Data Admin Service(DAS)

API Reference

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HUAWEI

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1 Before You Start

1.1 Overview

Welcome to *Data Admin Service API Reference*. This document describes how to call APIs to perform operations on Data Admin Service (DAS), such as querying metadata locks and creating database users. For details about all supported operations, see **API Overview**.

Before calling DAS APIs, ensure that you have understood the concepts related to DAS. For more information, see **Service Overview**.

1.2 API Calling

DAS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS requests. For details about API calling, see **Calling APIs**.

You can call APIs by adding the **das:*:*** action tor directly adding the **DAS FullAccess** system policy.

1.3 Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of all services, see **Regions and Endpoints**.

1.4 Constraints

For more constraints, see the descriptions of specific APIs.

1.5 Concepts

- Account

  A domain is created after your registration. The domain 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.

- User

  An IAM user is created by an account to use cloud services. Each IAM user has its own identity credentials (password and access keys).

- 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.

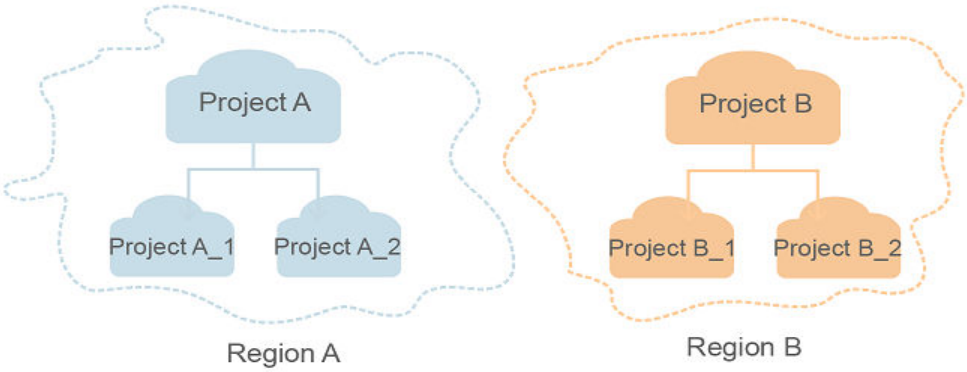
- AZ

  An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, 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 you 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. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific 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.

    For details about enterprise projects and how to obtain enterprise project IDs, see **Enterprise Management User Guide**.

2 API Overview

DAS provides extension APIs. By calling DAS APIs, you can use some DAS functions. See the following table for details.

Table 2-1 APIs

Type	Description
Querying API Versions	• Query API versions. • Query a specified API version.
Querying a SQL Execution Plan	Query a SQL execution plan. Currently, this function is supported only for MySQL DB instances.
Killing Sessions	Kill sessions. Sessions are killed by user, database, or session ID. Currently, this function is supported only for MySQL DB instances.
Querying Metadata Locks	Query metadata locks. Currently, this function is supported only for MySQL DB instances.
Querying InnoDB Lock Waits	Query InnoDB lock waits. Currently, this function is supported only for MySQL DB instances.
Querying Database Users	Query registered database users. Currently, this function is supported only for MySQL DB instances.
Registering a Database User	Register the database username and password with the DAS system. A database user ID will be returned in the response and is required for calling other APIs, such as the API used to query instance sessions. The database password is encrypted and used for DAS API calls only. This API does not create database user objects on the database. Currently, this function is supported only for MySQL DB instances.
Querying Instance Sessions	Query instance sessions by database or user. Currently, this function is supported only for MySQL DB instances.

Type	Description
Querying a Specified Database User	Query information of a specified database user. Currently, this function is supported only for MySQL DB instances.
Modifying a Database User	Change the username and password for a registered database user. Currently, this function is supported only for MySQL DB instances.
Deleting a Database User	Delete a database user. The database user is deleted from the DAS system only. The real database user object is not deleted. Currently, this function is supported only for MySQL DB instances.
Obtaining the Space Analysis Data	Obtain the space analysis data. The file system generates instance-level data, and the **information_schema.tables** table generates database-level and table-level data. **Space & Metadata Analysis** allows you to analyze a maximum of 10,000 tables. If tablespace data is missing, there may be too many instance tables, or the account password has not been saved. If the password has not been saved, use the user management API or page to save the database account. MySQL and TaurusDB are supported.
Creating a Space Analysis Task	This API is used to create a space analysis task, for example, triggering re-analysis. This function is supported for MySQL and TaurusDB.
Enabling or Disabling SQL Explorer and Slow Query Log	Enable or disable SQL Explorer. After this function is enabled, the instance performance loss rate is within 5% and DAS stores all SQL statement logs for analysis. You can set the retention period of SQL explorer data. After the retention period expires, the data is automatically deleted. If not specified, the data is retained for seven days. Enable or disable Slow Query Log. After this function is enabled, DAS stores slow query logs for analysis. You can set the retention period of slow query logs. After the retention period expires, the data is automatically deleted. If not specified, the data is retained for seven days.
Querying Whether SQL Explorer and Slow Query Log Are Enabled	Query whether SQL Explorer and Slow Query Log are enabled.
Exporting Slow Query Logs	After Slow Query Log is enabled, you can export the slow query logs within a specified period at a time. The data can be obtained by page.

Type	Description
Exporting SQL Explorer Data	After SQL Explorer is enabled, you can export the SQL explorer data within a specified period at a time. The data can be obtained by page.
Querying Whether SQL Statement Concurrency Control Is Enabled	Query whether SQL Statement Concurrency Control is enabled. Currently, this function is supported only for MySQL DB instances.
Enabling or Disabling SQL Statement Concurrency Control	Enable or disable SQL Statement Concurrency Control. Currently, this function is supported only for MySQL DB instances.
Querying Concurrency Control Rules of SQL Statements	Query concurrency control rules of SQL statements. Currently, this function is supported only for MySQL DB instances.
Creating a Concurrency Control Rule	Add concurrency control rules of SQL statements. Currently, this function is supported only for MySQL DB instances. The restrictions are as follows: ● Take **select~a** as an example. **select** and **a** are two keywords contained in a concurrency control rule. The keywords are separated by a tilde (~). In this example, the rule restricts the execution of only the SQL statements containing keywords **select** and **a**. ● If a SQL statement matches multiple concurrency control rules, only the most recently added rule is applied. ● Keywords in a concurrency control rule are sorted in a specific order, and the system will match them from first to last. For example, if one rule contains the keyword **a~and~b**, the system only matches **xxx a>1 and b>2**. ● Generated keywords may be case-sensitive. Execute **show variables like 'rds_sqlfilter_case_sensitive'** or go to the console to check parameter settings. ● Concurrency control rules can only be added for primary instances. ● System catalogs are not restricted, queries which do not involve data are not restricted, and the **root** user is not restricted in specific versions.
Deleting a Concurrency Control Rule	Delete concurrency control rules of SQL statements. Currently, this function is supported only for MySQL DB instances.
Querying Concurrency Control Tasks	Query information about an SQL concurrency control task with a specified ID.

Type	Description
Exporting the Top SQL Template List	Export the top SQL template list after Top SQL is enabled. This function is available only for paid instances. The maximum query interval is one hour.
Exporting SQL Execution Time Distribution	Export the SQL execution duration after Top SQL is enabled. This function is available only for paid instances. The query interval is 6 hours.
Exporting the Slow SQL Template List	Export the slow SQL template list after Slow Query Log is enabled. This function is available only for paid instances. The maximum query interval is one day.

3 Calling APIs

3.1 Making an API Request

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

Request URI

A request URI is in the following format:

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

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

Table 3-1 URI parameter description

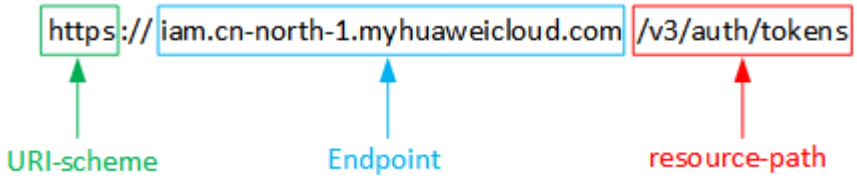
Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from **Regions and Endpoints**. For example, the endpoint of IAM in the **CN North-Beijing1** region is **iam.cn-north-1.myhuaweicloud.com**.
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**.

Parameter	Description
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.

For example, to obtain an IAM token in the **CN North-Beijing1** region, obtain the endpoint of IAM (**iam.cn-north-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3/auth/tokens**) in the URI of the API used to **obtain a user token**. Then, construct the URI as follows:

```
https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
```

Figure 3-1 Example URI



NOTE

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

Request Methods

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

Table 3-2 HTTP Method

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

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


```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
```

Request Header

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.

Table 3-3 lists common request header fields.

Table 3-3 Common request header fields

Field	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value is in the format of *hostname[:port]*. If the port number is not specified, the default port is used. The default port number for **https** is **443**.	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the MIME type of the request body. The default value **application/json** is recommended. For APIs used to upload objects or images, the value varies depending on the flow type.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	This field is optional for POST requests, but must be left blank for GET requests.	3495

Field	Description	Mandatory	Example Value
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in **Obtaining a Project ID**.	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies a user token. After the request is processed, the value of **X-Subject-Token** in the header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZfegerIhvc-NAQcCo...ggg1BBIINPXsidG9rZ

NOTE

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more information, see **Authentication Using AK/SK** in **Authentication**.

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

```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

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

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

In the case of the API used to **obtain a user token**, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ******** (login password), and *xxxxxxxxxxxxxxxxx* (project name such

as cn-north-1) with the actual values. Obtain a project name from **Regions and Endpoints**.

NOTE

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

```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json

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

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

3.2 Authentication

Requests for calling an API can be authenticated using either of the following methods:

- Token-based authentication: Requests are authenticated using a token.
- AK/SK-based authentication: Requests are authenticated by encrypting the request body using an AK/SK pair. AK/SK-based authentication is recommended because it is more secure than token-based authentication.

Token-based Authentication

NOTE

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

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

You need to obtain a token and add **X-Auth-Token** to the request header of API calls.

When you **call an API to obtain a user token**, set **auth.scope** in the request body to **project**.

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

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

```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/projects
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 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 using the signing SDK. For details about how to sign requests and use the signing SDK, see **API Request Signing Guide**.

NOTE

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

3.3 Response

Status Code

After sending a request, you will receive a response, including a 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 3-2 shows the response header fields 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 3-2 Header fields of the response to the request for obtaining a user token

(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.

The following is part of the response body for the API used to **obtain a user token**.

```
{
    "token": {
        "expires_at": "2019-02-13T06:52:13.855000Z",
        "methods": [
            "password"
```



```
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "aaa",
.....
```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{
"error_code": "DAS.200114",
"error_msg": "The instance_id parameter is invalid."
}
```

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

4 APIs (in OBT)

4.1 API Version Queries

4.1.1 Querying API Versions

Function

This API is used to query API versions.

URI

GET /das

Request Parameters

None

Response Parameters

Status code: 200

Table 4-1 Response body parameters

Parameter	Type	Description
versions	Array of ApiVersion objects	API version information.

Table 4-2 ApiVersion

Parameter	Type	Description
id	String	API version, for example, **v3**.
status	String	Version status. **CURRENT**, indicating that the version is the primary version. **SUPPORTED**, indicating that the version is an earlier version which is still supported. **DEPRECATED**, indicating that the version is a deprecated version which may be deleted later.
updated	String	Time when the API version was released. The format is yyyy-mm-ddThh:mm:ssZ. **T** is the separator between the calendar and the hourly notation of time. **Z** indicates the UTC.
version	String	API microversion. If the APIs do not support microversions, the value is left blank.

Example Requests

This API is used to query API versions.

Example Responses

Status code: 200

```
{
  "versions" : [ {
    "id" : "v3",
    "version" : "",
    "status" : "CURRENT",
    "updated" : "2021-01-15T12:00:00Z"
  } ]
}
```

Status Code

Status Code	Description
200	Success.

Error Code

For details, see **Error Codes**.

4.1.2 Querying a Specified API Version

Function

This API is used to query a specified API version.

URI

GET /das/{version}

Table 4-3 Path parameters

Parameter	Mandatory	Type	Description
version	Yes	String	API version.

Request Parameters

None

Response Parameters

Status code: 200

Table 4-4 Response body parameters

Parameter	Type	Description
version	**ApiVersion** object	API version information.

Table 4-5 ApiVersion

Parameter	Type	Description
id	String	API version, for example, **v3**.
status	String	Version status **CURRENT**, indicating that the version is the primary version. **SUPPORTED**, indicating that the version is an earlier version which is still supported. **DEPRECATED**, indicating that the version is a deprecated version which may be deleted later.
updated	String	Time when the API version was released. The format is yyyy-mm-ddThh:mm:ssZ. **T** is the separator between the calendar and the hourly notation of time. **Z** indicates the UTC.

Parameter	Type	Description
version	String	API microversion. If the APIs do not support microversions, the value is left blank.

Example Requests

This API is used to query a specified API version.

Example Responses

Status code: 200

Success

```
{
  "version" : {
    "id" : "v3",
    "version" : "",
    "status" : "CURRENT",
    "updated" : "2021-01-15T12:00:00Z"
  }
}
```

Status Code

Status Code	Description
200	Success.

Error Code

For details, see **Error Codes**.

4.2 Cloud DBA

4.2.1 Registering a Database User

Function

This API is used to register the database username and password with the DAS system. A database user ID will be returned in the response and is required for calling other APIs, such as the API used to query instance sessions. The database password is encrypted and used for DAS API calls only. This API does not create database users on the instance. Ensure that the entered username and password are valid. Currently, only MySQL instances are supported.

URI

POST /v3/{project_id}/instances/{instance_id}/db-users

Table 4-6 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Request Parameters

Table 4-7 Request body parameters

Parameter	Mandatory	Type	Description
db_username	Yes	String	**Explanation**: Database username **Constraints**: N/A **Values**: N/A **Default value**: N/A
db_user_password	Yes	String	**Explanation**: Database user password **Constraints**: N/A **Values**: N/A **Default value**: N/A
datastore_type	Yes	String	**Explanation**: Database type. Currently, only MySQL is supported. **Constraints**: N/A **Values**: MySQL instance: **MySQL** **Default value**: N/A

Response Parameters

Status code: 200

Table 4-8 Response body parameters

Parameter	Type	Description
db_user_id	String	**Explanation**: Database user ID **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed.

Example Request

Registering the **root** database user

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/db-users

{
  "db_username" : "root",
  "db_user_password" : "password",
  "datastore_type" : "mysql"
}
```

Example Response

Status code: 200

Success

```
{
  "db_user_id" : "2e407f6b-8c09-494a-a62f-31b01439596f"
}
```

Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.2 Modifying a Database User

Function

This API is used to change the username and password for a registered database user on DAS. This API does not change the username and password of the database user object on the DB instance. Ensure that the entered username and password are valid. Currently, only MySQL instances are supported.

URI

PUT /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}

Table 4-9 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A

Request Parameters

Table 4-10 Request body parameters

Parameter	Mandatory	Type	Description
db_username	Yes	String	**Explanation**: Database username **Constraints**: N/A **Values**: N/A **Default value**: N/A
db_user_password	Yes	String	**Explanation**: Database user password **Constraints**: N/A **Values**: N/A **Default value**: N/A

Response Parameters

Status code: 200

Table 4-11 Response body parameters

Parameter	Type	Description
result	String	**Explanation**: Modification result. If the modification is successful, **OK** is returned. **Values**: OK

Example Request

Changing the database username to **user**

```
PUT https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/db-users/24c0c455-1f0e-448b-acb2-6e184b4ffcfa

{
  "db_username" : "user",
  "db_user_password" : "password"
}
```

Example Response

Status code: 200

Success

```
{
  "result" : "OK"
}
```

Status Codes

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.3 Deleting a Database User

Function

This API is used to delete a database user on DAS. The database user is deleted from the DAS system only. The real database user object is not deleted. Currently, only MySQL instances are supported.

URI

DELETE /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}

Table 4-12 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-13 Response body parameters

Parameter	Type	Description
result	String	**Explanation**: Modification result. If the deletion is successful, **OK** is returned. **Values**: OK

Example Request

Deleting a database user

```
DELETE https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/db-users/24c0c455-1f0e-448b-acb2-6e184b4ffcfa
```

Example Response

Status code: 200

Success

```
{
  "result" : "OK"
}
```


Status Codes

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.4 Querying Intelligent O&M Quotas

Function

This API is used to query Intelligent O&M quotas.

URI

GET /v3/{project_id}/quotas

Table 4-14 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-15 Response body parameters

Parameter	Type	Description
quotas	Array of **Quotas** objects	**Explanation**: Objects in the quota list. **Values**: N/A

Table 4-16 Quotas

Parameter	Type	Description
resources	Array of **Resource** objects	**Explanation**: Resource objects. **Values**: N/A

Table 4-17 Resource

Parameter	Type	Description
type	String	**Explanation**: Resource type used to filter quotas **Values**: Intelligent O&M: **cloudDba**
used	Long	**Explanation**: Number of created resources **Values**: [0, 2^31-1]. The actual value depends on the query result.
quota	Long	**Explanation**: Maximum resource quota **Values**: [0, 2^31-1]. The actual value depends on the query result.

Parameter	Type	Description
min	Long	**Explanation**: Minimum quota **Values**: [0, 2^31-1]. The actual value depends on the query result.

Example Request

Querying Intelligent O&M quotas

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/quotas
```

Example Response

Status code: 200

Objects in the quota list

```
{
  "quotas" : {
    "resources" : [ {
      "type" : "cloudDba",
      "used" : 2,
      "quota" : 14,
      "min" : 0
    } ]
  }
}
```

Status Codes

Status Code	Description
200	Objects in the quota list.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.5 Querying Database User Information

Function

This API is used to query information of a specified database user on DAS. It does not query database user objects on a DB instance. Currently, only MySQL instances are supported.

URI

GET /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}

Table 4-18 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-19 Response body parameters

Parameter	Type	Description
db_user	DbUser object	**Explanation**: Database user information **Values**: N/A

Table 4-20 DbUser

Parameter	Type	Description
db_user_id	String	**Explanation**: Database user ID **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed.
db_username	String	**Explanation**: Database username **Values**: N/A

Example Request

Querying information about a database user

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/db-users/fe67bf85-cbd9-4819-ba74-fa0bba141690
```

Example Response

Status code: 200

Success

```
{
  "db_user" : {
    "db_user_id" : "2e407f6b-8c09-494a-a62f-31b01439596f",
    "db_username" : "root"
```



```
 }
}
```

Status Codes

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.6 Querying Database Users

Function

This API is used to query database users registered on DAS. **db_user_id** returned by this API is required for calling other APIs (such as the API for querying instance sessions). It does not return database user objects on a DB instance. Currently, only MySQL instances are supported.

URI

GET /v3/{project_id}/instances/{instance_id}/db-users

Table 4-21 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Table 4-22 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	**Explanation**: Index offset. The query starts from the next piece of data indexed by this parameter. If this parameter is set to **1** and **limit** is set to **10**, only the second to eleventh records are displayed. **Constraints**: N/A **Values**: [0, 2^31-1] **Default value**: The default value is **0**, indicating that the query starts from the first data record.

Parameter	Mandatory	Type	Description
limit	No	Integer	**Explanation**: Number of query records. If this parameter is set to **10**, a maximum of 10 records can be displayed. **Constraints**: N/A **Values**: [1, 100] **Default value**: **100**
db_user_id	No	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A
db_username	No	String	**Explanation**: Database username **Constraints**: N/A **Values**: N/A **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-23 Response body parameters

Parameter	Type	Description
total	Integer	**Explanation**: Total records **Values**: [0, 2^31-1]. The actual value depends on the query result.
db_users	Array of **DbUser** objects	**Explanation**: Database user list **Values**: N/A

Table 4-24 DbUser

Parameter	Type	Description
db_user_id	String	**Explanation**: Database user ID **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed.
db_username	String	**Explanation**: Database username **Values**: N/A

Example Request

Querying database users

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/db-users
```

Example Response

Status code: 200

Success

```
{
  "total" : 1,
  "db_users" : [ {
    "db_user_id" : "24c0c455-1f0e-448b-acb2-6e184b4ffcfa",
    "db_username" : "root"
```



```
 }]
}
```

Status Codes

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.7 Killing Sessions

Function

Kill sessions. Sessions are killed by user, database, or session ID. Currently, only MySQL instances are supported.

URI

DELETE /v3/{project_id}/instances/{instance_id}/process

Table 4-25 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Request Parameters

Table 4-26 Request body parameters

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A
process_ids	No	Array of strings	**Explanation**: Session ID list **Constraints**: At least one of the **process_ids**, **user**, and **database** parameters must be specified. **Values**: [0, 2^31-1]. The actual value depends on the query result. **Default value**: N/A

Parameter	Mandatory	Type	Description
user	No	String	**Explanation**: Database user **Constraints**: At least one of the **process_ids**, **user**, and **database** parameters must be specified. **Values**: N/A **Default value**: N/A
database	No	String	**Explanation**: Database name **Constraints**: At least one of the **process_ids**, **user**, and **database** parameters must be specified. **Values**: N/A **Default value**: N/A

Response Parameters

Status code: 200

None

Example Request

Killing sessions by user, database, or session

```
DELETE https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/process

{
  "db_user_id" : "2c250598-1e3c-4d31-bc19-be1d866247e6",
  "database" : "example",
  "user" : "aaa",
  "process_ids" : [ "11212", "3423222" ]
}
```

Example Response

None

Status Codes

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Codes

See **Error Codes**.

4.2.8 Querying the SQL Execution Plan (GET Request)

Function

This API is used to query a SQL execution plan. Currently, only MySQL instances are supported.

URI

GET /v3/{project_id}/instances/{instance_id}/sql/explain

Table 4-27 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: Only MySQL instances are supported. **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Table 4-28 Query parameters

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A
database	Yes	String	**Explanation**: Database name **Constraints**: Only MySQL instances are supported. **Values**: N/A **Default value**: N/A

Parameter	Mandatory	Type	Description
sql	Yes	String	**Explanation**: SQL statement **Constraints**: N/A **Values**: N/A **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-29 Response body parameters

Parameter	Type	Description
execution_plans	Array of **execution plan** objects	**Explanation**: SQL execution plan list. **Values**: N/A
error_message	String	**Explanation**: Error message displayed if the SQL execution fails. **Values**: N/A

Table 4-30 ExecutionPlan

Parameter	Type	Description
id	String	**Explanation**: Execution plan ID **Values**: [0, 2^31-1]. The actual value depends on the query result.

Parameter	Type	Description
select_type	String	**Explanation**: Type of the SELECT clause **Values**: N/A
table	String	**Explanation**: Database table **Values**: N/A
partitions	String	**Explanation**: Partition that will match a query record **Values**: N/A
type	String	**Explanation**: Access type **Values**: N/A
possible_keys	String	**Explanation**: Key (index) that may be used **Values**: N/A
key	String	**Explanation**: Key (index) that is used **Values**: N/A
key_len	String	**Explanation**: Length of a key to be used **Values**: N/A
ref	String	**Explanation**: Column or constant used along with a key to select rows **Values**: N/A

Parameter	Type	Description
rows	String	**Explanation**: Number of rows that MySQL must check during a query **Values**: N/A
filtered	String	**Explanation**: Estimated percentage of table rows filtered by table condition **Values**: N/A
extra	String	**Explanation**: Other information **Values**: N/A

Example Request

Querying the SQL execution plan (GET request)

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/sql/explain?db_user_id=2c250598-1e3c-4d31-bc19-be1d866247e6&database=abc&sql=select 1
```

Example Response

Status code: 200

```
{
  "execution_plans" : [ {
    "id" : "1",
    "select_type" : "SIMPLE",
    "table" : "",
    "partitions" : "",
    "type" : "",
    "possible_keys" : "",
    "key" : "",
    "key_len" : "",
    "ref" : "",
    "rows" : "",
    "filtered" : "",
    "extra" : "No tables used"
  } ]
}
```


Status Codes

Status Code	Description
200	Success
400	Bad request
500	Internal server error

Error Codes

See **Error Codes**.

4.2.9 Querying the SQL Execution Plan (POST Request)

Function

- This API is used to query a SQL execution plan.
- Currently, only MySQL instances are supported.
- This API serves as a supplement of GET requests to process overlong SQL statements.

URI

POST /v3/{project_id}/instances/{instance_id}/sql/explain

Table 4-31 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: Only MySQL instances are supported. **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Request Parameters

Table 4-32 Request body parameters

Parameter	Mandatory	Type	Description
db_user_id	No	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A
database	No	String	**Explanation**: Database name **Constraints**: Only MySQL instances are supported. **Values**: N/A **Default value**: N/A

Parameter	Mandatory	Type	Description
sql	No	String	**Explanation**: SQL statement **Constraints**: N/A **Values**: N/A **Default value**: N/A

Response Parameters

Status code: 200

Table 4-33 Response body parameters

Parameter	Type	Description
execution_plans	Array of **ExecutionPlan** objects	**Explanation**: SQL execution plan list. **Values**: N/A
error_message	String	**Explanation**: Error message displayed if the SQL execution fails. **Values**: N/A

Table 4-34 ExecutionPlan

Parameter	Type	Description
id	String	**Explanation**: Execution plan ID **Values**: [0, 2^31-1]. The actual value depends on the query result.
select_type	String	**Explanation**: Type of the SELECT clause **Values**: N/A

Parameter	Type	Description
table	String	**Explanation**: Database table **Values**: N/A
partitions	String	**Explanation**: Partition that will match a query record **Values**: N/A
type	String	**Explanation**: Access type **Values**: N/A
possible_keys	String	**Explanation**: Key (index) that may be used **Values**: N/A
key	String	**Explanation**: Key (index) that is used **Values**: N/A
key_len	String	**Explanation**: Length of a key to be used **Values**: N/A
ref	String	**Explanation**: Column or constant used along with a key to select rows **Values**: N/A
rows	String	**Explanation**: Number of rows that MySQL must check during a query **Values**: N/A

Parameter	Type	Description
filtered	String	**Explanation**: Estimated percentage of table rows filtered by table condition **Values**: N/A
extra	String	**Explanation**: Other information **Values**: N/A

Example Request

Querying the SQL execution plan (POST request)

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/sql/explain

{
  "db_user_id" : "2c250598-1e3c-4d31-bc19-be1d866247e6",
  "database" : "abc",
  "sql" : "select 1"
}
```

Example Response

Status code: 200

```
{
  "execution_plans" : [ {
    "id" : "1",
    "select_type" : "SIMPLE",
    "table" : "",
    "partitions" : "",
    "type" : "",
    "possible_keys" : "",
    "key" : "",
    "key_len" : "",
    "ref" : "",
    "rows" : "",
    "filtered" : "",
    "extra" : "No tables used"
  } ]
}
```

Status Codes

Status Code	Description
200	Success.
400	Bad request.

Status Code	Description
500	Internal server error.

Error Codes

See **Error Codes**.

4.2.10 Querying Metadata Locks

Function

Query metadata locks. Currently, only MySQL instances are supported.

URI

GET /v3/{project_id}/instances/{instance_id}/metadata-locks

Table 4-35 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	**Explanation**: Project ID of a tenant in a region To obtain this value, see **Obtaining a Project ID**. **Constraints**: N/A **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Parameter	Mandatory	Type	Description
instance_id	Yes	String	**Explanation**: Unique ID of an instance **Constraints**: Only MySQL instances are supported. **Values**: The value can contain 32 characters. Only letters and digits are allowed. **Default value**: N/A

Table 4-36 Query parameters

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	**Explanation**: Database user ID **Constraints**: N/A **Values**: The value is a UUID containing 36 characters. Only letters, digits, and hyphens (-) are allowed. **Default value**: N/A
thread_id	No	String	**Explanation**: Session ID **Constraints**: N/A **Values**: [0, 2^31-1]. The actual value depends on the query result. **Default value**: N/A

Parameter	Mandatory	Type	Description
database	No	String	**Explanation**: Database name **Constraints**: Only MySQL instances are supported. **Values**: N/A **Default value**: N/A
table	No	String	**Explanation**: Table name **Constraints**: Only MySQL instance tables are supported. **Values**: N/A **Default value**: N/A

Request Parameters

None

Response Parameters

Status code: 200

Table 4-37 Response body parameters

Parameter	Type	Description
metadata_locks	Array of **MetadataLock** objects	**Explanation**: List of metadata locks. **Values**: N/A
count	Integer	**Explanation**: Number of metadata locks. **Values**: [0, 2^31-1]. The actual value depends on the query result.

Table 4-38 MetadataLock

Parameter	Type	Description
thread_id	String	**Explanation**: Session ID **Values**: [0, 2^31-1]. The actual value depends on the query result.
lock_status	String	**Explanation**: Lock status **Values**: • **PENDING**: A lock wait occurs. • **GRANTED**: A lock is held.
lock_mode	String	**Explanation**: Lock mode **Values**: • MDL_SHARED • MDL_EXCLUSIVE • MDL_SHARED_READ • MDL_SHARED_WRITE
lock_type	String	**Explanation**: Lock type **Values**: • **Table metadata lock** • **Schema metadata lock** • **Tablespace lock** • **Global read lock**
lock_duration	String	**Explanation**: Lock granularity **Values**: • **MDL_STATEMENT**: statement level • **MDL_TRANSACTION**: transaction level • **MDL_EXPLICIT**: global level
table_schema	String	**Explanation**: Database where a lock is located. This field is left blank for some global read metadata locks. **Values**: N/A

Parameter	Type	Description
table_name	String	**Explanation**: Table name **Values**: N/A
user	String	**Explanation**: User **Values**: N/A
time	String	**Explanation**: Time **Values**: N/A
host	String	**Explanation**: Host **Values**: N/A
database	String	**Explanation**: Database where a session is located **Values**: N/A
command	String	**Explanation**: Command **Values**: N/A
state	String	**Explanation**: Status **Values**: N/A
sql	String	**Explanation**: SQL statement **Values**: N/A
trx_exec_time	String	**Explanation**: Transaction execution time **Values**: N/A

Parameter	Type	Description
block_process	Array of **Process** objects	**Explanation**: List of blocked sessions **Values**: N/A
wait_process	Array of **Process** objects	**Explanation**: List of waiting sessions **Values**: N/A

Table 4-39 Process

Parameter	Type	Description
id	String	**Explanation**: Session ID **Values**: [0, 2^31-1]. The actual value depends on the query result.
user	String	**Explanation**: User **Values**: N/A
host	String	**Explanation**: Host **Values**: N/A
database	String	**Explanation**: Database **Values**: N/A
command	String	**Explanation**: Command **Values**: N/A

Parameter	Type	Description
time	String	**Explanation**: Session duration **Values**: N/A
state	String	**Explanation**: Status **Values**: N/A
sql	String	**Explanation**: SQL statement **Values**: N/A
trx_executed_time	String	**Explanation**: Transaction duration **Values**: N/A

Example Request

Querying metadata locks

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/metadata-locks?db_user_id=2c250598-1e3c-4d31-bc19-be1d866247e6&thread_id=12121&database=example&table=example
```

Example Response

Status code: 200

```
{
  "metadata_locks" : [ {
    "thread_id" : "4096619",
    "lock_status" : "GRANTED",
    "lock_mode" : "MDL_SHARED_READ",
    "lock_type" : "Table metadata lock",
    "lock_duration" : "MDL_TRANSACTION",
    "table_schema" : "test_zyr",
    "table_name" : "test2",
    "user" : "root",
    "time" : "40",
    "host" : "das server",
    "database" : "test_zyr",
    "command" : "Sleep",
    "state" : "",
    "sql" : null,
    "trx_exec_time" : "341",
    "block_process" : [ ],
    "wait_process" : [ ]
  } ],
```



```
  "count" : 1
}
```

Status Codes

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Codes

See **Error Codes**.

4.2.11 Querying Instance Sessions

Function

Query instance sessions by database or user. Currently, this function is supported only for MySQL DB instances.

URI

GET /v3/{project_id}/instances/{instance_id}/processes

Table 4-40 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	Instance ID.

Table 4-41 Query parameters

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	Database user ID.
user	No	String	User.
database	No	String	Database.

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number.
limit	No	Integer	Number of records displayed on each page. The default value is **20** and the maximum value is **100**.
node_id	No	String	Node ID.

Request Parameters

Table 4-42 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-43 Response body parameters

Parameter	Type	Description
processes	Array of **Process** objects	List of sessions.
count	Long	Total records.

Table 4-44 Process

Parameter	Type	Description
id	String	Session ID.
user	String	User.
host	String	Host.
database	String	Database.
command	String	Command.
time	String	Session duration.
state	String	Status.
sql	String	SQL statement.
trx_executed_time	String	Transaction duration.

Status code: 400

Table 4-45 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-46 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Querying instance sessions

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/processes?db_user_id=2c250598-1e3c-4d31-bc19-be1d866247e6&offset=0&limit=10
```

Example Responses

Status code: 200

```
{
  "processes" : [ {
    "id" : "1",
    "user" : "event_scheduler",
    "host" : "localhost",
    "database" : "--",
    "command" : "Daemon",
    "time" : "4260107",
    "state" : "Waiting on empty queue",
    "sql" : "",
    "trx_executed_time" : "0"
  } ],
  "count" : 1
}
```

Status Code

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Code

For details, see **Error Codes**.

4.2.12 Querying InnoDB Lock Waits

Function

Query InnoDB lock waits. Currently, this function is supported only for MySQL DB instances.

URI

GET /v3/{project_id}/instances/{instance_id}/innodb-locks

Table 4-47 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	Instance ID.

Table 4-48 Query parameters

Parameter	Mandatory	Type	Description
db_user_id	Yes	String	Database user ID

Request Parameters

Table 4-49 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-50 Response body parameters

Parameter	Type	Description
innodb_trx	Array of **InnodbTrx** objects	Information about the transaction that holds or waits for a lock.
innodb_lock_waits	Array of **InnodbLockWaits** objects	Mapping between the lock requested by each transaction and the lock that blocks the request.
count	Integer	Number of transactions that hold or wait for a lock.

Table 4-51 InnodbTrx

Parameter	Type	Description
trx_id	String	Transaction ID.
trx_state	String	Transaction status.
trx_started	String	Time when the transaction was started.
trx_wait_started	String	Time when the transaction wait was started.
trx_mysql_thread_id	String	Session ID, same as the ID returned by the ListProcesses API.
trx_query	String	SQL statement executed by the transaction.
trx_tables_locked	String	Number of tables with row locks.
trx_rows_locked	String	Number of rows locked (approximate).
trx_rows_modified	String	Number of rows inserted or modified by the transaction.
trx_isolation_level	String	Isolation level.
innodb_wait_locks	Array of **InnodbLock** objects	Lock waits
innodb_hold_locks	Array of **InnodbLock** objects	Held locks.

Table 4-52 InnodbLock

Parameter	Type	Description
lock_id	String	Lock ID.
lock_trx_id	String	Transaction ID.
lock_mode	String	Lock mode. The value can be **S[,GAP]**, **X[,GAP]**, **IS[,GAP]**, **IX[,GAP]**, **AUTO_INC**, or **UNKNOWN**.
lock_type	String	Lock type. The value can be **RECORD** or **TABLE**. **RECORD** indicates a row lock and **TABLE** indicates a table lock.
lock_table	String	Name of the table that has been locked or contains locked records.

Parameter	Type	Description
lock_index	String	Index that has been locked if **lock_type** is **RECORD**. If **lock_type** is **Table**, **null** if returned.
lock_space	String	Index that has been locked if **lock_type** is **RECORD**. If **lock_type** is **Table**, **null** if returned.
lock_page	String	Page number of the locked record if **lock_type** is **RECORD**. If **lock_type** is **Table**, **null** if returned.
lock_rec	String	Heap number of the locked record if **lock_type** is **RECORD**. If **lock_type** is **Table**, **null** if returned.
lock_data	String	Primary key locked by the transaction. If **lock_type** is **Table**, **null** if returned.

Table 4-53 InnodbLockWaits

Parameter	Type	Description
requesting_trx_id	String	ID of the transaction that requests the lock.
requested_lock_id	String	ID of the lock requested.
blocking_trx_id	String	ID of the blocking transaction.
blocking_lock_id	String	ID of the blocking lock.

Status code: 400

Table 4-54 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-55 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Querying InnoDB lock waits

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/innodb-locks?db_user_id=2c250598-1e3c-4d31-bc19-be1d866247e6
```

Example Responses

Status code: 200

```
{
  "innodb_trx" : [ {
    "trx_id" : "1080883393",
    "trx_state" : "LOCK WAIT",
    "trx_started" : "2021-01-14 18:49:26",
    "trx_wait_started" : "2021-01-14 18:49:26",
    "trx_mysql_thread_id" : "115602",
    "trx_query" : "DELETE FROM adfasdf WHERE  id =1",
    "trx_tables_locked" : "1",
    "trx_rows_locked" : "1",
    "trx_rows_modified" : "0",
    "trx_isolation_level" : "REPEATABLE READ",
    "innodb_wait_locks" : [ {
      "lock_id" : "1080883393:27750:3:2",
      "lock_trx_id" : "1080883393",
      "lock_mode" : "X",
      "lock_type" : "RECORD",
      "lock_table" : "`abc`.`adfasdf`",
      "lock_index" : "GEN_CLUST_INDEX",
      "lock_space" : "27750",
      "lock_page" : "3",
      "lock_rec" : "2",
      "lock_data" : "0x0000005528EC"
    } ],
    "innodb_hold_locks" : [ ]
  }, {
    "trx_id" : "1080882971",
    "trx_state" : "LOCK WAIT",
    "trx_started" : "2021-01-14 18:49:25",
    "trx_wait_started" : "2021-01-14 18:49:25",
    "trx_mysql_thread_id" : "115598",
    "trx_query" : "DELETE FROM adfasdf WHERE  id =1",
    "trx_tables_locked" : "1",
    "trx_rows_locked" : "1",
```



```
  "trx_rows_modified" : "0",
  "trx_isolation_level" : "REPEATABLE READ",
  "innodb_wait_locks" : [ ],
  "innodb_hold_locks" : [ {
    "lock_id" : "1080882971:27750:3:2",
    "lock_trx_id" : "1080882971",
    "lock_mode" : "X",
    "lock_type" : "RECORD",
    "lock_table" : "`abc`.`adfasdf`",
    "lock_index" : "GEN_CLUST_INDEX",
    "lock_space" : "27750",
    "lock_page" : "3",
    "lock_rec" : "2",
    "lock_data" : "0x0000005528EC"
  } ]
 } ],
 "innodb_lock_waits" : [ {
  "requesting_trx_id" : "1080883393",
  "requested_lock_id" : "1080883393:27750:3:2",
  "blocking_trx_id" : "1080882971",
  "blocking_lock_id" : "1080882971:27750:3:2"
 } ],
 "count" : 2
}
```


Status Code

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Code

For details, see **Error Codes**.

4.2.13 Enabling or Disabling SQL Explorer and Slow Query Log

Function

SQL Explorer can be enabled and disabled. After this function is enabled, the instance performance loss rate is within 5% and DAS stores all SQL statement logs for analysis. You can set the retention period of SQL explorer data. After the retention period expires, the data is automatically deleted. If not specified, the data is retained for seven days. Slow Query Log can be enabled and disabled. After this function is enabled, DAS stores slow query logs for analysis. You can set the retention period of slow query logs. After the retention period expires, the data is automatically deleted. If not specified, the data is retained for seven days. This function is available only for paid instances.

URI

POST /v3/{project_id}/instances/{instance_id}/sql/switch

Table 4-56 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	Instance ID.

Request Parameters

Table 4-57 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Table 4-58 Request body parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Switch type. The value can be **DAS SQL Explorer** or **DAS Slow Query Log**.
status	Yes	Integer	Status. The value can be **0** (disabled) or **1** (enabled).
datastore_type	Yes	String	Database type. SQL Explorer is supported for MySQL and TaurusDB. Slow Query Log is supported for MySQL, TaurusDB, and PostgreSQL.
retention_days	No	Long	SQL data retention period (days). The default value is **7**. The maximum retention period is 30 days. Data will be automatically deleted after time expires. If you want to retain the data for more than 30 days, perform operations on the DAS console.

Response Parameters

Status code: 200

Table 4-59 Response body parameters

Parameter	Type	Description
status	String	Function status. The value can be **Enabled**, **Disabled**, or **Switching**.

Status code: 400

Table 4-60 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-61 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Enabling SQL Explorer

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/sql/switch

{
  "type" : "DAS SQL Explorer",
```



```
  "status" : 1,
  "datastore_type" : "MySQL",
  "retention_days" : 8
}
```

Example Response

Status code: 200

Response body

```
{
  "status" : "Enabled"
}
```

Status Codes

Status Code	Description
200	Response body.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.14 Querying Whether SQL Explorer and Slow Query Log Are Enabled

Function

This API is used to query whether SQL Explorer and Slow Query Log are enabled. This function is available only for paid instances.

URI

GET /v3/{project_id}/instances/{instance_id}/sql/switch

Table 4-62 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	Instance ID.

Table 4-63 Query parameters

Parameter	Mandatory	Type	Description
type	Yes	String	Switch type. The value can be **DAS SQL Explorer** or **DAS Slow Query Log**.
datastore_type	Yes	String	Database type. SQL Explorer is supported for MySQL and TaurusDB. Slow Query Log is supported for MySQL, TaurusDB, and PostgreSQL.

Request Parameters

Table 4-64 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-65 Response body parameters

Parameter	Type	Description
status	String	Function status. The value can be **Enabled**, **Disabled**, or **Switching**.
retention_days	Long	Number of days during which SQL data is retained.

Status code: 400

Table 4-66 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-67 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Querying whether Slow Query Log is enabled

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/
da304cd5bbb944de828759bc7be3d3fein01/sql/switch?type=DAS Slow Query Log&datastore_type=MySQL
```

Example Response

Status code: 200

DAS status response body

```
{
  "status" : "Enabled",
  "retention_days" : 7
}
```

Status Codes

Status Code	Description
200	DAS status response body.

Status Code	Description
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.15 Exporting Slow Query Logs

Function

After Slow Query Log is enabled, you can export the slow query logs within a specified period at a time. The data can be obtained by page. This function is available only for paid instances.

URI

GET /v3/{project_id}/instances/{instance_id}/slow-query-logs

Table 4-68 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	Instance ID.

Table 4-69 Query parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type, which can be MySQL, TaurusDB, and PostgreSQL
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds.
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds.
limit	Yes	Integer	Number of records on each page. The maximum value is 2,000.

Parameter	Mandatory	Type	Description
marker	No	String	Query result marker. When the first page is obtained, no value needs to be assigned to this parameter. When the next page is obtained, the returned value of the first page query result is used.

Request Parameters

Table 4-70 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-71 Response body parameters

Parameter	Type	Description
slow_logs	Array of **slow log** objects	Slow SQL set. If the set is empty, all slow SQL statements have been exported.
next_marker	String	Identifier required for obtaining the next page. This parameter is valid only within 3 minutes.

Table 4-72 Slow log

Parameter	Type	Description
sql	String	SQL statement.
database	String	Database name.
client	String	Client.
user	String	User.

Parameter	Type	Description
execute_at	Long	Execution start time in Unix timestamp format, in milliseconds.
query_time	Double	Duration (s).
lock_time	Double	Lock wait time (s).
rows_examined	Long	Scanned rows.
rows_sent	Long	Returned rows.

Status code: 400

Table 4-73 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-74 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Exporting slow query logs

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/slow-query-logs?
```



```
start_at=1611975464337&end_at=1611979064337&limit=10&marker=DXF1ZXJ5QW5kRmV0Y2gBAAAAAAAA
QH8YWSEFfM3FyOXZRNzJQOTVLNHNBOTQ2UQ==&datastore_type=MySQL
```

Example Response

Status code: 200

Response body for exporting slow query logs

```
{
  "slow_logs" : [ {
    "execute_at" : 1612343898000,
    "sql" : "SELECT sleep(10)\nLIMIT 0, 50;",
    "database" : "123",
    "client" : "[100.79.0.248]",
    "user" : "root[root]",
    "query_time" : 10.000158309936523,
    "lock_time" : 0,
    "rows_examined" : 0,
    "rows_sent" : 1
  } ],
  "next_marker" : "DXF1ZXJ5QW5kRmV0Y2gBAAAAAAAJr48WZERxYkx5Q2VRQS1LSXRrRWt0VEN1QQ=="
}
```

Status Codes

Status Code	Description
200	Response body for exporting slow query logs.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.16 Exporting SQL Explorer Data

Function

After SQL Explorer is enabled, you can export the SQL explorer data within a specified period at a time. The data can be obtained by page. This function is available only for paid instances.

URI

GET /v3/{project_id}/instances/{instance_id}/sql-statements

Table 4-75 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	Instance ID.

Table 4-76 Query parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds.
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds.
limit	Yes	Integer	Number of records on each page. The maximum value is 2,000.
marker	No	String	Query result marker. When the first page is obtained, no value needs to be assigned to this parameter. When the next page is obtained, the returned value of the first page query result is used.
datastore_type	Yes	String	Database type, which can be MySQL and TaurusDB

Request Parameters

Table 4-77 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-78 Response body parameters

Parameter	Type	Description
statements	Array of **FullSql** objects	Full SQL set. If the set is empty, all SQL statements have been exported.
next_marker	String	Identifier required for obtaining the next page. This parameter is valid only within 3 minutes.

Table 4-79 FullSql

Parameter	Type	Description
sql	String	SQL statement.
operate_type	String	Operation type.
status	String	Status.
error_no	String	Error code.
database	String	Database name.
client	String	Client.
thread_id	String	Thread ID.
user	String	User.
execute_at	Long	Execution start time in Unix timestamp format, in milliseconds.
query_time	Double	Duration (ms).
lock_time	Double	Lock wait time (ms).
rows_examined	Long	Scanned rows.
rows_sent	Long	Returned rows.
rows_affected	Long	Number of updated rows.

Status code: 400

Table 4-80 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-81 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Exporting SQL Explorer data

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/da304cd5bbb944de828759bc7be3d3fein01/sql-statements?start_at=1611975464337&end_at=1611979064337&limit=10&marker=DXF1ZXJ5QW5kRmV0Y2gBAAAAAAAQH8YWSEFfM3FyOXZRNzJQOTVLNHNBOTQ2UQ==&datastore_type=MySQL
```

Example Response

Status code: 200

Response body for exporting all SQL statements

```
{
  "statements" : [ {
    "sql" : "SELECT 1",
    "operate_type" : "select",
    "status" : "success",
    "error_no" : "",
    "database" : "",
    "thread_id" : "11481954",
    "client" : "100.79.3.154",
    "user" : "root",
    "execute_at" : 1612403000100,
    "query_time" : 0,
```



```
    "lock_time" : 0,
    "rows_examined" : 0,
    "rows_sent" : 1,
    "rows_affected" : 0
  } ],
  "next_marker" : "DXF1ZXJ5QW5kRmV0Y2gBAAAAAAASG3cWcHVpdktBU1lTbjJMM2tmYXYxZ09nUQ=="
}
```


Status Codes

Status Code	Description
200	Response body for exporting all SQL statements.
400	Client error.
500	Server error.

Error Codes

See **Error Codes**.

4.2.17 Querying Whether SQL Statement Concurrency Control Is Enabled

Function

This API is used to query whether SQL Statement Concurrency Control is enabled. Currently, this function is supported only for RDS for MySQL instances.

URI

GET /v3/{project_id}/instances/{instance_id}/sql-limit/switch

Table 4-82 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	Instance ID.

Table 4-83 Query parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type. The value can be: • **MySQL**

Request Parameters

Table 4-84 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-85 Response body parameters

Parameter	Type	Description
switch_status	String	Switch status. The value can be: • **ON** • **OFF**

Status code: 400

Table 4-86 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**

Parameter	Type	Description
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-87 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Querying whether SQL Statement Concurrency Control is enabled

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/sql-limit/switch?datastore_type=MySQL
```

Example Responses

Status code: 200

Success

```
{
  "switch_status" : "ON"
}
```

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Code

For details, see **Error Codes**.

4.2.18 Enabling or Disabling SQL Statement Concurrency Control

Function

This API is used to enable or disable SQL Statement Concurrency Control. Currently, this function is supported only for MySQL databases.

URI

POST /v3/{project_id}/instances/{instance_id}/sql-limit/switch

Table 4-88 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	Instance ID.

Request Parameters

Table 4-89 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Table 4-90 Request body parameters

Parameter	Mandatory	Type	Description
switch_status	Yes	String	Switch status. The value can be: • **ON** • **OFF**

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type. The value can be: • **MySQL**

Response Parameters

Status code: 200

Table 4-91 Response body parameters

Parameter	Type	Description
job_id	String	ID of a SQL statement concurrency control task.

Status code: 400

Table 4-92 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-93 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Enabling SQL Statement Concurrency Control

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/sql-limit/switch

{
  "datastore_type" : "MySQL",
  "switch_status" : "ON"
}
```

Example Responses

Status code: 200

Success

```
{
  "job_id" : "15535"
}
```

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Code

For details, see **Error Codes**.

4.2.19 Querying Concurrency Control Rules of SQL Statements

Function

This API is used to query concurrency control rules of SQL statements. Currently, this function is supported only for MySQL databases.

URI

GET /v3/{project_id}/instances/{instance_id}/sql-limit/rules

Table 4-94 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	Instance ID.

Table 4-95 Query parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number.
limit	No	Integer	Number of records to be queried. The default value is **100**. The value cannot be a negative number. The minimum value is **1** and the maximum value is **100**.
datastore_type	Yes	String	Database type. The value can be: • **MySQL**

Request Parameters

Table 4-96 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-97 Response body parameters

Parameter	Type	Description
sql_limit_rules	Array of **SqlLimitRule** objects	Concurrency control rules of SQL statements.
total_count	Integer	Total number of concurrency control rules of SQL statements.

Table 4-98 SqlLimitRule

Parameter	Type	Description
id	String	ID of a concurrency control rule of SQL statements.
sql_type	String	SQL type.
pattern	String	Concurrency control rules.
max_concurrency	Integer	Maximum number of concurrent SQL statements.
max_waiting	Integer	Maximum waiting time.

Status code: 400

Table 4-99 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-100 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Querying concurrency control rules of SQL statements

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/d871e13ee1044e21a473330cd67047cbin01/sql-limit/rules?datastore_type=MySQL&offset=0&limit=10
```

Example Responses

Status code: 200

Success

```
{
  "sql_limit_rules" : [ {
    "id" : "6",
    "sql_type" : "SELECT",
    "max_concurrency" : 1,
    "pattern" : "select~var~where~id"
  }, {
    "id" : "7",
    "sql_type" : "UPDATE",
    "max_concurrency" : 10,
    "pattern" : "update~table01~where~id"
  } ],
  "total_count" : 2
}
```

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Code

For details, see **Error Codes**.

4.2.20 Generate Keywords of a Concurrency Control Rule from the Original SQL Statement

Function

This API is used to generate keywords of a concurrency control rule from the original SQL statement. Currently, MySQL, MariaDB, and TaurusDB are supported.

URI

POST /v3/{project_id}/instances/{instance_id}/sql-limit/parse

Table 4-101 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	Instance ID.
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. Enumerated values: • **zh-cn** • **en-us**

Request Parameters

Table 4-102 Request body parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type, which can be MySQL, MariaDB, and TaurusDB Enumerated values: • **MySQL** • **MariaDB** • **TaurusDB**
original_sql	Yes	String	Original SQL Statement. Minimum length: 1 character Maximum length: 1024 characters

Parameter	Mandatory	Type	Description
use_template	Yes	Boolean	Indicates whether to verify SQL statements.
keep_operators	Yes	Boolean	Whether to retain operators.

Response Parameters

Status code: 200

Table 4-103 Response body parameters

Parameter	Type	Description
rule	String	SQL concurrency control keyword.

Example Request

Generating keywords of a concurrency control rule from the original SQL statement

```
https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/
da304cd5bbb944de828759bc7be3d3fein01/sql-limit/parse

{
  "datastore_type" : "MySQL",
  "original_sql" : "select * from das_conn_info",
  "use_template" : true,
  "keep_operators" : true
}
```

Example Response

Status code: 200

Return of generating SQL concurrency control keywords

```
{
  "rule" : "select~from~das_conn_info"
}
```

Status Codes

Status Code	Description
200	Return of generating SQL concurrency control keywords.

Error Codes

See **Error Codes**.

4.2.21 Creating a Concurrency Control Rule for SQL Statements

Function

This API is used to create a concurrency control rule for SQL statements. Currently, this function is supported only for MySQL databases. The restrictions are as follows:

- Take **select~a** as an example. **select** and **a** are two keywords contained in a concurrency control rule. The keywords are separated by a tilde (~). In this example, the rule restricts the execution of only the SQL statements containing keywords **select** and **a**.
- If a SQL statement matches multiple concurrency control rules, only the most recently added rule is applied.
- Keywords in a concurrency control rule are sorted in a specific order, and the system will match them from first to last. For example, if one rule contains the keyword **a~and~b**, the system only matches **xxx a>1 and b>2**.
- Generated keywords may be case-sensitive. Execute **show variables like 'rds_sqlfilter_case_sensitive'** or go to the console to check parameter settings for specifying case-sensitivity.
- Concurrency control rules can only be added for primary instances.
- System catalogs are not restricted, queries which do not involve data are not restricted, and the **root** user is not restricted in specific versions.

URI

POST /v3/{project_id}/instances/{instance_id}/sql-limit/rules

Table 4-104 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	Instance ID.

Request Parameters

Table 4-105 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Table 4-106 Request body parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type. The value can be: • **MySQL**
sql_limit_rules	Yes	Array of **CreateSqlLimitRuleOption** objects	Concurrency control rules of SQL statements to be created. A maximum of 5 rules can be created at a time.
database_name	No	String	Database name.

Table 4-107 CreateSqlLimitRuleOption

Parameter	Mandatory	Type	Description
sql_type	Yes	String	SQL type. The value can be: • **SELECT** • **UPDATE** • **DELETE**
max_concurrency	Yes	Integer	Maximum number of concurrent SQL statements.

Parameter	Mandatory	Type	Description
pattern	Yes	String	Concurrency control rules of SQL statements. Enter keywords and separate them with tildes (~), for example, select~a. Take **select~a** as an example. **select** and **a** are two keywords contained in a concurrency control rule. The keywords are separated by a tilde (~). In this example, the rule restricts the execution of only the SQL statements containing keywords **select** and **a**.
max_waiting	No	Integer	Maximum waiting time.
his_sql_limit_switch	No	Boolean	Concurrency control for historical SQL statements. • This parameter takes effect only for the current SQL concurrency control rule. • When this parameter is set to **ON**, existing sessions that match the SQL concurrency control rule will be killed.

Response Parameters

Status code: 400

Table 4-108 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-109 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Creating a concurrency control rule of SQL statements

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/d871e13ee1044e21a473330cd67047cbin01/sql-limit/rules

{
  "sql_limit_rules" : [ {
    "sql_type" : "SELECT",
    "pattern" : "select~t2~var",
    "max_concurrency" : 100
  }, {
    "sql_type" : "DELETE",
    "pattern" : "delete~t1~name",
    "max_concurrency" : 1
  } ],
  "datastore_type" : "MySQL"
}
```

Example Responses

None

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Client error.

Error Code

For details, see **Error Codes**.

4.2.22 Deleting a Concurrency Control Rule of SQL Statements

Function

This API is used to delete concurrency control rules of SQL statements. Currently, this function is supported only for MySQL databases.

URI

DELETE /v3/{project_id}/instances/{instance_id}/sql-limit/rules

Table 4-110 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	Instance ID.

Request Parameters

Table 4-111 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Table 4-112 Request body parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type. The value can be: • **MySQL**
sql_limit_rule_ids	Yes	Array of strings	ID of a concurrency control rule of SQL statements.
database_name	No	String	Database name.

Response Parameters

Status code: 400

Table 4-113 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-114 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Deleting concurrency control rules of SQL statements

```
DELETE https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/
d871e13ee1044e21a473330cd67047cbin01/sql-limit/rules

{
  "datastore_type" : "MySQL",
  "sql_limit_rule_ids" : [ "6", "7" ]
}
```

Example Responses

None

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Code

For details, see **Error Codes**.

4.2.23 Querying SQL Statement Concurrency Control Tasks

Function

This API is used to query information about an SQL concurrency control task with a specified ID.

URI

GET /v3/{project_id}/instances/{instance_id}/sql-limit/job

Table 4-115 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	Instance ID.

Table 4-116 Query parameters

Parameter	Mandatory	Type	Description
job_id	Yes	String	ID of a SQL statement concurrency control task.

Request Parameters

Table 4-117 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language. The value can be: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-118 Response body parameters

Parameter	Type	Description
job_id	String	Task ID.
job_status	String	Task status. The value can be: • **RUNNING** • **COMPLETED** • **FAILED**
fail_reason	String	Failure cause.

Status code: 400

Table 4-119 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-120 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Querying SQL statement concurrency control tasks

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/sql-limit/job?job_id=15535
```

Example Responses

Status code: 200

Success

```
{
  "job_id" : "15535",
  "job_status" : "COMPLETED",
  "fail_reason" : ""
}
```

Status Code

Status Code	Description
200	Success.
400	Client error.
500	Server error.

Error Code

For details, see **Error Codes**.

4.2.24 Exporting the Top SQL Template List

Function

This API is used to export the Top SQL template list after Top SQL is enabled. This function is available only for paid instances. The maximum query interval is one hour.

URI

GET /v3/{project_id}/instances/{instance_id}/top-sql-templates

Table 4-121 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	Instance ID.

Table 4-122 Query parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds.
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds.
datastore_type	Yes	String	Database type, which can be MySQL and TaurusDB
node_id	No	String	Node ID
sort	No	String	Sorting field (**executeNum**: execution times; **totalCost**: total duration; **avgCost**: average duration; **totalScan**: scanned rows; **avgScan**: average scanned rows). Default value: **avgCost** Enumerated values: • **executeNum** • **totalCost** • **avgCost** • **totalScan** • **avgScan**

Parameter	Mandatory	Type	Description
asc	No	Boolean	Sorting sequence. **true** indicates ascending order and **false** indicates descending order. Default value: **false**
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number.
limit	No	Integer	Number of records displayed on each page. The default value is **20** and the maximum value is **100**.

Request Parameters

Table 4-123 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-124 Response body parameters

Parameter	Type	Description
top_sql_templates	Array of **TopSqlTemplate** objects	SQL templates.
total_count	Integer	Total number of SQL templates

Table 4-125 TopSqlTemplate

Parameter	Type	Description
sql_template	String	SQL templates.
sql_sample_string	String	Example SQL.
sql_type	String	SQL type.
db_name	String	Database name.
execute_num	Long	Total executions.
total_cost	Double	Total duration (ms).
avg_cost	Double	Average duration (ms).
avg_rows_sent	Double	Avg. rows returned.
avg_rows_affected	Double	Avg. rows affected.
avg_lock_time	Double	Avg. lock wait time (ms).
total_rows_examined	Double	Total scanned rows.
avg_rows_examined	Double	Avg. rows scanned.
total_cost_ratio	String	Total duration (%).
total_examined_ratio	String	Scanned rows (%).
execute_num_ratio	String	Execution times (%).

Status code: 400

Table 4-126 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-127 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Exporting the Top SQL template list

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/top-sql-templates?start_at=1611975464337&end_at=1611979064337&node_id=fec05693c76c4f389561051db430324cno01&sort=avgCost&asc=true&datastore_type=MySQL&offset=0&limit=10
```

Example Response

Status code: 200

Success

```
{
  "top_sql_templates" : [ {
    "db_name" : "db_01",
    "execute_num" : 30,
    "avg_rows_examined" : 0,
    "total_cost_ratio" : "100.00%",
    "avg_lock_time" : 0,
    "sql_template" : "SELECT sleep(?)",
    "avg_rows_affected" : 0,
    "avg_rows_sent" : 1,
    "avg_cost" : 5000.266666666666,
    "execute_num_ratio" : "23.81%",
    "total_examined_ratio" : "-",
    "sql_type" : "select",
    "total_cost" : 150008,
    "total_rows_examined" : 0,
    "sql_sample_string" : "select sleep(5)"
  } ],
  "total_count" : 1
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.25 Exporting SQL Execution Time Distribution

Function

This API is used to export the SQL execution duration after the TopSQL switch is turned on. This function is available only for paid instances. The maximum query interval is six hours.

URI

GET /v3/{project_id}/instances/{instance_id}/top-sql-trend

Table 4-128 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	Instance ID.

Table 4-129 Query parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds.
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds.
datastore_type	Yes	String	Database type, which can be MySQL and TaurusDB
node_id	No	String	Node ID.

Request Parameters

Table 4-130 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-131 Response body parameters

Parameter	Type	Description
interval_millis	Long	Interval between two time points in the list. The query interval is 10s within one hour, 60s from one hour to six hours, and 300s within more than six hours. The unit is millisecond.
top_sql_trend_items	Array of **TopSqlTrendItem** objects	SQL execution time distribution.
total_count	Integer	Total execution time ranges.

Table 4-132 TopSqlTrendItem

Parameter	Type	Description
execute_at	Long	Execution time point in milliseconds. The time range for statistics is collected from **execute_at - interval_millis** to **execute_at**.
query_time_in_100ms	Long	Execution duration less than 100 ms.
query_time_in_500ms	Long	Execution duration from 100 ms to 500 ms.
query_time_in_1s	Long	Execution duration from 500 ms to 1000 ms.

Parameter	Type	Description
query_time_over_1s	Long	Execution duration more than 1000 ms.

Status code: 400

Table 4-133 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-134 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Exporting SQL execution time distribution

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/top-sql-trend?start_at=1611975464337&end_at=1611979064337&datastore_type=MySQL&node_id=fec05693c76c4f389561051db430324cno01
```

Example Response

Status code: 200

Success


```
{
  "top_sql_trend_items" : [ {
    "execute_at" : 1666702330000,
    "query_time_over_1s" : 1,
    "query_time_in_100ms" : 3,
    "query_time_in_1s" : 0,
    "query_time_in_500ms" : 0
  }, {
    "execute_at" : 1666702340000,
    "query_time_over_1s" : 2,
    "query_time_in_100ms" : 2,
    "query_time_in_1s" : 0,
    "query_time_in_500ms" : 0
  } ],
  "interval_millis" : 10000,
  "total_count" : 2
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.26 Exporting the Slow SQL Template List

Function

This API is used to export slow SQL template list after Slow Query Log is enabled. This function is available only for paid instances. The maximum query interval is one day.

URI

GET /v3/{project_id}/instances/{instance_id}/slow-sql-templates

Table 4-135 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	Instance ID.

Table 4-136 Query parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds.
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds.
datastore_type	Yes	String	Database type, which can be MySQL and TaurusDB
db_name	No	String	Database name.
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number.
limit	No	Integer	Number of records displayed on each page. The default value is **20** and the maximum value is **100**.

Request Parameters

Table 4-137 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Request language type. Enumerated values: • **en-us** • **zh-cn**

Response Parameters

Status code: 200

Table 4-138 Response body parameters

Parameter	Type	Description
slow_sql_templates	Array of **SlowSqlTemplate** objects	Slow query log templates.
total_count	Integer	Total number of slow query log templates.

Table 4-139 SlowSqlTemplate

Parameter	Type	Description
sql_template	String	SQL template
sql_sample	String	Sample SQL statement
sql_sample_user	String	User who executes a sample SQL statement
db_names	Array of strings	Database name.
execute_count	Long	Execution times
avg_execute_time	Double	Avg. execution duration (ms).
max_execute_time	Double	Maximum execution duration (ms).
avg_lock_wait_time	Double	Avg. lock wait time (ms).
max_lock_wait_time	Double	Max. lock wait time (ms).
avg_rows_examined	Double	Avg. rows scanned.
max_rows_examined	Double	Max. rows scanned.
avg_rows_sent	Double	Avg. rows returned.
max_rows_sent	Double	Max. rows returned.

Status code: 400

Table 4-140 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-141 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Exporting the slow SQL template list

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances/6243b3fcf2f948578d46ed4c52fb54eein01/slow-sql-templates?startAt=1611975464337&endAt=1611979064337&datastore_type=MySQL&db_name=db&offset=0&limit=10
```

Example Response

Status code: 200

Success

```
{
  "slow_sql_templates" : [ {
    "max_rows_examined" : 0,
    "max_lock_wait_time" : 0,
    "avg_rows_examined" : 0,
    "execute_count" : 27,
    "avg_execute_time" : 5.000509315066868,
    "max_execute_time" : 5.008123874664307,
    "avg_lock_wait_time" : 0,
    "sql_template" : "SELECT sleep(?);",
    "sql_sample" : "select sleep(5)",
    "avg_rows_sent" : 1,
    "db_names" : [ "db_01" ],
```



```
    "max_rows_sent" : 1
  } ],
  "total_count" : 1
}
```

Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.27 Viewing the Instance List on the Intelligent O&M Page

Function

This API is used to view the instance list on the **Intelligent O&M** page.

URI

GET /v3/{project_id}/instances

Table 4-142 URI parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. To obtain this value, see **Obtaining a Project ID**. Minimum length: 1 character Maximum length: 1024 characters

Table 4-143 Query parameters

Parameter	Mandatory	Type	Description
datastore_type	Yes	String	Database type, which can be

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number. Minimum value: **0** Maximum value: **5000**
limit	No	Integer	Number of records displayed on each page. The default value is **20**, and the maximum value is **200**. Minimum value: **0** Maximum value: **200**

Request Parameters

Table 4-144 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-145 Response body parameters

Parameter	Type	Description
instance_list	Array of **Table 4-146**	Instance list Array length: 0 to 200 characters

Parameter	Type	Description
total_count	Integer	Total number of records Minimum value: **0** Maximum value: **10000**

Table 4-146 DASInstanceInfo

Parameter	Type	Description
instance_id	String	Instance ID Minimum length: 1 character Maximum length: 64 characters
instance_name	String	Instance name Minimum length: 1 character Maximum length: 64 characters
instance_status	String	Instance status Minimum length: 1 character Maximum length: 16 characters
version	String	Instance version
engine_type	String	Engine type Minimum length: 0 character Maximum length: 64 characters
ip	String	IP address Minimum length: 0 character Maximum length: 128 characters
port	Integer	Port number Minimum value: **0** Maximum value: **65535**
cpu	Integer	Number of CPU cores of an instance
mem	Integer	Instance memory size
login_flag	Boolean	Whether instance login is enabled
slow_sql_flag	Boolean	Whether **Collect Slow Query Logs** is enabled
deadlock_flag	Boolean	Whether deadlock analysis is enabled
lock_blocking_flag	Boolean	Whether the blocking mode is enabled
charge_flag	Boolean	Whether the current instance is billed

Parameter	Type	Description
full_sql_flag	Boolean	Whether **Collect All SQL Statements** is enabled

Status code: 400

Table 4-147 Response body parameters

Parameter	Type	Description
error_code	String	Error code Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-148 Response body parameters

Parameter	Type	Description
error_code	String	Error code Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message Minimum length: 2 characters Maximum length: 512 characters

Example Request

Viewing the instance list on the **Intelligent O&M** page

```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054c630ff780d4cc2f40c00d7f6fb21d/instances
```

Example Response

```
{
  "instance_list" : [ {
    "instance_id" : "bcfa975193f1402fa11a6d4fd6baf5fbin01",
    "instance_name" : "rds-sql",
    "instance_status" : "ACTIVE",
    "version" : 5.7,
    "ip" : "192.168.0.84",
```



```
    "port" : 3306,
    "cpu" : 2,
    "mem" : 8,
    "login_flag" : true,
    "slow_sql_flag" : true,
    "deadlock_flag" : false,
    "lock_blocking_flag" : false,
    "charge_flag" : true,
    "full_sql_flag" : true
  } ],
  "total_count" : 2
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.28 Setting a Shared Link

Function

This API is used to add a shared link.

URI

POST /v3/{project_id}/connections/share

Table 4-149 URI parameters

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

Request Parameters

Table 4-150 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language.

Table 4-151 Request body parameters

Parameter	Mandatory	Type	Description
shared_conn_id	Yes	String	ID of a shared link.
expired_time	No	String	Expiration time.
users	Yes	Array of **ShareConnUserInfo** objects	User.

Table 4-152 ShareConnUserInfo

Parameter	Mandatory	Type	Description
user_id	Yes	String	User ID.
user_name	Yes	String	Username.

Response Parameters

Status code: 400

Table 4-153 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters

Parameter	Type	Description
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-154 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Setting a shared link

```
POST https://{{endpoint}}/v3/{{project_id}}/connections/share
{
  "shared_conn_id": "ee64e597-4f25-486f-bba1-0c850b3b59d6",
  "users": [
    {
      "user_id": "0852a89ae180d5401f5ac00271a4a02e",
      "user_name": "username"
    }
  ],
  "expired_time": "2023-05-03T10:30:00.200Z"
}
```

Example Response

None

Status Codes

Status Code	Description
200	Success
400	Bad request
500	Internal server error

Error Codes

See **Error Codes**.

4.2.29 Deleting a Shared Link

Function

This API is used to delete a shared link.

URI

DELETE /v3/{project_id}/connections/share

Table 4-155 Path parameters

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

Request Parameters

Table 4-156 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language.

Table 4-157 Request body parameters

Parameter	Mandatory	Type	Description
shared_conn_id	Yes	String	ID of a shared link.
users	Yes	Array of **ShareConnUserInfo** objects	User.

Table 4-158 ShareConnUserInfo

Parameter	Mandatory	Type	Description
user_id	Yes	String	User ID.
user_name	Yes	String	Username.

Response Parameters

Status code: 400

Table 4-159 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: 500

Table 4-160 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Deleting a shared link

```
DELETE https://{{endpoint}}/v3/{{project_id}}/connections/share
{
  "users" : [ {
    "user_id" : "0852a89ae180d5401f5ac00271a4a02e",
    "user_name" : "username1"
```



```
 }, {
   "user_id" : "07da4af00180d5651f49c00200b352b5",
   "user_name" : "username2"
 } ],
 "shared_conn_id" : "ee64e597-4f25-486f-bba1-0c850b3b59d6"
}
```

Example Responses

None

Status Code

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Code

See **Error Codes**.

4.2.30 Executing a SQL Diagnosis

Function

This API is used to execute a SQL diagnosis.

URI

POST /v3/{project_id}/connections/{connection_id}/tuning/create-tuning

Table 4-161 Path parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. To obtain this value, see **Obtaining a Project ID**.
connection_id	Yes	String	Connection ID.

Request Parameters

Table 4-162 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language.

Table 4-163 Request body parameters

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name.
schema_name	No	String	Schema name.
sql_script	Yes	String	SQL script.
node_type	No	String	Node type.
node_id	No	String	Node ID.

Response Parameters

Status code: **200**

Table 4-164 Response body parameters

Parameter	Type	Description
message_id	Array of strings	Diagnosis information ID.
status	Boolean	Status.
quota_exceeded	Boolean	Diagnosis quota status.

Status code: **400**

Table 4-165 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Status code: **500**

Table 4-166 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: **2** Maximum length: **512**

Example Requests

Executing a SQL diagnosis

```
POST https://{{endpoint}}/v3/{{project_id}}/connections/{connection_id}/tuning/create-tuning

{
  "database_name" : "string",
  "schema_name" : "string",
  "sql_script" : "string"
}
```

Example Responses

```
{
    "message_id": [
        "6507f5070cf2476b18473d9b"
    ],
    "status": true,
    "quota_exceeded": false
}
```


Status Code

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Code

See **Error Codes**.

4.2.31 Obtaining Diagnosis Results

Function

This API is used to obtain SQL diagnosis results.

URI

GET /v3/{project_id}/connections/{connection_id}/tuning/{message_id}/show-tuning-result

Table 4-167 URI parameters

Parameter	Mandatory	Type	Description
message_id	Yes	String	Diagnosis information ID.
project_id	Yes	String	Project ID. To obtain this value, see **Obtaining a Project ID**.
connection_id	Yes	String	Connection ID.

Request Parameters

Table 4-168 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.
X-Language	No	String	Language.

Response Parameters

Status code: **200**

Table 4-169 Response body parameters

Parameter	Type	Description
tune_result	**AdviceResult** object	Diagnosis result.

Table 4-170 AdviceResult

Parameter	Type	Description
message_id	String	Diagnosis information ID.
status_code	String	Status code.
error_code	String	Error code.
error_message	String	Error message.
index_advice	Array of **IndexAdviceInfo** objects	Suggestions on indexes.
tuning_advice	Array of strings	Diagnosis suggestions.
formatted_sql	String	Formatted SQL statement.
original_sql	String	Original SQL statement.
explain	Array of **Explain** objects	Execution plan.
tb_pos_infos	Array of **TbPosInfo** objects	Table location information.
feedback_infos	**FeedbackInfo** object	Feedback information.

Table 4-171 IndexAdviceInfo

Parameter	Type	Description
schema_name	String	Schema name.
table_name	String	Table name.
index_name	String	Index name.
columns	Array of strings	Column.
unique	Boolean	Unique or not.

Parameter	Type	Description
track_id	String	Tracking ID.
quality	Object	Quality.
ddl_add_index	String	Index to be added for DDL.

Table 4-172 Explain

Parameter	Type	Description
id	Integer	Type of the SELECT clause.
select_type	String	Type of the SELECT clause.
table	String	Table JOIN sequence selected by the SQL optimizer.
type	String	Access type of the row in the table, ordered from the best type to the worst (null>system>const>eq_ref>ref>range>index>all).
possible_keys	String	Index that helps find the required row.
key	String	Index actually used by SQL Optimizer to minimize query costs.
key_len	String	Length (bytes) of the index in the key column.
ref	String	Column or constant for querying data using the index in the key column.
rows	Long	Length (bytes) of the index in the key column.
filtered	Double	Percentage of remaining values after data is scanned at the engine layer and filtered based on the additional WHERE condition.
extra	String	Additional information about SQL parsing. • If **using index** is displayed, the SQL statement uses the overwrite index and performs well. • If **using filesort**, **using temporary**, or **using where** is displayed, the query needs to be optimized.

Table 4-173 TbPosInfo

Parameter	Type	Description
origin_name	String	Original name.
name	String	Name.
start	Integer	Start.
end	Integer	End.

Table 4-174 FeedbackInfo

Parameter	Type	Description
id	String	ID.
project_id	String	Project ID.
message_id	String	Unique message ID.
feedback_grade	String	Feedback level.
feedback_content	String	Feedback content.
gmt_created	Long	Creation time.
gmt_modified	Long	Modification time.

Status code: **400**

Table 4-175 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 4-176 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: **8** Maximum length: **36**
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Requests

None

Example Response

```
{
   "tune_result": {
      "message_id": "6507f5070cf2476b18473d9b",
      "status_code": "0000",
      "error_message": "Success",
      "formatted_sql": "SELECT *\nFROM test_tb",
      "original_sql": "select * from test_tb",
      "tuning_advice": [
         "The outermost SELECT statement does not have a WHERE condition specified, which could result in more rows being returned than anticipated."
      ],
      "explain": [{
         "id": 1,
         "select_type": "SIMPLE",
         "type": "ALL",
         "rows": 100512,
         "filtered": 100
      }],
      "tb_pos_infos": [{
         "origin_name": "test_tb",
         "name": "test_tb",
         "start": 14,
         "end": 21
      }],
      "feedback_infos": {}
   }
}
```

Status Code

Status Code	Description
200	Success.
400	Bad request.
500	Internal server error.

Error Code

See **Error Codes**.

4.2.32 Creating an Instance Diagnosis Task

Function

This API is used to create an instance diagnosis task.

URI

POST /v3/{project_id}/instances/{instance_id}/create-instance-health-report-task

Table 4-177 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	Instance ID

Request Parameters

Table 4-178 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Table 4-179 Request body parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds

Response Parameters

Status code: 200

Table 4-180 Response body parameters

Parameter	Type	Description
create_success	Boolean	Whether the diagnosis task is successfully created

Status code: 400

Table 4-181 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Status code: 500

Table 4-182 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Creating an instance diagnosis task

```
POST https://das.cn-north-7.myhuaweicloud.com/v3/052041494800d57c2f02c00275b4c247/instances/bcfa975193f1402fa11a6d4fd6baf5fbin01/create-instance-health-report-task

{
  "start_at" : 1728103093329,
  "end_at" : 1729103093329
}
```

Example Response

Status code: 200

Success

```
{
  "create_success" : true
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.33 Querying Instance Diagnosis Reports

Function

This API is used to query instance diagnosis reports.

URI

GET /v3/{project_id}/instances/{instance_id}/get-instance-health-report-task-list

Table 4-183 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	Instance ID

Table 4-184 Query parameters

Parameter	Mandatory	Type	Description
start_at	Yes	Long	Start time in Unix timestamp format, in milliseconds
end_at	Yes	Long	End time in Unix timestamp format, in milliseconds

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number.
limit	No	Integer	Number of records displayed on each page. The default value is **10**, and the maximum value is **200**.

Request Parameters

Table 4-185 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-186 Response body parameters

Parameter	Type	Description
total	Long	Number of diagnosis reports
health_report_task_list	Array of **Table 4-187** objects	Diagnosis report list

Table 4-187 HealthReportTask

Parameter	Type	Description
task_id	String	Report ID
instance_id	String	Instance ID
create_at	Long	Creation time in Unix timestamp format, in milliseconds
report_status	String	Diagnosis status
risk_count	Integer	Number of risks
origin	String	Trigger source
start_at	Long	Diagnosis start time (in Unix timestamp format) in a daily report, in milliseconds
end_at	Long	Diagnosis end time (in Unix timestamp format) in a daily report, in milliseconds

Status code: 400

Table 4-188 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Status code: 500

Table 4-189 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Querying instance diagnosis reports

```
GET https://das.cn-north-7.myhuaweicloud.com/v3/052041494800d57c2f02c00275b4c247/instances/bcfa975193f1402fa11a6d4fd6baf5fbin01/get-instance-health-report-task-list?start_at=1727177896507&end_at=1728871794805
```


Example Response

Status code: 200

Success


```
{
  "health_report_task_list" : [ {
    "instance_id" : "bcfa975193f1402fa11a6d4fd6baf5fbin01",
    "task_id" : "8aa02bb1-ca4a-4724-ad3b-00993d6e08e0",
    "create_at" : 1727200803179,
    "report_status" : "SUCCESS",
    "risk_count" : 1,
    "origin" : "SYSTEM",
    "start_at" : 1727064000211,
    "end_at" : 1727150400211
  } ],
  "total" : 22
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.34 Obtaining an Instance Diagnosis Report

Function

This API is used to obtain an instance diagnosis report.

URI

GET /v3/{project_id}/instances/{instance_id}/get-instance-health-report

Table 4-190 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	Instance ID

Table 4-191 Query parameters

Parameter	Mandatory	Type	Description
task_id	Yes	String	Task ID

Request Parameters

Table 4-192 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 4-193 Response body parameters

Parameter	Type	Description
success	Boolean	Whether the diagnosis in a daily report is successful
start_at	Long	Diagnosis start time (in Unix timestamp format) in a daily report, in milliseconds
end_at	Long	Diagnosis end time (in Unix timestamp format) in a daily report, in milliseconds
task_id	String	Report ID
summary_info	Objects in **Table 4-194**	Daily report abstract
instance_info	**Table 4-198** object	Instance information list
performance_stat	**Table 4-199** object	Performance statistics and analysis list
disk_stat	**Table 4-200** object	Disk statistics and analysis list

Parameter	Type	Description
table_space_stat	Table 4-203 object	Tablespace statistics and analysis list
slow_log_stat	Table 4-206 object	Statistics and analysis list of slow SQL queries
full_sql_stat	Table 4-207 object	Statistics and analysis list of SQL queries in SQL Explorer
inspection_stat	Table 4-209 object	Statistics and analysis list of preventive maintenance inspection scores
error_message	String	Error message

Table 4-194 HealthReportSummaryInfo

Parameter	Type	Description
analysis_results	Array of Table 4-195 objects	Analysis results

Table 4-195 HealthReportAnalysisResult

Parameter	Type	Description
risk_code	String	Risk code
risk_level	String	Risk level
risk_content	String	Risk content
reasons	Array of Table 4-196 objects	Possible causes

Table 4-196 HealthReportRiskReason

Parameter	Type	Description
reason_code	String	Possible cause code
reason_content	String	Possible cause content

Parameter	Type	Description
suggestions	Array of Table 4-197 objects	Suggestions

Table 4-197 HealthReportRiskSuggestion

Parameter	Type	Description
suggestion_code	String	Suggestion codes
suggestion_content	String	Suggestion content

Table 4-198 HealthReportInstanceInfo

Parameter	Type	Description
tenant_id	String	Account ID
project_id	String	Project ID
instance_id	String	Instance ID
master_node_id	String	Primary node ID
instance_name	String	Instance name
cpu	Integer	Number of CPU cores of an instance
mem	Integer	Instance memory size
disk_size	Integer	Disk size
disk_type	String	Disk type
engine	String	DB engine
engine_version	String	DB engine kernel version

Table 4-199 HealthReportPerformanceStat

Parameter	Type	Description
peak_stats	Array of **Table 4-201** objects	Peak statistics
ratio_stats	Array of **Table 4-202** objects	Ratio data
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-200 HealthReportDiskStat

Parameter	Type	Description
peak_stats	Array of **Table 4-201** objects	Peak statistics
ratio_stats	Array of **Table 4-202** objects	Ratio data
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-201 HealthReportSingleValueStat

Parameter	Type	Description
metric	String	Metric name
value	Double	Value
max_value	Double	Maximum value
normalized	Double	Normalized value
stage	String	Current status
timestamp	Long	Metric collection time

Table 4-202 HealthReportRatioStat

Parameter	Type	Description
metric	String	Metric name
max_value	Double	Maximum value
critical_ratio	Double	Critical ratio
medium_ratio	Double	Medium ratio
light_ratio	Double	Light ratio

Table 4-203 HealthReportTableSpaceStat

Parameter	Type	Description
size_top	Array of **Table 4-204** objects	Top tables in size
rows_top	Array of **Table 4-204** objects	Top table rows
size_incr_top	Array of **Table 4-205** objects	Top tables in size with the highest growth rate
rows_incr_top	Array of **Table 4-205** objects	Top rows with the highest growth rate
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-204 HealthReportTableSpaceInfo

Parameter	Type	Description
database	String	Database name
table	String	Table name
db_engine	String	DB engine
table_size	Long	Table size
data_size	Long	Data size

Parameter	Type	Description
index_size	Long	Index size
rows	Long	Number of rows

Table 4-205 HealthReportTableSpaceIncrInfo

Parameter	Type	Description
database	String	Database name
table	String	Table name
increment	Long	Increment
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-206 HealthReportSlowLogStat

Parameter	Type	Description
collect_slow_log	Boolean	Whether slow SQL queries are collected
top_execute_slow_logs	Array of **Table 4-208** objects	Top slow SQL queries executed
top_avg_query_time_slow_logs	Array of **Table 4-208** objects	Top slow SQL queries taking average time
top_max_query_time_slow_logs	Array of **Table 4-208** objects	Top slow SQL queries taking longest
rows_examined_exceeding	Array of **Table 4-208** objects	Top slow SQL queries which return rows
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-207 HealthReportFullSqlStat

Parameter	Type	Description
collect_full_sql	Boolean	Whether SQL Explorer data is collected
execute_top_templates	Array of **Table 4-208** objects	Top executed SQL queries in SQL Explorer
sum_rows_examined_top_templates	Array of **Table 4-208** objects	Top SQL queries scanning rows in SQL Explorer
avg_cost_top_templates	Array of **Table 4-208** objects	Top SQL queries taking average time in SQL Explorer
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-208 HealthReportSqlTemplate

Parameter	Type	Description
template_id	String	Template ID
template	String	Template content
databases	Array of strings	Database list
times	Long	Execution times
avg_query_time	Double	Average execution time
max_query_time	Double	Maximum execution time
avg_rows_examined	Double	Average rows scanned
max_rows_examined	Double	Maximum rows scanned
sum_rows_examined	Double	Total rows scanned
avg_rows_sent	Double	Average rows returned

Parameter	Type	Description
max_rows_sent	Double	Maximum rows returned

Table 4-209 HealthReportInspectionStat

Parameter	Type	Description
inspection_score	Array of **Table 4-210** objects	Inspection score
analyze_success	Boolean	Whether analytical and statistical data is collected
error_message	String	Error message

Table 4-210 HealthReportInspectionScore

Parameter	Type	Description
score	Double	Score
critical	Integer	Major event
medium	Integer	Warning
light	Integer	Optimization
cpu_usage	Double	CPU usage
mem_usage	Double	Memory usage
space_usage	Double	Space usage
connection_rate	Double	Connection usage
iops_usage	Double	IOPS usage
thread_running	Double	Active session
slow_sql_total	Long	Slow SQL queries
lost_points_detail_list	Array of **Table 4-211** objects	Score deduction details

Table 4-211 HealthReportLostPointsDetail

Parameter	Type	Description
metric	String	Score deduction item
lost_points	Double	Deducted score
risk_level	String	Event level

Status code: 400

Table 4-212 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Status code: 500

Table 4-213 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Obtaining an instance diagnosis report

```
GET https://das.cn-north-7.myhuaweicloud.com/v3/052041494800d57c2f02c00275b4c247/instances/bcfa975193f1402fa11a6d4fd6baf5fbin01/get-instance-health-report?task_id=bb252ed0-3d06-489a-a662-6609e054e91c
```

Example Response

Status code: 200

Success

```
{
  "success" : true,
  "summary_info" : {
    "analysis_results" : [ {
      "risk_code" : "SLOW_LOG_ISSUE",
      "risk_level" : "WARNING",
      "risk_content": "Slow SQL queries",
      "reasons" : [ {
        "reason_code" : "SLOW_LOG_EXIST",
      reason_content": "Slow SQL queries",
```



```
      "suggestions" : [ {
        "suggestion_code" : "ANALYZE_SLOW_LOG",
         "suggestion_content":"Analyzes slow SQL statements to locate the root cause."
      } ]
    } ]
  } ]
},
"instance_info" : {
  "tenant_id" : "05204146e600d48f0f02c002850ec340",
  "project_id" : "052041494800d57c2f02c00275b4c247",
  "instance_id" : "bcfa975193f1402fa11a6d4fd6baf5fbin01",
  "instance_name" : "rds-sql-Do not delete 1.",
  "cpu" : 2,
  "mem" : 8,
  "disk_size" : 60,
  "disk_type" : "CLOUDSSD",
  "engine" : "mysql",
  "engine_version" : "5.7"
},
"performance_stat" : {
  "analyze_success" : true,
  "peak_stats" : [ {
    "metric" : "qps",
    "value" : 64.88,
    "max_value" : 11178,
    "normalized" : 0.005804258364644837,
    "stage" : "LIGHT",
    "timestamp" : 1728756000
  } ],
  "ratio_stats" : [ {
    "metric" : "qps",
    "max_value" : 11178,
    "critical_ratio" : 0,
    "medium_ratio" : 0,
    "light_ratio" : 1
  } ]
},
"disk_stat" : {
  "analyze_success" : true,
  "peak_stats" : [ {
    "metric" : "iops",
    "value" : 91.9,
    "max_value" : 4500,
    "normalized" : 0.020422222222222224,
    "stage" : "LIGHT",
    "timestamp" : 1728750600
  } ],
  "ratio_stats" : [ {
    "metric" : "iops",
    "max_value" : 4500,
    "critical_ratio" : 0,
    "medium_ratio" : 0,
    "light_ratio" : 1
  } ]
},
"table_space_stat" : {
  "analyze_success" : true
},
"slow_log_stat" : {
  "analyze_success" : true,
  "collect_slow_log" : true,
  "top_execute_slow_logs" : [ {
    "template_id" : "5B20B6BF446F926F",
    "template" : "INSERT INTO test123 VALUES (?);",
    "databases" : [ "test_db" ],
    "times" : 83,
    "avg_query_time" : 0.9021538595657752,
    "max_query_time" : 45.08398997783661,
    "avg_rows_examined" : 0,
```



```
      "sum_rows_examined" : 0,
      "avg_rows_sent" : 0
    } ],
    "rows_examined_exceeding" : [ ]
  },
  "full_sql_stat" : {
    "analyze_success" : true,
    "collect_full_sql" : true,
    "execute_top_templates" : [ {
      "template_id" : "B38F825636B24B7",
      "template" : "CREATE TABLE IF NOT EXISTS table_001 (id int)",
      "databases" : [ "test_db" ],
      "times" : 1,
      "avg_query_time" : 5,
      "avg_rows_examined" : 0,
      "sum_rows_examined" : 0
    } ]
  },
  "inspection_stat" : {
    "analyze_success" : true,
    "inspection_score" : [ {
      "score" : 100,
      "critical" : 0,
      "medium" : 0,
      "light" : 0,
      "cpu_usage" : 3.93,
      "mem_usage" : 22.91,
      "space_usage" : 8.66,
      "connection_rate" : 0.54,
      "iops_usage" : 0.28,
      "thread_running" : 4,
      "slow_sql_total" : 0,
      "lost_points_detail_list" : [ {
        "metric" : "memUsage",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "cpuUsage",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "spaceUsage",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "iopsUsage",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "connectionRate",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "threadRunning",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      }, {
        "metric" : "slowSqlTotal",
        "lost_points" : 0,
        "risk_level" : "NORMAL"
      } ]
    } ]
  }
}
```


Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

4.2.35 Synchronizing the Instance List

Function

This API is used to synchronize the instance list.

URI

POST /v3/{project_id}/instances/synchronize-instance-list

Table 4-214 URI parameters

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

Request Parameters

Table 4-215 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Table 4-216 Request body parameters

Parameter	Mandatory	Type	Description
engine_type	No	String	Database engine type

Response Parameters

Status code: 200

Table 4-217 Response body parameters

Parameter	Type	Description
success	Boolean	Whether a task is successfully created

Status code: 400

Table 4-218 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Status code: 500

Table 4-219 Response body parameters

Parameter	Type	Description
error_code	String	Error code
error_msg	String	Error message

Example Request

Synchronizing the instance list

```
POST https://das.cn-north-7.myhuaweicloud.com/v3/052041494800d57c2f02c00275b4c247/instances/synchronize-instance-list

{
  "engine_type" : "mysql"
}
```


Example Response

Status code: 200

Success

```
{
  "success" : true
}
```

Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

5 Deprecated APIs

5.1 Creating a Space Analysis Task

Function

This API is used to create a space analysis task, for example, triggering re-analysis. This function is supported for MySQL and TaurusDB.

URI

POST /v3/{project_id}/instances/{instance_id}/space-analysis

Table 5-1 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	Instance ID.

Request Parameters

Table 5-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token.

Parameter	Mandatory	Type	Description
X-Language	No	String	Language. Enumerated values: • **zh-cn** • **en-us**

Table 5-3 Request body parameters

Parameter	Mandatory	Type	Description
operate	Yes	String	Operation type. Enumerated values: • **reanalysis**
datastore_type	Yes	String	Engine type. Enumerated values: • **MySQL** • **TaurusDB**

Response Parameters

Status code: 200

Table 5-4 Response body parameters

Parameter	Type	Description
execution_time	Long	Execution time, expressed in the form of a timestamp in milliseconds.

Status code: 400

Table 5-5 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 5-6 Response body parameters

Parameter	Type	Description
error_code	String	Error code. Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message. Minimum length: 2 characters Maximum length: 512 characters

Example Request

Creating a space analysis task

```
POST https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/fa7d0b6e40704cd48facf9889d6e745bin01/space-analysis

{
  "operate" : "reanalysis",
  "datastore_type" : "MySQL"
}
```

Example Response

Status code: 200

Success

```
{
  "execution_time" : 1615358657378
}
```

Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

5.2 Obtaining the Space Analysis Data List

Function

This API is used to obtain the space analysis data list. The file system generates instance-level data, and the **information_schema.tables** table generates database-level and table-level data. **Space & Metadata Analysis** allows you to analyze a maximum of 10,000 tables. If tablespace data is missing, there may be too many instance tables, or the account password has not been saved. If the password has not been saved, use the user management API or page to save the database account. This function is supported for MySQL, TaurusDB, and SQL Server.

URI

GET /v3/{project_id}/instances/{instance_id}/space-analysis

Table 5-7 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	Instance ID

Table 5-8 Query parameters

Parameter	Mandatory	Type	Description
object_type	Yes	String	Object type Default value: **database** Enumerated values: • **database** • **table**
database_id	No	String	Database ID

Parameter	Mandatory	Type	Description
offset	No	String	Offset. If **offset** is set to *N*, the resource query starts from the *N*+1 piece of data. The value is **0** by default, indicating that the query starts from the first piece of data. The value must be a number but cannot be a negative number. The offset value must be an integer multiple of limit value. Default value: **0**.
limit	No	String	Number of records to be queried. The default value is **100**. The value cannot be a negative number. The minimum value is **1** and the maximum value is **100**. Default value: **100**
show_instance_info	No	String	Whether to return instance data. The value can be **true** or **false**. Default value: **true**
datastore_type	Yes	String	Engine type Enumerated values: • **MySQL** • **TaurusDB** • **SQLServer**

Request Parameters

Table 5-9 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token
X-Language	No	String	Language Enumerated values: • **zh-cn** • **en-us**

Response Parameters

Status code: 200

Table 5-10 Response body parameters

Parameter	Type	Description
total	Long	Total number of records
db_objects	Array of **DbObjectSpaceInfo** objects	DB objects
instance_info	**InstanceSpaceInfo** object	Instance storage usage: The data comes from the file system. The used space includes the data space, log space, and other space. Other space includes space for storing temporary files generated by the engine.

Table 5-11 DbObjectSpaceInfo

Parameter	Type	Description
object_type	String	Object type. If the object type is **table**, **database_id** must be transferred. Enumerated values: • **database** • **table**
object_name	String	Object name
object_id	String	Object ID
used_size	Long	Used space, in bytes
data_size	Long	Data space, in bytes
index_size	Long	Index space, in bytes
estimated_rows	Long	Number of estimated value rows, in bytes

Table 5-12 InstanceSpaceInfo

Parameter	Type	Description
total_size	Long	Total instance space, in bytes. The total space of a TaurusDB instance is not returned.
used_size	Long	Used space, in bytes

Parameter	Type	Description
data_size	Long	Data space, in bytes
log_size	Long	Log space, in bytes
avg_daily_growth	Long	Average daily data growth in the last seven days, in bytes
last_result_time	Long	Time when the last analysis result is generated, in milliseconds

Status code: 400

Table 5-13 Response body parameters

Parameter	Type	Description
error_code	String	Error code Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message Minimum length: 2 characters Maximum length: 512 characters

Status code: 500

Table 5-14 Response body parameters

Parameter	Type	Description
error_code	String	Error code Minimum length: 8 characters Maximum length: 36 characters
error_msg	String	Error message Minimum length: 2 characters Maximum length: 512 characters

Example Request

- Obtaining the database list
  ```
  GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/fa7d0b6e40704cd48facf9889d6e745bin01/space-analysis?datastore_type=MySQL&object_type=database&show_instance_info=true&offset=0&limit=100
  ```
- Obtaining the table list


```
GET https://das.cn-north-1.myhuaweicloud.com/v3/054e292c9880d4992f02c0196d3ea468/instances/fa7d0b6e40704cd48facf9889d6e745bin01/space-analysis?datastore_type=MySQL&object_type=table&database_id=24937&show_instance_info=false&offset=0&limit=100
```

Example Response

Status code: 200

Success

```
{
  "db_objects" : [ {
    "object_type" : "database",
    "object_name" : "db_01",
    "object_id" : "24937",
    "used_size" : 171687936,
    "data_size" : 129646592,
    "index_size" : 38895616
  }, {
    "object_type" : "database",
    "object_name" : "test_db",
    "object_id" : "24936",
    "used_size" : 84574208,
    "data_size" : 41484288,
    "index_size" : 38895616
  } ],
  "total" : 2,
  "instance_info" : {
    "total_size" : 42949672960,
    "used_size" : 2635862016,
    "data_size" : 256262144,
    "log_size" : 2100001252,
    "avg_daily_growth" : 86016,
    "last_result_time" : 1615323657065
  }
}
```

Status Codes

Status Code	Description
200	Success
400	Client error
500	Server error

Error Codes

See **Error Codes**.

6 Permissions Policies and Supported Actions

6.1 Introduction

This section describes fine-grained permissions management for your DAS resources. If your account does not need individual IAM users, then you may skip over this section.

By default, new IAM users do not have any permissions assigned. You need to add a user to one or more groups, and attach permissions policies to these groups. After authorization, the user can perform specified operations on the DDM service based on the permissions.

You can grant users permissions by using **roles** and **policies**. Roles are a type of coarse-grained authorization mechanism that defines permissions related to user responsibilities. Policies define API-based permissions for operations on specific resources under certain conditions, allowing for more fine-grained, secure access control of cloud resources.

NOTE

Policy-based authorization is useful if you want to allow or deny the access to an API.

An account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user wants to query instance sessions using an API, the user must have been granted permissions that allow the **das:clouddba:read** action.

Supported Actions

DAS provides system-defined policies that can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- Permission: A statement in a policy that allows or denies certain operations.
- APIs: REST APIs that can be called by a user who has been granted specific permissions.
- Action: Specific operations that are allowed or denied.
- IAM projects or enterprise project: Scope of users a permission is granted to. Policies that contain actions for both IAM and enterprise projects can be used and take effect for both IAM and Enterprise Management. Policies that only contain actions for IAM projects can be used and only take effect for IAM. For details about the differences between IAM and enterprise projects, see **Differences Between IAM Projects and Enterprise Projects**.

For details about the custom actions supported by DAS, see **DAS Actions**.

6.2 DAS Actions

Function	API	Action	IAM Project	Enterprise Project
Querying API Versions	GET /das	No authorization required	√	√
Querying a Specified API Version	GET /das/{version}	No authorization required	√	√
Registering a Database User	POST /v3/{project_id}/instances/{instance_id}/db-users	das:*:*	√	√
Querying Database Users	GET /v3/{project_id}/instances/{instance_id}/db-users	das:*:*	√	√
Querying a Specified Database User	GET /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}	das:*:*	√	√
Modifying a Database User	PUT /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}	das:*:*	√	√

Function	API	Action	IAM Project	Enterprise Project
Deleting a Database User	DELETE /v3/{project_id}/instances/{instance_id}/db-users/{db_user_id}	das:*:*	√	√
Querying a SQL Execution Plan	GET /v3/{project_id}/instances/{instance_id}/sql/explain	das:*:*	√	√
Querying Instance Sessions	GET /v3/{project_id}/instances/{instance_id}/processes	das:*:*	√	√
Killing Sessions	DELETE /v3/{project_id}/instances/{instance_id}/process	das:*:*	√	√
Querying Metadata Locks	GET /v3/{project_id}/instances/{instance_id}/metadata-locks	das:*:*	√	√
Querying InnoDB Lock Waits	GET /v3/{project_id}/instances/{instance_id}/innodb-locks	das:*:*	√	√
Obtaining the Space Analysis Data	GET /v3/{project_id}/instances/{instance_id}/space-analysis	das:*:*	√	√
Creating a Space Analysis Task	POST /v3/{project_id}/instances/{instance_id}/space-analysis	das:*:*	√	√

Function	API	Action	IAM Project	Enterprise Project
Enabling or Disabling SQL Explorer and Slow Query Log	POST /v3/{project_id}/instances/{instance_id}/sql/switch	das:*:*	√	√
Querying Whether SQL Explorer and Slow Query Log Are Enabled	GET /v3/{project_id}/instances/{instance_id}/sql/switch	das:*:*	√	√
Exporting Slow Query Logs	GET /v3/{project_id}/instances/{instance_id}/slow-query-logs	das:*:*	√	√
Exporting SQL Explorer Data	GET /v3/{project_id}/instances/{instance_id}/sql-statements	das:*:*	√	√
Querying Whether SQL Statement Concurrency Control Is Enabled	GET /v3/{project_id}/instances/{instance_id}/sql-limit/switch	das:*:*	√	√
Enabling or Disabling SQL Statement Concurrency Control	POST /v3/{project_id}/instances/{instance_id}/sql-limit/switch	rds:databasePrivilege:grant	√	√
Querying Concurrency Control Rules of SQL Statements	GET /v3/{project_id}/instances/{instance_id}/sql-limit/rules	das:*:*	√	√

Function	API	Action	IAM Project	Enterprise Project
Creating a Concurrency Control Rule	POST /v3/{project_id}/instances/{instance_id}/sql-limit/rules	rds:databasePrivilege:grant	√	√
Deleting a Concurrency Control Rule	DELETE /v3/{project_id}/instances/{instance_id}/sql-limit/rules	rds:databasePrivilege:grant	√	√
Querying Concurrency Control Tasks	GET /v3/{project_id}/instances/{instance_id}/sql-limit/job	das:*:*	√	√
Exporting the TopSQL Template List	GET /v3/{project_id}/instances/{instance_id}/top-sql-templates	das:*:*	√	√
Exporting SQL Execution Time Distribution	GET /v3/{project_id}/instances/{instance_id}/top-sql-trend	das:*:*	√	√
Exporting the Slow SQL Template List	GET /v3/{project_id}/instances/{instance_id}/slow-sql-templates	das:*:*	√	√
Setting a Shared Link	POST /v3/{project_id}/connections/share	das:*:*	√	√
Deleting a Shared Link	DELETE /v3/{project_id}/connections/share	das:*:*	√	√
Executing a SQL Diagnosis	POST /v3/{project_id}/connections/{connection_id}/tuning/create-tuning	das:*:*	√	√

Function	API	Action	IAM Project	Enterprise Project
Obtaining Diagnosis Results	GET /v3/{project_id}/connections/{connection_id}/tuning/{message_id}/show-tuning-result	das:*:*	√	√

NOTE

- √: supported; x: not supported
- Some APIs have not been configured with actions. Add the **das:*:*** action or add the **DAS FullAccess** system policy to call APIs.

7 Appendixes

7.1 Abnormal Request Results

- Abnormal response

  Table 7-1 Parameter description

Parameter	Type	Description
error_code	String	Error code returned when a task submission exception occurs. For details, see **Error Codes**.
error_msg	String	Error description returned when a task submission exception occurs

- Example abnormal response

```
{
   "error_code": "DAS.200100",
   "error_msg": "Parameter error"
}
{
   "error_code": "DAS.200051",
   "error_msg": "Authentication failed"
}
```


7.2 Status Codes

Table 7-2 Status codes

Status Code	Message	Description
100	Continue	The client should continue with its request. This interim response is used to inform the client that the initial part of the request has been received and has not yet been rejected by the server.
101	Switching Protocols	The protocol should be switched. The protocol can only be switched to a more advanced protocol. For example, the current HTTP protocol is switched to a later version.
200	OK	Request succeeded.
201	Created	The request for creating a resource or task has been fulfilled.
202	Accepted	The request has been accepted, but the processing has not been completed.
203	Non-Authoritative Information	Unauthorized information. The request is successful.
204	NoContent	The server has successfully processed the request, but has not returned any content. The status code is returned in response to an HTTP OPTIONS request.
205	Reset Content	The server has fulfilled the request, but the requester is required to reset the content.
206	Partial Content	The server has processed certain GET requests.
300	Multiple Choices	There are multiple options for the location of the requested resource. The response contains a list of resource characteristics and addresses from which the user or user agent (such as a browser) can choose the most appropriate one.
301	Moved Permanently	The requested resource has been assigned a new permanent URI, and the new URI is contained in the response.
302	Found	The requested resource was temporarily moved.

Status Code	Message	Description
303	See Other	Retrieve a location. The response to the request can be found under a different URI and should be retrieved using a GET or POST method.
304	Not Modified	The requested resource has not been modified. In such a case, there is no need to retransmit the resource since the client still has a previously-downloaded copy.
305	Use Proxy	The requested resource must be accessed through a proxy.
306	Unused	The HTTP status code is no longer used.
400	BadRequest	Invalid request. The client should not repeat the request without modifications.
401	Unauthorized	The status code is returned after the client provides the authentication information, indicating that the authentication information is incorrect or invalid.
402	Payment Required	This status code is reserved for future use.
403	Forbidden	The request is rejected. The server has received and understood the request; yet it refused to respond, because the request is set to deny access. Do not retry the request before modification.
404	NotFound	The requested resource cannot be found. The client should not repeat the request without modifications.
405	MethodNotAllowed	The method specified in the request is not supported for the requested resource. The client should not repeat the request without modifications.
406	Not Acceptable	The server cannot fulfill the request according to the content characteristics of the request.
407	Proxy Authentication Required	This status code is similar to 401, but indicates that the client must first authenticate itself with the proxy.

Status Code	Message	Description
408	Request Time-out	The server timed out waiting for the request. The client may repeat the request without modifications at any later time.
409	Conflict	The request could not be processed due to a conflict. This status code indicates that the resource that the client attempts to create already exits, or the request fails to be processed because of the update of the conflict request.
410	Gone	The requested resource is no longer available. The requested resource has been deleted permanently.
411	Length Required	The server refuses to process the request without a defined Content-Length.
412	Precondition Failed	The server does not meet one of the preconditions that the requester puts on the request.
413	Request Entity Too Large	The request is larger than that a server is able to process. The server may close the connection to prevent the client from continuing the request. If the server temporarily cannot process the request, the response will contain a Retry-After header field.
414	Request-URI Too Large	The URI provided was too long for the server to process.
415	Unsupported Media Type	The server is unable to process the media format in the request.
416	Requested range not satisfiable	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the Expect request-header field.
422	UnprocessableEntity	The request is well-formed but is unable to be processed due to semantic errors.
429	TooManyRequests	The client has sent more requests than its rate limit is allowed within a given amount of time, or the server has received more requests than it is able to process within a given amount of time. In this case, it is advisable for the client to re-initiate requests after the time specified in the Retry-After header of the response expires.

Status Code	Message	Description
500	InternalServerError	The server is able to receive the request but it could not understand the request.
501	Not Implemented	The server does not support the requested function.
502	Bad Gateway	The server acting as a gateway or proxy receives an invalid response from a remote server.
503	ServiceUnavailable	The requested service is invalid. The client should not repeat the request without modifications.
504	ServerTimeout	The request cannot be fulfilled within a given time. The response will reach the client only if the request carries a timeout parameter.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

7.3 Error Codes

If an error occurs in API calling, no result is returned. Identify the error cause based on the error codes of each API. If an error occurs, an HTTP status code is returned. The response body contains the specific error code and information.

Status Code	Error Code	Error Message	Description	Solution
400	DAS.200002	Frequent requests.	Too frequent requests.	Try again later.
400	DAS.200100	The parameter is invalid.	Invalid parameters.	Check whether the parameters are correctly specified.
400	DAS.200101	The start_at parameter is invalid.	Parameter start_at is invalid.	Check whether parameter start_at is correctly specified.
400	DAS.200102	The end_at parameter is invalid.	Parameter end_at is invalid.	Check whether parameter end_at is correctly specified.

Status Code	Error Code	Error Message	Description	Solution
400	DAS.200103	The offset parameter is invalid.	Parameter offset is invalid.	Check whether parameter offset is correctly specified.
400	DAS.200104	The limit parameter is invalid.	Parameter limit is invalid.	Check whether parameter limit is correctly specified.
400	DAS.200105	The order parameter is invalid.	Parameter order is invalid.	Check whether parameter order is correctly specified.
400	DAS.200106	The order_by parameter is invalid.	Parameter order_by is invalid.	Check whether parameter order_by is correctly specified.
400	DAS.200107	The datastore_type is invalid.	Parameter datastore_type is invalid.	Check whether parameter datastore_type is correctly specified.
400	DAS.200108	The database value is invalid!	Parameter database is invalid.	Check whether parameter database is correctly specified.
400	DAS.200109	The script value is invalid!	Parameter script is invalid.	Check whether parameter script is correctly specified.
400	DAS.200110	The lock_status value is invalid!	Parameter lock_status is invalid.	Check whether parameter lock_status is correctly specified.
400	DAS.200111	The lock_type value is invalid!	Parameter lock_type is invalid.	Check whether parameter lock_type is correctly specified.
400	DAS.200112	The db_user_id value is invalid!	Parameter db_user_id is invalid.	Check whether parameter db_user_id is correctly specified.

Status Code	Error Code	Error Message	Description	Solution
400	DAS.200113	The project_id parameter is invalid.	Parameter project_id is invalid.	Check whether parameter project_id is correctly specified.
400	DAS.200114	The instance_id parameter is invalid.	Parameter instance_id is invalid.	Check whether parameter instance_id is correctly specified.
400	DAS.200115	The parameter of DeleteProcess is invalid!	Parameters for killing sessions are invalid.	Check whether the parameters are correctly specified.
400	DAS.200116	The type parameter is invalid.	Parameter type is invalid.	Check whether the parameters are correctly specified.
400	DAS.200117	The status parameter is invalid.	Parameter status is invalid.	Check whether the parameters are correctly specified.
400	DAS.200118	The retention_days parameter is invalid.	Parameter retention_days is invalid.	Check whether the parameters are correctly specified.
400	DAS.200119	The object_type parameter is invalid.	Parameter object_type is invalid.	Check whether the parameters are correctly specified.
400	DAS.200120	This API is only available for paid instances.	This API is available only for paid instances.	Subscribe to Intelligent O&M and configure instances as paid.
400	DAS.200121	The marker is only valid for three minutes. If the expiration time is exceeded, please re export.	The marker is valid only within 3 minutes. If the marker is invalid, export it again.	Export it again.

Status Code	Error Code	Error Message	Description	Solution
400	DAS.220002	Failed to connect to the database.	Failed to connect to the database.	Check whether the instance is running properly and the database username and password are correct.
400	DAS.220003	The database user does not exist.	The database user does not exist.	Check whether the parameters are correctly specified.
400	DAS.220004	The database user already exists.	The database user already exists.	Check whether the database user exists.
400	DAS.220029	Failed to operate the SQL limit switch.	Failed to enable or disable the SQL concurrency control switch.	Rectify the fault based on the information returned in error_msg.
400	DAS.220030	Failed to operate the SQL limit rules.	Failed to enable or disable the SQL concurrency control rules.	Rectify the fault based on the information returned in error_msg.
403	DAS.200050	Invalid token.	The token is invalid.	Check whether the token is correct, or obtain the token and try again.
403	DAS.200051	Authenticatio n failed.	Authenticatio n failed.	Check whether you have the required permission.
500	DAS.200001	Internal service error.	Internal service error.	Contact the customer service.
500	DAS.200003	Internal service invoking error.	Internal service invoking error.	Contact the customer service.

Status Code	Error Code	Error Message	Description	Solution
500	DAS.220005	Failed to kill process.	Failed to kill sessions.	Rectify the fault based on the information returned in error_msg.
500	DAS.220006	Failed to Query Metadata Locks.	Failed to query metadata locks.	Rectify the fault based on the information returned in error_msg.
500	DAS.220007	Failed to query InnoDB locks.	Failed to query InnoDB lock waits.	Rectify the fault based on the information returned in error_msg.
500	DAS.220008	Failed to query process list.	Failed to query instance sessions.	Rectify the fault based on the information returned in error_msg.
500	DAS.220009	Failed to query SQL execution plan.	Failed to query the SQL execution plan.	Rectify the fault based on the information returned in error_msg.
500	DAS.220010	Failed to list slow query logs.	Failed to obtain slow SQL details.	Rectify the fault based on the information returned in error_msg.
500	DAS.220011	Failed to list SQL statements.	Failed to obtain the full SQL statement.	Rectify the fault based on the information returned in error_msg.
500	DAS.220012	Failed to enable/ disable DAS SQL explorer.	Failed to enable or disable DAS to collect full SQL statements.	Try again.

Status Code	Error Code	Error Message	Description	Solution
500	DAS.220013	Failed to enable/ disable DAS Slow Query Log.	Failed to enable or disable DAS to collect slow query logs.	Try again later.
500	DAS.220014	Failed to query the status.	Failed to query the switch status.	Rectify the fault based on the information returned in error_msg.
500	DAS.220015	Failed to query space analysis data.	Failed to query space analysis data.	Rectify the fault based on the information returned in error_msg.
500	DAS.220016	Failed to execute the space analysis task.	Failed to execute the space analysis task.	Check whether the database account has been recorded for the instance.
500	DAS.220017	The switch is not enabled.	Failed to enable log collection.	Toggle on the switch.
500	DAS.220065	Failed to turn on/off the DAS transaction switch.	Failed to enable or disable the historical transaction switch.	Rectify the fault based on the information returned in error_msg.
500	DAS.220066	Failed to query the DAS historical transaction switch.	Failed to query the status of the historical transaction switch.	Rectify the fault based on the information returned in error_msg.
500	DAS.220067	Failed to query the DAS historical transaction list.	Failed to query the historical transaction list.	Rectify the fault based on the information returned in error_msg.

7.4 Obtaining a Project ID

Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- **Obtaining a Project ID by Calling an API**
- **Obtaining a Project ID from the Console**

Obtaining a Project ID by Calling an API

You can obtain the project ID by calling the API used to **query project information based on the 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 **Regions and Endpoints**. 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

1. Register yourself on the management console and log in to it.
2. Move your pointer over the username and select **My Credential** in the displayed drop-down list.

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

Figure 7-1 Viewing project IDs