges from 2100 to 9500. • The Microsoft SQL Server database port is 1433 or ranges from 2100 to 9500 (excluding 5355 and 5985). <p>If this parameter is not set, the default value is as follows:</p> <ul style="list-style-type: none"> • For MySQL, the default value is 3306. • For PostgreSQL, the default value is 5432. • For Microsoft SQL Server, the default value is 1433. |

| Name | Mandatory | Type | Description |
|-----------------|-----------|--------|---|
| password | Yes | String | <p>Specifies the database password.</p> <p>Valid value:</p> <ul style="list-style-type: none"> The password must consist of 8 to 32 characters and contain at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_-=+?). <p>You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking.</p> |
| backup_strategy | No | Object | <p>Specifies the advanced backup policy.</p> <p>For details, see Table 5-130.</p> |
| flavor_ref | Yes | String | <p>Specifies the specification code. The value cannot be empty.</p> <p>For details, see spec_code in section Querying Database Specifications.</p> |

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|--|
| volume | Yes | Object | Specifies the volume information. For details, see Table 5-131 . |
| availability_zone | Yes | String | Specifies the AZ ID. If the DB instance is not a single instance, you need to specify an AZ for each node of the instance and separate the AZs with commas (.). For details, see the example. |
| vpc_id | Yes | String | Specifies the VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details. |

| Name | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| subnet_id | Yes | String | <p>Specifies the network ID. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> • Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. • Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |

| Name | Mandatory | Type | Description |
|-------------------|-----------|--------|--|
| security_group_id | No | String | <p>Specifies the security group which the RDS DB instance belongs to. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> Method 1: Log in to VPC console. Choose Access Control > Security Groups in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page. Method 2: See the "Querying Security Groups" section in the <i>Virtual Private Cloud API Reference</i>. |
| restore_point | Yes | Object | <p>Specifies the restoration information. For details, see Table 5-132.</p> |

Table 5-129 ha field data structure description

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|--|
| mode | Yes | String | Specifies the DB instance type. The value is Ha (primary/standby DB instances) and is case-insensitive. |
| replication_mode | Yes | String | <p>Specifies the replication mode for the standby DB instance. The value cannot be empty.</p> <ul style="list-style-type: none"> • For MySQL, the value is async or semisync. • For PostgreSQL, the value is async or sync. • For Microsoft SQL Server, the value is sync. <p>NOTE</p> <ul style="list-style-type: none"> • async indicates the asynchronous replication mode. • semisync indicates the semi-synchronous replication mode. • sync indicates the synchronous replication mode. |

Table 5-130 backup_strategy field data structure description

| Name | Mandatory | Type | Description |
|------------|-----------|--------|---|
| start_time | Yes | String | <p>Specifies the backup time window. Automated backups will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> • 08:15-09:15 • 23:00-00:00 |

| Name | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| keep_days | No | Integer | Specifies the retention days for specific backup files. The value range is from 0 to 732. If this parameter is not specified or set to 0 , the automated backup policy is disabled. To extend the retention period, contact customer service. Automated backups can be retained for up to 2562 days. |

Table 5-131 volume field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| type | Yes | String | Specifies the volume type. Its value can be any of the following and is case-sensitive: <ul style="list-style-type: none"> ● ULTRAHIGH: indicates the SSD type. |

| Name | Mandatory | Type | Description |
|------|-----------|---------|---|
| size | Yes | Integer | <p>Specifies the volume size.</p> <p>Its value range is from 40 GB to 4000 GB. The value must be a multiple of 10.</p> <p>NOTICE The volume size of the new DB instance must be greater than or equal to that of the original DB instance.</p> |

Table 5-132 restore_point field data structure description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| instance_id | Yes | String | Specifies the DB instance ID. |
| type | Yes | String | <p>Specifies the restoration mode.</p> <p>Enumerated values include:</p> <ul style="list-style-type: none"> • backup: indicates restoration from backup files. In this mode, backup_id is mandatory when type is not mandatory. • timestamp: indicates point-in-time restoration. In this mode, restore_time is mandatory when type is mandatory. |

| Name | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| backup_id | No | String | Specifies the ID of the backup used to restore data. This parameter must be specified when the backup file is used for restoration. NOTICE When type is not mandatory, backup_id is mandatory. |
| restore_time | No | Integer | Specifies the time point of data restoration in the UNIX timestamp. The unit is millisecond and the time zone is UTC. NOTICE When type is mandatory, restore_time is mandatory. |

Table 5-133 charge_info field data structure description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|-----------------------------|
| charge_mode | Yes | String | Specifies the billing mode. |

- Request example
Use backup files for restoration:
Use PITR for restoration:

Response

- Normal response

Table 5-134 Parameter description

| Name | Type | Description |
|----------|--------|--|
| instance | Object | Indicates the DB instance information. For details, see Table 5-135 . |
| job_id | String | Indicates the ID of the DB instance creation task. This parameter is returned only for the restoration to a new DB instance billed on the pay-per-use basis. |

Table 5-135 instance description

| Name | Type | Description |
|-----------|--------|---|
| id | String | Indicates the DB instance ID. |
| name | String | Indicates the DB instance name. The value must be 4 to 64 characters in length and start with a letter. It is case-insensitive and can contain only letters, digits, hyphens (-), and underscores (_). |
| status | String | Indicates the DB instance status. For example, BUILD indicates that the DB instance is being created. |
| datastore | Object | Indicates the database information. For details, see Table 5-136 . |

| Name | Type | Description |
|------------------|--------|---|
| ha | Object | <p>Indicates the HA configuration parameters. This parameter is returned only when primary/standby DB instances are created.</p> <p>For details, see Table 5-137.</p> |
| configuration_id | String | <p>Indicates the parameter template ID. This parameter is returned only when a custom parameter template is used during DB instance creation.</p> |

| Name | Type | Description |
|-----------------|--------|---|
| port | String | <p>Indicates the database port information.</p> <ul style="list-style-type: none"> The MySQL database port ranges from 1024 to 65535 (excluding 12017 and 33071, which are occupied by the RDS system and cannot be used). The PostgreSQL database port ranges from 2100 to 9500. The Microsoft SQL Server database port is 1433 or ranges from 2100 to 9500 (excluding 5355 and 5985). <p>If this parameter is not set, the default value is as follows:</p> <ul style="list-style-type: none"> For MySQL, the default value is 3306. For PostgreSQL, the default value is 5432. For Microsoft SQL Server, the default value is 1433. |
| backup_strategy | Object | <p>Indicates the automated backup policy.</p> <p>For details, see Table 5-138.</p> |
| flavor_ref | String | <p>Indicates the specification ID.</p> <p>For details, see spec_code in Table 5-6 in section Querying Database Specifications.</p> |

| Name | Type | Description |
|-------------------|--------|--|
| volume | Object | Indicates the volume information. For details, see Table 5-139 . |
| region | String | Indicates the region ID. |
| availability_zone | String | Indicates the AZ ID. |
| vpc_id | String | Indicates the VPC ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and view the VPC ID in the VPC details. |
| subnet_id | String | Indicates the network ID. To obtain this parameter value, use either of the following methods: <ul style="list-style-type: none"> Method 1: Log in to VPC console and click the target subnet on the Subnets page. You can view the network ID on the displayed page. Method 2: See the "Querying Subnets" section in the <i>Virtual Private Cloud API Reference</i>. |

| Name | Type | Description |
|-------------------|--------|--|
| security_group_id | String | <p>Indicates the security group which the RDS DB instance belongs to. To obtain this parameter value, use either of the following methods:</p> <ul style="list-style-type: none"> • Method 1: Log in to VPC console. Choose Access Control > Security Groups in the navigation pane on the left. On the displayed page, click the target security group. You can view the security group ID on the displayed page. • Method 2: See the "Querying Security Groups" section in the <i>Virtual Private Cloud API Reference</i>. |

Table 5-136 datastore field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| type | Yes | String | <p>Indicates the DB engine. Its value can be any of the following and is case-insensitive:</p> <ul style="list-style-type: none"> • MySQL • PostgreSQL • SQLServer |

| Name | Mandatory | Type | Description |
|---------|-----------|--------|--|
| version | Yes | String | Indicates the database version. For details about supported database versions, see section Querying Version Information About a DB Engine . |

Table 5-137 ha field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| mode | Yes | String | Indicates the DB instance type. The value is Ha (primary/standby DB instances). |

| Name | Mandatory | Type | Description |
|------------------|-----------|--------|---|
| replication_mode | Yes | String | <p>Indicates the replication mode for the standby DB instance.</p> <p>The value cannot be empty.</p> <ul style="list-style-type: none"> • For MySQL, the value is async or semisync. • For PostgreSQL, the value is async or sync. • For Microsoft SQL Server, the value is sync. <p>NOTE</p> <ul style="list-style-type: none"> • async indicates the asynchronous replication mode. • semisync indicates the semi-synchronous replication mode. • sync indicates the synchronous replication mode. |

Table 5-138 backupStrategy field data structure description

| Name | Mandatory | Type | Description |
|------------|-----------|--------|---|
| start_time | Yes | String | <p>Indicates the backup time window. Automated backups will be triggered during the backup time window.</p> <p>The value cannot be empty. It must be a valid value in the "hh:mm-HH:MM" format. The current time is in the UTC format.</p> <ul style="list-style-type: none"> • The HH value must be 1 greater than the hh value. • The values of mm and MM must be the same and must be set to any of the following: 00, 15, 30, or 45. <p>Example value:</p> <ul style="list-style-type: none"> • 08:15-09:15 • 23:00-00:00 |

| Name | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| keep_days | No | Integer | Indicates the retention days for specific backup files. The value range is from 0 to 732. If this parameter is not specified or set to 0 , the automated backup policy is disabled. To extend the retention period, contact customer service. Automated backups can be retained for up to 2562 days. |

Table 5-139 volume field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|---------|---|
| type | Yes | String | Indicates the volume type. Its value can be any of the following and is case-sensitive: <ul style="list-style-type: none"> ● ULTRAHIGH: indicates the SSD type. |
| size | Yes | Integer | Indicates the volume size. Its value range is from 40 GB to 4000 GB. The value must be a multiple of 10. |

- Example normal response

MySQL

```
{
  "instance": {
```

```

    "id": "f5ffdd8b1c98434385eb001904209eacin01",
    "name": "demoname",
    "status": "BUILD",
    "datastore": {
      "type": "MySQL",
      "version": "5.6.41"
    },
    "port": "3306",
    "volume": {
      "type": "ULTRAHIGH",
      "size": "40"
    },
    "backup_strategy": {
      "start_time": "02:00-03:00",
      "keep_days": "7"
    },
    "flavor_ref": "rds.mysql.s1.large",
    "vpc_id": "19e5d45d-70fd-4a91-87e9-b27e71c9891f",
    "subnet_id": "bd51fb45-2dcb-4296-8783-8623bfe89bb7",
    "security_group_id": "23fd0cd4-15dc-4d65-bdb3-8844cc291be0"
  },
  "job_id": "bf003379-afea-4aa5-aa83-4543542070bc"
}

```

SQL Server

```

{
  "instance": {
    "id": "f5ffdd8b1c98434385eb001904209eacin01",
    "name": "demoname",
    "status": "BUILD",
    "datastore": {
      "type": "sqlserver",
      "version": "2014_SE"
    },
    "port": "2100",
    "volume": {
      "type": "ULTRAHIGH",
      "size": "40"
    },
    "backup_strategy": {
      "start_time": "02:00-03:00",
      "keep_days": "7"
    },
    "flavor_ref": "rds.mssql.2014.se.s3.large.2",
    "vpc_id": "19e5d45d-70fd-4a91-87e9-b27e71c9891f",
    "subnet_id": "bd51fb45-2dcb-4296-8783-8623bfe89bb7",
    "security_group_id": "23fd0cd4-15dc-4d65-bdb3-8844cc291be0",
    "charge_info": {
      "charge_mode": "prePaid",
      "period_num": 1
    },
    "collation": "Cyrillic_General_CI_AS"
  },
  "order_id": "CS20122919584LQ7K"
}

```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.9 Restoring Data to an Existing DB Instance

Function

This API is used to restore a database to an existing DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API does not support PostgreSQL instance restoration.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/recovery`
- Parameter description

Table 5-140 Parameter description

| Name | Mandatory | Description |
|------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |

Request

- Parameter description

Table 5-141 Parameter description

| Name | Mandatory | Type | Description |
|--------|-----------|--------|--|
| source | Yes | Object | Specifies the restoration information. For details, see Table 5-142 . |

| Name | Mandatory | Type | Description |
|--------|-----------|--------|---|
| target | Yes | Object | Specifies the restoration target. For details, see Table 5-143 . |

Table 5-142 source field data structure description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| instance_id | Yes | String | Specifies the DB instance ID. |
| type | No | String | Specifies the restoration mode. Enumerated values include: <ul style="list-style-type: none"> • backup: indicates using backup files for restoration. In this mode, type is not mandatory and backup_id is mandatory. • timestamp: indicates the point-in-time restoration mode. In this mode, type is mandatory and restore_time is no mandatory. |

| Name | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| backup_id | No | String | Specifies the ID of the backup used to restore data. This parameter must be specified when the backup file is used for restoration. |
| restore_time | No | Integer | Specifies the time point of data restoration in the UNIX timestamp. The unit is millisecond and the time zone is UTC. |

Table 5-143 target field data structure description

| Name | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| instance_id | Yes | String | Specifies the ID of the DB instance which the backup will be restored to. |

- Request example

Use backup files for restoration:

```
{
  "source": {
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01",
    "type": "backup",
    "backup_id": "2f4ddb93-b901-4b08-93d8-1d2e472f30fe"
  },
  "target": {
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01"
  }
}
```

Use PITR for restoration:

```
{
  "source": {
    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01",
    "type": "timestamp",
    "restore_time": 1532001446987
  },
  "target": {
```

```

    "instance_id": "d8e6ca5a624745bcb546a227aa3ae1cfin01"
  }
}

```

Response

- Normal response

Table 5-144 Parameter description

| Name | Type | Description |
|--------|--------|------------------------|
| job_id | String | Indicates the task ID. |

- Example normal response


```

{
  "job_id": "ff80808157127d9301571bf8160c001d"
}

```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.7.10 Restoring Tables to a Specified Point in Time (MySQL)

Function

To ensure data integrity and reduce impact on the original instance performance, the system restores the full and incremental data at the selected time point to a temporary DB instance, automatically exports the tables to be restored, and then restores the tables to the original DB instance.

NOTICE

This operation will generate restored tables on the original DB instance. Ensure that the original DB instance has sufficient storage capacity.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- This API is supported for MySQL only.
- This API is not supported for MySQL 8.0 DB instances.

URI

- URI format
POST
`https://{Endpoint}/v3/{project_id}/instances/{instance_id}/restore/tables`
- Parameter description

Table 5-145 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-146 Parameter description

| Name | Mandatory | Type | Description |
|---------------|-----------|------------------|--|
| restoreTime | Yes | Long | Specifies the backup time point. |
| restoreTables | Yes | Array of objects | Database information. For details, see Table 5-147 . |

Table 5-147 restoreTables field data structure description

| Name | Mandatory | Type | Description |
|----------|-----------|------------------|---|
| database | Yes | String | Specifies the database name. |
| tables | Yes | Array of objects | Specifies the table information. For details, see Table 5-148 . |

Table 5-148 tables field data structure description

| Name | Mandatory | Type | Description |
|---------|-----------|--------|---|
| oldName | Yes | String | Specifies the original table name before the restoration. |

| Name | Mandatory | Type | Description |
|---------|-----------|--------|---|
| newName | Yes | String | Specifies the table name after the restoration. |

- Request example

```
{
  "restoreTime": 1583720991838,
  "restoreTables": [
    {
      "database": "restoretest",
      "tables": [
        {
          "oldName": "test",
          "newName": "test_1583720991838"
        }
      ]
    }
  ]
}
```

Response

- Normal response

| Name | Type | Description |
|-------|--------|------------------------|
| jobId | String | Indicates the task ID. |

- Example normal response

```
{
  "jobId": "7b55d6ca-dc8e-4844-a9da-6c53a1506db3"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.8 Log Information Queries

5.8.1 Querying Database Error Logs

Function

This API is used to query the latest 2000 database error logs.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/errorlog?start_date={start_date}&end_date={end_date}`
- Parameter description

Table 5-149 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the ID of the queried DB instance. |
| start_date | Yes | Specifies the start time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| end_date | Yes | Specifies the end time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . You can only query error logs generated within a month. |
| offset | No | Specifies the page offset, such as 1, 2, 3, or 4. The parameter value is 1 by default if it is not specified. |
| limit | No | Specifies the number of records on each page. Its value range is from 1 to 100. The parameter value is 10 by default if it is not specified. |

| Name | Mandatory | Description |
|-------|-----------|--|
| level | No | Specifies the log level. The default value is ALL . Valid value: <ul style="list-style-type: none"> • ALL • INFO • LOG • WARNING • ERROR • FATAL • PANIC • NOTE |

Request

None

Response

- Normal response

Table 5-150 Parameter description

| Name | Type | Description |
|----------------|------------------|---|
| error_log_list | Array of objects | Indicates detailed information. For details, see Table 5-151 . |
| total_record | Integer | Indicates the total number of records. |

Table 5-151 error_log_list field data structure description

| Name | Type | Description |
|---------|--------|---------------------------------------|
| time | String | Indicates the time in the UTC format. |
| level | String | Indicates the log level. |
| content | String | Indicates the log content. |

- Example normal response

```
{
  "error_log_list": [{
    "time": "2018-12-04T14:24:42",
    "level": "ERROR",
```

```

    "content": "Slave I/O for channel ': error connecting to master
'rdsRepl@172.16.30.111:3306' - retry-time: 60 retries: 1, Error_code: 203"
  }, {
    "time": "2018-12-04T14:24:42",
    "level": "ERROR",
    "content": "Slave I/O for channel ': error connecting to master
'rdsRepl@172.11.11.111:8081' - retry-time: 60 retries: 1, Error_code: 203"
  }],
  "total_record": 2
}

```

- Abnormal Response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.8.2 Querying Database Slow Logs

Function

This API is used to query the latest 2000 database slow query logs.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Only the MySQL DB instances are supported.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/slowlog?start_date={start_date}&end_date={end_date}`
- Parameter description

Table 5-152 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the ID of the queried DB instance. |

| Name | Mandatory | Description |
|------------|-----------|--|
| start_date | Yes | Specifies the start date in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . |
| end_date | Yes | Specifies the end time in the "yyyy-mm-ddThh:mm:ssZ" format. T is the separator between the calendar and the hourly notation of time. Z indicates the time zone offset. For example, in the Beijing time zone, the time zone offset is shown as +0800 . You can only query slow logs generated within a month. |
| offset | No | Specifies the page offset, such as 1, 2, 3, or 4. The parameter value is 1 by default if it is not specified. |
| limit | No | Specifies the number of records on each page. Its value range is from 1 to 100. The parameter value is 10 by default if it is not specified. |
| type | No | Specifies the statement type. If it is left blank, all statement types are queried. Valid value: <ul style="list-style-type: none"> • INSERT • UPDATE • SELECT • DELETE • CREATE |

Request

None

Response

- Normal response

Table 5-153 Parameter description

| Name | Type | Description |
|---------------|------------------|---|
| slow_log_list | Array of objects | Indicates detailed information. For details, see Table 5-154 . |
| total_record | Integer | Indicates the total number of records. |

Table 5-154 slow_log_list field data structure description

| Name | Type | Description |
|---------------|--------|---|
| count | String | Indicates the number of executions. |
| time | String | Indicates the execution time. |
| lock_time | String | Indicates the lock wait time. |
| rows_sent | String | Indicates the number of sent rows. |
| rows_examined | String | Indicates the number of scanned rows. |
| database | String | Indicates the database which the slow log belongs to. |
| users | String | Indicates the account. |
| query_sample | String | Indicates the execution syntax. |
| type | String | Indicates the statement type. |
| start_time | String | Indicates the time in the UTC format. |
| client_ip | String | Indicates the IP address. |

- Example normal response

```
{
  "total_record": 1,
  "slow_log_list": [
    {
      "count": "1",
      "time": "1.04899 s",
      "lock_time": "0.00003 s",
      "rows_sent": "0",
      "rows_examined": "0",
      "database": "mysql",
      "users": "root",
      "query_sample": "INSERT INTO time_zone_name (Name, Time_zone_id) VALUES
(N, @time_zone_id);",
      "type": "INSERT",
      "start_time": "2018-08-06T10:41:14",
```

```
    "client_ip": "192.*.*.1"  
  }  
]  
}
```

- Abnormal Response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9 Database and Account Management (MySQL)

5.9.1 Precautions

The **lower_case_table_names** parameter controls whether the MySQL database and table names are case sensitive. This parameter setting may affect the database or table configurations when the APIs in the following sections in this chapter are invoked. For example, if you have set the table names to be case insensitive and enter a table name containing uppercase letters, the name of the created table may contain only lowercase letters because the letter cases are insensitive. Therefore, when using the following APIs, ensure that the case of your input is the same as the actual case to avoid being affected by the case setting.

5.9.2 Creating a Database

Function

This API is used to create a database in a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database
- Parameter description

Table 5-155 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-156 Parameter description

| Name | Mandatory | Type | Description |
|---------------|-----------|--------|---|
| name | Yes | String | Specifies the database name. The database name contains 1 to 64 characters. Only letters, digits, hyphens (-), underscores (_), and dollar signs (\$) are allowed. The total number of hyphens (-) and dollar signs (\$) cannot exceed 10. MySQL 8.0 does not support dollar signs (\$). |
| character_set | Yes | String | Specifies the character set used by the database, such as utf8, gbk, and ascii. |

- Request example

```
{
  "name": "rds-test",
  "character_set": "utf8"
}
```

Response

- Normal response

Table 5-157 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.3 Querying Details About Databases

Function

This API is used to query details about databases on a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- The database list of read replicas cannot be queried.

URI

- URI format

```
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database/detail?page={page}&limit={limit}
```

- Parameter description

Table 5-158 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| page | Yes | Specifies the page number. The value starts from 1. |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-159 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| databases | Array of objects | Each element in the list indicates a database. For details, see Table 5-160 . |
| total_count | Integer | Indicates the total number of databases. |

Table 5-160 databases element structure description

| Name | Type | Description |
|---------------|--------|---|
| name | String | Indicates the database name. |
| character_set | String | Indicates the character set used by the database, such as utf8, gbk, and ascii. |

- Example normal response

```
{
  "databases": [
    {
      "name": "rds-test",
      "character_set": "utf8"
    },
    {
      "name": "testdb1",
      "character_set": "utf8"
    },
    {
      "name": "tt",
      "character_set": "utf8"
    }
  ],
  "total_count": 3
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.4 Querying Authorized Databases of a Specified User

Function

This API is used to query authorized databases of a specified database user.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be queried when the DB instance is in the abnormal state.

URI

- URI format
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/database?user-name={user-name}&page={page}&limit={limit}
- Parameter description

Table 5-161 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| user-name | Yes | Specifies the database username. |
| page | Yes | Specifies the page number. The value starts from 1. |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-162 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| databases | Array of objects | Each element in the list indicates a database. For details, see Table 5-163 . |
| total_count | Integer | Indicates the total number of databases. |

Table 5-163 databases element structure description

| Name | Type | Description |
|------|--------|------------------------------|
| name | String | Indicates the database name. |

| Name | Type | Description |
|----------|---------|---|
| readonly | Boolean | Indicates the read-only permission. <ul style="list-style-type: none"> • true: indicates the database is read-only. • false: indicates the database is readable and writable. |

- Example normal response

```
{
  "databases": [
    {
      "name": "rds-test",
      "readonly": false
    },
    {
      "name": "testdb1",
      "readonly": true
    },
    {
      "name": "tt",
      "readonly": false
    }
  ],
  "total_count": 3
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.5 Deleting a Database

Function

This API is used to delete a database from a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database/{db_name}`
- Parameter description

Table 5-164 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| db_name | Yes | Specifies the name of the database to be deleted. |

Request

- Parameter description
No request body
- Request example

```
{}
```

Response

- Normal response

Table 5-165 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{  
  "resp": "successful"  
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.6 Creating a Database Account

Function

This API is used to create a database account for a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user`
- Parameter description

Table 5-166 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-167 Parameter description

| Name | Mandatory | Type | Description |
|----------|-----------|--------|---|
| name | Yes | String | <p>Specifies the username of the database account.</p> <p>The username consists of 1 to 32 characters. Only lowercase letters, digits, hyphens (-), and underscores (_) are allowed.</p> <ul style="list-style-type: none"> • If the database version is MySQL 5.6, the username consists of 1 to 16 characters. • If the database version is MySQL 5.7 or 8.0, the username consists of 1 to 32 characters. |
| password | Yes | String | <p>Specifies the password of the database account.</p> <p>Valid value:</p> <p>The value cannot be empty and must be 8-32 characters. It can contain only uppercase letters, lowercase letters, digits, and the special characters (~!@#%^*-_+=?). The value cannot be the same as the name value or the name value in reverse order.</p> <p>You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking.</p> |

- Request example

```
{
  "name": "rds",
  "password": "Test@12345678"
}
```

Response

- Normal response

Table 5-168 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.7 Querying Details About Database Users

Function

This API is used to query details about database users of a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- The database user list of read replicas cannot be queried.

URI

- URI format

```
GET https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/detail?
page={page}&limit={limit}
```

- Parameter description

Table 5-169 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| page | Yes | Specifies the page number. The value starts from 1. |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-170 Parameter description

| Name | Type | Description |
|-------------|------------------|---|
| users | Array of objects | Each element in the list indicates a database account. For details, see Table 5-171 . |
| total_count | Integer | Indicates the total number of database users. |

Table 5-171 users element structure description

| Name | Type | Description |
|------|--------|-----------------------------|
| name | String | Indicates the account name. |

| Name | Type | Description |
|-------|--------|--|
| state | String | Indicates the database user status. <ul style="list-style-type: none"> • unavailable: The database user is unavailable. • available: The database user is available. |

- Example normal response

```
{
  "users": [
    {
      "name": "rdsuser",
      "state": "available"
    },
    {
      "name": "login001",
      "state": "available"
    }
  ],
  "total_count": 3
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.8 Querying Authorized Users of a Specified Database

Function

This API is used to query authorized users of a specified database.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- The database list of read replicas cannot be queried.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database/db_user?db-name={db-name}&page={page}&limit={limit}`
- Parameter description

Table 5-172 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| db-name | Yes | Specifies the database name. |
| page | Yes | Specifies the page number. The value starts from 1. |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-173 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| users | Array of objects | Each element in the list indicates a database account. For details, see Table 5-174 . |
| total_count | Integer | Indicates the total number of database users. |

Table 5-174 users element structure description

| Name | Type | Description |
|----------|---------|---|
| name | String | Indicates the account name. |
| readonly | Boolean | Indicates the read-only permission. <ul style="list-style-type: none"> • true: indicates the database is read-only. • false: indicates the database is readable and writable. |

- Example normal response

```
{
  "users": [
    {
      "name": "rds",
      "readonly": false
    },
    {
      "name": "rds001",
      "readonly": false
    }
  ],
  "total_count": 3
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.9 Deleting a Database Account

Function

This API is used to delete a database account from a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/{user_name}`
- Parameter description

Table 5-175 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| user_name | Yes | Specifies the username of the account to be deleted. |

Request

- Parameter description
No request body
- Request example

```
{}
```

Response

- Normal response

Table 5-176 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{  
  "resp": "successful"  
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.10 Configuring a Password for a Database Account

Function

This API is used to configure a password for a database account.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/resetpwd`
- Parameter description

Table 5-177 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-178 Parameter description

| Name | Mandatory | Type | Description |
|------|-----------|--------|---|
| name | Yes | String | Specifies the username of the database account. |

| Name | Mandatory | Type | Description |
|----------|-----------|--------|--|
| password | Yes | String | <p>Specifies the password of the database account.</p> <p>Valid value:</p> <p>The value cannot be empty and must be 8-32 characters in length. It contains at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters (~!@#%^*_=-+?). The value must be different from the name value and the value spelled backwards.</p> <p>You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking.</p> |

- Request example

```
{
  "name": "rds",
  "password": "Test@12345678"
}
```

Response

- Normal response

Table 5-179 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.11 Authorizing a Database Account

Function

This API is used to set permissions of a database account in a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_privilege`
- Parameter description

Table 5-180 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-181 Parameter description

| Name | Mandatory | Type | Description |
|---------|-----------|--------|------------------------------|
| db_name | Yes | String | Specifies the database name. |

| Name | Mandatory | Type | Description |
|-------|-----------|------------------|---|
| users | Yes | Array of objects | Specifies the account that associated with the database. A single request supports a maximum of 50 elements. For details on the element structure, see Table 5-182 . |

Table 5-182 users field data structure description

| Name | Mandatory | Type | Description |
|----------|-----------|---------|---|
| name | Yes | String | Specifies the username of the database account. The username consists of 1 to 32 characters. Only lowercase letters, digits, hyphens (-), and underscores (_) are allowed. <ul style="list-style-type: none"> • If the database version is MySQL 5.6, the username consists of 1 to 16 characters. • If the database version is MySQL 5.7 or 8.0, the username consists of 1 to 32 characters. |
| readonly | Yes | Boolean | Specifies the read-only permission. <ul style="list-style-type: none"> • true: indicates the read-only permission. • false: indicates the read and write permission. |

- Request example

```
{
  "db_name": "rds-test",
```

```
"users": [
  {
    "name": "rds",
    "readonly": false
  },
  {
    "name": "rds001",
    "readonly": true
  }
]
```

Response

- Normal response

Table 5-183 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.9.12 Revoking Permissions of a Database Account

Function

This API is used to revoke permissions of a database account in a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_privilege`
- Parameter description

Table 5-184 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-185 Parameter description

| Name | Mandatory | Type | Description |
|---------|-----------|------------------|---|
| db_name | Yes | String | Specifies the database name. |
| users | Yes | Array of objects | Specifies the account that associated with the database. A single request supports a maximum of 50 elements. For more information about the element structure, see Table 5-186 . |

Table 5-186 users field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| name | Yes | String | <p>Specifies the username of the database account.</p> <p>The username consists of 1 to 32 characters. Only lowercase letters, digits, hyphens (-), and underscores (_) are allowed.</p> <ul style="list-style-type: none"> • If the database version is MySQL 5.6, the username consists of 1 to 16 characters. • If the database version is MySQL 5.7 or 8.0, the username consists of 1 to 32 characters. |

- Request example

```
{
  "db_name": "rds-test",
  "users": [
    {
      "name": "rds"
    },
    {
      "name": "rds001"
    }
  ]
}
```

Response

- Normal response

Table 5-187 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response


```
{
  "resp": "successful"
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10 Database and Account Management (Microsoft SQL Server)

5.10.1 Querying Details About Databases

Function

This API is used to query details about databases on a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- The database user list of read replicas cannot be queried.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database/detail?page={page}&limit={limit}&db-name={db-name}`
- Parameter description

Table 5-188 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

| Name | Mandatory | Description |
|---------|-----------|---|
| page | Yes | Specifies the page number. The value starts from 1. |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |
| db-name | No | Specifies the database name. When this parameter is specified, the page and limit parameters need to be specified but do not take effect. |

Request

None

Response

- Normal response

Table 5-189 Parameter description

| Name | Type | Description |
|-------------|------------------|---|
| databases | Array of objects | Each element in the list indicates a database. For details, see Table 5-190 . |
| total_count | Integer | Indicates the total number of databases. |

Table 5-190 databases element structure description

| Name | Type | Description |
|---------------|--------|--|
| name | String | Indicates the database name. |
| character_set | String | Indicates the character set used by the database, such as Chinese_PRC_CI_AS. |

| Name | Type | Description |
|-------|--------|---|
| state | String | Indicates the database status. Its value can be any of the following: <ul style="list-style-type: none"> • Creating: The database is being created. • Running: The database is running. • Deleting: The database is being deleted. • Not Exists: The database does not exist. |

- Example normal response

```
{
  "databases": [
    {
      "name": "master",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    },
    {
      "name": "msdb",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    },
    {
      "name": "model",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    },
    {
      "name": "tempdb",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    },
    {
      "name": "rdsadmin",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    },
    {
      "name": "rds-test",
      "character_set": "Chinese_PRC_CI_AS",
      "state": "Running"
    }
  ],
  "total_count": 6
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10.2 Creating a Database Account

Function

This API is used to create a database account for a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user`
- Parameter description

Table 5-191 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|---|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-192 Parameter description

| Name | Mandatory | Type | Description |
|----------|-----------|--------|---|
| name | Yes | String | Specifies the username of the database account. It contains 1 to 128 characters and must be different from system usernames. System users include rdsadmin , rdsuser , rdsbackup , and rdsmirror . |
| password | Yes | String | Specifies the password of the database account. The value cannot be left blank. It consists of 8 to 128 characters and contains at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters. You are advised to enter a strong password to improve security, preventing security risks such as brute force cracking. |

- Request example

```
{
  "name": "rds",
  "password": "Test@12345678"
}
```

Response

- Normal response

Table 5-193 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10.3 Querying Details About Database Users

Function

This API is used to query details about database users of a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- The database user list of read replicas cannot be queried.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/detail?page={page}&limit={limit}`
- Parameter description

Table 5-194 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| page | Yes | Specifies the page number. The value starts from 1 . |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-195 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| users | Array of objects | Each element in the list indicates a database account. For details, see Table 5-196 . |
| total_count | Integer | Indicates the total number of database users. |

Table 5-196 users element structure description

| Name | Type | Description |
|-------|--------|--|
| name | String | Indicates the account name. |
| state | String | Indicates the database user status. <ul style="list-style-type: none"> • unavailable: The database user is unavailable. • available: The database user is available. |

- Example normal response

```
{
  "users": [
    {
      "name": "rdsuser",
      "state": "available"
    },
    {
      "name": "login001",
      "state": "available"
    }
  ],
  "total_count": 2
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Codes

For details, see [Status Codes](#).

Error Codes

For details, see [Error Codes](#).

5.10.4 Querying Authorized Users of a Specified Database

Function

This API is used to query authorized users of a specified database.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

- Databases cannot be queried when the DB instance is in the abnormal state.
- Authorized users of a specified database for read replicas cannot be queried.

URI

- URI format
GET `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/database/db_user?db-name={db-name}&page={page}&limit={limit}`
- Parameter description

Table 5-197 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| db-name | Yes | Specifies the database name. |
| page | Yes | Specifies the page number. The value starts from 1 . |
| limit | Yes | Specifies the number of records on each page. The value ranges from 1 (inclusive) to 100 (inclusive). |

Request

None

Response

- Normal response

Table 5-198 Parameter description

| Name | Type | Description |
|-------------|------------------|--|
| users | Array of objects | Each element in the list indicates a database account. For details, see Table 5-199 . |
| total_count | Integer | Indicates the total number of database users. |

Table 5-199 users element structure description

| Name | Type | Description |
|------|--------|-----------------------------|
| name | String | Indicates the account name. |

- Example normal response

```
{
  "users": [
    {
      "name": "rds"
    },
    {
      "name": "rds001"
    }
  ],
  "total_count": 3
}
```

- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10.5 Deleting a Database Account

Function

This API is used to delete a database account from a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
DELETE https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_user/{user_name}
- Parameter description

Table 5-200 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |
| user_name | Yes | Specifies the username of the account to be deleted. |

Request

- Parameter description
No request body
- Request example
{ }

Response

- Normal response

Table 5-201 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response


```
{
  "resp": "successful"
}
```
- Abnormal response
For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10.6 Authorizing a Database Account

Function

This API is used to set permissions of a database account in a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
POST https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_privilege
- Parameter description

Table 5-202 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-203 Parameter description

| Name | Mandatory | Type | Description |
|---------|-----------|------------------|--|
| db_name | Yes | String | Specifies the database name. |
| users | Yes | Array of objects | Specifies the account that associated with the database. A single request supports a maximum of 50 elements. For details on the element structure, see Table 5-204 . |

Table 5-204 users field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| name | Yes | String | Specifies the username of the database account. It contains 1 to 128 characters and must be different from system usernames. System users include rdsadmin , rdsuser , rdsbackup , and rdsmirror . |

- Request example

```
{
  "db_name": "rds-test",
  "users": [
    {
      "name": "rds"
    },
    {
      "name": "rds001"
    }
  ]
}
```

Response

- Normal response

Table 5-205 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

5.10.7 Revoking Permissions of a Database Account

Function

This API is used to revoke permissions of a database account in a specified DB instance.

- Before calling an API, you need to understand the API in [Authentication](#).
- Before calling this API, obtain the required [region and endpoint](#).

Constraints

Databases cannot be created when the DB instance is in any of the following statuses: creating, changing instance class, changing port, or abnormal.

URI

- URI format
DELETE `https://{Endpoint}/v3/{project_id}/instances/{instance_id}/db_privilege`
- Parameter description

Table 5-206 Parameter description

| Name | Mandatory | Description |
|-------------|-----------|--|
| project_id | Yes | Specifies the project ID of a tenant in a region. For details about how to obtain the project ID, see Obtaining a Project ID . |
| instance_id | Yes | Specifies the DB instance ID. |

Request

- Parameter description

Table 5-207 Parameter description

| Name | Mandatory | Type | Description |
|---------|-----------|------------------|--|
| db_name | Yes | String | Specifies the database name. |
| users | Yes | Array of objects | Specifies the account that associated with the database. A single request supports a maximum of 50 elements. For more information about the element structure, see Table 5-208 . |

Table 5-208 users field data structure description

| Name | Mandatory | Type | Description |
|------|-----------|--------|--|
| name | Yes | String | Specifies the username of the database account. It contains 1 to 128 characters and must be different from system usernames. System users include rdsadmin , rdsuser , rdsbackup , and rdsmirror . |

- Request example

```
{
  "db_name": "rds-test",
  "users": [
    {
      "name": "rds"
    },
    {
      "name": "rds001"
    }
  ]
}
```

Response

- Normal response

Table 5-209 Parameter description

| Name | Type | Description |
|------|--------|--|
| resp | String | Returns successful if the invoking is successful. |

- Example normal response

```
{
  "resp": "successful"
}
```

- Abnormal response

For details, see [Abnormal Request Results](#).

Status Code

For details, see [Status Codes](#).

Error Code

For details, see [Error Codes](#).

6 Appendix

6.1 Abnormal Request Results

v3 APIs

Abnormal response description

Table 6-1 Abnormal response description

| Name | Type | Description |
|------------|--------|--|
| error_code | String | Specifies the error returned when a task submission exception occurs. |
| error_msg | String | Specifies the description of the error returned when a task submission exception occurs. |

Response example

```
{  
  "error_code": "DBS.200022",  
  "error_msg": "The DB instance name already exists."  
}
```

6.2 Status Codes

[Table 6-2](#) describes status codes.

Table 6-2 Status codes

| Status Code | Message | Description |
|-------------|-------------------------------|--|
| 100 | Continue | The client should continue with its request. This interim response is used to inform the client that the initial part of the request has been received and has not yet been rejected by the server. |
| 101 | Switching Protocols | The protocol should be switched. The protocol can only be switched to a more advanced protocol. For example, the current HTTP protocol is switched to a later version. |
| 200 | OK | Request succeeded. |
| 201 | Created | The request for creating a resource or task has been fulfilled. |
| 202 | Accepted | The request has been accepted, but the processing has not been completed. |
| 203 | Non-Authoritative Information | Unauthorized information. The request is successful. |
| 204 | NoContent | The server has successfully processed the request, but has not returned any content. The status code is returned in response to an HTTP OPTIONS request. |
| 205 | Reset Content | The server has fulfilled the request, but the requester is required to reset the content. |
| 206 | Partial Content | The server has processed certain GET requests. |
| 300 | Multiple Choices | There are multiple options for the location of the requested resource. The response contains a list of resource characteristics and addresses from which the user or user agent (such as a browser) can choose the most appropriate one. |
| 301 | Moved Permanently | The requested resource has been assigned a new permanent URI, and the new URI is contained in the response. |
| 302 | Found | The requested resource was temporarily moved. |
| 303 | See Other | The response to the request can be found under a different URI and should be retrieved using a GET or POST method. |

| Status Code | Message | Description |
|-------------|-------------------------------|--|
| 304 | Not Modified | The requested resource has not been modified. In such a case, there is no need to retransmit the resource since the client still has a previously-downloaded copy. |
| 305 | Use Proxy | The requested resource must be accessed through a proxy. |
| 306 | Unused | The HTTP status code is no longer used. |
| 400 | BadRequest | Invalid request. The client should not repeat the request without modifications. |
| 401 | Unauthorized | The status code is returned after the client provides the authentication information, indicating that the authentication information is incorrect or invalid. |
| 402 | Payment Required | This status code is reserved for future use. |
| 403 | Forbidden | The server understood the request, but is refusing to fulfill it. The client should not repeat the request without modifications. |
| 404 | NotFound | The requested resource cannot be found. The client should not repeat the request without modifications. |
| 405 | MethodNotAllowed | The method specified in the request is not supported for the requested resource. The client should not repeat the request without modifications. |
| 406 | Not Acceptable | The server cannot fulfill the request according to the content characteristics of the request. |
| 407 | Proxy Authentication Required | This status code is similar to 401, but indicates that the client must first authenticate itself with the proxy. |
| 408 | Request Time-out | The server timed out waiting for the request. The client may repeat the request without modifications at any later time. |

| Status Code | Message | Description |
|-------------|-------------------------------|---|
| 409 | Conflict | The request could not be processed due to a conflict. This status code indicates that the resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request. |
| 410 | Gone | The requested resource is no longer available. The requested resource has been deleted permanently. |
| 411 | Length Required | The server refuses to process the request without a defined Content-Length. |
| 412 | Precondition Failed | The server does not meet one of the preconditions that the requester puts on the request. |
| 413 | Request Entity Too Large | The request is larger than that a server is able to process. The server may close the connection to prevent the client from continuing the request. If the server temporarily cannot process the request, the response will contain a Retry-After header field. |
| 414 | Request-URI Too Large | The URI provided was too long for the server to process. |
| 415 | Unsupported Media Type | The server is unable to process the media format in the request. |
| 416 | Requested range not satisfied | The requested range is invalid. |
| 417 | Expectation Failed | The server fails to meet the requirements of the Expect request-header field. |
| 422 | UnprocessableEntity | The request is well-formed but is unable to be processed due to semantic errors. |
| 429 | TooManyRequests | The client has sent more requests than its rate limit is allowed within a given amount of time, or the server has received more requests than it is able to process within a given amount of time. In this case, it is advisable for the client to re-initiate requests after the time specified in the Retry-After header of the response expires. |
| 500 | InternalServerError | The server is able to receive the request but it could not understand the request. |

| Status Code | Message | Description |
|-------------|----------------------------|--|
| 501 | Not Implemented | The server does not support the requested function. |
| 502 | Bad Gateway | The server acting as a gateway or proxy receives an invalid response from a remote server. |
| 503 | ServiceUnavailable | The requested service is invalid. The client should not repeat the request without modifications. |
| 504 | ServerTimeout | The request cannot be fulfilled within a given time. The response will reach the client only if the request carries a timeout parameter. |
| 505 | HTTP Version not supported | The server does not support the HTTP protocol version used in the request. |

6.3 Error Codes

The following table describes error codes.

Table 6-3 V3 error codes

| Error Code | Response Code | Description |
|------------|---------------|---|
| DBS.108000 | 500 | Server failure. |
| DBS.108002 | 500 | Server failure. |
| DBS.108005 | 500 | Server failure. |
| DBS.200001 | 400 | Parameter error. |
| DBS.200002 | 404 | The DB instance does not exist. |
| DBS.200004 | 400 | Parameter error. |
| DBS.200005 | 500 | Server failure. |
| DBS.200006 | 400 | The request is null. Enter a request parameter. |
| DBS.200008 | 404 | The ECS information of the DB instance cannot be found. |
| DBS.200010 | 403 | The DB instance ID or user ID may be null, or the operation is not authorized. |
| DBS.200011 | 409 | Another operation is being performed on the DB instance or the DB instance is faulty. |

| Error Code | Response Code | Description |
|------------|---------------|---|
| DBS.200013 | 404 | The original DB instance does not exist. |
| DBS.200019 | 409 | Another operation is being performed on the DB instance or the DB instance is faulty. |
| DBS.200021 | 400 | Invalid DB instance name. |
| DBS.200022 | 409 | The DB instance name already exists. |
| DBS.200023 | 400 | Storage space is out of range. |
| DBS.200024 | 400 | Invalid region. |
| DBS.200025 | 400 | Invalid AZ. |
| DBS.200026 | 400 | Invalid storage type. |
| DBS.200027 | 400 | Storage space must be a multiple of 10. |
| DBS.200040 | 400 | The DB engine or version is not supported. |
| DBS.200041 | 400 | Invalid database version. |
| DBS.200042 | 400 | The DB engine does not exist. |
| DBS.200043 | 400 | Invalid synchronize model. |
| DBS.200044 | 403 | Resource not found or permission denied. |
| DBS.200045 | 404 | The DB instance does not exist. |
| DBS.200046 | 413 | The number of DB instances has reached the quota. |
| DBS.200047 | 409 | Another operation is being performed on the DB instance or the DB instance is faulty. |
| DBS.200048 | 400 | Invalid VPC ID. |
| DBS.200049 | 400 | Invalid network ID. |
| DBS.200050 | 404 | The security group does not exist or does not belong to the VPC. |
| DBS.200051 | 400 | Invalid HA mode. |
| DBS.200052 | 400 | Invalid database root password. |
| DBS.200053 | 400 | The selected specifications do not exist. |
| DBS.200054 | 400 | Invalid specifications. |
| DBS.200055 | 400 | Invalid replica_of_id. |
| DBS.200056 | 400 | The maximum number of nodes has been reached. |

| Error Code | Response Code | Description |
|------------|---------------|--|
| DBS.200086 | 400 | This operation is not allowed by the DB instance status. |
| DBS.200087 | 400 | The number of tags added for the DB instance has reached the quota. |
| DBS.200098 | 400 | The tag already exists. |
| DBS.200203 | 400 | Failed to query the DB instance. |
| DBS.200303 | 400 | The scale-up times have reached the maximum value. |
| DBS.200306 | 400 | The new storage space must be greater than or equal to the original storage space. |
| DBS.200308 | 400 | The new storage space after scaling up cannot be greater than that of the primary DB instance. |
| DBS.200316 | 409 | This operation cannot be performed because the DB instance status is Storage full. |
| DBS.200402 | 409 | Invalid operation. |
| DBS.200405 | 400 | Parameter error. |
| DBS.200408 | 404 | The DB instance does not exist. |
| DBS.200461 | 400 | The parameter value is out of range. |
| DBS.200470 | 404 | The region or AZ does not exist. |
| DBS.200501 | 404 | The subnet does not exist or does not belong to the VPC. |
| DBS.200503 | 404 | The VPC does not exist or does not belong to the user. |
| DBS.200504 | 400 | Invalid database version. |
| DBS.200506 | 400 | Invalid KMS. |
| DBS.200543 | 400 | The job does not exist. |
| DBS.200602 | 404 | The DB instance does not exist. |
| DBS.200604 | 403 | The DB instance ID or user ID may be null, or the operation is not authorized. |
| DBS.200811 | 500 | Failed to create the database. |
| DBS.201003 | 403 | Resource not found or permission denied. |
| DBS.201010 | 404 | The backup information does not exist. |

| Error Code | Response Code | Description |
|------------|---------------|---|
| DBS.201014 | 400 | This operation is not allowed by the DB instance status. |
| DBS.201028 | 404 | The DB instance does not exist. |
| DBS.201035 | 400 | The database name must be different from the original and target database names. |
| DBS.201101 | 400 | Invalid backup cycle. |
| DBS.201103 | 400 | Invalid backup start time. |
| DBS.201106 | 400 | Invalid retention days. |
| DBS.201201 | 409 | The object already exists. |
| DBS.201202 | 409 | Another operation is being performed on the DB instance or the DB instance is faulty. |
| DBS.201203 | 400 | The backup file does not exist. |
| DBS.201205 | 409 | Backup is in progress, please wait. |
| DBS.201207 | 400 | The DB engine or version is not supported. |
| DBS.212001 | 404 | The parameter template does not exist. |
| DBS.212002 | 400 | Incorrect parameter template quota. |
| DBS.212003 | 400 | Operation not allowed. |
| DBS.212004 | 400 | Parameter template update error. |
| DBS.212005 | 400 | The node does not belong to the group. |
| DBS.212006 | 409 | Another operation is being performed on the DB instance or the DB instance is faulty. |
| DBS.212007 | 400 | The DB engine does not exist. |
| DBS.212008 | 400 | The DB engine is not supported. |
| DBS.212009 | 400 | Task processing failed. |
| DBS.212010 | 400 | The parameter template is being applied. |
| DBS.212011 | 400 | Application failed. |
| DBS.212012 | 400 | The parameter does not exist. |
| DBS.212013 | 404 | The object does not exist. |
| DBS.212014 | 400 | The node does not have a default parameter template. |
| DBS.212015 | 400 | Partial success |

| Error Code | Response Code | Description |
|------------|---------------|--|
| DBS.212016 | 400 | Parameter update failed. |
| DBS.212017 | 400 | Invalid parameter. |
| DBS.212019 | 422 | The parameter cannot be processed. |
| DBS.212025 | 400 | Update failed. |
| DBS.212030 | 400 | Parameter error |
| DBS.212032 | 400 | The parameter template has been applied. |
| DBS.212037 | 400 | Parameters are incorrectly set. |
| DBS.213004 | 500 | Failed to process the request. |
| DBS.216028 | 400 | Insufficient internal resource quota. |
| DBS.280001 | 400 | Parameter error. |
| DBS.280015 | 403 | Resource not found or permission denied. |
| DBS.280056 | 403 | Invalid token. |
| DBS.280127 | 400 | Invalid backup description. |
| DBS.280128 | 400 | The database name does not exist. |
| DBS.280204 | 400 | Invalid parameter. |
| DBS.280214 | 400 | The backup does not exist. |
| DBS.280235 | 400 | Invalid database type. |
| DBS.280238 | 400 | The DB engine or version is not supported. |
| DBS.280239 | 400 | Invalid specifications. |
| DBS.280241 | 400 | Invalid storage type. |
| DBS.280246 | 400 | Invalid database root password. |
| DBS.280250 | 400 | Invalid backup retention days. |
| DBS.280253 | 400 | Invalid backup start time. |
| DBS.280270 | 400 | The parameter does not exist. |
| DBS.280271 | 400 | The parameter value is out of range. |
| DBS.280272 | 400 | The tag key must be unique. |
| DBS.280277 | 400 | Invalid object name. |
| DBS.280285 | 400 | Invalid AZ. |
| DBS.280404 | 400 | Invalid DB instance ID or node ID format. |

| Error Code | Response Code | Description |
|------------|---------------|---|
| DBS.280449 | 400 | Operation not allowed on frozen objects. |
| DBS.280450 | 400 | The DB instance specifications are sold out. |
| DBS.290000 | 400 | Parameter error. |
| DBS.290001 | 400 | Invalid parameter letter case. |
| DBS.290002 | 404 | The selected specifications do not exist. |
| DBS.290003 | 413 | The number of DB instances has reached the quota. |
| DBS.290005 | 404 | The DB instance does not exist. |
| DBS.290006 | 500 | Failed to process the request. |
| DBS.290011 | 404 | The DB instance does not exist. |
| DBS.290013 | 404 | Resource not found. |
| DBS.290015 | 500 | Failed to process the request. |

6.4 Obtaining a Project ID

Scenarios

When calling APIs, you need to specify the project ID in some URLs. To do so, you need to obtain the project ID first. Two methods are available:

- [Obtaining the Project ID by Calling an API](#)

Obtaining the Project ID by Calling an API

The API used to obtain a project ID is GET `https://{Endpoint}/v3/projects`. `{Endpoint}` is the IAM endpoint and can be obtained from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. The value of `id` is the project ID.

```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "project_name",
      "description": "",
      "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
      },
      "id": "a4a5d4098fb4474fa22cd05f897d6b99",
      "enabled": true
    }
  ]
}
```

```

    }
  ],
  "links": {
    "next": null,
    "previous": null,
    "self": "https://www.example.com/v3/projects"
  }
}

```

6.5 Replication Mode Table

Replication mode table

| Replication Mode | Description | Remarks |
|------------------|------------------|---------|
| async | Asynchronous | N/A |
| semisync | Semi-synchronous | N/A |
| sync | Synchronous | N/A |

6.6 RDS Monitoring Metrics Description

Function Description

This section describes namespaces, descriptions, and dimensions of monitoring metrics reported to Cloud Eye. You can query monitoring metrics and alarm information reported to Cloud Eye over its API.

Namespace

SYS.RDS

Monitoring Metrics

Table 6-4 RDS performance metrics

| Metric | Name | Description | Value Range | Remarks |
|-----------------|-----------|-----------------------------------|-------------|---|
| rds001_cpu_util | CPU Usage | CPU usage of the monitored object | 0%–100% | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |

| Metric | Name | Description | Value Range | Remarks |
|-------------------------|---------------------------|--|--------------|---|
| rds002_memory_util | Memory Usage | Memory usage of the monitored object | 0%–100% | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds003_iops | IOPS | Average number of I/O requests processed by the system in a specified period | ≥ 0 counts/s | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds004_bytes_in | Network Input Throughput | Incoming traffic in bytes per second | ≥ 0 bytes/s | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds005_bytes_out | Network Output Throughput | Outgoing traffic in bytes per second | ≥ 0 bytes/s | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds006_connection_count | Total Connections | Total number of connections that attempt to connect to the MySQL server | ≥ 0 counts | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|-------------------------------|------------------------------|---|-------------|--|
| rds007_conn_active_count | Current Active Connections | Number of current active connections | ≥ 0 counts | Monitored object: database Monitored instance type: MySQL instances |
| rds008_queries | QPS | Query times of SQL statements (including storage procedures) per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |
| rds009_transactions | TPS | Execution times of submitted and rollback transactions per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |
| rds010_innodb_buffer_usage | Buffer Pool Usage | Ratio of dirty data to all data in the InnoDB buffer | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds011_innodb_buffer_hit | Buffer Pool Hit Rate | Ratio of read hits to read requests in the InnoDB buffer | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds012_innodb_buffer_dirty | Buffer Pool Dirty Block Rate | Ratio of used pages to total pages in the InnoDB buffer | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds013_innodb_read_throughput | InnoDB Read Throughput | Number of read bytes per second in the InnoDB buffer | ≥ 0 bytes/s | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|-----------------------------------|--------------------------------------|--|--------------|--|
| rds014_innodb_writes | InnoDB Write Throughput | Number of write bytes per second in the InnoDB buffer | ≥ 0 bytes/s | Monitored object: database Monitored instance type: MySQL instances |
| rds015_innodb_read_count | InnoDB File Read Frequency | Number of times that InnoDB reads data from files per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |
| rds016_innodb_write_count | InnoDB File Write Frequency | Number of times that InnoDB writes data to files per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |
| rds017_innodb_log_write_req_count | InnoDB Log Write Requests per Second | Number of InnoDB log write requests per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds018_innodb_log_write_count | InnoDB Log Physical Write Frequency | Number of InnoDB physical write times to log files per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds019_innodb_log_fsync_count | InnoDB Log fsync() Write Frequency | Number of completed fsync() write times to InnoDB log files per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|--------------------------------|-----------------------------|---|-------------|--|
| rds020_temp_tbl_count | Temporary Tables | Number of temporary tables automatically created on hard disks when MySQL statements are executed | ≥ 0 counts | Monitored object: database Monitored instance type: MySQL instances |
| rds021_myisam_buffer_usage | Key Buffer Usage | MyISAM key buffer usage | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds022_myisam_buffer_write_hit | Key Buffer Write Hit Ratio | MyISAM key buffer write hit ratio | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds023_myisam_buffer_read_hit | Key Buffer Read Hit Ratio | MyISAM key buffer read hit ratio | 0-1 | Monitored object: database Monitored instance type: MySQL instances |
| rds024_myisam_disk_write_count | MyISAM Disk Write Frequency | Number of times that indexes are written to disks per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |
| rds025_myisam_disk_read_count | MyISAM Disk Read Frequency | Number of times that indexes are read from disks per second | ≥ 0 times/s | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|-----------------------------------|--|---|--------------|--|
| rds026_myisam_buf_write_count | MyISAM Buffer Pool Write Requests per Second | Number of requests for writing indexes into the MyISAM buffer pool per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds027_myisam_buf_read_count | MyISAM Buffer Pool Read Requests per Second | Number of requests for reading indexes from the MyISAM buffer pool per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds028_cmdml_delete_count | DELETE Statements per Second | Number of DELETE statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds029_cmdml_insert_count | INSERT Statements per Second | Number of INSERT statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds030_cmdml_insert_select_count | INSERT_SELECT Statements per Second | Number of INSERT_SELECT statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds031_cmdml_replace_count | REPLACE Statements per Second | Number of REPLACE statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds032_cmdml_replace_select_count | REPLACE_SELECT Statements per Second | Number of REPLACE_SELECT statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|--|--|--|--------------|--|
| rds033_c mdml_sel _count | SELECT Statement s per Second | Number of SELECT statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds034_c mdml_up d_count | UPDATE Statement s per Second | Number of UPDATE statements executed per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds035_in nodb_del_ row_coun t | Row Delete Frequency | Number of rows deleted from the InnoDB table per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds036_in nodb_ins_ row_coun t | Row Insert Frequency | Number of rows inserted into the InnoDB table per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds037_in nodb_rea d_row_co unt | Row Read Frequency | Number of rows read from the InnoDB table per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |
| rds038_in nodb_upd _row_cou nt | Row Update Frequency | Number of rows updated into the InnoDB table per second | ≥ 0 counts/s | Monitored object: database Monitored instance type: MySQL instances |

| Metric | Name | Description | Value Range | Remarks |
|-------------------------------------|------------------------------|---|-------------|---|
| rds039_disk_util | Storage Space Usage | Storage space usage of the monitored object | 0%–100% | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds040_transaction_logs_usage | Transaction Logs Usage | Storage space usage of transaction logs | ≥ 0 MB | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds041_replication_slot_usage | Replication Slot Usage | Storage space usage of replication slot files | ≥ 0 MB | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds042_database_connections | Database Connections in Use | Number of database connections in use | ≥ 0 counts | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds043_maximum_used_transaction_ids | Maximum Used Transaction IDs | Maximum number of transaction IDs that have been used | ≥ 0 counts | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds044_transaction_logs_generations | Transaction Logs Generation | Size of transaction logs generated per second | ≥ 0 MB/s | Monitored object: database Monitored instance type: PostgreSQL instances |

| Metric | Name | Description | Value Range | Remarks |
|------------------------------------|-----------------------------|--|-------------|---|
| rds045_oldest_replication_slot_lag | Oldest Replication Slot Lag | Lagging size of the most lagging replica in terms of WAL data received | ≥ 0 MB | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds046_replication_lag | Replication Lag | Replication lag delay | ≥ 0 ms | Monitored object: database Monitored instance type: PostgreSQL instances |
| rds047_disk_total_size | Total Storage Space | Total storage space of the monitored object | 40–4000 GB | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds048_disk_used_size | Used Storage Space | Used storage space of the monitored object | 0–4000 GB | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds049_disk_read_throughput | Disk Read Throughput | Number of bytes read from the disk per second | ≥ 0 bytes/s | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |

| Metric | Name | Description | Value Range | Remarks |
|-------------------------------|-----------------------------|---|--------------|---|
| rds050_disk_write_throughput | Disk Write Throughput | Number of bytes written into the disk per second | ≥ 0 bytes/s | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds051_avg_disk_sec_per_read | Disk Read Time | Average time required for each disk read in a specified period | ≥ 0 ms | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds052_avg_disk_sec_per_write | Disk Write Time | Average time required for each disk write in a specified period | > 0 ms | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL PostgreSQL Microsoft SQL Server |
| rds053_avg_disk_queue_length | Average Disk Queue Length | Number of processes to be written into the monitored object | ≥ 0 | Monitored object: ECS. Monitored DB instance type: <ul style="list-style-type: none"> MySQL Microsoft SQL Server |
| rds054_db_connections_in_use | Database Connections in Use | Number of database connections in use | ≥ 0 counts | Monitored object: database Monitored instance type: Microsoft SQL Server instances |
| rds077_buffer_write_rate | Buffer Pool Write Frequency | Write frequency of the database buffer pool | ≥ 0 counts/s | Monitored object: database Monitored instance type: |

| Metric | Name | Description | Value Range | Remarks |
|--------------------------------|----------------------------------|---|--------------|--|
| rds078_buf f_read_rat e | Buffer Pool Read Frequency | Read frequency of the database buffer pool | ≥ 0 counts/s | Monitored object: database Monitored instance type: |
| rds079_di sk_write_r ate | Disk Write Frequency | Write frequency of the database disk | ≥ 0 counts/s | Monitored object: database Monitored instance type: |
| rds080_di sk_read_r ate | Disk Read Frequency | Read frequency of the database disk | ≥ 0 counts/s | Monitored object: database Monitored instance type: |

Dimension

| Key | Value |
|---------------------------|--|
| rds_instance_id | Specifies the MySQL DB instance ID. |
| postgresql_instance_id | Specifies the PostgreSQL DB instance ID. |
| rds_instance_sqlserver_id | Specifies the Microsoft SQL Server DB instance ID. |

API Calling

Use APIs to search for RDS monitoring metrics. For details about calling methods and parameter description, see section "Querying Monitoring Data" in the *Cloud Eye API Reference*.

Examples:

- Request

```
/V1.0/{project_id}/metric-data?
namespace=SYS.RDS&metric_name=rds001_cpu_usage&dim.0=rds_instance_id,5ea170ad-
cc6b-49cd-9020-
e94fdbeea391&from=1484123686000&to=1568188853000&period=300&filter=average
```

- Response:

```
{
  "datapoints": [
    {
      "average": 0.35,
      "timestamp": 1484123400000,
      "unit": "Ratio"
    },
    {
```

```
        "average": 0.11,  
        "timestamp": 1484123700000,  
        "unit": "Ratio"  
    }  
],  
  "metric_name": "rds001_cpu_usage",  
  "httpcode" : 200,  
  "header" : {  
    "Transfer-Encoding" : "chunked",  
    "Server" : "Web Server",  
    "X-Request-Id" : "te-l-CES-  
APISVR25.id-0418d62a-1e76-46ff-9a5f-9ce40b336e29.ts-1484123744291.c-15046",  
    "X-Content-Type-Options" : "nosniff",  
    "Connection" : "keep-alive",  
    "X-Download-Options" : "noopen",  
    "Date" : "Wed, 11 Jan 2017 08:35:44 GMT",  
    "X-Frame-Options" : "DENY",  
    "Strict-Transport-Security" : "max-age=31536000; includeSubdomains;",  
    "Cache-Control" : "no-cache",  
    "X-XSS-Protection" : "1; mode=block;",  
    "Content-Length" : "165",  
    "Content-Type" : "application/json"  
  }  
}
```