

LakeFormation

API Reference

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1 Before You Start

1.1 Overview

Welcome to LakeFormation. You can centrally manage the lifecycle of metadata in the data lake using the LakeFormation console and APIs, eliminating the need to use the SQL engine of big data clusters.

This document describes how to use application programming interfaces (APIs) to perform operations on LakeFormation, such as creating and deleting LakeFormation instances, metadata databases, and metadata tables.

For details about all supported operations, see [API Overview](#).

1.2 Calling Methods

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

In addition, LakeFormation offers software development kits (SDKs) for multiple programming languages. For details about how to use SDKs, see [API Explorer](#).

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](#).

You need to select an endpoint based on your service requirements.

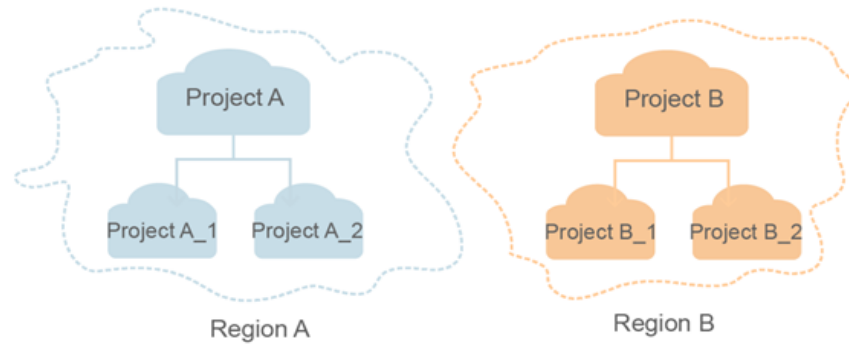
1.4 Constraints and Limitations

- The number of resources that you can create is determined by your quota. For details, see [Quotas](#).
- For more constraints, see API description.

1.5 Basic Concepts

- **Account**
A 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 domain should not be used directly to perform routine management. For security purposes, create users and grant them permissions for routine management.
- **User**
A user is created by using an account in IAM to use cloud services. Each user has its own identity credentials (password and access keys).
You can view the account ID and user ID in [Obtaining a Project ID](#). The domain name, username, and password will be required for API authentication.
- **Region**
Regions are divided from the dimensions of geographical location and network latency. Public services, such as elastic computing, block storage, object storage, VPC network, elastic public IP address, and image, are shared in the same region. Regions are classified as universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides services of the same type only or for specific tenants.
- **AZ**
An availability zone (AZ) comprises one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Compute, 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 support cross-AZ high-availability systems.
- **Project**
A project corresponds to a region. Projects group and isolate resources (including compute, storage, and network resources) across physical regions. Users can be granted permissions in a default project to access all resources in the region associated with the project. For more refined access control, create subprojects under a project and **Buy** resources in the subprojects. Users can then be assigned permissions to access only specific resources in the subprojects.

Figure 1-1 Project isolating model



You can also view the project ID in [Obtaining a Project ID](#).

- Enterprise project
An enterprise project groups and manages enterprise resources in a logically isolated manner. It contains resources in multiple regions, and allows resources to be added or removed.

2 API Overview

Operation	API Type	Description
Instance management	Managing Instances	Instance management APIs, which allow you to create, delete, edit, and query LakeFormation instances. With these APIs, you can create instances and obtain information about the created instances.
	Managing Agreement Authorization	Agreement authorization management APIs, which allow you to authorize agreements, and query system and authorized agreements. Before using LakeFormation, you need to understand and accept related agreements and authorization.
	Managing OBS Buckets	OBS bucket management APIs, which allow you to query OBS buckets and objects. With these APIs, you can obtain the OBS information needed for configuring the storage path of metadata.
	Managing Service Accesses	Service access management APIs, which allow you to obtain access information and apply for access. Once the service is activated and the instances are set up, LakeFormation can offer metadata management features to other services. However, these services need to connect to LakeFormation through this API before they can access the metadata management features that LakeFormation provides.

Operation	API Type	Description
	Job Management	Task management APIs, including the APIs that create tasks and list task information. With these APIs, you can create and manage tasks.
Metadata management	Managing functions	Function management APIs, which allow you to create and delete functions. With these APIs, you can create functions and obtain information about the created functions.
	Managing Catalogs	Catalog management APIs. With these APIs, you can create and delete catalogs.
	Managing Databases	Database management APIs. With these APIs, you can create and delete databases.
	Managing Tables	Table management APIs. With these APIs, you can create and delete tables.
	Collecting Table Statistics	Table statistics APIs. With these APIs, you can obtain the column statistics of a table and delete the statistics of a specified column.
	Managing Partitions	Partition management APIs. With these APIs, you can create and delete partitions.
	Collecting Partition Statistics	Partition statistics APIs. With these APIs, you can obtain and delete partition column statistics.
	Managing Authorizations	Authorization management APIs. With these APIs, you can query authorization policies and perform batch authorization.
	Managing User Groups	User group management APIs. With these APIs, you can obtain information such as user groups of a tenant.

Managing Instances

Table 2-1 Instance management APIs

API	Description
Creating an Instance	Allows you to create a LakeFormation instance.
Querying the Instance List	Allows you to query a list of instances created by a user.
Deleting an Instance	Allows you to delete a LakeFormation instance by ID.
Querying Instance Details	Allows you to query the details of LakeFormation instances by ID.
Updating an Instance	Allows you to modify LakeFormation instance information.

Managing Agreement Authorization

Table 2-2 Agreement authorization APIs

API	Description
Registering a Tenant Agreement	Allows you to authorize and delegate users.
Querying whether a Tenant Has Registered an Agreement	Allows you to query the agreement and agency information of a tenant.
Querying the Current System Agreement	Allows you to query the current system agreement.

Managing OBS Buckets

Table 2-3 OBS bucket management APIs

API	Description
Querying the OBS Buckets	Allows you to query the list of OBS buckets.
Querying the OBS Bucket Objects	Allows you to query the object list of an OBS bucket.

Managing Service Accesses

Table 2-4 Service access management APIs

API	Description
Obtaining the Service Access Information	Allows you to obtain the access information about the API Gateway instance based on the LakeFormation instance.
Applying for Service Access	Allows you to apply for the VPCEP connection to access API Gateway.

Job Management

Table 2-5 Job management APIs

API	Description
Creating a Job	Allows you to create jobs.
Listing Tasks by Condition on Different Page	Jobs information can be listed on multiple pages based on search criteria. Fuzzy search by job name and filtering by latest execution status are supported.
Deleting a Job	Allows you to delete a job. A submitted or running job can be deleted only after it is stopped.
Obtaining Job Details	Allows you to get job details.
Modifying a Job	Allows you to modify job information.
Starting a Job	Allows you to run the job.
Stopping a Job	Allows you to stop your job.
Checking the Logs of a Job	Allows you to view the job log specified by the job ID.

Managing functions

Table 2-6 Function Management APIs

API	Description
Listing All Functions in a Catalog	Allows you to obtain all functions in a catalog.
Modifying Function Attributes	Allows you to modify the attributes of a function.

API	Description
Creating a Function	Allows you to create a function.
Querying a Function	Allows you to query function information by function name.
Deleting a Function	Allows you to delete a function.
Listing Functions	Allows you to list functions.

Managing Catalogs

Table 2-7 Catalog management APIs

API	Description
Listing Catalogs	Allows you to query catalog details based on the wildcard of the catalog name.
Obtaining Catalog Information	Allows you to obtain catalog information.
Creating a Catalog	Allows you to create a catalog. A default database is created in the catalog. The database name is default .
Modifying a Catalog	Allows you to modify catalog information.
Deleting a Catalog	Allows you to delete empty catalog objects. Before the deletion, ensure that the catalog contains only the default database and the default database does not contain table objects. Otherwise, the deletion fails.

Managing Databases

Table 2-8 Database management APIs

API	Description
Listing Database Information	Allows you to query database information.
Creating a Database	Allows you to create a database.
Obtaining a Database	Allows you to obtain the database names.
Modifying Database Attributes	Allows you to modify database attributes.

API	Description
Deleting a Database	<p>Allows you to delete a database. The default database of the catalog cannot be deleted.</p> <p>cascade: If this parameter is set to true, tables in the database are deleted. If it is set to false, only empty databases can be deleted.</p> <p>delete_data: If this parameter is set to true, table data is moved to the recycle bin. If it is set to false, table data is not deleted.</p> <p>After a database is deleted, transaction tables in the database cannot be restored.</p>

Managing Tables

Table 2-9 Table Management APIs

API	Description
Obtaining Table Description Page by Page	Allows you to find the table that meets the conditions and returns the table description based on the database wildcard and table wildcard.
Tenant token.	Allows you to query the table information list in the database based on the table name.
Listing Tables on Different Pages by Condition	<p>Returns the metadata of the table that meets the query conditions in the database. Transaction operations are not supported.</p> <p>If the table name wildcard or table type is not empty, the table name and type are preferentially used for filtering.</p> <p>If the table name wildcard or table type is empty, filter data based on attributes.</p>
Creating a Table	Allows you to create a table.
Obtaining Table Information	Allows you to obtain table information.
Modifying Table Information	Allows you to modify table information.
Deleting a Table	Allows you to delete a table and its partitions.

Collecting Table Statistics

Table 2-10 Table statistics APIs

API	Description
Obtaining Column Statistics	Allows you to obtain the column statistics of a table.
Updating Table Column Statistics	Allows you to update the column statistics of a table.
Deleting Column Statistics from a Table	Allows you to delete statistics about a specified column in a table.

Managing Partitions

Table 2-11 Partition Management APIs

API	Description
Listing Partitions	<p>Allows you to traverse the partition list in a table. For a transaction table, the partition list can be traversed based on a specific table version.</p> <p>If there are filter criteria, the system filters data based on the filter criteria first.</p> <p>If no filter criterion is available, the system filters data based on the partition values (if any).</p> <p>All partitions in a table will be returned if no filter criterion or partition value is available.</p>
Modifying Partitions in Batches	Allows you to modify partition information. All partitions must exist. If a partition does not exist, a failure message is returned.
Adding Partitions in Batches	Allows you to add partition information in batches.
Deleting Partitions in Batches	<p>Allows you to delete partition information.</p> <p>If data deletion is enabled for a non-transaction table, data in the partition data path is immediately deleted.</p> <p>If data deletion is enabled for a transaction table, the data is retained in the original path but is invisible to other services. The data is deleted after it expires.</p>
Obtaining Partitions in Batches	Allows you to obtain partition information in batches.

API	Description
Listing Partition Values	Allows you to traverse the partition name list. For transaction tables, the partition name list can be traversed based on a specific table version.

Collecting Partition Statistics

Table 2-12 Partition statistics APIs

API	Description
Obtaining Column Statistics in a Partition in Batches	Allows you to obtain partition column statistics in batches.
Setting Partition Statistics in Batches	Allows you to set partition column statistics in batches.
Deleting Column Statistics in a Partition	Allows you to delete partition column statistics.

Managing Authorizations

Table 2-13 Authorization management APIs

API	Description
Granting Permissions in Batches	Allows you to authorize users in batches.
Canceling Batch Authorization	Allows you to cancel authorization in batches.
Querying a Policy	Allows you to query by filter criterion.

Managing User Groups

Table 2-14 User group management APIs

API	Description
Obtaining the User Group of a Tenant	Allows you to obtain tenant user groups.

3 API Calling

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 demonstrate how to call an API. The obtained token can then be used to authenticate the calling of other APIs.

Request URI

The format of a request URI is as follows:

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

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

Table 3-1 Parameters in a URI

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service endpoint. The endpoint varies between services in different regions. Obtain the value of this parameter from Regions and Endpoints .
resource-path	Resource path, that is, API access path. Obtain the value from the URI of the API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens .
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included in front of each query parameter that is in the format of <i>Parameter name=Parameter value</i> . For example, ? limit=10 indicates that a maximum of 10 data records will be queried.

For example, to obtain an IAM token in the **CN-Hong Kong** region, use the endpoint of IAM (**iam.ap-southeast-1.myhuaweicloud.com**) for this region and **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.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
```

 **NOTE**

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

Request Method

HTTP-based request methods specify the type of operations that you are requesting.

Table 3-2 HTTP methods

Method	Description
GET	Requests a server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specific resources, for example, an object.
HEAD	Requests the server resource header.
PATCH	Requests the server to update part of specified resources. If the resource does not exist, the PATCH method may create a resource.

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

Request Header

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

Common request header fields are as follows:

- **Content-Type**: specifies the request body type or format. This field is mandatory and its default value is **application/json**. Other values of this field will be provided for specific APIs if any.

- **X-Auth-Token:** specifies a user token, which is optional. This field is mandatory when token authentication is used. The user token is a response to the API used to [obtain a user token](#). This API is the only one that does not require authentication.

 **NOTE**

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

For more details, see [Authentication Using AK/SK](#).

- **X-Project-ID:** subproject ID. This field is optional and can be used in multi-project scenarios.
- **X-Domain-ID:** account ID.

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.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

Request Body

This part is optional. The body of a request is often sent in a structured format as specified in **Content-Type**. The request body transfers content except the request header. If the request body contains Chinese characters, these characters must be coded in UTF-8.

Request bodies vary with APIs. Some APIs do not require a request body, such as the APIs requested using GET and DELETE methods.

In the case of the API used to [obtain a user token](#), the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace **username**, **domainname**, ********* (login password), and **xxxxxxxxxxxxxxxxxxxx** (project name, for example, **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.ap-southeast-1.myhuaweicloud.com/v3/auth/tokens
Content-Type: application/json
```

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
```

```
    "password": "*****#",
    "domain": {
      "name": "domainname"
    }
  },
  "scope": {
    "project": {
      "id": "xxxxxxxx"
    }
  }
}
```

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. You can use the token to authenticate other API calls.

3.2 Authentication

You can use either of the following authentication methods to call APIs:

- Authentication using tokens: General requests are authenticated using tokens.
- Authentication using AK/SK: Requests are encrypted using access key ID (AK)/secret access key (SK). This authentication method is recommended because it is more secure than token-based authentication.

Authentication Using Tokens

NOTE

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

Ensure that the token is valid when you use it. Using a token that will soon expire may cause API calling failures.

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

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

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username", //Username
          "password": "*****", //Password of the username
          "domain": {
            "name": "domainname" //Domain name which the user belongs to
          }
        }
      }
    }
  },
  "scope": {
```

```
"project": {  
  "id": "xxxxxxx" //Resource set ID  
}  
}
```

After a token is obtained, add field **X-Auth-Token** to the request header to specify the token when other APIs are called. For example, if the token is **ABCDEFJ....**, add **X-Auth-Token: ABCDEFJ....** in a request as follows:

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

Authentication Using AK/SK

NOTE

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

This authentication method uses AK/SK to sign requests, and the signature is then added to request headers for authentication.

- **AK:** access key ID. It is a unique identifier used with a secret access key to sign requests cryptographically.
- **SK:** secret access key. It is used together with an AK to sign requests. They can identify request senders and prevent requests from being modified.

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

NOTICE

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

3.3 Response

Status Codes

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 request. For more information, see [Status Codes](#).

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

Response Header

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

Figure 3-1 shows the response header fields for the API used to **obtain a user token**. The **x-subject-token** header field is the desired user token. You can use the token to authenticate other API calls.

Figure 3-1 Response header for obtaining a user token

```

connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token
x-xss-protection → 1; mode=block;

```

Response Body

The body of a response is often returned in structured format 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**. The following describes only part of the request body.

```

{
  "token": {
    "expires_at": "2023-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "aaa", //aaa indicates the region name. Replace it with the actual region name.
            .....

```

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

```

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

```

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

4 API

4.1 Console

4.1.1 Instance Management

4.1.1.1 Creating an Instance

Function

This API is used to create a LakeFormation instance.

URI

POST /v1/{project_id}/instances

Table 4-1 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-2 Request header parameters

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

Table 4-3 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Instance name. Enter 4 to 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
charge_mode	Yes	String	Billing type. postPaid indicates the pay-per-use billing and prePaid indicates the yearly/monthly billing. Enumeration values: <ul style="list-style-type: none"> • postPaid • prePaid
enterprise_project_id	No	String	Enterprise project ID. This parameter is available only when an enterprise project is interconnected. Enter 1 to 64 characters. Only letters, numbers, and hyphens (-) are allowed.
description	No	String	Instance description entered by a user. The value contains a maximum of 255 characters.
shared	Yes	Boolean	The parameter values include false (physical multi-tenancy) and true (logical multi-tenancy). The default value is true .
order_id	No	String	Order ID of a yearly/monthly instance.
specs	No	Array of CreateSpec objects	Specification list.
tags	No	Array of ResourceTag objects	Tag list. Up to 20 tags can be added.
charge_info	No	ChargeInfo object	Billing information. This parameter cannot be left blank when charge_mode is set to prePaid .

Table 4-4 CreateSpec

Parameter	Mandatory	Type	Description
product_id	No	String	Product ID. The system automatically generates a value, for example, OFFI8XXXXXXXXXXXXXXXXXX4 .
spec_code	Yes	String	Specification code. The system automatically generates a value, for example, lakeformation.unit.basic.qps .
stride_num	Yes	Integer	Number of steps. QPS indicates the maximum number of requests per second. The minimum value is 5 and the step is 1 .

Table 4-5 ResourceTag

Parameter	Mandatory	Type	Description
key	Yes	String	Key.
value	No	String	Value.

Table 4-6 ChargeInfo

Parameter	Mandatory	Type	Description
period_type	No	String	Subscription period type. This parameter is valid and mandatory when charge_mode is set to prePaid . The options are MONTH (monthly) and YEAR (yearly). Enumeration values: <ul style="list-style-type: none"> • MONTH • YEAR

Parameter	Mandatory	Type	Description
period_num	No	Integer	Subscription period. This parameter is valid and mandatory only when charge_mode is set to prePaid . If period_type is set to month , the parameter value ranges from 1 to 9 . If period_type is set to year , the parameter value ranges from 1 to 3 . When a floating-point value is transferred, the value is automatically truncated to an integer.
is_auto_renew	No	Boolean	Whether to automatically renew the subscription. This parameter is valid and mandatory when charge_mode is set to prePaid . The payment is automatically made during subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. true : Automatic renewal is enabled. false : Automatic renewal is disabled. The default value is false .
is_auto_pay	No	Boolean	Whether the order will be automatically paid after yearly/monthly DB instances are created. This parameter does not affect the payment mode of automatic renewal. And it is valid and mandatory when charge_mode is set to prePaid . true : The order will be automatically paid. false : The order will be manually paid. The default value is false .

Response Parameters

Status code: 202

Table 4-7 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-8 Response body parameters

Parameter	Type	Description
instance_id	String	LakeFormation instance ID.
name	String	Instance name.
description	String	Description.
enterprise_project_id	String	Enterprise project ID.
shared	Boolean	Logical multi-tenancy or physical multi-tenancy. false indicates physical multi-tenancy and true indicates logical multi-tenancy.
default_instance	Boolean	Default instance or not.
create_time	String	Instance creation timestamp.
update_time	String	Instance update timestamp.

Parameter	Type	Description
status	String	<p>Instance status. RESOURCE_PREPARATION indicates that the instance is being prepared. RUNNING indicates that the instance is running. RESOURCE_RELEASE indicates that the instance is being released. DELETED indicates that the instance has been released, RESOURCE_PREPARATION_FAIL indicates that the instance preparation fails. FROZEN_RELEASABLE indicates that the instance can be restored. FROZEN_UNRELEASABLE indicates that the instance cannot be restored. RECOVERING, DELETING, and SCALING indicates that the instance is being restored, deleted, and scaled, respectively. SCALE_FAIL indicates the scaling of the instance fails.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● RESOURCE_PREPARATION ● RUNNING ● RESOURCE_RELEASE ● DELETED ● RESOURCE_PREPARATION_FAIL ● FROZEN_RELEASABLE ● FROZEN_UNRELEASABLE ● RECOVERING ● DELETING ● SCALING ● SCALE_FAIL
resource_progress	Integer	Resource preparation progress, in percentage. This value is calculated and returned only when the instance is in the resource preparation state.
resource_expected_duration	Integer	Estimated resource preparation duration, in minutes.
scale_progress	Integer	Specification change progress, in percentage. The value is calculated and returned only when the instance is in the specification changing state.
scale_expected_duration	Integer	Estimated specification change duration, in minutes.
in_recycle_bin	Boolean	Whether the target is in the recycle bin.

Parameter	Type	Description
tags	Array of ResourceTag objects	Tags.
specs	Array of CreateSpec objects	Specifications.
charge_mode	String	Billing mode. postPaid indicates pay-per-use billing and prePaid indicates yearly/monthly billing. Enumeration values: <ul style="list-style-type: none"> • prePaid • postPaid

Table 4-9 ResourceTag

Parameter	Type	Description
key	String	Key.
value	String	Value.

Table 4-10 CreateSpec

Parameter	Type	Description
product_id	String	Product ID. The system automatically generates a value, for example, OFFI8XXXXXXXXXXXXXXXXX4 .
spec_code	String	Specification code. The system automatically generates a value, for example, lakeformation.unit.basic.qps .
stride_num	Integer	Number of steps. QPS indicates the maximum number of requests per second. The minimum value is 5 and the step is 1 .

Status code: 400

Table 4-11 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-12 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-13 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

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

```
{
  "name": "lakeformation-instance",
  "charge_mode": "postPaid",
  "shared": "true",
  "description": "",
  "tags": [ {
    "key": "key1"
  } ],
  "enterprise_project_id": "0"
}
```

Example Responses

Status code: 202

Successful submission of an instance creation request.

```
{
  "instance_id" : "2aeb1789-1b04-4bad-92bf-486a399b9a3e",
  "name" : "lakeformation-instance",
  "description" : "",
  "enterprise_project_id" : "0",
  "shared" : false,
  "default_instance" : false,
  "create_time" : "2023-08-03T11:50:02.000+00:00",
  "update_time" : "2023-08-03T11:50:04.000+00:00",
  "status" : "RUNNING",
  "in_recycle_bin" : false,
  "tags" : [],
  "specs" : [ {
    "spec_code" : "lakeformation.unit.basic.metadata",
    "stride_num" : 0
  }, {
    "spec_code" : "lakeformation.unit.basic.apiinvoke",
    "stride_num" : 0
  } ],
  "charge_mode" : "postPaid"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
}
```



```
{  
  "error_msg": "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code": "common.00000408",  
  "error_msg": "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code": "common.00000500",  
  "error_msg": "internal error"  
}
```

Status Codes

Status Code	Description
202	Successful submission of an instance creation request.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.2 Querying the Instance List

Function

This API is used to query a list of instances created by a user.

URI

GET /v1/{project_id}/instances

Table 4-14 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Table 4-15 Query Parameters

Parameter	Mandatory	Type	Description
in_recycle_bin	Yes	Boolean	Whether to query instances in the recycle bin. The default value is false .

Parameter	Mandatory	Type	Description
status	No	String	<p>Instance status.</p> <p>RESOURCE_PREPARATION indicates that the instance is being prepared. RUNNING indicates that the instance is running. RESOURCE_RELEASE indicates that the instance is being released. DELETED indicates that the instance has been released, RESOURCE_PREPARATION_FAIL indicates that the instance preparation fails. FROZEN_RELEASABLE indicates that the instance can be restored. FROZEN_UNRELEASABLE indicates that the instance cannot be restored. RECOVERING, DELETING, and SCALING indicates that the instance is being restored, deleted, and scaled, respectively. SCALE_FAIL indicates the scaling of the instance fails.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● RESOURCE_PREPARATION ● RUNNING ● RESOURCE_RELEASE ● DELETED ● RESOURCE_PREPARATION_FAIL ● FROZEN_RELEASABLE ● FROZEN_UNRELEASABLE ● RECOVERING ● DELETING ● SCALING ● SCALE_FAIL
offset	Yes	Integer	<p>Offset of the page-based query. The default value is 0. The value ranges from 0 to 1000.</p>

Parameter	Mandatory	Type	Description
limit	Yes	Integer	Number of records displayed on one page. The default value is 10 . The value ranges from 1 to 1000 .
name	No	String	This API is used to search information using LakeFormation instance name. The value should contain 4 to 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
enterprise_project_id	Yes	String	Enterprise project ID entered by users. The value should contain 1 to 36 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed. The default value is all_granted_eps .
tags	No	String	Tag condition list.

Request Parameters

Table 4-16 Request header parameters

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

Response Parameters

Status code: 200

Table 4-17 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-18 Response body parameters

Parameter	Type	Description
instances	Array of LakeFormationInstance objects	LakeFormation instance list.
total	Integer	Total number of LakeFormation instances.

Table 4-19 LakeFormationInstance

Parameter	Type	Description
instance_id	String	LakeFormation instance ID.
name	String	Instance name.
description	String	Description.
enterprise_project_id	String	Enterprise project ID.
shared	Boolean	Logical multi-tenancy or physical multi-tenancy. false indicates physical multi-tenancy and true indicates logical multi-tenancy.
default_instance	Boolean	Default instance or not.
create_time	String	Instance creation timestamp.
update_time	String	Instance update timestamp.

Parameter	Type	Description
status	String	Instance status. RESOURCE_PREPARATION indicates that the instance is being prepared. RUNNING indicates that the instance is running. RESOURCE_RELEASE indicates that the instance is being released. DELETED indicates that the instance has been released, RESOURCE_PREPARATION_FAIL indicates that the instance preparation fails. FROZEN_RELEASABLE indicates that the instance can be restored. FROZEN_UNRELEASABLE indicates that the instance cannot be restored. RECOVERING , DELETING , and SCALING indicates that the instance is being restored, deleted, and scaled, respectively. SCALE_FAIL indicates the scaling of the instance fails. Enumeration values: <ul style="list-style-type: none"> • RESOURCE_PREPARATION • RUNNING • RESOURCE_RELEASE • DELETED • RESOURCE_PREPARATION_FAIL • FROZEN_RELEASABLE • FROZEN_UNRELEASABLE • RECOVERING • DELETING • SCALING • SCALE_FAIL
in_recycle_bin	Boolean	Whether the target is in the recycle bin.
tags	Array of ResourceTag objects	Tags.

Table 4-20 ResourceTag

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400

Table 4-21 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-22 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-23 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances?in_recycle_bin=false

Example Responses

Status code: 200

LakeFormation instance list.

```
{
  "instances": [ {
    "instance_id": "9c368079-6401-4886-991d-0b1bb11e3702",
    "name": "LakeFormation_instance",
    "description": "string",
    "enterprise_project_id": "0",
    "shared": false,
    "create_time": "2022-11-08T04:08:39.000+00:00",
    "update_time": "2022-11-08T04:08:40.000+00:00",
    "status": "RUNNING",
    "in_recycle_bin": false
  }, {
    "instance_id": "dec259f5-c7a8-413e-91b3-67d66c512680",
    "name": "LakeFormation_instance_test",
    "description": "string",
    "enterprise_project_id": "0",
    "shared": false,
    "create_time": "2022-11-08T04:07:42.000+00:00",
    "update_time": "2022-11-08T04:07:42.000+00:00",
    "status": "RUNNING",
    "in_recycle_bin": false
  } ],
  "total": 2
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```


Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	LakeFormation instance list.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.1.1.3 Deleting an Instance****Function**

This API is used to delete a LakeFormation instance by ID.

URI

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

Table 4-24 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-25 Query Parameters

Parameter	Mandatory	Type	Description
to_recycle_bin	Yes	Boolean	Whether to move deleted data to the recycle bin. The default value is false .

Request Parameters

Table 4-26 Request header parameters

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

Response Parameters

Status code: 202

Table 4-27 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-28 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-29 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-30 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}?to_recycle_bin=true
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
202	Successful deletion.
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.4 Querying Instance Details

Function

This API is used to query the details of LakeFormation instances by ID.

URI

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

Table 4-31 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-32 Request header parameters

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

Response Parameters

Status code: 200

Table 4-33 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-34 Response body parameters

Parameter	Type	Description
instance_id	String	LakeFormation instance ID.
name	String	Instance name.
description	String	Description.
enterprise_project_id	String	Enterprise project ID.
shared	Boolean	Logical multi-tenancy or physical multi-tenancy. false indicates physical multi-tenancy and true indicates logical multi-tenancy.
default_instance	Boolean	Default instance or not.
create_time	String	Instance creation timestamp.
update_time	String	Instance update timestamp.

Parameter	Type	Description
status	String	<p>Instance status. RESOURCE_PREPARATION indicates that the instance is being prepared. RUNNING indicates that the instance is running. RESOURCE_RELEASE indicates that the instance is being released. DELETED indicates that the instance has been released, RESOURCE_PREPARATION_FAIL indicates that the instance preparation fails. FROZEN_RELEASABLE indicates that the instance can be restored. FROZEN_UNRELEASABLE indicates that the instance cannot be restored. RECOVERING, DELETING, and SCALING indicates that the instance is being restored, deleted, and scaled, respectively. SCALE_FAIL indicates the scaling of the instance fails.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● RESOURCE_PREPARATION ● RUNNING ● RESOURCE_RELEASE ● DELETED ● RESOURCE_PREPARATION_FAIL ● FROZEN_RELEASABLE ● FROZEN_UNRELEASABLE ● RECOVERING ● DELETING ● SCALING ● SCALE_FAIL
resource_progress	Integer	Resource preparation progress, in percentage. This value is calculated and returned only when the instance is in the resource preparation state.
resource_expected_duration	Integer	Estimated resource preparation duration, in minutes.
scale_progress	Integer	Specification change progress, in percentage. The value is calculated and returned only when the instance is in the specification changing state.
scale_expected_duration	Integer	Estimated specification change duration, in minutes.
in_recycle_bin	Boolean	Whether the target is in the recycle bin.

Parameter	Type	Description
tags	Array of ResourceTag objects	Tags.
specs	Array of CreateSpec objects	Specifications.
charge_mode	String	Billing mode. postPaid indicates pay-per-use billing and prePaid indicates yearly/monthly billing. Enumeration values: <ul style="list-style-type: none"> • prePaid • postPaid

Table 4-35 ResourceTag

Parameter	Type	Description
key	String	Key.
value	String	Value.

Table 4-36 CreateSpec

Parameter	Type	Description
product_id	String	Product ID. The system automatically generates a value, for example, OFFI8XXXXXXXXXXXXXXXXX4 .
spec_code	String	Specification code. The system automatically generates a value, for example, lakeformation.unit.basic.qps .
stride_num	Integer	Number of steps. QPS indicates the maximum number of requests per second. The minimum value is 5 and the step is 1 .

Status code: 400

Table 4-37 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-38 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-39 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

LakeFormation instance details.

```
{
  "instance_id" : "01049549-82cd-4b2b-9733-ddb94350c125",
  "name" : "LakeFormation_instance",
```

```
"description" : "string",
"enterprise_project_id" : 0,
"shared" : false,
"create_time" : "2022-10-08T12:49:19.000+00:00",
"update_time" : "2022-10-08T12:49:19.000+00:00",
"status" : "running",
"in_recycle_bin" : false,
"specs" : [ {
  "spec_code" : "hws.resource.type.lakeformation.qps",
  "stride_num" : 1
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	LakeFormation instance details.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.5 Updating an Instance

Function

This API is used to modify LakeFormation instance information.

URI

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

Table 4-40 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-41 Request header parameters

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

Table 4-42 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Instance name. The value should contain 4 to 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	No	String	Instance description entered by a user. The value contains a maximum of 255 characters.

Response Parameters

Status code: 200

Table 4-43 Response body parameters

Parameter	Type	Description
instance_id	String	LakeFormation instance ID.
name	String	Instance name.
description	String	Description.
enterprise_project_id	String	Enterprise project ID.

Parameter	Type	Description
shared	Boolean	Logical multi-tenancy or physical multi-tenancy. false indicates physical multi-tenancy and true indicates logical multi-tenancy.
default_instance	Boolean	Default instance or not.
create_time	String	Instance creation timestamp.
update_time	String	Instance update timestamp.
status	String	Instance status. RESOURCE_PREPARATION indicates that the instance is being prepared. RUNNING indicates that the instance is running. RESOURCE_RELEASE indicates that the instance is being released. DELETED indicates that the instance has been released, RESOURCE_PREPARATION_FAIL indicates that the instance preparation fails. FROZEN_RELEASABLE indicates that the instance can be restored. FROZEN_UNRELEASABLE indicates that the instance cannot be restored. RECOVERING , DELETING , and SCALING indicates that the instance is being restored, deleted, and scaled, respectively. SCALE_FAIL indicates the scaling of the instance fails. Enumeration values: <ul style="list-style-type: none"> ● RESOURCE_PREPARATION ● RUNNING ● RESOURCE_RELEASE ● DELETED ● RESOURCE_PREPARATION_FAIL ● FROZEN_RELEASABLE ● FROZEN_UNRELEASABLE ● RECOVERING ● DELETING ● SCALING ● SCALE_FAIL
in_recycle_bin	Boolean	Whether the target is in the recycle bin.
tags	Array of ResourceTag objects	Tags.

Table 4-44 ResourceTag

Parameter	Type	Description
key	String	Key.
value	String	Value.

Status code: 400

Table 4-45 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-46 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-47 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}
{
  "name" : "LakeFormation_instance_update",
  "description" : "description"
}
```

Example Responses

Status code: 200

Instance information.

```
{
  "instance_id" : "01049549-82cd-4b2b-9733-ddb94350c125",
  "name" : "LakeFormation_instance",
  "description" : "string",
  "enterprise_project_id" : 0,
  "shared" : false,
  "create_time" : "2022-10-08T12:49:19.000+00:00",
  "update_time" : "2022-10-08T12:49:19.000+00:00",
  "status" : "running",
  "in_recycle_bin" : false
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
}
```

```
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Instance information.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.6 Setting a Default Instance

Function

This API is used to set a non-default instance as a default one.

URI

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

Table 4-48 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-49 Request header parameters

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

Response Parameters

Status code: 200

Table 4-50 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-51 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-52 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-53 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/default
{
  "name" : "LakeFormation_instance_update_default",
  "description" : "description"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	This API is used to set an instance as a default one.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.7 Modifying Instance Specifications

Function

This API is used to modify LakeFormation instance specifications.

URI

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

Table 4-54 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-55 Request header parameters

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

Table 4-56 Request body parameters

Parameter	Mandatory	Type	Description
specs	No	Array of CreateSpec objects	Specification list.
charge_mode	No	String	Billing type. postPaid indicates the pay-per-use billing and prePaid indicates the yearly/monthly billing. Enumeration values: <ul style="list-style-type: none"> • postPaid • prePaid
change_classification	No	String	Change type. The value can be UPGRADE (upgrade) or RENEW_CHANGE (renewal change). RENEW_CHANGE takes effect only for yearly/monthly instances. The default value is SCALE_UP for pay-per-use instances. Enumeration values: <ul style="list-style-type: none"> • UPGRADE • RENEW_CHANGE
charge_info	No	ChargeInfo object	Billing information. This parameter cannot be left blank when charge_mode is set to prePaid .

Table 4-57 CreateSpec

Parameter	Mandatory	Type	Description
product_id	No	String	Product ID. The system automatically generates a value, for example, OFFI8XXXXXXXXXXXXXXXXXX4 .
spec_code	Yes	String	Specification code. The system automatically generates a value, for example, lakeformation.unit.basic.qps .
stride_num	Yes	Integer	Number of steps. QPS indicates the maximum number of requests per second. The minimum value is 5 and the step is 1 .

Table 4-58 ChargeInfo

Parameter	Mandatory	Type	Description
period_type	No	String	Subscription period type. This parameter is valid and mandatory when charge_mode is set to prePaid . The options are MONTH (monthly) and YEAR (yearly). Enumeration values: <ul style="list-style-type: none"> • MONTH • YEAR
period_num	No	Integer	Subscription period. This parameter is valid and mandatory only when charge_mode is set to prePaid . If period_type is set to month , the parameter value ranges from 1 to 9 . If period_type is set to year , the parameter value ranges from 1 to 3 . When a floating-point value is transferred, the value is automatically truncated to an integer.

Parameter	Mandatory	Type	Description
is_auto_renew	No	Boolean	Whether to automatically renew the subscription. This parameter is valid and mandatory when charge_mode is set to prePaid . The payment is automatically made during subscription renewal. The default renewal period is one month for monthly subscription and one year for yearly subscription. The renewal period can be configured as needed. true : Automatic renewal is enabled. false : Automatic renewal is disabled. The default value is false .
is_auto_pay	No	Boolean	Whether the order will be automatically paid after yearly/monthly DB instances are created. This parameter does not affect the payment mode of automatic renewal. And it is valid and mandatory when charge_mode is set to prePaid . true : The order will be automatically paid. false : The order will be manually paid. The default value is false .

Response Parameters

Status code: 200

Table 4-59 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-60 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-61 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-62 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/scale
{
  "specs": [ {
    "spec_code": "hws.resource.type.lakeformation.qps",
    "stride_num": 1
  } ]
}
```


Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Instance specification changed.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.1.8 Restoring an Instance

Function

This API is used to restore a LakeFormation instance from the recycle bin.

URI

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

Table 4-63 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-64 Request header parameters

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

Response Parameters

Status code: 200

Table 4-65 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-66 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-67 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-68 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
```

```
"error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful recovery.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2 Job Management

4.1.2.1 Creating a Job

Function

This API is used to create jobs.

URI

POST /v1/{project_id}/instances/{instance_id}/lf-jobs

Table 4-69 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-70 Request header parameters

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

Table 4-71 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Job name. The value can contain 4 to 255 characters. Only letters, digits, and underscores (_) are allowed.
description	No	String	Description. Enter 0 to 4000 characters to describe the created job.
type	Yes	String	METADATA_MIGRATION: metadata migration PERMISSION_MIGRATION data permission migration METADATA_DISCOVERY metadata discovery Enumeration values: <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY

Parameter	Mandatory	Type	Description
parameter	Yes	JobParameter object	Job parameter, which is determined by the system based on the migration job type.

Table 4-72 JobParameter

Parameter	Mandatory	Type	Description
metadata_migration_parameter	No	MetaDataMigrationParameter object	Metadata migration.
permission_migration_parameter	No	PermissionMigrationParameter object	Permission migration parameters.
metadata_discovery_parameter	No	MetaDataDiscoveryParameter object	Metadata discovery parameters.

Table 4-73 MetaDataMigrationParameter

Parameter	Mandatory	Type	Description
datasource_type	Yes	String	<p>ALIYUN_DLF DLF</p> <p>MRS_RDS_FOR_MYSQL: MRS RDS (for MySQL)</p> <p>OPEN_FOR_MYSQL: Open source HiveMetastore (for MySQL)</p> <p>MRS_RDS_FOR_PG: MRS RDS (for PostgreSQL)</p> <p>MRS_LOCAL_GAUSSDB: MRS local database (GaussDB)</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALIYUN_DLF • MRS_RDS_FOR_MYSQL • OPEN_FOR_MYSQL • MRS_RDS_FOR_PG • MRS_LOCAL_GAUSSDB
datasource_parameter	Yes	DataSourceParameter object	Data source parameter.
source_catalog	Yes	String	Source catalog, which is the catalog to be migrated out.

Parameter	Mandatory	Type	Description
target_catalog	Yes	String	Target catalog, which stores the migrated metadata.
conflict_strategy	Yes	String	Conflict resolution policy. UPSERT indicates that only existing metadata is created and updated, but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPSERT
log_location	Yes	String	Data storage path, which is selected by users.
sync_objects	Yes	Array of strings	Migration metadata object array. The values include DATABASE , FUNCTION , TABLE , and PARTITION . Enumeration values: <ul style="list-style-type: none"> • DATABASE • FUNCTION • TABLE • PARTITION
default_owner	No	String	Default user information, which is determined by users.
locations	Yes	Array of LocationReplacementRule objects	Path replacement table, which is generated after key-value pairs are determined by users. A maximum of 20 records are supported.
instance_id	Yes	String	Instance ID.
ignore_obs_checked	No	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
network_type	No	String	Migration network type, which can be EIP or VPC_PEERING . Enumeration values: <ul style="list-style-type: none"> • EIP • VPC_PEERING
accepted_vpc_id	No	String	ID of the VPC where the peer RDS is located.

Table 4-74 DataSourceParameter

Parameter	Mandatory	Type	Description
jdbc_url	No	String	JDBC URL, for example, jdbc:protocol://host:port/db_name .
username	No	String	User name. The value can contain only letters and digits and cannot exceed 255 characters.
password	No	String	Password. The value can be transferred only when a job is created or updated. If the value is empty, there is no password or the password does not need to be updated. The password cannot be exposed during query and listing.
endpoint	No	String	Endpoint URL, for example, xxx**.com** .
access_key	No	String	Access key. The value can be transferred only when a job is created or updated. If the value is empty, no key is available or the key does not need to be updated. The key cannot be exposed during query and listing.
secret_key	No	String	Secret key. The value can be transferred only when a job is created or updated. If the value is empty, there is no key or the key does not need to be updated. The key cannot be exposed during query and listing.
subnet_ip	No	String	Subnet IP address of RDS.

Table 4-75 LocationReplaceRule

Parameter	Mandatory	Type	Description
key	Yes	String	Key (source path).
value	Yes	String	Value (target path).

Table 4-76 PermissionMigrationParameter

Parameter	Mandatory	Type	Description
location	Yes	String	OBS file path for obtaining permission migration.
file_name	No	String	Permission JSON file. The file name cannot contain special characters such as <, >, ;, ", /, , ?, *.
log_location	Yes	String	Data storage path, which is selected by users.
policy_type	Yes	String	Permission type. The values are DLF , RANGER , and LAKEFORMATION . Enumeration values: <ul style="list-style-type: none"> • DLF • RANGER • LAKEFORMATION
catalog_id	No	String	The catalog_id field needs to be transferred for DLF permission policy conversion.
instance_id	Yes	String	Instance ID.
ranger_permission_migration_principal_relas	No	RangerPermissionMigrationPrincipalRelas object	Authorization entity conversion relationship of Ranger.

Table 4-77 RangerPermissionMigrationPrincipalRelas

Parameter	Mandatory	Type	Description
user_to	No	String	User conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
user_prefix	No	String	Prefix of the object name after user conversion

Parameter	Mandatory	Type	Description
user_suffix	No	String	Suffix of the object name after user conversion.
group_to	No	String	Group conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
group_prefix	No	String	Prefix of the object name after group conversion.
group_suffix	No	String	Suffix of the object name after group conversion.
role_to	No	String	Role conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
role_prefix	No	String	Prefix of the object name after role conversion.
role_suffix	No	String	Suffix of the object name after role conversion.

Table 4-78 MetaDataDiscoveryParameter

Parameter	Mandatory	Type	Description
data_location	Yes	String	Data storage path, which is selected by users.
target_catalog	Yes	String	Target catalog, which saves discovered metadata.
target_database	Yes	String	Target database, which saves discovered metadata.

Parameter	Mandatory	Type	Description
conflict_strategy	Yes	String	Conflict resolution policy. UPDATE indicates that existing metadata is updated but not deleted. INSERT indicates that metadata is created but not updated or deleted. UPSERT indicates that existing metadata is created and updated but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPDATE • INSERT • UPSERT
file_discovery_type	Yes	String	File discovery type. PARQUET : a columnar storage format that is built on top of the Hadoop Distributed File System (HDFS). CSV : a comma-separated values file. JSON : stands for Java Script Object Notation. ORC : stands for Optimized Row Columnar. TEXT : stands for text. AVRO : a row-oriented remote procedure call and data serialization framework. ALL : means auto-detected the file types. Enumeration values: <ul style="list-style-type: none"> • PARQUET • CSV • JSON • ORC • AVRO • ALL
separator	No	String	File separator. Common separators include commas (,) and semicolons (;).

Parameter	Mandatory	Type	Description
quote	No	String	File quotation character. Common quotation characters include single quotation marks, double quotation marks, and \u0000. Enumeration values: <ul style="list-style-type: none"> • DOUBLE_QUOTE • SINGLE_QUOTE • NULL_QUOTE
escape	No	String	Escape character of a file. The common escape characters are \.
header	No	Boolean	Indicates whether the first line of the file is considered as a header. The value true indicates that the first line is a header, and the value false indicates that the first line is not a header. The default value is false.
file_sample_rate	No	Integer	File sampling rate. The value ranges from 0 to 100 . 100 indicates 100% full scanning. 0 indicates that only one file in each folder is scanned.
table_depth	No	Integer	Table depth. Assume that path obs://a/b/c/d/e=1/f=99 exists and the data storage path is obs://a/b . Group level 2 indicates that d is used as the boundary. d is the table name. e=1 and f=99 indicate that table d is a partitioned table. The partition keys are e and f and the partition values are 1 and 99 .
log_location	Yes	String	Data storage path, which is selected by users.
default_owner	No	String	This parameter contains the information of the user who created the task, by default.
principals	No	Array of Principal objects	Entity information.

Parameter	Mandatory	Type	Description
give_write	No	Boolean	Whether to grant the write permission. The options are true (yes) and false (no). The default value is false . The authorization entity gets the read and write permissions if the write permission is granted.
instance_id	Yes	String	Instance ID.
rediscovery_policy	No	String	Enumeration values:Rediscovery policy. The options are FULL_DISCOVERY (full discovery) and INCREMENTAL_DISCOVERY (incremental discovery). The default value is FULL_DISCOVERY. <ul style="list-style-type: none"> ● FULL_DISCOVERY ● INCREMENTAL_DISCOVERY
execute_strategy	No	String	Metadata discovery execution mode. The options are MANNUAL (manual) and SCHEDULE (scheduled). The default value is MANNUAL. <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MANNUAL ● SCHEDULE
execute_frequency	No	String	Execution Frequency: The options are MONTHLY (monthly), WEEKLY (weekly), DAILY (daily), and HOURLY (hourly). <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MONTHLY ● WEEKLY ● DAILY ● HOURLY

Parameter	Mandatory	Type	Description
execute_day	No	String	Indicates the date and time when the metadata discovery task is executed. When execute_frequency is set to MONLY, this parameter indicates the date when the task is executed every month. The value ranges from 1 to 31. If the specified date does not exist in the current month, the task is not executed. If execute_frequency is set to MONLY and execute_day is set to 30, the metadata discovery task will not be triggered in February. If execute_frequency is set to WEEKLY, execute_date indicates the day of a week. The value ranges from 1 to 7. If execute_frequency is set to DAILY or HOURLY, set this parameter to *, indicating that the scheduled task is executed every day.
execute_hour	No	String	Hour when the metadata discovery schedule is executed. When execute_frequency is set to MONLY, WEEKLY, or DAILY, this parameter indicates the execution time of the selected day. The value ranges from 0 to 23. If execute_frequency is set to HOURLY, the value of this parameter is *, indicating that the task is triggered every hour.
execute_minute	No	String	Specifies the minute when the metadata discovery task is executed. The value ranges from 0 to 59, indicating that the task is executed at the specified minute.

Table 4-79 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : LDAP ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 201

Table 4-80 Response body parameters

Parameter	Type	Description
id	String	Job ID, which is automatically generated when a job is created. 03141229-84cd-4b1b-9733-dd124320c125 is an example.
name	String	Job name. The value can contain 4 to 255 characters. Only letters, digits, and underscores (_) are allowed.

Parameter	Type	Description
description	String	Description written when a user creates a job.
type	String	<p>METADATA_MIGRATION: metadata migration PERMISSION_MIGRATION data permission migration METADATA_DISCOVERY metadata discovery</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY
parameter	JobParameter object	Job parameters.
create_time	String	Job creation timestamp, which is generated based on the job creation time.
start_time	String	Execution timestamp of the last job, which is generated based on the last job execution time.
status	String	<p>Status.</p> <ul style="list-style-type: none"> • CREATED: The job is created. • SUBMITTED: The job is submitted. • RUNNING: The job is being executed. • SUCCESS: The job has been executed. • FAILED: The job failed. • STOPPED: The job has been stopped. <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATED • SUBMITTED • RUNNING • SUCCESS • FAILED • STOPPED

Table 4-81 JobParameter

Parameter	Type	Description
metadata_migration_parameter	MetaDataMigrationParameter object	Metadata migration.

Parameter	Type	Description
permission_migration_parameter	PermissionMigrationParameter object	Permission migration parameters.
metadata_discovery_parameter	MetaDataDiscoveryParameter object	Metadata discovery parameters.

Table 4-82 MetaDataMigrationParameter

Parameter	Type	Description
datasource_type	String	ALIYUN_DLF DLF MRS_RDS_FOR_MYSQL : MRS RDS (for MySQL) OPEN_FOR_MYSQL : Open source HiveMetastore (for MySQL) MRS_RDS_FOR_PG : MRS RDS (for PostgreSQL) MRS_LOCAL_GAUSSDB : MRS local database (GaussDB) Enumeration values: <ul style="list-style-type: none"> • ALIYUN_DLF • MRS_RDS_FOR_MYSQL • OPEN_FOR_MYSQL • MRS_RDS_FOR_PG • MRS_LOCAL_GAUSSDB
datasource_parameter	DataSourceParameter object	Data source parameter.
source_catalog	String	Source catalog, which is the catalog to be migrated out.
target_catalog	String	Target catalog, which stores the migrated metadata.
conflict_strategy	String	Conflict resolution policy. UPSERT indicates that only existing metadata is created and updated, but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPSERT
log_location	String	Data storage path, which is selected by users.

Parameter	Type	Description
sync_objects	Array of strings	Migration metadata object array. The values include DATABASE , FUNCTION , TABLE , and PARTITION . Enumeration values: <ul style="list-style-type: none"> • DATABASE • FUNCTION • TABLE • PARTITION
default_owner	String	Default user information, which is determined by users.
locations	Array of LocationReplacementRule objects	Path replacement table, which is generated after key-value pairs are determined by users. A maximum of 20 records are supported.
instance_id	String	Instance ID.
ignore_obs_checked	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
network_type	String	Migration network type, which can be EIP or VPC_PEERING . Enumeration values: <ul style="list-style-type: none"> • EIP • VPC_PEERING
accepted_vpc_id	String	ID of the VPC where the peer RDS is located.

Table 4-83 DataSourceParameter

Parameter	Type	Description
jdbc_url	String	JDBC URL, for example, jdbc:protocol://host:port/db_name .
username	String	User name. The value can contain only letters and digits and cannot exceed 255 characters.
password	String	Password. The value can be transferred only when a job is created or updated. If the value is empty, there is no password or the password does not need to be updated. The password cannot be exposed during query and listing.
endpoint	String	Endpoint URL, for example, xxx**.com** .

Parameter	Type	Description
access_key	String	Access key. The value can be transferred only when a job is created or updated. If the value is empty, no key is available or the key does not need to be updated. The key cannot be exposed during query and listing.
secret_key	String	Secret key. The value can be transferred only when a job is created or updated. If the value is empty, there is no key or the key does not need to be updated. The key cannot be exposed during query and listing.
subnet_ip	String	Subnet IP address of RDS.

Table 4-84 LocationReplaceRule

Parameter	Type	Description
key	String	Key (source path).
value	String	Value (target path).

Table 4-85 PermissionMigrationParameter

Parameter	Type	Description
location	String	OBS file path for obtaining permission migration.
file_name	String	Permission JSON file. The file name cannot contain special characters such as <, >, :, /, , ?, *.
log_location	String	Data storage path, which is selected by users.
policy_type	String	Permission type. The values are DLF , RANGER , and LAKEFORMATION . Enumeration values: <ul style="list-style-type: none"> • DLF • RANGER • LAKEFORMATION
catalog_id	String	The catalog_id field needs to be transferred for DLF permission policy conversion.
instance_id	String	Instance ID.

Parameter	Type	Description
ranger_permission_migration_principal_relas	RangerPermissionMigrationPrincipalRelas object	Authorization entity conversion relationship of Ranger.

Table 4-86 RangerPermissionMigrationPrincipalRelas

Parameter	Type	Description
user_to	String	User conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
user_prefix	String	Prefix of the object name after user conversion
user_suffix	String	Suffix of the object name after user conversion.
group_to	String	Group conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
group_prefix	String	Prefix of the object name after group conversion.
group_suffix	String	Suffix of the object name after group conversion.
role_to	String	Role conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
role_prefix	String	Prefix of the object name after role conversion.
role_suffix	String	Suffix of the object name after role conversion.

Table 4-87 MetaDataDiscoveryParameter

Parameter	Type	Description
data_location	String	Data storage path, which is selected by users.
target_catalog	String	Target catalog, which saves discovered metadata.
target_database	String	Target database, which saves discovered metadata.
conflict_strategy	String	Conflict resolution policy. UPDATE indicates that existing metadata is updated but not deleted. INSERT indicates that metadata is created but not updated or deleted. UPSERT indicates that existing metadata is created and updated but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPDATE • INSERT • UPSERT
file_discovery_type	String	File discovery type. PARQUET : a columnar storage format that is built on top of the Hadoop Distributed File System (HDFS). CSV : a comma-separated values file. JSON : stands for Java Script Object Notation. ORC : stands for Optimized Row Columnar. TEXT : stands for text. AVRO : a row-oriented remote procedure call and data serialization framework. ALL : means auto-detected the file types. Enumeration values: <ul style="list-style-type: none"> • PARQUET • CSV • JSON • ORC • AVRO • ALL
separator	String	File separator. Common separators include commas (,) and semicolons (;).
quote	String	File quotation character. Common quotation characters include single quotation marks, double quotation marks, and \u0000. Enumeration values: <ul style="list-style-type: none"> • DOUBLE_QUOTE • SINGLE_QUOTE • NULL_QUOTE

Parameter	Type	Description
escape	String	Escape character of a file. The common escape characters are\.
header	Boolean	Indicates whether the first line of the file is considered as a header. The value true indicates that the first line is a header, and the value false indicates that the first line is not a header. The default value is false.
file_sample_rate	Integer	File sampling rate. The value ranges from 0 to 100 . 100 indicates 100% full scanning. 0 indicates that only one file in each folder is scanned.
table_depth	Integer	Table depth. Assume that path obs://a/b/c/d/e=1/f=99 exists and the data storage path is obs://a/b . Group level 2 indicates that d is used as the boundary. d is the table name. e=1 and f=99 indicate that table d is a partitioned table. The partition keys are e and f and the partition values are 1 and 99 .
log_location	String	Data storage path, which is selected by users.
default_owner	String	This parameter contains the information of the user who created the task, by default.
principals	Array of Principal objects	Entity information.
give_write	Boolean	Whether to grant the write permission. The options are true (yes) and false (no). The default value is false . The authorization entity gets the read and write permissions if the write permission is granted.
instance_id	String	Instance ID.
rediscovery_policy	String	Rediscovery policy. The options are FULL_DISCOVERY (full discovery) and INCREMENTAL_DISCOVERY (incremental discovery). The default value is FULL_DISCOVERY. Enumeration values: <ul style="list-style-type: none"> ● FULL_DISCOVERY ● INCREMENTAL_DISCOVERY

Parameter	Type	Description
execute_strategy	String	<p>Metadata discovery execution mode. The options are MANNUAL (manual) and SCHEDULE (scheduled). The default value is MANNUAL.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MANNUAL ● SCHEDULE
execute_frequency	String	<p>Execution Frequency: The options are MONTHLY (monthly), WEEKLY (weekly), DAILY (daily), and HOURLY (hourly).</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MONTHLY ● WEEKLY ● DAILY ● HOURLY
execute_day	String	<p>Indicates the date and time when the metadata discovery task is executed. When execute_frequency is set to MONLY, this parameter indicates the date when the task is executed every month. The value ranges from 1 to 31. If the specified date does not exist in the current month, the task is not executed. If execute_frequency is set to MONLY and execute_day is set to 30, the metadata discovery task will not be triggered in February. If execute_frequency is set to WEEKLY, execute_date indicates the day of a week. The value ranges from 1 to 7. If execute_frequency is set to DAILY or HOURLY, set this parameter to *, indicating that the scheduled task is executed every day.</p>
execute_hour	String	<p>Hour when the metadata discovery schedule is executed. When execute_frequency is set to MONLY, WEEKLY, or DAILY, this parameter indicates the execution time of the selected day. The value ranges from 0 to 23. If execute_frequency is set to HOURLY, the value of this parameter is *, indicating that the task is triggered every hour.</p>
execute_minute	String	<p>Specifies the minute when the metadata discovery task is executed. The value ranges from 0 to 59, indicating that the task is executed at the specified minute.</p>

Table 4-88 Principal

Parameter	Type	Description
principal_type	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : LDAP ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Status code: 400

Table 4-89 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-90 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-91 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs

```
{
  "name": "testjob",
  "description": "testjob",
  "type": "METADATA_MIGRATION",
  "parameter": {
    "metadata_migration_parameter": {
      "datasource_type": "ALIYUN_DLF",
      "datasource_parameter": {
        "jdbc_url": "jdbc:protocol://host:port/db_name",
        "username": "root",
        "password": "password",
        "endpoint": "xxxx.com",
        "access_key": "LTAIxxxxxxxxxxxxxxxxRxPG",
        "secret_key": "12345xxxxxxxxxxxxxxxxNabcdefgh",
        "subnet_ip": "127.0.0.1"
      }
    },
    "source_catalog": "sourceCatalog1",
    "target_catalog": "targetCatalog1",
    "conflict_strategy": "UPSERT",
    "log_location": "obs://logStore/2023",
    "sync_objects": [ "string" ],
    "default_owner": "string",
    "locations": [ {
      "key": "test/test1",
      "value": "test2/db"
    } ],
    "instance_id": "string",
  }
}
```

```
"ignore_obs_checked" : false,
"network_type" : "EIP",
"accepted_vpc_id" : "13551d6b-755d-4757-b956-536f674975c0"
},
"permission_migration_parameter" : {
"location" : "obs://location/uri/",
"file_name" : "string",
"log_location" : "obs://logStore/2023",
"policy_type" : "DLF",
"catalog_id" : "test_catalog",
"instance_id" : "string",
"ranger_permission_migration_principal_relas" : {
"user_to" : "IAM_USER",
"user_prefix" : "string",
"user_suffix" : "string",
"group_to" : "IAM_USER",
"group_prefix" : "string",
"group_suffix" : "string",
"role_to" : "IAM_USER",
"role_prefix" : "string",
"role_suffix" : "string"
}
},
"metadata_discovery_parameter" : {
"data_location" : "obs://logStore/2023",
"target_catalog" : "targetCatalog1",
"target_database" : "targetCatalog1",
"conflict_strategy" : "UPDATE",
"file_discovery_type" : "PARQUET",
"separator" : ",",
"quote" : "DOUBLE_QUOTE",
"escape" : "\\\"",
"header" : false,
"file_sample_rate" : 100,
"table_depth" : 3,
"log_location" : "obs://logStore/2023",
"default_owner" : "testOwner",
"principals" : [ {
"principal_type" : "USER",
"principal_source" : "IAM",
"principal_name" : "user1"
} ],
"give_write" : false,
"instance_id" : "abcdefgh12345678abcdefgh12345678",
"rediscovery_policy" : "FULL_DISCOVERY",
"execute_strategy" : "MANUAL",
"execute_frequency" : "MONTHLY",
"execute_day" : 1,
"execute_hour" : 1,
"execute_minute" : 1
}
}
}
```

Example Responses

Status code: 201

Successful job creation.

```
{
  "id" : "03141229-84cd-4b1b-9733-dd124320c125",
  "name" : "testjob",
  "description" : "testJob",
  "type" : "METADATA_MIGRATION",
  "parameter" : {
    "metadata_migration_parameter" : {
      "datasource_type" : "ALIYUN_DLF",
      "datasource_parameter" : {
```

```
"endpoint" : "protocol://xxx.xxx.com"
},
"source_catalog" : "sourceCatalog1",
"target_catalog" : "targetCatalog1",
"conflict_strategy" : "UPDATE",
"log_location" : "obs://logStore/2023",
"sync_objects" : [ "DATABASE" ],
"locations" : [ {
  "key" : "test/test1",
  "value" : "test2/db"
} ]
}
},
"status" : {
  "status" : "SUCCESS"
}
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
```

```
{
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
201	Successful job creation.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.2 Listing Tasks by Condition on Different Page

Function

This API is used to list task information on multiple pages based on search criteria. Fuzzy query by task name and filtering by latest execution status are supported.

URI

GET /v1/{project_id}/instances/{instance_id}/lf-jobs

Table 4-92 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-93 Query Parameters

Parameter	Mandatory	Type	Description
name_pattern	No	String	Wildcard of the task name, which is used to match the task name.
type	Yes	String	METADATA_MIGRATION: metadata migration PERMISSION_MIGRATION data permission migration METADATA_DISCOVERY metadata discovery Enumeration values: <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY
status	No	String	CREATED: The job is created. SUBMITTED: The job is submitted. RUNNING: The job is in progress. SUCCESS: The job has been executed. FAILED: The task failed. STOPPED: The job has been stopped. Enumeration values: <ul style="list-style-type: none"> • CREATED • SUBMITTED • RUNNING • SUCCESS • FAILED • STOPPED
offset	Yes	Integer	Offset of the page-based query. The default value is 0 . The value ranges from 0 to 1000 .

Parameter	Mandatory	Type	Description
limit	Yes	Integer	Number of records displayed on one page. The default value is 10 . The value ranges from 1 to 1000 .

Request Parameters

Table 4-94 Request header parameters

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

Response Parameters

Status code: 200

Table 4-95 Response body parameters

Parameter	Type	Description
total	Integer	Total number of tasks.
jobs	Array of JobInfo objects	Task list.

Table 4-96 JobInfo

Parameter	Type	Description
id	String	Job ID.
name	String	Job name.
type	String	Job type. METADATA_MIGRATION indicates a metadata migration job, PERMISSION_MIGRATION indicates a data permission migration job, and METADATA_DISCOVERY indicates a metadata discovery job. Enumeration values: <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY

Parameter	Type	Description
create_time	String	Job creation timestamp.
start_time	String	Execution timestamp of the last job.
status	String	<p>CREATED: The job is created. SUBMITTED: The job is submitted. RUNNING: The job is in progress. SUCCESS: The job has been executed. FAILED: The job failed. STOPPED: The job has been stopped.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATED • SUBMITTED • RUNNING • SUCCESS • FAILED • STOPPED

Status code: 400

Table 4-97 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-98 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-99 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

Successful query on the job list.

```
{
  "total": 1,
  "jobs": [ {
    "id": "03141229-84cd-4b1b-9733-dd124320c125",
    "name": "testjob",
    "type": "METADATA_MIGRATION",
    "create_time": "2023-05-27T10:04:35.743Z",
    "start_time": "2023-05-27T10:04:35.743Z",
    "status": {
      "status": "SUCCESS"
    }
  }
]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
```

```
"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful query on the job list.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.3 Deleting a Job

Function

This API is used to delete jobs. A task that has been submitted or is running needs to be stopped before being deleted.

URI

DELETE /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}

Table 4-100 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID, which is automatically generated when a job is created. The value is a string of 36 characters consisting of letters and digits.

Request Parameters

Table 4-101 Request header parameters

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

Response Parameters

Status code: 200

Table 4-102 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-103 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-104 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-105 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful job deletion.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.4 Obtaining Job Details

Function

This API is used to obtain job details.

URI

GET /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}

Table 4-106 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID.

Request Parameters

Table 4-107 Request header parameters

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

Response Parameters

Status code: 200

Table 4-108 Response body parameters

Parameter	Type	Description
id	String	Job ID, which is automatically generated when a job is created. 03141229-84cd-4b1b-9733-dd124320c125 is an example.
name	String	Job name. The value can contain 4 to 255 characters. Only letters, digits, and underscores (_) are allowed.
description	String	Description written when a user creates a job.
type	String	METADATA_MIGRATION : metadata migration PERMISSION_MIGRATION data permission migration METADATA_DISCOVERY metadata discovery Enumeration values: <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY
parameter	JobParameter object	Job parameters.

Parameter	Type	Description
create_time	String	Job creation timestamp, which is generated based on the job creation time.
start_time	String	Execution timestamp of the last job, which is generated based on the last job execution time.
status	String	<p>Status.</p> <ul style="list-style-type: none"> ● CREATED: The job is created. ● SUBMITTED: The job is submitted. ● RUNNING: The job is being executed. ● SUCCESS: The job has been executed. ● FAILED: The job failed. ● STOPPED: The job has been stopped. <p>Enumeration values:</p> <ul style="list-style-type: none"> ● CREATED ● SUBMITTED ● RUNNING ● SUCCESS ● FAILED ● STOPPED

Table 4-109 JobParameter

Parameter	Type	Description
metadata_migration_parameter	MetaDataMigrationParameter object	Metadata migration.
permission_migration_parameter	PermissionMigrationParameter object	Permission migration parameters.
metadata_discovery_parameter	MetaDataDiscoveryParameter object	Metadata discovery parameters.

Table 4-110 MetaDataMigrationParameter

Parameter	Type	Description
datasource_type	String	ALIYUN_DLF DLF MRS_RDS_FOR_MYSQL : MRS RDS (for MySQL) OPEN_FOR_MYSQL : Open source HiveMetastore (for MySQL) MRS_RDS_FOR_PG : MRS RDS (for PostgreSQL) MRS_LOCAL_GAUSSDB : MRS local database (GaussDB) Enumeration values: <ul style="list-style-type: none"> • ALIYUN_DLF • MRS_RDS_FOR_MYSQL • OPEN_FOR_MYSQL • MRS_RDS_FOR_PG • MRS_LOCAL_GAUSSDB
datasource_parameter	DataSourceParameter object	Data source parameter.
source_catalog	String	Source catalog, which is the catalog to be migrated out.
target_catalog	String	Target catalog, which stores the migrated metadata.
conflict_strategy	String	Conflict resolution policy. UPSERT indicates that only existing metadata is created and updated, but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPSERT
log_location	String	Data storage path, which is selected by users.
sync_objects	Array of strings	Migration metadata object array. The values include DATABASE , FUNCTION , TABLE , and PARTITION . Enumeration values: <ul style="list-style-type: none"> • DATABASE • FUNCTION • TABLE • PARTITION
default_owner	String	Default user information, which is determined by users.
locations	Array of LocationReplacementRule objects	Path replacement table, which is generated after key-value pairs are determined by users. A maximum of 20 records are supported.

Parameter	Type	Description
instance_id	String	Instance ID.
ignore_obs_checked	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
network_type	String	Migration network type, which can be EIP or VPC_PEERING . Enumeration values: <ul style="list-style-type: none"> • EIP • VPC_PEERING
accepted_vpc_id	String	ID of the VPC where the peer RDS is located.

Table 4-111 DataSourceParameter

Parameter	Type	Description
jdbc_url	String	JDBC URL, for example, jdbc:protocol://host:port/db_name .
username	String	User name. The value can contain only letters and digits and cannot exceed 255 characters.
password	String	Password. The value can be transferred only when a job is created or updated. If the value is empty, there is no password or the password does not need to be updated. The password cannot be exposed during query and listing.
endpoint	String	Endpoint URL, for example, xxx**.com** .
access_key	String	Access key. The value can be transferred only when a job is created or updated. If the value is empty, no key is available or the key does not need to be updated. The key cannot be exposed during query and listing.
secret_key	String	Secret key. The value can be transferred only when a job is created or updated. If the value is empty, there is no key or the key does not need to be updated. The key cannot be exposed during query and listing.
subnet_ip	String	Subnet IP address of RDS.

Table 4-112 LocationReplaceRule

Parameter	Type	Description
key	String	Key (source path).
value	String	Value (target path).

Table 4-113 PermissionMigrationParameter

Parameter	Type	Description
location	String	OBS file path for obtaining permission migration.
file_name	String	Permission JSON file. The file name cannot contain special characters such as <, >, ;, /, , ?, *.
log_location	String	Data storage path, which is selected by users.
policy_type	String	Permission type. The values are DLF , RANGER , and LAKEFORMATION . Enumeration values: <ul style="list-style-type: none"> • DLF • RANGER • LAKEFORMATION
catalog_id	String	The catalog_id field needs to be transferred for DLF permission policy conversion.
instance_id	String	Instance ID.
ranger_permission_migration_principal_relas	RangerPermissionMigrationPrincipalRelas object	Authorization entity conversion relationship of Ranger.

Table 4-114 RangerPermissionMigrationPrincipalRelas

Parameter	Type	Description
user_to	String	User conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
user_prefix	String	Prefix of the object name after user conversion

Parameter	Type	Description
user_suffix	String	Suffix of the object name after user conversion.
group_to	String	Group conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> ● IAM_USER ● IAM_GROUP ● ROLE
group_prefix	String	Prefix of the object name after group conversion.
group_suffix	String	Suffix of the object name after group conversion.
role_to	String	Role conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> ● IAM_USER ● IAM_GROUP ● ROLE
role_prefix	String	Prefix of the object name after role conversion.
role_suffix	String	Suffix of the object name after role conversion.

Table 4-115 MetaDataDiscoveryParameter

Parameter	Type	Description
data_location	String	Data storage path, which is selected by users.
target_catalog	String	Target catalog, which saves discovered metadata.
target_database	String	Target database, which saves discovered metadata.
conflict_strategy	String	Conflict resolution policy. UPDATE indicates that existing metadata is updated but not deleted. INSERT indicates that metadata is created but not updated or deleted. UPSERT indicates that existing metadata is created and updated but not deleted. Enumeration values: <ul style="list-style-type: none"> ● UPDATE ● INSERT ● UPSERT

Parameter	Type	Description
file_discovery_type	String	File discovery type. PARQUET : a columnar storage format that is built on top of the Hadoop Distributed File System (HDFS). CSV : a comma-separated values file. JSON : stands for Java Script Object Notation. ORC : stands for Optimized Row Columnar. TEXT : stands for text. AVRO : a row-oriented remote procedure call and data serialization framework. ALL : means auto-detected the file types. Enumeration values: <ul style="list-style-type: none"> ● PARQUET ● CSV ● JSON ● ORC ● AVRO ● ALL
separator	String	File separator. Common separators include commas (,) and semicolons (;).
quote	String	File quotation character. Common quotation characters include single quotation marks, double quotation marks, and \u0000. Enumeration values: <ul style="list-style-type: none"> ● DOUBLE_QUOTE ● SINGLE_QUOTE ● NULL_QUOTE
escape	String	Escape character of a file. The common escape characters are\.
header	Boolean	Indicates whether the first line of the file is considered as a header. The value true indicates that the first line is a header, and the value false indicates that the first line is not a header. The default value is false.
file_sample_rate	Integer	File sampling rate. The value ranges from 0 to 100 . 100 indicates 100% full scanning. 0 indicates that only one file in each folder is scanned.

Parameter	Type	Description
table_depth	Integer	Table depth. Assume that path obs://a/b/c/d/e=1/f=99 exists and the data storage path is obs://a/b . Group level 2 indicates that d is used as the boundary. d is the table name. e=1 and f=99 indicate that table d is a partitioned table. The partition keys are e and f and the partition values are 1 and 99 .
log_location	String	Data storage path, which is selected by users.
default_owner	String	This parameter contains the information of the user who created the task, by default.
principals	Array of Principal objects	Entity information.
give_write	Boolean	Whether to grant the write permission. The options are true (yes) and false (no). The default value is false . The authorization entity gets the read and write permissions if the write permission is granted.
instance_id	String	Instance ID.
rediscovery_policy	String	Rediscovery policy. The options are FULL_DISCOVERY (full discovery) and INCREMENTAL_DISCOVERY (incremental discovery). The default value is FULL_DISCOVERY. Enumeration values: <ul style="list-style-type: none"> ● FULL_DISCOVERY ● INCREMENTAL_DISCOVERY
execute_strategy	String	Metadata discovery execution mode. The options are MANNUAL (manual) and SCHEDULE (scheduled). The default value is MANNUAL. Enumeration values: <ul style="list-style-type: none"> ● MANNUAL ● SCHEDULE

Parameter	Type	Description
execute_frequency	String	<p>Execution Frequency: The options are MONTHLY (monthly), WEEKLY (weekly), DAILY (daily), and HOURLY (hourly).</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MONTHLY ● WEEKLY ● DAILY ● HOURLY
execute_day	String	<p>Indicates the date and time when the metadata discovery task is executed. When execute_frequency is set to MONTHLY, this parameter indicates the date when the task is executed every month. The value ranges from 1 to 31. If the specified date does not exist in the current month, the task is not executed. If execute_frequency is set to MONTHLY and execute_day is set to 30, the metadata discovery task will not be triggered in February. If execute_frequency is set to WEEKLY, execute_date indicates the day of a week. The value ranges from 1 to 7. If execute_frequency is set to DAILY or HOURLY, set this parameter to *, indicating that the scheduled task is executed every day.</p>
execute_hour	String	<p>Hour when the metadata discovery schedule is executed. When execute_frequency is set to MONTHLY, WEEKLY, or DAILY, this parameter indicates the execution time of the selected day. The value ranges from 0 to 23. If execute_frequency is set to HOURLY, the value of this parameter is *, indicating that the task is triggered every hour.</p>
execute_minute	String	<p>Specifies the minute when the metadata discovery task is executed. The value ranges from 0 to 59, indicating that the task is executed at the specified minute.</p>

Table 4-116 Principal

Parameter	Type	Description
principal_type	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : LDAP ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Status code: 400

Table 4-117 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-118 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-119 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}
```

Example Responses

Status code: 200

Job details obtained.

```
{
  "id": "03141229-84cd-4b1b-9733-dd124320c125",
  "name": "testjob",
  "description": "testJob",
  "type": "METADATA_MIGRATION",
  "parameter": {
    "metadata_migration_parameter": {
      "datasource_type": "ALIYUN_DLF",
      "datasource_parameter": {
        "endpoint": "protocol://xxx.xxx.com"
      }
    },
    "source_catalog": "sourceCatalog1",
    "target_catalog": "targetCatalog1",
    "conflict_strategy": "UPDATE",
    "log_location": "obs://logStore/2023",
    "sync_objects": [ "DATABASE" ],
    "locations": [ {
      "key": "test/test1",
      "value": "test2/db"
    } ]
  }
}
```

```
}  
},  
"status" : {  
  "status" : "SUCCESS"  
}  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
  cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code" : "common.00000408",  
  "error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "common.00000500",  
  "error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
200	Job details obtained.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.5 Modifying a Job

Function

This API is used to modify job information.

URI

PUT /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}

Table 4-120 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID.

Request Parameters

Table 4-121 Request header parameters

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

Table 4-122 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Task name.
description	No	String	Description.
parameter	Yes	JobParameter object	Job parameters.

Table 4-123 JobParameter

Parameter	Mandatory	Type	Description
metadata_migration_parameter	No	MetaDataMigrationParameter object	Metadata migration.
permission_migration_parameter	No	PermissionMigrationParameter object	Permission migration parameters.
metadata_discovery_parameter	No	MetaDataDiscoveryParameter object	Metadata discovery parameters.

Table 4-124 MetaDataMigrationParameter

Parameter	Mandatory	Type	Description
datasource_type	Yes	String	<p>ALIYUN_DLF DLF</p> <p>MRS_RDS_FOR_MYSQL: MRS RDS (for MySQL)</p> <p>OPEN_FOR_MYSQL: Open source HiveMetastore (for MySQL)</p> <p>MRS_RDS_FOR_PG: MRS RDS (for PostgreSQL)</p> <p>MRS_LOCAL_GAUSSDB: MRS local database (GaussDB)</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALIYUN_DLF • MRS_RDS_FOR_MYSQL • OPEN_FOR_MYSQL • MRS_RDS_FOR_PG • MRS_LOCAL_GAUSSDB
datasource_parameter	Yes	DataSourceParameter object	Data source parameter.
source_catalog	Yes	String	Source catalog, which is the catalog to be migrated out.
target_catalog	Yes	String	Target catalog, which stores the migrated metadata.
conflict_strategy	Yes	String	<p>Conflict resolution policy.</p> <p>UPSERT indicates that only existing metadata is created and updated, but not deleted.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • UPSERT
log_location	Yes	String	Data storage path, which is selected by users.
sync_objects	Yes	Array of strings	<p>Migration metadata object array. The values include DATABASE, FUNCTION, TABLE, and PARTITION.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • DATABASE • FUNCTION • TABLE • PARTITION

Parameter	Mandatory	Type	Description
default_owner	No	String	Default user information, which is determined by users.
locations	Yes	Array of LocationReplacementRule objects	Path replacement table, which is generated after key-value pairs are determined by users. A maximum of 20 records are supported.
instance_id	Yes	String	Instance ID.
ignore_obs_checked	No	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
network_type	No	String	Migration network type, which can be EIP or VPC_PEERING . Enumeration values: <ul style="list-style-type: none"> • EIP • VPC_PEERING
accepted_vpc_id	No	String	ID of the VPC where the peer RDS is located.

Table 4-125 DataSourceParameter

Parameter	Mandatory	Type	Description
jdbc_url	No	String	JDBC URL, for example, <code>jdbc:protocol://host:port/db_name</code> .
username	No	String	User name. The value can contain only letters and digits and cannot exceed 255 characters.
password	No	String	Password. The value can be transferred only when a job is created or updated. If the value is empty, there is no password or the password does not need to be updated. The password cannot be exposed during query and listing.
endpoint	No	String	Endpoint URL, for example, <code>xxx**.com**</code> .

Parameter	Mandatory	Type	Description
access_key	No	String	Access key. The value can be transferred only when a job is created or updated. If the value is empty, no key is available or the key does not need to be updated. The key cannot be exposed during query and listing.
secret_key	No	String	Secret key. The value can be transferred only when a job is created or updated. If the value is empty, there is no key or the key does not need to be updated. The key cannot be exposed during query and listing.
subnet_ip	No	String	Subnet IP address of RDS.

Table 4-126 LocationReplaceRule

Parameter	Mandatory	Type	Description
key	Yes	String	Key (source path).
value	Yes	String	Value (target path).

Table 4-127 PermissionMigrationParameter

Parameter	Mandatory	Type	Description
location	Yes	String	OBS file path for obtaining permission migration.
file_name	No	String	Permission JSON file. The file name cannot contain special characters such as <, >, :, /, , ?, *.
log_location	Yes	String	Data storage path, which is selected by users.

Parameter	Mandatory	Type	Description
policy_type	Yes	String	Permission type. The values are DLF , RANGER , and LAKEFORMATION . Enumeration values: <ul style="list-style-type: none"> • DLF • RANGER • LAKEFORMATION
catalog_id	No	String	The catalog_id field needs to be transferred for DLF permission policy conversion.
instance_id	Yes	String	Instance ID.
ranger_permission_migration_principal_relas	No	RangerPermissionMigrationPrincipalRelas object	Authorization entity conversion relationship of Ranger.

Table 4-128 RangerPermissionMigrationPrincipalRelas

Parameter	Mandatory	Type	Description
user_to	No	String	User conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
user_prefix	No	String	Prefix of the object name after user conversion
user_suffix	No	String	Suffix of the object name after user conversion.
group_to	No	String	Group conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE

Parameter	Mandatory	Type	Description
group_prefix	No	String	Prefix of the object name after group conversion.
group_suffix	No	String	Suffix of the object name after group conversion.
role_to	No	String	Role conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
role_prefix	No	String	Prefix of the object name after role conversion.
role_suffix	No	String	Suffix of the object name after role conversion.

Table 4-129 MetaDataDiscoveryParameter

Parameter	Mandatory	Type	Description
data_location	Yes	String	Data storage path, which is selected by users.
target_catalog	Yes	String	Target catalog, which saves discovered metadata.
target_database	Yes	String	Target database, which saves discovered metadata.
conflict_strategy	Yes	String	Conflict resolution policy. UPDATE indicates that existing metadata is updated but not deleted. INSERT indicates that metadata is created but not updated or deleted. UPSERT indicates that existing metadata is created and updated but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPDATE • INSERT • UPSERT

Parameter	Mandatory	Type	Description
file_discovery_type	Yes	String	File discovery type. PARQUET : a columnar storage format that is built on top of the Hadoop Distributed File System (HDFS). CSV : a comma-separated values file. JSON : stands for Java Script Object Notation. ORC : stands for Optimized Row Columnar. TEXT : stands for text. AVRO : a row-oriented remote procedure call and data serialization framework. ALL : means auto-detected the file types. Enumeration values: <ul style="list-style-type: none"> • PARQUET • CSV • JSON • ORC • AVRO • ALL
separator	No	String	File separator. Common separators include commas (,) and semicolons (;).
quote	No	String	File quotation character. Common quotation characters include single quotation marks, double quotation marks, and \u0000. Enumeration values: <ul style="list-style-type: none"> • DOUBLE_QUOTE • SINGLE_QUOTE • NULL_QUOTE
escape	No	String	Escape character of a file. The common escape characters are \.

Parameter	Mandatory	Type	Description
header	No	Boolean	Indicates whether the first line of the file is considered as a header. The value <code>true</code> indicates that the first line is a header, and the value <code>false</code> indicates that the first line is not a header. The default value is <code>false</code> .
file_sample_rate	No	Integer	File sampling rate. The value ranges from 0 to 100 . 100 indicates 100% full scanning. 0 indicates that only one file in each folder is scanned.
table_depth	No	Integer	Table depth. Assume that path obs://a/b/c/d/e=1/f=99 exists and the data storage path is obs://a/b . Group level 2 indicates that d is used as the boundary. d is the table name. e=1 and f=99 indicate that table d is a partitioned table. The partition keys are e and f and the partition values are 1 and 99 .
log_location	Yes	String	Data storage path, which is selected by users.
default_owner	No	String	This parameter contains the information of the user who created the task, by default.
principals	No	Array of Principal objects	Entity information.
give_write	No	Boolean	Whether to grant the write permission. The options are true (yes) and false (no). The default value is false . The authorization entity gets the read and write permissions if the write permission is granted.
instance_id	Yes	String	Instance ID.

Parameter	Mandatory	Type	Description
rediscovery_policy	No	String	Rediscovery policy. The options are FULL_DISCOVERY (full discovery) and INCREMENTAL_DISCOVERY (incremental discovery). The default value is FULL_DISCOVERY. Enumeration values: <ul style="list-style-type: none">• FULL_DISCOVERY• INCREMENTAL_DISCOVERY
execute_strategy	No	String	Metadata discovery execution mode. The options are MANNUAL (manual) and SCHEDULE (scheduled). The default value is MANNUAL. Enumeration values: <ul style="list-style-type: none">• MANNUAL• SCHEDULE
execute_frequency	No	String	Execution Frequency: The options are MONTHLY (monthly), WEEKLY (weekly), DAILY (daily), and HOURLY (hourly). Enumeration values: <ul style="list-style-type: none">• MONTHLY• WEEKLY• DAILY• HOURLY

Parameter	Mandatory	Type	Description
execute_day	No	String	Indicates the date and time when the metadata discovery task is executed. When execute_frequency is set to MONLY, this parameter indicates the date when the task is executed every month. The value ranges from 1 to 31. If the specified date does not exist in the current month, the task is not executed. If execute_frequency is set to MONLY and execute_day is set to 30, the metadata discovery task will not be triggered in February. If execute_frequency is set to WEEKLY, execute_date indicates the day of a week. The value ranges from 1 to 7. If execute_frequency is set to DAILY or HOURLY, set this parameter to *, indicating that the scheduled task is executed every day.
execute_hour	No	String	Hour when the metadata discovery schedule is executed. When execute_frequency is set to MONLY, WEEKLY, or DAILY, this parameter indicates the execution time of the selected day. The value ranges from 0 to 23. If execute_frequency is set to HOURLY, the value of this parameter is *, indicating that the task is triggered every hour.
execute_minute	No	String	Specifies the minute when the metadata discovery task is executed. The value ranges from 0 to 59, indicating that the task is executed at the specified minute.

Table 4-130 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : LDAP ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 200

Table 4-131 Response body parameters

Parameter	Type	Description
id	String	Job ID, which is automatically generated when a job is created. 03141229-84cd-4b1b-9733-dd124320c125 is an example.
name	String	Job name. The value can contain 4 to 255 characters. Only letters, digits, and underscores (_) are allowed.

Parameter	Type	Description
description	String	Description written when a user creates a job.
type	String	<p>METADATA_MIGRATION: metadata migration PERMISSION_MIGRATION data permission migration METADATA_DISCOVERY metadata discovery</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • METADATA_MIGRATION • PERMISSION_MIGRATION • METADATA_DISCOVERY
parameter	JobParameter object	Job parameters.
create_time	String	Job creation timestamp, which is generated based on the job creation time.
start_time	String	Execution timestamp of the last job, which is generated based on the last job execution time.
status	String	<p>Status.</p> <ul style="list-style-type: none"> • CREATED: The job is created. • SUBMITTED: The job is submitted. • RUNNING: The job is being executed. • SUCCESS: The job has been executed. • FAILED: The job failed. • STOPPED: The job has been stopped. <p>Enumeration values:</p> <ul style="list-style-type: none"> • CREATED • SUBMITTED • RUNNING • SUCCESS • FAILED • STOPPED

Table 4-132 JobParameter

Parameter	Type	Description
metadata_migration_parameter	MetaDataMigrationParameter object	Metadata migration.

Parameter	Type	Description
permission_migration_parameter	PermissionMigrationParameter object	Permission migration parameters.
metadata_discovery_parameter	MetaDataDiscoveryParameter object	Metadata discovery parameters.

Table 4-133 MetaDataMigrationParameter

Parameter	Type	Description
datasource_type	String	ALIYUN_DLF DLF MRS_RDS_FOR_MYSQL : MRS RDS (for MySQL) OPEN_FOR_MYSQL : Open source HiveMetastore (for MySQL) MRS_RDS_FOR_PG : MRS RDS (for PostgreSQL) MRS_LOCAL_GAUSSDB : MRS local database (GaussDB) Enumeration values: <ul style="list-style-type: none"> • ALIYUN_DLF • MRS_RDS_FOR_MYSQL • OPEN_FOR_MYSQL • MRS_RDS_FOR_PG • MRS_LOCAL_GAUSSDB
datasource_parameter	DataSourceParameter object	Data source parameter.
source_catalog	String	Source catalog, which is the catalog to be migrated out.
target_catalog	String	Target catalog, which stores the migrated metadata.
conflict_strategy	String	Conflict resolution policy. UPSERT indicates that only existing metadata is created and updated, but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPSERT
log_location	String	Data storage path, which is selected by users.

Parameter	Type	Description
sync_objects	Array of strings	Migration metadata object array. The values include DATABASE , FUNCTION , TABLE , and PARTITION . Enumeration values: <ul style="list-style-type: none"> • DATABASE • FUNCTION • TABLE • PARTITION
default_owner	String	Default user information, which is determined by users.
locations	Array of LocationReplacementRule objects	Path replacement table, which is generated after key-value pairs are determined by users. A maximum of 20 records are supported.
instance_id	String	Instance ID.
ignore_obs_checked	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
network_type	String	Migration network type, which can be EIP or VPC_PEERING . Enumeration values: <ul style="list-style-type: none"> • EIP • VPC_PEERING
accepted_vpc_id	String	ID of the VPC where the peer RDS is located.

Table 4-134 DataSourceParameter

Parameter	Type	Description
jdbc_url	String	JDBC URL, for example, jdbc:protocol://host:port/db_name .
username	String	User name. The value can contain only letters and digits and cannot exceed 255 characters.
password	String	Password. The value can be transferred only when a job is created or updated. If the value is empty, there is no password or the password does not need to be updated. The password cannot be exposed during query and listing.
endpoint	String	Endpoint URL, for example, xxx**.com** .

Parameter	Type	Description
access_key	String	Access key. The value can be transferred only when a job is created or updated. If the value is empty, no key is available or the key does not need to be updated. The key cannot be exposed during query and listing.
secret_key	String	Secret key. The value can be transferred only when a job is created or updated. If the value is empty, there is no key or the key does not need to be updated. The key cannot be exposed during query and listing.
subnet_ip	String	Subnet IP address of RDS.

Table 4-135 LocationReplaceRule

Parameter	Type	Description
key	String	Key (source path).
value	String	Value (target path).

Table 4-136 PermissionMigrationParameter

Parameter	Type	Description
location	String	OBS file path for obtaining permission migration.
file_name	String	Permission JSON file. The file name cannot contain special characters such as <, >, :, /, , ?, *.
log_location	String	Data storage path, which is selected by users.
policy_type	String	Permission type. The values are DLF , RANGER , and LAKEFORMATION . Enumeration values: <ul style="list-style-type: none"> • DLF • RANGER • LAKEFORMATION
catalog_id	String	The catalog_id field needs to be transferred for DLF permission policy conversion.
instance_id	String	Instance ID.

Parameter	Type	Description
ranger_permission_migration_principal_relas	RangerPermissionMigrationPrincipalRelas object	Authorization entity conversion relationship of Ranger.

Table 4-137 RangerPermissionMigrationPrincipalRelas

Parameter	Type	Description
user_to	String	User conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
user_prefix	String	Prefix of the object name after user conversion
user_suffix	String	Suffix of the object name after user conversion.
group_to	String	Group conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
group_prefix	String	Prefix of the object name after group conversion.
group_suffix	String	Suffix of the object name after group conversion.
role_to	String	Role conversion object. IAM_USER : IAM user IAM_GROUP : IAM group ROLE : role Enumeration values: <ul style="list-style-type: none"> • IAM_USER • IAM_GROUP • ROLE
role_prefix	String	Prefix of the object name after role conversion.
role_suffix	String	Suffix of the object name after role conversion.

Table 4-138 MetaDataDiscoveryParameter

Parameter	Type	Description
data_location	String	Data storage path, which is selected by users.
target_catalog	String	Target catalog, which saves discovered metadata.
target_database	String	Target database, which saves discovered metadata.
conflict_strategy	String	Conflict resolution policy. UPDATE indicates that existing metadata is updated but not deleted. INSERT indicates that metadata is created but not updated or deleted. UPSERT indicates that existing metadata is created and updated but not deleted. Enumeration values: <ul style="list-style-type: none"> • UPDATE • INSERT • UPSERT
file_discovery_type	String	File discovery type. PARQUET : a columnar storage format that is built on top of the Hadoop Distributed File System (HDFS). CSV : a comma-separated values file. JSON : stands for Java Script Object Notation. ORC : stands for Optimized Row Columnar. TEXT : stands for text. AVRO : a row-oriented remote procedure call and data serialization framework. ALL : means auto-detected the file types. Enumeration values: <ul style="list-style-type: none"> • PARQUET • CSV • JSON • ORC • AVRO • ALL
separator	String	File separator. Common separators include commas (,) and semicolons (;).
quote	String	File quotation character. Common quotation characters include single quotation marks, double quotation marks, and \u0000. Enumeration values: <ul style="list-style-type: none"> • DOUBLE_QUOTE • SINGLE_QUOTE • NULL_QUOTE

Parameter	Type	Description
escape	String	Escape character of a file. The common escape characters are\.
header	Boolean	Indicates whether the first line of the file is considered as a header. The value true indicates that the first line is a header, and the value false indicates that the first line is not a header. The default value is false.
file_sample_rate	Integer	File sampling rate. The value ranges from 0 to 100 . 100 indicates 100% full scanning. 0 indicates that only one file in each folder is scanned.
table_depth	Integer	Table depth. Assume that path obs://a/b/c/d/e=1/f=99 exists and the data storage path is obs://a/b . Group level 2 indicates that d is used as the boundary. d is the table name. e=1 and f=99 indicate that table d is a partitioned table. The partition keys are e and f and the partition values are 1 and 99 .
log_location	String	Data storage path, which is selected by users.
default_owner	String	This parameter contains the information of the user who created the task, by default.
principals	Array of Principal objects	Entity information.
give_write	Boolean	Whether to grant the write permission. The options are true (yes) and false (no). The default value is false . The authorization entity gets the read and write permissions if the write permission is granted.
instance_id	String	Instance ID.
rediscovery_policy	String	Rediscovery policy. The options are FULL_DISCOVERY (full discovery) and INCREMENTAL_DISCOVERY (incremental discovery). The default value is FULL_DISCOVERY. Enumeration values: <ul style="list-style-type: none"> ● FULL_DISCOVERY ● INCREMENTAL_DISCOVERY

Parameter	Type	Description
execute_strategy	String	<p>Metadata discovery execution mode. The options are MANNUAL (manual) and SCHEDULE (scheduled). The default value is MANNUAL.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MANNUAL ● SCHEDULE
execute_frequency	String	<p>Execution Frequency: The options are MONTHLY (monthly), WEEKLY (weekly), DAILY (daily), and HOURLY (hourly).</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● MONTHLY ● WEEKLY ● DAILY ● HOURLY
execute_day	String	<p>Indicates the date and time when the metadata discovery task is executed. When execute_frequency is set to MONLY, this parameter indicates the date when the task is executed every month. The value ranges from 1 to 31. If the specified date does not exist in the current month, the task is not executed. If execute_frequency is set to MONLY and execute_day is set to 30, the metadata discovery task will not be triggered in February. If execute_frequency is set to WEEKLY, execute_date indicates the day of a week. The value ranges from 1 to 7. If execute_frequency is set to DAILY or HOURLY, set this parameter to *, indicating that the scheduled task is executed every day.</p>
execute_hour	String	<p>Hour when the metadata discovery schedule is executed. When execute_frequency is set to MONLY, WEEKLY, or DAILY, this parameter indicates the execution time of the selected day. The value ranges from 0 to 23. If execute_frequency is set to HOURLY, the value of this parameter is *, indicating that the task is triggered every hour.</p>
execute_minute	String	<p>Specifies the minute when the metadata discovery task is executed. The value ranges from 0 to 59, indicating that the task is executed at the specified minute.</p>

Table 4-139 Principal

Parameter	Type	Description
principal_type	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : LDAP ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Status code: 400

Table 4-140 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-141 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-142 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}

```
{
  "name": "testjob",
  "description": "string",
  "parameter": {
    "metadata_migration_parameter": {
      "datasource_type": "ALIYUN_DLF",
      "datasource_parameter": {
        "endpoint": "protocol://xxx.xxx.com",
        "access_key": "LTAIxxxxxxxxxxxxxxxxRxPG",
        "secret_key": "1234xxxxxxxxxxxxxxxxxxefgh"
      }
    },
    "source_catalog": "sourceCatalog1",
    "target_catalog": "targetCatalog1",
    "conflict_strategy": "UPDATE",
    "log_location": "obs://logStore/2023",
    "sync_objects": [ "DATABASE" ],
    "locations": [ {
      "key": "test/test1",
      "value": "test2/db"
    } ],
    "instance_id": "12345678910a"
  }
}
```


Example Responses

Status code: 200

Job information modified.

```
{
  "id" : "03141229-84cd-4b1b-9733-dd124320c125",
  "name" : "testjob",
  "description" : "testJob",
  "type" : "METADATA_MIGRATION",
  "parameter" : {
    "metadata_migration_parameter" : {
      "datasource_type" : "ALIYUN_DLF",
      "datasource_parameter" : {
        "endpoint" : "protocol://xxx.xxx.com"
      },
      "source_catalog" : "sourceCatalog1",
      "target_catalog" : "targetCatalog1",
      "conflict_strategy" : "UPDATE",
      "log_location" : "obs://logStore/2023",
      "sync_objects" : [ "DATABASE" ],
      "locations" : [ {
        "key" : "test/test1",
        "value" : "test2/db"
      } ]
    }
  },
  "status" : {
    "status" : "SUCCESS"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Job information modified.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.1.2.6 Starting a Job****Function**

This API is used to run jobs.

URI

POST /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/start

Table 4-143 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID.

Request Parameters

Table 4-144 Request header parameters

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

Response Parameters

Status code: 400

Table 4-145 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-146 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-147 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/start

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
```

```

"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
202	The running signal has been received by the server.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.7 Stopping a Job

Function

This API is used to stop jobs.

URI

POST /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/stop

Table 4-148 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID.

Request Parameters

Table 4-149 Request header parameters

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

Response Parameters

Status code: 400

Table 4-150 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Parameter	Type	Description
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-151 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-152 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/stop

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
202	The stop signal has been received by the server.
400	Bad Request
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.2.8 Checking the Logs of a Job

Function

This API is used to check the logs of jobs by job ID.

URI

GET /v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/log

Table 4-153 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
job_id	Yes	String	Job ID.

Request Parameters

Table 4-154 Request header parameters

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

Response Parameters

Status code: 200

Table 4-155 Response body parameters

Parameter	Type	Description
log	String	Log content.

Status code: 400

Table 4-156 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-157 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-158 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Parameter	Type	Description
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/lf-jobs/{job_id}/log
```

Example Responses

Status code: 200

Log-related information.

```
{
  "log" : "2023-06-23 12:03:23 INFO - starting"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
```

```
"error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Log-related information.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.3 Service Authorization Management

4.1.3.1 Granting Permissions for Accessing Other Cloud Services

Function

Cloud service access authorization.

URI

POST /v1/{project_id}/access-service

Table 4-159 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-160 Request header parameters

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

Table 4-161 Request body parameters

Parameter	Mandatory	Type	Description
access_services	Yes	Array of AccessServiceInfo objects	Access service authorization information list.

Table 4-162 AccessServiceInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Name of the access service. Enter a maximum of 20 characters.
description	No	String	Description of the access service. Enter a maximum of 500 characters.
grant	No	Boolean	Whether it is authorized or not. The value can be true or false.

Response Parameters

Status code: 200

Table 4-163 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-164 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-165 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-166 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/access-service
{
  "access_services": [ {
    "name": "DLI",
    "description": "Data Lake Insight",
    "grant": true
  }, {
    "name": "DWS",
    "description": "Data Warehouse Service",
    "grant": true
  }, {
    "name": "MA",
    "description": "ModelArts",
    "grant": true
  }
  ]
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful cloud service access authorization.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.3.2 Querying Cloud Service Access Permissions

Function

This API is used to query the cloud service access permissions of a tenant.

URI

GET /v1/{project_id}/access-service

Table 4-167 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-168 Request header parameters

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

Response Parameters

Status code: 200

Table 4-169 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-170 Response body parameters

Parameter	Type	Description
access_services	Array of AccessServiceInfo objects	Access service authorization information list.

Table 4-171 AccessServiceInfo

Parameter	Type	Description
name	String	Name of the access service. Enter a maximum of 20 characters.
description	String	Description of the access service. Enter a maximum of 500 characters.

Parameter	Type	Description
grant	Boolean	Whether it is authorized or not. The value can be true or false.

Status code: 400

Table 4-172 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-173 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-174 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/access-service
```

Example Responses

Status code: 200

Response body for querying tenant agreements.

```
{
  "access_services": [ {
    "name": "DLI",
    "description": "Data Lake Insight",
    "grant": true
  }, {
    "name": "DWS",
    "description": "Data Warehouse Service",
    "grant": true
  }, {
    "name": "MA",
    "description": "ModelArts",
    "grant": true
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
}
```

```
{
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	Response body for querying tenant agreements.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.3.3 Registering a Tenant Agreement

Function

User authorization and delegation.

URI

POST /v1/{project_id}/agreement

Table 4-175 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-176 Request header parameters

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

Table 4-177 Request body parameters

Parameter	Mandatory	Type	Description
agreements	No	Array of TenantAgreement objects	Tenant agreement list.

Table 4-178 TenantAgreement

Parameter	Mandatory	Type	Description
agreement_name	No	String	Agreement name. The value should contain 1 to 64 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
agreement_version	No	String	Agreement version. The value should contain 1 to 32 characters. Only letters and numbers are allowed.

Response Parameters

Status code: 200

Table 4-179 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-180 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-181 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-182 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

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

```
{
  "agreements": [ {
    "agreement_name": "agreement AAA",
    "agreement_version": "v1"
  }, {
    "agreement_name": "agreement BBB",
    "agreement_version": "v1"
  } ]
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful tenant agreement registration.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error CodesSee [Error Codes](#).**4.1.3.4 Querying whether a Tenant Has Registered an Agreement****Function**

This API is used to query the current agreement and agency information of a tenant.

URI

GET /v1/{project_id}/agreement

Table 4-183 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-184 Request header parameters

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

Response Parameters

Status code: 200

Table 4-185 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-186 Response body parameters

Parameter	Type	Description
agreements	Array of TenantAgreement objects	Tenant agreement list.
is_agency	Boolean	Whether an agency is bound.

Table 4-187 TenantAgreement

Parameter	Type	Description
agreement_name	String	Agreement name. The value should contain 1 to 64 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Parameter	Type	Description
agreement_version	String	Agreement version. The value should contain 1 to 32 characters. Only letters and numbers are allowed.

Status code: 400**Table 4-188** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404**Table 4-189** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500**Table 4-190** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/agreement
```

Example Responses

Status code: 200

Response body for querying tenant agreements.

```
{
  "agreements": [ {
    "agreement_name": "agreement AAA",
    "agreement_version": "v1"
  }, {
    "agreement_name": "agreement BBB",
    "agreement_version": "v1"
  } ],
  "is_agency": true
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Response body for querying tenant agreements.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.3.5 Deleting a Tenant Agreement

Function

The user cancels the authorization and the authorized user deletes the agency.

URI

DELETE /v1/{project_id}/agreement

Table 4-191 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-192 Request header parameters

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

Response Parameters

Status code: 204

Table 4-193 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-194 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-195 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-196 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/agreement
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
```

```

"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
204	Successful deletion.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.3.6 Querying the Current System Agreement

Function

This API is used to query the current system agreement.

URI

GET /v1/{project_id}/agreement-rule

Table 4-197 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-198 Request header parameters

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

Response Parameters

Status code: 200

Table 4-199 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-200 Response body parameters

Parameter	Type	Description
agreement_rules	Array of AgreementRule objects	System agreement list.

Table 4-201 AgreementRule

Parameter	Type	Description
agreement_name	String	Agreement name.
agreement_display_name	String	Agreement display name.
agreement_version	String	Agreement version
agreement_url	String	Agreement URL.

Status code: 400**Table 4-202** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404**Table 4-203** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-204 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/agreement-rule
```

Example Responses

Status code: 200

System agreement response body.

```
{
  "agreement_rules": [ {
    "agreement_name": "agreement AAA",
    "agreement_display_name": "AAA",
    "agreement_version": "v1",
    "agreement_url": "https://AAA"
  }, {
    "agreement_name": "agreement BBB",
    "agreement_display_name": "BBB",
    "agreement_version": "v1",
    "agreement_url": "https://BBB"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
  }
}
```

```

    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	System agreement response body.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.4 OBS Management

4.1.4.1 Querying the OBS Buckets

Function

This API is used to query the OBS buckets.

URI

GET /v1/{project_id}/obs/buckets

Table 4-205 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Table 4-206 Query Parameters

Parameter	Mandatory	Type	Description
offset	No	Integer	Offset of the page-based query. The default value is 0 . The value ranges from 1 to 1000 .
limit	No	Integer	Number of records displayed on one page. The default value is 1000 . The value ranges from 1 to 1000 .

Request Parameters

Table 4-207 Request header parameters

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

Response Parameters

Status code: 200

Table 4-208 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-209 Response body parameters

Parameter	Type	Description
buckets	Array of BucketDetail objects	OBS bucket list.
total	Integer	Total number of OBS buckets.

Table 4-210 BucketDetail

Parameter	Type	Description
id	String	OBS bucket ID.
name	String	OBS bucket name.
creation_date	String	OBS bucket creation date.
location	String	Region.

Status code: 400**Table 4-211** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-212 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-213 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/obs/buckets

Example Responses

Status code: 200

OBS bucket list.

```
{
  "total" : 3,
  "buckets" : [ {
    "id" : "555d9e8999c94705be3d7edb70a3199a",
    "name" : "lakeformation",
    "creation_date" : "2022-06-01T09:32:01.487+00:00",
    "location" : "xxxxxx"
  }, {
    "id" : "555d9e8999c94705be3d7edb70a3199a",
    "name" : "lakeformation-test",
    "creation_date" : "2022-06-07T03:20:39.120+00:00",
    "location" : "xxxxxx"
  }, {
    "id" : "555d9e8999c94705be3d7edb70a3199a",
    "name" : "test-bk",
    "creation_date" : "2022-08-02T09:36:37.193+00:00",
    "location" : "xxxxxx"
  }
  ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OBS bucket list.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.4.2 Querying the OBS Bucket Objects

Function

This API is used to query the OBS bucket objects.

URI

GET /v1/{project_id}/obs/buckets/{bucket_name}

Table 4-214 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
bucket_name	Yes	String	OBS bucket name. The value can contain 1 to 64 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Table 4-215 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Name of the object from which the query starts. The value should contain a maximum of 4,096 characters.
limit	Yes	Integer	Number of returned records. The value ranges from 1 to 1000 .
prefix	No	String	Search prefix. The value should contain a maximum of 4,096 characters.

Request Parameters

Table 4-216 Request header parameters

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

Response Parameters

Status code: 200

Table 4-217 Response body parameters

Parameter	Type	Description
object_names	Array of strings	Object name list.
location	String	Region code.
prefix	String	Search prefix.
bucket_name	String	OBS bucket name.
next_marker	String	Start position of the next object.

Status code: 400

Table 4-218 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-219 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-220 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/obs/buckets/{bucket_name}

Example Responses

Status code: 200

Response body for querying OBS bucket objects.

```
{
  "object_names" : [ "aaa/", "test/" ],
  "location" : "xxxxxx",
  "prefix" : "",
  "bucket_name" : "lakeformation",
  "next_marker" : "next"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Response body for querying OBS bucket objects.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.5 Access Management

4.1.5.1 Obtaining the Service Access Information

Function

This API is used to obtain the access information related to a LakeFormation instance by instance name.

URI

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

Table 4-221 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-222 Query Parameters

Parameter	Mandatory	Type	Description
offset	Yes	Integer	Offset of the page-based query. The default value is 0 . The value ranges from 0 to 1000 .
limit	No	Integer	Number of records displayed on one page. The default value is 10 and the maximum value is 1000 .

Request Parameters

Table 4-223 Request header parameters

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

Response Parameters

Status code: 200

Table 4-224 Response body parameters

Parameter	Type	Description
access_infos	Array of AccessInfo objects	accessinfo list.
total	Integer	Total number of accessinfo records.

Table 4-225 AccessInfo

Parameter	Type	Description
vpcep_service_name	String	Service name.
domain	String	Independent domain name of a group.

Status code: 400

Table 4-226 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-227 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-228 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "total" : 1,
  "access_infos" : [ {
    "vpcep_service_name" : "xxxxxx.apig.3ab1xxxxxxxxxxxxxxxxxxxxxxxxxxxxxf524",
    "domain" : "xxxxxxxxxxxxxxxxxxxxxxxxxxxx.com"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",

```

```
"error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.5.2 Applying for Service Access

Function

This API is used to apply for service access.

URI

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

Table 4-229 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-230 Request header parameters

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

Table 4-231 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of AccessRequestInfo objects	Access application information.

Table 4-232 AccessRequestInfo

Parameter	Mandatory	Type	Description
vpcep_id	Yes	String	VPC endpoint ID. Click Clients , click Create , and click create one . On the displayed page, click VPC Endpoint to create or check a VPC endpoint.
domain	Yes	String	Independent domain name of a group.

Response Parameters

Status code: 200

Table 4-233 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 204

Table 4-234 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400**Table 4-235** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404**Table 4-236** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500**Table 4-237** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/access
[ {
  "vpcep_id" : "string",
  "domain" : "string"
} ]
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.5.3 Obtaining the List of Service Access Clients

Function

This API is used to obtain the list of access clients related to a LakeFormation instance by instance name.

URI

GET /v1/{project_id}/instances/{instance_id}/access-clients

Table 4-238 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-239 Query Parameters

Parameter	Mandatory	Type	Description
id	No	String	This API is used to search information by ID.
name	No	String	This API is used to search by keyword. The keyword should contain a maximum of 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
offset	Yes	Integer	Offset of the page-based query. The default value is 0 . The value ranges from 0 to 1000 .
limit	No	Integer	Number of records displayed on one page. The default value is 10 . The value ranges from 1 to 1000 .

Request Parameters

Table 4-240 Request header parameters

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

Response Parameters

Status code: 200

Table 4-241 Response body parameters

Parameter	Type	Description
access_client_infos	Array of AccessClientInfo objects	Access client information list.
total	Integer	Total number of access clients.

Table 4-242 AccessClientInfo

Parameter	Type	Description
id	String	Client ID.
name	String	Client name.
access_mode	String	Access mode. The options are SYSTEM , CUSTOM , or AUTO . Enumeration values: <ul style="list-style-type: none"> • SYSTEM • CUSTOM • AUTO
status	String	Client status. The options are CREATING , RUNNING , DELETING , DELETED , CREATE_FAIL , and DELETE_FAIL . Enumeration values: <ul style="list-style-type: none"> • CREATING • RUNNING • DELETING • DELETED • CREATE_FAIL • DELETE_FAIL
vpc_id	String	VPC ID.
subnet_id	String	Subnet ID.
access_connections	Array of AccessConnectionInfo objects	Access connection list.
create_time	String	Timestamp when the instance is created.

Table 4-243 AccessConnectionInfo

Parameter	Type	Description
vpcep_id	String	VPC endpoint ID. Click Clients , click Create , and click create one . On the displayed page, click VPC Endpoint to create or check a VPC endpoint.
ip	String	Access IP address.
owner	String	Owner.
domain	String	Access domain name. When accessing LakeFormation APIs using an IP address, you need to add the HOST parameter to the request header and transfer the domain name.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients

Example Responses

Status code: 200

OK

```
{
  "total": 1,
  "access_client_infos": [ {
    "id": "gs23xxxxxxxxxxxxxxxxxxxxxxxxxxxxfgs2",
    "name": "lakeformation_client",
    "access_mode": "SYSTEM",
    "vpc_id": "d3fcxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
    "subnet_id": "d3fcxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
    "status": "RUNNING",
    "access_connections": [ {
      "vpcep_id": "0612xxxxxxxxxxxxxxxxxxxxa8fb",
      "ip": "10.1.0.1",
      "domain": "xxxxxx.com"
    }, {
      "vpcep_id": "0612xxxxxxxxxxxxxxxxxxxxa8fb",
      "ip": "10.1.0.2",
      "domain": "xxxxxx.com"
    }
  ]
} ]
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.1.5.4 Creating a Service Access Client

Function

This API is used to create service access clients. Restriction: By default, a maximum of 20 access clients can be created in an instance.

URI

POST /v1/{project_id}/instances/{instance_id}/access-clients

Table 4-244 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-245 Request header parameters

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

Table 4-246 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Client name. Enter 4 to 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
access_mode	No	String	Access mode. SYSTEM : default mode, in which the system automatically creates a VPCEP connection. This mode is recommended. In this mode, vpc_id and subnet_id cannot be left empty. CUSTOM : custom mode, in which the VPCEP connection is created by an external service. This mode is applicable to cross-tenant scenarios. In this mode, access_connections cannot be left empty. This mode is not recommended. Use the APIs related to the access tenant instead. Enumeration values: <ul style="list-style-type: none"> ● SYSTEM ● CUSTOM
vpc_id	No	String	VPC ID. You can click Clients , click Create , and then click create one to create a VPC.
subnet_id	No	String	Subnet ID. The value is generated by the system when a subnet is created, for example, 8c6721b5-78d1-4c3c-97b1-8421da139ffc .
access_connections	No	Array of AccessConnectionRequestBody objects	Access connection list. This parameter is valid only when the access mode is CUSTOM .

Table 4-247 AccessConnectionRequestBody

Parameter	Mandatory	Type	Description
vpcep_id	No	String	VPCEP ID. Click Clients , click Create , and click create one . On the displayed page, click VPC Endpoint to create or check a VPC endpoint.

Parameter	Mandatory	Type	Description
vpcep_service_name	No	String	Name of a VPC endpoint service. Enter a maximum of 64 characters.
domain	No	String	Access domain name. When accessing LakeFormation APIs using an IP address, you need to add the HOST parameter to the request header and transfer the domain name.

Response Parameters

Status code: 202

Table 4-248 Response body parameters

Parameter	Type	Description
id	String	Client ID.
name	String	Client name.
access_mode	String	Access mode. The options are SYSTEM , CUSTOM , or AUTO . Enumeration values: <ul style="list-style-type: none"> ● SYSTEM ● CUSTOM ● AUTO
status	String	Client status. The options are CREATING , RUNNING , DELETING , DELETED , CREATE_FAIL , and DELETE_FAIL . Enumeration values: <ul style="list-style-type: none"> ● CREATING ● RUNNING ● DELETING ● DELETED ● CREATE_FAIL ● DELETE_FAIL
vpc_id	String	VPC ID.
subnet_id	String	Subnet ID.

Parameter	Type	Description
access_connections	Array of AccessConnectionInfo objects	Access connection list.
create_time	String	Timestamp when the instance is created.

Table 4-249 AccessConnectionInfo

Parameter	Type	Description
vpcep_id	String	VPC endpoint ID. Click Clients , click Create , and click create one . On the displayed page, click VPC Endpoint to create or check a VPC endpoint.
ip	String	Access IP address.
owner	String	Owner.
domain	String	Access domain name. When accessing LakeFormation APIs using an IP address, you need to add the HOST parameter to the request header and transfer the domain name.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients
{
  "name" : "name-example",
  "vpc_id" : "vpc-example",
  "subnet_id" : "subnet-example"
}
```

Example Responses

Status code: 202

Created

```
{
  "id" : "gs23xxxxxxxxxxxxxxxxxxxxxxxxxxxxxfgs2",
  "name" : "lakeformation_client",
  "access_mode" : "SYSTEM",
  "vpc_id" : "d3fcxxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
  "subnet_id" : "d3fcxxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
  "status" : "CREATING"
}
```

Status Codes

Status Code	Description
202	Created

Error Codes

See [Error Codes](#).

4.1.5.5 Obtaining Service Access Client Details

Function

This API is used to obtain service access client details by ID.

URI

GET /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}

Table 4-250 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
client_id	Yes	String	Client ID. The value is automatically generated when the client is created.

Request Parameters

Table 4-251 Request header parameters

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

Response Parameters

Status code: 200

Table 4-252 Response body parameters

Parameter	Type	Description
id	String	Client ID.
name	String	Client name.
access_mode	String	Access mode. The options are SYSTEM , CUSTOM , or AUTO . Enumeration values: <ul style="list-style-type: none"> • SYSTEM • CUSTOM • AUTO
status	String	Client status. The options are CREATING , RUNNING , DELETING , DELETED , CREATE_FAIL , and DELETE_FAIL . Enumeration values: <ul style="list-style-type: none"> • CREATING • RUNNING • DELETING • DELETED • CREATE_FAIL • DELETE_FAIL
vpc_id	String	VPC ID.
subnet_id	String	Subnet ID.
access_connections	Array of AccessConnectionInfo objects	Access connection list.
create_time	String	Timestamp when the instance is created.

Table 4-253 AccessConnectionInfo

Parameter	Type	Description
vpcep_id	String	VPC endpoint ID. Click Clients , click Create , and click create one . On the displayed page, click VPC Endpoint to create or check a VPC endpoint.

Parameter	Type	Description
ip	String	Access IP address.
owner	String	Owner.
domain	String	Access domain name. When accessing LakeFormation APIs using an IP address, you need to add the HOST parameter to the request header and transfer the domain name.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients/{client_id}
```

Example Responses

Status code: 200

OK

```
{
  "id": "gs23xxxxxxxxxxxxxxxxxxxxxxxxxfgs2",
  "name": "lakeformation_client",
  "access_mode": "SYSTEM",
  "status": "RUNNING",
  "vpc_id": "d3fcxxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
  "subnet_id": "d3fcxxxxxxxxxxxxxxxxxxxxxxxxx8f1e",
  "access_connections": [ {
    "vpcep_id": "0612xxxxxxxxxxxxxxxxxxxxxxxxxa8fb"
  } ],
  "create_time": "2023-05-30T01:22:44.100Z"
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.1.5.6 Deleting a Service Access Client

Function

This API is used to delete service access clients by ID.

URI

```
DELETE /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}
```

Table 4-254 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
client_id	Yes	String	Client ID. The value is automatically generated when the client is created.

Request Parameters

Table 4-255 Request header parameters

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

Response Parameters

None

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients/{client_id}
```

Example Responses

None

Status Codes

Status Code	Description
200	Successful deletion.

Error Codes

See [Error Codes](#).

4.1.5.7 Updating a Service Access Client

Function

This API is used to update service access clients by ID.

URI

PUT /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}

Table 4-256 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
client_id	Yes	String	Client ID. The value is automatically generated when the client is created.

Request Parameters

Table 4-257 Request header parameters

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

Table 4-258 Request body parameters

Parameter	Mandatory	Type	Description
name	Yes	String	Client name. The value should contain 4 to 32 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Response Parameters

None

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients/{client_id}
{
  "name" : "lakeformation_client"
}
```

Example Responses

None

Status Codes

Status Code	Description
200	Successful upgrade.

Error Codes

See [Error Codes](#).

4.1.6 Specification Management

4.1.6.1 Querying the Specification List

Function

This API is used to query the specification list.

URI

GET /v1/{project_id}/specs

Table 4-259 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Table 4-260 Query Parameters

Parameter	Mandatory	Type	Description
spec_code	No	String	Specification code. The system automatically generates a value, for example, lakeformation.unit.basic.qps .
offset	No	Integer	Offset. The value ranges from 0 to 100 . The default value is 0 .
limit	No	Integer	Number of records to be queried at a time. The value ranges from 1 to 100 . The default value is 10 .

Request Parameters

None

Response Parameters

Status code: 200

Table 4-261 Response body parameters

Parameter	Type	Description
total	Integer	Total number.
spec_codes	Array of Spec objects	Resource specification code list.

Table 4-262 Spec

Parameter	Type	Description
spec_code	String	Specification code. For example, lakeformation.unit.basic.qps : indicates the query rate per second (QPS) specification.
resource_type	String	Resource code.
stride	Integer	Step.
unit	String	Unit.
min_stride_num	Integer	Minimum number of steps.
max_stride_num	Integer	Maximum number of steps.
usage_measurement_id	Integer	Usage measurement ID.
usage_factor	String	Usage factor.
usage_value	Integer	Total usage. Suppose you set a limit of 1 million API calls and 1 million metadata records as free, and charge CNY5 for each extra million API calls and each extra 100,000 metadata records. If this parameter shows 2 million API calls and 1.1 million metadata records, you have to pay for 1 million API calls and 100,000 metadata records.
free_usage_value	Integer	Free quota for API calls and metadata storage, which is set by users. This parameter will return a result shows that how many API calls are free of charge and how many metadata can be stored for free. Suppose you set a limit of 1 million API calls and 1 million metadata records as free, this parameter shows 1 million API calls and 1 million metadata records.
stride_num_whitelist	Array of integers	Step count whitelist. The step count must be a value in the whitelist.

Status code: 204

Table 4-263 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-264 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-265 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-266 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/specs

Example Responses

Status code: 200

Specification list.

```
{
  "total" : 1,
  "spec_codes" : [ {
    "spec_code" : "hws.resource.type.lakeformation.qps",
    "resource_type" : "hws.resource.type.lakeformation.metadata",
    "stride" : 2000,
    "unit" : "qps",
    "min_stride_num" : 1,
    "max_stride_num" : 100,
    "usage_measure_id" : 6,
    "usage_factor" : "Duration",
    "usage_value" : 1,
    "free_usage_value" : 1,
    "stride_num_whitelist" : [ 1, 2 ]
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
```

```
{
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	Specification list.
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.7 Quota Management Service

4.1.7.1 Querying the Quotas

Function

This API is used to query quota information about a user.

URI

GET /v1/{project_id}/quotas

Table 4-267 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Request Parameters

Table 4-268 Request header parameters

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

Response Parameters

Status code: 200

Table 4-269 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 404

Table 4-270 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-271 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/quotas
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```


Status Codes

Status Code	Description
200	Quota information about a user.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.8 Tag Management Service

4.1.8.1 Querying Tags

Function

This API is used to query all resource tags of the instances in a specified project.

URI

GET /v1/{project_id}/lakeformation-instance/tags

Table 4-272 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID.

Table 4-273 Query Parameters

Parameter	Mandatory	Type	Description
use_predefine_tags	Yes	Boolean	Whether to use a predefined tag. Value true indicates that a predefined tag is used.

Request Parameters

Table 4-274 Request header parameters

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

Response Parameters

Status code: 200

Table 4-275 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-276 Response body parameters

Parameter	Type	Description
tags	Array of ResourceTagParam objects	Tags.

Table 4-277 ResourceTagParam

Parameter	Type	Description
key	String	Resource tag key.
values	Array of strings	List of resource tag values.

Status code: 400

Table 4-278 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.

Parameter	Type	Description
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-279 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-280 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/lakeformation-instance/tags

Example Responses

Status code: 200

This API is used to query tags.

```
{
  "tags": [ {
    "key": "key1",
    "values": [ "value1" ]
  }, {
```

```
"key" : "key2",  
  "values" : [ "value2" ]  
} ]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code" : "common.00000408",  
  "error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "common.00000500",  
  "error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
200	This API is used to query tags.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.8.2 Updating Tags in Batches

Function

This API is used to batch update tags of a specified instance.

URI

PUT /v1/{project_id}/instances/{instance_id}/tags

Table 4-281 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-282 Request header parameters

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

Table 4-283 Request body parameters

Parameter	Mandatory	Type	Description
tags	No	Array of ResourceTag objects	Tag list.

Table 4-284 ResourceTag

Parameter	Mandatory	Type	Description
key	Yes	String	Key.
value	No	String	Value.

Response Parameters

Status code: 200**Table 4-285** Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 204**Table 4-286** Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-287 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-288 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-289 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/tags

```
{
  "tags": [ {
    "key": "key1",
    "value": "value1"
  }, {
    "key": "key2",
```

```
"value" : "value2"  
} ]  
}
```

Example Responses

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
  cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code" : "common.00000408",  
  "error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "common.00000500",  
  "error_msg" : "internal error0"  
}
```


Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.9 Agency Management

4.1.9.1 Creating an Agency

Function

This API is used to create an agency.

URI

POST /v1/{project_id}/agency

Table 4-290 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-291 Request header parameters

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

Table 4-292 Request body parameters

Parameter	Mandatory	Type	Description
agency_type	Yes	String	Agency type. Choose JOB_TRUST . Enumeration values: <ul style="list-style-type: none"> • JOB_TRUST

Response Parameters

Status code: 400

Table 4-293 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-294 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500**Table 4-295** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

This API is used to create an agency.

```
POST https://{endpoint}/v1/{project_id}/agency
```

```
{  
  "agency_type" : "JOB_TRUST"  
}
```

Example Responses

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
201	Successful agency creation.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.9.2 This API is used to delete an agency.

Function

This API is used to delete an agency.

URI

DELETE /v1/{project_id}/agency

Table 4-296 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Request Parameters

Table 4-297 Request header parameters

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

Table 4-298 Request body parameters

Parameter	Mandatory	Type	Description
agency_type	Yes	String	Agency type. Choose JOB_TRUST . Enumeration values: <ul style="list-style-type: none"> JOB_TRUST

Response Parameters

Status code: 200

Table 4-299 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-300 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-301 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-302 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

Delete an agency.

```
DELETE https://{endpoint}/v1/{project_id}/agency
{
  "agency_type" : "JOB_TRUST"
}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	Successful agency deletion.

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.1.9.3 Querying an Agency

Function

This API is used to query an agency.

URI

GET /v1/{project_id}/agency

Table 4-303 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Table 4-304 Query Parameters

Parameter	Mandatory	Type	Description
agency_type	Yes	String	Agency type. The options are JOB_TRUST (job agency) and ADMIN_TRUST (system agency). Enumeration values: <ul style="list-style-type: none"> • JOB_TRUST • ADMIN_TRUST

Request Parameters

Table 4-305 Request header parameters

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

Response Parameters

Status code: 200

Table 4-306 Response body parameters

Parameter	Type	Description
agency_type	String	Agency type. The options are JOB_TRUST (job agency) and ADMIN_TRUST (system agency). Enumeration values: <ul style="list-style-type: none"> • JOB_TRUST • ADMIN_TRUST

Status code: 400

Table 4-307 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.

Parameter	Type	Description
solution_msg	String	Solution.

Status code: 401

Table 4-308 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 403

Table 4-309 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 404

Table 4-310 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 408

Table 4-311 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Status code: 500

Table 4-312 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error description.
common_error_code	String	CBC common error code.
solution_msg	String	Solution.

Example Requests

```
/v1/{project_id}/agency?agency_type=JOB_TRUST
```

Example Responses

Status code: 200

Agency result.

```
{
  "agency_type" : "JOB_TRUST"
}
```

Status Codes

Status Code	Description
200	Agency result.

Status Code	Description
400	{ "error_code": "common.01000001", "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException" }
401	{ "error_code": 'APIG.1002', "error_msg": 'Incorrect token or token resolution failed' }
403	{ "error": { "code": "403", "message": "X-Auth-Token is invalid in the request", "error_code": null, "error_msg": null, "title": "Forbidden" }, "error_code": "403", "error_msg": "X-Auth-Token is invalid in the request", "title": "Forbidden" }
404	{ "error_code": "common.01000001", "error_msg": "response status exception, code: 404" }
408	{ "error_code": "common.00000408", "error_msg": "timeout exception occurred" }
500	{ "error_code": "common.00000500", "error_msg": "internal error" }

Error Codes

See [Error Codes](#).

4.2 LakeCat

4.2.1 Function Management

4.2.1.1 Listing All Functions in a Catalog

Function

Obtain all functions in a catalog.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/functions

Table 4-313 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-314 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-315 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-316 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-317 Response body parameters

Parameter	Type	Description
page_info	PagedInfo object	Pagination information.
functions	Array of Function objects	Function.

Table 4-318 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Table 4-319 Function

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.

Parameter	Type	Description
database_id	String	Database ID.
function_name	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none"> • JAVA
function_id	String	Function ID.
owner	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (LD user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	String	Function class name.
create_time	String	Creation time in the "yyyy-mm-ddThh:mm:ss" format.
update_time	String	Function metadata last modification time.
resource_uris	Array of FunctionResourceUri objects	Function address.

Table 4-320 FunctionResourceUri

Parameter	Type	Description
type	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	String	Function package address.

Status code: 400

Table 4-321 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-322 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-323 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "page_info": {
    "current_count": 2,
    "next_marker": null,
    "previous_marker": null
  },
  "functions": [ {
    "catalog_name": "catalog_1",
    "database_name": "database",
    "function_name": "123kk",
    "function_type": "JAVA",
    "owner": "owner_1",
    "owner_type": "USER",
    "owner_auth_source_type": "IAM",
    "class_name": "lxy",
    "create_time": "2022-12-08T08:18:54.000+00:00",
    "resource_uris": [ {
      "type": "FILE",
      "uri": "obs://lakeformation-test/test2/6/"
    } ]
  }, {
    "catalog_name": "catalog_2",
    "database_name": "database",
    "function_name": "1456",
    "function_type": "JAVA",
    "owner": "owner_2",
    "owner_type": "USER",
    "owner_auth_source_type": "IAM",
    "class_name": "34",
    "create_time": "2022-12-09T01:50:56.000+00:00",
    "resource_uris": [ {
      "type": "JAR",
      "uri": "obs://lakeformation-test/"
    } ], {
      "type": "FILE",
      "uri": "obs://lakeformation-test/test3/"
    } ]
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.2 Modifying Function Attributes

Function

This API is used to modify function attributes.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}

Table 4-324 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
function_name	Yes	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-325 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-326 Request body parameters

Parameter	Mandatory	Type	Description
function_name	Yes	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	Yes	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none">• JAVA
owner	Yes	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	Yes	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none">• USER• GROUP• ROLE

Parameter	Mandatory	Type	Description
owner_auth_source_type	No	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	Yes	String	Function class name. The value can contain 1 to 4,000 characters.
create_time	No	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
resource_uris	No	Array of FunctionResourceUri objects	Function address.

Table 4-327 FunctionResourceUri

Parameter	Mandatory	Type	Description
type	Yes	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	Yes	String	Function package address.

Response Parameters

Status code: 200

Table 4-328 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
function_name	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none"> • JAVA
function_id	String	Function ID.
owner	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	String	Function class name.

Parameter	Type	Description
create_time	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
update_time	String	Function metadata last modification time.
resource_uris	Array of FunctionResourceUri objects	Function address.

Table 4-329 FunctionResourceUri

Parameter	Type	Description
type	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	String	Function package address.

Status code: 400

Table 4-330 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-331 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-332 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}

```
{
  "function_name": "1456",
  "function_type": "JAVA",
  "owner": "owner_2",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "class_name": "34",
  "create_time": "2022-12-09T01:50:56.000+00:00",
  "resource_uris": [ {
    "type": "JAR",
    "uri": "obs://lakeformation-test/"
  }, {
    "type": "FILE",
    "uri": "obs://lakeformation-test/test3/"
  } ]
}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "database_name": "lx",
  "function_name": "2",
  "function_type": "JAVA",
  "owner": "owner",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "class_name": "333",
  "create_time": "2022-12-09T01:51:01.000+00:00",
  "resource_uris": [ ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.3 Creating a Function

Function

This API is used to create a function.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions

Table 4-333 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-334 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-335 Request body parameters

Parameter	Mandatory	Type	Description
function_name	Yes	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	Yes	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none">• JAVA
owner	Yes	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	Yes	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none">• USER• GROUP• ROLE

Parameter	Mandatory	Type	Description
owner_auth_source_type	No	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	Yes	String	Function class name. The value can contain 1 to 4,000 characters.
create_time	No	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
resource_uris	No	Array of FunctionResourceUri objects	Function address.

Table 4-336 FunctionResourceUri

Parameter	Mandatory	Type	Description
type	Yes	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	Yes	String	Function package address.

Response Parameters

Status code: 201

Table 4-337 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
function_name	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none"> • JAVA
function_id	String	Function ID.
owner	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	String	Function class name.

Parameter	Type	Description
create_time	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
update_time	String	Function metadata last modification time.
resource_uris	Array of FunctionResourceUri objects	Function address.

Table 4-338 FunctionResourceUri

Parameter	Type	Description
type	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	String	Function package address.

Status code: 400

Table 4-339 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-340 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-341 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions

```
{
  "function_name": "1456",
  "function_type": "JAVA",
  "owner": "owner_2",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "class_name": "34",
  "create_time": "2022-12-09T01:50:56.000+00:00",
  "resource_uris": [ {
    "type": "JAR",
    "uri": "obs://lakeformation-test/"
  }, {
    "type": "FILE",
    "uri": "obs://lakeformation-test/test3/"
  } ]
}
```

Example Responses

Status code: 201

Created

```
{
  "function_name": "1456",
  "function_type": "JAVA",
  "owner": "owner_2",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "class_name": "34",
  "create_time": "2022-12-09T01:50:56.000+00:00",
  "resource_uris": [ {
    "type": "JAR",
    "uri": "obs://lakeformation-test/"
  }, {
    "type": "FILE",
    "uri": "obs://lakeformation-test/test3/"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
```

```
"error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request

Status Code	Description
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.4 Listing All Function Names in a Database

Function

Query all function names in a database.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/names

Table 4-342 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-343 Query Parameters

Parameter	Mandatory	Type	Description
function_pattern	No	String	Function name wildcard. The value can contain a maximum of 256 characters. Only letters, digits, and special characters (*.) are allowed.

Request Parameters

Table 4-344 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-345 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-346 Response body parameters

Parameter	Type	Description
[items]	Array of strings	OK

Status code: 400

Table 4-347 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-348 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-349 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/names
```

Example Responses

Status code: 200

OK

```
[ "test" ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.5 Querying a Function

Function

This API is used to query function information by function name.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}

Table 4-350 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
function_name	Yes	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-351 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-352 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-353 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.

Parameter	Type	Description
function_name	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
function_type	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none"> • JAVA
function_id	String	Function ID.
owner	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	String	Function class name.
create_time	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
update_time	String	Function metadata last modification time.
resource_uris	Array of FunctionResourceUri objects	Function address.

Table 4-354 FunctionResourceUri

Parameter	Type	Description
type	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	String	Function package address.

Status code: 400

Table 4-355 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-356 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-357 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}
```

Example Responses

Status code: 200

OK

```
{
  "function_name": "1456",
  "function_type": "JAVA",
  "owner": "owner_2",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "class_name": "34",
  "create_time": "2022-12-09T01:50:56.000+00:00",
  "resource_uris": [ {
    "type": "JAR",
    "uri": "obs://lakeformation-test/"
  }, {
    "type": "FILE",
    "uri": "obs://lakeformation-test/test3/"
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.6 Deleting a Function

Function

This API is used to delete a function.

URI

```
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/
databases/{database_name}/functions/{function_name}
```

Table 4-358 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
function_name	Yes	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-359 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-360 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-361 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-362 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-363 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.1.7 Listing Functions

Function

This API is used to list functions.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions

Table 4-364 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-365 Query Parameters

Parameter	Mandatory	Type	Description
function_name_pattern	No	String	Function name wildcard. The value can contain a maximum of 256 characters. Only letters, digits, and special characters (_ *.) are allowed.
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
deleted	No	Boolean	Whether to query deleted metadata.

Request Parameters

Table 4-366 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-367 Response body parameters

Parameter	Type	Description
page_info	PagedInfo object	Pagination information.
functions	Array of Function objects	Function.

Table 4-368 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Table 4-369 Function

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
function_name	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (<code>_</code>) are allowed.
function_type	String	Function type. You can choose JAVA . Enumeration values: <ul style="list-style-type: none"> JAVA

Parameter	Type	Description
function_id	String	Function ID.
owner	String	Function owner. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
class_name	String	Function class name.
create_time	String	Creation time in the "yyyy-mm-ddThh:mm:sss" format.
update_time	String	Function metadata last modification time.
resource_uris	Array of FunctionResourceUri objects	Function address.

Table 4-370 FunctionResourceUri

Parameter	Type	Description
type	String	Function package type. The options are JAR , FILE , and ARCHIVE . Enumeration values: <ul style="list-style-type: none"> • JAR • FILE • ARCHIVE
uri	String	Function package address.

Status code: 400

Table 4-371 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-372 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-373 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions
```

Example Responses

Status code: 200

OK

```
{
  "page_info": {
    "current_count": 2,
    "next_marker": null,
    "previous_marker": null
  },
  "functions": [ {
    "catalog_name": "catalog_1",
    "database_name": "database",
    "function_name": "123kk",
    "function_type": "JAVA",
    "owner": "owner_1",
    "owner_type": "USER",
    "owner_auth_source_type": "IAM",
    "class_name": "lxy",
    "create_time": "2022-12-08T08:18:54.000+00:00",
    "resource_uris": [ {
      "type": "FILE",
      "uri": "obs://lakeformation-test/test2/6/"
    } ]
  }, {
    "catalog_name": "catalog_2",
    "database_name": "database",
    "function_name": "1456",
    "function_type": "JAVA",
    "owner": "owner_2",
    "owner_type": "USER",
    "owner_auth_source_type": "IAM",
    "class_name": "34",
    "create_time": "2022-12-09T01:50:56.000+00:00",
    "resource_uris": [ {
      "type": "JAR",
      "uri": "obs://lakeformation-test/"
    } ], {
      "type": "FILE",
      "uri": "obs://lakeformation-test/test3/"
    } ]
  } ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2 Catalog Management

4.2.2.1 Listing Catalogs

Function

Catalog details listed based on the wildcard of the catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

URI

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

Table 4-374 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-375 Query Parameters

Parameter	Mandatory	Type	Description
branch_name	No	String	Branch name. The value should contain 1 to 32 characters. Only letters, numbers, and underscores (_) are allowed. The default value is main .
version	No	Long	Version.
deleted	No	Boolean	Whether to query deleted metadata.

Request Parameters

Table 4-376 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-377 Response body parameters

Parameter	Type	Description
[items]	Array of Catalog objects	OK

Table 4-378 Catalog

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
description	String	Description.
location	String	Path, for example, obs://location/uri/ .
database_location_list	Array of strings	List of database paths. Value null indicates that the response body does not contain this parameter.
owner	String	Catalog owner. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter.

Parameter	Type	Description
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_source	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
type	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE
update_time	String	Catalog metadata last modification time.

Status code: 400

Table 4-379 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-380 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-381 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
[ {  
  "catalog_name" : "hive",  
  "description" : "Default catalog, for Hive",  
  "location" : "obs://lakeformation/test",  
  "database_location_list" : null,  
  "owner" : "admin",  
  "owner_type" : "USER",  
  "owner_source" : "IAM"  
}]
```

Status code: 400

Bad Request


```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2.2 Obtaining Catalog Information

Function

This API is used to obtain catalog information.

URI

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

Table 4-382 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-383 Query Parameters

Parameter	Mandatory	Type	Description
branch_name	No	String	Branch name. The value should contain 1 to 32 characters. Only letters, numbers, and underscores (_) are allowed. The default value is main .
version	No	Long	Version.

Request Parameters

Table 4-384 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-385 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
description	String	Description.
location	String	Path, for example, obs://location/uri/ .
database_location_list	Array of strings	List of database paths. Value null indicates that the response body does not contain this parameter.
owner	String	Catalog owner. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter.

Parameter	Type	Description
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_source	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
type	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE
update_time	String	Catalog metadata last modification time.

Status code: 400

Table 4-386 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-387 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-388 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "description": "Default catalog, for Hive",
  "location": "obs://lakeformation/test",
  "database_location_list": null,
  "owner": "admin",
  "owner_type": "USER",
  "owner_source": "IAM"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2.3 Creating a Catalog

Function

Create the **default** database in the new catalog.

URI

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

Table 4-389 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-390 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-391 Request body parameters

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
description	No	String	Description. Enter a maximum of 4,000 characters.
location	No	String	Path, for example, obs://location/uri/ .
database_location_list	No	Array of strings	List of database paths. A maximum of 1,000 paths can be displayed on the page.
branch_name	No	String	Branch name. The value should contain 1 to 32 characters. Only letters, numbers, and underscores (_) are allowed. The default value is main .
owner	No	String	Catalog owner. The value can contain a maximum of 128 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP

Parameter	Mandatory	Type	Description
owner_source	No	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
type	No	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE

Response Parameters

Status code: 201

Table 4-392 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
description	String	Description.
location	String	Path, for example, obs://location/uri/ .
database_location_list	Array of strings	List of database paths. Value null indicates that the response body does not contain this parameter.

Parameter	Type	Description
owner	String	Catalog owner. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_source	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
type	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE
update_time	String	Catalog metadata last modification time.

Status code: 400

Table 4-393 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-394 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-395 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs
{
  "catalog_name" : "hive",
  "description" : "Default catalog, for Hive",
  "location" : "obs://lakeformation/test",
  "database_location_list" : null,
  "owner" : "admin",
  "owner_type" : "USER",
  "owner_source" : "IAM"
}
```

Example Responses

Status code: 201

Created

```
{
  "catalog_name" : "hive",
  "description" : "Default catalog, for Hive",
  "location" : "obs://lakeformation/test",
  "database_location_list" : null,
  "owner" : "admin",
  "owner_type" : "USER",
  "owner_source" : "IAM"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
```

```
"error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2.4 Modifying a Catalog

Function

This API is used to modify a catalog.

URI

PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}

Table 4-396 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-397 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-398 Request body parameters

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
description	No	String	Description. Enter a maximum of 4,000 characters.
location	No	String	Path, for example, obs://location/uri/ .
database_location_list	No	Array of strings	List of database paths. A maximum of 1,000 paths can be displayed on the page.
branch_name	No	String	Branch name. The value should contain 1 to 32 characters. Only letters, numbers, and underscores (_) are allowed. The default value is main .
owner	No	String	Catalog owner. The value can contain a maximum of 128 characters. Only letters, numbers, and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_source	No	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
type	No	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE

Response Parameters

Status code: 200

Table 4-399 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.

Parameter	Type	Description
catalog_id	String	catalogID.
description	String	Description.
location	String	Path, for example, obs://location/uri/ .
database_location_list	Array of strings	List of database paths. Value null indicates that the response body does not contain this parameter.
owner	String	Catalog owner. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_source	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER

Parameter	Type	Description
type	String	Catalog type. The values are DEFAULT (default metadata type) or CLICKHOUSE (ClickHouse type). If this parameter is not specified, the default value DEFAULT is used. This parameter is specified during creation and cannot be modified. Enumeration values: <ul style="list-style-type: none"> • DEFAULT • CLICKHOUSE
update_time	String	Catalog metadata last modification time.

Status code: 400

Table 4-400 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-401 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-402 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}
```

```
{
  "catalog_name" : "hive",
  "description" : "Default catalog, for Hive",
  "location" : "obs://lakeformation/test",
  "database_location_list" : null,
  "owner" : "admin",
  "owner_type" : "USER",
  "owner_source" : "IAM"
}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name" : "hive",
  "description" : "Default catalog, for Hive",
  "location" : "obs://lakeformation/test",
  "database_location_list" : null,
  "owner" : "admin",
  "owner_type" : "USER",
  "owner_source" : "IAM"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  }
}
```

```

},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.2.5 Deleting a Catalog

Function

Delete empty catalogs. Before the deletion, ensure that the catalog contains only the default database and the default database does not contain tables. Otherwise, the deletion fails.

URI

```
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}
```

Table 4-403 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-404 Query Parameters

Parameter	Mandatory	Type	Description
branch_name	No	String	Branch name. The value should contain 1 to 32 characters. Only letters, numbers, and underscores (_) are allowed. The default value is main .

Request Parameters

Table 4-405 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-406 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-407 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-408 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-409 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
  cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3 Database Management

4.2.3.1 Listing Database Information

Function

This API is used to list database information.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases

Table 4-410 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-411 Query Parameters

Parameter	Mandatory	Type	Description
database_name_pattern	No	String	Database name wildcard. The value can contain 1 to 128 characters. Only letters, digits, and special characters ([*.-]) are allowed.
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 0 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
external_database_id	No	String	User database ID, which is specified during creation and cannot be changed.
deleted	No	Boolean	Whether to query deleted metadata.

Request Parameters

Table 4-412 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-413 Response body parameters

Parameter	Type	Description
databases	Array of Database objects	Database information.
page_info	PagedInfo object	Pagination information.

Table 4-414 Database

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
database_status	Integer	Database status. The options are 0 (normal), 1 (deleting), 2 (deleted), or 3 (restoring).
external_database_id	String	User database ID, which is specified during creation and cannot be changed.
owner	String	Database owner.

Parameter	Type	Description
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (LD user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	String	Database description.
location	String	Database directory, for example, obs://location/uri/ .
parameters	Map<String,String>	Parameters.
table_location_list	Array of strings	List of table paths. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. In phase 2, the default value is null . Value null indicates that the response body does not contain this parameter.
function_location_list	Array of strings	Function path list. Value null (the default value) indicates that the response body does not contain this parameter.
update_time	String	Database metadata last modification time.

Table 4-415 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-416 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-417 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-418 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "databases": [ {
    "catalog_name": "hive",
    "database_name": "policy_test",
    "owner": "lakeformation",
    "owner_type": "USER",
    "owner_auth_source_type": "IAM",
    "description": "",
    "location": "obs://lakeformation/test",
    "parameters": { },
    "table_location_list": null,
    "function_location_list": null
  } ],
  "page_info": {
    "current_count": 1,
    "next_marker": null,
    "previous_marker": null
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  }
}
```

```

},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3.2 Creating a Database

Function

This API is used to create a database.

URI

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

Table 4-419 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-420 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-421 Request body parameters

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
external_database_id	No	String	User database ID, which is specified during creation and cannot be changed.

Parameter	Mandatory	Type	Description
owner	No	String	Database owner. The value contains 0 to 128 characters.
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_auth_source_type	No	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	No	String	Database description. Enter a maximum of 4,000 characters when you create the database.
location	No	String	Database directory, for example, obs://location/uri/ .
parameters	No	Map<String,String>	Tags.
table_location_list	No	Array of strings	List of table paths.

Parameter	Mandatory	Type	Description
function_location_list	No	Array of strings	Function path list.

Response Parameters

Status code: 201

Table 4-422 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
database_status	Integer	Database status. The options are 0 (normal), 1 (deleting), 2 (deleted), or 3 (restoring).
external_database_id	String	User database ID, which is specified during creation and cannot be changed.
owner	String	Database owner.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none">• USER• GROUP• ROLE

Parameter	Type	Description
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	String	Database description.
location	String	Database directory, for example, obs://location/uri/ .
parameters	Map<String,String>	Parameters.
table_location_list	Array of strings	List of table paths. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. In phase 2, the default value is null . Value null indicates that the response body does not contain this parameter.
function_location_list	Array of strings	Function path list. Value null (the default value) indicates that the response body does not contain this parameter.
update_time	String	Database metadata last modification time.

Status code: 400

Table 4-423 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-424 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-425 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases
{
  "database_name": "db8a9ea595e6a14db1bdb3c3a90bf2554c",
  "owner": "owner",
  "owner_type": "USER",
  "description": "description",
  "location": "obs://location/test/db8a9ea595e6a14db1bdb3c3a90bf2554c.db",
  "parameters": {
    "transient_lastDdlTime": "120",
    "comment": "comment message",
    "classification": "other"
  }
}
```

Example Responses

Status code: 201

Created

```
{
  "catalog_name": "catalog0b5633ba2b904511ad514346f4d23d4b",
  "database_name": "db8a9ea595e6a14db1bdb3c3a90bf2554c",
  "owner": "owner",
  "owner_type": "USER",
  "description": "description",
  "location": "obs://location/test/db8a9ea595e6a14db1bdb3c3a90bf2554c.db",
  "parameters": {
    "transient_lastDdlTime": "120",
    "comment": "comment message",
    "classification": "other"
  }
}
```

```
},  
"table_location_list" : [ ],  
"function_location_list" : [ ]  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code" : "common.00000408",  
  "error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "common.00000500",  
  "error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3.3 Obtaining a Database

Function

This API is used to obtain a database.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}

Table 4-426 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-427 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-428 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
database_status	Integer	Database status. The options are 0 (normal), 1 (deleting), 2 (deleted), or 3 (restoring).
external_database_id	String	User database ID, which is specified during creation and cannot be changed.
owner	String	Database owner.

Parameter	Type	Description
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (LD user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	String	Database description.
location	String	Database directory, for example, obs://location/uri/ .
parameters	Map<String,String>	Parameters.
table_location_list	Array of strings	List of table paths. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. In phase 2, the default value is null . Value null indicates that the response body does not contain this parameter.
function_location_list	Array of strings	Function path list. Value null (the default value) indicates that the response body does not contain this parameter.
update_time	String	Database metadata last modification time.

Status code: 400

Table 4-429 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-430 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-431 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "database_name": "policy_test",
  "owner": "lakeformation",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "description": "",
  "location": "obs://lakeformation/test",
  "parameters": {
```

```
"transient_lastDdlTime" : "120",
"comment" : "comment message",
"classification" : "other"
},
"table_location_list" : [ ],
"function_location_list" : [ ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```


Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3.4 Modifying Database Attributes

Function

This API is used to modify database attributes.

URI

PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}

Table 4-432 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-433 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-434 Request body parameters

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
external_database_id	No	String	User database ID, which is specified during creation and cannot be changed.
owner	No	String	Database owner. The value contains 0 to 128 characters.

Parameter	Mandatory	Type	Description
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • USER • ROLE • GROUP
owner_auth_source_type	No	String	Owner source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	No	String	Database description. Enter a maximum of 4,000 characters when you create the database.
location	No	String	Database directory, for example, obs://location/uri/ .
parameters	No	Map<String,String>	Tags.
table_location_list	No	Array of strings	List of table paths.
function_location_list	No	Array of strings	Function path list.

Response Parameters

Status code: 200

Table 4-435 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
database_status	Integer	Database status. The options are 0 (normal), 1 (deleting), 2 (deleted), or 3 (restoring).
external_database_id	String	User database ID, which is specified during creation and cannot be changed.
owner	String	Database owner.
owner_type	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
owner_auth_source_type	String	Owner authorization source type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (LD user), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
description	String	Database description.
location	String	Database directory, for example, obs://location/uri/ .

Parameter	Type	Description
parameters	Map<String,String>	Parameters.
table_location_list	Array of strings	List of table paths. The LakeFormation service is divided into phase 1 and phase 2. The response body of phase 1 does not contain this parameter. In phase 2, the default value is null . Value null indicates that the response body does not contain this parameter.
function_location_list	Array of strings	Function path list. Value null (the default value) indicates that the response body does not contain this parameter.
update_time	String	Database metadata last modification time.

Status code: 400

Table 4-436 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-437 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-438 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}

{
  "database_name": "db8a9ea595e6a14db1bdb3c3a90bf2554c",
  "owner": "owner",
  "owner_type": "USER",
  "description": "description",
  "location": "obs://location/test/db8a9ea595e6a14db1bdb3c3a90bf2554c.db",
  "parameters": {
    "transient_lastDdlTime": "120",
    "comment": "comment message",
    "classification": "other"
  }
}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "database_name": "policy_test",
  "owner": "lakeformation",
  "owner_type": "USER",
  "owner_auth_source_type": "IAM",
  "description": "",
  "location": "obs://lakeformation/test",
  "parameters": {
    "transient_lastDdlTime": "120",
    "comment": "comment message",
    "classification": "other"
  },
  "table_location_list": [ ],
  "function_location_list": [ ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
```

```
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3.5 Deleting a Database

Function

Delete a database. The default database cannot be deleted. **cascade**: If this parameter is set to **true**, tables in the database will be deleted. If it is set to **false**, only empty databases will be deleted. **delete_data**: If this parameter is set to **true**, table data will be moved to the recycle bin during cascading deletion. If it is set to **false**, no data will be deleted from the table. After a database is deleted, transaction tables in it cannot be restored.

URI

```
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/  
databases/{database_name}
```

Table 4-439 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-440 Query Parameters

Parameter	Mandatory	Type	Description
delete_data	No	Boolean	Whether to delete the data stored in the database path. The default value is false .
cascade	No	Boolean	Whether to delete tables, partitions, and functions in the database. The default value is false .

Request Parameters

Table 4-441 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-442 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-443 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-444 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-445 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  }
}
```

```

},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.3.6 Listing Database Names

Function

This API is used to list database names.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/
names

Table 4-446 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-447 Query Parameters

Parameter	Mandatory	Type	Description
database_pattern	No	String	Database name wildcard. The value can contain 1 to 128 characters. Only letters, digits, and special characters (_- *.) are allowed.

Request Parameters

Table 4-448 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-449 Response body parameters

Parameter	Type	Description
[items]	Array of strings	OK

Status code: 400

Table 4-450 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-451 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-452 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/names

Example Responses

Status code: 200

OK

```
[ "test" ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
```

```
{
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4 Table Management

4.2.4.1 Obtaining Table Description Page by Page

Function

Find the table that meets the conditions and returns the table description based on the database and table wildcards.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/
tables

Table 4-453 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Table 4-454 Query Parameters

Parameter	Mandatory	Type	Description
database_name_pattern	No	String	Database name wildcard. The value can contain 1 to 128 characters. Only letters, digits, and special characters (_ * . -) are allowed.
table_name_pattern	No	String	Table name wildcard. The value can contain 1 to 256 characters. Only letters, digits, and special characters (_ * . -) are allowed.

Parameter	Mandatory	Type	Description
table_types	No	Array	Type of the table to be queried. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
external_table_id	No	String	User table ID, which is specified during creation and cannot be changed.

Request Parameters

Table 4-455 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-456 Response body parameters

Parameter	Type	Description
table metas	Array of TableMeta objects	Table metadata list.
page_info	PagedInfo object	Pagination return information.

Table 4-457 TableMeta

Parameter	Type	Description
catalog_name	String	Catalog name.
database_name	String	Database name.
table_name	String	Table name.
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.

Table 4-458 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Parameter	Type	Description
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-459 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-460 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-461 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/tables

Example Responses

Status code: 200

OK

```
{
  "table metas" : [ {
    "catalog_name" : "hive",
    "database_name" : "default",
    "table_name" : "tbla",
    "table_type" : "MANAGED_TABLE",
    "comments" : ""
  }, {
    "catalog_name" : "hive",
    "database_name" : "default",
    "table_name" : "tblb",
    "table_type" : "MANAGED_TABLE",
    "comments" : ""
  } ],
  "page_info" : {
    "current_count" : 2,
    "next_marker" : null,
    "previous_marker" : null
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
```

```
{
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.2 Tenant token.

Function

Query the table information list in the database by table name.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/list-by-names

Table 4-462 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-463 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-464 Request body parameters

Parameter	Mandatory	Type	Description
table_names	Yes	Array of strings	Name list of tables to be queried. A maximum of 1,000 table names can be displayed on the page.

Response Parameters

Status code: 200

Table 4-465 Response body parameters

Parameter	Type	Description
[items]	Array of Table objects	OK

Table 4-466 Table

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
table_status	Integer	Table status. The options are 0 (normal), 1 (deleted), 2 (restoring).
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
create_time	String	Table creation time.
last_access_time	String	Last access time.
update_time	String	Table metadata last modification time.
last_analyzed_time	String	Last time when column-level statistics were calculated.
owner	String	User information.
owner_type	String	User type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
parameters	Map<String,String>	Parameter.
partition_keys	Array of Column objects	List of table partition columns.

Parameter	Type	Description
retention	Integer	Table retention period.
storage_descriptor	StorageDescriptor object	Data storage.
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.
view_expanded_text	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .

Table 4-467 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.

Parameter	Type	Description
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-468 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-469 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-470 SerDeInfo

Parameter	Type	Description
name	String	Names.

Parameter	Type	Description
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-471 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-472 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-473 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-474 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/
{database_name}/tables/list-by-names
{
  "table_names" : [ "testtable" ]
}
```

Example Responses

Status code: 200

OK

```
[ {
  "catalog_name" : "hive",
  "database_name" : "dba",
  "table_name" : "aa",
  "create_time" : "2022-11-23T02:34:23.000+00:00",
  "last_access_time" : "2022-12-31T23:59:59.000+00:00",
  "update_time" : null,
  "last_analyzed_time" : null,
  "owner" : "owner",
  "owner_type" : "USER",
  "parameters" : {
    "transient_lastDdlTime" : "1669170863",
    "classification" : "avro"
  },
  "partition_keys" : [ ],
  "retention" : 0,
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "int",
      "column_name" : "a",
      "comment" : "a"
    } ],
    "location" : "obs://lakeformation-test/test/aa",
    "compressed" : true,
    "input_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerInputFormat",
    "output_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerOutputFormat",
    "number_of_buckets" : 0,
    "bucket_columns" : [ ],
    "sort_columns" : [ ],
    "serde_info" : {
      "name" : "name",
      "serialization_library" : "org.apache.hadoop.hive.serde2.avro.AvroSerDe",
      "parameters" : {
        "serialization.format" : "1"
      }
    }
  },
  "parameters" : { },
  "skewed_info" : {
    "skewed_column_names" : [ ],
```

```
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
},
"table_type" : "MANAGED_TABLE",
"comments" : "",
"view_expanded_text" : "",
"view_original_text" : ""
} ]
```

Status code: 201

Created

```
{
  "tables" : [ {
    "catalog_name" : "hive",
    "database_name" : "dba",
    "table_name" : "www",
    "create_time" : "2022-11-19T03:10:14.000+00:00",
    "last_access_time" : "2022-12-31T23:59:59.000+00:00",
    "update_time" : null,
    "last_analyzed_time" : null,
    "owner" : "lakeformation",
    "owner_type" : "USER",
    "parameters" : {
      "ww" : "ww",
      "transient_lastDdlTime" : "1668827414",
      "classification" : "avro",
      "www" : "ww",
      "wwwwww" : "ww"
    },
    "partition_keys" : [ ],
    "retention" : 0,
    "storage_descriptor" : {
      "columns" : [ {
        "column_type" : "tinyint",
        "column_name" : "ww",
        "comment" : null
      } ],
      "location" : "obs://lakeformation/test",
      "compressed" : true,
      "input_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerInputFormat",
      "output_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerOutputFormat",
      "number_of_buckets" : 0,
      "bucket_columns" : [ ],
      "sort_columns" : [ ],
      "serde_info" : {
        "name" : "name",
        "serialization_library" : "org.apache.hadoop.hive.serde2.avro.AvroSerDe",
        "parameters" : {
          "serialization.format" : "1"
        }
      }
    },
    "parameters" : { },
    "skewed_info" : {
      "skewed_column_names" : [ ],
      "skewed_column_value_location_maps" : { },
      "skewed_column_values" : [ ]
    },
    "stored_as_sub_directories" : false
  },
  "table_type" : "MANAGED_TABLE",
  "comments" : "",
  "view_expanded_text" : "",
  "view_original_text" : ""
} ],
"page_info" : {
  "current_count" : 1,
```

```
"next_marker" : null,  
"previous_marker" : null  
}  
}
```

Status code: 400

Bad Request

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error" : {  
    "code" : "403",  
    "message" : "X-Auth-Token is invalid in the request",  
    "error_code" : null,  
    "error_msg" : null,  
    "title" : "Forbidden"  
  },  
  "error_code" : "403",  
  "error_msg" : "X-Auth-Token is invalid in the request",  
  "title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code" : "common.01000001",  
  "error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code" : "common.00000408",  
  "error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code" : "common.00000500",  
  "error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.3 Listing Tables on Different Pages by Condition

Function

Return the metadata of the table that meets the query conditions. Transaction operations are not supported. The table name and type are the primary criteria for filtering when they are specified by a wildcard or a type. Otherwise, the filtering is based on the attributes of the data.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables

Table 4-475 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-476 Query Parameters

Parameter	Mandatory	Type	Description
table_name_pattern	No	String	Table name wildcard. The value can contain 1 to 256 characters. Only letters, digits, and special characters (_ *.-) are allowed.
table_type	No	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> ● MANAGED_TABLE ● EXTERNAL_TABLE ● VIRTUAL_VIEW ● MATERIALIZED_VIEW ● DICTIONARY_TABLE

Parameter	Mandatory	Type	Description
filter	No	String	Filtering criteria string. You can query the table by attribute. The supported attributes include: HIVE_FILTER_FIELD_OWNER HIVE_FILTER_FIELD_LAST_ACCESS HIVE_FILTER_FIELD_PARAMS
limit	No	Integer	Number of returned records. The default number is 100 . The value ranges from 1 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
deleted	No	Boolean	Whether to query deleted metadata.

Request Parameters

Table 4-477 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-478 Response body parameters

Parameter	Type	Description
tables	Array of Table objects	Tables.
page_info	PagedInfo object	Pagination information.

Table 4-479 Table

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
table_status	Integer	Table status. The options are 0 (normal), 1 (deleted), 2 (restoring).
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
create_time	String	Table creation time.
last_access_time	String	Last access time.
update_time	String	Table metadata last modification time.
last_analyzed_time	String	Last time when column-level statistics were calculated.
owner	String	User information.
owner_type	String	User type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
parameters	Map<String,String>	Parameter.
partition_keys	Array of Column objects	List of table partition columns.
retention	Integer	Table retention period.
storage_descriptor	StorageDescriptor object	Data storage.

Parameter	Type	Description
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.
view_expanded_text	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .

Table 4-480 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.

Parameter	Type	Description
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-481 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code>) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-482 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-483 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.

Parameter	Type	Description
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-484 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Table 4-485 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-486 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-487 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-488 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables
```

Example Responses

Status code: 200

OK

```
{
  "tables": [ {
    "catalog_name": "hive",
    "database_name": "dba",
    "table_name": "www",
    "create_time": "2022-11-19T03:10:14.000+00:00",
    "last_access_time": "2022-12-31T23:59:59.000+00:00",
    "update_time": null,
    "last_analyzed_time": null,
    "owner": "lakeformation",
    "owner_type": "USER",
    "parameters": {
      "ww": "ww",
      "transient_lastDdlTime": "1668827414",
      "classification": "avro",
      "www": "ww",
      "wwwwww": "ww"
    },
  },
  "partition_keys": [ ],
  "retention": 0,
  "storage_descriptor": {
    "columns": [ {
      "column_type": "tinyint",
```

```

        "column_name": "ww",
        "comment": null
    }],
    "location": "obs://lakeformation/test",
    "compressed": true,
    "input_format": "org.apache.hadoop.hive ql.io.avro.AvroContainerInputFormat",
    "output_format": "org.apache.hadoop.hive ql.io.avro.AvroContainerOutputFormat",
    "number_of_buckets": 0,
    "bucket_columns": [],
    "sort_columns": [],
    "serde_info": {
        "name": "name",
        "serialization_library": "org.apache.hadoop.hive.serde2.avro.AvroSerDe",
        "parameters": {
            "serialization.format": "1"
        }
    },
    "parameters": {},
    "skewed_info": {
        "skewed_column_names": [],
        "skewed_column_value_location_maps": {},
        "skewed_column_values": []
    },
    "stored_as_sub_directories": false
},
"table_type": "MANAGED_TABLE",
"comments": "",
"view_expanded_text": "",
"view_original_text": ""
}],
"page_info": {
    "current_count": 1,
    "next_marker": null,
    "previous_marker": null
}
}

```

Status code: 400

Bad Request

```

{
    "error_code": "common.01000001",
    "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
    "error_code": 'APIG.1002',
    "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```

{
    "error": {
        "code": "403",
        "message": "X-Auth-Token is invalid in the request",
        "error_code": null,
        "error_msg": null,
        "title": "Forbidden"
    },
    "error_code": "403",
    "error_msg": "X-Auth-Token is invalid in the request",
}

```

```
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.4 Creating a Table

Function

This API is used to create a table.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables

Table 4-489 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-490 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-491 Request body parameters

Parameter	Mandatory	Type	Description
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_type	Yes	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
owner	No	String	Table owner. Enter 1 to 49 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
create_time	No	String	Table creation time.
last_access_time	No	String	Last access time.
last_analyzed_time	No	String	Last analyzed time.
partition_keys	No	Array of Column objects	Information about partition columns.
retention	No	Integer	Table retention period.

Parameter	Mandatory	Type	Description
storage_descriptor	Yes	StorageDescriptor object	Data storage.
parameters	No	Map<String,String>	Table parameter information. Each key is a string that contains at least 1 byte but no more than 255 bytes. Each value is a UTF-8 string containing a maximum of 4000 bytes.
comments	No	String	Table description. Enter a maximum of 4,000 characters when you create the table.
view_expanded_text	No	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	No	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .
ignore_obs_checked	No	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
external_table_id	No	String	User table ID, which is specified during creation and cannot be changed.

Table 4-492 StorageDescriptor

Parameter	Mandatory	Type	Description
columns	Yes	Array of Column objects	All fields except partition columns.
location	No	String	Path, for example, obs://location/uri/ .
compressed	Yes	Boolean	Whether to enable data compression. The default value is false .
input_format	No	String	Input format.

Parameter	Mandatory	Type	Description
output_format	No	String	Output format.
number_of_buckets	No	Integer	Number of buckets. The default value is 0 .
bucket_columns	No	Array of strings	Bucket field.
sort_columns	No	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	Yes	SerdeInfo object	Serialization/Deserialization information.
parameters	Yes	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	No	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	No	Boolean	Whether to store data in subdirectories.

Table 4-493 Column

Parameter	Mandatory	Type	Description
column_type	Yes	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ -+*(,)</code>) are allowed.
comment	No	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-494 Order

Parameter	Mandatory	Type	Description
column	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	No	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-495 SerDeInfo

Parameter	Mandatory	Type	Description
name	No	String	Names.
serialization_library	No	String	Class that implements serialization/deserialization.
parameters	No	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-496 SkewedInfo

Parameter	Mandatory	Type	Description
skewed_column_names	Yes	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Yes	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Yes	Array<Array<String>>	List of skewed values.

Response Parameters

Status code: 201

Table 4-497 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
table_status	Integer	Table status. The options are 0 (normal), 1 (deleted), 2 (restoring).
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
create_time	String	Table creation time.
last_access_time	String	Last access time.
update_time	String	Table metadata last modification time.
last_analyzed_time	String	Last time when column-level statistics were calculated.
owner	String	User information.
owner_type	String	User type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none">• USER• GROUP• ROLE
parameters	Map<String,String>	Parameter.
partition_keys	Array of Column objects	List of table partition columns.
retention	Integer	Table retention period.
storage_descriptor	StorageDescriptor object	Data storage.

Parameter	Type	Description
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.
view_expanded_text	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .

Table 4-498 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.

Parameter	Type	Description
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-499 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-500 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-501 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.

Parameter	Type	Description
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-502 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-503 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-504 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-505 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables
```

```
{
  "table_name": "tbl86b03ad314fa4ea7943fb769df163a79",
  "table_type": "MANAGED_TABLE",
  "owner": "onebox",
  "owner_type": "USER",
  "create_time": "2023-05-31T01:59:54.000+00:00",
  "last_access_time": "2023-05-31T01:59:54.000+00:00",
  "last_analyzed_time": "2023-05-31T01:59:54.000+00:00",
  "partition_keys": [ {
    "column_type": "string",
    "column_name": "column_prefix0",
    "comment": "5456ac36c75947eab223476dafa58ae0"
  }, {
    "column_type": "string",
    "column_name": "column_prefix1",
    "comment": "d95d1241557e4a769bfcda42974fdf0e"
  } ],
  "retention": 1000,
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "3eb10da96ec84ec6b8543b730c0660b2"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "ee5aa1f3755f425a964f045f59b2c0a0"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "d47884f69582432db1256e60a8e37ea6"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "4e26e910310648f1a97b6e17cb2b25ce"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "85084620943b4d36a9e5d6a856307e73"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",
      "comment": "f78264b5d8ab4409a3a05ebb0434424e"
    }, {
      "column_type": "string",
      "column_name": "column_prefix6",
      "comment": "45df8ef109374ac6ab9aaa371b29baa7"
    }, {
      "column_type": "string",
      "column_name": "column_prefix7",
      "comment": "c006d18cc411429bacc0f0e1eb75f99e"
    } ]
  }
}
```

```

    }, {
      "column_type": "string",
      "column_name": "column_prefix8",
      "comment": "58e1c81b2c0a4c089570106c8bb4461d"
    }, {
      "column_type": "string",
      "column_name": "column_prefix9",
      "comment": "32cc797a16f348ebbf5f2e1f85969603"
    }
  ],
  "location": "obs://location/test/database/5e2941387d8741afa217677361d0676f",
  "compressed": false,
  "input_format": "850fd4c238934dfdaa3006f388d71f9d",
  "output_format": "740f42961f1146d39abe19beadc2ad89",
  "number_of_buckets": 0,
  "bucket_columns": [ ],
  "sort_columns": [ ],
  "serde_info": {
    "name": "a247cc09ce74477e8c95915bb45e9878",
    "serialization_library": "9dad2d1dfe944e1d83747997188ed445",
    "parameters": {
      "347f5f03fdaf46489a39e308be3d2160": "317b872caa5d4de7bed96f644028ed83"
    }
  },
  "parameters": {
    "ce43c3c8b9854b749dddabe76c487dd8": "67393e5c0dc649479399603f6adf1432",
    "8805af26461e49feaf5fb67eef8da574": "f956a8ac29514f57af9da84043b845f0"
  },
  "skewed_info": {
    "skewed_column_names": [ ],
    "skewed_column_value_location_maps": { },
    "skewed_column_values": [ ]
  },
  "stored_as_sub_directories": false
},
"parameters": {
  "key1": "value1",
  "transient_lastDdlTime": "120",
  "classification": "other"
},
"comments": "comment info"
}

```

Example Responses

Status code: 201

Created

```

{
  "catalog_name": "catcd6359b2a15f42dc90fca897c15db00a",
  "database_name": "dbbf565489e3d04b2d8ca03d6e3d48486f",
  "table_name": "tbl1298911dffa94c449a900ec5dfc50cf8",
  "create_time": "2023-05-31T02:03:44.016+00:00",
  "last_access_time": "2023-05-31T02:03:43.000+00:00",
  "update_time": "2023-05-31T02:03:44.016+00:00",
  "last_analyzed_time": "2023-05-31T02:03:43.000+00:00",
  "owner": "onebox",
  "owner_type": "USER",
  "parameters": {
    "key1": "value1",
    "transient_lastDdlTime": "120",
    "classification": "other"
  },
  "partition_keys": [ {
    "column_type": "string",
    "column_name": "column_prefix0",
    "comment": "8be09e713e6b46a08b375b662f93e195"
  } ],
  {
    "column_type": "string",

```

```
"column_name" : "column_prefix1",
"comment" : "6874d3047a6c494696438fc64d9a0194"
}],
"retention" : 1000,
"storage_descriptor" : {
  "columns" : [ {
    "column_type" : "string",
    "column_name" : "column_prefix0",
    "comment" : "5a2968f6141c4d40969c935c39b5accc"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix1",
    "comment" : "39ac0d5c26ce47d8948a5ea49a455742"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix2",
    "comment" : "a8d51537564a4042ab3d88a0acfccf83"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix3",
    "comment" : "d541dd8c95bf4d49853ae5563869821e"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix4",
    "comment" : "9955f7831b3b4bdc8a18c2e20b592976"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix5",
    "comment" : "32115b31e61245fd94162f566c6db966"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix6",
    "comment" : "a6d61e1ad9e14a6da94e242607369284"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix7",
    "comment" : "9dd785a2f6744fa2a8c5a64d78147961"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix8",
    "comment" : "60128f0062a949559f0c95f2656812ae"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix9",
    "comment" : "99d4d3e57af64bd1bb287b5a305b7225"
  }
  ],
"location" : "obs://location/test/database/0b288717b41a411dacdd0c9fa2e1c275",
"compressed" : false,
"input_format" : "c28e802613a342568a667aeba4961979",
"output_format" : "9bf425a38fd540c69b68366071b8bbd5",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
  "name" : "e044a1458d8c4b7a871e54243d2adb93",
  "serialization_library" : "bb299f2201fe4da0886ecd380a1508a3",
  "parameters" : {
    "2980009b8dfd4b3bb78a96485a3728c2" : "f83395c8db5e4ac1803892b08c209799"
  }
},
"parameters" : {
  "64f073b0a9bd49cb8437681f3faa1538" : "f4154f400e6e465cbc8b8b2033a24faf",
  "f31bf1375d4d4097b68e9816388e50a8" : "881546d1b0184048b03ad20d1218104d"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
},
}
```

```
"stored_as_sub_directories" : false
},
"table_type" : "EXTERNAL_TABLE",
"comments" : "comment info"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.5 Obtaining Table Information

Function

This API is used to obtain table information.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}

Table 4-506 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-507 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-508 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.

Parameter	Type	Description
table_status	Integer	Table status. The options are 0 (normal), 1 (deleted), 2 (restoring).
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
create_time	String	Table creation time.
last_access_time	String	Last access time.
update_time	String	Table metadata last modification time.
last_analyzed_time	String	Last time when column-level statistics were calculated.
owner	String	User information.
owner_type	String	User type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
parameters	Map<String,String>	Parameter.
partition_keys	Array of Column objects	List of table partition columns.
retention	Integer	Table retention period.
storage_descriptor	StorageDescriptor object	Data storage.
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.

Parameter	Type	Description
view_expanded_text	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .

Table 4-509 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerdeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-510 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code>) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-511 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-512 SerDelInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-513 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.

Parameter	Type	Description
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-514 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-515 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-516 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "database_name": "dba",
  "table_name": "www",
  "create_time": "2022-11-19T03:10:14.000+00:00",
  "last_access_time": "2022-12-31T23:59:59.000+00:00",
  "update_time": null,
  "last_analyzed_time": null,
  "owner": "lakeformation",
  "owner_type": "USER",
  "parameters": {
    "ww": "ww",
    "transient_lastDdlTime": "1668827414",
    "classification": "avro",
    "www": "ww",
    "wwwwww": "ww"
  },
  "partition_keys": [],
  "retention": 0,
  "storage_descriptor": {
    "columns": [ {
      "column_type": "tinyint",
      "column_name": "ww",
      "comment": null
    } ],
    "location": "obs://lakeformation/test",
    "compressed": true,
    "input_format": "org.apache.hadoop.hive ql.io.avro.AvroContainerInputFormat",
    "output_format": "org.apache.hadoop.hive ql.io.avro.AvroContainerOutputFormat",
    "number_of_buckets": 0,
    "bucket_columns": [],
    "sort_columns": [],
    "serde_info": {
      "name": "name",
      "serialization_library": "org.apache.hadoop.hive.serde2.avro.AvroSerDe",
      "parameters": {
        "serialization.format": "1"
      }
    }
  },
  "parameters": {},
  "skewed_info": {
    "skewed_column_names": [],
    "skewed_column_value_location_maps": {},
    "skewed_column_values": []
  },
  "stored_as_sub_directories": false
},
"table_type": "MANAGED_TABLE",
"comments": "",
"view_expanded_text": "",
"view_original_text": ""
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
}
```

```
{
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.6 Modifying Table Information

Function

This API is used to modify table information.

URI

PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}

Table 4-517 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-518 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-519 Request body parameters

Parameter	Mandatory	Type	Description
alter_params	No	Map<String,String>	Modify table parameter mapping information. The following parameters are supported: CASCADE : whether to delete columns in the partition. If it is set to true , columns are deleted. DO_NOT_UPDATE_STATS : whether to update file-level statistics. If it is set to true , the system updates file-level statistics. STATS_GENERATED : initiator of the update. The options are TASK and USET . The role of the parameter is not clear.
table	Yes	TableInput object	Table input model.

Table 4-520 TableInput

Parameter	Mandatory	Type	Description
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
table_type	Yes	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
owner	No	String	Table owner. Enter 1 to 49 characters. Only letters, numbers, and underscores (_) are allowed.
owner_type	No	String	Owner type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
create_time	No	String	Table creation time.
last_access_time	No	String	Last access time.
last_analyzed_time	No	String	Last analyzed time.
partition_keys	No	Array of Column objects	Information about partition columns.
retention	No	Integer	Table retention period.
storage_descriptor	Yes	StorageDescriptor object	Data storage.

Parameter	Mandatory	Type	Description
parameters	No	Map<String,String>	Table parameter information. Each key is a string that contains at least 1 byte but no more than 255 bytes. Each value is a UTF-8 string containing a maximum of 4000 bytes.
comments	No	String	Table description. Enter a maximum of 4,000 characters when you create the table.
view_expanded_text	No	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	No	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .
ignore_obs_checked	No	Boolean	Whether to ignore the restriction on the OBS path when creating an internal table.
external_table_id	No	String	User table ID, which is specified during creation and cannot be changed.

Table 4-521 StorageDescriptor

Parameter	Mandatory	Type	Description
columns	Yes	Array of Column objects	All fields except partition columns.
location	No	String	Path, for example, obs://location/uri/ .
compressed	Yes	Boolean	Whether to enable data compression. The default value is false .
input_format	No	String	Input format.
output_format	No	String	Output format.

Parameter	Mandatory	Type	Description
number_of_buckets	No	Integer	Number of buckets. The default value is 0 .
bucket_columns	No	Array of strings	Bucket field.
sort_columns	No	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	Yes	SerdeInfo object	Serialization/Deserialization information.
parameters	Yes	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	No	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	No	Boolean	Whether to store data in subdirectories.

Table 4-522 Column

Parameter	Mandatory	Type	Description
column_type	Yes	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	No	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-523 Order

Parameter	Mandatory	Type	Description
column	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(),</code>) are allowed.
sort_order	No	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-524 SerDeInfo

Parameter	Mandatory	Type	Description
name	No	String	Names.
serialization_library	No	String	Class that implements serialization/deserialization.
parameters	No	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-525 SkewedInfo

Parameter	Mandatory	Type	Description
skewed_column_names	Yes	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Yes	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Yes	Array<Array<String>>	List of skewed values.

Response Parameters

Status code: 200

Table 4-526 Response body parameters

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
table_status	Integer	Table status. The options are 0 (normal), 1 (deleted), 2 (restoring).
external_table_id	String	User table ID, which is specified during creation and cannot be changed.
create_time	String	Table creation time.
last_access_time	String	Last access time.
update_time	String	Table metadata last modification time.
last_analyzed_time	String	Last time when column-level statistics were calculated.
owner	String	User information.
owner_type	String	User type. The options are USER (user), GROUP (group), and ROLE (role). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE
parameters	Map<String,String>	Parameter.
partition_keys	Array of Column objects	List of table partition columns.
retention	Integer	Table retention period.
storage_descriptor	StorageDescriptor object	Data storage.

Parameter	Type	Description
table_type	String	Table type. The options are MANAGED_TABLE (internal tables), EXTERNAL_TABLE (foreign tables), VIRTUAL_VIEW (views), MATERIALIZED_VIEW (materialized views), and DICTIONARY_TABLE (dictionary tables). Enumeration values: <ul style="list-style-type: none"> • MANAGED_TABLE • EXTERNAL_TABLE • VIRTUAL_VIEW • MATERIALIZED_VIEW • DICTIONARY_TABLE
comments	String	Table description.
view_expanded_text	String	If the table type is set to view , the value of this parameter is the extended text of a view; otherwise, the value is null .
view_original_text	String	If the table type is set to view , the value of this parameter is the original text of a view; otherwise, the value is null .

Table 4-527 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.

Parameter	Type	Description
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-528 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-529 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-530 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.

Parameter	Type	Description
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-531 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-532 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-533 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-534 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}

```
{
  "alter_params": {
    "CASCADE": "TRUE"
  },
  "table": {
    "table_name": "tbl08e39978e97b4266a7074fd92127e032",
    "table_type": "EXTERNAL_TABLE",
    "owner": "onebox",
    "owner_type": "USER",
    "create_time": "2023-05-31T02:06:58.000+00:00",
    "last_access_time": "2023-05-31T02:06:58.000+00:00",
    "last_analyzed_time": "2023-05-31T02:06:58.000+00:00",
    "partition_keys": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "372f0f259ed049f5876050dcd13df630"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "6bb9dd73db49498d9aaabd343bfad689"
    } ],
    "retention": 1000,
    "storage_descriptor": {
      "columns": [ {
        "column_type": "string",
        "column_name": "column_prefix0",
        "comment": "4a4eca73554c4117b480fd73d8d6697b"
      }, {
        "column_type": "string",
        "column_name": "column_prefix1",
        "comment": "5dc9df8676324e989440b0e6669d9338"
      }, {
        "column_type": "string",
        "column_name": "column_prefix2",
        "comment": "b73c6fdb55594366bcd25c45ffbee47"
      }, {
        "column_type": "string",
        "column_name": "column_prefix3",
        "comment": "74fe507023414e2ba6137aeee059c3f9"
      }, {
        "column_type": "string",
        "column_name": "column_prefix4",
        "comment": "4bd450c11ea24884875cd62e9d3e42dc"
      }, {
        "column_type": "string",
        "column_name": "column_prefix5",
        "comment": "2457eea4a38e4ead8bbc065985279544"
      }, {
        "column_type": "string",
        "column_name": "column_prefix6",
        "comment": "39b5869cea974e1488a47584acf4c313"
      } ]
    }
  }
}
```

```
}, {
  "column_type": "string",
  "column_name": "column_prefix7",
  "comment": "90928727a6bb4c6ca2e3497ea9b31bf8"
}, {
  "column_type": "string",
  "column_name": "column_prefix8",
  "comment": "90d6544f85004c58a056891f7d00fbb2"
}, {
  "column_type": "string",
  "column_name": "column_prefix9",
  "comment": "8e993211dcad4adbacc360c9e5d0bbd9"
}],
"location": "obs://location/test/database/7b2fad385fd8434cbb8e759094a068cf",
"compressed": false,
"input_format": "9ea8ec4fc8dc4faaa8e5d1ed1e2db776",
"output_format": "ce56f7ea7a754a14a5c4525b296cc6f1",
"number_of_buckets": 0,
"bucket_columns": [],
"sort_columns": [],
"serde_info": {
  "name": "f69aa43399ec498dbc42290d8e26ac6d",
  "serialization_library": "fe216304f4f84411ba2d52b32688bfe6",
  "parameters": {
    "f2d383124614470895a0ce2619bf3a32": "69ee824ac98944d78f321af7a6edd538"
  }
},
"parameters": {
  "dbc72b6d947e4d6f9a4b5ec081ebd07a": "e5f22c513e984e3cb279ba5e40a2f69a",
  "64eb05edecae4722befd2e3575d3cbe8": "656c632c586940649fcc1a4e62c8c0a1"
},
"skewed_info": {
  "skewed_column_names": [],
  "skewed_column_value_location_maps": {},
  "skewed_column_values": []
},
"stored_as_sub_directories": false
},
"parameters": {
  "key1": "value1",
  "transient_lastDdlTime": "120",
  "classification": "other"
},
"comments": "comment info"
}
}
```

Example Responses

Status code: 200

OK

```
{
  "catalog_name": "hive",
  "database_name": "dba",
  "table_name": "www",
  "create_time": "2022-11-19T03:10:14.000+00:00",
  "last_access_time": "2022-12-31T23:59:59.000+00:00",
  "update_time": null,
  "last_analyzed_time": null,
  "owner": "lakeformation",
  "owner_type": "USER",
  "parameters": {
    "ww": "ww",
    "transient_lastDdlTime": "1668827414",
    "classification": "avro",
    "www": "www",
    "wwwwww": "www"
  }
}
```



```
},
"partition_keys" : [ ],
"retention" : 0,
"storage_descriptor" : {
  "columns" : [ {
    "column_type" : "tinyint",
    "column_name" : "ww",
    "comment" : null
  } ],
  "location" : "obs://lakeformation/test",
  "compressed" : true,
  "input_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerInputFormat",
  "output_format" : "org.apache.hadoop.hive ql.io.avro.AvroContainerOutputFormat",
  "number_of_buckets" : 0,
  "bucket_columns" : [ ],
  "sort_columns" : [ ],
  "serde_info" : {
    "name" : "name",
    "serialization_library" : "org.apache.hadoop.hive.serde2.avro.AvroSerDe",
    "parameters" : {
      "serialization.format" : "1"
    }
  },
  "parameters" : { },
  "skewed_info" : {
    "skewed_column_names" : [ ],
    "skewed_column_value_location_maps" : { },
    "skewed_column_values" : [ ]
  },
  "stored_as_sub_directories" : false
},
"table_type" : "MANAGED_TABLE",
"comments" : "",
"view_expanded_text" : "",
"view_original_text" : ""
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
}
```

```
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.7 Deleting a Table

Function

Delete a table and its partitions.

URI

DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/
databases/{database_name}/tables/{table_name}

Table 4-535 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-536 Query Parameters

Parameter	Mandatory	Type	Description
delete_data	No	Boolean	Whether to delete data from a table. The default value is false .

Request Parameters

Table 4-537 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-538 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-539 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-540 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-541 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.4.8 Listing All Table Names in a Database

Function

Query all table names in a database.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/names

Table 4-542 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-543 Query Parameters

Parameter	Mandatory	Type	Description
table_pattern	No	String	Table name wildcard. The value can contain 1 to 256 characters. Only letters, digits, and special characters (_ *.) are allowed.
table_type	No	String	Type of the table to be queried. The values are MANAGED_TABLE , EXTERNAL_TABLE , VIRTUAL_VIEW , MATERIALIZED_VIEW and DICTIONARY_TABLE are allowed.

Request Parameters

Table 4-544 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-545 Response body parameters

Parameter	Type	Description
[items]	Array of strings	OK

Status code: 400

Table 4-546 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-547 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-548 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/names
```

Example Responses

Status code: 200

OK

```
[ "test" ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
```

```
{
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.5 Data Table Statistics

4.2.5.1 Obtaining Column Statistics

Function

This API is used to obtain column statistics.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics/batch-get

Table 4-549 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-550 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-551 Request body parameters

Parameter	Mandatory	Type	Description
column_names	Yes	Array of strings	Column name.

Response Parameters

Status code: 200

Table 4-552 Response body parameters

Parameter	Type	Description
[items]	Array of ColumnStatisticsObj objects	OK

Table 4-553 ColumnStatisticsObj

Parameter	Type	Description
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
column_type	String	Data type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
data_type	String	Statistics type, including binaryStats, booleanStats, dateStats, decimalStats, doubleStats, longStats, and stringStats. Enumeration values: <ul style="list-style-type: none"> • binaryStats • booleanStats • dateStats • decimalStats • doubleStats • longStats • stringStats
binary_statistics_data	BinaryColumnStatisticsData object	Statistics on byte arrays.
long_statistics_data	LongColumnStatisticsData object	Statistics on long integers.
decimal_statistics_data	DecimalColumnStatisticsData object	Statistics on decimal values.

Parameter	Type	Description
string_statistics_data	StringColumnStatisticsData object	Statistics on strings.
double_statistics_data	DoubleColumnStatisticsData object	Statistics on floating point numbers.
date_statistics_data	DateColumnStatisticsData object	Statistics on date values.
boolean_statistics_data	BooleanColumnStatisticsData object	Statistics on Boolean data.

Table 4-554 BinaryColumnStatisticsData

Parameter	Type	Description
maximum_length	Long	Maximum value of a byte array in a column.
average_length	Double	Average length of byte arrays in a column.
number_of_null	Long	Number of null values in a column.

Table 4-555 LongColumnStatisticsData

Parameter	Type	Description
minimum_value	Long	Minimum long integer value in a column.
maximum_value	Long	Maximum long integer value in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of long integer values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-556 DecimalColumnStatisticsData

Parameter	Type	Description
minimum_value	Decimal object	Minimum decimal value in a column.
maximum_value	Decimal object	Maximum decimal value in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of decimal values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-557 Decimal

Parameter	Type	Description
scale	Integer	Integer part.
unscaled	String	Decimal part.

Table 4-558 StringColumnStatisticsData

Parameter	Type	Description
average_length	Double	Average length of strings in a column.
maximum_length	Long	Maximum length of strings in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of strings after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-559 DoubleColumnStatisticsData

Parameter	Type	Description
minimum_value	Double	Minimum floating point number in a column.

Parameter	Type	Description
maximum_value	Double	Maximum floating point number in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of floating point numbers after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-560 DateColumnStatisticsData

Parameter	Type	Description
minimum_value	String	Minimum timestamp in a column.
maximum_value	String	Maximum timestamp in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of timestamps after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-561 BooleanColumnStatisticsData

Parameter	Type	Description
number_of_true	Long	Number of real records in a column.
number_of_false	Long	Number of false records in a column.
number_of_null	Long	Number of empty records in a column.

Status code: 400

Table 4-562 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-563 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-564 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics/batch-get
{
  "column_names": [ "column1" ]
}
```

Example Responses

Status code: 200

OK

```
[ {
  "column_name": "column_name",
  "column_type": "string",
  "data_type": "int",
  "binary_statistics_data": {
```



```

    "maximum_length" : 0,
    "average_length" : 0,
    "number_of_null" : 0
  },
  "long_statistics_data" : {
    "minimum_value" : 0,
    "maximum_value" : 0,
    "number_of_null" : 0,
    "number_of_distinct_value" : 0,
    "bit_vector" : "string"
  },
  "decimal_statistics_data" : {
    "minimum_value" : {
      "scale" : 0,
      "unscaled" : "string"
    },
    "maximum_value" : {
      "scale" : 0,
      "unscaled" : "string"
    },
    "number_of_null" : 0,
    "number_of_distinct_value" : 0,
    "bit_vector" : "string"
  },
  "string_statistics_data" : {
    "average_length" : 0,
    "maximum_length" : 0,
    "number_of_null" : 0,
    "number_of_distinct_value" : 0,
    "bit_vector" : "string"
  },
  "double_statistics_data" : {
    "minimum_value" : 0,
    "maximum_value" : 0,
    "number_of_null" : 0,
    "number_of_distinct_value" : 0,
    "bit_vector" : "string"
  },
  "date_statistics_data" : {
    "minimum_value" : "2023-01-09T09:40:45.206Z",
    "maximum_value" : "2023-01-09T09:40:45.206Z",
    "number_of_null" : 0,
    "number_of_distinct_value" : 0,
    "bit_vector" : "string"
  },
  "boolean_statistics_data" : {
    "number_of_true" : 0,
    "number_of_false" : 0,
    "number_of_null" : 0
  }
}
} ]

```

Status code: 400

Bad Request

```

{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.5.2 Updating Table Column Statistics

Function

This API is used to update table column statistics.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics

Table 4-565 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-566 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-567 Request body parameters

Parameter	Mandatory	Type	Description
merge	No	Boolean	Whether to merge statistics. The default value is false .
table_column_statistics	Yes	TableColumnStatistics object	Table column statistics.

Table 4-568 TableColumnStatistics

Parameter	Mandatory	Type	Description
column_statistics_desc	Yes	TableColumnStatisticsDescription object	Table column statistics description.
column_statistics_objects	Yes	Array of ColumnStatisticsObj objects	Column statistics.

Table 4-569 TableColumnStatisticsDescription

Parameter	Mandatory	Type	Description
last_analyzed_time	Yes	String	Last collected time.

Table 4-570 ColumnStatisticsObj

Parameter	Mandatory	Type	Description
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ -+*(,)</code>) are allowed.
column_type	Yes	String	Data type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
data_type	Yes	String	Statistics type, including binaryStats, booleanStats, dateStats, decimalStats, doubleStats, longStats, and stringStats. Enumeration values: <ul style="list-style-type: none"> • binaryStats • booleanStats • dateStats • decimalStats • doubleStats • longStats • stringStats
binary_statistics_data	No	BinaryColumnStatisticsData object	Statistics on byte arrays.
long_statistics_data	No	LongColumnStatisticsData object	Statistics on long integers.
decimal_statistics_data	No	DecimalColumnStatisticsData object	Statistics on decimal values.
string_statistics_data	No	StringColumnStatisticsData object	Statistics on strings.
double_statistics_data	No	DoubleColumnStatisticsData object	Statistics on floating point numbers.

Parameter	Mandatory	Type	Description
date_statistics_data	No	DateColumnStatisticsData object	Statistics on date values.
boolean_statistics_data	No	BooleanColumnStatisticsData object	Statistics on Boolean data.

Table 4-571 BinaryColumnStatisticsData

Parameter	Mandatory	Type	Description
maximum_length	Yes	Long	Maximum value of a byte array in a column.
average_length	Yes	Double	Average length of byte arrays in a column.
number_of_null	Yes	Long	Number of null values in a column.

Table 4-572 LongColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Long	Minimum long integer value in a column.
maximum_value	Yes	Long	Maximum long integer value in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of long integer values in a column after deduplication.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-573 DecimalColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Decimal object	Minimum decimal value in a column.

Parameter	Mandatory	Type	Description
maximum_value	Yes	Decimal object	Maximum decimal value in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of decimal values in a column after deduplication.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-574 Decimal

Parameter	Mandatory	Type	Description
scale	No	Integer	Integer part.
unscaled	No	String	Decimal part.

Table 4-575 StringColumnStatisticsData

Parameter	Mandatory	Type	Description
average_length	Yes	Double	Average length of strings in a column.
maximum_length	Yes	Long	Maximum length of strings in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of strings after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-576 DoubleColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Double	Minimum floating point number in a column.
maximum_value	Yes	Double	Maximum floating point number in a column.

Parameter	Mandatory	Type	Description
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of floating point numbers after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-577 DateColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	No	String	Minimum timestamp in a column.
maximum_value	No	String	Maximum timestamp in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of timestamps after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-578 BooleanColumnStatisticsData

Parameter	Mandatory	Type	Description
number_of_true	Yes	Long	Number of real records in a column.
number_of_false	Yes	Long	Number of false records in a column.
number_of_null	Yes	Long	Number of empty records in a column.

Response Parameters

Status code: 200

Table 4-579 Response body parameters

Parameter	Type	Description
column_statistics_desc	TableColumnStatisticsDescription object	Table column statistics description.
column_statistics_objects	Array of ColumnStatisticsObj objects	Column statistics.

Table 4-580 TableColumnStatisticsDescription

Parameter	Type	Description
last_analyzed_time	String	Last collected time.

Table 4-581 ColumnStatisticsObj

Parameter	Type	Description
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
column_type	String	Data type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
data_type	String	Statistics type, including <code>binaryStats</code> , <code>booleanStats</code> , <code>dateStats</code> , <code>decimalStats</code> , <code>doubleStats</code> , <code>longStats</code> , and <code>stringStats</code> . Enumeration values: <ul style="list-style-type: none"> • <code>binaryStats</code> • <code>booleanStats</code> • <code>dateStats</code> • <code>decimalStats</code> • <code>doubleStats</code> • <code>longStats</code> • <code>stringStats</code>
binary_statistics_data	BinaryColumnStatisticsData object	Statistics on byte arrays.

Parameter	Type	Description
long_statistics_data	LongColumnStatisticsData object	Statistics on long integers.
decimal_statistics_data	DecimalColumnStatisticsData object	Statistics on decimal values.
string_statistics_data	StringColumnStatisticsData object	Statistics on strings.
double_statistics_data	DoubleColumnStatisticsData object	Statistics on floating point numbers.
date_statistics_data	DateColumnStatisticsData object	Statistics on date values.
boolean_statistics_data	BooleanColumnStatisticsData object	Statistics on Boolean data.

Table 4-582 BinaryColumnStatisticsData

Parameter	Type	Description
maximum_length	Long	Maximum value of a byte array in a column.
average_length	Double	Average length of byte arrays in a column.
number_of_null	Long	Number of null values in a column.

Table 4-583 LongColumnStatisticsData

Parameter	Type	Description
minimum_value	Long	Minimum long integer value in a column.
maximum_value	Long	Maximum long integer value in a column.
number_of_null	Long	Number of null values in a column.

Parameter	Type	Description
number_of_distinct_value	Long	Number of long integer values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-584 DecimalColumnStatisticsData

Parameter	Type	Description
minimum_value	Decimal object	Minimum decimal value in a column.
maximum_value	Decimal object	Maximum decimal value in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of decimal values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-585 Decimal

Parameter	Type	Description
scale	Integer	Integer part.
unscaled	String	Decimal part.

Table 4-586 StringColumnStatisticsData

Parameter	Type	Description
average_length	Double	Average length of strings in a column.
maximum_length	Long	Maximum length of strings in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of strings after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-587 DoubleColumnStatisticsData

Parameter	Type	Description
minimum_value	Double	Minimum floating point number in a column.
maximum_value	Double	Maximum floating point number in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of floating point numbers after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-588 DateColumnStatisticsData

Parameter	Type	Description
minimum_value	String	Minimum timestamp in a column.
maximum_value	String	Maximum timestamp in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of timestamps after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-589 BooleanColumnStatisticsData

Parameter	Type	Description
number_of_true	Long	Number of real records in a column.
number_of_false	Long	Number of false records in a column.
number_of_null	Long	Number of empty records in a column.

Status code: 400

Table 4-590 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-591 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-592 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics
```

```
{
  "merge": false,
  "table_column_statistics": {
    "column_statistics_desc": {
      "last_analyzed_time": "1970-01-01T00:00:00.100+00:00"
    }
  },
  "column_statistics_objects": [ {
    "column_name": "column_prefix1",
    "column_type": "string",
    "data_type": "stringStats",
    "string_statistics_data": {
      "average_length": 10,
      "maximum_length": 100,
      "number_of_null": 30,
      "number_of_distinct_value": 20,
      "bit_vector": "FwAAAAAAAAAAAA=="
    }
  }
]
```

```

    }
  }, {
    "column_name": "column_prefix2",
    "column_type": "string",
    "data_type": "stringStats",
    "string_statistics_data": {
      "average_length": 10,
      "maximum_length": 100,
      "number_of_null": 30,
      "number_of_distinct_value": 20,
      "bit_vector": "FwAAAAAAAAAAAAA=="
    }
  }, {
    "column_name": "column_prefix3",
    "column_type": "string",
    "data_type": "stringStats",
    "string_statistics_data": {
      "average_length": 10,
      "maximum_length": 100,
      "number_of_null": 30,
      "number_of_distinct_value": 20,
      "bit_vector": "FwAAAAAAAAAAAAA=="
    }
  }
}
}
}

```

Example Responses

Status code: 200

OK

```

{
  "column_statistics_desc": {
    "last_analyzed_time": "2023-05-31T02:25:35.614+00:00"
  },
  "column_statistics_objects": [ {
    "column_name": "1f3cbc18c07434435900b9cc7ba77678e",
    "column_type": "bigint",
    "data_type": "longStats",
    "long_statistics_data": {
      "minimum_value": -1469440606,
      "maximum_value": 1927485019,
      "number_of_null": -762838456,
      "number_of_distinct_value": 531813078,
      "bit_vector": "AWioLRcudhP0QQ=="
    }
  }
}
]
}

```

Status code: 400

Bad Request

```

{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.5.3 Deleting Column Statistics from a Table

Function

This API is used to delete column statistics from a table.

URI

```
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/  
databases/{database_name}/tables/{table_name}/column-statistics
```

Table 4-593 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-594 Query Parameters

Parameter	Mandatory	Type	Description
column_name	No	String	Name of the column to be deleted. If this parameter is left blank, all statistics in the table will be deleted.

Request Parameters

Table 4-595 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-596 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-597 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-598 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-599 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  }
}
```

```

},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6 Zone-based Management

4.2.6.1 Modifying Partitions in Batches

Function

Update the partition information in batches based on the list of partition value combinations entered. This modification only succeeds if each partition value combination matches an existing partition.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-alter

Table 4-600 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-601 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-602 Request body parameters

Parameter	Mandatory	Type	Description
partition_inputs	Yes	Array of AlterPartitionEntry objects	Modify partition arrays in batches.

Table 4-603 AlterPartitionEntry

Parameter	Mandatory	Type	Description
partition	Yes	PartitionInput object	New partition.
partition_values	Yes	Array of strings	Old partition value array.

Table 4-604 PartitionInput

Parameter	Mandatory	Type	Description
partition_values	Yes	Array of strings	Partition values.
create_time	Yes	String	Creation time.
last_access_time	Yes	String	Last access time.
parameters	Yes	Map<String,String>	Parameters.
storage_descriptor	Yes	StorageDescriptor object	Data storage.

Table 4-605 StorageDescriptor

Parameter	Mandatory	Type	Description
columns	Yes	Array of Column objects	All fields except partition columns.
location	No	String	Path, for example, obs://location/uri/ .
compressed	Yes	Boolean	Whether to enable data compression. The default value is false .
input_format	No	String	Input format.
output_format	No	String	Output format.
number_of_buckets	No	Integer	Number of buckets. The default value is 0 .
bucket_columns	No	Array of strings	Bucket field.
sort_columns	No	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	Yes	SerdeInfo object	Serialization/Deserialization information.
parameters	Yes	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	No	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	No	Boolean	Whether to store data in subdirectories.

Table 4-606 Column

Parameter	Mandatory	Type	Description
column_type	Yes	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.

Parameter	Mandatory	Type	Description
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	No	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-607 Order

Parameter	Mandatory	Type	Description
column	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	No	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-608 SerDelInfo

Parameter	Mandatory	Type	Description
name	No	String	Names.
serialization_library	No	String	Class that implements serialization/deserialization.
parameters	No	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-609 SkewedInfo

Parameter	Mandatory	Type	Description
skewed_column_names	Yes	Array of strings	List of skewed columns.

Parameter	Mandatory	Type	Description
skewed_column_value_location_maps	Yes	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Yes	Array<Array<String>>	List of skewed values.

Response Parameters

Status code: 200

Table 4-610 Response body parameters

Parameter	Type	Description
[items]	Array of Partition objects	OK

Table 4-611 Partition

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
partition_id	String	Partition ID.
partition_values	Array of strings	Partition values.
create_time	String	Creation time.
last_access_time	String	Last access time.
parameters	Map<String,String>	Parameter table.
storage_descriptor	StorageDescriptor object	Data storage.

Table 4-612 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerdeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. value can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-613 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (_ - + * () ,) are allowed.

Parameter	Type	Description
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-614 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-615 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-616 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-617 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-618 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-619 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/
{database_name}/tables/{table_name}/partitions/batch-alter
{
  "partition_inputs": [ {
    "partition": {
      "partition_values": [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ],
      "create_time": "2023-05-30T09:06:41.000+00:00",
      "last_access_time": "2023-05-30T09:06:41.000+00:00",
      "parameters": {
        "key1": "value1",
        "transient_lastDdlTime": "120",
        "classification": "other"
      }
    },
    "storage_descriptor": {
      "columns": [ {
        "column_type": "string",
        "column_name": "column_prefix0",
        "comment": "83e99b4daff04e75b28263bf44495a3c"
      }
    ]
  }
} ]
}
```

```
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "d947669d90884014b60264b2770849ae"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "21edd8e92f2448deb036f8e4682ec694"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "fc25f38e8b694aebb34a2f84ef4a62f7"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "3443079e616d447f8f35da2014754701"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",
      "comment": "5f7dda02ac8e4813b3eb4858abb7c520"
    }, {
      "column_type": "string",
      "column_name": "column_prefix6",
      "comment": "2a6ae2e5bc3f4add99133106f2cd526c"
    }, {
      "column_type": "string",
      "column_name": "column_prefix7",
      "comment": "84d50424269a41fbb5528b350e9d0b13"
    }, {
      "column_type": "string",
      "column_name": "column_prefix8",
      "comment": "e3f1d2fa80454554a22e8564ec9c4832"
    }, {
      "column_type": "string",
      "column_name": "column_prefix9",
      "comment": "f11315794e6d40daa2cb8347c61e5a46"
    }
  ],
  "location": "obs://location/test/database/b593fc09871e4c9886ed931a3e51f9e5",
  "compressed": false,
  "input_format": "8c470072d43344a3a3bfabd2c7f9d6ec",
  "output_format": "74ee5be43fb548e7b988390df05134fa",
  "number_of_buckets": 0,
  "bucket_columns": [],
  "sort_columns": [],
  "serde_info": {
    "name": "9b3ea84748854c2d86a71ae37e246293",
    "serialization_library": "e9632ffbbf425d8eac91e765e046e1",
    "parameters": {
      "e5ae426044054a5f8e362b9b5729dbab": "33d8296203f94760b1e4b7db55edce0d"
    }
  },
  "parameters": {
    "7e27b28f439e40bea098dd65bc857334": "ab893cac08bb4374beb8ff00a02e9a73",
    "c698760d6de74d0c92eee65bea283215": "8ba9a058a5cc4ebaac6f43c9771e167a"
  },
  "skewed_info": {
    "skewed_column_names": [],
    "skewed_column_value_location_maps": {},
    "skewed_column_values": []
  },
  "stored_as_sub_directories": false
},
"partition_values": [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ]
}, {
  "partition": {
    "partition_values": [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ],
    "create_time": "2023-05-30T09:06:41.000+00:00",
    "last_access_time": "2023-05-30T09:06:41.000+00:00",
```

```
"parameters" : {
  "key1" : "value1",
  "transient_lastDdlTime" : "120",
  "classification" : "other"
},
"storage_descriptor" : {
  "columns" : [ {
    "column_type" : "string",
    "column_name" : "column_prefix0",
    "comment" : "b40e5a6b6b3c4a538c4b7daa8bc49300"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix1",
    "comment" : "d7de59704feb4218ad6c3899f16f72e3"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix2",
    "comment" : "215d3961dd0c4858b884e50157da1d4b"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix3",
    "comment" : "b8e4888680ca4492be2344a81aba1d"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix4",
    "comment" : "1ac15b288c354834830062e48b04e3c8"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix5",
    "comment" : "5e65189b3f28434c8b96a56fb19b3005"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix6",
    "comment" : "7944cf9158514a96905712d686bc7c18"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix7",
    "comment" : "c6b9396476e541e9ab34a8eb5fda9953"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix8",
    "comment" : "978fe9b8a1d1437391e83553ae361bfc"
  }, {
    "column_type" : "string",
    "column_name" : "column_prefix9",
    "comment" : "4f7ed315c7c44c5683500104464f4776"
  }
],
"location" : "obs://location/test/database/3971910eb87a41ee9d7096d538232c33",
"compressed" : false,
"input_format" : "620befc9b9a447fb95ecfb0d33fb636c",
"output_format" : "fc943b36eaec4d1da525734e56374d32",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
  "name" : "9286f98baef44841883166345635faed",
  "serialization_library" : "ac9cdbc5004d468798bc57b4ed10f602",
  "parameters" : {
    "cef1b8d74bdd43459793b00b4deff6ae" : "e66acd0f816047ae9e00d01a4045c340"
  }
},
"parameters" : {
  "0546e622cf2042598ed4f31e0b3b3276" : "be46b5accfdc41ba93f50fbe16b782c2",
  "a5b63ea213ab48be8c3c361fe93f75d2" : "c0f1215c944040cfad2e69fbc7cb4b0b"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
}
```

```
    },
    "stored_as_sub_directories" : false
  }
},
"partition_values" : [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ]
}, {
  "partition" : {
    "partition_values" : [ "e5ade865888a4bb0a22b71505dd0989d",
"788dfdb29db342f488a6155a55875f5b" ],
    "create_time" : "2023-05-30T09:06:41.000+00:00",
    "last_access_time" : "2023-05-30T09:06:41.000+00:00",
    "parameters" : {
      "key1" : "value1",
      "transient_lastDdlTime" : "120",
      "classification" : "other"
    }
  },
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "string",
      "column_name" : "column_prefix0",
      "comment" : "a4398b0a8f40ad1a2d8d350efdc812"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix1",
      "comment" : "c2d17faf55de41ddb9f098a684dd8473"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix2",
      "comment" : "5f2de67835ff49aba7b661712ef059a6"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix3",
      "comment" : "26ce9cc09f3545df80181cbcd87d4da2"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix4",
      "comment" : "f5b65b8db66349b3a1f8eace0ea33334"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix5",
      "comment" : "3f9b100dbc2f45d58d6fbcfa63e0d806"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix6",
      "comment" : "22c5f279e9d04cada8bdee6ddb38af7"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix7",
      "comment" : "7ac1468020094057bf2e1e41f3e035b8"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix8",
      "comment" : "8c8178e2fe694ace80e78d5c985f7165"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix9",
      "comment" : "3f8d23d533fe44b295067de73a8f1b68"
    }
  ],
  "location" : "obs://location/test/database/8c351a1aca6b426a936be4453da30c35",
  "compressed" : false,
  "input_format" : "9fb9f9d02b3044febe447a1ad4ca5297",
  "output_format" : "ba8acae75da24d858ebe99f4ef2fce84",
  "number_of_buckets" : 0,
  "bucket_columns" : [ ],
  "sort_columns" : [ ],
  "serde_info" : {
    "name" : "6e4b2479321842d191f1b540b348a4f1",
    "serialization_library" : "22209422df114f589b4ec28d19d86e52",
    "parameters" : {
```

```
    "a5c4f39d83d047748dcd1218764c7a1c" : "9e2256acd089474ba469d329d35ace13"
  }
},
"parameters" : {
  "997ebfa4c6e343789a92d20f7961c865" : "2a1899624e084fb4b26595469cd23f32",
  "86887611dd7345c88f3de16538cb3587" : "ac4aab973d50429d9803cb418c9d44e1"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
},
"partition_values" : [ "e5ade865888a4bb0a22b71505dd0989d", "788dfdb29db342f488a6155a55875f5b" ]
}
}
```

Example Responses

Status code: 200

OK

```
[ {
  "catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values" : [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ],
  "create_time" : "2023-05-30T09:06:41.372+00:00",
  "last_access_time" : "2023-05-30T09:06:41.000+00:00",
  "parameters" : {
    "key1" : "value1",
    "transient_lastDdlTime" : "120",
    "classification" : "other"
  },
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "string",
      "column_name" : "column_prefix0",
      "comment" : "83e99b4daff04e75b28263bf44495a3c"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix1",
      "comment" : "d947669d90884014b60264b2770849ae"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix2",
      "comment" : "21edd8e92f2448deb036f8e4682ec694"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix3",
      "comment" : "fc25f38e8b694aebb34a2f84ef4a62f7"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix4",
      "comment" : "3443079e616d447f8f35da2014754701"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix5",
      "comment" : "5f7dda02ac8e4813b3eb4858abb7c520"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix6",
      "comment" : "2a6ae2e5bc3f4add99133106f2cd526c"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix7",

```

```

"comment" : "84d50424269a41fbb5528b350e9d0b13"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix8",
  "comment" : "e3f1d2fa80454554a22e8564ec9c4832"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix9",
  "comment" : "f11315794e6d40daa2cb8347c61e5a46"
}],
"location" : "obs://location/test/database/b593fc09871e4c9886ed931a3e51f9e5",
"compressed" : false,
"input_format" : "8c470072d43344a3a3bfabd2c7f9d6ec",
"output_format" : "74ee5be43fb548e7b988390df05134fa",
"number_of_buckets" : 0,
"bucket_columns" : [],
"sort_columns" : [],
"serde_info" : {
  "name" : "9b3ea84748854c2d86a71ae37e246293",
  "serialization_library" : "e9632ffbbfbc425d8eac91e765e046e1",
  "parameters" : {
    "e5ae426044054a5f8e362b9b5729dbab" : "33d8296203f94760b1e4b7db55edce0d"
  }
},
"parameters" : {
  "7e27b28f439e40bea098dd65bc857334" : "ab893cac08bb4374beb8ff00a02e9a73",
  "c698760d6de74d0c92eee65bea283215" : "8ba9a058a5cc4ebaac6f43c9771e167a"
},
"skewed_info" : {
  "skewed_column_names" : [],
  "skewed_column_value_location_maps" : {},
  "skewed_column_values" : []
},
"stored_as_sub_directories" : false
}
}, {
  "catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values" : [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ],
  "create_time" : "2023-05-30T09:06:41.372+00:00",
  "last_access_time" : "2023-05-30T09:06:41.000+00:00",
  "parameters" : {
    "key1" : "value1",
    "transient_lastDdlTime" : "120",
    "classification" : "other"
  },
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "string",
      "column_name" : "column_prefix0",
      "comment" : "b40e5a6b6b3c4a538c4b7daa8bc49300"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix1",
      "comment" : "d7de59704feb4218ad6c3899f16f72e3"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix2",
      "comment" : "215d3961dd0c4858b884e50157da1d4b"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix3",
      "comment" : "b8e4888680ca449492be2344a81aba1d"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix4",
      "comment" : "1ac15b288c354834830062e48b04e3c8"
    }
  ], {

```



```
"column_type" : "string",
"column_name" : "column_prefix5",
"comment" : "5e65189b3f28434c8b96a56fb19b3005"
}, {
"column_type" : "string",
"column_name" : "column_prefix6",
"comment" : "7944cf9158514a96905712d686bc7c18"
}, {
"column_type" : "string",
"column_name" : "column_prefix7",
"comment" : "c6b9396476e541e9ab34a8eb5fda9953"
}, {
"column_type" : "string",
"column_name" : "column_prefix8",
"comment" : "978fe9b8a1d1437391e83553ae361bfc"
}, {
"column_type" : "string",
"column_name" : "column_prefix9",
"comment" : "4f7ed315c7c44c5683500104464f4776"
}],
"location" : "obs://location/test/database/3971910eb87a41ee9d7096d538232c33",
"compressed" : false,
"input_format" : "620befc9b9a447fb95ecfb0d33fb636c",
"output_format" : "fc943b36eac4d1da525734e56374d32",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
"name" : "9286f98baef44841883166345635faed",
"serialization_library" : "ac9cde5004d468798bc57b4ed10f602",
"parameters" : {
"cef1b8d74bdd43459793b00b4deff6ae" : "e66acd0f816047ae9e00d01a4045c340"
}
},
"parameters" : {
"0546e622cf2042598ed4f31e0b3b3276" : "be46b5accfdc41ba93f50fbe16b782c2",
"a5b63ea213ab48be8c3c361fe93f75d2" : "c0f1215c944040cfad2e69fbe7cb4b0b"
},
"skewed_info" : {
"skewed_column_names" : [ ],
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
}, {
"catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
"database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
"table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
"partition_values" : [ "e5ade865888a4bb0a22b71505dd0989d", "788dfdb29db342f488a6155a55875f5b" ],
"create_time" : "2023-05-30T09:06:41.372+00:00",
"last_access_time" : "2023-05-30T09:06:41.000+00:00",
"parameters" : {
"key1" : "value1",
"transient_lastDdlTime" : "120",
"classification" : "other"
},
"storage_descriptor" : {
"columns" : [ {
"column_type" : "string",
"column_name" : "column_prefix0",
"comment" : "a4398b0a8f404ad1a2d8d350efdc812"
}, {
"column_type" : "string",
"column_name" : "column_prefix1",
"comment" : "c2d17faf55de41ddb9f098a684dd8473"
}, {
"column_type" : "string",
"column_name" : "column_prefix2",
```

```
"comment" : "5f2de67835ff49aba7b661712ef059a6"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix3",
  "comment" : "26ce9cc09f3545df80181cbcd87d4da2"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix4",
  "comment" : "f5b65b8db66349b3a1f8eace0ea33334"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix5",
  "comment" : "3f9b100dbc2f45d58d6fbcfa63e0d806"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix6",
  "comment" : "22c5f279e9d04cada8bdee6ddb38af7"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix7",
  "comment" : "7ac1468020094057bf2e1e41f3e035b8"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix8",
  "comment" : "8c8178e2fe694ace80e78d5c985f7165"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix9",
  "comment" : "3f8d23d533fe44b295067de73a8f1b68"
}
],
"location" : "obs://location/test/database/8c351a1aca6b426a936be4453da30c35",
"compressed" : false,
"input_format" : "9fb9f9d02b3044febe447a1ad4ca5297",
"output_format" : "ba8acae75da24d858ebe99f4ef2fce84",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
  "name" : "6e4b2479321842d191f1b540b348a4f1",
  "serialization_library" : "22209422df114f589b4ec28d19d86e52",
  "parameters" : {
    "a5c4f39d83d047748dcd1218764c7a1c" : "9e2256acd089474ba469d329d35ace13"
  }
},
"parameters" : {
  "997ebfa4c6e343789a92d20f7961c865" : "2a1899624e084fb4b26595469cd23f32",
  "86887611dd7345c88f3de16538cb3587" : "ac4aab973d50429d9803cb418c9d44e1"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
}]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.2 Listing Partitions

Function

Traverse the partition list in a specified data table. For a transaction table, the partition list can be traversed based on a specific version of the table. Filtering by the criteria is the system's first priority. If no criteria are given, the system filters by the partition values instead. If neither are specified, the system returns all the partitions in the data table.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions

Table 4-620 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-621 Query Parameters

Parameter	Mandatory	Type	Description
filter	No	String	Partition filter criteria. The value consists of 0 to 256 characters.
partition_values	No	Array	Partition values. A maximum of 1,000 table names can be displayed on the page.
limit	No	Integer	Number of returned records. The default value is 500 . The value ranges from 1 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-622 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-623 Response body parameters

Parameter	Type	Description
partitions	Array of Partition objects	Partition information.
page_info	PagedInfo object	Pagination information.

Table 4-624 Partition

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
partition_id	String	Partition ID.
partition_values	Array of strings	Partition values.
create_time	String	Creation time.
last_access_time	String	Last access time.
parameters	Map<String,String>	Parameter table.
storage_descriptor	StorageDescriptor object	Data storage.

Table 4-625 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerdeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. value can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-626 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (_ - +*(,)) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-627 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-628 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-629 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Table 4-630 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Parameter	Type	Description
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-631 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-632 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-633 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions
```

Example Responses

Status code: 200

OK

```
{
  "partitions": [ {
    "catalog_name": "cat97bc31536be24f2cae8ecddf34a6d53a",
    "database_name": "dbe062bd53192249d7a0258062ed122683",
    "table_name": "tbl25e30cecd1a4ab58ab3eba7c70b7dc2",
    "partition_values": [ "0e3af7a7552d4aa7b75f271505495590", "936b465a11b64e28aa2d047e92908707" ],
    "create_time": "2023-05-30T12:24:30.401+00:00",
    "last_access_time": "2023-05-30T12:24:30.000+00:00",
    "parameters": {
      "key1": "value1",
      "transient_lastDdlTime": "120",
      "classification": "other"
    }
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "b2489a84845b436d8557b2a7ae44082b"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "f6b3ce66332e475f99aaba1c5ba8a080"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "9cd48faa87e04cf0b64416d9491a0131"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "73b0ebce76fe4b5fa97ba29e93f69093"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "9339b5d828314da09900d647a4dcafe2"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",
      "comment": "006d9b8151ca4816bc47ba3e53428b7b"
    }, {
      "column_type": "string",
      "column_name": "column_prefix6",
      "comment": "116e112b2e8c447e942ec14995bcf659"
    }, {
      "column_type": "string",
      "column_name": "column_prefix7",
      "comment": "d388b4d142834eaab7e55137f4b8089d"
    }, {
      "column_type": "string",
      "column_name": "column_prefix8",
      "comment": "216f8d15eb044463b2e22a31f3bd40e9"
    }, {
      "column_type": "string",
      "column_name": "column_prefix9",
      "comment": "7f8565e9381e4070b3faab51badfa035"
    }
  ],
  "location": "obs://location/test/database/de0eef7ef86a4940a266c03bc7c5a548",
  "compressed": false,
  "input_format": "0a376351bf9c4966b9258301ba0473f7",
  "output_format": "1297b151c9544f368f7c9a1708deb067",
  "number_of_buckets": 0,
  "bucket_columns": [ ],
  "sort_columns": [ ],
  "serde_info": {
```

```

"name": "b277e0cefeaf4f78aacffbe6bd714ca4",
"serialization_library": "8c348e0841524ce9ba0ab29cf30483cb",
"parameters": {
  "0804f29205a546efabd6c6934badfa81": "4e4d5a8d807e4150af0df5cb967810dd"
}
},
"parameters": {
  "27976ea945ed4486a938e6336e7b4923": "679081deb759451cbc3ccacdc4e4940",
  "08f5c45c202b4572b1b3c2255205a2a6": "7cd4dab5553f4c20b3d08d2a59b8eeca"
},
"skewed_info": {
  "skewed_column_names": [],
  "skewed_column_value_location_maps": {},
  "skewed_column_values": []
},
"stored_as_sub_directories": false
}
}],
"page_info": {
  "current_count": 1
}
}

```

Status code: 400

Bad Request

```

{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```

{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}

```

Status code: 404

Not Found

```

{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.3 Adding Partitions in Batches

Function

This API is used to add partitions in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-create

Table 4-634 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-635 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-636 Request body parameters

Parameter	Mandatory	Type	Description
if_not_exist	Yes	Boolean	Whether to skip a normal partition. The default value is false .

Parameter	Mandatory	Type	Description
partitions	Yes	Array of PartitionInput objects	Information about the added partition.

Table 4-637 PartitionInput

Parameter	Mandatory	Type	Description
partition_values	Yes	Array of strings	Partition values.
create_time	Yes	String	Creation time.
last_access_time	Yes	String	Last access time.
parameters	Yes	Map<String,String>	Parameters.
storage_descriptor	Yes	StorageDescriptor object	Data storage.

Table 4-638 StorageDescriptor

Parameter	Mandatory	Type	Description
columns	Yes	Array of Column objects	All fields except partition columns.
location	No	String	Path, for example, obs://location/uri/ .
compressed	Yes	Boolean	Whether to enable data compression. The default value is false .
input_format	No	String	Input format.
output_format	No	String	Output format.
number_of_buckets	No	Integer	Number of buckets. The default value is 0 .
bucket_columns	No	Array of strings	Bucket field.
sort_columns	No	Array of Order objects	A list that specifies the bucket sorting method.

Parameter	Mandatory	Type	Description
serde_info	Yes	SerDeInfo object	Serialization/Deserialization information.
parameters	Yes	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	No	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	No	Boolean	Whether to store data in subdirectories.

Table 4-639 Column

Parameter	Mandatory	Type	Description
column_type	Yes	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	No	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-640 Order

Parameter	Mandatory	Type	Description
column	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.

Parameter	Mandatory	Type	Description
sort_order	No	Integer	Sorting method. The values are ==1 (ascending order) and ==0 (descending order).

Table 4-641 SerDelInfo

Parameter	Mandatory	Type	Description
name	No	String	Names.
serialization_library	No	String	Class that implements serialization/deserialization.
parameters	No	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-642 SkewedInfo

Parameter	Mandatory	Type	Description
skewed_column_names	Yes	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Yes	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Yes	Array<Array<String>>	List of skewed values.

Response Parameters

Status code: 201

Table 4-643 Response body parameters

Parameter	Type	Description
[items]	Array of Partition objects	List of newly added partitions.

Table 4-644 Partition

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
partition_id	String	Partition ID.
partition_values	Array of strings	Partition values.
create_time	String	Creation time.
last_access_time	String	Last access time.
parameters	Map<String,String>	Parameter table.
storage_descriptor	StorageDescriptor object	Data storage.

Table 4-645 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.

Parameter	Type	Description
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-646 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-647 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-648 SerDeInfo

Parameter	Type	Description
name	String	Names.

Parameter	Type	Description
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-649 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-650 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-651 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-652 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-create

```
{
  "if_not_exist": "false",
  "partitions": [ {
    "partition_values": [ "string" ],
    "create_time": "2023-05-26T08:03:42.267Z",
    "last_access_time": "2023-05-26T08:03:42.267Z",
    "parameters": {
      "additionalProp1": "string",
      "additionalProp2": "string",
      "additionalProp3": "string"
    }
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "c1",
      "comment": "string"
    } ],
    "location": "string",
    "compressed": false,
    "input_format": "string",
    "output_format": "string",
    "number_of_buckets": 0,
    "bucket_columns": [ "string" ],
    "sort_columns": [ {
      "column": "string",
      "sort_order": 1
    } ],
  },
  "serde_info": {
    "name": "string",
    "serialization_library": "string",
    "parameters": {
      "additionalProp1": "string",
      "additionalProp2": "string",
      "additionalProp3": "string"
    }
  },
  "parameters": {
    "additionalProp1": "string",
    "additionalProp2": "string",
    "additionalProp3": "string"
  },
  "skewed_info": {
    "skewed_column_names": [ "string" ],
    "skewed_column_value_location_maps": {
      "additionalProp1": "string",
      "additionalProp2": "string",
      "additionalProp3": "string"
    }
  },
  "skewed_column_values": [ [ ] ]
},
"stored_as_sub_directories": false
```

```
}  
}]  
}
```

Example Responses

Status code: 201

List of newly added partitions.

```
[ {  
  "catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",  
  "database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",  
  "table_name" : "tblbb79f3733c0747adbb94981b412fe48f",  
  "partition_values" : [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ],  
  "create_time" : "2023-05-30T09:06:41.372+00:00",  
  "last_access_time" : "2023-05-30T09:06:41.000+00:00",  
  "parameters" : {  
    "key1" : "value1",  
    "transient_lastDdlTime" : "120",  
    "classification" : "other"  
  },  
  "storage_descriptor" : {  
    "columns" : [ {  
      "column_type" : "string",  
      "column_name" : "column_prefix0",  
      "comment" : "83e99b4daff04e75b28263bf44495a3c"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix1",  
      "comment" : "d947669d90884014b60264b2770849ae"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix2",  
      "comment" : "21edd8e92f2448deb036f8e4682ec694"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix3",  
      "comment" : "fc25f38e8b694aebb34a2f84ef4a62f7"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix4",  
      "comment" : "3443079e616d447f8f35da2014754701"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix5",  
      "comment" : "5f7dda02ac8e4813b3eb4858abb7c520"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix6",  
      "comment" : "2a6ae2e5bc3f4add99133106f2cd526c"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix7",  
      "comment" : "84d50424269a41fbb5528b350e9d0b13"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix8",  
      "comment" : "e3f1d2fa80454554a22e8564ec9c4832"  
    }, {  
      "column_type" : "string",  
      "column_name" : "column_prefix9",  
      "comment" : "f11315794e6d40daa2cb8347c61e5a46"  
    }  
  ],  
  "location" : "obs://location/test/database/b593fc09871e4c9886ed931a3e51f9e5",  
  "compressed" : false,  
  "input_format" : "8c470072d43344a3a3bfbabd2c7f9d6ec",  
  "output_format" : "74ee5be43fb548e7b988390df05134fa",  
  "number_of_buckets" : 0,  
}
```

```
"bucket_columns" : [],
"sort_columns" : [],
"serde_info" : {
  "name" : "9b3ea84748854c2d86a71ae37e246293",
  "serialization_library" : "e9632ffbbf425d8eac91e765e046e1",
  "parameters" : {
    "e5ae426044054a5f8e362b9b5729dbab" : "33d8296203f94760b1e4b7db55edce0d"
  }
},
"parameters" : {
  "7e27b28f439e40bea098dd65bc857334" : "ab893cac08bb4374beb8ff00a02e9a73",
  "c698760d6de74d0c92eee65bea283215" : "8ba9a058a5cc4ebaac6f43c9771e167a"
},
"skewed_info" : {
  "skewed_column_names" : [],
  "skewed_column_value_location_maps" : {},
  "skewed_column_values" : []
},
"stored_as_sub_directories" : false
}, {
  "catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values" : [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ],
  "create_time" : "2023-05-30T09:06:41.372+00:00",
  "last_access_time" : "2023-05-30T09:06:41.000+00:00",
  "parameters" : {
    "key1" : "value1",
    "transient_lastDdlTime" : "120",
    "classification" : "other"
  },
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "string",
      "column_name" : "column_prefix0",
      "comment" : "b40e5a6b6b3c4a538c4b7daa8bc49300"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix1",
      "comment" : "d7de59704feb4218ad6c3899f16f72e3"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix2",
      "comment" : "215d3961dd0c4858b884e50157da1d4b"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix3",
      "comment" : "b8e4888680ca449492be2344a81aba1d"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix4",
      "comment" : "1ac15b288c354834830062e48b04e3c8"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix5",
      "comment" : "5e65189b3f28434c8b96a56fb19b3005"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix6",
      "comment" : "7944cf9158514a96905712d686bc7c18"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix7",
      "comment" : "c6b9396476e541e9ab34a8eb5fda9953"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix8",
      "comment" : "978fe9b8a1d1437391e83553ae361bfc"
    }
  ]
}
```

```
    }, {
      "column_type": "string",
      "column_name": "column_prefix9",
      "comment": "4f7ed315c7c44c5683500104464f4776"
    }],
    "location": "obs://location/test/database/3971910eb87a41ee9d7096d538232c33",
    "compressed": false,
    "input_format": "620befc9b9a447fb95ecfb0d33fb636c",
    "output_format": "fc943b36eac4d1da525734e56374d32",
    "number_of_buckets": 0,
    "bucket_columns": [],
    "sort_columns": [],
    "serde_info": {
      "name": "9286f98baef44841883166345635faed",
      "serialization_library": "ac9cdbe5004d468798bc57b4ed10f602",
      "parameters": {
        "cef1b8d74bdd43459793b00b4deff6ae": "e66acd0f816047ae9e00d01a4045c340"
      }
    },
    "parameters": {
      "0546e622cf2042598ed4f31e0b3b3276": "be46b5accfdc41ba93f50fbe16b782c2",
      "a5b63ea213ab48be8c3c361fe93f75d2": "c0f1215c944040cfad2e69fbe7cb4b0b"
    },
    "skewed_info": {
      "skewed_column_names": [],
      "skewed_column_value_location_maps": {},
      "skewed_column_values": []
    },
    "stored_as_sub_directories": false
  }
}, {
  "catalog_name": "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name": "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name": "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values": [ "e5ade865888a4bb0a22b71505dd0989d", "788dfdb29db342f488a6155a55875f5b" ],
  "create_time": "2023-05-30T09:06:41.372+00:00",
  "last_access_time": "2023-05-30T09:06:41.000+00:00",
  "parameters": {
    "key1": "value1",
    "transient_lastDdlTime": "120",
    "classification": "other"
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "a4398b0a8f404ad1a2d8d350efdc812"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "c2d17faf55de41ddb9f098a684dd8473"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "5f2de67835ff49aba7b661712ef059a6"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "26ce9cc09f3545df80181cbcd87d4da2"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "f5b65b8db66349b3a1f8eace0ea33334"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",
      "comment": "3f9b100dbc2f45d58d6fbcfa63e0d806"
    } ],
    "column_type": "string",
```

```
"column_name" : "column_prefix6",
"comment" : "22c5f279e9d04cada8bdee6ddbd38af7"
}, {
"column_type" : "string",
"column_name" : "column_prefix7",
"comment" : "7ac1468020094057bf2e1e41f3e035b8"
}, {
"column_type" : "string",
"column_name" : "column_prefix8",
"comment" : "8c8178e2fe694ace80e78d5c985f7165"
}, {
"column_type" : "string",
"column_name" : "column_prefix9",
"comment" : "3f8d23d533fe44b295067de73a8f1b68"
}],
"location" : "obs://location/test/database/8c351a1aca6b426a936be4453da30c35",
"compressed" : false,
"input_format" : "9fb9f9d02b3044febe447a1ad4ca5297",
"output_format" : "ba8acae75da24d858ebe99f4ef2fce84",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
"name" : "6e4b2479321842d191f1b540b348a4f1",
"serialization_library" : "22209422df114f589b4ec28d19d86e52",
"parameters" : {
"a5c4f39d83d047748dcd1218764c7a1c" : "9e2256acd089474ba469d329d35ace13"
}
},
"parameters" : {
"997ebfa4c6e343789a92d20f7961c865" : "2a1899624e084fb4b26595469cd23f32",
"86887611dd7345c88f3de16538cb3587" : "ac4aab973d50429d9803cb418c9d44e1"
},
"skewed_info" : {
"skewed_column_names" : [ ],
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
}]
```

Status code: 400

Bad Request

```
{
"error_code" : "common.01000001",
"error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
"error_code": 'APIG.1002',
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
"error" : {
"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
}
```



```

    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}

```

Status code: 404

Not Found

```

{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}

```

Status Codes

Status Code	Description
201	List of newly added partitions.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.4 Deleting Partitions in Batches

Function

Delete partition data immediately for non-transaction tables if data deletion is enabled. Data in transaction table is retained but is kept invisible. The data will be deleted when it expires.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-drop

Table 4-653 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-654 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-655 Request body parameters

Parameter	Mandatory	Type	Description
if_exist	No	Boolean	Whether to skip an unallocated or hidden partition. The default value is false .
delete_data	No	Boolean	Delete partition data in non-transaction tables. If if_purge is set to true , space is immediately released. Data in transaction tables is retained but is kept invisible. The data will be deleted when it expires. The default value is false .
partition_values	Yes	Array<Array<String>>	Delete the partition value list in a partition.

Response Parameters

Status code: 200

Table 4-656 Response body parameters

Parameter	Type	Description
[items]	Array of Partition objects	List of deleted partitions.

Table 4-657 Partition

Parameter	Type	Description
catalog_name	String	Catalog name.

Parameter	Type	Description
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
partition_id	String	Partition ID.
partition_values	Array of strings	Partition values.
create_time	String	Creation time.
last_access_time	String	Last access time.
parameters	Map<String,String>	Parameter table.
storage_descriptor	StorageDescriptor object	Data storage.

Table 4-658 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.

Parameter	Type	Description
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-659 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-660 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code> ,) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-661 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.

Parameter	Type	Description
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-662 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-663 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-664 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-665 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-drop
{
  "if_exist": true,
  "delete_data": true,
  "partition_values": [ [ "54fd5f39855e43e29630196af18cfb22", "ae64345374854efc819fac880541465e" ],
  [ "c085eeb64df04982a4c93d3a33fc8cf6", "e9c380472d974182b973f46443e8dc3b" ],
  [ "ca39a2137c8548d0a49842802f2dedb8", "c1d9679369494c52933c31ecd5483550" ] ]
}
```

Example Responses

Status code: 200

List of deleted partitions.

```
[ {
  "catalog_name": "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name": "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name": "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values": [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ],
  "create_time": "2023-05-30T09:06:41.372+00:00",
  "last_access_time": "2023-05-30T09:06:41.000+00:00",
  "parameters": {
    "key1": "value1",
    "transient_lastDdlTime": "120",
    "classification": "other"
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "83e99b4daff04e75b28263bf44495a3c"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "d947669d90884014b60264b2770849ae"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "21edd8e92f2448deb036f8e4682ec694"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "fc25f38e8b694aebb34a2f84ef4a62f7"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "3443079e616d447f8f35da2014754701"
    }
  ], {
    "column_type": "string",
```

```
"column_name" : "column_prefix5",
"comment" : "5f7dda02ac8e4813b3eb4858abb7c520"
}, {
"column_type" : "string",
"column_name" : "column_prefix6",
"comment" : "2a6ae2e5bc3f4add99133106f2cd526c"
}, {
"column_type" : "string",
"column_name" : "column_prefix7",
"comment" : "84d50424269a41fbb5528b350e9d0b13"
}, {
"column_type" : "string",
"column_name" : "column_prefix8",
"comment" : "e3f1d2fa80454554a22e8564ec9c4832"
}, {
"column_type" : "string",
"column_name" : "column_prefix9",
"comment" : "f11315794e6d40daa2cb8347c61e5a46"
}
],
"location" : "obs://location/test/database/b593fc09871e4c9886ed931a3e51f9e5",
"compressed" : false,
"input_format" : "8c470072d43344a3a3bfabd2c7f9d6ec",
"output_format" : "74ee5be43fb548e7b988390df05134fa",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
"name" : "9b3ea84748854c2d86a71ae37e246293",
"serialization_library" : "e9632ffbbfbc425d8eac91e765e046e1",
"parameters" : {
"e5ae426044054a5f8e362b9b5729dbab" : "33d8296203f94760b1e4b7db55edce0d"
}
}
},
"parameters" : {
"7e27b28f439e40bea098dd65bc857334" : "ab893cac08bb4374beb8ff00a02e9a73",
"c698760d6de74d0c92eee65bea283215" : "8ba9a058a5cc4ebaac6f43c9771e167a"
}
},
"skewed_info" : {
"skewed_column_names" : [ ],
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
}
},
"stored_as_sub_directories" : false
}
}, {
"catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
"database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
"table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
"partition_values" : [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ],
"create_time" : "2023-05-30T09:06:41.372+00:00",
"last_access_time" : "2023-05-30T09:06:41.000+00:00",
"parameters" : {
"key1" : "value1",
"transient_lastDdlTime" : "120",
"classification" : "other"
}
},
"storage_descriptor" : {
"columns" : [ {
"column_type" : "string",
"column_name" : "column_prefix0",
"comment" : "b40e5a6b6b3c4a538c4b7daa8bc49300"
}
], {
"column_type" : "string",
"column_name" : "column_prefix1",
"comment" : "d7de59704feb4218ad6c3899f16f72e3"
}
], {
"column_type" : "string",
"column_name" : "column_prefix2",
"comment" : "215d3961dd0c4858b884e50157da1d4b"
```



```
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "b8e4888680ca449492be2344a81aba1d"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "1ac15b288c354834830062e48b04e3c8"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",
      "comment": "5e65189b3f28434c8b96a56fb19b3005"
    }, {
      "column_type": "string",
      "column_name": "column_prefix6",
      "comment": "7944cf9158514a96905712d686bc7c18"
    }, {
      "column_type": "string",
      "column_name": "column_prefix7",
      "comment": "c6b9396476e541e9ab34a8eb5fda9953"
    }, {
      "column_type": "string",
      "column_name": "column_prefix8",
      "comment": "978fe9b8a1d1437391e83553ae361bfc"
    }, {
      "column_type": "string",
      "column_name": "column_prefix9",
      "comment": "4f7ed315c7c44c5683500104464f776"
    }
  ],
  "location": "obs://location/test/database/3971910eb87a41ee9d7096d538232c33",
  "compressed": false,
  "input_format": "620befc9b9a447fb95ecfb0d33fb636c",
  "output_format": "fc943b36eac4d1da525734e56374d32",
  "number_of_buckets": 0,
  "bucket_columns": [ ],
  "sort_columns": [ ],
  "serde_info": {
    "name": "9286f98baef44841883166345635faed",
    "serialization_library": "ac9cdbe5004d468798bc57b4ed10f602",
    "parameters": {
      "cef1b8d74bdd43459793b00b4deff6ae": "e66acd0f816047ae9e00d01a4045c340"
    }
  },
  "parameters": {
    "0546e622cf2042598ed4f31e0b3b3276": "be46b5accfdc41ba93f50fbe16b782c2",
    "a5b63ea213ab48be8c3c361fe93f75d2": "c0f1215c944040cfad2e69fbe7cb4b0b"
  },
  "skewed_info": {
    "skewed_column_names": [ ],
    "skewed_column_value_location_maps": { },
    "skewed_column_values": [ ]
  },
  "stored_as_sub_directories": false
}
}, {
  "catalog_name": "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name": "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name": "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values": [ "e5ade865888a4bb0a22b71505dd0989d", "788dfdb29db342f488a6155a55875f5b" ],
  "create_time": "2023-05-30T09:06:41.372+00:00",
  "last_access_time": "2023-05-30T09:06:41.000+00:00",
  "parameters": {
    "key1": "value1",
    "transient_lastDdlTime": "120",
    "classification": "other"
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
```

```
"column_name" : "column_prefix0",
"comment" : "a4398b0a8f404ad1a2d8d350efdcd812"
}, {
"column_type" : "string",
"column_name" : "column_prefix1",
"comment" : "c2d17faf55de41ddb9f098a684d8473"
}, {
"column_type" : "string",
"column_name" : "column_prefix2",
"comment" : "5f2de67835ff49aba7b661712ef059a6"
}, {
"column_type" : "string",
"column_name" : "column_prefix3",
"comment" : "26ce9cc09f3545df80181cbcd87d4da2"
}, {
"column_type" : "string",
"column_name" : "column_prefix4",
"comment" : "f5b65b8db66349b3a1f8eace0ea33334"
}, {
"column_type" : "string",
"column_name" : "column_prefix5",
"comment" : "3f9b100dbc2f45d58d6fbcfa63e0d806"
}, {
"column_type" : "string",
"column_name" : "column_prefix6",
"comment" : "22c5f279e9d04cada8bdee6ddb38af7"
}, {
"column_type" : "string",
"column_name" : "column_prefix7",
"comment" : "7ac1468020094057bf2e1e41f3e035b8"
}, {
"column_type" : "string",
"column_name" : "column_prefix8",
"comment" : "8c8178e2fe694ace80e78d5c985f7165"
}, {
"column_type" : "string",
"column_name" : "column_prefix9",
"comment" : "3f8d23d533fe44b295067de73a8f1b68"
} ],
"location" : "obs://location/test/database/8c351a1aca6b426a936be4453da30c35",
"compressed" : false,
"input_format" : "9fb9f9d02b3044febe447a1ad4ca5297",
"output_format" : "ba8acae75da24d858ebe99f4ef2fce84",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
"name" : "6e4b2479321842d191f1b540b348a4f1",
"serialization_library" : "22209422df114f589b4ec28d19d86e52",
"parameters" : {
"a5c4f39d83d047748dcd1218764c7a1c" : "9e2256acd089474ba469d329d35ace13"
}
},
"parameters" : {
"997ebfa4c6e343789a92d20f7961c865" : "2a1899624e084fb4b26595469cd23f32",
"86887611dd7345c88f3de16538cb3587" : "ac4aab973d50429d9803cb418c9d44e1"
},
"skewed_info" : {
"skewed_column_names" : [ ],
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
}]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	List of deleted partitions.

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.5 Obtaining Partitions in Batches

Function

This API is used to obtain partitions in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-get

Table 4-666 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-667 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-668 Request body parameters

Parameter	Mandatory	Type	Description
values	Yes	Array<Array<String>>	Obtained partition list. Each partition value list represents a partition.

Response Parameters

Status code: 200

Table 4-669 Response body parameters

Parameter	Type	Description
[items]	Array of Partition objects	List of normal partitions.

Table 4-670 Partition

Parameter	Type	Description
catalog_name	String	Catalog name.
catalog_id	String	catalogID.
database_name	String	Database name.
database_id	String	Database ID.
table_name	String	Table name.
table_id	String	Table ID.
partition_id	String	Partition ID.
partition_values	Array of strings	Partition values.
create_time	String	Creation time.
last_access_time	String	Last access time.
parameters	Map<String,String>	Parameter table.
storage_descriptor	StorageDescriptor object	Data storage.

Table 4-671 StorageDescriptor

Parameter	Type	Description
columns	Array of Column objects	All fields except partition columns.
location	String	Path, for example, obs://location/uri/ .
compressed	Boolean	Whether to enable data compression. The default value is false .
input_format	String	Input format.
output_format	String	Output format.
number_of_buckets	Integer	Number of buckets. The default value is 0 .

Parameter	Type	Description
bucket_columns	Array of strings	Bucket field.
sort_columns	Array of Order objects	A list that specifies the bucket sorting method.
serde_info	SerDeInfo object	Serialization/Deserialization information.
parameters	Map<String,String>	Descriptor storage parameter. key can contain 255 characters at most. <i>value</i> can contain a maximum of 4,000 characters.
skewed_info	SkewedInfo object	Information about values (skewed values) that often appear in a column.
stored_as_sub_directories	Boolean	Whether to store data in subdirectories.

Table 4-672 Column

Parameter	Type	Description
column_type	String	Column type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
comment	String	Description of a column. Enter a maximum of 4,000 characters.

Table 4-673 Order

Parameter	Type	Description
column	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
sort_order	Integer	Sorting method. The values are <code>==1</code> (ascending order) and <code>==0</code> (descending order).

Table 4-674 SerDeInfo

Parameter	Type	Description
name	String	Names.
serialization_library	String	Class that implements serialization/deserialization.
parameters	Map<String,String>	Parameters. The value of key ranges from 1 to 255 . The maximum value of value is 4000 .

Table 4-675 SkewedInfo

Parameter	Type	Description
skewed_column_names	Array of strings	List of skewed columns.
skewed_column_value_location_maps	Map<String,String>	Mapping between skew values and addresses.
skewed_column_values	Array<Array<String>>	List of skewed values.

Status code: 400

Table 4-676 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-677 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-678 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-get
{
  "values": [ [ "test_partition" ] ]
}
```

Example Responses

Status code: 200

List of normal partitions.

```
[ {
  "catalog_name": "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name": "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name": "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values": [ "48e1f86dc4394a218b832d94411805fe", "5a2ab07a663c49a98cc606e6ffa0b178" ],
  "create_time": "2023-05-30T09:06:41.372+00:00",
  "last_access_time": "2023-05-30T09:06:41.000+00:00",
  "parameters": {
    "key1": "value1",
    "transient_lastDdlTime": "120",
    "classification": "other"
  },
  "storage_descriptor": {
    "columns": [ {
      "column_type": "string",
      "column_name": "column_prefix0",
      "comment": "83e99b4daff04e75b28263bf44495a3c"
    }, {
      "column_type": "string",
      "column_name": "column_prefix1",
      "comment": "d947669d90884014b60264b2770849ae"
    }, {
      "column_type": "string",
      "column_name": "column_prefix2",
      "comment": "21edd8e92f2448deb036f8e4682ec694"
    }, {
      "column_type": "string",
      "column_name": "column_prefix3",
      "comment": "fc25f38e8b694aebb34a2f84ef4a62f7"
    }, {
      "column_type": "string",
      "column_name": "column_prefix4",
      "comment": "3443079e616d447f8f35da2014754701"
    }, {
      "column_type": "string",
      "column_name": "column_prefix5",

```

```
"comment" : "5f7dda02ac8e4813b3eb4858abb7c520"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix6",
  "comment" : "2a6ae2e5bc3f4add99133106f2cd526c"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix7",
  "comment" : "84d50424269a41fbb5528b350e9d0b13"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix8",
  "comment" : "e3f1d2fa80454554a22e8564ec9c4832"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix9",
  "comment" : "f11315794e6d40daa2cb8347c61e5a46"
} ],
"location" : "obs://location/test/database/b593fc09871e4c9886ed931a3e51f9e5",
"compressed" : false,
"input_format" : "8c470072d43344a3a3bfabd2c7f9d6ec",
"output_format" : "74ee5be43fb548e7b988390df05134fa",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
  "name" : "9b3ea84748854c2d86a71ae37e246293",
  "serialization_library" : "e9632ffbbfbc425d8eac91e765e046e1",
  "parameters" : {
    "e5ae426044054a5f8e362b9b5729dbab" : "33d8296203f94760b1e4b7db55edce0d"
  }
},
"parameters" : {
  "7e27b28f439e40bea098dd65bc857334" : "ab893cac08bb4374beb8ff00a02e9a73",
  "c698760d6de74d0c92eee65bea283215" : "8ba9a058a5cc4ebaac6f43c9771e167a"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}, {
  "catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
  "database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
  "table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
  "partition_values" : [ "e4af64d55308403a9abf1999afb2be", "079f4cd2ee5b4de6922ef8f0c92c82ae" ],
  "create_time" : "2023-05-30T09:06:41.372+00:00",
  "last_access_time" : "2023-05-30T09:06:41.000+00:00",
  "parameters" : {
    "key1" : "value1",
    "transient_lastDdlTime" : "120",
    "classification" : "other"
  },
  "storage_descriptor" : {
    "columns" : [ {
      "column_type" : "string",
      "column_name" : "column_prefix0",
      "comment" : "b40e5a6b6b3c4a538c4b7daa8bc49300"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix1",
      "comment" : "d7de59704feb4218ad6c3899f16f72e3"
    }, {
      "column_type" : "string",
      "column_name" : "column_prefix2",
      "comment" : "215d3961dd0c4858b884e50157da1d4b"
    } ],
  }, {
```

```

"column_type" : "string",
"column_name" : "column_prefix3",
"comment" : "b8e4888680ca449492be2344a81aba1d"
}, {
"column_type" : "string",
"column_name" : "column_prefix4",
"comment" : "1ac15b288c354834830062e48b04e3c8"
}, {
"column_type" : "string",
"column_name" : "column_prefix5",
"comment" : "5e65189b3f28434c8b96a56fb19b3005"
}, {
"column_type" : "string",
"column_name" : "column_prefix6",
"comment" : "7944cf9158514a96905712d686bc7c18"
}, {
"column_type" : "string",
"column_name" : "column_prefix7",
"comment" : "c6b9396476e541e9ab34a8eb5fda9953"
}, {
"column_type" : "string",
"column_name" : "column_prefix8",
"comment" : "978fe9b8a1d1437391e83553ae361bfc"
}, {
"column_type" : "string",
"column_name" : "column_prefix9",
"comment" : "4f7ed315c7c44c5683500104464f4776"
}],
"location" : "obs://location/test/database/3971910eb87a41ee9d7096d538232c33",
"compressed" : false,
"input_format" : "620befc9b9a447fb95ecfb0d33fb636c",
"output_format" : "fc943b36eaec4d1da525734e56374d32",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
"name" : "9286f98baef44841883166345635faed",
"serialization_library" : "ac9cdbc5004d468798bc57b4ed10f602",
"parameters" : {
"cef1b8d74bdd43459793b00b4deff6ae" : "e66acd0f816047ae9e00d01a4045c340"
}
},
"parameters" : {
"0546e622cf2042598ed4f31e0b3b3276" : "be46b5accfd41ba93f50fbe16b782c2",
"a5b63ea213ab48be8c3c361fe93f75d2" : "c0f1215c944040cfad2e69fbe7cb4b0b"
},
"skewed_info" : {
"skewed_column_names" : [ ],
"skewed_column_value_location_maps" : { },
"skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}, {
"catalog_name" : "catcd6a92bfc2c74a509dc8501b8124505c",
"database_name" : "db4cfc99ac3cea421abc157c7bd49f6f16",
"table_name" : "tblbb79f3733c0747adbb94981b412fe48f",
"partition_values" : [ "e5ade865888a4bb0a22b71505dd0989d", "788dfdb29db342f488a6155a55875f5b" ],
"create_time" : "2023-05-30T09:06:41.372+00:00",
"last_access_time" : "2023-05-30T09:06:41.000+00:00",
"parameters" : {
"key1" : "value1",
"transient_lastDdlTime" : "120",
"classification" : "other"
},
"storage_descriptor" : {
"columns" : [ {
"column_type" : "string",
"column_name" : "column_prefix0",

```

```
"comment" : "a4398b0a8f404ad1a2d8d350efdcd812"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix1",
  "comment" : "c2d17faf55de41ddb9f098a684dd8473"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix2",
  "comment" : "5f2de67835ff49aba7b661712ef059a6"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix3",
  "comment" : "26ce9cc09f3545df80181cbcd87d4da2"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix4",
  "comment" : "f5b65b8db66349b3a1f8eace0ea33334"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix5",
  "comment" : "3f9b100dbc2f45d58d6fbcfa63e0d806"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix6",
  "comment" : "22c5f279e9d04cada8bdee6ddb38af7"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix7",
  "comment" : "7ac1468020094057bf2e1e41f3e035b8"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix8",
  "comment" : "8c8178e2fe694ace80e78d5c985f7165"
}, {
  "column_type" : "string",
  "column_name" : "column_prefix9",
  "comment" : "3f8d23d533fe44b295067de73a8f1b68"
}
],
"location" : "obs://location/test/database/8c351a1aca6b426a936be4453da30c35",
"compressed" : false,
"input_format" : "9fb9f9d02b3044febe447a1ad4ca5297",
"output_format" : "ba8acae75da24d858ebe99f4ef2fce84",
"number_of_buckets" : 0,
"bucket_columns" : [ ],
"sort_columns" : [ ],
"serde_info" : {
  "name" : "6e4b2479321842d191f1b540b348a4f1",
  "serialization_library" : "22209422df114f589b4ec28d19d86e52",
  "parameters" : {
    "a5c4f39d83d047748dcd1218764c7a1c" : "9e2256acd089474ba469d329d35ace13"
  }
},
"parameters" : {
  "997ebfa4c6e343789a92d20f7961c865" : "2a1899624e084fb4b26595469cd23f32",
  "86887611dd7345c88f3de16538cb3587" : "ac4aab973d50429d9803cb418c9d44e1"
},
"skewed_info" : {
  "skewed_column_names" : [ ],
  "skewed_column_value_location_maps" : { },
  "skewed_column_values" : [ ]
},
"stored_as_sub_directories" : false
}
}]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	List of normal partitions.

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.6 Listing Partition Values

Function

Traverse the partition name list. You can access a list of partition names for transactional tables, depending on the table version.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/partition-names

Table 4-679 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-680 Query Parameters

Parameter	Mandatory	Type	Description
filter	No	String	Filter condition expression. The value consists of 0 to 256 characters.
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-681 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-682 Response body parameters

Parameter	Type	Description
partition_name_list	Array of strings	Partition name list.
page_info	PagedInfo object	Pagination information.

Table 4-683 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-684 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-685 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-686 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/partition-names
```

Example Responses

Status code: 200

OK

```
{
  "partition_name_list" : [ "partition1" ],
  "page_info" : {
    "current_count" : 2000,
    "next_marker" : "006f492b-xxxx",
    "previous_marker" : "003e6eba-xxxx"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
```

```
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.6.7 Listing All Partition Values

Function

Traverse the partition name list and returns all data. You can access a list of partition names for transactional tables, depending on the table version.

URI

GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/names

Table 4-687 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-688 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from -1 to 9999999 .

Request Parameters

Table 4-689 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-690 Response body parameters

Parameter	Type	Description
[items]	Array of strings	OK

Status code: 400

Table 4-691 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-692 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-693 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/names
```

Example Responses

Status code: 200

OK

```
[ "test" ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
```

```

"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.7 Partition Statistics

4.2.7.1 Obtaining Column Statistics in a Partition in Batches

Function

This API is used to obtain column statistics in a partition in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics/batch-get

Table 4-694 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-695 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-696 Request body parameters

Parameter	Mandatory	Type	Description
aggregate_statistics	Yes	Boolean	Whether to aggregate and return statistics.
column_names	Yes	Array of strings	Name of the column that contains the statistics.
partition_values_list	Yes	Array<Array<String>>	List of partition values to be collected.

Response Parameters

Status code: 200

Table 4-697 Response body parameters

Parameter	Type	Description
found_partition_number	Integer	Number of partitions.
column_statistics	Map<String,Array<ColumnStatisticsObj>>	List of partition statistics.

Table 4-698 ColumnStatisticsObj

Parameter	Type	Description
column_name	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.

Parameter	Type	Description
column_type	String	Data type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
data_type	String	Statistics type, including binaryStats, booleanStats, dateStats, decimalStats, doubleStats, longStats, and stringStats. Enumeration values: <ul style="list-style-type: none"> • binaryStats • booleanStats • dateStats • decimalStats • doubleStats • longStats • stringStats
binary_statistics_data	BinaryColumnStatisticsData object	Statistics on byte arrays.
long_statistics_data	LongColumnStatisticsData object	Statistics on long integers.
decimal_statistics_data	DecimalColumnStatisticsData object	Statistics on decimal values.
string_statistics_data	StringColumnStatisticsData object	Statistics on strings.
double_statistics_data	DoubleColumnStatisticsData object	Statistics on floating point numbers.
date_statistics_data	DateColumnStatisticsData object	Statistics on date values.
boolean_statistics_data	BooleanColumnStatisticsData object	Statistics on Boolean data.

Table 4-699 BinaryColumnStatisticsData

Parameter	Type	Description
maximum_length	Long	Maximum value of a byte array in a column.
average_length	Double	Average length of byte arrays in a column.
number_of_null	Long	Number of null values in a column.

Table 4-700 LongColumnStatisticsData

Parameter	Type	Description
minimum_value	Long	Minimum long integer value in a column.
maximum_value	Long	Maximum long integer value in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of long integer values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-701 DecimalColumnStatisticsData

Parameter	Type	Description
minimum_value	Decimal object	Minimum decimal value in a column.
maximum_value	Decimal object	Maximum decimal value in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of decimal values in a column after deduplication.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-702 Decimal

Parameter	Type	Description
scale	Integer	Integer part.
unscaled	String	Decimal part.

Table 4-703 StringColumnStatisticsData

Parameter	Type	Description
average_length	Double	Average length of strings in a column.
maximum_length	Long	Maximum length of strings in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of strings after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-704 DoubleColumnStatisticsData

Parameter	Type	Description
minimum_value	Double	Minimum floating point number in a column.
maximum_value	Double	Maximum floating point number in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of floating point numbers after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-705 DateColumnStatisticsData

Parameter	Type	Description
minimum_value	String	Minimum timestamp in a column.

Parameter	Type	Description
maximum_value	String	Maximum timestamp in a column.
number_of_null	Long	Number of null values in a column.
number_of_distinct_value	Long	Number of timestamps after deduplication in a column.
bit_vector	String	Bitmap used for estimating unique values.

Table 4-706 BooleanColumnStatisticsData

Parameter	Type	Description
number_of_true	Long	Number of real records in a column.
number_of_false	Long	Number of false records in a column.
number_of_null	Long	Number of empty records in a column.

Status code: 400

Table 4-707 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-708 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-709 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/
{database_name}/tables/{table_name}/partitions/column-statistics/batch-get

{
  "aggregate_stats": false,
  "column_names": [ "column1", "column2" ],
  "partition_values_list": [ [ "value1", "value2" ] ]
}
```

Example Responses

Status code: 200

OK

```
{
  "found_partition_number": 1,
  "column_statistics": {
    "part1=value1/part2=value2": [ {
      "column_name": "columnName",
      "column_type": "bigint",
      "data_type": "longStats",
      "long_statistics_data": {
        "minimum_value": 10,
        "maximum_value": 1000,
        "number_of_null": 30,
        "number_of_distinct_value": 20
      }
    }
  ]
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
```

```
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout

Status Code	Description
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.7.2 Setting Partition Statistics in Batches

Function

This API is used to set partition statistics in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics

Table 4-710 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Parameter	Mandatory	Type	Description
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-711 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-712 Request body parameters

Parameter	Mandatory	Type	Description
need_merge	Yes	Boolean	Whether to incorporate original statistics.
statistics	Yes	Array of PartitionColumnStatistics objects	List of partition statistics.

Table 4-713 PartitionColumnStatistics

Parameter	Mandatory	Type	Description
column_statistics_desc	Yes	PartitionColumnStatisticsDescription object	Column statistics description.
column_statistics_objects	Yes	Array of ColumnStatisticsObj objects	Column statistics.

Table 4-714 PartitionColumnStatisticsDescription

Parameter	Mandatory	Type	Description
partition_values	No	Array of strings	Partition values.
last_analyzed_time	Yes	String	Last collected time.

Table 4-715 ColumnStatisticsObj

Parameter	Mandatory	Type	Description
column_name	Yes	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_</code> , <code>-</code> , <code>+</code> , <code>()</code> , <code>,</code>) are allowed.
column_type	Yes	String	Data type, including array, bigint, binary, boolean, char, date, decimal, double, float, int, interval, map, set, smallint, string, struct, timestamp, tinyint, union, and varchar.
data_type	Yes	String	Statistics type, including binaryStats, booleanStats, dateStats, decimalStats, doubleStats, longStats, and stringStats. Enumeration values: <ul style="list-style-type: none"> • binaryStats • booleanStats • dateStats • decimalStats • doubleStats • longStats • stringStats
binary_statistics_data	No	BinaryColumnStatisticsData object	Statistics on byte arrays.
long_statistics_data	No	LongColumnStatisticsData object	Statistics on long integers.

Parameter	Mandatory	Type	Description
decimal_statistics_data	No	DecimalColumnStatisticsData object	Statistics on decimal values.
string_statistics_data	No	StringColumnStatisticsData object	Statistics on strings.
double_statistics_data	No	DoubleColumnStatisticsData object	Statistics on floating point numbers.
date_statistics_data	No	DateColumnStatisticsData object	Statistics on date values.
boolean_statistics_data	No	BooleanColumnStatisticsData object	Statistics on Boolean data.

Table 4-716 BinaryColumnStatisticsData

Parameter	Mandatory	Type	Description
maximum_length	Yes	Long	Maximum value of a byte array in a column.
average_length	Yes	Double	Average length of byte arrays in a column.
number_of_null	Yes	Long	Number of null values in a column.

Table 4-717 LongColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Long	Minimum long integer value in a column.
maximum_value	Yes	Long	Maximum long integer value in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of long integer values in a column after deduplication.

Parameter	Mandatory	Type	Description
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-718 DecimalColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Decimal object	Minimum decimal value in a column.
maximum_value	Yes	Decimal object	Maximum decimal value in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of decimal values in a column after deduplication.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-719 Decimal

Parameter	Mandatory	Type	Description
scale	No	Integer	Integer part.
unscaled	No	String	Decimal part.

Table 4-720 StringColumnStatisticsData

Parameter	Mandatory	Type	Description
average_length	Yes	Double	Average length of strings in a column.
maximum_length	Yes	Long	Maximum length of strings in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of strings after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-721 DoubleColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	Yes	Double	Minimum floating point number in a column.
maximum_value	Yes	Double	Maximum floating point number in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of floating point numbers after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-722 DateColumnStatisticsData

Parameter	Mandatory	Type	Description
minimum_value	No	String	Minimum timestamp in a column.
maximum_value	No	String	Maximum timestamp in a column.
number_of_null	Yes	Long	Number of null values in a column.
number_of_distinct_value	Yes	Long	Number of timestamps after deduplication in a column.
bit_vector	No	String	Bitmap used for estimating unique values.

Table 4-723 BooleanColumnStatisticsData

Parameter	Mandatory	Type	Description
number_of_true	Yes	Long	Number of real records in a column.
number_of_false	Yes	Long	Number of false records in a column.
number_of_null	Yes	Long	Number of empty records in a column.

Response Parameters

Status code: 400

Table 4-724 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-725 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-726 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics
```

```
{
  "need_merge" : false,
  "statistics" : [ {
    "column_statistics_desc" : {
      "partition_values" : [ "value1", "value2" ],
      "last_analyzed_time" : "2023-05-31T02:52:16.137Z"
    },
    "column_statistics_objects" : [ {
      "column_name" : "column_prefix0",
      "column_type" : "string",
      "data_type" : "stringStats",
```

```
"string_statistics_data" : {
  "average_length" : 10,
  "maximum_length" : 100,
  "number_of_null" : 30,
  "number_of_distinct_value" : 20,
  "bit_vector" : "FwAAAAAAAAAAAAA=="
}
}, {
  "column_name" : "column_prefix1",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
    "number_of_null" : 30,
    "number_of_distinct_value" : 20,
    "bit_vector" : "FwAAAAAAAAAAAAA=="
  }
}, {
  "column_name" : "column_prefix2",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
    "number_of_null" : 30,
    "number_of_distinct_value" : 20,
    "bit_vector" : "FwAAAAAAAAAAAAA=="
  }
}, {
  "column_name" : "column_prefix3",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
    "number_of_null" : 30,
    "number_of_distinct_value" : 20,
    "bit_vector" : "FwAAAAAAAAAAAAA=="
  }
}, {
  "column_name" : "column_prefix4",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
    "number_of_null" : 30,
    "number_of_distinct_value" : 20,
    "bit_vector" : "FwAAAAAAAAAAAAA=="
  }
}, {
  "column_name" : "column_prefix5",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
    "number_of_null" : 30,
    "number_of_distinct_value" : 20,
    "bit_vector" : "FwAAAAAAAAAAAAA=="
  }
}, {
  "column_name" : "column_prefix6",
  "column_type" : "string",
  "data_type" : "stringStats",
  "string_statistics_data" : {
    "average_length" : 10,
    "maximum_length" : 100,
```

```
"number_of_null" : 30,
"number_of_distinct_value" : 20,
"bit_vector" : "FwAAAAAAAAAAAAA=="
}, {
"column_name" : "column_prefix7",
"column_type" : "string",
"data_type" : "stringStats",
"string_statistics_data" : {
"average_length" : 10,
"maximum_length" : 100,
"number_of_null" : 30,
"number_of_distinct_value" : 20,
"bit_vector" : "FwAAAAAAAAAAAAA=="
}
}, {
"column_name" : "column_prefix8",
"column_type" : "string",
"data_type" : "stringStats",
"string_statistics_data" : {
"average_length" : 10,
"maximum_length" : 100,
"number_of_null" : 30,
"number_of_distinct_value" : 20,
"bit_vector" : "FwAAAAAAAAAAAAA=="
}
}, {
"column_name" : "column_prefix9",
"column_type" : "string",
"data_type" : "stringStats",
"string_statistics_data" : {
"average_length" : 10,
"maximum_length" : 100,
"number_of_null" : 30,
"number_of_distinct_value" : 20,
"bit_vector" : "FwAAAAAAAAAAAAA=="
}
}
}
}
```

Example Responses

Status code: 400

Bad Request

```
{
"error_code" : "common.01000001",
"error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
"error_code": 'APIG.1002',
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
"error" : {
```

```

"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.7.3 Deleting Column Statistics in a Partition

Function

This API is used to delete column statistics in a partition.

URI

DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/
databases/{database_name}/tables/{table_name}/partitions/column-statistics

Table 4-727 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
catalog_name	Yes	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database_name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
table_name	Yes	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-728 Query Parameters

Parameter	Mandatory	Type	Description
partition_values	Yes	Array	Partition values.

Parameter	Mandatory	Type	Description
column_name	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*()</code>) are allowed.

Request Parameters

Table 4-729 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-730 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-731 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-732 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-733 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
DELETE https://{endpoint} /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics/batch-get
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  }
}
```

```

},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8 Authorization Management

4.2.8.1 Granting Permissions in Batches

Function

This API is used to grant permissions in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/policies/grant

Table 4-734 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-735 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-736 Request body parameters

Parameter	Mandatory	Type	Description
principal_list	Yes	Array of Principal objects	Entity information.
resource	Yes	ResourceInfo object	Resource information.
effect	Yes	Boolean	Deny/Allow.

Parameter	Mandatory	Type	Description
permissions	Yes	Array of strings	<p>Permissions: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● ALL ● CREATE ● ALTER

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY

Parameter	Mandatory	Type	Description
grant_able_permissions	No	Array of strings	<p>Permissions that can be transferred: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● ALL ● CREATE

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY
conditions	No	String	Condition.
data_filter	No	String	Row filtering.
data_mask	No	String	Column mask.
parameters	No	Map<String,String>	Parameter.

Table 4-737 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Table 4-738 ResourceInfo

Parameter	Mandatory	Type	Description
catalogs	No	Array of CatalogInfo objects	Catalog information.
uris	No	Array of strings	URI.

Parameter	Mandatory	Type	Description
type	Yes	String	Resource type. The options are CATALOG , DATABASE , TABLE , COLUMN , FUNC , MODEL , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • COLUMN • FUNC • MODEL • URI

Table 4-739 CatalogInfo

Parameter	Mandatory	Type	Description
databases	No	Array of DatabaseInfo objects	Subdatabase information.
name	Yes	String	Catalog name.

Table 4-740 DatabaseInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
tables	No	Array of TableInfo objects	Subtables.
functions	No	Array of FunctionInfo objects	Subfunctions.

Table 4-741 TableInfo

Parameter	Mandatory	Type	Description
columns	No	ColumnInfo object	Sub-columns.
name	Yes	String	Table name.

Table 4-742 ColumnInfo

Parameter	Mandatory	Type	Description
column_name	Yes	Array of strings	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
filter	Yes	String	Whether to filter out an item. The options are Include and Exclude . Enumeration values: <ul style="list-style-type: none"> • Include • Exclude

Table 4-743 FunctionInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Function name.

Response Parameters

Status code: 200

Table 4-744 Response body parameters

Parameter	Type	Description
policies	Array of LakeFormationPolicy objects	LakeCat policies.
page_info	PagedInfo object	Pagination information.

Table 4-745 LakeFormationPolicy

Parameter	Type	Description
project_id	String	Project ID.
instance_id	String	Instance ID.
principal_type	String	Entity type. The options are USER (user), GROUP (group), ROLE (role), SHARE (shared), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (permission policy), LOCAL (local user), AGENT (agency), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name.
resource	ResourceInfo object	Resource information.
resource_name	String	Require to perform splitting in dotted format.

Parameter	Type	Description
permissions	Array of strings	<p>Permissions: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● ALL ● CREATE ● ALTER ● DROP ● DESCRIBE ● EXEC ● CREATE_DATABASE ● LIST_DATABASE ● CREATE_TABLE ● LIST_TABLE ● CREATE_FUNC ● LIST_FUNC ● REGISTER_MODEL ● LIST_MODEL ● INSERT ● UPDATE ● DELETE

Parameter	Type	Description
		<ul style="list-style-type: none"> • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT

Parameter	Type	Description
		<ul style="list-style-type: none">• ALTER TTL• ALTER MATERIALIZE TTL• ALTER SETTINGS• ALTER MOVE PARTITION• ALTER FETCH PARTITION• ALTER FREEZE PARTITION• ALTER VIEW• ALTER VIEW REFRESH• ALTER VIEW MODIFY QUERY

Parameter	Type	Description
grant_able_permissions	Array of strings	<p>Permissions that can be transferred: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • CREATE • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE

Parameter	Type	Description
		<ul style="list-style-type: none"> • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT

Parameter	Type	Description
		<ul style="list-style-type: none"> • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY
created_time	Long	Creation time.
condition	String	Conditions.
obligation	String	Obligation, including data filter and data mask .
authorization_paths	Array of strings	Authorization path list.
parameters	Map<String,String>	Parameter.
access_policy_type	String	Policy type. The options are DEFAULT (common policy) and ROW_FILTER (row filtering policy). Enumeration values: <ul style="list-style-type: none"> • DEFAULT • ROW_FILTER

Table 4-746 ResourceInfo

Parameter	Type	Description
catalogs	Array of CatalogInfo objects	Catalog information.
uris	Array of strings	URI.

Parameter	Type	Description
type	String	Resource type. The options are CATALOG , DATABASE , TABLE , COLUMN , FUNC , MODEL , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • COLUMN • FUNC • MODEL • URI

Table 4-747 CatalogInfo

Parameter	Type	Description
databases	Array of DatabaseInfo objects	Subdatabase information.
name	String	Catalog name.

Table 4-748 DatabaseInfo

Parameter	Type	Description
name	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
tables	Array of TableInfo objects	Subtables.
functions	Array of FunctionInfo objects	Subfunctions.

Table 4-749 TableInfo

Parameter	Type	Description
columns	ColumnInfo object	Sub-columns.

Parameter	Type	Description
name	String	Table name.

Table 4-750 ColumnInfo

Parameter	Type	Description
column_name	Array of strings	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
filter	String	Whether to filter out an item. The options are Include and Exclude . Enumeration values: <ul style="list-style-type: none"> • Include • Exclude

Table 4-751 FunctionInfo

Parameter	Type	Description
name	String	Function name.

Table 4-752 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_mar ker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-753 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-754 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-755 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/policies/grant

```
{
  "principal_list": [ {
    "principal_type": "USER",
    "principal_source": "IAM",
    "principal_name": "user1"
  } ],
  "resource": {
    "catalogs": [ {
      "databases": [ {
        "name": "db1",
        "tables": [ {
          "columns": {
            "column_name": [ ],
            "filter": "string"
          },
          "name": "tb1"
        } ]
      } ]
    } ]
  }
}
```



```

"functions": [ {
  "name": "string"
} ]
}],
"name": "catalog1"
}],
"uris": [ "string" ],
"type": "CATALOG"
},
"effect": true,
"permissions": "ALTER,DROP",
"grant_able_permissions": "ALTER,DROP",
"conditions": "ip=127.0.0.1",
"data_filter": "c1 < 0",
"data_mask": "Include:c1,c2:mask"
}

```

Example Responses

Status code: 200

OK

```

{
  "policies": [ {
    "project_id": "41aa75443xxxxx2c6afaaa40cc046",
    "instance_id": "51c51596-2e97-47bf-xxxx-0fc728c04ced",
    "principal_type": "USER",
    "principal_source": "IAM",
    "principal_name": "user1",
    "resource": {
      "catalogs": [ {
        "databases": [ {
          "name": "db1",
          "tables": [ { } ],
          "functions": [ { } ]
        } ],
        "name": "catalog1"
      } ],
      "uris": [ "string" ],
      "type": "CATALOG"
    },
    "resource_name": "string",
    "permissions": [ "DROP", "ALTER" ],
    "grant_able_permissions": [ "ALTER" ],
    "created_time": 0,
    "condition": "ip=127.0.0.1",
    "obligation": "DATAFILTER:c1<10;DATAMASK:INCLUDE:c1",
    "authorization_paths": [ "obs://location/uri/" ]
  } ],
  "page_info": {
    "current_count": 2000,
    "next_marker": "006f492b-xxxx",
    "previous_marker": "003e6eba-xxxx"
  }
}

```

Status code: 400

Bad Request

```

{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden

Status Code	Description
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8.2 Obtaining Synchronization Permission Policies

Function

This API is used to obtain synchronization permission policies.

URI

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

Table 4-756 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-757 Query Parameters

Parameter	Mandatory	Type	Description
last_known_version	No	Long	Latest known version.

Parameter	Mandatory	Type	Description
supports_policy_deltas	No	Boolean	Whether to support the incremental synchronization policy. The default value is false .
is_return_policy_data	No	Boolean	Whether to return permission policy data. The default value is true .
catalog_name	No	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.

Request Parameters

Table 4-758 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-759 Response body parameters

Parameter	Type	Description
policy_version	Long	Policy version.
policy_update_time	String	Policy update time.
policies	Array of Policy objects	Permission policies.
policy_deltas	Array of PolicyDelta objects	Incremental permission policies.

Table 4-760 Policy

Parameter	Type	Description
allow_exceptions	Array of PolicyItem objects	Excluded allow rules.
conditions	Array of PolicyItemCondition objects	Condition attributes.
create_time	String	Creation time.
created_by	String	Creator.
data_mask_policy_items	Array of DataMaskPolicyItem objects	Class mask policy items.
deny_exceptions	Array of PolicyItem objects	Deny exclusion policies.
deny_policy_items	Array of PolicyItem objects	Deny policies.
description	String	Description.
guid	String	Unique GUID.
id	Long	Primary key.
is_audit_enabled	Boolean	Whether to enable auditing.
is_default_policy	Boolean	Whether this policy is the default one.
is_deny_all_else	Boolean	Whether to reject all.
is_enabled	Boolean	Whether to enable it.
name	String	Name.
options	Object	Options.
policy_items	Array of PolicyItem objects	Policy items.
policy_labels	Array of strings	Policy labels.
policy_priority	Integer	Policy priority.

Parameter	Type	Description
policy_type	Integer	Policy type.
resource_signature	String	Resource signature.
resources	Map<String, PolicyResource >	Resources.
row_filter_policy_items	Array of RowFilterPolicyItem objects	Row-based filtering policy items.
service	String	Service.
service_type	String	Service type.
update_time	String	Update time.
updated_by	String	Updater.
validity_schedules	Array of ValiditySchedule objects	Verification period.
version	Long	Version.
zone_name	String	Zone name.

Table 4-761 PolicyDelta

Parameter	Type	Description
policy	Policy object	Policy information.
change_type	Integer	Change type.

Table 4-762 DataMaskPolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Access arrays.
conditions	Array of PolicyItemCondition objects	Condition arrays.

Parameter	Type	Description
data_mask_info	PolicyItemDataMaskInfo object	Column mask policies.
delegate_admin	Boolean	Whether to support delegation.
groups	Array of strings	User groups.
roles	Array of strings	Roles.
users	Array of strings	Users.

Table 4-763 PolicyItemDataMaskInfo

Parameter	Type	Description
condition_expr	String	Condition expression.
data_mask_type	String	Column mask type.
value_expr	String	Column mask expression.

Table 4-764 PolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Access control data.
conditions	Array of PolicyItemCondition objects	Conditions.
delegate_admin	Boolean	Whether to support delegation.
groups	Array of strings	Groups.
roles	Array of strings	Roles.

Parameter	Type	Description
users	Array of strings	Users.

Table 4-765 PolicyResource

Parameter	Type	Description
is_excludes	Boolean	Whether to exclude it.
is_recursive	Boolean	Whether to perform this operation recursively.
values	Array of strings	Values.

Table 4-766 RowFilterPolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Permissions.
conditions	Array of PolicyItemCondition objects	Conditions.
delegate_admin	Boolean	Whether to support delegation.
groups	Array of strings	Groups.
roles	Array of strings	Roles.
row_filter_info	PolicyItemRowFilterInfo object	Row filtering.
users	Array of strings	Users.

Table 4-767 PolicyItemAccess

Parameter	Type	Description
is_allowed	Boolean	Whether to allow this operation.

Parameter	Type	Description
type	String	Type.

Table 4-768 PolicyItemCondition

Parameter	Type	Description
type	String	Condition type.
values	Array of strings	Condition value.

Table 4-769 PolicyItemRowFilterInfo

Parameter	Type	Description
filter_expr	String	Row filter expression.

Table 4-770 ValiditySchedule

Parameter	Type	Description
end_time	String	End time.
recurrences	Array of ValidityRecurrence objects	Policy recursion.
start_time	String	Start time.
time_zone	String	Time zone.

Table 4-771 ValidityRecurrence

Parameter	Type	Description
interval	ValidityInterval object	Interval.
schedule	RecurrenceSchedule object	Period.

Table 4-772 ValidityInterval

Parameter	Type	Description
days	Integer	Days.
hours	Integer	Hours.
minutes	Integer	Minutes.

Table 4-773 RecurrenceSchedule

Parameter	Type	Description
day_of_month	String	Date (by month).
day_of_week	String	Date (by week).
hour	String	Hour.
minute	String	Minute.
month	String	Month.
year	String	Year.

Status code: 400

Table 4-774 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-775 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-776 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/policies/policy

Example Responses

Status code: 200

OK

```
{
  "policy_version" : 217,
  "policy_updateTime" : "1657788005000",
  "policies" : [ {
    "allow_exceptions" : [ ],
    "data_mask_policy_items" : [ ],
    "deny_exceptions" : [ ],
    "deny_policy_items" : [ {
      "accesses" : [ {
        "is_allowed" : true,
        "type" : "select"
      } ],
      "conditions" : [ {
        "type" : "ip-range",
        "values" : [ ".*.*.*" ]
      } ],
      "delegate_admin" : false,
      "groups" : [ "groupD" ],
      "roles" : [ ],
      "users" : [ ]
    } ],
    "id" : 39,
    "is_audit_enabled" : true,
    "is_default_policy" : false,
    "is_deny_all_else" : false,
    "is_enabled" : true,
    "name" : "database_a.test.[*]-table_all_column",
    "options" : { },
    "policy_items" : [ {
      "accesses" : [ {
        "is_allowed" : true,
        "type" : "select"
      } ],
      "conditions" : [ ],
      "delegate_admin" : true,
      "groups" : [ "groupA" ],
      "roles" : [ ],
      "users" : [ ]
    } ],
    {
      "accesses" : [ {
        "is_allowed" : true,
```

```

    "type": "select"
  },
  "conditions": [ ],
  "delegate_admin": true,
  "groups": [ "groupB" ],
  "roles": [ ],
  "users": [ ]
}],
"policy_labels": [ ],
"policy_priority": 0,
"policy_type": 0,
"resources": {
  "database": {
    "is_excludes": false,
    "is_recursive": false,
    "values": [ "database_a" ]
  },
  "column": {
    "is_excludes": false,
    "is_recursive": false,
    "values": [ "*" ]
  },
  "table": {
    "is_excludes": false,
    "is_recursive": false,
    "values": [ "test" ]
  }
},
"row_filter_policy_items": [ ],
"service": "Hive",
"service_type": "hive",
"validity_schedules": [ ]
}]
}

```

Status code: 400

Bad Request

```

{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```

{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}

```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8.3 Canceling Batch Authorization

Function

Revoke permissions in batches.

URI

POST /v1/{project_id}/instances/{instance_id}/policies/revoke

Table 4-777 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-778 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-779 Request body parameters

Parameter	Mandatory	Type	Description
principal_list	Yes	Array of Principal objects	Entity information.
resource	Yes	ResourceInfo object	Resource information.
effect	Yes	Boolean	Deny/Allow.

Parameter	Mandatory	Type	Description
permissions	Yes	Array of strings	<p>Permissions: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> ● ALL ● CREATE ● ALTER

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY

Parameter	Mandatory	Type	Description
grant_able_permissions	No	Array of strings	<p>Permissions that can be transferred: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • CREATE

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE

Parameter	Mandatory	Type	Description
			<ul style="list-style-type: none"> • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY
conditions	No	String	Condition.
data_filter	No	String	Row filtering.
data_mask	No	String	Column mask.
parameters	No	Map<String,String>	Parameter.

Table 4-780 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Table 4-781 ResourceInfo

Parameter	Mandatory	Type	Description
catalogs	No	Array of CatalogInfo objects	Catalog information.
uris	No	Array of strings	URI.

Parameter	Mandatory	Type	Description
type	Yes	String	Resource type. The options are CATALOG , DATABASE , TABLE , COLUMN , FUNC , MODEL , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • COLUMN • FUNC • MODEL • URI

Table 4-782 CatalogInfo

Parameter	Mandatory	Type	Description
databases	No	Array of DatabaseInfo objects	Subdatabase information.
name	Yes	String	Catalog name.

Table 4-783 DatabaseInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
tables	No	Array of TableInfo objects	Subtables.
functions	No	Array of FunctionInfo objects	Subfunctions.

Table 4-784 TableInfo

Parameter	Mandatory	Type	Description
columns	No	ColumnInfo object	Sub-columns.
name	Yes	String	Table name.

Table 4-785 ColumnInfo

Parameter	Mandatory	Type	Description
column_name	Yes	Array of strings	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_+*(,)</code>) are allowed.
filter	Yes	String	Whether to filter out an item. The options are Include and Exclude . Enumeration values: <ul style="list-style-type: none"> • Include • Exclude

Table 4-786 FunctionInfo

Parameter	Mandatory	Type	Description
name	Yes	String	Function name.

Response Parameters

Status code: 400

Table 4-787 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-788 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-789 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/policies/revoke

```
{
  "principal_list": [ {
    "principal_type": "USER",
    "principal_source": "IAM",
    "principal_name": "user1"
  } ],
  "resource": {
    "catalogs": [ {
      "databases": [ {
        "name": "db1",
        "tables": [ {
          "columns": {
            "column_name": [ ],
            "filter": "string"
          },
          "name": "tb1"
        } ],
        "functions": [ {
          "name": "string"
        } ]
      } ],
      "name": "catalog1"
    } ],
    "uris": [ "string" ],
    "type": "CATALOG"
  },
  "effect": true,
  "permissions": "ALTER,DROP",
  "grant_able_permissions": "ALTER,DROP",
  "conditions": "ip=127.0.0.1",
  "data_filter": "c1 < 0",
  "data_mask": "Include:c1,c2:mask"
}
```


Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
  cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8.4 Querying a Policy

Function

Querying APIs by filter criterion.

URI

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

Table 4-790 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-791 Query Parameters

Parameter	Mandatory	Type	Description
filter	No	String	Permission policy filter expression, which is not supported currently.
resource_name	No	String	Full name of a metadata resource. The value can contain 1 to 1,000 characters.
resource_type	No	String	Metadata resource type. The options are CATALOG , DATABASE , TABLE , FUNC , MODEL , COLUMN , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • FUNC • MODEL • COLUMN • URI
principal_source	No	String	Source of the authorization entity. The values are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), and LOCAL (local user). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL
principal_type	No	String	Authorization entity type. The options are USER (user), GROUP (group), ROLE (role), SHARE (shared), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER

Parameter	Mandatory	Type	Description
principal_name	No	String	Name of the authorization entity. The value can contain 1 to 1,000 characters.
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2147483647 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-792 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-793 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Table 4-794 Response body parameters

Parameter	Type	Description
policies	Array of LakeFormationPolicy objects	LakeCat policies.

Parameter	Type	Description
page_info	PagedInfo object	Pagination information.

Table 4-795 LakeFormationPolicy

Parameter	Type	Description
project_id	String	Project ID.
instance_id	String	Instance ID.
principal_type	String	Entity type. The options are USER (user), GROUP (group), ROLE (role), SHARE (shared), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (permission policy), LOCAL (local user), AGENT (agency), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name.
resource	ResourceInfo object	Resource information.
resource_name	String	Require to perform splitting in dotted format.

Parameter	Type	Description
permissions	Array of strings	<p>Permissions: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • CREATE • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE

Parameter	Type	Description
		<ul style="list-style-type: none"> • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT

Parameter	Type	Description
		<ul style="list-style-type: none">• ALTER TTL• ALTER MATERIALIZE TTL• ALTER SETTINGS• ALTER MOVE PARTITION• ALTER FETCH PARTITION• ALTER FREEZE PARTITION• ALTER VIEW• ALTER VIEW REFRESH• ALTER VIEW MODIFY QUERY

Parameter	Type	Description
grant_able_permissions	Array of strings	<p>Permissions that can be transferred: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, INTROSPECTION, SOURCES, DICT GET, TRUNCATE, OPTIMIZE, CREATE TEMPORARY TABLE, CREATE DICTIONARY, CREATE VIEW, SHOW DATABASES, SHOW TABLES, SHOW DICTIONARIES, SHOW COLUMNS, DROP DATABASE, DROP VIEW, DROP DICTIONARY, DROP TABLE, ALTER TABLE, ALTER UPDATE, ALTER DELETE, ALTER COLUMN, ALTER ADD COLUMN, ALTER DROP COLUMN, ALTER MODIFY COLUMN, ALTER COMMENT COLUMN, ALTER CLEAR COLUMN, ALTER RENAME COLUMN, ALTER INDEX, ALTER ORDER BY, ALTER ADD INDEX, ALTER DROP INDEX, ALTER MATERIALIZE INDEX, ALTER CLEAR INDEX, ALTER CONSTRAINT, ALTER ADD CONSTRAINT, ALTER DROP CONSTRAINT, ALTER TTL, ALTER MATERIALIZE TTL, ALTER SETTINGS, ALTER MOVE PARTITION, ALTER FETCH PARTITION, ALTER FREEZE PARTITION, ALTER VIEW, ALTER VIEW REFRESH, and ALTER VIEW MODIFY QUERY.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • CREATE • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE

Parameter	Type	Description
		<ul style="list-style-type: none"> • SELECT • READ • WRITE • OPERATE • INTROSPECTION • SOURCES • DICT GET • TRUNCATE • OPTIMIZE • CREATE TEMPORARY TABLE • CREATE DICTIONARY • CREATE VIEW • SHOW DATABASES • SHOW TABLES • SHOW DICTIONARIES • SHOW COLUMNS • DROP DATABASE • DROP VIEW • DROP DICTIONARY • DROP TABLE • ALTER TABLE • ALTER UPDATE • ALTER DELETE • ALTER COLUMN • ALTER ADD COLUMN • ALTER DROP COLUMN • ALTER MODIFY COLUMN • ALTER COMMENT COLUMN • ALTER CLEAR COLUMN • ALTER RENAME COLUMN • ALTER INDEX • ALTER ORDER BY • ALTER ADD INDEX • ALTER DROP INDEX • ALTER MATERIALIZE INDEX • ALTER CLEAR INDEX • ALTER CONSTRAINT • ALTER ADD CONSTRAINT • ALTER DROP CONSTRAINT

Parameter	Type	Description
		<ul style="list-style-type: none"> • ALTER TTL • ALTER MATERIALIZE TTL • ALTER SETTINGS • ALTER MOVE PARTITION • ALTER FETCH PARTITION • ALTER FREEZE PARTITION • ALTER VIEW • ALTER VIEW REFRESH • ALTER VIEW MODIFY QUERY
created_time	Long	Creation time.
condition	String	Conditions.
obligation	String	Obligation, including data filter and data mask .
authorization_paths	Array of strings	Authorization path list.
parameters	Map<String,String>	Parameter.
access_policy_type	String	Policy type. The options are DEFAULT (common policy) and ROW_FILTER (row filtering policy). Enumeration values: <ul style="list-style-type: none"> • DEFAULT • ROW_FILTER

Table 4-796 ResourceInfo

Parameter	Type	Description
catalogs	Array of CatalogInfo objects	Catalog information.
uris	Array of strings	URI.

Parameter	Type	Description
type	String	Resource type. The options are CATALOG , DATABASE , TABLE , COLUMN , FUNC , MODEL , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • COLUMN • FUNC • MODEL • URI

Table 4-797 CatalogInfo

Parameter	Type	Description
databases	Array of DatabaseInfo objects	Subdatabase information.
name	String	Catalog name.

Table 4-798 DatabaseInfo

Parameter	Type	Description
name	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
tables	Array of TableInfo objects	Subtables.
functions	Array of FunctionInfo objects	Subfunctions.

Table 4-799 TableInfo

Parameter	Type	Description
columns	ColumnInfo object	Sub-columns.

Parameter	Type	Description
name	String	Table name.

Table 4-800 ColumnInfo

Parameter	Type	Description
column_name	Array of strings	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (<code>_ - + * () ,</code>) are allowed.
filter	String	Whether to filter out an item. The options are Include and Exclude . Enumeration values: <ul style="list-style-type: none"> • Include • Exclude

Table 4-801 FunctionInfo

Parameter	Type	Description
name	String	Function name.

Table 4-802 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_mar ker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-803 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-804 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-805 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/policies/show

Example Responses

Status code: 200

OK

```
{
  "policies": [ {
    "project_id": "41aa75443xxxxx2c6afaaa40cc046",
    "instance_id": "51c51596-2e97-47bf-xxxx-0fc728c04ced",
    "principal_type": "USER",
    "principal_source": "IAM",
    "principal_name": "user1",
    "resource": {
      "catalogs": [ {
        "databases": [ {
```

```

    "name" : "db1",
    "tables" : [ { } ],
    "functions" : [ { } ]
  } ],
  "name" : "catalog1"
} ],
"uris" : [ "string" ],
"type" : "CATALOG"
},
"resource_name" : "string",
"permissions" : [ "DROP", "ALTER" ],
"grant_able_permissions" : [ "ALTER" ],
"created_time" : 0,
"condition" : "ip=127.0.0.1",
"obligation" : "DATAFILTER:c1<10;DATAMASK:INCLUDE:c1",
"authorization_paths" : [ "obs://location/uri/" ]
} ],
"page_info" : {
  "current_count" : 2000,
  "next_marker" : "006f492b-xxxx",
  "previous_marker" : "003e6eba-xxxx"
}
}
}

```

Status code: 400

Bad Request

```

{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}

```

Status code: 401

Unauthorized

```

{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}

```

Status code: 403

Forbidden

```

{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8.5 Performing Batch Authentication

Function

Batch authentication. This API is exclusive to the tenant plane and not accessible from the management plane.

URI

POST /v1/{project_id}/instances/{instance_id}/policies/check-permission

Table 4-806 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-807 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-808 Request body parameters

Parameter	Mandatory	Type	Description
access_request	Yes	Array of AccessRequest objects	Entity information.

Table 4-809 AccessRequest

Parameter	Mandatory	Type	Description
resource	Yes	ResourceInput object	Resource information.
principal	Yes	Array of Principal objects	Authorization entity information.

Parameter	Mandatory	Type	Description
action	Yes	String	<p>Permission information: ALL, CREATE, ALTER, DROP, DESCRIBE, EXEC, CREATE_DATABASE, LIST_DATABASE, CREATE_TABLE, LIST_TABLE, CREATE_FUNC, LIST_FUNC, REGISTER_MODEL, LIST_MODEL, INSERT, UPDATE, DELETE, SELECT, READ, WRITE, OPERATE, and USE.</p> <p>Enumeration values:</p> <ul style="list-style-type: none"> • ALL • CREATE • ALTER • DROP • DESCRIBE • EXEC • CREATE_DATABASE • LIST_DATABASE • CREATE_TABLE • LIST_TABLE • CREATE_FUNC • LIST_FUNC • REGISTER_MODEL • LIST_MODEL • INSERT • UPDATE • DELETE • SELECT • READ • WRITE • OPERATE • USE

Table 4-810 ResourceInput

Parameter	Mandatory	Type	Description
resource_type	Yes	String	Metadata resource type. The options are CATALOG , DATABASE , TABLE , FUNC , MODEL , COLUMN , and URI . Enumeration values: <ul style="list-style-type: none"> • CATALOG • DATABASE • TABLE • FUNC • MODEL • COLUMN • URI
catalog	No	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
database	No	String	Database name. The value should contain 1 to 128 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
function	No	String	Function name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (_) are allowed.
table	No	String	Table name. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
column	No	String	Column name. The value can contain 1 to 767 characters. Only letters, digits, and special characters (_-+*(,)) are allowed.
uri	No	String	URI
columns	No	Array of strings	List of column names.

Table 4-811 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 200

Table 4-812 Response body parameters

Parameter	Type	Description
[items]	Array of CheckPermissionResult objects	OK

Table 4-813 CheckPermissionResult

Parameter	Type	Description
check_result	Boolean	Check result of the input policy.
error_message	String	Error message.
data_filters	Array of strings	Row filter condition list.

Status code: 400

Table 4-814 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-815 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-816 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/policies/check-permission

{
  "access_request": [ {
    "resource": {
      "resource_type": "DATABASE",
      "catalog": "hive",
      "database": "test_database_name"
    },
    "principal": [ {
      "principal_type": "GROUP",
      "principal_source": "IAM",
      "principal_name": "onebox"
    } ],
    "action": "ALL"
  } ]
}
```

Example Responses

Status code: 200

OK

```
[ {
  "check_result": false,
  "error_message": "test error message"
} ]
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.8.6 Obtain Synchronization Permission Policies Page by Page

Function

This API is used to obtain synchronization permission policies page by page.

URI

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

Table 4-817 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-818 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of returned records. The default value is 5000 . The value ranges from 1 to 10000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 1,024 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
catalog_name	No	String	Catalog name. The value should contain 1 to 256 characters. Only letters, numbers, and underscores (<code>_</code>) are allowed.

Request Parameters

Table 4-819 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-820 Response body parameters

Parameter	Type	Description
page_info	PagedInfo object	Policy list.
policies	Array of Policy objects	Pagination information.

Table 4-821 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Table 4-822 Policy

Parameter	Type	Description
allow_exceptions	Array of PolicyItem objects	Excluded allow rules.
conditions	Array of PolicyItemCondition objects	Condition attributes.
create_time	String	Creation time.
created_by	String	Creator.
data_mask_policy_items	Array of DataMaskPolicyItem objects	Class mask policy items.

Parameter	Type	Description
deny_exclusions	Array of PolicyItem objects	Deny exclusion policies.
deny_policy_items	Array of PolicyItem objects	Deny policies.
description	String	Description.
guid	String	Unique GUID.
id	Long	Primary key.
is_audit_enabled	Boolean	Whether to enable auditing.
is_default_policy	Boolean	Whether this policy is the default one.
is_deny_all_else	Boolean	Whether to reject all.
is_enabled	Boolean	Whether to enable it.
name	String	Name.
options	Object	Options.
policy_items	Array of PolicyItem objects	Policy items.
policy_labels	Array of strings	Policy labels.
policy_priority	Integer	Policy priority.
policy_type	Integer	Policy type.
resource_signature	String	Resource signature.
resources	Map<String, PolicyResource >	Resources.
row_filter_policy_items	Array of RowFilterPolicyItem objects	Row-based filtering policy items.
service	String	Service.
service_type	String	Service type.
update_time	String	Update time.

Parameter	Type	Description
updated_by	String	Updater.
validity_schedules	Array of ValiditySchedule objects	Verification period.
version	Long	Version.
zone_name	String	Zone name.

Table 4-823 DataMaskPolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Access arrays.
conditions	Array of PolicyItemCondition objects	Condition arrays.
data_mask_info	PolicyItemDataMaskInfo object	Column mask policies.
delegate_admin	Boolean	Whether to support delegation.
groups	Array of strings	User groups.
roles	Array of strings	Roles.
users	Array of strings	Users.

Table 4-824 PolicyItemDataMaskInfo

Parameter	Type	Description
condition_expr	String	Condition expression.
data_mask_type	String	Column mask type.
value_expr	String	Column mask expression.

Table 4-825 PolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Access control data.
conditions	Array of PolicyItemCondition objects	Conditions.
delegate_admin	Boolean	Whether to support delegation.
groups	Array of strings	Groups.
roles	Array of strings	Roles.
users	Array of strings	Users.

Table 4-826 PolicyResource

Parameter	Type	Description
is_excludes	Boolean	Whether to exclude it.
is_recursive	Boolean	Whether to perform this operation recursively.
values	Array of strings	Values.

Table 4-827 RowFilterPolicyItem

Parameter	Type	Description
accesses	Array of PolicyItemAccess objects	Permissions.
conditions	Array of PolicyItemCondition objects	Conditions.
delegate_admin	Boolean	Whether to support delegation.

Parameter	Type	Description
groups	Array of strings	Groups.
roles	Array of strings	Roles.
row_filter_info	PolicyItemRowFilterInfo object	Row filtering.
users	Array of strings	Users.

Table 4-828 PolicyItemAccess

Parameter	Type	Description
is_allowed	Boolean	Whether to allow this operation.
type	String	Type.

Table 4-829 PolicyItemCondition

Parameter	Type	Description
type	String	Condition type.
values	Array of strings	Condition value.

Table 4-830 PolicyItemRowFilterInfo

Parameter	Type	Description
filter_expr	String	Row filter expression.

Table 4-831 ValiditySchedule

Parameter	Type	Description
end_time	String	End time.
recurrences	Array of ValidityRecurrence objects	Policy recursion.

Parameter	Type	Description
start_time	String	Start time.
time_zone	String	Time zone.

Table 4-832 ValidityRecurrence

Parameter	Type	Description
interval	ValidityInterval object	Interval.
schedule	RecurrenceSchedule object	Period.

Table 4-833 ValidityInterval

Parameter	Type	Description
days	Integer	Days.
hours	Integer	Hours.
minutes	Integer	Minutes.

Table 4-834 RecurrenceSchedule

Parameter	Type	Description
day_of_month	String	Date (by month).
day_of_week	String	Date (by week).
hour	String	Hour.
minute	String	Minute.
month	String	Month.
year	String	Year.

Status code: 400

Table 4-835 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-836 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-837 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "page_info": {
    "current_count": 1,
    "next_marker": "000000001225efff0000000000000001"
  },
  "policies": [ {
    "allow_exceptions": [ ],
    "data_mask_policy_items": [ ],
    "deny_exceptions": [ ],
    "deny_policy_items": [ ],
  }
]
```

```
"id" : 61,
"is_audit_enabled" : true,
"is_default_policy" : false,
"is_deny_all_else" : false,
"is_enabled" : true,
"name" : "test_database_name-database",
"options" : { },
"policy_items" : [ {
  "accesses" : [ {
    "is_allowed" : true,
    "type" : "read"
  }, {
    "is_allowed" : true,
    "type" : "index"
  }, {
    "is_allowed" : true,
    "type" : "select"
  }, {
    "is_allowed" : true,
    "type" : "drop"
  }, {
    "is_allowed" : true,
    "type" : "alter"
  }, {
    "is_allowed" : true,
    "type" : "all"
  } ],
  "conditions" : [ {
    "type" : "ip-range",
    "values" : [ "127.0.0.1" ]
  } ],
  "delegate_admin" : true,
  "groups" : [ "testGroupName1" ],
  "roles" : [ ],
  "users" : [ ]
}, {
  "accesses" : [ {
    "is_allowed" : true,
    "type" : "alter"
  } ],
  "conditions" : [ ],
  "delegate_admin" : false,
  "groups" : [ "testGroupName2" ],
  "roles" : [ ],
  "users" : [ ]
} ],
"policy_labels" : [ ],
"policy_priority" : 0,
"policy_type" : 0,
"resources" : {
  "database" : {
    "is_excludes" : false,
    "is_recursive" : false,
    "values" : [ "test_database_name" ]
  }
},
"row_filter_policy_items" : [ ],
"service" : "Hive",
"service_type" : "hive",
"validity_schedules" : [ ]
} ]
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
```



```
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized

Status Code	Description
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.9 User Group Management

4.2.9.1 Obtaining the User Group of a Tenant

Function

This API is used to obtain the user group of a tenant.

URI

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

Table 4-838 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-839 Query Parameters

Parameter	Mandatory	Type	Description
group_source	No	String	Source of the queried user group. The values are IAM (cloud user), SAML (SAML-based federation), LDAP (ID user), and LOCAL (local user). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-840 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-841 Response body parameters

Parameter	Type	Description
user_group	Array of UserGroup objects	User groups.

Parameter	Type	Description
page_info	PagedInfo object	Pagination information.

Table 4-842 UserGroup

Parameter	Type	Description
group_name	String	User group name.
group_source	String	User group type. The options are IAM (cloud user), SAML (SAML-based federation), LDAP (permission policy), LOCAL (local user), AGENTTENANT (agency), and OTHER (others). Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
group_id	String	User group ID.

Table 4-843 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-844 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-845 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-846 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "user_group": [ {
    "group_name": "group-name",
    "group_source": "IAM"
  } ],
  "page_info": {
    "current_count": 1
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.10 Metadata Statistics

4.2.10.1 Collecting Metadata Quantity Statistics

Function

Obtain metadata events.

URI

POST /v1/{project_id}/instances/{instance_id}/metaobj/count

Table 4-847 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-848 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-849 Response body parameters

Parameter	Type	Description
total_count	Long	Total quantity.
functions_count	Long	Number of functions.
catalogs_count	Long	Number of directories.
databases_count	Long	Number of databases.
tables_count	Long	Number of tables.
partitions_count	Long	Number of partitions.
indexes_count	Long	Number of indexes.

Status code: 400

Table 4-850 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-851 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-852 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/metaobj/count

Example Responses

Status code: 200

Metadata quantity statistics.

```
{
  "total_count": 600,
  "functions_count": 100,
  "catalogs_count": 100,
  "databases_count": 100,
  "tables_count": 100,
  "partitions_count": 100,
  "indexes_count": 100
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
}
```

```
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	Metadata quantity statistics.
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11 Role Management

4.2.11.1 Creating a Role

Function

This API is used to create a role.

URI

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

Table 4-853 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-854 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-855 Request body parameters

Parameter	Mandatory	Type	Description
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	No	String	Description. Enter a maximum of 4,000 characters.
parameters	No	Map<String,String>	Parameter.
external_role_id	No	String	User role ID, which is specified during creation and cannot be changed.

Response Parameters

Status code: 201

Table 4-856 Response body parameters

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
parameters	Map<String,String>	Parameter.

Parameter	Type	Description
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Status code: 400

Table 4-857 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-858 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-859 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles
{
  "role_name" : "admin",
  "description" : "role from lakeformation"
}
```

Example Responses

Status code: 201

Created

```
{
  "role_name" : "admin",
  "principal_source" : " LOCAL ",
  "description" : "role from lakeformation"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
201	Created
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.2 Listing Roles on Different Pages by Condition

Function

Return all roles.

URI

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

Table 4-860 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .

Parameter	Mandatory	Type	Description
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-861 Query Parameters

Parameter	Mandatory	Type	Description
role_pattern	No	String	Role name for fuzzy match. The value can contain 1 to 255 characters. Only letters, digits, and special characters (<code>[_*.-]</code>) are allowed.
limit	No	Integer	Number of returned records. The default number is 100 . The value ranges from 1 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 1,024 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
external_role_id	No	String	User role ID, which is specified during creation and cannot be changed.

Request Parameters

Table 4-862 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-863 Response body parameters

Parameter	Type	Description
roles	Array of Role objects	Roles.
page_info	PagedInfo object	Pagination information.

Table 4-864 Role

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
parameters	Map<String,String>	Parameter.
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Table 4-865 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .

Parameter	Type	Description
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_mar ker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-866 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-867 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-868 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "roles": [ {
    "role_name": "admin",
    "description": "role from lakeformation"
  } ],
  "page_info": {
    "current_count": 1,
    "next_marker": null,
    "previous_marker": null
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.3 Deleting a Role

Function

Delete a role.

URI

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

Table 4-869 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-870 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-871 Response header parameters

Parameter	Type	Description
X-request-id	String	Request ID, which is used to locate auxiliary information.

Status code: 400

Table 4-872 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-873 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-874 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

DELETE https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch.,
cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
204	No Content
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.4 Obtaining a Role

Function

This API is used to obtain a role.

URI

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

Table 4-875 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-876 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-877 Response body parameters

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
parameters	Map<String,String>	Parameter.
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Status code: 400

Table 4-878 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-879 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-880 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}

Example Responses

Status code: 200

OK

```
{
  "role_name": "admin",
  "description": "string",
  "principal_source": "LOCAL"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK

Status Code	Description
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.5 Modifying a Role

Function

This API is used to modify a role.

URI

PUT /v1/{project_id}/instances/{instance_id}/roles/{role_name}

Table 4-881 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-882 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-883 Request body parameters

Parameter	Mandatory	Type	Description
description	No	String	Description. Enter a maximum of 4,000 characters.
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
parameters	No	Map<String,String>	Parameter.
external_role_id	No	String	User role ID, which is specified during creation and cannot be changed.

Response Parameters

Status code: 200

Table 4-884 Response body parameters

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.

Parameter	Type	Description
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
parameters	Map<String,String>	Parameter.
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Status code: 400

Table 4-885 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-886 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-887 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}
{
  "description" : "test description",
  "role_name" : "admin"
}
```

Example Responses

Status code: 200

OK

```
{
  "role_name" : "admin",
  "description" : "string",
  "principal_source" : "LOCAL"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
}
```

```
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.6 Listing All Role Names

Function

Query the list of all roles.

URI

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

Table 4-888 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-889 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-890 Response body parameters

Parameter	Type	Description
[items]	Array of strings	OK

Status code: 400

Table 4-891 Response body parameters

Parameter	Type	Description
error_code	String	Error code.

Parameter	Type	Description
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-892 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-893 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
[ "admin" ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found

Status Code	Description
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.7 Querying the Users or User groups Under a Role

Function

This API is used to query the users or user groups under a role.

URI

GET /v1/{project_id}/instances/{instance_id}/roles/{role_name}/principals

Table 4-894 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-895 Query Parameters

Parameter	Mandatory	Type	Description
principal_pattern	No	String	Entity name for fuzzy match. The value can contain 1 to 49 characters. Only letters, digits, and special characters (_ *.-) are allowed.
limit	No	Integer	Number of returned records. The default number is 100 . The value ranges from 1 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 1,024 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-896 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-897 Response body parameters

Parameter	Type	Description
principals	Array of Principal objects	Entity list.
page_info	PagedInfo object	Pagination information.

Table 4-898 Principal

Parameter	Type	Description
principal_type	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Table 4-899 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-900 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-901 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-902 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}/principals

Example Responses

Status code: 200

OK

```
{
  "principals": [ {
    "principal_type": "USER",
    "principal_source": "IAM",
    "principal_name": "user1"
  } ],
  "page_info": {
    "current_count": 2000,
    "next_marker": "006f492b-xxxx",
    "previous_marker": "003e6eba-xxxx"
  }
}
```

```
}  
}
```

Status code: 400

Bad Request

```
{  
  "error_code": "common.01000001",  
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch.,  
cause: TypeMismatchException"  
}
```

Status code: 401

Unauthorized

```
{  
  "error_code": 'APIG.1002',  
  "error_msg": 'Incorrect token or token resolution failed'  
}
```

Status code: 403

Forbidden

```
{  
  "error": {  
    "code": "403",  
    "message": "X-Auth-Token is invalid in the request",  
    "error_code": null,  
    "error_msg": null,  
    "title": "Forbidden"  
  },  
  "error_code": "403",  
  "error_msg": "X-Auth-Token is invalid in the request",  
  "title": "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
  "error_code": "common.01000001",  
  "error_msg": "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
  "error_code": "common.00000408",  
  "error_msg": "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
  "error_code": "common.00000500",  
  "error_msg": "internal error"  
}
```


Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.8 Adding One or More Users or User Groups to a Role

Function

This API is used to add one or more users or user groups to a role.

URI

POST /v1/{project_id}/instances/{instance_id}/roles/{role_name}/grant-principals

Table 4-903 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Parameter	Mandatory	Type	Description
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-904 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-905 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of Principal objects	Entity list. A maximum of 100 table names can be displayed on the page.

Table 4-906 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER

Parameter	Mandatory	Type	Description
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency user OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 400

Table 4-907 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-908 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-909 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}/grant-principals

```
[ {
  "principal_name": "user1",
  "principal_source": "IAM",
  "principal_type": "USER"
}]
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.9 Removing One or More Users or User Groups from a Role

Function

This API is used to remove one or more users or user groups from a role.

URI

POST /v1/{project_id}/instances/{instance_id}/roles/{role_name}/revoke-principals

Table 4-910 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-911 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-912 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of Principal objects	Entity list. A maximum of 100 table names can be displayed on the page.

Table 4-913 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 400

Table 4-914 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-915 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-916 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}/revoke-principals
[ {
  "principal_name" : "user1",
  "principal_source" : "IAM",
  "principal_type" : "USER"
} ]
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
```



```

"code" : "403",
"message" : "X-Auth-Token is invalid in the request",
"error_code" : null,
"error_msg" : null,
"title" : "Forbidden"
},
"error_code" : "403",
"error_msg" : "X-Auth-Token is invalid in the request",
"title" : "Forbidden"
}

```

Status code: 404

Not Found

```

{
"error_code" : "common.01000001",
"error_msg" : "response status exception, code: 404"
}

```

Status code: 408

Request Timeout

```

{
"error_code" : "common.00000408",
"error_msg" : "timeout exception occurred"
}

```

Status code: 500

Internal Server Error

```

{
"error_code" : "common.00000500",
"error_msg" : "internal error"
}

```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.11.10 Updating the Entities in a Role

Function

This API is used to update the entities in a role.

URI

PUT /v1/{project_id}/instances/{instance_id}/roles/{role_name}/update-principals

Table 4-917 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-918 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-919 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of Principal objects	Entity list. A maximum of 100 table names can be displayed on the page.

Table 4-920 Principal

Parameter	Mandatory	Type	Description
principal_type	Yes	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none"> • USER • GROUP • ROLE • SHARE • OTHER
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
principal_name	Yes	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Response Parameters

Status code: 200

Table 4-921 Response body parameters

Parameter	Type	Description
[items]	Array of Principal objects	OK

Table 4-922 Principal

Parameter	Type	Description
principal_type	String	Entity type. USER : user GROUP : group ROLE : role SHARE : share OTHER : others Enumeration values: <ul style="list-style-type: none">• USER• GROUP• ROLE• SHARE• OTHER
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none">• IAM• SAML• LDAP• LOCAL• AGENTTENANT• OTHER
principal_name	String	Entity name. The value can contain 1 to 49 characters. Only letters, digits, underscores (_), hyphens (-), and periods (.) are allowed.

Status code: 400**Table 4-923** Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-924 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-925 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/roles/{role_name}/update-principals
[ {
  "principal_name": "user1",
  "principal_source": "IAM",
  "principal_type": "USER"
} ]
```

Example Responses

Status code: 200

OK

```
[ {
  "principal_name": "user1",
  "principal_source": "IAM",
  "principal_type": "USER"
} ]
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
```

```
{
  "error_msg": "Incorrect token or token resolution failed"
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.12 Credential Management

4.2.12.1 Obtaining the Temporary Key and SecurityToken

Function

This API is used to obtain a temporary key and SecurityToken. The temporary key and SecurityToken expire after an hour or more. You need to update them before an hour passes. This API is exclusive to the tenant plane and not accessible from the management plane.

URI

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

Table 4-926 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Request Parameters

Table 4-927 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-928 Request body parameters

Parameter	Mandatory	Type	Description
user_names	No	Array of strings	IAM users.
groups	No	Array of strings	User group.
roles	No	Array of strings	Role.

Response Parameters

Status code: 200

Table 4-929 Response body parameters

Parameter	Type	Description
access	String	AK. An access key (AK) is used to identify a user.
secret	String	SK. A secret key (SK) is used to encrypt the signature of the access key for identity authentication.
security_token	String	SecurityToken, which is a string generated after the obtained AK and SK are encrypted.

Status code: 400

Table 4-930 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-931 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-932 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/credential
{
  "user_names" : [ "user1" ],
  "groups" : [ "superGroup" ],
  "roles" : [ "admin" ]
}
```

Example Responses

Status code: 200

OK

```
{
  "access" : "ABC***123",
  "secret" : "ABC***123",
  "security_token" : "abc***000"
}
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
```

```
"error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code": "common.01000001",
  "error_msg": "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code": "common.00000408",
  "error_msg": "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code": "common.00000500",
  "error_msg": "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.13 Configuration Management

4.2.13.1 Obtaining Open Tenant-Plane Configurations

Function

This API is used to get the tenant-plane configurations that everyone can see. This API is exclusive to the tenant plane and not accessible from the management plane.

URI

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

Table 4-933 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-934 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 0 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.

Parameter	Mandatory	Type	Description
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-935 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-936 Response body parameters

Parameter	Type	Description
configs	Array of LakeCatConfiguration objects	Configuration item.
page_info	PagedInfo object	Pagination information.

Table 4-937 LakeCatConfiguration

Parameter	Type	Description
key	String	Key of a configuration item.
value	String	Value of a configuration item.
description	String	Configuration item description.

Table 4-938 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-939 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-940 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-941 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "configs": [ {
    "key": "catalog.max.limit",
    "value": 1,
    "description": "Maximum number of catalogs."
  } ],
  "page_info": {
    "current_count": 2000,
    "next_marker": "006f492b-xxxx",
    "previous_marker": "003e6eba-xxxx"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.14 User

4.2.14.1 Obtaining the User List

Function

This API is used to obtain the user list.

URI

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

Table 4-942 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .

Table 4-943 Query Parameters

Parameter	Mandatory	Type	Description
user_source	No	String	Source of the user to be queried. The values include IAM, SAML, LDAP, LOCAL, AGENTTENANT , or OTHER . The default value is IAM .
limit	No	Integer	Number of returned records. The default value is 1000 . The value ranges from 1 to 2000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 256 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .
user_name_pattern	No	String	Fuzzy user query. The value can contain 1 to 255 characters. Only letters, digits, and special characters (<code>[_]*</code>) are allowed.

Request Parameters

Table 4-944 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-945 Response body parameters

Parameter	Type	Description
users	Array of User objects	Users.
page_info	PagedInfo object	Pagination information.

Table 4-946 User

Parameter	Type	Description
user_name	String	Username.
user_source	String	User type. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
user_id	String	User ID.

Table 4-947 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-948 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-949 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-950 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.

Parameter	Type	Description
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "users": [ {
    "user_name": "string",
    "user_source": "string",
    "user_id": "string"
  } ],
  "page_info": {
    "current_count": 2000,
    "next_marker": "006f492b-xxxx",
    "previous_marker": "003e6eba-xxxx"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch, cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
    "error_msg": null,
    "title": "Forbidden"
  },
  "error_code": "403",
  "error_msg": "X-Auth-Token is invalid in the request",
  "title": "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.14.2 Granting Multiple Roles to a User

Function

This API is used to grant multiple roles to a user.

URI

POST /v1/{project_id}/instances/{instance_id}/users/{user_name}/grant-roles

Table 4-951 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
user_name	Yes	String	Username. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-952 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-953 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of RoleInfoInput objects	Role list.

Table 4-954 RoleInfoInput

Parameter	Mandatory	Type	Description
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER

Response Parameters

Status code: 400

Table 4-955 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-956 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-957 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/users/{user_name}/grant-roles
[ {
  "principal_source" : "LOCAL",
  "role_name" : "admin"
} ]
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.14.3 Removing One or More Roles from a User

Function

This API is used to remove one or more roles from a user.

URI

POST /v1/{project_id}/instances/{instance_id}/users/{user_name}/revoke-roles

Table 4-958 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
user_name	Yes	String	Username. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-959 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-960 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of RoleInfoInput objects	Role list.

Table 4-961 RoleInfoInput

Parameter	Mandatory	Type	Description
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER

Response Parameters

Status code: 400

Table 4-962 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-963 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-964 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/users/{user_name}/revoke-roles
[ {
  "principal_source" : "LOCAL",
  "role_name" : "admin"
} ]
```

Example Responses

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
  "title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.14.4 Updating the Role of a User

Function

This API is used to update the role of a user.

URI

PUT /v1/{project_id}/instances/{instance_id}/users/{user_name}/update-roles

Table 4-965 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
user_name	Yes	String	Username. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Request Parameters

Table 4-966 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Table 4-967 Request body parameters

Parameter	Mandatory	Type	Description
[items]	Yes	Array of RoleInfoInput objects	Role list.

Table 4-968 RoleInfoInput

Parameter	Mandatory	Type	Description
role_name	Yes	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
principal_source	Yes	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER

Response Parameters

Status code: 200

Table 4-969 Response body parameters

Parameter	Type	Description
[items]	Array of Role objects	OK

Table 4-970 Role

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.

Parameter	Type	Description
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER
parameters	Map<String,String>	Parameter.
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Status code: 400

Table 4-971 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-972 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-973 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

```
PUT https://{endpoint}/v1/{project_id}/instances/{instance_id}/users/{user_name}/update-roles
[ {
  "principal_source" : "LOCAL",
  "role_name" : "admin"
} ]
```

Example Responses

Status code: 200

OK

```
[ {
  "role_name" : "admin",
  "description" : "string",
  "principal_source" : "LOCAL"
} ]
```

Status code: 400

Bad Request

```
{
  "error_code" : "common.01000001",
  "error_msg" : "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error" : {
    "code" : "403",
    "message" : "X-Auth-Token is invalid in the request",
    "error_code" : null,
    "error_msg" : null,
    "title" : "Forbidden"
  },
  "error_code" : "403",
  "error_msg" : "X-Auth-Token is invalid in the request",
}
```



```
"title" : "Forbidden"
}
```

Status code: 404

Not Found

```
{
  "error_code" : "common.01000001",
  "error_msg" : "response status exception, code: 404"
}
```

Status code: 408

Request Timeout

```
{
  "error_code" : "common.00000408",
  "error_msg" : "timeout exception occurred"
}
```

Status code: 500

Internal Server Error

```
{
  "error_code" : "common.00000500",
  "error_msg" : "internal error"
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

4.2.14.5 Querying the Roles of a User

Function

This API is used to query the roles of a user.

URI

GET /v1/{project_id}/instances/{instance_id}/users/{user_name}/roles

Table 4-974 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Project ID. For how to obtain the project ID, see Obtaining a Project ID (lakeformation_04_0026.xml) .
instance_id	Yes	String	LakeFormation instance ID. The value is automatically generated when the instance is created, for example, 2180518f-42b8-4947-b20b-adfc53981a25 .
user_name	Yes	String	Username. The value should contain 1 to 256 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.

Table 4-975 Query Parameters

Parameter	Mandatory	Type	Description
role_pattern	No	String	Role name for fuzzy match. The value can contain 1 to 255 characters. Only letters, digits, and special characters ([_*.-]) are allowed.
limit	No	Integer	Number of returned records. The default number is 100 . The value ranges from 1 to 1000 .
marker	No	String	ID of the record where the query starts. The value consists of 0 to 1,024 characters.
reverse_page	No	Boolean	Whether to query the previous page. The default value is false .

Request Parameters

Table 4-976 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	Array of strings	Tenant token.

Response Parameters

Status code: 200

Table 4-977 Response body parameters

Parameter	Type	Description
roles	Array of Role objects	Roles.
page_info	PagedInfo object	Pagination information.

Table 4-978 Role

Parameter	Type	Description
role_name	String	Role name. The value should contain 1 to 255 characters. Only letters, numbers, hyphens (-), and underscores (_) are allowed.
description	String	Description. Enter a maximum of 4,000 characters. If there is no description, the value of description is null . If the value is null , the response body does not contain this parameter.
principal_source	String	Entity source. IAM : cloud user SAML : SAML-based federation. LDAP : ID user LOCAL : local user AGENTTENANT : agency OTHER : others Enumeration values: <ul style="list-style-type: none"> • IAM • SAML • LDAP • LOCAL • AGENTTENANT • OTHER

Parameter	Type	Description
parameters	Map<String,String>	Parameter.
external_role_id	String	User role ID, which is specified during creation and cannot be changed.

Table 4-979 PagedInfo

Parameter	Type	Description
current_count	Integer	Number of objects returned this time. The value ranges from 0 to 2000 .
next_marker	String	Query address of the next page. If the next page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)
previous_marker	String	Query address of the previous page. If the previous page does not exist, the value is null . (If the value is null, the response body does not contain this parameter.)

Status code: 400

Table 4-980 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 404

Table 4-981 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Status code: 500

Table 4-982 Response body parameters

Parameter	Type	Description
error_code	String	Error code.
error_msg	String	Error message.
solution_msg	String	Solution.

Example Requests

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

Example Responses

Status code: 200

OK

```
{
  "roles": [ {
    "role_name": "admin",
    "description": "string",
    "principal_source": "LOCAL"
  } ],
  "page_info": {
    "current_count": 2000,
    "next_marker": "006f492b-xxxx",
    "previous_marker": "003e6eba-xxxx"
  }
}
```

Status code: 400

Bad Request

```
{
  "error_code": "common.01000001",
  "error_msg": "failed to read http request, please check your input, code: 400, reason: Type mismatch., cause: TypeMismatchException"
}
```

Status code: 401

Unauthorized

```
{
  "error_code": 'APIG.1002',
  "error_msg": 'Incorrect token or token resolution failed'
}
```

Status code: 403

Forbidden

```
{
  "error": {
    "code": "403",
    "message": "X-Auth-Token is invalid in the request",
    "error_code": null,
  }
}
```

```
"error_msg" : null,  
"title" : "Forbidden"  
},  
"error_code" : "403",  
"error_msg" : "X-Auth-Token is invalid in the request",  
"title" : "Forbidden"  
}
```

Status code: 404

Not Found

```
{  
"error_code" : "common.01000001",  
"error_msg" : "response status exception, code: 404"  
}
```

Status code: 408

Request Timeout

```
{  
"error_code" : "common.00000408",  
"error_msg" : "timeout exception occurred"  
}
```

Status code: 500

Internal Server Error

```
{  
"error_code" : "common.00000500",  
"error_msg" : "internal error"  
}
```

Status Codes

Status Code	Description
200	OK
400	Bad Request
401	Unauthorized
403	Forbidden
404	Not Found
408	Request Timeout
500	Internal Server Error

Error Codes

See [Error Codes](#).

5 Application Examples

5.1 Connecting External Services to LakeFormation

Overview

This section describes how to connect external services to LakeFormation by calling APIs.

If a tenant plan to perform this operation, the tenant should completed service authorization on the LakeFormation console. For details about how to call APIs, see [API Calling](#).

Prerequisites

The following information has been obtained:

- **endpoint:** For details about how to obtain the endpoints, see [Regions and Endpoints](#).
- **project_id:** Obtain the value by referring to [Obtaining a Project ID](#).

Procedure

- Step 1** Call the [Creating an Instance](#) API to create a LakeFormation instance and record the instance ID returned by the API.

Example request:

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

Body:

```
{
  "name": "lakeformation",
  "charge_mode": "postPaid",
  "shared": "false",
  "specs": [
    {
      "spec_code": "lakeformation.unit.basic.qps",
      "stride_num": 1
    }
  ]
}
```

```
  ],  
  "enterprise_project_id": "0"  
}
```

Example response

```
{  
  "instance_id": "13677734-a4ee-43e2-9d11-30b8b2e32a95",  
  "name": "lakeformation",  
  "description": "",  
  "enterprise_project_id": "0",  
  "shared": false,  
  "default_instance": false,  
  "create_time": "2023-06-29T09:08:33.000+00:00",  
  "update_time": "2023-06-29T09:08:34.000+00:00",  
  "status": "RESOURCE_PREPARATION",  
  "resource_progress": 25,  
  "resource_expected_duration": 15,  
  "in_recycle_bin": false,  
  "tags": [],  
  "specs": [  
    {  
      "spec_code": "lakeformation.unit.basic.qps",  
      "stride_num": 1  
    },  
    {  
      "spec_code": "lakeformation.unit.basic.metadata",  
      "stride_num": 0  
    }  
  ]  
}
```

- Step 2** Call the [Querying Instance Details](#) API to query the instance status. Wait until the instance status changes to **RUNNING**, indicating that the instance is created.

Example request:

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

instance_id indicates the value of **instance_id** in the response of the request made in [Step 1](#).

Example response

```
{  
  "instance_id": "13677734-a4ee-43e2-9d11-30b8b2e32a95",  
  "name": "lakeformation",  
  "description": "",  
  "enterprise_project_id": "0",  
  "shared": false,  
  "default_instance": false,  
  "create_time": "2023-06-29T09:08:33.000+00:00",  
  "update_time": "2023-06-29T09:08:34.000+00:00",  
  "status": "RUNNING",  
  "in_recycle_bin": false,  
  "tags": [],  
  "specs": [  
    {  
      "spec_code": "lakeformation.unit.basic.qps",  
      "stride_num": 1  
    },  
    {  
      "spec_code": "lakeformation.unit.basic.metadata",  
      "stride_num": 0  
    }  
  ]  
}
```


Step 3 (Optional) If the current tenant creates a LakeFormation instance for the first time, the instance is automatically used as the default instance. The client can directly access the default instance or access the corresponding instance by specifying the instance ID. You can set a non-default instance as the default instance by calling the [Setting an Default Instance](#) API.

Example request:

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

instance_id indicates the value of **instance_id** in the response of the request made in [Step 1](#).

Step 4 Call the [Creating a Service Access Client](#) API and select the VPC information corresponding to the client to create an access client. LakeFormation automatically creates a VPC endpoint and a DNS private domain name for the client to connect to the network.

Example request:

```
POST https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients
```

instance_id indicates the value of **instance_id** in the response of the request made in [Step 1](#).

Body:

```
{
  "name": "access-client",
  "vpc_id": "131fb837-37ae-4aa6-9e87-312919df659f",
  "subnet_id": "2fa7ec47-c7f6-4a81-8e77-1dd41121b726"
}
```

Example response

```
{
  "id": "b73a9311-1ce9-48fe-b714-21bc41ce7b82",
  "name": "access-client",
  "access_mode": "SYSTEM",
  "status": "CREATING",
  "vpc_id": "131fb837-37ae-4aa6-9e87-312919df659f",
  "subnet_id": "2fa7ec47-c7f6-4a81-8e77-1dd41121b726"
}
```

Step 5 Call the [Obtaining Service Access Client Details](#) API to query the status of the access client. Wait until the status changes to **RUNNING**, indicating that the access client is created. In addition, you can view details such as the access IP address and domain name in the details.

Example request:

```
GET https://{endpoint}/v1/{project_id}/instances/{instance_id}/access-clients/{client_id}
```

- **instance_id** indicates the value of **instance_id** in the response of the request made in [Step 1](#).
- **client_id** indicates the value of **id** in the response of the request made in [Step 4](#).

Example response

```
{
  "id": "b73a9311-1ce9-48fe-b714-21bc41ce7b82",
```

```
"name": "access-client",
"access_mode": "SYSTEM",
"status": "RUNNING",
"vpc_id": "131fb837-37ae-4aa6-9e87-312919df659f",
"subnet_id": "2fa7ec47-c7f6-4a81-8e77-1dd41121b726",
"access_connections": [
  {
    "vpcep_id": "f72c8034-df38-4dbc-bd5d-2f50531ba104",
    "ip": "10.0.0.6",
    "owner": "555d9e8999c94705be3d7edb70a3199a",
    "domain": "xxx.dalf-ed1c-b3070cba-baae-4220-b7ff-9b2bca043efb.apig-lakeformation.com"
  }
],
"create_time": "2023-06-29T12:12:12.000+00:00"
}
```

Step 6 Use the access IP address and instance ID obtained in the preceding step to access the metadata management API and obtain the catalog list. For details, see the APIs in [Catalog Management](#).

Example request:

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

- **endpoint:** Use *{instance_id}.lakeformation.lakecat.com*. If the instance has been set as the default instance, use **default-*{project_id}.lakeformation.lakecat.com***.
- **instance_id:** value of **instance_id** in the response of the request made in [Step 1](#). If the instance has been set as the default instance, use **default** as the instance ID.

Request header example

```
Host: lakeformation.lakecat.com
```

Example response

```
[
  {
    "catalog_name": "hive",
    "description": "Default catalog, for Hive",
    "location": "obs://lakeformation-555d9e8999c94705-xxx/ed1ce787-1671-4ce4-b84f-6f40ccb26752"
  }
]
```

----End

6 Permissions and Supported Actions

6.1 Introduction

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

New IAM users do not have any permissions assigned by default. You need to first add them to one or more groups and attach policies or roles to these groups. Users inherit permissions from their groups and can perform operations on cloud services as allowed by the permissions.

You can grant permissions by using roles and policies. Roles are provided by IAM to define service-based permissions that match users' job responsibilities. Policies are more fine-grained, API-based permissions required to perform operations on specific cloud resources under certain conditions, meeting requirements for secure access control.

NOTE

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

Each account has all the permissions required to call all APIs, but IAM users must be assigned the required permissions. The required permissions are determined by the actions supported by the API. Only users with the policies allowing for those actions can call the API. For example, if an IAM user wants to query ECSs using an API, the user must have been granted permissions that allow the **ecs:servers:list** action.

Actions

LakeFormation provides system-defined policies that can be directly used in IAM. You can also create custom policies to supplement system-defined policies for more refined access control. The following are related concepts:

- Permissions: statements in a policy that allow or deny certain operations.
- APIs: REST APIs that can be called by a user who has been granted specific permissions.

- **Actions:** specific operations that are allowed or denied in a custom policy.
- **Dependencies:** actions on which a specific action depends. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- **IAM or enterprise projects:** Type of projects for which an action will take effect. Policies that contain actions supporting both IAM and enterprise projects can be assigned to user groups and take effect in both IAM and Enterprise Management. Policies that contain actions only for IAM projects can be used and applied to IAM only.

6.2 Supported Actions in ABAC

IAM provides system-defined policies to define common actions supported by cloud services. You can also create custom policies using the actions supported by cloud services for more refined access control.

In addition to IAM, Organizations also provides Service Control Policies (SCP) to set access control policies.

SCPs do not actually grant any permissions to an entity. They only set the permissions boundary for the entity. When SCPs are attached to an organizational unit (OU) or a member account, the SCPs do not directly grant permissions to that OU or member account. Instead, the SCPs only determine what permissions are available for that member account or those member accounts under that OU. The granted permissions can be applied only if they are allowed by the SCPs.

This section describes the elements used by IAM custom policies in ABAC and Organizations SCPs. The elements include actions, resources, and conditions.

Actions

Actions are specific operations that are allowed or denied in a policy.

- The **Access Level** column describes how the action is classified (**List**, **Read**, or **Write**). This classification helps you understand the level of access that an action grants when you use it in a policy.
- The **Resource Type** column indicates whether the action supports resource-level permissions.
 - You can use a wildcard (*) to indicate all resource types. If this column is empty (-), the action does not support resource-level permissions and you must specify all resources ("*") in your policy statements.
 - If this column includes a resource type, you must specify the URN in the Resource element of your policy statements.
 - Required resources are marked with asterisks (*) in the table. If you specify a resource in a statement using this action, then it must be of this type.

For details about the resource types defined by LakeFormation, see [Resources](#).

- The **Condition Key** column includes keys that you can specify in the Condition element of a policy statement.

- If the **Resource Type** column has values for an action, the condition key takes effect only for the listed resource types.
- If the **Resource Type** column is empty (-) for an action, the condition key takes effect for all resources that action supports.
- If the **Condition Key** column is empty (-) for an action, the action does not support any condition keys.

For details about the condition keys defined by LakeFormation, see [Conditions](#).

- For details about the actions supported by LakeFormation and the relationships between APIs and actions, see the following parts:
 - [LakeFormation Console API](#)
 - [LakeFormation LakeCat API](#)
- LakeFormation APIs that support enterprise project authorization:
 - GET /v1/{project_id}/instances
 - API whose request contains **instance_id**, for example, GET /v1/{project_id}/instances/{instance_id}.

LakeFormation Console API

[Table 6-1](#) lists the actions that you can define in custom policies for LakeFormation Console APIs.

Table 6-1 Actions supported by LakeFormation

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:job:create	Create a LakeFormation task.	write	-	-
lakeformation:job:describe	Obtain a LakeFormation task.	read	-	-
lakeformation:job:drop	Delete a LakeFormation task.	write	-	-
lakeformation:job:alter	Modify a LakeFormation task.	write	-	-
lakeformation:job:exec	Execute a LakeFormation task.	write	-	-
lakeformation:instanceJob:create	Create a LakeFormation task.	write	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:instanceJob:describe	Obtain a LakeFormation task.	read	-	-
lakeformation:instanceJob:drop	Delete a LakeFormation task.	write	-	-
lakeformation:instanceJob:alter	Modify a LakeFormation task.	write	-	-
lakeformation:instanceJob:execute	Execute a LakeFormation task.	write	-	-
lakeformation:instance:create	Create a LakeFormation instance.	write	-	-
lakeformation:instance:describe	Obtain a LakeFormation instance.	read	-	-
lakeformation:instance:drop	Delete a LakeFormation instance.	write	-	-
lakeformation:instance:alter	Modify a LakeFormation instance.	write	-	-
lakeformation:access:describe	Obtain a client for accessing LakeFormation.	read	-	-
lakeformation:instance:access	Obtain a LakeFormation instance or apply for the access to it.	write	-	-
lakeformation:access:create	Create a client for accessing LakeFormation.	write	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:access:delete	Delete a client for accessing LakeFormation.	write	-	-
lakeformation:agency:create	Create a LakeFormation agency.	write	-	-
lakeformation:agency:drop	Delete a LakeFormation agency.	write	-	-
lakeformation:agency:describe	Obtain a LakeFormation agency.	read	-	-
lakeformation:accessService:describe	Check services connected to LakeFormation.	permission_management	-	-
lakeformation:accessService:grant	Grant permissions to services connected to LakeFormation.	permission_management	-	-
lakeformation:accessTenant:grant	Grant permissions to a tenant for accessing LakeFormation.	permission_management	-	-
lakeformation:accessAgency:describe	Obtain the LakeFormation agency information.	permission_management	-	-
lakeformation:agreement:describe	Obtain LakeFormation service agreements.	permission_management	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:agreement:cancel	Cancel LakeFormation service agreements.	permission_management	-	-
lakeformation:agreement:grant	Grant LakeFormation service agreements.	permission_management	-	-
lakeformation:obs:describe	Obtain OBS buckets.	read	-	-
lakeformation:tag:describe	Obtain LakeFormation pre-defined resource tags.	read	-	-

Each LakeFormation Console API usually supports one or more actions. [Table 6-2](#) lists the actions and dependencies supported by LakeFormation Console APIs.

Table 6-2 Actions and dependencies supported by LakeFormation APIs

API	Action	Dependencies
POST /v1/{project_id}/instances	lakeformation:instance:create	-
GET /v1/{project_id}/instances	lakeformation:instance:describe	-
DELETE /v1/{project_id}/instances/{instance_id}	lakeformation:instance:drop	-
GET /v1/{project_id}/instances/{instance_id}	lakeformation:instance:describe	-
PUT /v1/{project_id}/instances/{instance_id}	lakeformation:instance:alter	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/default	lakeformation:instance:alter	-
POST /v1/{project_id}/instances/{instance_id}/scale	lakeformation:instance:alter	-
POST /v1/{project_id}/instances/{instance_id}/recover	lakeformation:instance:create	-
POST /v1/{project_id}/access-service	lakeformation:accessService:grant	-
GET /v1/{project_id}/access-service	lakeformation:accessService:describe	-
POST /v1/{project_id}/agreement	lakeformation:agreement:grant	-
GET /v1/{project_id}/agreement	lakeformation:agreement:describe	-
DELETE /v1/{project_id}/agreement	lakeformation:agreement:cancel	-
GET /v1/{project_id}/obs/buckets	lakeformation:obs:describe	obs:bucket:ListAllMyBuckets
GET /v1/{project_id}/obs/buckets/{bucket_name}	lakeformation:obs:describe	<ul style="list-style-type: none"> obs:bucket:ListBucket obs:bucket:HeadBucket
GET /v1/{project_id}/instances/{instance_id}/access	lakeformation:instance:access	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/access	lakeformation:instance:access	-
GET /v1/{project_id}/instances/{instance_id}/access-clients	lakeformation:access:describe	-
POST /v1/{project_id}/instances/{instance_id}/access-clients	lakeformation:access:create	-
GET /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}	lakeformation:access:describe	-
DELETE /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}	lakeformation:access:delete	-
PUT /v1/{project_id}/instances/{instance_id}/access-clients/{client_id}	lakeformation:instance:alter	-
PUT /v1/{project_id}/instances/{instance_id}/tags	lakeformation:instance:alter	-
POST /v1/{project_id}/agency	lakeformation:agency:create	-
DELETE /v1/{project_id}/agency	lakeformation:agency:drop	-

API	Action	Dependencies
GET /v1/{project_id}/agency	lakeformation:agency:describe	-
GET /v1/{project_id}/lakeformation-instance/tags	lakeformation:tag:describe	tms:predefineTags:list
-	lakeformation:instance:describe	-
-	lakeformation:instance:alter	-

LakeFormation LakeCat API

Table 6-3 lists the actions that you can define in custom policies for LakeFormation LakeCat APIs.

Table 6-3 Actions supported by LakeFormation

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:function:describe	Obtain the functions of LakeFormation metadata.	read	-	-
lakeformation:function:drop	Delete the functions of LakeFormation metadata.	write	-	-
lakeformation:function:alter	Modify the functions of LakeFormation metadata.	write	-	-
lakeformation:function:create	Create the functions of LakeFormation metadata.	write	-	-
lakeformation:catalog:describe	Obtain a data directory of LakeFormation metadata.	read	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:catalog:create	Create a data directory of LakeFormation metadata.	write	-	-
lakeformation:catalog:alter	Modify a data directory of LakeFormation metadata.	write	-	-
lakeformation:catalog:drop	Delete a data directory of LakeFormation metadata.	write	-	-
lakeformation:database:describe	Permission to query the database for LakeFormation metadata.	read	-	-
lakeformation:database:create	Permission to create the database for LakeFormation metadata.	write	-	-
lakeformation:database:alter	Modify the database permissions for LakeFormation metadata.	write	-	-
lakeformation:database:drop	Permission to delete the database of LakeFormation metadata.	write	-	-
lakeformation:table:describe	Obtain a data table of LakeFormation metadata.	read	-	-
lakeformation:table:alter	Modify a data table of LakeFormation metadata.	write	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:table:create	Create a data table of LakeFormation metadata.	write	-	-
lakeformation:table:drop	Delete a data table of LakeFormation metadata.	write	-	-
lakeformation:transaction:operate	Operate LakeFormation transactions.	write	-	-
lakeformation:user:describe	Obtain the relationship between the user and associated roles	read	-	-
lakeformation:policy:create	Create a LakeFormation permission policy.	write	-	-
lakeformation:policy:export	Obtain LakeFormation permission policies in batches.	read	-	-
lakeformation:policy:drop	Delete a LakeFormation permission policy.	write	-	-
lakeformation:policy:describe	Obtain a LakeFormation permission policy.	read	-	-
lakeformation:group:describe	Obtain the relationship between the user group and associated roles.	read	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:group:alter	Modify the relationship between the user group and associated roles.	write	-	-
lakeformation:instance:describe	Obtain a LakeFormation instance.	read	-	-
lakeformation:role:create	Create a LakeFormation role.	write	-	-
lakeformation:role:describe	Obtain a LakeFormation role.	read	-	-
lakeformation:role:drop	Delete a LakeFormation role.	write	-	-
lakeformation:role:alter	Modify the relationship between a LakeFormation role and associated user group.	write	-	-
lakeformation:credential:describe	Obtain LakeFormation authentication information.	read	-	-
lakeformation:configuration:describe	Obtain user configurations.	read	-	-
lakeformation:user:alter	Modify the relationship between the user and associated roles. - name: lakeformation:tableFile:alter	write	-	-

Action	Description	Access Level	Resource Type (*: required)	Condition Key
lakeformation:tableFile:alter	Alter files	write	-	-
lakeformation:tableFile:describe	Querying Files	read	-	-
lakeformation:tableFile:drop	Deletes files	write	-	-
lakeformation:tableFile:create	Create Files	write	-	-
lakeformation:tableFileGroup:create	Create TableFileGroups	write	-	-
lakeformation:tableFileGroup:describe	Permission to query TableFileGroups	read	-	-
lakeformation:tableFileGroup:alter	Permission to modifying TableFileGroups	write	-	-
lakeformation:tableFileGroup:drop	Permission to delete TableFileGroups	write	-	-
lakeformation:metadata:restore	Permission to restore metadata	write	-	-
lakeformation:metadataEvent:describe	Permission to query metadata events.	read	-	-

Each LakeFormation LakeCat API usually supports one or more actions. [Table 6-4](#) lists the actions and dependencies supported by LakeFormation LakeCat APIs.

Table 6-4 Actions and dependencies supported by LakeFormation APIs

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/functions	lakeformation:function:describe	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/names	lakeformation:function:describe	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}	lakeformation:function:describe	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}	lakeformation:function:drop	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions/{function_name}	lakeformation:function:alter	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions	lakeformation:function:create	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/functions	lakeformation:function:describe	-
GET /v1/{project_id}/instances/{instance_id}/catalogs	lakeformation:catalog:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs	lakeformation:catalog:create	-
PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}	lakeformation:catalog:alter	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}	lakeformation:catalog:drop	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}	lakeformation:catalog:describe	-

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases	lakeformation:database:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases	lakeformation:database:create	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}	lakeformation:database:describe	-
PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}	lakeformation:database:alter	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}	lakeformation:database:drop	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/names	lakeformation:database:describe	-

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/tables	lakeformation:table:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/list-by-names	lakeformation:table:describe	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables	lakeformation:table:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables	lakeformation:table:create	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}	lakeformation:table:describe	-

API	Action	Dependencies
PUT /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}	lakeformation:table:alter	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}	lakeformation:table:drop	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/names	lakeformation:table:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics/batch-get	lakeformation:table:describe	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics	lakeformation:table:alter	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/column-statistics	lakeformation:table:alter	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/batch-alter	lakeformation:table:alter	-
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions	lakeformation:table:describe	-

API	Action	Dependencies
POST /v1/ {project_id}/ instances/ {instance_id}/ catalogs/ {catalog_name}/ databases/ {database_name}/ tables/ {table_name}/ partitions/batch- create	lakeformation:table:alter	-
POST /v1/ {project_id}/ instances/ {instance_id}/ catalogs/ {catalog_name}/ databases/ {database_name}/ tables/ {table_name}/ partitions/batch- drop	lakeformation:table:alter	-
POST /v1/ {project_id}/ instances/ {instance_id}/ catalogs/ {catalog_name}/ databases/ {database_name}/ tables/ {table_name}/ partitions/batch- get	lakeformation:table:describe	-
GET /v1/ {project_id}/ instances/ {instance_id}/ catalogs/ {catalog_name}/ databases/ {database_name}/ tables/ {table_name}/ partitions/ partition-names	lakeformation:table:describe	-

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/names	lakeformation:table:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics/batch-get	lakeformation:table:describe	-
POST /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics	lakeformation:table:alter	-
DELETE /v1/{project_id}/instances/{instance_id}/catalogs/{catalog_name}/databases/{database_name}/tables/{table_name}/partitions/column-statistics	lakeformation:table:alter	-

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/users	lakeformation:user:describe	-
POST /v1/{project_id}/instances/{instance_id}/policies/grant	lakeformation:policy:create	-
GET /v1/{project_id}/instances/{instance_id}/policies/policy	lakeformation:policy:export	-
POST /v1/{project_id}/instances/{instance_id}/policies/revoke	lakeformation:policy:drop	-
GET /v1/{project_id}/instances/{instance_id}/policies/show	lakeformation:policy:describe	-
GET /v1/{project_id}/instances/{instance_id}/policies	lakeformation:policy:export	-
GET /v1/{project_id}/instances/{instance_id}/groups	lakeformation:group:describe	-
-	lakeformation:group:alter	-
-	lakeformation:group:alter	-
-	lakeformation:group:alter	-
-	lakeformation:group:describe	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/metaobj/count	lakeformation:instance:describe	-
POST /v1/{project_id}/instances/{instance_id}/roles	lakeformation:role:create	-
GET /v1/{project_id}/instances/{instance_id}/roles	lakeformation:role:describe	-
DELETE /v1/{project_id}/instances/{instance_id}/roles/{role_name}	lakeformation:role:drop	-
GET /v1/{project_id}/instances/{instance_id}/roles/{role_name}	lakeformation:role:describe	-
PUT /v1/{project_id}/instances/{instance_id}/roles/{role_name}	lakeformation:role:alter	-
GET /v1/{project_id}/instances/{instance_id}/roles/names	lakeformation:role:describe	-
GET /v1/{project_id}/instances/{instance_id}/roles/{role_name}/principals	lakeformation:role:describe	-
POST /v1/{project_id}/instances/{instance_id}/roles/{role_name}/grant-principals	lakeformation:role:alter	-

API	Action	Dependencies
POST /v1/{project_id}/instances/{instance_id}/roles/{role_name}/revoke-principals	lakeformation:role:alter	-
PUT /v1/{project_id}/instances/{instance_id}/roles/{role_name}/update-principals	lakeformation:role:alter	-
POST /v1/{project_id}/instances/{instance_id}/credential	lakeformation:credential:describe	-
GET /v1/{project_id}/instances/{instance_id}/configurations	lakeformation:configuration:describe	-
POST /v1/{project_id}/instances/{instance_id}/users/{user_name}/grant-roles	lakeformation:user:alter	-
POST /v1/{project_id}/instances/{instance_id}/users/{user_name}/revoke-roles	lakeformation:user:alter	-
PUT /v1/{project_id}/instances/{instance_id}/users/{user_name}/update-roles	lakeformation:user:alter	-

API	Action	Dependencies
GET /v1/{project_id}/instances/{instance_id}/users/{user_name}/roles	lakeformation:user:describe	-
POST /v1/{project_id}/instances/{instance_id}/policies/check-permission	lakeformation:policy:describe	-
-	lakeformation:metadata:restore	-

Resources

LakeFormation does not support resource-level authorization. To allow access to LakeFormation, use a wildcard (*) in the Resource element of the policy, indicating that the policy will be applied to all resources.

Conditions

LakeFormation does not support service-specific condition keys in policies. It can only use global condition keys applicable to all services.

7 Appendix

7.1 Status Codes

[Table 7-1](#) describes status codes.

Table 7-1 Status codes

Status Code	Message	Description
100	Continue	The client should continue sending its request. This interim response is used to inform the client that part of the request has been received and has not yet been rejected by the server.
101	Switching Protocols	The server is switching to a new protocol. The protocol can only be switched to a more advanced one. For example, the protocol in use is switched to a later version of HTTP.
201	Created	The request for creating a resource has been fulfilled.
202	Accepted	The request has been accepted for processing, 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 does not return any response. 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.

Status Code	Message	Description
206	Partial Content	The server has successfully processed a part of the GET request.
300	Multiple Choices	There are multiple options for the requested resource. The response contains a list of resource characteristics and addresses from which a user terminal (such as a browser) can choose the most appropriate one.
301	Moved Permanently	This and all future requests have been permanently moved to the given URI indicated in this response.
302	Found	The requested resource has been temporarily moved.
303	See Other	The server is redirecting the client to a different address. The response to the request should be retrieved using a GET or POST method.
304	Not Modified	The requested resource has not been modified. When the server returns this status code, no resource is returned.
305	Use Proxy	The requested resource is available only through a proxy.
306	Unused	This HTTP status code is no longer used.
400	BadRequest	The request is invalid. The client should not repeat the request without modifications.
401	Unauthorized	The authentication information provided by the client is incorrect or invalid.
402	Payment Required	Reserved request.
403	Forbidden	The request has been rejected. The client should modify the request instead of re-initiating it.
404	NotFound	The requested resource cannot be found. The client should not repeat the request without modifications.
405	MethodNotAllowed	A request method is not supported for the requested resource. The client should not repeat the request without modifications.

Status Code	Message	Description
406	Not Acceptable	The server cannot fulfill the request according to the content characteristics of the request.
407	Proxy Authentication Required	This code is similar to 401, but indicates that the client must first authenticate itself with the proxy.
408	Request Time-out	The server timed out waiting for the request. The client may repeat the request without modifications at a later time.
409	Conflict	The request could not be processed due to a conflict with the current state of the resource. The resource that the client attempts to create already exists, or the request fails to be processed because of the update of the conflict request.
410	Gone	The requested resource cannot be found. The requested resource has been deleted permanently.
411	Length Required	The server refused to process the request because the request does not specify the length of its content.
412	Precondition Failed	The server did not meet one of the preconditions contained in the request.
413	Request Entity Too Large	The server refused the request because the request was too large. The server may disable the connection to prevent the client from sending requests consecutively. If the server is only temporarily unable to process the request, the response will contain a Retry-After header field.
414	Request-URI Too Large	The Request-URI is too long for the server to process.
415	Unsupported Media Type	The server does not support the media type 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.

Status Code	Message	Description
429	TooManyRequests	The client has sent more requests than the rate limit 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, the client should resend the request after the time specified in the Retry-After header of the response has elapsed.
500	InternalServerError	The server is able to receive the request but unable to understand it.
501	Not Implemented	The server does not support the requested function.
502	Bad Gateway	The server was acting as a gateway or proxy and received an invalid request from a remote server.
503	ServiceUnavailable	The requested service is unavailable. The client should not repeat the request without modifications.
504	ServerTimeout	The request cannot be fulfilled within a given amount of time. This status code is returned to the client only when the Timeout parameter is specified in the request.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

7.2 Error Codes

If an error occurs during API calling, no result will be returned. The returned error code can be used to identify the failure cause. If an error occurs in API calling, HTTP status code 4xx or 5xx is returned. The response contains the specific error code and information. If you cannot locate the cause of an error, contact O&M personnel and provide the error code.

Error Response Body Format

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

```
{
  "error_msg": "Failed to import APIs in the swagger file to API Gateway.",
  "error_code": "lakeformation.00012001"
}
```

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

Error Code Description

If an error code starting with **APIGW** is returned after you call an API, rectify the fault by referring to the instructions provided in [Error Codes](#).

For details about LakeFormation error codes, see [Table 7-2](#).

Table 7-2 LakeFormation error codes

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012001	Failed to import APIs in the swagger file to API Gateway.	Failed to import the APIs in swagger files to API Gateway.	Check whether these swagger files about API definitions contain format or syntax errors.
500	lakeformation.0012002	Failed to create the API Gateway security group.	Failed to create the API Gateway security group.	Contact O&M personnel.
500	lakeformation.0012003	Failed to delete the API Gateway security group.	Failed to delete the API Gateway security group.	Contact O&M personnel.
500	lakeformation.0012004	Failed to add the API Gateway security rule.	Failed to add an API Gateway security rule.	Contact O&M personnel.
500	lakeformation.0012005	Failed to create the API Gateway instance.	Failed to create an API Gateway instance.	Contact O&M personnel.
500	lakeformation.0012006	API Gateway creation failed.	Failed to complete the API Gateway creation.	Contact O&M personnel.
500	lakeformation.0012007	Failed to atomically create API Gateway.	Failed to atomically create API Gateway.	Contact O&M personnel.
500	lakeformation.0012008	Failed to roll back the atomically created API Gateway.	Failed to roll back the atomically created API Gateway.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012009	Failed to bind API Gateway to the cluster.	Failed to bind API Gateway to the cluster.	Contact O&M personnel.
500	lakeformation.0012010	API Gateway failed to create the API list.	API Gateway failed to create the API list.	Contact O&M personnel.
500	lakeformation.0012011	Failed to delete API Gateway.	Failed to delete the API Gateway.	Contact O&M personnel.
500	lakeformation.0012012	Failed to add a CCE cluster.	Failed to add a CCE cluster.	Contact O&M personnel.
500	lakeformation.0012013	Failed to atomically add a CCE cluster to the cluster.	Failed to atomically add a CCE cluster.	Contact O&M personnel.
500	lakeformation.0012014	Failed to bind the CCE cluster to the DALF cluster.	Failed to bind the CCE cluster to the DALF cluster.	Contact O&M personnel.
500	lakeformation.0012015	Check whether the creation task in the CCE cluster is successful.	Failed to check whether the creation task in the CCE cluster is successful.	Contact O&M personnel.
500	lakeformation.0012016	Failed to configure automatic node scaling for the CCE cluster.	Failed to configure automatic node scaling for the CCE cluster.	Contact O&M personnel.
500	lakeformation.0012017	Failed to set the initialization task for the CCE cluster only once.	Failed to set the initialization task for the CCE cluster only once.	Contact O&M personnel.
500	lakeformation.0012018	Failed to set the initialization task for the ddCCE cluster only once.	Failed to complete the initialization task setting for the CCE cluster only once.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012019	Failed to configure service containers for the CCE cluster.	Failed to configure service containers for the CCE cluster.	Contact O&M personnel.
500	lakeformation.0012020	Failed to add the namespace to the cluster.	Failed to add a namespace to the cluster.	Contact O&M personnel.
500	lakeformation.0012021	Failed to obtain all CCE clusters in the cluster.	Failed to obtain all CCE clusters in the cluster.	Contact O&M personnel.
500	lakeformation.0012022	Failed to delete the CCE cluster.	Failed to delete a CCE cluster.	Contact O&M personnel.
500	lakeformation.0012023	Failed to atomically delete the CCE cluster.	Failed to atomically delete a CCE cluster.	Contact O&M personnel.
500	lakeformation.0012024	Failed to check whether the deletion task in the CCE cluster is successful.	Failed to check whether the deletion task in the CCE cluster is successful.	Contact O&M personnel.
500	lakeformation.0012025	Failed to unbind the CCE cluster from the DALF cluster.	Failed to unbind the CCE cluster from the DALF cluster.	Contact O&M personnel.
500	lakeformation.0012026	Failed to set ConfigMap for the CCE cluster.	Failed to set ConfigMap for the CCE cluster.	Contact O&M personnel.
500	lakeformation.0012027	Failed to add the CCE node.	Failed to add a CCE node.	Contact O&M personnel.
500	lakeformation.0012028	Failed to create all CCE nodes.	Failed to create all CCE nodes.	Contact O&M personnel.
500	lakeformation.0012029	Failed to create a DALF cluster.	Failed to create a DALF cluster.	Contact O&M personnel.
500	lakeformation.0012030	Failed to create a DALF cluster during rollback.	Failed to create a DALF cluster during rollback.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012031	Failed to update the DALF cluster ID of the user instance.	Failed to update the DALF cluster ID of the user instance.	Contact O&M personnel.
500	lakeformation.0012032	Failed to create a VPC.	Failed to create a VPC.	Contact O&M personnel.
500	lakeformation.0012033	Failed to make the VPC persistent.	Failed to make the VPC persistent.	Contact O&M personnel.
500	lakeformation.0012034	Failed to create a subnet.	Failed to create a subnet.	Contact O&M personnel.
500	lakeformation.0012035	Failed to make the subnet persistent.	Failed to make the subnet persistent.	Contact O&M personnel.
500	lakeformation.0012036	Failed to create the business_vpcep service.	Failed to create the business_vpcep service.	Contact O&M personnel.
500	lakeformation.0012037	Failed to make the VPCEP service persistent.	Failed to make the VPCEP service persistent.	Contact O&M personnel.
500	lakeformation.0012038	Failed to create a single ELB.	Failed to create a single ELB.	Contact O&M personnel.
500	lakeformation.0012039	Failed to make a single ELB persistent.	Failed to make a single ELB persistent.	Contact O&M personnel.
500	lakeformation.0012040	Failed to delete a cluster.	Failed to delete a cluster.	Contact O&M personnel.
500	lakeformation.0012041	Failed to delete the start method of the cluster.	Failed to delete the start method of the cluster.	Contact O&M personnel.
500	lakeformation.0012042	Failed to change the cluster status.	Failed to change the cluster status.	Contact O&M personnel.
500	lakeformation.0012043	Failed to change the cluster status.	Failed to change the cluster status.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012044	Failed to delete the instance.	Failed to delete an instance.	Contact O&M personnel.
500	lakeformation.0012045	Failed to delete a VPC.	Failed to delete a VPC.	Contact O&M personnel.
500	lakeformation.0012046	Failed to delete a subnet.	Failed to delete a subnet.	Contact O&M personnel.
500	lakeformation.0012047	Failed to delete a VPCEP endpoint.	Failed to delete a VPCEP.	Contact O&M personnel.
500	lakeformation.0012048	Failed to delete the ELB.	Failed to delete the ELB.	Contact O&M personnel.
500	lakeformation.0012049	The VPCEP license is invalid.	The VPCEP license is invalid.	Contact O&M personnel.
500	lakeformation.0012050	Failed to create a VPCEP endpoint.	Failed to create a VPCEP.	Contact O&M personnel.
500	lakeformation.0012051	Failed to receive the VPCEP connection.	Failed to receive the VPCEP connection.	Contact O&M personnel.
500	lakeformation.0012052	Failed to delete a VPCEP endpoint.	Failed to delete a VPCEP.	Contact O&M personnel.
500	lakeformation.0012053	Failed to create the obs folder.	Failed to create the OBS folder.	Check whether the OBS bucket has been created or whether OBS is normal.
500	lakeformation.0012054	Failed to create the database.	Failed to create the database.	Contact O&M personnel.
500	lakeformation.0012055	Failed to create the database security group.	Failed to create the database security group.	Contact O&M personnel.
500	lakeformation.0012056	Failed to create the database security group rule.	Failed to create the database security group rule.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012057	Failed to delete the database security group.	Failed to delete the database security group.	Contact O&M personnel.
500	lakeformation.0012058	Failed to create a business database.	Failed to create a business database.	Contact O&M personnel.
500	lakeformation.0012059	Failed to create a business database.	Failed to create a business database.	Contact O&M personnel.
500	lakeformation.0012060	The database creation is suspended.	Failed to complete the database creation.	Contact O&M personnel.
500	lakeformation.0012061	Failed to make the database persistent.	Failed to make the database persistent.	Contact O&M personnel.
500	lakeformation.0012062	Failed to bind the database to the cluster.	Failed to bind the database to the cluster.	Contact O&M personnel.
500	lakeformation.0012063	Failed to delete a single business database.	Failed to delete a single business database.	Contact O&M personnel.
500	lakeformation.0012064	Failed to separate the database from the cluster.	Failed to separate the database from the cluster.	Contact O&M personnel.
500	lakeformation.0012065	Failed to query the database based on the cluster ID.	Failed to query the database by cluster ID.	Contact O&M personnel.
500	lakeformation.0012066	Failed to initialize DCS.	Failed to initialize the DCS.	Contact O&M personnel.
500	lakeformation.0012067	Failed to create a security group.	Failed to create a security group.	Contact O&M personnel.
500	lakeformation.0012068	Failed to add a security group rule.	Failed to add a security group rule.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0012069	Failed to create a DCS instance.	Failed to create a DCS instance.	Contact O&M personnel.
500	lakeformation.0012070	The DCS instance creation task is suspended.	Failed to complete DCS instance creation.	Contact O&M personnel.
500	lakeformation.0012071	Failed to merge the four atomic operations.	Failed to merge the four atomic operations.	Contact O&M personnel.
500	lakeformation.0012072	Failed to make DCS persistent.	Failed to make DCS persistent.	Contact O&M personnel.
500	lakeformation.0012073	Failed to associate the DCS with the cluster.	Failed to associate the DCS with the cluster.	Contact O&M personnel.
500	lakeformation.0012074	Failed to delete a security group.	Failed to delete a security group.	Contact O&M personnel.
500	lakeformation.0012075	Failed to delete DCS.	Failed to delete DCS.	Contact O&M personnel.
500	lakeformation.0012076	Failed to separate DCS from the cluster.	Failed to separate DCS from the cluster.	Contact O&M personnel.
500	lakeformation.0012077	Failed to prepare a resource container account.	Failed to prepare a resource container account.	Contact O&M personnel to create a resource container account. The IAM service is faulty or needs to be restored.
500	lakeformation.0011001	Failed to copy the data flow.	Failed to copy the data flow.	Contact O&M personnel to rectify the fault.
500	lakeformation.0011002	Failed to run the external script.	Failed to run the external script.	Check whether the script contains errors.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011003	Duplicate sequence ID of WebSocket requests.	Duplicate sequence ID of WebSocket requests.	View logs to locate and rectify the fault.
500	lakeformation.0011004	Failed to create an API Gateway instance.	Failed to create an API Gateway instance.	View logs to locate and rectify the fault.
500	lakeformation.0011005	Failed to create API Gateway instances due to insufficient AZ.	Failed to create API Gateway instances due to insufficient AZ.	View logs to locate and rectify the fault.
500	lakeformation.0011006	The default API Gateway API group does not exist.	The default API Gateway API group does not exist.	View logs to locate and rectify the fault.
500	lakeformation.0011007	Failed to import APIs in batches to API Gateway.	Failed to import APIs in batches to API Gateway.	View logs to locate and rectify the fault.
500	lakeformation.0011008	Failed to import APIs in batches to API Gateway because the backend ELB is not ready.	Failed to import APIs in batches to API Gateway because the backend ELB is not ready.	View logs to locate and rectify the fault.
500	lakeformation.0011009	There is no API Gateway release environment.	There is no API Gateway release environment.	View logs to locate and rectify the fault.
500	lakeformation.0011010	LakeFormation Admin server certificate will expire soon.	LakeFormation Admin server certificate will expire soon.	Replace the certificate and complete the upgrade in a timely manner.
500	lakeformation.0011011	LakeCat authentication credential of cluster is not found.	LakeCat authentication credential for clusters is not found.	Check whether the corresponding credential exists in the database.
500	lakeformation.0011012	Failed to update the LakeCat authentication credential of cluster.	Failed to update the LakeCat authentication credential for clusters.	Check logs to determine whether the ks certificate fails to be obtained.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011013	Image with tag does not exist.	Image with tag does not exist.	Check whether the configured image tag exists.
500	lakeformation.0011014	Failed to connect the endpoint to API Gateway.	Failed to connect the endpoint to API Gateway.	View logs to locate and rectify the fault.
500	lakeformation.0011015	The cluster does not exist.	The cluster does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011016	The API Gateway instance does not exist.	The API Gateway instance does not exist.	Check whether the API Gateway instance related to the instance has been created and is running properly.
500	lakeformation.0011017	Failed to execute the SQL statement.	Failed to execute the SQL statement.	View logs to locate and rectify the fault.
500	lakeformation.0011018	Abnormal I/O stream operation.	The I/O stream operation is abnormal.	View logs to locate and rectify the fault.
500	lakeformation.0011019	LakeCat connection authentication failed.	Failed to authenticate LakeCat connection.	Check whether the authentication credential is correct.
500	lakeformation.0011020	Failed to parse the LakeFormation Admin server certificate.	Failed to parse the LakeFormation Admin server certificate.	Rebuild the container.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011021	The service tenant ID does not exist.	The service tenant ID does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011022	The VPC ID does not exist.	The VPC ID does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011023	The VPC subnet ID does not exist.	The VPC subnet does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011024	The service unit ID does not exist.	The service unit ID does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011025	The cluster ID does not exist.	The cluster ID does not exist.	Check whether the clusters related to the instance have been created and are running properly.
500	lakeformation.0011026	The specified content cannot be found in the database.	The specified content cannot be found in the database.	Check whether the database table is tampered with.
500	lakeformation.0011027	Inconsistent API statuses.	The API status is inconsistent.	Contact O&M personnel.
500	lakeformation.0011028	Process being stopped.	The process is being stopped.	Contact O&M personnel.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011029	Failed to obtain, create, or delete the agency.	Failed to obtain, create, or delete an agency.	Check whether the IAM service is normal.
500	lakeformation.0011030	Running.	The task is running.	Try again later.
500	lakeformation.0011031	Failed to re-encrypt the password when uploading the configuration to CCE.	Failed to re-encrypt the password when uploading the configuration to CCE.	Contact the O&M personnel to check whether the password in the database is correctly encrypted.
500	lakeformation.0011032	Failed to delete the OBS directory.	Failed to delete the OBS directory.	Manually delete the residual OBS directory.
500	lakeformation.0011033	The VPC does not exist.	The VPC does not exist.	Check the VPC configuration items.
500	lakeformation.0011034	The subnet does not exist.	The subnet does not exist.	Check the subnet configuration items.
500	lakeformation.0011035	The segment configuration of the subnet network conflicts with VPC.	The segment configuration of the subnet network conflicts with VPC.	Check the subnet segment configuration.
500	lakeformation.0011036	DCS unavailable.	The DCS does not exist or is unavailable.	Check the DCS configuration.
500	lakeformation.0011037	Database unavailable.	The database does not exist or is unavailable.	Check the database configuration.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011038	An internal error occurred in the quota management service.	An internal error occurred in the quota management service.	Contact the O&M personnel to check whether the quota data in the database is correct.
500	lakeformation.0011039	Instance unavailable.	The instance does not exist or is unavailable.	Check the database configuration.
500	lakeformation.0011040	Failed to restore the instance.	Failed to restore an instance.	Check the instance status.
500	lakeformation.0011041	Failed to move the instance to the recycle bin.	Failed to move the instance to the recycle bin.	Check the instance status.
500	lakeformation.0011042	Failed to bring all APIs online or offline.	Failed to bring all APIs online or offline.	Try again later.
500	lakeformation.0011043	Failed to execute the method in the cache.	Failed to execute the method in the cache.	Query logs based on the cache key in the alarm information to locate the fault.
500	lakeformation.0011044	API Gateway health check failed.	The API Gateway health check failed.	Check the status of the API Gateway service.
500	lakeformation.0011045	CCE health check failed.	The CCE health check failed.	Check the status of the CCE service.
500	lakeformation.0011046	CDK health check failed.	The CloudAutoDeploy-CDK health check failed.	Check the status of CloudAutoDeploy-CDK.
500	lakeformation.0011047	GaussDB health check failed.	The GaussDB health check failed.	Check the status of GaussDB.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011048	ELB health check failed.	The ELB health check failed.	Check the status of the ELB service.
500	lakeformation.0011049	VPCEP health check failed.	The VPCEP health check failed.	Check the status of the VPCEP service.
500	lakeformation.0011050	DCS health check failed.	The DCS health check failed.	Check the status of the DCS service.
500	lakeformation.0011051	IAM health check failed.	The IAM health check failed.	Check the status of the IAM service.
500	lakeformation.0011052	ZooKeeper health check failed.	The ZooKeeper health check failed.	Check the status of ZooKeeper.
500	lakeformation.0011053	MySQL health check failed.	The MySQL health check failed.	Check the status of MySQL.
500	lakeformation.0011054	OBS health check failed.	The OBS health check failed.	Check the status of the OBS service.
500	lakeformation.0011055	The health check on the tenant plane failed.	The health check on the tenant plane failed.	Contact O&M personnel.
500	lakeformation.0011056	HiveMetaStore health check failed.	HiveMetaStore health check failed.	Contact O&M personnel.
500	lakeformation.0011057	Ranger health check failed.	Ranger health check failed.	Contact O&M personnel.
500	lakeformation.0011058	No running business unit exists during the health check.	No running business unit exists during the health check.	Check the cluster status or wait until the cluster is created.
500	lakeformation.0011059	Failed to configure the DCS instance.	Failed to configure the DCS instance.	Check whether the DCS instance status is normal and configuration is correct.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011060	RDS health check failed.	The RDS health check failed.	Check the status of the RDS service.
500	lakeformation.0011061	Pods on the CCE cluster node exceeds the upper limit.	Pods on the CCE cluster node exceed the upper limit.	Check the CCE cluster nodes and migrate pods.
500	lakeformation.0011062	Failed to obtain the agency token.	Failed to obtain the agency token.	Check whether the IAM service is normal.
500	lakeformation.0011063	Failed to obtain the user ID.	Failed to obtain the user ID.	Check whether the access client or its instance is normal.
500	lakeformation.0011064	Failed to obtain the project ID.	Failed to obtain the project ID.	Check whether the access client or its instance is normal.
500	lakeformation.0011065	Failed to obtain the terminal tenant.	Failed to obtain the terminal tenant.	Check whether the access client or its instance is normal.
500	lakeformation.0011066	Failed to obtain the job.	Failed to obtain a job.	Check whether the job is normal.
500	lakeformation.0011067	Failed to obtain the task.	Failed to obtain a task.	Check whether the task is normal.
500	lakeformation.0011068	Failed to access the GOCM service.	Failed to access the GOCM service.	Check whether the GOCM service is normal.
500	lakeformation.0011069	The cluster does not have any connection to the tenant plane.	The cluster does not have any connection to the tenant plane.	Check whether the instances on the tenant plane are normal.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011070	The node on the management and control plane cannot connect to the tenant plane.	The node on the management and control plane cannot connect to the tenant plane.	Check whether the instances on the tenant plane are normal.
500	lakeformation.0011071	Failed to execute the workflow.	Failed to execute the workflow.	Locate the cause based on the workflow task ID or service logs.
500	lakeformation.0011072	Failed to initialize the instance.	Failed to initialize the instance.	View logs on the tenant plane.
500	lakeformation.0011073	Failed to release the instance.	Failed to release the instance.	View logs on the tenant plane.
500	lakeformation.0011074	Failed to upgrade the cluster.	Failed to upgrade the cluster.	Check whether the cluster mirroring function is normal.
500	lakeformation.0011075	An error occurred during table aging.	An error occurred during table aging.	Check the data aging configuration.
500	lakeformation.0011076	Failed to create OpenGauss because the flavor does not have insufficient AZ.	Failed to create OpenGauss because the flavor does not have insufficient AZ.	Contact OpenGauss O&M personnel or try other specifications.
500	lakeformation.0011077	OpenGauss health check failed.	The OpenGauss health check failed.	Check the status of OpenGauss.
500	lakeformation.0011078	Failed to obtain the API calling times record.	Failed to obtain the number of API calling times.	Check the connection between the management plane and tenant plane.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011079	Failed to delete the API calling times record.	Failed to delete the API calling times record.	Check the connection between the management plane and tenant plane.
500	lakeformation.0011080	Failed to scale out the MySQL database.	Failed to scale out the MySQL database.	Check whether the MySQL DB instance is normal.
500	lakeformation.0011081	DCS scale-out failed.	DCS scale-out failed.	Check whether the DCS instance is normal.
500	lakeformation.0011082	OLC decryption failed.	OLC decryption failed.	Check the overload control decryptor.
500	lakeformation.0011083	GaussDB health check failed.	The GaussDB health check failed.	Check the status of the GaussDB service.
500	lakeformation.0011084	No specCode is found.	No specCode is found.	Check the configured specCode.
500	lakeformation.0011085	An agency exception occurred when accessing service or tenant account.	An agency exception occurred when a service is accessed or a tenant account is used.	Authorize the access tenant again.
500	lakeformation.0011086	Failed to perform the health check on CCE nodes.	Failed to perform the health check on CCE nodes.	Check the CCE node status and restart the node.
500	lakeformation.0011087	Failed to perform the health check on CCE pods.	Failed to perform the health check on a CCE pod.	Check the CCE pod status and rebuild the pod.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0011088	Too many connections in the database connection pool on the tenant plane.	Too many connections in the database connection pool on the tenant plane.	Check the database connection on the tenant plane.
500	lakeformation.0011089	Too many connections in the database connection pool on the management plane.	Too many connections in the database connection pool on the management plane.	Check the database connection on the management plane.
500	lakeformation.0011090	Medium high GaussDB database capacity use.	Medium high GaussDB database capacity use.	Check the instance database capacity on the tenant plane.
500	lakeformation.0011091	Medium GaussDB database capacity use.	Medium GaussDB database capacity use.	Check the instance database capacity on the tenant plane.
500	lakeformation.0011092	High GaussDB database capacity use.	High GaussDB database capacity use.	Check the instance database capacity on the tenant plane and expand the capacity in a timely manner.
500	lakeformation.0011093	Ultra GaussDB database capacity use.	Ultra GaussDB database capacity use.	Check the instance database capacity on the tenant plane and expand the capacity in a timely manner.
400	lakeformation.0010002	The instance cannot process requests because it is not running.	The instance cannot process requests because it is not running.	Send the request when the instance is running.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010003	Instance not exist.	The instance does not exist.	Use a correct instance ID.
400	lakeformation.0010004	Bucket entered not exist.	The entered bucket does not exist.	Check the bucket.
400	lakeformation.0010005	Protocol version entered not exist.	The entered protocol version does not exist.	Check the protocol version.
400	lakeformation.0010006	Empty protocol version.	The protocol version cannot be empty.	Check the entered protocol version.
400	lakeformation.0010007	Resource clearing task ID not exist.	The resource clearing task does not exist.	Check the task ID.
400	lakeformation.0010008	Duplicate instance name.	The instance name already exists.	Enter another instance name.
400	lakeformation.0010009	No resources found.	The queried resource does not exist.	Enter correct resource and project IDs.
400	lakeformation.0010010	The resource management service request parameter is incorrect.	The resource management service request parameter is incorrect.	Contact the resource management service to check the query parameters.
400	lakeformation.0010011	Invalid specification code.	The specification code is invalid.	Enter a correct specification code.
400	lakeformation.0010012	Access domain name entered not exist.	The entered access domain name does not exist.	Check the entered access domain name.
400	lakeformation.0010013	Access client not exist.	The access client does not exist.	Check the entered access client.
400	lakeformation.0010014	Duplicate access client name.	The access client name already exists.	Check the entered access client name.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010015	Connected clients reach the upper limit.	The number of connected clients reaches the upper limit.	Delete idle access clients and re-create them, or contact O&M personnel to increase the upper limit.
400	lakeformation.0010016	The VPC ID must be specified in the default system access mode.	The VPC ID must be specified in the default system access mode.	Check the entered VPC ID.
400	lakeformation.0010017	The regional node ID must be specified in the default system access mode.	The subnet ID must be specified in the default system access mode.	Check the entered subnet ID.
400	lakeformation.0010018	Access connection is mandatory in the custom access mode.	The access connection must be specified in the custom access mode.	Check the access connection list.
400	lakeformation.0010019	Only running access clients can be deleted.	Only running access clients can be deleted.	Delete the client after it changes to the running state.
400	lakeformation.0010020	Subnet conflict. Access clients cannot be repeatedly created on the same subnet.	Subnet conflict. Access clients cannot be repeatedly created on the same subnet.	Select another VPC subnet to create an access client.
400	lakeformation.0010021	Failed to delete instances in the current state.	Failed to delete instances in the current state.	Delete the cluster after the cluster status changes.
400	lakeformation.0010022	The feature is restricted and is open only to whitelisted customers.	The feature is restricted and is open only to whitelisted customers.	Contact O&M personnel to whitelist you.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010023	Invalid time format in the parameter.	The time format in the parameter is invalid.	Use a valid time format.
400	lakeformation.0010024	Agency not created and service will be abnormal.	The current tenant has not created an agency and therefore service functions will be abnormal.	Contact a user with IAM usage permission under the current tenant to create an agency.
400	lakeformation.0010025	The quota service failed.	The quota service failed.	Check whether the updated quota meets requirements.
400	lakeformation.0010026	Duplicate key in the tag list.	The tag list has duplicate keys.	Check the keys in the tag list.
400	lakeformation.0010027	Tags for a single instance exceeds the upper limit.	The number of tags for a single instance exceeds the upper limit.	Check the number of tags in the instance.
400	lakeformation.0010028	Duplicate member value in the tag list.	The tag list has duplicate member values.	Check the member values in the tag list.
400	lakeformation.0010029	Null members are not allowed in the tag list.	Null members are not allowed in the tag list.	Check the members in the tag list.
400	lakeformation.0010030	Null members are not allowed in the condition list.	Null members are not allowed in the condition list.	Check the members in the condition list.
400	lakeformation.0010031	Null values are not allowed in the member value list of the tag list.	Null values are not allowed in the member value list of the tag list.	Check the member values in the tag list.
400	lakeformation.0010032	Null member values are not allowed in the tag list.	Null member values are not allowed in the tag list.	Check the member values in the tag list.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010033	Null member values are not allowed in the condition list.	Null member values are not allowed in the condition list.	Check the member values in the condition list.
400	lakeformation.0010034	System tags cannot be deleted in batches.	System tags cannot be deleted in batches.	Select another tag operation.
400	lakeformation.0010035	No permissions for operating system labels.	You do not have the permission to operate system labels.	Check your permissions.
400	lakeformation.0010036	System labels cannot be empty.	System labels cannot be empty.	Check the system label parameter.
400	lakeformation.0010037	System labels and labels cannot be used concurrently.	System labels and labels cannot be used concurrently.	Select a system label or a label of your choice.
400	lakeformation.0010038	Unauthorized requests.	The request is not authorized.	Request after authorization.
400	lakeformation.0010039	Incorrect user or tenant information.	The entered user or tenant information is incorrect.	Enter correct user or tenant information.
400	lakeformation.0010040	Incorrect configuration name.	The entered configuration name is incorrect.	Enter a correct configuration name and check whether the configuration is at the system level.
400	lakeformation.0010041	VPC conflict. Access clients cannot be repeatedly created in the same VPC.	VPC conflict. Access clients cannot be repeatedly created in the same VPC.	Select another VPC to create an access client.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010042	Shared instances are not supported.	Shared instances are not supported.	Create an exclusive instance or contact O&M personnel.
400	lakeformation.0010043	Failed to create instances due to insufficient resources.	Failed to create instances due to insufficient resources.	Contact O&M personnel to check resources.
400	lakeformation.0010044	A user instance is in use in the cluster.	A user instance is in use in the cluster.	Release the instances associated with the cluster first.
400	lakeformation.0010045	Cluster not exist.	The cluster does not exist.	Use a correct cluster ID.
400	lakeformation.0010046	API traffic limit threshold reached.	The traffic limit threshold of the API is reached.	Try again later.
400	lakeformation.0010047	Failed to upgrade the cluster.	Failed to upgrade the cluster.	Refresh and try again. Check whether the cluster status is normal.
400	lakeformation.0010048	System configuration cannot be modified.	System configurations cannot be modified.	Check the O&M user's system configurations and operation permission.
400	lakeformation.0010049	Invalid O&M service invoking parameter.	The O&M service invoking parameter is invalid.	Check whether the parameter is valid.
400	lakeformation.0010050	Failed to change the instance specifications because the instance is not running.	Failed to change the instance specifications because the instance is not running.	Change the instance specifications after the instance status changes into Running .

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010051	No permission for sending messages.	You do not have the permission to send messages.	Check whether the configuration is correct.
400	lakeformation.0010052	Current user not authorized for LakeFormation.	The current user is not authorized to use LakeFormation.	Grant the user permission to use LakeFormation.
400	lakeformation.0010053	The current tenant has instances and cannot cancel the authorization.	The current tenant has instances and cannot cancel the authorization.	Delete the tenant's all instances (including those in the recycle bin) and cancel the authorization.
400	lakeformation.0010054	The metadata type of a logical multi-tenant cluster cannot be hivemetastore .	The metadata type of a logical multi-tenant cluster cannot be hivemetastore .	Change the metadata type.
400	lakeformation.0010055	Only non-shared instances support specification change.	Only non-shared instances support specification change.	Select a non-shared instance to continue the specification change.
400	lakeformation.0010056	Only scale-out is supported.	Only scale-out is supported.	Select a higher instance specification.
400	lakeformation.0010057	Failed to set the instance as default because there is another default one.	Failed to set the instance as default because there is another default one.	Set the current default instance as non-default and set another instance as default.
400	lakeformation.0010058	Failed to collect the account ID during overload control.	Failed to collect the account ID during overload control.	Check the account information.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0010059	Access tenant unauthorized.	The access tenant is not authorized.	Check whether the access tenant has been authorized.
400	lakeformation.0010060	Access tenant authorized.	The access tenant has been authorized.	Do not repeatedly authorize an access tenant.
400	lakeformation.0010061	Failed to perform this operation because the cluster is not running.	Failed to perform this operation because the cluster is not running.	Check the cluster status.
400	lakeformation.0010062	Failed to perform this operation in the current task status.	Failed to perform this operation in the current task status.	Check the task status.
400	lakeformation.0010063	The task name already exists.	The task name already exists.	Check the entered task name.
400	lakeformation.0010064	The number of tasks has reached the upper limit.	The number of tasks has reached the upper limit.	Delete idle tasks and create them again, or contact O&M personnel to increase the maximum number of tasks.
400	lakeformation.0010065	Risk check failed.	The risk check failed.	Check your balance.
400	lakeformation.0010066	Task task not exist.	The task does not exist.	Check the job ID.
400	lakeformation.0010067	Failed to initialize the task because the number of tasks may have reached the upper limit.	Failed to initialize the task because the number of tasks may have reached the upper limit.	Try again later.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.00010068	The application cannot be deleted. Duplicate deletion is not allowed.	The application in the current state cannot be deleted. Duplicate deletion is not allowed.	The current application is being deleted or has been deleted. Do not repeatedly delete it.
400	lakeformation.00010069	Application not exist.	The application does not exist.	Use a correct application ID.
500	lakeformation.00000001	Exception being handled.	The exception is being handled.	Try again later.
400	lakeformation.00000002	Unsupported permission types.	The permission type is not supported.	Check the entered permission type.
400	lakeformation.00000003	The resource already exists.	The resource already exists.	Check all your resources and reset them.
400	lakeformation.00000004	The number of resources exceeds the upper limit.	The number of resources exceeds the upper limit.	Delete unnecessary resources.
400	lakeformation.00000005	The resource does not exist.	The resource does not exist.	Check whether the resource is available.
400	lakeformation.00000006	The resource list is empty.	The resource list is empty.	Check whether the resource list is empty.
400	lakeformation.00000007	Resource cannot be null.	The resource cannot be empty.	Check whether the resource is null .
400	lakeformation.00000008	Unsupported resources name.	The resource name is not supported.	Check the resource name.
400	lakeformation.00000009	Unsupported resource types.	The resource type is not supported.	Check the entered permission type.
400	lakeformation.00000010	Unsupported authorization entity types.	The authorization entity type is not supported.	Check the entered authorization entity type.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0000011	The operation table is a non-partitioned table.	The operation table is a non-partitioned table.	Check the entered table type.
400	lakeformation.0000012	Incorrect partition value.	The entered partition value is incorrect.	Check whether the number and type of the entered partition key list of the table match those of the entered partition value list.
400	lakeformation.0000013	Incorrect type of column.	The column type is incorrect.	Check whether the entered column type matches the type supported by the official website.
500	lakeformation.0000014	The signature certificate does not exist.	The signature certificate does not exist.	Check whether services on the management plane are available.
400	lakeformation.0000015	Invalid token.	The token is invalid.	Check whether the token is valid.
400	lakeformation.0000016	Insufficient permissions.	The permission is insufficient.	Check whether you have the required permission.
400	lakeformation.0000017	Empty statistics.	The statistics are empty.	Check whether the statistics are empty or the statistics type is set incorrectly.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0000018	Incomplete information about the referenced table when attempting to obtain the foreign key.	The referenced table information is incomplete when the foreign key is obtained.	To query foreign keys, enter the complete database and table names of the referenced table.
400	lakeformation.0000019	Pattern matching and filtering matching parameters cannot coexist.	Pattern matching and filtering matching parameters cannot coexist.	Check the entered pattern matching and filtering parameters.
400	lakeformation.0000020	Feature is not supported.	The feature is not supported.	Look out for version updates.
400	lakeformation.0000021	The project to which the token belongs is inconsistent with the project ID in the request address.	The project to which the token belongs is inconsistent with the project ID in the request address.	Check whether the project ID is correct and whether the token belongs to the project.
400	lakeformation.0000022	Incorrect request address format.	The format of the request address is incorrect.	Enter a correct request address.
400	lakeformation.0000023	The token is missing.	The token is missing.	Enter a token.
500	lakeformation.0000030	Invalid input parameter.	The input parameter is invalid.	Check the input parameter.
400	lakeformation.0000031	Invalid object.	The object is invalid.	Check the object.
400	lakeformation.0000032	Invalid operation.	The operation is invalid.	Check the operation.
400	lakeformation.0000033	Unknown database.	The database is unknown.	Check the database.
400	lakeformation.0000034	Unknown partition.	The partition is unknown.	Check the partition.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0000035	Unknown table.	The table is unknown.	Check the table.
400	lakeformation.0000036	Metadata exception.	The metadata is abnormal.	Check the request.
400	lakeformation.0000037	Exceeded the number supported by the permission principal.	The permission entity number exceeds the number supported by the permission principal.	Delete some authorizations.
400	lakeformation.0000038	Cluster	The cluster server certificate has expired.	Replace the certificate and complete the upgrade in a timely manner.
400	lakeformation.0000039	Failed to created the directory.	Failed to create the directory.	Check the path.
400	lakeformation.0000040	Function does not exist.	The function does not exist.	Check the function name.
400	lakeformation.0000041	Invalid table filter condition field.	The table filter condition field is invalid.	Check the fields that can be filtered in the table.
400	lakeformation.0000042	Location path is not supported.	The location path is not supported.	Check the input location path.
400	lakeformation.0000043	String has SQL injection risks.	The string has SQL injection risks.	Check the input string.
500	lakeformation.0000044	Failed to parse the LakeFormation Admin server certificate.	Failed to parse the LakeFormation Admin server certificate.	Rebuild the container.
400	lakeformation.0000045	The LakeFormation admin server certificate parse failed.	The path already exists.	Select an empty path.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0000046	Process being stopped.	The process is being stopped.	Wait for the container to restart.
400	lakeformation.0000047	Failed to delete Catalog because it contains custom databases.	Failed to delete Catalog because it contains custom databases.	Delete all non-default databases in this catalog.
500	lakeformation.0000048	HiveMetaStore health check failed.	The HiveMetaStore health check failed.	Check the status of the HiveMetaStore service.
500	lakeformation.0000049	Ranger health check failed.	The Ranger health check failed.	Check the status of the Ranger service.
500	lakeformation.0000050	OBS health check failed.	The OBS health check failed.	Check whether the OBS service is normal and whether the AK/SK for calling OBS has expired.
500	lakeformation.0000051	Failed to create or update database metadata.	Failed to create or update database metadata.	Check whether the SQL statement or database is normal.
400	lakeformation.0000052	No default instance ID is configured in project by tenant.	No default instance ID is configured in project by tenant.	Check whether the default instance ID of the tenant is configured.
400	lakeformation.0000053	Instance does not belong to tenant.	The instance does not belong to the tenant.	Check whether the instance ID is correct.
400	lakeformation.0000054	Column statistics cannot be created for partitioned tables.	Column statistics cannot be created for partitioned tables.	Create or update statistics on the partition.

Statu s Code	Error Code	Error Message	Description	Measure
400	lakeformation.0000055	Inconsistent data types between column statistics and columns.	Inconsistent data types between column statistics and columns.	Ensure that the data type of the column statistics is consistent with that of the table or partition column.
500	lakeformation.0000056	Protobuf decoding failed.	Protobuf decoding failed.	Reset the data.
500	lakeformation.0000057	No instances found.	The instance is not found.	Enter a correct instance ID.
400	lakeformation.0000058	Failed to collect the account ID during overload control.	Failed to collect the account ID during overload control.	Check the account information.
500	lakeformation.0000059	GaussDB health check failed.	The GaussDB health check failed.	Check the status of the GaussDB service.
500	lakeformation.0000060	Too many requests.	There are too many requests.	Try again later.
400	lakeformation.0000061	Requests cannot be serialized during partition creation.	Requests cannot be serialized during partition creation.	Try again later.
400	lakeformation.0000062	The input exceeds the length limit.	The input exceeds the length limit.	Check the input.
400	lakeformation.0000063	Failed to delete Catalog because it contains databases.	Failed to delete Catalog because it contains databases.	Delete all databases in this catalog.
500	lakeformation.0000064	Failed to delete data from the table.	Failed to delete data from the table.	Check the log stack information.

Statu s Code	Error Code	Error Message	Description	Measure
500	lakeformation.0023001	The WebSocket session is disconnected.	The WebSocket session is disconnected.	Check whether services on the management plane are available.
500	lakeformation.0023002	Too many WebSocket requests.	Too many WebSocket requests.	Check whether services on the management plane are frozen.
500	lakeformation.0023003	Empty WebSocket message.	Empty WebSocket message.	Check whether the network is in good condition.
400	lakeformation.0023004	No permission to perform this operation on resources.	You do not have the permission to perform this operation on resources.	Check whether you have the permission to perform this operation on resources.
500	lakeformation.0023005	Duplicate sequence ID of WebSocket requests.	Duplicate sequence ID of WebSocket requests.	View logs to locate and rectify the fault.
500	lakeformation.0023006	Failed to execute the method in the cache.	Failed to execute the method in the cache.	Query logs based on the cache key in the alarm information to locate the fault.
400	lakeformation.0023007	Failed to delete the role because it has been authorized.	Failed to delete the role because it has been authorized.	Unbind all permissions authorizations from the role before deleting it.
400	lakeformation.0023008	Failed to create resources.	Failed to create resources.	Check the resource parameters or database status.
400	lakeformation.0023009	The catalog cannot be deleted.	The catalog cannot be deleted.	The catalog cannot be deleted.

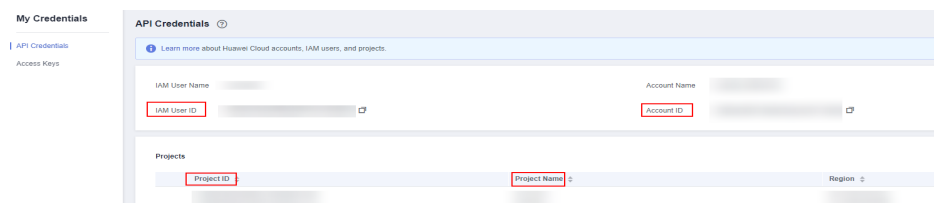
7.3 Obtaining a Project ID

Obtaining a Project ID on the Console

A project ID indicates a tenant's resources and an account ID corresponds to the current account. You can view the project IDs and account IDs in different regions on the corresponding pages.

1. Log in to the LakeFormation console.
2. Click the username and select **My Credentials** from the drop-down list.
3. On the **API Credentials** page, view project IDs in the project list.

Figure 7-1 Viewing the project ID



If there are multiple projects in one region, expand **Region** and view subproject IDs in the **Project ID** column.

Obtaining a Project ID by Calling an API

A project ID can also be obtained by calling a specific API. For details, see [Querying Project Information](#).

The API for obtaining a project ID is **GET https://{Endpoint}/v3/projects**, where *{Endpoint}* indicates the IAM endpoint. You can obtain the IAM endpoint from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. The **id** indicates a project ID.

```
{
  "projects": [
    {
      "domain_id": "65382450e8f64ac0870cd180d14e684b",
      "is_domain": false,
      "parent_id": "65382450e8f64ac0870cd180d14e684b",
      "name": "xxx",
      "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"
  }
}
```

```
}  
}
```

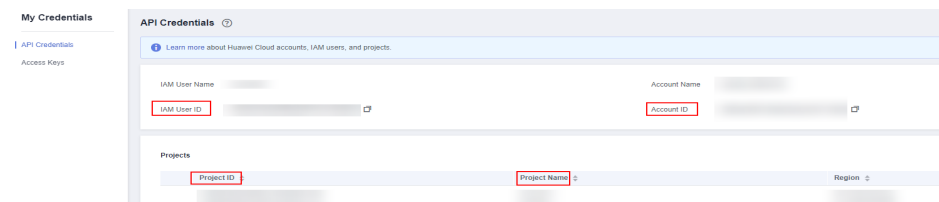
7.4 Obtaining an Account ID

An account ID is required for some URLs when an API is called. To obtain an account ID, perform the following operations:

1. Log in to the LakeFormation console.
2. Click the username in the upper right corner and choose **My Credentials** from the drop-down list.

On the **My Credentials** page, view the account ID.

Figure 7-2 Obtaining your account ID



A Change History

Released On	Description
2024-02-01	This issue is the first official release.