

01 DDM API Reference

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1 Before You Start

1.1 Overview

Welcome to Distributed Database Middleware (DDM). This document describes functions, syntax, parameters, and examples of DDM.

If you plan to access DDM using an API, ensure that you are familiar with DDM concepts.

This document describes how to use application programming interfaces (APIs) to perform creating, modifying, querying, and updating operations.

NOTE

- This document will be updated when APIs of new functions are added, for example, adding response parameters.
- To reduce impacts caused by API changes, DDM is backward compatible with existing APIs. When using DDM, you should accept and ignore unused parameters and parameter values in JSON responses.

1.2 API Calling

DDM supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS.

NOTE

A request throttling policy is used to limit the number of times that an API can be called within a specific time period. If there are too many API requests within a specific time period, the requests may fail.

Standard request throttling policy: 60 calls per minute for a single user and 8,000 calls per minute for an API.

1.3 Constraints

- The number of DDM instances that you can create is determined by your quota.

- For more constraints, see API description.

1.4 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 users and grant them permissions for routine management.
- IAM user

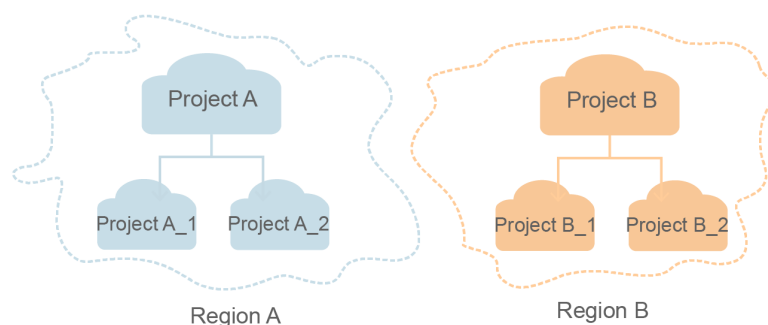
An IAM user is created using an account to use cloud services. Each IAM user has its own identity credentials (password and access keys).
An IAM user can view the account ID and user ID on the **API Credentials** page of the management console. The account name, username, and password will be required 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 comprises one or more physical data centers equipped with independent cooling, fire extinguishing, moisture-proof, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow users to build cross-AZ high-availability systems.
- Project

A project corresponds to a region. Projects group and isolate resources (including compute, storage, and network resources) across physical regions. Users can be granted permissions in a default project to access all resources in the region associated with the project. For more refined access control, create subprojects under a project and 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 of multiple regions, and resources can be added to or removed from the enterprise project.

2 API Overview

DDM provides REST APIs. With DDM APIs, you can use all DDM functions, including creating DDM instances and schemas.

Table 2-1 API description

Type	API	Description
APIs for managing DDM instances	Buying a DDM instance	This API is used to buy a DDM instance. DDM instances created using this API are billed in pay-per-use mode. DDM runs in VPCs. Before you create a DDM instance, ensure that a VPC is available and a subnet and security group have been configured.
	Querying DDM instances	This API is used to query DDM instances.
	Querying details of a DDM instance	This API is used to query details about a DDM instance.
	Changing the name of a DDM instance	This API is used to change the name of an existing DDM instance.
	Modifying the security group of a DDM instance	This API is used to modify the security group of a DDM instance.
	Deleting a DDM instance	This API is used to delete a DDM instance to release all its resources.
	Restarting a DDM instance	This API is used to restart a DDM instance.
	Reloading table data	This API is used to reload table data of the destination DDM instance for cross-region DR.

Type	API	Description
	Scaling out a DDM instance	This API is used to add nodes to a specified DDM instance.
	Scaling in a DDM instance	This API is used to remove nodes from a specified DDM instance.
	Modifying the read policy of the associated DB instance	This API is used to modify the read policy of the DB instance associated with a DDM instance.
	Synchronizing data node information	This API is used to synchronize configuration information of all data nodes that are associated with the current DDM instance.
	Querying nodes of a DDM instance	This API is used to query nodes of a DDM instance.
	Querying details of a DDM instance node	This API is used to query details of a DDM instance node.
	Querying parameters of a specified DDM instance	This API is used to query parameters of a specified DDM instance.
	Modifying parameters of a DDM instance	This API is used to modify parameters of a DDM instance.
	Querying DDM engine information	This API is used to query information about the DDM engine.
	Querying DDM node classes available in an AZ	This API is used to query DDM node classes available in an AZ.
	Changing the node class of a DDM instance	This API is used to change the node class of a DDM instance.
APIs for managing schemas	Creating a schema	This API is used to create a schema. Before creating a schema, ensure that there is an RDS instance available and that the instance is running properly and not associated with any DDM instance.

Type	API	Description
	Querying schemas of a DDM instance	This API is used to query schemas of a DDM instance.
	Querying details of a schema	This API is used to query details about a schema.
	Deleting a schema	This API is used to delete a schema to release all its resources.
	Querying DB instances available for creating a schema	This API is used to query DB instances that can be used for creating a schema.
APIs for managing DDM accounts	Creating a DDM account	This API is used to create a DDM account. DDM accounts are used to connect to and manage schemas. One DDM account can be associated with multiple schemas.
	Querying DDM accounts	This API is used to query DDM accounts.
	Modifying a DDM account	This API is used to modify the permissions and associated schemas of a DDM account.
	Deleting a DDM account	This API is used to delete a DDM account. This operation will also disassociate the account from schemas if any.
	Resetting the password of a DDM account	This API is used to reset the password of a DDM account.
	Managing an Administrator Password	This API is used to manage the password of a DDM administrator account.
	Validating password strength	This API is used to check whether an instance password is a weak password.
APIs for monitoring	Monitoring slow query logs	This API is used to query the SQL statements that take a long time to execute on the DDM instance within a specified time range.
	Monitoring the read/write ratio (unavailable soon)	This API is used to query reads and writes of a DDM instance in a specified time range.

3 Calling APIs

3.1 Making an API Request

This section describes the structure of a REST API and how to call an API. Before calling an API, you need to obtain the user token using the IAM API.

Request URI

A request URI is in the following format:

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

Although a request URI is a part of 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 URI parameter description

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 endpoint. The endpoint varies depending on the service and service region. <i>Endpoint</i> : Endpoint of the Objective-func function. For details, see 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.

```
https://iam.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
```

NOTE

To simplify the URI display, each API is provided only with a resource-path and a request method. This is because the **URI-scheme** value of all APIs is **HTTPS**, and the endpoints in a region are the same. Therefore, the two parts are omitted.

Request Method

HTTP methods, which are also called operations or actions, specify the type of operations that you are requesting.

Table 3-2 HTTP methods

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

For example, for the URI 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 Headers

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

You can also add additional fields to the request header, for example, the fields required by a specified URI and an HTTP method. [Table 3-3](#) lists common request header fields.

Table 3-3 Common request headers

Field	Description	Mandatory	Example
Host	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	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 varies depending on the flow type.	Yes	application/json
Content-Length	Length of the request body. The unit is byte.	This parameter is optional for POST requests, but must be left blank for GET requests.	3495
X-Project-Id	Project ID. Obtain the project ID by following the instructions in Obtaining a Project ID .	No This parameter is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cb aa340f9c0f4

Field	Description	Mandatory	Example
X-Auth-Token	User token After the request is processed, the value of X-Subject-Token in the header is the token value.	No This parameter is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvcNAQc-Co...ggg1BBIINPXsidG9rZ

NOTE

In addition to supporting token-based authentication, APIs support authentication using access key ID/secret access key (AK/SK). During AK/SK-based authentication, an SDK is used to sign the request, and the **Authorization** (signature information) and **X-Sdk-Date** (time when the request is sent) header fields are automatically added to the request.

For more information, see [AK/SK-based Authentication](#).

The API used to obtain a user token does not require authentication. Therefore, this API only requires adding the **Content-Type** field. The request with the added **Content-Type** header 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 depending on APIs. Some APIs do not require the request body, such as the APIs requested using GET and DELETE methods.

For the API used to obtain a user token, the request parameters and parameter description can be obtained in the API request. The following provides an example request with a body included. Replace **username, domainname, ******* (login password), and **xxxxxxxxxxxxxxxxxxxx** (project name such as) with actual values. You can obtain the values from the administrator.

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.

```
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": "xxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}

```

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

3.2 Authentication

Token authentication is required to call APIs.

Authentication using tokens: General requests are authenticated using tokens.

Token-based Authentication

NOTE

The validity period of a token is 24 hours. If a token is required, the system caches the token to avoid frequent calling.

A token specifies temporary permissions in a computer system. Token-based authentication adds a token in a request as its header during API calling to obtain the permissions for operating APIs on IAM.

```

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

```

In [Making an API Request](#), the process of calling the API used to obtain a user token is described.

After obtaining the token, add the **X-Auth-Token** header in a request 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:

```
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

AK/SK-based Authentication

NOTE

AK/SK-based authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token-based authentication is recommended.

In AK/SK-based authentication, AK/SK is used to sign requests and the signature is then added to the requests for authentication.

- AK: access key ID, which is a unique identifier associated with a secret access key and is used in conjunction with a secret access key to sign requests cryptographically.
- SK: secret access key used in conjunction with an AK to sign requests cryptographically. It identifies a request sender and prevents the request from being modified.

In AK/SK-based authentication, you can use an AK/SK to sign requests based on the signature algorithm or use the signing SDK to sign requests. For details about how to sign requests or use the signing SDK, see [API Request Signing Guide](#).

NOTICE

The signing SDK is only used for signing requests and is different from the SDKs provided by services.

3.3 Returned Values

Status Code

After sending a request, you will receive a response, including the status code, response header, and response body.

A status code is a group of digits ranging from 1xx to 5xx. It indicates the status of a response. For more information, see [Status Codes](#).

For example, if status code **201** is returned for calling the API used to obtain a user token, the request is successful.

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**.

Figure 3-1 shows the response header for the API used to obtain a user token. The **x-subject-token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

Figure 3-1 Header fields of the response to the request for obtaining a user token

```

connection → keep-alive

content-type → application/json

date → Tue, 12 Feb 2019 06:52:13 GMT

server → Web Server

strict-transport-security → max-age=31536000; includeSubdomains;

transfer-encoding → chunked

via → proxy A

x-content-type-options → nosniff

x-download-options → noopen

x-frame-options → SAMEORIGIN

x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5

x-subject-token
→ MIIYXQYJKoZIhvcNAQcCoIIYtJCCGEoCAQExDTALBgIghkgBZQMEAgEwgharBgkqhkiG9w0BBwGgghacBIIIWmHsidG9rZW4iOnsiZXhwaXJlc19hdCI6IjIwMTktMDItMTNUMD
fj3Kjs6YgKnpVNRbW2eZ5eb78SZOkajACgkIqO1wi4JlGzrpd18LGXK5bldfq4lqHCYb8P4NaY0NYejcAgz/VeFYtLWT1GSO0zxKZmiQHQ82HBqHdgIZO9fuEbL5dMhdavj+33wEI
xHRCE9I87o+k9-
j+CMZSEB7bUGd5Uj6eRASXI1jipPEGA270g1FruooL6jggIFkNPQuFSOU8+uSsttVwRtnfsC+qTp22Rkd5MCqFGQ8LcuUxC3a+9CM8nOintWW7oeRUVhVpxk8pxiX1wTEboX-
RzT6MUbpvGw-oPNFYxJECKnoH3HRozv0vN--n5d6Nbxg==

x-xss-protection → 1; mode=block;

```

(Optional) Response Body

This part is optional. The body of a response is often returned in structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The response body transfers content except the response header.

For the API used to obtain a user token, the following information is returned. The following describes part of the request body.

```

{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "az-01",

```

If an error occurs during API calling, the system returns an error code and message to you. The following shows the format of an error response body:

```

{
  "error_code": "AS.0001",
  "error_msg": "The format of message is error"
}

```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

4 APIs (Recommended)

4.1 DDM Instances

4.1.1 Buying a DDM Instance

Function

This API is used to buy a DDM instance.

Constraints

DDM runs in VPCs. Before you create a DDM instance, ensure that a VPC is available and a subnet and security group have been configured.

URI

POST /v1/{project_id}/instances

Table 4-1 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Request Parameters

Table 4-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-3 Request body parameters

Parameter	Mandatory	Type	Description
instance	Yes	CreateInstanceDetail object	Instance information
extend_param	No	CreateInstanceExtendParam object	Extended parameter, which is available only when you create a yearly/monthly instance

Table 4-4 CreateInstanceDetail

Parameter	Mandatory	Type	Description
name	Yes	String	Name of a DDM instance, which: <ul style="list-style-type: none"> • Can include 4 to 64 characters. • Must start with a letter. • Can contain only letters, digits, and hyphens (-).
flavor_id	Yes	String	Class ID
node_num	Yes	Integer	Number of nodes
engine_id	Yes	String	Engine ID
enterprise_project_id	No	String	Enterprise project ID
available_zones	Yes	Array of strings	AZ code. The value cannot be empty. For details, see Regions and Endpoints.
vpc_id	Yes	String	VPC ID

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Security group ID
subnet_id	Yes	String	Subnet ID
param_group_id	No	String	Parameter template ID.
time_zone	No	String	UTC time zone. The default value is UTC . The value can be UTC, UTC-12:00, UTC-11:00, UTC-10:00, UTC-09:00, UTC-08:00, UTC-07:00, UTC-06:00, UTC-05:00, UTC-04:00, UTC-03:00, UTC-02:00, UTC-01:00, UTC+01:00, UTC+02:00, UTC+03:00, UTC+05:00, UTC+06:00, UTC+07:00, UTC+08:00, UTC+09:00, UTC+10:00, UTC+11:00, and UTC+12:00.
admin_username	No	String	Username of the administrator. The username: <ul style="list-style-type: none"> • Can include 1 to 32 characters. • Must start with a letter. • Can contain only letters, digits, and underscores (_).
admin_password	No	String	Password of the administrator. The password: <ul style="list-style-type: none"> • Can include 8 to 32 characters. • Must be a combination of uppercase letters, lowercase letters, digits, and the following special characters: ~!@#%^*-_+? Must be a strong password to improve security and prevent security risks such as brute force cracking.

Table 4-5 CreateInstanceExtendParam

Parameter	Mandatory	Type	Description
charge_mode	No	String	<p>Billing mode. The value can be:</p> <ul style="list-style-type: none"> • prePaid: indicates the yearly/monthly billing mode. • postPaid: indicates the pay-per-use billing mode. It is the default value. <p>Default value: postPaid</p> <p>Enumerated values:</p> <ul style="list-style-type: none"> • prePaid • postPaid
period_type	No	String	<p>Subscription period. The value can be:</p> <ul style="list-style-type: none"> • month: indicates the subscription time unit is month. • year: indicates the subscription time unit is year. This parameter is valid and mandatory if charge_mode is set to prePaid. <p>Enumerated values:</p> <ul style="list-style-type: none"> • month • year
period_num	No	Integer	<p>Subscription duration.</p> <ul style="list-style-type: none"> • If period_type is set to month, the value ranges from 1 to 9. • If period_type is set to year, the value is 1. This parameter is valid and mandatory if charge_mode is set to prePaid.

Parameter	Mandatory	Type	Description
is_auto_renew	No	String	<p>Whether the instance is automatically renewed when it expires. The value can be:</p> <ul style="list-style-type: none"> • true: The instance is automatically renewed when it expires. • false: The instance is not automatically renewed when it expires. This parameter is valid when charge_mode is set to prePaid. The instance is not automatically renewed by default if no value is specified. <p>Enumerated values:</p> <ul style="list-style-type: none"> • true • false
is_auto_pay	No	String	<p>Whether the order is paid from the customer's account balance. The value can be:</p> <ul style="list-style-type: none"> • true: indicates that the order is automatically paid from the customer's account balance. • false: indicates that the order needs to be paid manually. This parameter is available if charge_mode is set to prePaid. The order needs to be paid manually by default if no value is specified. <p>Enumerated values:</p> <ul style="list-style-type: none"> • true • false

Response Parameters

Status code: 200

Table 4-6 Response body parameters

Parameter	Type	Description
id	String	Instance ID.
job_id	String	ID of the job for creating an instance. This parameter is returned only when pay-per-use instances are created.
order_id	String	Order ID. This parameter is returned only when a yearly/monthly instance is created.

Status code: 400**Table 4-7** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-8** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

- Creating a DDM instance.

POST https://{endpoint}/v1/{project_id}/instances

```
{
  "instance": {
    "name": "ddm-test-001",
    "flavor_id": "8f2e696c-a9c1-30bd-af90-25522bc67606",
    "node_num": 4,
    "engine_id": "2325a707-0361-8be6-dd01-13474bbac437",
    "enterprise_project_id": "0",
    "available_zones": [ "az1" ],
    "vpc_id": "e1d886ec-cfe7-4cd4-b748-fc55a10b4172",
    "security_group_id": "035b70ed-319b-4086-9fd7-62a2e8548b2e",
    "subnet_id": "f942f970-1a02-4eee-8927-xxxxxxx",
    "param_group_id": "035b70ed-319b-4086-9fd7-xxxxxxx"
  }
}
```

```
}
}
```

Example Response

Status code: 200

OK

```
{
  "id": "e90bc6739a3c4666a577c3fa1524dac2in09",
  "job_id": "3ae783f3-844e-4051-abd5-b9cc65899785",
  "order_id": null
}
```

Status code: 400

bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage": "Server failure.",
  "errCode": "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.2 Querying DDM Instances

Function

This API is used to query DDM instances.

Constraints

None

URI

GET /v1/{project_id}/instances?offset={offset}&limit={limit}

Table 4-9 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Table 4-10 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a number but cannot be a negative number.
limit	No	Integer	Maximum instances to be queried. Value range: 1 to 128. If the parameter value is not specified, 10 instances are queried by default.

Request Parameters

Table 4-11 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-12 Response body parameters

Parameter	Type	Description
instances	Array of ShowInstanceBeanResponse objects	DDM instance information
instance_num	Integer	Number of DDM instances of a tenant
page_no	Integer	Current page
page_size	Integer	Data records on the current page
total_record	Integer	Total records
total_page	Integer	Total pages

Table 4-13 ShowInstanceBeanResponse

Parameter	Type	Description
id	String	DDM instance ID
status	String	DDM instance status. For details about this parameter value, see Status Description .
name	String	Name of the created DDM instance
created	String	Time when the DDM instance is created. The time must be in the format of yyyy-mm-dd Thh:mm:ssZ . T indicates the separator between the calendar and the hourly notation of time. Z indicates Coordinated Universal Time (UTC).
updated	String	Time when the DDM instance is last updated, which is in the same format as created .
available_zone	String	AZ name
vpc_id	String	VPC ID
subnet_id	String	Subnet ID
security_group_id	String	Security group ID
node_count	Integer	Number of nodes
access_ip	String	Address for accessing the DDM instance
access_port	String	Port for accessing the DDM instance

Parameter	Type	Description
core_count	String	Number of vCPUs
ram_capacity	String	Memory size in GB
error_msg	String	Response message. This parameter is not returned if no abnormality occurs.
node_status	String	Node status
enterprise_project_id	String	Enterprise project ID
project_id	String	Project ID of a tenant in a region
engine_version	String	Engine version
order_id	String	Order ID, which is returned if the DDM instance is billed on a yearly/monthly basis
enable_ssl	Boolean	Whether SSL is enabled. The value can be: <ul style="list-style-type: none"> ● true: SSL is enabled for the instance. ● false: SSL is disabled for the instance.
flavor_ref	String	Specification code

Table 4-14 ProjectTag

Parameter	Type	Description
key	String	Tag key.
value	String	Tag value

Status code: 400**Table 4-15** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-16 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying DDM instances

```
GET https://{endpoint}/v1/{project_id}/instances?offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "instance_num" : 26,
  "instances" : [ {
    "id" : "73f27bb0b26d4a79a9b0c58a4c700c4fin09",
    "status" : "RUNNING",
    "name" : "ddm-36c7",
    "created" : "2021-12-14T07:46:22+0000",
    "updated" : "2021-12-14T10:11:22+0000",
    "available_zone" : "az1",
    "vpc_id" : "1d9441c5-1a4b-431d-9edb-bf3564a83e74",
    "subnet_id" : "20c2d83c-755b-42a2-846a-4688eb35d1a7",
    "security_group_id" : "fbdff89d-32fe-45a4-832b-115ac4bfaac9",
    "node_count" : 1,
    "access_ip" : "192.168.23.143",
    "access_port" : "5066",
    "core_count" : "2",
    "ram_capacity" : "4",
    "node_status" : "RUNNING",
    "enterprise_project_id" : "0",
    "project_id" : "055d9f4ee780d4d42f96c01c1bc3c50c",
    "engine_version" : "3.0.8",
    "enable_ssl" : false,
    "flavor_ref" : "ddm.c6.large.2"
  } ],
  "page_size" : 1,
  "total_record" : 26,
  "total_page" : 26,
  "page_no" : 3
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error CodesFor details, see [Error Codes](#).**4.1.3 Querying Details of a DDM Instance****Function**

This API is used to query details about a DDM instance.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}

Table 4-17 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-18 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-19 Response body parameters

Parameter	Type	Description
id	String	DDM instance ID
status	String	DDM instance status. For details about this parameter value, see Status Description .
name	String	DDM instance name
created	String	Time when the DDM instance is created. The time must be in the format of yyyy-mm-dd Thh:mm:ssZ .
updated	String	Time when the DDM instance is last updated
available_zone	String	Name of the AZ where the DDM instance is located
vpc_id	String	VPC ID
subnet_id	String	Subnet ID
security_group_id	String	Security group ID
node_count	Integer	Number of nodes
access_ip	String	Address for accessing the DDM instance
access_port	String	Port for accessing the DDM instance
node_status	String	Node status
core_count	String	Number of vCPUs
ram_capacity	String	Memory size in GB

Parameter	Type	Description
error_msg	String	Response message. This parameter is not returned if no abnormality occurs.
project_id	String	Project ID
order_id	String	Order ID. No value is returned when a pay-per-use instance is created.
enterprise_project_id	String	Enterprise project ID
engine_version	String	Engine version
nodes	Array of GetDetailfNodesInfo objects	Node information
admin_username	String	Username of the administrator. The username:
enable_ssl	Boolean	Whether SSL is enabled. The value can be: <ul style="list-style-type: none"> • true: SSL is enabled for the instance. • false: SSL is disabled for the instance.
flavor_ref	String	Specification code

Table 4-20 GetDetailfNodesInfo

Parameter	Type	Description
status	String	Status of the DDM instance node
port	String	Port of the DDM instance node
ip	String	IP address of the DDM instance node. If load balancing is enabled, the value is the ELB IP address of the group that the node belongs to.

Status code: 400**Table 4-21** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-22 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying details of a DDM instance

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}
```

Example Response

Status code: 200

OK

```
{
  "nodes": [ {
    "status": "RUNNING",
    "port": 5066,
    "ip": "192.168.0.160"
  } ],
  "id": "1f5c9fd6cd984056ba89c8c87cc03278in09",
  "status": "RUNNING",
  "name": "ddm2-test",
  "created": "2021-11-09T03:30:01+0000",
  "updated": "2021-12-15T09:12:58+0000",
  "available_zone": "az1",
  "vpc_id": "cfaa4024-0603-4aba-81d4-2203b4ad26fb",
  "subnet_id": "48f270ef-af70-4ad9-bb1c-c28dd5b37f93",
  "security_group_id": "bc28ef93-0083-4652-bce6-381e14284db6",
  "node_count": 1,
  "access_ip": "192.168.0.160",
  "access_port": "5066",
  "core_count": "2",
  "ram_capacity": "8",
  "node_status": "RUNNING",
  "enterprise_project_id": "0",
  "project_id": "070c071d8e80d58c2f42c0121b10cf9f",
  "engine_version": "3.0.6",
  "admin_user_name": "root",
  "enable_ssl": false,
  "flavor_ref": "ddm.c6.large.2"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
}
```

```
{
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.4 Modifying the Name of a DDM Instance

Function

This API is used to modify the name of a DDM instance.

Constraints

None

URI

PUT /v1/{project_id}/instances/{instance_id}/modify-name

Table 4-23 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-24 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-25 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Name of a DDM instance, which: <ul style="list-style-type: none"> • Can include 4 to 64 characters. • Must start with a letter. • Can contain only letters, digits, and hyphens (-).

Response Parameters

Status code: 200

Table 4-26 Response body parameters

Parameter	Type	Description
name	String	DDM instance name

Status code: 400

Table 4-27 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-28 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Modifying the name of a DDM instance

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/modify-name
{
  "name" : "DDM-test-04"
}
```

Example Response

Status code: 200

OK

```
{
  "name" : "DDM-test-04"
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.5 Changing the Security Group of a DDM Instance

Function

This API is used to modify the security group of a DDM instance.

Constraints

None

URI

PUT /v1/{project_id}/instances/{instance_id}/modify-security-group

Table 4-29 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-30 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-31 Request body parameters

Parameter	Mandatory	Type	Description
security_group_id	Yes	String	Security group ID. The default value is the original security group ID. You can change the value as required.

Response Parameters

Status code: 200

Table 4-32 Response body parameters

Parameter	Type	Description
security_group_id	String	Security group ID

Status code: 400

Table 4-33 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-34 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Changing the security group of a DDM instance

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/modify-security-group
{
  "security_group_id" : "035b70ed-319b-4086-9fd7-62a2e8548b2e"
}
```

Example Response

Status code: 200

OK

```
{
  "security_group_id" : "035b70ed-319b-4086-9fd7-62a2e8548b2e"
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.6 Deleting a DDM Instance**Function**

This API is used to delete a DDM instance to release all its resources.

Constraints**URI**

DELETE /v1/{project_id}/instances/{instance_id}

Table 4-35 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	DDM instance ID

Table 4-36 Query parameters

Parameter	Mandatory	Type	Description
delete_rds_data	No	String	Whether data stored on the associated DB instances is deleted. The value can be: <ul style="list-style-type: none"> • true: indicates that the data stored on the associated DB instances is deleted. • false: indicates that the data stored on the associated DB instances is not deleted. It is left blank by default. Enumerated values: <ul style="list-style-type: none"> • true • false

Request Parameters

Table 4-37 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-38 Response body parameters

Parameter	Type	Description
id	String	DDM instance ID

Status code: 400**Table 4-39** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-40** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

- Deleting a DDM instance (including the data stored on associated DB instances)
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}?delete_rds_data=true
- Deleting a DDM instance (excluding the data stored on associated DB instances)
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}?delete_rds_data=false

Example Response**Status code: 200**

OK

```
{
  "id": "9608ce63-bf66-4342-be8a-44f9b6b15d54",
  "job_id": "1c403d1d-d3e9-4b3e-9750-7cd6a58376d9"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage": "Server failure.",
}
```

```
"errCode" : "DBS.200412"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.7 Restarting a DDM Instance

Function

This API is used to restart a DDM instance.

Constraints

None

URI

POST /v1/{project_id}/instances/{instance_id}/action

Table 4-41 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-42 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-43 Request body parameters

Parameter	Mandatory	Type	Description
restart	No	RestartInstanceInfo object	Restart-related parameter

Table 4-44 RestartInstanceInfo

Parameter	Mandatory	Type	Description
type	No	String	Restart type, which can be soft or hard . <ul style="list-style-type: none"> • soft: Only the process is restarted. • hard: The instance VM is forcibly restarted. Enumerated values: <ul style="list-style-type: none"> • soft • hard

Response Parameters

Status code: 200

Table 4-45 Response body parameters

Parameter	Type	Description
instanceId	String	DDM instance ID
instanceName	String	DDM instance name
jobId	String	Task ID

Status code: 400**Table 4-46** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-47** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Restarting a DDM instance (only the instance process)

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/action

```
{
  "restart": {
    "type": "soft"
  }
}
```

Example Response**Status code: 200**

ok

```
{
  "instanceId": "28e8841d0b9c4f6a9a30742ee60e1068in09",
  "instanceName": "ddm-fb88-test",
  "jobId": "1eb697c0-1842-43a3-8671-f562d0385cb9"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.8 Reloading Table Data

Function

This API is used to reload table data of the destination DDM instance for cross-region DR.

Constraints

None

URI

POST /v1/{project_id}/instances/{instance_id}/reload-config

Table 4-48 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-49 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

None

Status code: 400

Table 4-50 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-51 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Reloading table data

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/reload_config
{ }
```

Example Response

Status code: 200

OK

```
{}
```

Status code: 400

Bad request

```
{  
  "externalMessage" : "Parameter error.",  
  "errCode" : "DBS.280001"  
}
```

Status code: 500

Server error

```
{  
  "externalMessage" : "Server failure.",  
  "errCode" : "DBS.200412"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.9 Scaling Out a DDM Instance

Function

This API is used to scale out a specified DDM instance.

Constraints

Make sure that the associated RDS instances are available and not undergoing other operations.

URI

POST /v2/{project_id}/instances/{instance_id}/action/enlarge

Table 4-52 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-53 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-54 Request body parameters

Parameter	Mandatory	Type	Description
flavor_id	Yes	String	Flavor ID of the VM for deploying the DDM instance that is to be scaled out
node_number	Yes	Integer	Number of nodes to be added
group_id	No	String	Group ID, which specifies the group that is scaled out. This parameter must be specified if there are more than one node group.

Parameter	Mandatory	Type	Description
is_auto_pay	No	Boolean	<p>Whether the order is automatically paid when you change the node class of a yearly/monthly instance. This parameter does not affect the billing mode of automatic renewal.</p> <ul style="list-style-type: none"> • true: indicates that the order is automatically paid from the account. • false: indicates that the order is manually paid from the account. The default value is false.

Response Parameters

Status code: 200

Table 4-55 Response body parameters

Parameter	Type	Description
instanceId	String	DDM instance ID
instanceName	String	DDM instance name.
jobId	String	Task ID.

Status code: 400

Table 4-56 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-57 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

- Scaling out a DDM instance. The number of nodes to be added is 1.
 POST https://{endpoint}/v2/{project_id}/instances/{instance_id}/action/enlarge


```
{
  "flavor_id": "8f2e696c-a9c1-30bd-af90-25522bc67606",
  "node_number": 1
}
```
- Scaling out a DDM instance that has more than one group. The number of nodes to be added is 1.
 POST https://{endpoint}/v2/{project_id}/instances/{instance_id}/action/enlarge


```
{
  "flavor_id": "8f2e696c-a9c1-30bd-af90-25522bc67606",
  "group_id": "f080abf2010d45118068c28c8958f5fcgr09",
  "node_number": 1
}
```

Example Response

Status code: 200

OK

```
{
  "instanceId": "28e8841d0b9c4f6a9a30742ee60e1068in09",
  "instanceName": "ddm-fb88-test",
  "jobId": "1eb697c0-1842-43a3-8671-f562d0385cb9"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage": "Server failure.",
  "errCode": "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.10 Scaling In a DDM Instance

Function

This API is used to remove nodes from a specified DDM instance.

Constraints

Make sure that the associated RDS instances are available and not undergoing other operations.

URI

POST /v2/{project_id}/instances/{instance_id}/action/reduce

Table 4-58 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-59 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-60 Request body parameters

Parameter	Mandatory	Type	Description
node_number	Yes	Integer	Number of the nodes to be removed. The maximum value is the instance nodes minus 1.
group_id	No	String	Group ID, which specifies the group that is scaled out. This parameter must be specified if there are more than one node group.

Response Parameters

Status code: 200

Table 4-61 Response body parameters

Parameter	Type	Description
instanceId	String	DDM instance ID
instanceName	String	DDM instance name
jobId	String	Task ID.
orderId	String	Order ID.

Status code: 400

Table 4-62 Response body parameters

Parameter	Type	Description
errCode	String	Service error code

Parameter	Type	Description
externalMessage	String	Error message

Status code: 500

Table 4-63 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

- Scaling in a DDM instance. The number of nodes to be removed is 2.
 POST https://{endpoint}/v2/{project_id}/instances/{instance_id}/action/reduce


```
{
  "node_number": 2
}
```
- Scaling in a DDM instance that has more than one group. The number of nodes to be removed is 1.
 POST https://{endpoint}/v2/{project_id}/instances/{instance_id}/action/reduce


```
{
  "group_id": "f080abf2010d45118068c28c8958f5fcgr09",
  "node_number": 1
}
```

Example Response

Status code: 200

OK

```
{
  "instanceId": "28e8841d0b9c4f6a9a30742ee60e1068in09",
  "instanceName": "BUG-ddm-fb88-test",
  "jobId": "1eb697c0-1842-43a3-8671-f562d0385cb9"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.11 Modifying the Read Policy of the Associated DB Instance

Function

This API is used to modify the read policy of the DB instance associated with a DDM instance.

Constraints

Make sure that the associated RDS instances are available and not undergoing other operations.

URI

PUT /v2/{project_id}/instances/{instance_id}/action/read-write-strategy

Table 4-64 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-65 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-66 Request body parameters

Parameter	Mandatory	Type	Description
read_weight	Yes	Map<String, Integer>	Read weights of the primary DB instance and its read replicas <ul style="list-style-type: none"> key: DB instance ID value: read weight parameter

Response Parameters

Status code: 200

Table 4-67 Response body parameters

Parameter	Type	Description
success	Boolean	Whether the operation is successful
instance_id	String	DDM instance ID

Status code: 400

Table 4-68 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-69 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Modifying the read policy of the associated DB instance

```
PUT https://{endpoint}/v2/{project_id}/instances/{instance_id}/action/read-write-strategy
{
  "read_weight" : {
    "395298ae6fb9496d95939ed556474983in01" : 60,
    "38ef52c365a14b7caeb7333137900e96in01" : 50
  }
}
```

Example Response

Status code: 200

OK

```
{
  "success" : true,
  "instance_id" : "175f5aff-xxxx-xxxx-xxxx-d0858982bbec"
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request

Status Code	Description
500	Server error

Error Codes

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

4.1.12 Synchronizing Data Node Information

Function

This API is used to synchronize configuration information of all data nodes that are associated with a DDM instance.

Constraints

None

URI

POST /v1/{project_id}/instances/{instance_id}/rds/sync

Table 4-70 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-71 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-72 Response body parameters

Parameter	Type	Description
instanceId	String	DDM instance ID
jobId	String	Task ID

Status code: 400

Table 4-73 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-74 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Synchronizing data node information

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/rds/sync
```

None

Example Response

Status code: 200

OK

```
{
  "instanceId": "1f5c9fd6cd984056ba89c8c87cc03278in09",
  "jobId": "6f1334ca-faa6-479e-837f-f3219192675e"
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.13 Querying Nodes of a DDM Instance**Function**

This API is used to query nodes of a DDM instance.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/nodes?offset={offset}&limit={limit}

Table 4-75 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-76 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a non-negative number.
limit	No	Integer	Maximum nodes to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-77 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-78 Response body parameters

Parameter	Type	Description
nodes	Array of NodeList objects	Instance node information
offset	Integer	Which page the server starts returning items.
limit	Integer	Number of records displayed on each page
total	Integer	Number of DDM instance nodes

Table 4-79 NodeList

Parameter	Type	Description
port	String	Port
status	String	Node status
node_id	String	Node ID
ip	String	Private IP address (data floating IP address) of the node

Status code: 400**Table 4-80** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-81** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying nodes of a DDM instance

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/nodes?offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "nodes" : [ {
    "port" : "5066",
    "status" : "normal",
    "node_id" : "4a2b97b7f5e3462c9c78aae93b46ed83no09",
    "ip" : "192.168.0.160"
  } ],
  "offset" : 0,
  "limit" : 128,
  "total" : 1
}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.14 Querying Details of a DDM Instance Node

Function

This API is used to query details of a DDM instance node.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/nodes/{node_id}

Table 4-82 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
node_id	Yes	String	DDM instance node ID

Request Parameters

Table 4-83 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-84 Response body parameters

Parameter	Type	Description
status	String	Node status
name	String	Node name

Parameter	Type	Description
node_id	String	Node ID
private_ip	String	Private IP address (data floating IP address) of the node
floating_ip	String	Management floating IP address
server_id	String	VM ID
subnet_name	String	Subnet name
datavolume_id	String	Data disk ID
res_subnet_ip	String	Data synchronization IP address
systemvolume_id	String	System disk ID
group_id	String	ID of the group that the node belongs to
subnet_id	String	Subnet ID

Status code: 400**Table 4-85** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-86** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying details of a DDM instance node

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/nodes/{node_id}
```

Example Response

Status code: 200

OK

```
{
  "status": "normal",
  "name": "ddm2-test_node_01",
  "node_id": "4a2b97b7f5e3462c9c78aae93b46ed83no09",
  "private_ip": "192.168.0.160",
  "floating_ip": "100.65.78.158",
  "server_id": "8bd4d0bd-f63e-489a-95b6-50351f9657e6",
  "datavolume_id": "30ade9fb-26de-4d1f-af08-c376974b9d86",
  "res_subnet_ip": "172.16.15.224",
  "systemvolume_id": "88d7de55-f886-4929-ae7c-04d842959700"

  "subnet_id": "ead1e945-ca89-45dd-bcce-4a30b2054c22"
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage": "Server failure.",
  "errCode": "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.1.15 Querying DDM Engine Information

Function

This API is used to query information about DDM engine.

Constraints

None

URI

GET /v2/{project_id}/engines?offset={offset}&limit={limit}

Table 4-87 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Table 4-88 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a positive integer.
limit	No	Integer	Maximum engines to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-89 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token. You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-90 Response body parameters

Parameter	Type	Description
engineGroups	Array of EngineGroupInfo objects	Information of available engines
offset	Integer	Which page the server starts returning items
limit	Integer	Number of records displayed on each page
total	Integer	Number of engine versions

Table 4-91 EngineGroupsInfo

Parameter	Type	Description
id	String	Engine ID
name	String	Engine name
version	String	Engine version
supportAzs	Array of SupportAzsInfo objects	AZs

Table 4-92 SupportAzsInfo

Parameter	Type	Description
code	String	AZ code
name	String	AZ name
favored	Boolean	Whether the current AZ is supported

Status code: 400

Table 4-93 Response body parameters

Parameter	Type	Description
errCode	String	Service error code

Parameter	Type	Description
externalMessage	String	Error message

Status code: 500

Table 4-94 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying DDM engine information

```
GET https://{endpoint}/v2/{project_id}/engines?offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "engineGroups": [ {
    "id": "b6907aa2-aacb-3ac9-9782-b90b152d456c",
    "name": "ddm",
    "version": "3.0.8",
    "supportAzs": [ {
      "code": "az1",
      "name": "az1",
      "favored": false
    }, {
      "code": "az2",
      "name": "az2",
      "favored": true
    } ]
  } ],
  "offset": 0,
  "limit": 128,
  "total": 1
}
```

Status code: 400

bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.1.16 Querying DDM Node Classes Available in an AZ

Function

This API is used to query DDM node classes available in an AZ.

Constraints

None

URI

GET /v2/{project_id}/flavors?engine_id={engine_id}&offset={offset}&limit={limit}

Table 4-95 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Table 4-96 Query parameters

Parameter	Mandatory	Type	Description
engine_id	Yes	String	Engine ID, which can be obtained by calling the API for querying DDM engine information.
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a positive integer.
limit	No	Integer	Maximum node classes to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-97 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-98 Response body parameters

Parameter	Type	Description
computeFlavorGroups	Array of ComputeFlavorGroupsInfo objects	Compute flavor information

Table 4-99 ComputeFlavorGroupsInfo

Parameter	Type	Description
groupType	String	Compute resource architecture type.
computeFlavors	Array of ComputeFlavors objects	Compute flavors
offset	Integer	Which page the server starts returning items
limit	Integer	Number of records displayed on each page
total	Integer	Total number of compute flavors

Table 4-100 ComputeFlavors

Parameter	Type	Description
id	String	Class ID
typeCode	String	Resource type code
code	String	VM flavor types recorded in DDM
iaasCode	String	VM flavor types recorded by the IaaS layer
cpu	String	Number of vCPUs
mem	String	Memory size in GB
maxConnections	String	Maximum number of connections
serverType	String	Compute resource type
architecture	String	Compute resource architecture type.
azStatus	Map<String,String>	Status of the AZ where node classes are available. The key is the AZ ID and the value is the AZ status. The value can be: <ul style="list-style-type: none"> • normal: indicates that the node classes in the AZ are available. • unsupported: indicates that the node classes are not supported by the AZ. • sellout: indicates that the node classes in the AZ are sold out.
regionStatus	String	Region status
groupType	String	Compute resource architecture type.
dbType	String	Engine type

Parameter	Type	Description
extendFields	Map<String,String>	Extension field for storing AZ information

Status code: 400

Table 4-101 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-102 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying DDM node classes available in an AZ

```
GET https://{endpoint}/v2/{project_id}/flavors?engine_id={engine_id}&offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "computeFlavorGroups": [{
    "offset": 0,
    "limit": 100,
    "total": 3,
    "groupType": "X86",
    "computeFlavors": [{
      "id": "7267235a-80b0-3fd4-892f-4f3dd0cd60e4",
      "typeCode": "cloudtype.resource.type.ddm",
      "code": "ddm.2xlarge.2",
      "iaasCode": "s2.xlarge.2",
      "cpu": "8",
      "mem": "16",
      "maxConnections": null,
    }
  ]
}
```

```

"serverType": "KVM",
"architecture": "X86",
"azStatus": {
  "az1": "unsupported",
  "az2": "normal",
  "az3": "normal"
},
"regionStatus": "abandon",
"groupType": null,
"dbType": "DDM",
"extendFields": {
  "azCode": "az1,az2,az3",
  "azDescription": "az1,az2,az3"
}
},
{
  "id": "8cfd2730-1d53-3349-acbb-12a741767f70",
  "typeCode": "cloudtype.resource.type.ddm",
  "code": "ddm.4xlarge.2",
  "iaasCode": "s2.xlarge.2",
  "cpu": "16",
  "mem": "32",
  "maxConnections": null,
  "serverType": "KVM",
  "architecture": "X86",
  "azStatus": {
    "az1": "unsupported",
    "az2": "normal",
    "az3": "normal"
  },
  "regionStatus": "abandon",
  "groupType": null,
  "dbType": "DDM",
  "extendFields": {
    "azCode": "az1,az2,az3",
    "azDescription": "az1,az2,az3"
  }
},
{
  "id": "f8388a59-b2af-3be0-8fe5-7422755d4570",
  "typeCode": "cloudtype.resource.type.ddm",
  "code": "ddm.8xlarge.2",
  "iaasCode": "s2.xlarge.2",
  "cpu": "32",
  "mem": "64",
  "maxConnections": null,
  "serverType": "KVM",
  "architecture": "X86",
  "azStatus": {
    "az1": "unsupported",
    "az2": "normal",
    "az3": "normal"
  },
  "regionStatus": "abandon",
  "groupType": null,
  "dbType": "DDM",
  "extendFields": {
    "azCode": "az1,az2,az3",
    "azDescription": "az1,az2,az3"
  }
}
]
}}
}

```

Status code: 400

bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.1.17 Changing the Node Class of a DDM Instance

Function

This API is used to change the node class of a DDM instance.

Constraints

- The node class can be changed only when the corresponding DDM instance is normal.
- The new node class cannot be the same as the original one.
- Node classes of c6s series cannot be changed to those classes of c6 series.

URI

PUT /v3/{project_id}/instances/{instance_id}/flavor

Table 4-103 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request

Table 4-104 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-105 Request body parameters

Parameter	Mandatory	Type	Description
spec_code	Yes	String	Resource specification code of the new node class
group_id	No	String	This parameter is not required if the instance has only one node group. Each instance has one node group by default. If you need to create multiple node groups, set this parameter to the ID of the group whose node class you want to change.

Parameter	Mandatory	Type	Description
is_auto_pay	No	Boolean	Whether the order is automatically paid when you change the node class of a yearly/monthly instance. This parameter does not affect the billing mode of automatic renewal. true : indicates that the order is automatically paid from the account. false : indicates that the order is manually paid from the account. The default value is false .

Example Request

Changing node class of a DDM instance to **ddm.8xlarge.2**

```
PUT https://{endpoint}/v3/{project_id}/instances/{instance_id}/flavor
```

```
{
  "spec_code" : "ddm.8xlarge.2",
  "group_id" : "3e5a9063d3b84729b0a3310fad3a0942gr09"
}
```

Response Parameters

- Normal response

Table 4-106 Response body parameters

Parameter	Type	Description
job_id	String	ID of the task of changing node class. This parameter is returned only when you change the node class of a pay-per-use instance.
order_id	String	Order ID. This parameter is returned only when you change the node class of a yearly/monthly instance.

Example Response

- Normal response example

```
{
  "job_id" : "2x414788a5112333a02390e2eb0ea227"
}
```

- Abnormal response

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

Status Codes

- Normal
202
- Abnormal
For details, see [Status Codes](#).

Error Codes

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

4.1.18 Querying Parameters of a Specified DDM Instance

Function

This API is used to query parameters of a specified DDM instance.

Constraints

None

URI

GET /v3/{project_id}/instances/{instance_id}/configurations?
offset={offset}&limit={limit}

Table 4-107 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-108 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a non-negative number.

Parameter	Mandatory	Type	Description
limit	No	Integer	Maximum records to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-109 Request header parameters

Parameter	Mandatory	Type	Description
X-Language	No	String	Language. The value can be zh-cn or en-us . The default value is zh-cn .
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Example Request

Querying parameters of a specified DDM instance

```
GET https://{endpoint}/v3/{project_id}/instances/{instance_id}/configurations?offset={offset}&limit={limit}
```

Response Parameters

- Normal response

Table 4-110 Response body parameters

Parameter	Type	Description
updated	String	Time when DDM instance parameters are last updated
configuration_parameter	Array of ConfigurationParameterList objects	Information about DDM instance parameters
offset	Integer	Which page the server starts returning items
limit	Integer	Number of records displayed on each page

Parameter	Type	Description
total	Integer	Total collections
id	String	Parameter template ID
name	String	Parameter template name
description	String	Parameter template description

Table 4-111 ConfigurationParameterList

Parameter	Type	Description
name	String	Parameter name
value	String	Parameter value
need_restart	String	Whether the instance needs to be restarted
read_only	String	Whether the parameter is read-only
value_range	String	Parameter value range
data_type	String	Parameter type.
description	String	Parameter description

Example Response

- Normal response example

```
{
  "id": "08142a7de30d40549f04fe4757c6660cpr09",
  "name": "ddm_69873de2-072",
  "description": "ParamGroup for instance",
  "updated": "2021-11-09 03:26:52",
  "configuration_parameter": [ {
    "name": "temp_table_size_limit",
    "value": "1000000",
    "need_restart": "0",
    "read_only": "0",
    "value_range": "500000-2000000000",
    "data_type": "integer",
    "description": "Maximum size of the temporary table."
  } ],
  "offset": 0,
  "limit": 128,
  "total": 22
}
```

- Abnormal response

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

Status Code

- Normal
200

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

Error Codes

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

4.2 Schemas

4.2.1 Creating a Schema

Function

This API is used to create a schema.

Constraints

Before creating a schema, ensure that you have associated RDS instances with your DDM instance and that the RDS instances are not associated with other DDM instances.

URI

POST /v1/{project_id}/instances/{instance_id}/databases

Table 4-112 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-113 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-114 Request body parameters

Parameter	Mandatory	Type	Description
databases	Yes	Array of CreateDatabaseDetail objects	Schema information

Table 4-115 CreateDatabaseDetail

Parameter	Mandatory	Type	Description
name	Yes	String	<p>Schema name, which:</p> <ul style="list-style-type: none"> • Can include 2 to 48 characters. • Must start with a letter. • Contains only lowercase letters, digits, and underscores (_). • Cannot contain keywords information_schema, mysql, performance_schema, or sys. <p>Minimum length: 2 characters Maximum length: 48 characters</p>
shard_mode	Yes	String	<p>Sharding mode of the schema. The value can be:</p> <ul style="list-style-type: none"> • cluster: indicates that the schema is in sharded mode. • single: indicates that the schema is in unsharded mode. <p>Enumerated values:</p> <ul style="list-style-type: none"> • cluster • single

Parameter	Mandatory	Type	Description
shard_number	Yes	Integer	Number of shards in the same working mode <ul style="list-style-type: none"> If shard_unit is not empty, the value is the product of shard_unit multiplied by the associated RDS instances. If shard_unit is left blank, the value must be greater than the number of associated RDS instances and less than or equal to the product of the associated RDS instances multiplied by 64.
shard_unit	No	Integer	Number of shards per RDS instance This parameter is optional. <ul style="list-style-type: none"> The value is 1 if the schema is unsharded. The value ranges from 1 to 64 if the schema is sharded. Minimum value: 1 Maximum value: 64
used_rds	Yes	Array of Table 4-116 objects	RDS instances associated with the schema

Table 4-116 DatabaseInstancesParam

Parameter	Mandatory	Type	Description
id	Yes	String	ID of the RDS instance associated with the schema
adminUser	Yes	String	Username for logging in to the associated RDS instance
adminPassword	Yes	String	Password for logging in to the associated RDS instance

Response Parameters

Status code: 200

Table 4-117 Response body parameters

Parameter	Type	Description
databases	Array of CreateDatabaseDetailResponses objects	Schema information

Table 4-118 CreateDatabaseDetailResponses

Parameter	Type	Description
name	String	Schema name

Status code: 400**Table 4-119** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-120** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Creating a schema and associating it with an existing DDM account

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/databases
{
  "databases": [ {
    "name": "mytestdb",
    "shard_mode": "cluster",
    "shard_number": 8,
```

```

"shard_unit" : 8,
"used_rds" : [ {
  "id" : "f296c394f13f48449d715bf99af07e59in01",
  "adminUser" : "root",
  "adminPassword" : "xxxxxx"
} ]
} ]
}

```

Example Response

Status code: 200

OK

```

{
  "databases" : [ {
    "name" : "mytestdb"
  } ]
}

```

Status code: 400

Bad request

```

{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}

```

Status code: 500

Server error

```

{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.2.2 Querying Schemas

Function

This API is used to query schemas of a DDM instance.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/databases?
offset={offset}&limit={limit}

Table 4-121 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-122 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a non-negative number.
limit	No	Integer	Maximum schemas to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-123 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-124 Response body parameters

Parameter	Type	Description
databases	Array of GetDatabaseInfo objects	Schema information
total	Integer	Total records

Table 4-125 GetDatabaseInfo

Parameter	Type	Description
name	String	Schema name
shard_mode	String	Sharding mode of the schema <ul style="list-style-type: none"> cluster: indicates that the schema is in sharded mode. single: indicates that the schema is in unsharded mode.
shard_number	Integer	Number of shards in the same working mode
status	String	Schema status
created	Long	Time when the schema was created
used_rds	Array of GetDatabaseUsedRds objects	RDS instances associated with the schema
shard_unit	Integer	Number of shards per RDS instance

Table 4-126 GetDatabaseUsedRds

Parameter	Type	Description
id	String	Node ID of the associated RDS instance
name	String	Name of the associated RDS instance
status	String	Status of the associated RDS instance
error_msg	String	Response message. This parameter is not returned if no abnormality occurs.

Status code: 400**Table 4-127** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-128** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying schemas

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/databases?offset={offset}&limit={limit}

Example Response

Status code: 200

OK

```
{
  "databases": [ {
    "status": "RUNNING",
    "created": 1642063713625,
    "name": "mytestdb170",
```

```

"shard_mode" : "cluster",
"shard_number" : 8,
"shard_unit" : 8,
"used_rds" : [ {
  "id" : "c6f68fed9e74478c8679479a07d7d568in01",
  "status" : "normal",
  "name" : "rds-test"
} ]
}],
"total" : 172
}

```

Status code: 400

Bad request

```

{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}

```

Status code: 500

Server error

```

{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.2.3 Querying Details of a Schema**Function**

This API is used to query details about a schema.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/databases/{ddm_dbname}

Table 4-129 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
ddm_dbname	Yes	String	Name of the schema to be queried, which is case-insensitive

Request Parameters

Table 4-130 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-131 Response body parameters

Parameter	Type	Description
database	GetDatabaseResponseBean object	Schema information

Table 4-132 GetDatabaseResponseBean

Parameter	Type	Description
name	String	Schema name
created	Long	Time when the schema was created. The value is a UNIX timestamp, in milliseconds.
status	String	Schema status

Parameter	Type	Description
updated	Long	Time when the schema is last updated. The value is a UNIX timestamp, in milliseconds.
databases	Array of GetDatabase s objects	Sharding information of the schema
shard_mode	String	Sharding mode of the schema <ul style="list-style-type: none"> • cluster: indicates that the schema is in sharded mode. • single: indicates that the schema is in unsharded mode.
shard_number	Integer	Number of shards in the same working mode
shard_unit	Integer	Number of shards per RDS instance
dataVips	Array of strings	IP address and port number for connecting to the schema
used_rds	Array of GetDatabase UsedRds objects	Associated RDS instances

Table 4-133 GetDatabases

Parameter	Type	Description
dbslot	Integer	Number of shards
name	String	Shard name
status	String	Schema status
created	Long	Creation time. The value is a UNIX timestamp, in milliseconds.
updated	Long	Last update time. The value is a UNIX timestamp, in milliseconds.
id	String	ID of the RDS instance where the shard is located
idName	String	Name of the physical database

Table 4-134 GetDatabaseUsedRds

Parameter	Type	Description
id	String	Node ID of the associated RDS instance
name	String	Name of the associated RDS instance
status	String	Status of the associated RDS instance
error_msg	String	Response message. This parameter is not returned if no abnormality occurs.

Status code: 400

Table 4-135 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-136 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying details of a schema

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/databases/{ddm_dbname}
```

Example Response

Status code: 200

OK

```
{
  "database": {
    "name": "db_7567",
    "created": "1604631243234",
    "status": "RUNNING",
```

```

"updated" : "1604631243234",
"databases" : [ {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0000",
  "idName" : "db_7567_0000",
  "dbslot" : 0,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0001",
  "idName" : "db_7567_0001",
  "dbslot" : 1,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0002",
  "idName" : "db_7567_0002",
  "dbslot" : 2,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0003",
  "idName" : "db_7567_0003",
  "dbslot" : 3,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0004",
  "idName" : "db_7567_0004",
  "dbslot" : 4,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0005",
  "idName" : "db_7567_0005",
  "dbslot" : 5,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0006",
  "idName" : "db_7567_0006",
  "dbslot" : 6,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
}, {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "db_7567_0007",
  "idName" : "db_7567_0007",
  "dbslot" : 7,
  "status" : "RUNNING",
  "created" : 1604631243234,
  "updated" : 1604631243234
} ],
"shard_mode" : "cluster",
"shard_number" : 8,
"shard_unit" : 8,

```

```

"dataVips" : [
  "192.168.185.97:5066"
],
"used_rds" : [ {
  "id" : "e70a82534a364492b795c5080e3a1591in01",
  "name" : "rds-5338",
  "status" : "normal"
} ]
}
}

```

Status code: 400

Bad request

```

{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}

```

Status code: 500

Server error

```

{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.2.4 Deleting a Schema**Function**

This API is used to delete a schema to release all its resources.

Constraints

None

URI

```

DELETE /v1/{project_id}/instances/{instance_id}/databases/{ddm_dbname}?
delete_rds_data={delete_rds_data}

```

Table 4-137 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
ddm_dbname	Yes	String	Name of the schema to be queried, which is case-insensitive

Table 4-138 Query parameters

Parameter	Mandatory	Type	Description
delete_rds_data	No	String	Whether data stored on the associated DB instances is deleted. The value can be: <ul style="list-style-type: none"> true: indicates that the data stored on the associated DB instances is deleted. false: indicates that the data stored on the associated DB instances is not deleted. It is left blank by default. Enumerated values: <ul style="list-style-type: none"> true false

Request Parameters

Table 4-139 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

None

Status code: 400

Table 4-140 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-141 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

- Deleting a schema (including the data stored on associated DB instances)
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/databases/{ddm_dbname}?delete_rds_data=true
- Deleting a schema (excluding the data stored on associated DB instances)
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/databases/{ddm_dbname}?delete_rds_data=false

Example Response

Status code: 200

OK

```
{}
```

Status code: 400

Bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.2.5 Querying DB Instances Available for Creating a Schema

Function

This API is used to query DB instances that can be used for creating a schema.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/rds?offset={offset}&limit={limit}

Table 4-142 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-143 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a non-negative number.
limit	No	Integer	Maximum instances to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-144 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-145 Response body parameters

Parameter	Type	Description
instances	Array of QueryAvailableRdsList objects	DB instances that can be used for creating a schema
offset	Integer	Which page the server starts returning items
limit	Integer	Number of records displayed on each page
total	Integer	Total collections

Table 4-146 QueryAvailableRdsList

Parameter	Type	Description
id	String	DB instance ID
projectId	String	Project ID of the tenant that the DB instance belongs to
status	String	DB instance status
name	String	DB instance name
engineName	String	Engine name of the DB instance
engineSoftwareVersion	String	Engine version of the DB instance
privateIp	String	Private IP address for connecting to the DB instance
mode	String	DB instance type (primary/standby or single-node)
port	Integer	Port for connecting to the DB instance
azCode	String	AZ
timeZone	String	Time zone

Status code: 400**Table 4-147** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-148** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying DB instances available for creating a schema

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/rds?offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "instances": [ {
    "id": "c6f68fed9e74478c8679479a07d7d568in01",
    "projectId": "055d9f4ee780d4d42f96c01c1bc3c50c",
    "status": "normal",
    "name": "test-ddm-no-delete-test01-00",
    "engineName": "mysql",
    "engineSoftwareVersion": 5.7,
    "privateIp": "192.168.23.97",
    "mode": "Ha",
    "port": 3306,
    "azCode": "az1xahzaz1xahz",
    "timeZone": "UTC+08: 00"
  }, {
    "id": "337e2598c2a64cb5935079f85996731din01",
    "projectId": "055d9f4ee780d4d42f96c01c1bc3c50c",
    "status": "normal",
    "name": "test-ddm-no-delete-test01",
    "engineName": "mysql",
    "engineSoftwareVersion": 5.7,
    "privateIp": "192.168.23.221",
    "mode": "Ha",
    "port": 3306,
    "azCode": "az1xahzaz1xahz",
    "timeZone": "UTC+08: 00"
  } ],
  "offset": 0,
  "limit": 6,
  "total": 2
}
```

Status code: 400

Bad request

```
{
  "externalMessage": "Parameter error.",
  "errCode": "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "externalMessage": "Server failure.",
  "errCode": "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.3 Accounts

4.3.1 Creating a DDM Account

Function

This API is used to create a DDM account. DDM accounts are used to connect to and manage schemas. A maximum of 100 DDM accounts can be created for each DDM instance, and one DDM account can be associated with multiple schemas.

Constraints

None

URI

POST /v1/{project_id}/instances/{instance_id}/users

Table 4-149 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-150 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-151 Request body parameters

Parameter	Mandatory	Type	Description
users	Yes	Array of CreateUsersInfo objects	DDM account information

Table 4-152 CreateUsersInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Username of the DDM account, which: <ul style="list-style-type: none"> • Can include 1 to 32 characters. • Must start with a letter. • Can contain only letters, digits, and underscores (_). Minimum length: 1 character Maximum length: 32 characters
password	Yes	String	DDM account password

Parameter	Mandatory	Type	Description
base_authority	Yes	Array of strings	Basic permissions of the DDM account. The value can be CREATE , DROP , ALTER , INDEX , INSERT , DELETE , UPDATE , or SELECT . Enumerated values: <ul style="list-style-type: none"> • CREATE • DROP • ALTER • INDEX • INSERT • DELETE • UPDATE • SELECT
description	No	String	Description of the DDM account, which cannot exceed 256 characters. It is left blank by default. Maximum length: 256 characters
databases	No	Array of CreateUsersDatabases objects	Associated schemas. The databases field is optional. You can create a DDM account without associating it with any schema.

Table 4-153 CreateUsersDatabases

Parameter	Mandatory	Type	Description
name	Yes	String	Name of the associated schema

Response Parameters

Status code: 200

Table 4-154 Response body parameters

Parameter	Type	Description
users	Array of CreateUsersDetailResponses objects	DDM account information

Table 4-155 CreateUsersDetailResponses

Parameter	Type	Description
name	String	Username of the DDM account

Status code: 400**Table 4-156** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-157** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Creating account **DDMuser1** that has permissions of CREATE, DROP, ALTER, INDEX, INSERT, DELETE, UPDATE, and SELECT, and associating it with schema **DDMdb1**

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/users
```

```
{
  "users": [ {
    "name": "DDMuser1",
    "password": "xxxxxx",
```

```

"base_authority" : [ "CREATE", "DROP", "ALTER", "INDEX", "INSERT", "DELETE", "UPDATE", "SELECT" ],
"description" : "",
"databases" : [ {
  "name" : "DDMdb1"
} ]
} ]
}

```

Example Response

Status code: 200

OK

```

{
  "users" : [ {
    "name" : "DDMuser1"
  } ]
}

```

Status code: 400

bad request

```

{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}

```

Status code: 500

server error

```

{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}

```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.3.2 Querying DDM Accounts

Function

This API is used to query DDM accounts.

Constraints

None

URI

GET /v1/{project_id}/instances/{instance_id}/users?offset={offset}&limit={limit}

Table 4-158 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-159 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Index offset. The query starts from the next piece of data indexed by this parameter. The value is 0 by default. The value must be a positive integer.
limit	No	Integer	Maximum accounts to be queried. Value range: 1 to 128. If the parameter value is not specified, 128 nodes are queried by default.

Request Parameters

Table 4-160 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-161 Response body parameters

Parameter	Type	Description
users	Array of GetUsersListDetailResponses objects	DDM account information
page_no	Integer	Current page
page_size	Integer	Data records on the current page
total_record	Integer	Total records
total_page	Integer	Total pages

Table 4-162 GetUsersListDetailResponses

Parameter	Type	Description
name	String	Username of the DDM account
status	String	Status of the DDM account
base_authority	Array of strings	Basic permissions of the DDM account. The value can be CREATE , DROP , ALTER , INDEX , INSERT , DELETE , UPDATE , or SELECT .
extend_authority	Array of strings	Extended permissions of the DDM account. The value can be fulltableDelete , fulltableSelect , or fulltableUpdate .
password_last_changed	Long	Time when the password of a DDM account is changed, in UNIX timestamp format
description	String	Description of the DDM account
created	Long	Time when a DDM account is created, in UNIX timestamp format
databases	Array of GetUsersListDatabase objects	Associated schemas

Table 4-163 GetUsersListdatabase

Parameter	Type	Description
name	String	Name of the schema associated with the DDM account
description	String	Schema description

Status code: 400

Table 4-164 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-165 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying DDM accounts

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/users?offset={offset}&limit={limit}
```

Example Response

Status code: 200

OK

```
{
  "users": [ {
    "name": "ddmtest",
    "status": "RUNNING",
    "base_authority": [ "SELECT" ],
    "password_last_changed": 1686904661709,
    "description": "Account",
    "created": 1686904661709,
    "databases": [ {
```

```

    "name" : "zhxtest",
    "description" : "Schema"
  } ]
} ],
"page_no" : 1,
"page_size" : 10,
"total_record" : 1,
"total_page" : 1
}

```

Status code: 400

bad request

```

{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}

```

Status code: 500

server error

```

{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}

```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.3.3 Modifying a DDM Account**Function**

This API is used to modify the permissions and associated schemas of a DDM account.

Constraints

At least one of the following parameters must be configured: **base_authority**, **description**, and **databases**.

URI

PUT /v1/{project_id}/instances/{instance_id}/users/{username}

Table 4-166 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
username	Yes	String	Username of the DDM account

Request Parameters

Table 4-167 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-168 Request body parameters

Parameter	Mandatory	Type	Description
user	Yes	UpdateUserDetailReq object	DDM account information

Table 4-169 UpdateUserDetailReq

Parameter	Mandatory	Type	Description
base_authority	No	Array of strings	Basic permissions of the DDM account. The default value is the original account permission. The value can be CREATE , DROP , ALTER , INDEX , INSERT , DELETE , UPDATE , or SELECT . Enumerated values: <ul style="list-style-type: none"> • CREATE • DROP • ALTER • INDEX • INSERT • DELETE • UPDATE • SELECT
description	No	String	Description of the DDM account, which cannot exceed 256 characters. It is left blank by default. Maximum length: 256 characters
databases	No	Array of UpdateUsers Databases objects	DDM account information

Table 4-170 UpdateUsersDatabases

Parameter	Mandatory	Type	Description
name	No	String	Schema name, which is case-insensitive. The databases and name fields must be both or neither specified. The parameter is left blank by default.

Response Parameters

Status code: 200

Table 4-171 Response body parameters

Parameter	Type	Description
name	String	Username of the DDM account

Status code: 400

Table 4-172 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-173 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Modifying the account permission to SELECT and associating it with schema **db_7350**

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/users/{username}
```

```
{
  "user" : {
    "base_authority" : [ "SELECT" ],
    "description" : "test11",
    "databases" : [ {
      "name" : "db_7350"
    } ]
  }
}
```

Example Response

Status code: 200

OK

```
{
  "name" : "ddmtest"
}
```

Status code: 400

bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.3.4 Deleting a DDM Account

Function

This API is used to delete a DDM account. This operation will also disassociate the account from schemas if any.

Constraints

None

URI

DELETE /v1/{project_id}/instances/{instance_id}/users/{username}

Table 4-174 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
username	Yes	String	Username of the DDM account to be deleted

Request Parameters

Table 4-175 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-176 Response body parameters

Parameter	Type	Description
name	String	Username of the DDM account

Status code: 400

Table 4-177 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500

Table 4-178 Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Deleting a DDM account

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/users/{username}
```

Example Response

Status code: 200

OK

```
{
  "name" : "ddmtest"
}
```

Status code: 400

bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.3.5 Resetting the Password of a DDM Account

Function

This API is used to reset the password of a DDM account.

Constraints

None

URI

POST /v2/{project_id}/instances/{instance_id}/users/{username}/password

Table 4-179 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID
username	Yes	String	Username of the DDM account to be modified

Request Parameters

Table 4-180 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-181 Request body parameters

Parameter	Mandatory	Type	Description
password	Yes	String	New password

Response Parameters

Status code: 200

Table 4-182 Response body parameters

Parameter	Type	Description
success	Boolean	Whether the operation is successful
instance_id	String	DDM instance ID
user_name	String	Username of the DDM account

Status code: 400**Table 4-183** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-184** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Resetting the password of a DDM account

```
POST https://{endpoint}/v2/{project_id}/instances/{instance_id}/users/{username}/password
{
  "password" : "xxxxxx"
}
```

Example Response

Status code: 200

OK

```
{
  "success": true,
  "instance_id": "e6b99563-xxxx-xxxx-xxxx-1820d4fd2a67",
  "user_name" : "ddmtest"
}
```

Status code: 400

bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

4.3.6 Managing an Administrator Password**Function**

If it is the first time to call this API, it is used to create an administrator and reset its password for a DDM instance. Then this API can only be used to update the administrator password.

Constraints

The version of DDM must be 3.0.9 or later

URI

PUT /v3/{project_id}/instances/{instance_id}/admin-user

Table 4-185 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Request Parameters

Table 4-186 Request header parameters

Parameter	Mandatory	Type	Description
x-auth-token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-187 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Username of the administrator. The username: <ul style="list-style-type: none"> Can include 1 to 32 characters. Must start with a letter. Can contain only letters, digits, and underscores (_).
password	Yes	String	Password of the administrator. The password: <ul style="list-style-type: none"> Can include 8 to 32 characters. Must be a combination of uppercase letters, lowercase letters, digits, and the following special characters: ~!@#%^*_+? Must be a strong password to improve security and prevent security risks such as brute force cracking.

Response Parameters

Status code: default

Table 4-188 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Creating administrator account **root** and setting a password for it

```
PUT https://{endpoint}/v3/{project_id}/instances/{instance_id}/admin-user
{
  "name" : "root",
  "password" : "xxxxx"
}
```

Example Response

None

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

Status Codes

- Normal
202
- Abnormal
For details, see [Status Codes](#).

Error Codes

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

4.3.7 Validating Password Strength

Function

This API is used to check whether an instance password is a weak password.

URI

POST /v3/{project_id}/weak-password-verification

Table 4-189 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID of a tenant in a region To obtain this value, see Obtaining a Project ID .

Request Parameters

Table 4-190 Request header parameters

Parameter	Mandatory	Type	Description
x-auth-token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Table 4-191 Request body parameters

Parameter	Mandatory	Type	Description
password	Yes	String	Character string to be validated

Response Parameters

Status code: 200

Table 4-192 Response body parameters

Parameter	Type	Description
is_weak_password	Boolean	Whether the password is a weak password. The value can be: true : indicating that the password is a weak password. Such a password is not recommended. false : indicating that the password is not a weak password. Such a password is recommended.

Status code: 400

Table 4-193 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Status code: 500**Table 4-194** Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Verifying password strength

POST https://{endpoint}/v3/{project_id}/weak-password-verification

```
{
  "password" : "xxx"
}
```

Example Response

Status code: 200

OK

```
{
  "is_weak_password" : true
}
```

Status code: 400

Bad request

```
{
  "error_msg" : "Parameter error.",
  "error_code" : "DBS.280001"
}
```

Status code: 500

Server error

```
{
  "error_msg" : "Parameter error.",
  "error_code" : "DBS.280001"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad request
500	Server error

Error Codes

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

4.4 Monitoring

4.4.1 Monitoring Slow Query Logs

Function

This API is used to query the SQL statements that take a long time to execute on the DDM instance within a specified time range.

Constraints

None

URI

GET /v2/{project_id}/instances/{instance_id}/slowlog?
curPage={curPage}&perPage={perPage}&startDate={startDate}&endDate={endDate}

Table 4-195 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID To obtain this value, see Obtaining a Project ID .
instance_id	Yes	String	DDM instance ID

Table 4-196 Query parameters

Parameter	Mandatory	Type	Description
curPage	Yes	String	Which page the server starts returning items. The start value cannot be less than 1.
perPage	Yes	String	Number of records displayed on each page
startDate	Yes	String	Start time. The format is UNIX timestamp, in milliseconds.
endDate	Yes	String	End time. The format is UNIX timestamp, in milliseconds. The interval between the start time and the end time must be no more than 7 days.

Request Parameters

Table 4-197 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token You can obtain the token by calling the IAM API used to obtain a user token.

Response Parameters

Status code: 200

Table 4-198 Response body parameters

Parameter	Type	Description
totalRecord	Integer	Number of slow query logs
slowLogList	Array of SlowLogList objects	Information about slow query logs

Table 4-199 SlowLogList

Parameter	Type	Description
users	String	Username of the DDM account for executing the slow SQL statement
database	String	Name of the schema where the slow SQL statement is executed
querySample	String	Syntax for executing the slow SQL statement
logTime	String	Time when the slow SQL statement starts to be executed. The format is yyyy-mm-ddThh:mm:ssZ .
time	String	Time for a SQL statement to execute, accurate to milliseconds
shards	String	Name of the physical shard
rowsExamined	String	Number of rows affected by the SQL statements that take a long time to execute
host	String	Client IP address. This IP address may involve personal data. Anonymizing the IP address data is recommended.

Status code: 400**Table 4-200** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Status code: 500**Table 4-201** Response body parameters

Parameter	Type	Description
errCode	String	Service error code
externalMessage	String	Error message

Example Request

Querying the SQL statements that take a long time to execute on the DDM instance within a specified time range

```
GET https://{endpoint}/v2/{project_id}/instances/{instance_id}/slowlog?
curPage={curPage}&perPage={perPage}&startDate={startDate}&endDate={endDate}
```

Example Response

Status code: 200

OK

```
{
  "totalRecord" : 2,
  "slowLogList" : [ {
    "users" : "testddm",
    "database" : "test1",
    "querySample" : "select id, sleep(3) from test",
    "logTime" : "2021-04-26T02:40:21",
    "time" : "12002",
    "shards" : "test1_0000",
    "rowsExamined" : "4",
    "host" : "192.168.16.18"
  } ]
}
```

Status code: 400

bad request

```
{
  "externalMessage" : "Parameter error.",
  "errCode" : "DBS.280001"
}
```

Status code: 500

server error

```
{
  "externalMessage" : "Server failure.",
  "errCode" : "DBS.200412"
}
```

Status Codes

Status Code	Description
200	OK
400	bad request
500	server error

Error Codes

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

A Appendix

A.1 Abnormal Request Results

v3 APIs

Abnormal response description

Table A-1 Abnormal response description

Parameter	Type	Description
error_code	String	Error code returned when a task submission exception occurs
error_msg	String	Error description returned when a task submission exception occurs

Response example:

```
{
  "error_code": "DBS.300301",
  "error_msg": "Failed to update the account"
}
```

v1 and v2 APIs

Abnormal response description

Table A-2 Parameter description

Parameter	Type	Description
errCode	String	Error code returned when a task submission exception occurs

Parameter	Type	Description
externalMessage	String	Description of the error returned when a task submission exception occurs.

Response example:

```
{
  "errCode": "DBS.300101",
  "externalMessage": "Failed to delete the schema"
}
```

A.2 Status Codes

Normal

Table A-3 lists the status codes that may be returned.

Table A-3 Normal status codes

Status Code	Message	Description
200	OK	The request has been processed successfully.
202	OK	The asynchronous request is submitted successfully.

Abnormal

Table A-4 lists the status codes that may be returned.

Table A-4 Abnormal status codes

Status Code	Message	Description
400	Bad Request	The server fails to process the request. The possible causes are as follows: <ul style="list-style-type: none"> The request could not be parsed by the server due to incorrect syntax. Request parameters are incorrect.
401	Unauthorized	Necessary credentials (for example, username and password) required for user authentication are not provided.
403	Forbidden	Access to the requested page is denied.

Status Code	Message	Description
404	Not Found	The request failed because the requested resource could not be found on the server.
405	Method Not Allowed	You are not allowed to use the method specified in the request.
409	Conflict	The request could not be processed due to a conflict with the current resource status.
413	Request Entity Too Large	The requested resource exceeds the resource quota.
415	Unsupported Media Type	ContentType contained in the request header is neither application nor json .
500	Internal Server Error	The request is not completed due to a service error.
501	Not Implemented	The request is not completed because the server does not support the requested function.
503	Service Unavailable	The request could not be processed by the server because the server is being maintained or overloaded.

A.3 Error Codes

Status Code	Error Code	Error Message	Solution
400	DBS.280001	Parameter error.	Refresh the page, modify some parameters, and try again.
400	DBS.200076	The instance and node must be in the Available state.	Check whether other operations are being performed or fail on the instance or node. After the fault is rectified, deliver the request again.
400	DBS.300002	Server failure.	Refresh the page and try again later.
400	DBS.300005	Failed to process the request. Contact technical support.	-

Status Code	Error Code	Error Message	Solution
400	DBS.300 100	Failed to create the schema.	Check whether the DDM instance is available, whether the instance is in the Running state, whether the RDS instance is being scaled, and whether the schema name is duplicated. If the schema name is duplicated, modify the name and send the request again.
400	DBS.300 101	Failed to delete the schema.	Check whether the schema has been deleted and whether the associated RDS instance exists or becomes abnormal.
400	DBS.300 102	The number of RDS instances associated with the schema is invalid.	Check whether the number of RDS instances associated with the schema is valid and try again.
400	DBS.300 103	The RDS instance does not exist or it is not in the same VPC as the schema.	Check whether the RDS DB instance exists and whether the DB instance is in the same VPC as the required DDM instance, and then try again.
400	DBS.300 104	The sharding rule of the schema is invalid.	Ensure that the sharding rule is valid and try again.
400	DBS.300 106	The number of shards per RDS instance is invalid.	Check whether the number of shards per RDS instance in the request is correct. If not, modify the number and try again.
400	DBS.300 107	The accounts are duplicated.	Check whether the accounts configured in parameters are duplicated and try again.
400	DBS.300 108	The RDS instances are duplicated.	Check whether there are duplicate RDS instances in the request. If yes, modify them and try again.
400	DBS.300 109	The schema name is invalid.	Check whether the schema name is valid. If no, modify it and try again.
400	DBS.300 110	The status of the RDS instance does not allow associating with the schema.	Resolve the RDS instance status exception and try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300 112	This schema name already exists.	Check whether a schema with the same name exists. If yes, modify the name and try again.
400	DBS.300 113	Failed to create a physical database.	Check whether the RDS administrator and password are correct. If no, modify them and try again.
400	DBS.300 114	The administrator or password is incorrect.	Check whether the RDS administrator and password are correct. If no, modify them and try again.
400	DBS.300 115	Failed to delete the shard.	To delete the schema, check whether there are RDS instances associated with it. If the associated RDS DB instances have been deleted, click Synchronize DB Instance Data on the Basic Information page and delete the schema again.
400	DBS.300 116	Failed to query available RDS instances.	Check whether the RDS service is running properly and try again.
400	DBS.300 117	Failed to obtain the associated RDS instances.	Check whether the RDS service is running properly and try again.
400	DBS.300 118	Failed to configure shards of a schema.	Check input parameters in the request.
400	DBS.300 120	Failed to obtain task information.	Ensure that the DDM instance is running properly and try again.
400	DBS.300 121	Failed to delete the shard configuration task.	Ensure that the shard configuration task exists and is in the valid state and that the administrator password of the destination RDS instance is correct, and try again.
400	DBS.300 122	Failed to roll back the shard configuration task.	Ensure that the shard configuration task exists and is in the valid state and that the administrator password of the destination RDS instance is correct, and try again.
400	DBS.300 123	Failed to retry the shard configuration task.	Ensure that the shard configuration task exists and is in the valid state, and try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300 125	Failed to synchronize RDS information.	Check whether the RDS service is running properly and try again.
400	DBS.300 127	The number of shards in the RDS instances associated with the schema is invalid.	Ensure that the total number of shards in the associated RDS DB instances is valid and try again.
400	DBS.300 128	Failed to query schema information.	Ensure that the DDM instance is running properly and try again.
400	DBS.300 129	Failed to query schema information.	Check whether the schema exists and try again.
400	DBS.300 130	Invalid schema status.	Check whether the schema is in the running state and try again.
400	DBS.300 131	Failed to update the schema SQL blacklist.	Ensure that the DDM instance is running properly and try again.
400	DBS.300 132	Failed to query the schema SQL blacklist.	Ensure that the DDM instance is running properly and try again.
400	DBS.300 133	The RDS instance is being used to scale out a schema.	Ensure that the RDS DB instance status is not Scaling out or Scaling failed and try again.
400	DBS.300 134	The schema status does not allow rolling back or canceling the scale-out task.	Refresh the page and try again later.
400	DBS.300 135	Failed to update the relative read weight of the RDS instance.	Ensure that the DDM instance is running properly and try again.
400	DBS.300 300	Failed to create a DDM account	Ensure that the DDM instance, schema, and account exist and try again.
400	DBS.300 301	Failed to update the account.	Ensure that the account and associated schema exist and that the password meets the requirements, and try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300302	Failed to delete the account.	Ensure that the DDM instance is running properly and try again.
400	DBS.300305	Invalid DDM account name.	Ensure that the account name is valid and try again.
400	DBS.300306	The account password is invalid.	Ensure that the account name and password in the request body are correct and try again.
400	DBS.300307	The account description is invalid.	Ensure that the maximum length of account description does not exceed 256 characters and try again.
400	DBS.300309	The account basic permissions are invalid.	Ensure that basic permissions configured for the account are correct and try again.
400	DBS.300310	The account extended permissions are invalid.	Ensure that extended permissions configured for the account are correct and try again.
400	DBS.300311	The account already exists.	Ensure that the account name is unique and try again.
400	DBS.300312	Failed to query the account.	Ensure that the DDM instance is running properly and try again.
400	DBS.300313	Failed to configure the SQL blacklist.	Ensure that the schema exists and is in the Running state, and try again.
400	DBS.300314	Failed to modify the read/write policy.	Ensure that the DDM instance is running properly and try again.
400	DBS.300315	Invalid read/write relative weight.	Ensure that the weight is greater than or equal to 0 and less than 100.
400	DBS.300316	Failed to query the read/write policy.	Ensure that the DDM instance is running properly and try again.
400	DBS.300322	Failed to save instance metadata.	Provide environment information, instance ID, involved operations, and symptom description and contact technical support.
400	DBS.300323	The associated RDS instance is unavailable or this operation cannot be performed when the RDS instance is in the current state.	Ensure that the associated RDS DB instance exists and is in normal state, and try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300 327	The account does not exist.	Ensure that the account exists and try again.
400	DBS.300 328	Failed to reset the password.	Ensure that the account exists and try again.
400	DBS.300 329	Failed to obtain the step name.	Try again or roll back the scale-out task.
400	DBS.300 330	Failed to convert the string from JSON to the required format.	Provide environment information, involved operations, instance ID, and symptom description and contact technical support.
400	DBS.300 331	Data migration error.	Provide environment information, involved operations, instance ID, and symptom description and contact technical support.
400	DBS.300 332	The request for shard configuration times out.	Try again or roll back the scale-out task.
400	DBS.300 333	Failed to check the time zone.	Log in to the RDS console. In the instance list, locate the source RDS instance and click its name. In the navigation pane, choose Parameters , search for time_zone in the upper right text box to check its value. Then, perform these operations on the target RDS instance, and check whether its time_zone value is consistent with the source instance. If not, modify it to ensure that the two values are consistent and retry.
400	DBS.300 334	sql_mode check failed.	Log in to the RDS console. In the instance list, locate the source RDS instance and click its name. In the navigation pane, choose Parameters , search for sql_mode in the upper right text box to check its value. Then, perform these operations on the target RDS instance, and check whether its sql_mode value is consistent with the source instance. If not, modify it to ensure that the two values are consistent and retry.
400	DBS.300 335	Failed to obtain the RDS link.	Check whether the RDS service is running properly.

Status Code	Error Code	Error Message	Solution
400	DBS.300 336	Physical database not found.	Log in to the associated RDS instance and execute SHOW DATABASES . Check whether there is a physical database whose name starts with the schema name, and whether the number of physical databases must be the same as the number of shards in the schema.
400	DBS.300 337	Failed to check the primary key.	Check whether there are tables without primary keys. If yes, add primary keys for those tables and retry.
400	DBS.300 338	Failed to disable DDL or DML.	Provide environment information, instance ID, involved operations, and symptom description and contact technical support.
400	DBS.300 339	Failed to insert a scale-out subtask.	Contact technical support.
400	DBS.300 340	Failed to change statuses of scale-out subtasks to Initialization .	Contact technical support.
400	DBS.300 341	Failed to issue a scale-out subtask.	Contact technical support.
400	DBS.300 342	Failed to obtain scale-out subtasks.	Contact technical support.
400	DBS.300 343	The volume of remaining subtask data is invalid.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300 344	Status check for scale-out task failed.	Contact technical support.
400	DBS.300 345	Failed to obtain information about the scale-out task.	Try again.
400	DBS.300 346	Failed to obtain information about the DDM process.	Try again.
400	DBS.300 347	Failed to close the connection.	Try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300348	Failed to obtain subtasks during data verification.	Contact technical support.
400	DBS.300349	Failed to update the schema status during route switching.	Contact technical support.
400	DBS.300350	The required data is not found.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300351	Failed to change statuses of scale-out subtasks to Error .	Contact technical support.
400	DBS.300352	Failed to change statuses of scale-out subtasks to Stop .	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300353	Data verification failed.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300354	Failed to change statuses of scale-out subtasks to Complete .	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300355	Schema creation failed.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300356	Failed to connect to the RDS DB instance.	Check whether the RDS service is running properly.
400	DBS.300357	The RDS instance administrator or password is incorrect.	If the RDS instance administrator is incorrect, log in to the RDS console, locate the required RDS instance and click its name, and view the administrator on the instance details page.

Status Code	Error Code	Error Message	Solution
400	DBS.300 358	There is a schema where source data is not cleared.	Log in to the DDM console, switch to the schema management page, locate the target schema, and click Clear in the Operation column.
400	DBS.300 360	The associated instance does not support this operation.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300 362	The scaling method is invalid.	Select either one of rebalance and reshard.
400	DBS.300 363	Pre-check failed.	Provide environment information, involved operations, and symptom description and contact technical support.
400	DBS.300 364	Failed to check disk space of the DB instance.	Perform the following operations to scale up disk space of the DB instance: <ol style="list-style-type: none"> 1. Log in to the management console. 2. Hover on the left menu to display Service List and choose Database > Relational Database Service. 3. On the Instance Management page, locate the required DB instance and click its name. 4. On the Basic Information page, locate the Storage Space part. 5. Click Scale and try again after the scaling is complete.
400	DBS.300 365	Failed to update metadata.	Retry the scale-out task.
400	DBS.300 366	Failed to rename physical tables during migration.	Retry the scale-out task.
400	DBS.300 367	Failed to clear source data.	Try again.

Status Code	Error Code	Error Message	Solution
400	DBS.300368	Parameter lower_case_table_names of the DB instance is invalid.	<p>Perform the following operations to scale up disk space of the DB instance:</p> <ol style="list-style-type: none"> 1. Log in to the management console. 2. Hover on the left menu to display Service List and choose Database > Relational Database Service. 3. On the Instance Management page, locate the required DB instance and click its name. 4. Choose Parameters in the left navigation pane, search for lower_case_table_names and verify that its value is 1 and retry.
400	DBS.300369	Failed to configure access control. Contact technical support.	<p>View DBS-ddm-instancemanager logs and DBS-resource-manager logs and modify as follows:</p> <ul style="list-style-type: none"> • If error code APIG.xxxx is returned, indicating that you have no permission to access the API, contact ELB O&M engineers to grant the user the required permission. View the URI of the API in the resource management INFO log. • If an error code containing ELB.xxxx is displayed, contact ELB O&M engineers to locate the fault.
400	DBS.300370	Elastic load balancing is not enabled for the current DDM instance. To enable it, contact technical support.	<p>If needed, go to DBS Operation System to enable elastic load balancing for the required DDM instance.</p>
400	DBS.300371	Creating a test DDM instance is not supported. To enable this function, contact technical support.	<p>Creating DDM instances using the engine ID of a stable version is recommended. To create a test DDM instance, go to the DBS Operation System platform to add the user to the whitelist.</p> <p>View the DDM instance management logs to obtain the whitelist name.</p>

Status Code	Error Code	Error Message	Solution
400	DBS.300 372	Invalid destination DDM instance.	Create a DDM instance as the destination instance.
400	DBS.300 375	Invalid {param} .	Change the value of {param} and try again.
400	DBS.300 376	The time zone is invalid.	Enter a correct time zone.
400	DBS.300 377	Invalid time range.	<ol style="list-style-type: none"> 1. Ensure that the format of the time range for route switching is HH:mm:ss. 2. Ensure that the route switching start time and end time are the same day and the interval is longer than 1 hour. 3. Retry after completing the above operations.
400	DBS.300 379	The operation is not allowed for this type of tasks.	Enter the ID of the required schema scale-out task.
400	DBS.300 400	The task is not found.	Enter a valid task ID.
400	DBS.300 401	Failed to modify the automatic route switching time range.	Provide environment information, involved operations, symptom description, and tenant node logs and contact technical support.
400	DBS.300 402	Failed to switch the route manually.	Provide environment information, involved operations, symptom description, and tenant node logs and contact technical support.
400	DBS.300 405	The schema name length is invalid.	Ensure that the schema name contains 2 to 24 characters.
400	DBS.300 406	The schema name cannot contain keyword <i>keyword</i> .	Ensure that the schema name does not contain information_schema , mysql , performance_schema , and sys .
400	DBS.300 407	The schema name cannot contain uppercase letters.	Enter a schema name that only consists of lowercase letters.

Status Code	Error Code	Error Message	Solution
400	DBS.300408	Failed to check the RDS connectivity.	<ol style="list-style-type: none"> 1. Upgrade Agent to 2.6.1 or later. 2. Provide environment information, involved operations, and symptom description. Contact O&M engineers to check whether the Agent is faulty.
400	DBS.300541	Insufficient permissions.	Use an account with the required permissions.
400	DBS.200057	Invalid parameter template ID.	Enter a correct parameter template ID and try again later.
400	DBS.280305	Invalid security group ID.	Enter a valid security group ID and try again later.

A.4 Instance Specifications

DDM node classes are listed in the following table and vary according to actual situations.

Table A-5 Supported DDM node classes

Specification Code	vCPUs	Memory (GB)	Architecture
ddm.c6.2xlarge.2	8	16	x86
ddm.c6.4xlarge.2	16	32	x86
ddm.c6.8xlarge.2	32	64	x86
ddm.kc1.2xlarge.2	8	16	Arm
ddm.kc1.4xlarge.2	16	32	Arm
ddm.kc1.8xlarge.2	32	64	Arm

A.5 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 a Project ID from the Console](#)

Obtaining the Project ID by Calling an API

You can obtain the project ID by calling the API used to query .

You can obtain the project ID by calling the IAM API used to query project information based on specified criteria.

The API used to obtain a project ID is **GET https://{Endpoint}/v3/projects**. **{Endpoint}** is the IAM endpoint and can be obtained from the administrator. For details about API authentication, see [Authentication](#).

The following is an example response. **id** indicates 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"
  }
}
```

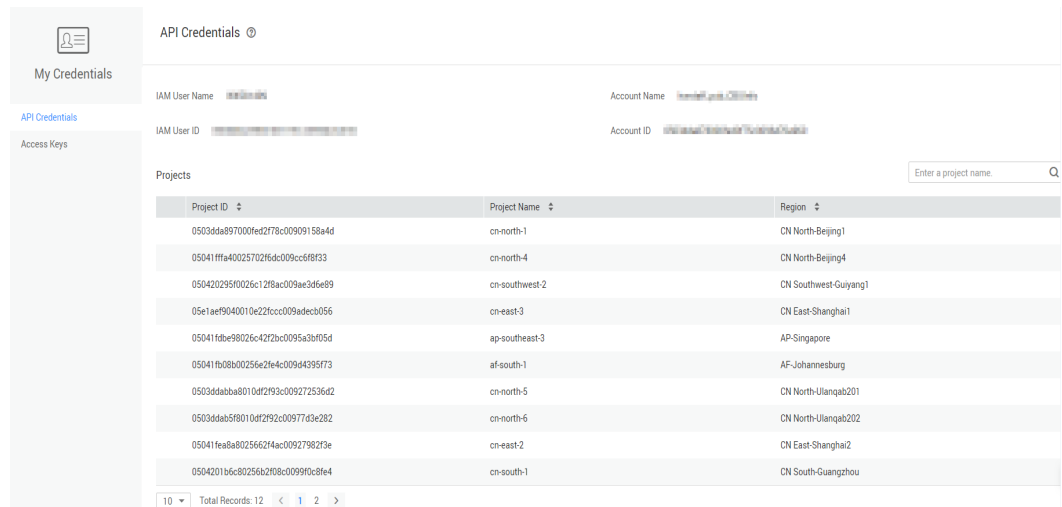
Obtaining a Project ID from the Console

Step 1 Sign up and log in to the management console.

Step 2 Hover the mouse over the username in the upper right corner and select **My Credentials** from the drop-down list.

On the **API Credentials** page, view the project ID in the project list.

Figure A-1 Viewing project IDs



----End

A.6 Status Description

DDM Instance Statuses

Table A-6 DDM instance statuses

Status	Description
CREATING	The DDM instance is being created.
CREATEFAILED	The DDM instance fails to be created.
RUNNING	The DDM instance is running and available.
ERROR	The DDM instance is faulty.
RESTARTING	The DDM instance is being restarted.
RESIZING	Class of the DDM instance fail to be changed.
UPGRADE_VERSION_INSTANCE	The version is being upgraded.
ROLL_BACK_DB_VERSION	The version is being rolled back.
GROWING	A DDM instance is being scaled out.
REDUCING	A DDM instance is being scaled in.
RESTORE	A DDM instance is being restored.
BACKUP	A DDM instance is being backed up.
MODIFY_NAME	A DDM instance name is being changed.

Status	Description
MIGRATE_DATABASE	Shards of a schema are being configured.
RESET_PASSWORD	A password is being reset.
SET_CONFIGURATIO N	The instance parameters are being updated.

DDM Schema Statuses

Table A-7 DDM schema statuses

Status	Description
CREATING	The schema is being created.
RUNNING	The schema is running and available.
CREATE_FAILED	The schema fails to be created.
DELETING	The schema is being deleted.
EXPANDING	Shards are being configured.
EXPAND_FAILED	Shards fail to be configured.
ROLLING BACK	The schema is being rolled back.

DDM Node Status

Table A-8 Node statuses

Status	Description
normal	The node is running normally.
abnormal	The node is abnormal.
creating	The DDM instance is being created.
createfail	The DDM instance fails to be created.
enlargefail	The DDM instance fails to be scaled out.
resizing	The node class is being changed.

B Change History

Table B-1 Document change history

Release Date	Description
2022-09-30	This issue is the first official release.