



Cloud Stream Service

SDK Reference

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1 Content Navigation

This document describes how to install and configure an environment and call functions provided by CS SDK for secondary development.

Chapter	Describes
Overview	Concepts of CS and CS SDK.
Applying for CS	How to apply for CS.
Downloading SDK	Resources required for secondary development using CS SDK.
Preparing the Environment	Environment configuration required before using CS SDK.
Getting Started with SDK (Java)	Common operations using CS SDK.

2 Overview

Introduction to CS

CS is a real-time big data stream analysis service running on HUAWEI CLOUD. Computing clusters are fully managed by CS, enabling you to focus on Stream SQL services. CS is compatible with Apache Flink APIs, and CS jobs run in real time.

CS supports standard SQL interfaces and mainstream data formats, and delivers computing resource isolation and fine-grained data permission control capabilities. It enables you to analyze and explore a wide variety of off-premises data sources through the management console or RESTful APIs.

Introduction to SDK

Cloud Stream Service Software Development Kit (CS SDK) is the encapsulation of RESTful APIs provided by CS to simplify user development. Users can directly call API functions provided by CS SDK to use CS.

3 Applying for CS

- Step 1** Log in to the HUAWEI CLOUD website and click **Console** from the menu on the top. (If no account is available, register an account on the management console and perform real-name authentication. After authentication succeeds, you can use the account to apply for related services.)
 - Step 2** Choose **Service List > Enterprise Intelligence > Cloud Stream Service**.
 - Step 3** On the displayed **Apply for Cloud Stream Service** page, select **I have read and agree to the HUAWEI CLOUD User Agreement** and click **Apply**.
 - Step 4** After applying for CS, you can invoke CS through APIs.
- End

4 Downloading SDK

- Log in to the Huawei public cloud platform. Visit the following website to download the CS SDK software package and documents: <https://developer.huaweicloud.com/en-us/sdk?all>.
- You can download the SDK software package by configuring the Maven repository. Specifically, add the following code to the **pom** file:

```
<dependency>  
  <groupId>com.huaweicloud.cs</groupId>  
  <artifactId>huaweicloud-cs-java-sdk</artifactId>  
  <version>1.1.8</version>  
</dependency>
```

5 Preparing the Environment

- You have downloaded JDK1.8 or a later version from the [Oracle official website](#), installed JDK, and configured Java environment variables.
- You have downloaded IntelliJ IDEA for Java Developers of the latest version from the [IntelliJ's official website](#), and installed it.
- JDK has been configured in IntelliJ IDEA.

6 Getting Started with SDK (Java)

6.1 Job Management

6.1.1 Initializing the API Client

Sample Code

To use CS SDK to access CS, you need to initialize the CS API client. During CS client initialization, you can perform authentication using the AK/SK or token. The sample code is as follows:

```
//Create an API client in a specified region.  
ApiClient apiClient = new ApiClient("regionName");  
//Use token authentication.  
apiClient.useToken("accountName", "userName", "password", "projectId");  
//Use AK/SK authentication.  
apiClient.useAksk("ak", "sk");  
//Use AK/SK authentication. You must specify projectId if you use AK/SK authentication for a customized  
project.  
apiClient.useAksk("ak", "sk", "projectId");
```

NOTE

- AK/SK authentication is supported in 1.1.1 and later versions.
- In the example, **regionName** is the name of the region to which the service belongs. For example, **regionName** for the **CN North-Beijing1** region is **cn-north-1**. For details about other region names, see [Regions and Endpoints](#).
- **accountName**, **userName**, and **password** indicate the account name, username, and password of a HUAWEI CLOUD user, respectively. You can log in to the management console and obtain the information from the **My Credentials** page.
- **projectId** indicates the project ID. For details about how to obtain the project ID, see [How Do I Obtain the Project ID?](#)
- For details about how to obtain the AK/SK, see [How Do I Obtain the AK/SK?](#)
- If you use AK/SK authentication for a customized project, you must specify **projectId**.

6.1.2 Registering to Use CS

Sample Code

You can use the API to register with the public cloud to use CS. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.UserApi;

UserApi apiInstance = new UserApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
try {
    GlobalResponse result = apiInstance.userRegister(xProjectId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling UserApi#userRegister");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-1 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.

Table 6-2 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.1.3 Granting OBS Operation Rights to CS

Sample Code

You can use the API to grant operation rights on OBS buckets to CS to save checkpoint setting and run logs of users' jobs. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.AuthorizeApi;
```

```

AuthorizeApi apiInstance = new AuthorizeApi(apiClient);//apiClient is created when initializing a CS API
client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
List<String> body = new ArrayList<String>();// List<String> | Grant operation rights on one or more OBS
buckets. The request parameter is in JSON format.
    body.add("obs_bucket");
try {
    GlobalResponse result = apiInstance.authorizeBucket(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling AuthorizeApi#authorizeBucket");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
    
```

Parameter Description

Table 6-3 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	List<String>	Grants operation rights on one or more OBS buckets to CS. The request parameter is in JSON format.

Table 6-4 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.1.4 Querying the Current Release Version of CS

Sample Code

This API is used to query the current release version of CS. A user sends a GET query request. The request body is in JSON format. Sample code is as follows:

```

import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.StatisticsApi;

StatisticsApi apiInstance = new StatisticsApi(apiClient);//apiClient is created when initializing a CS API client.
try {
    ReleaseVersionResponse result = apiInstance.getReleaseVersion();
    System.out.println(result);
}
    
```

```

} catch (ApiException e) {
    System.err.println("Exception when calling StatisticsApi#getReleaseVersion");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}

```

Parameter Description

Table 6-5 Parameters in **ReleaseVersionResponse**

Parameter	Mandatory	Type	Description
id	No	String	CS version ID.
version	No	String	Current version of CS.
minVersion	No	String	Current minor version number of CS.
engines	No	array	Flink engine content. For details, see Table 6-6 .
status	No	String	Status of the current CS version.
updated	No	String	Time when the CS version is updated.
current_millis	No	Integer	Current time, expressed by milliseconds.

Table 6-6 Parameters in **EngineVersion**

Parameter	Mandatory	Type	Description
name	No	String	Flink engine name.
version	No	String	Current version of the Flink engine.

6.1.5 Creating a SQL Job

Sample Code

You can use the API to use the POST method to submit a stream SQL job in JSON format. Sample code is as follows:

```

import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
SubmitSqlJobRequest body = new SubmitSqlJobRequest(); // SubmitSqlJobRequest | Request body in the JSON format.
try {
    JobStatusResponse result = apiInstance.submitSqlJob(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#submitSqlJob");
    System.err.println(e.getResponseBody());
}

```

```
e.printStackTrace();
}
```

Parameter Description

Table 6-7 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	Array of objects	Request body in the JSON format. For details about parameter types, see Table 6-8 .

Table 6-8 Parameters involved in **SubmitSqlJobRequest**

Parameter	Mandatory	Type	Description
name	Yes	String	Job name.
desc	No	String	Job description.
templateId	No	Integer	Job template ID. <ul style="list-style-type: none"> If template_id and sql_body are both specified, sql_body takes precedence. If template_id is not empty and sql_body is empty, the sql_body field is filled with the value of template_id.
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.
sqlBody	No	String	Stream SQL statement, which includes at least the following three parts: source, query, and sink.
runMode	Yes	RunModeEnum	Job running mode. A job can run on a shared or exclusive cluster or an edge node. Possible values are: <ul style="list-style-type: none"> shared_cluster exclusive_cluster edge_node
spuNumber	No	Integer	Number of SPUs selected for a job. <ul style="list-style-type: none"> Minimum value: 2 Maximum value: 400

Parameter	Mandatory	Type	Description
parallelNumber	No	Integer	Number of parallel jobs set by a user. <ul style="list-style-type: none"> Minimum value: 1 Maximum value: 2000
checkpointEnabled	No	Boolean	Whether to enable the automatic job snapshot function. The value can be true (enabled) or false (disabled). The default value is false .
checkpointMode	No	CheckpointModeEnum	Snapshot mode. The options are as follows: <ul style="list-style-type: none"> <code>exactly_once</code> <code>at_least_once</code>
checkpointInterval	No	Integer	Snapshot interval, expressed by seconds. The default value is 10 .
obsBucket	No	String	OBS path where users are authorized to save the snapshot. This parameter is used only when checkpoint_enabled is set to true .
logEnabled	No	Boolean	Whether to enable the function of uploading job logs to users' OBS buckets. The default value is false .
smnTopic	No	String	If a job fails to work, CS pushes alarm information to the SMN topic.
restartWhenException	No	Boolean	Whether to enable the function of restart upon exceptions. The default value is false .
idleStateRetention	No	Integer	Maximum retention duration for the idle state, which defines for how long the state of a key is retained without being updated before it is removed. The parameter value is expressed by seconds. The default value is 3600 .
jobType	No	String	Job type. Available options are as follows: <ul style="list-style-type: none"> If run_mode is set to edge_node, this parameter must be flink_sql_edge_job. If run_mode is set to shared_cluster or exclusive_cluster, this parameter must be flink_sql_job.
edgeGroupIds	No	String	List of edge computing group IDs that are separated by commas (,).
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.

Parameter	Mandatory	Type	Description
udfJarUrl	No	String	OBS address where the SQL job UDF JAR file is stored.
dirtyDataStrategy	No	String	Dirty data policy of a job. <ul style="list-style-type: none"> ● 2:obs-wan-wulan3/jobs: Save. ● 1: Trigger a job exception. ● 0: Ignore.

Table 6-9 Parameters involved in **JobStatusResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	JobStatusInfo	For details about parameter types, see Table 6-13 .

Table 6-10 Parameters involved in **JobStatusInfo**

Parameter	Mandatory	Type	Description
jobId	No	Long	Job ID.
statusName	No	String	Status name.
statusDesc	No	String	Status description.

6.1.6 Creating a User-Defined Job

Sample Code

You can use the API to create user-defined jobs, which currently support the JAR format and run in exclusive clusters. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient); //apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String name = "name_example"; // String | Job name.
String desc = "desc_example"; // String | Job description.
```

```

Integer clusterId = 56; // Integer | Resource ID of an exclusive cluster. Ensure that the current user has been
authorized to use resources of the exclusive cluster.
Integer managerSpu = 56; // Integer | Number of management node SPU's selected by a user for a job. For
user-defined Flink jobs, the parameter value is the number of Flink job managers. For user-defined Spark
jobs, the parameter value is the number of Spark drivers.
String jobType = "jobType_example"; // String | Job type. Value flink_jar_job indicates a user-defined Flink
job, and value spark_streaming_jar_job indicates a user-defined Spark Streaming job.
Integer spuNumber = 56; // Integer | Number of SPU's selected by a user for a job. You need to set this
parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job.
Integer parallelNumber = 56; // Integer | Number of parallel tasks selected by a user for a job. You need to
set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark
job.
Integer executorNumber = 56; // Integer | Number of executors selected by a user for a Spark job. You need
to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined
Flink job.
Integer executorSpu = 56; // Integer | Number of SPU's for each executor of a Spark job. You need to set this
parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job.
Boolean logEnabled = true; // Boolean | Whether to enable the job log function. Value true indicates that
the job log function is enabled, and value false indicates that the job log function is disabled.
String obsBucket = "obsBucket_example"; // String | OBS path where users are authorized to save the
snapshot. This parameter is valid only when log_enabled is set to true.
String smnTopic = "smnTopic_example"; // String | Whether CS pushes alarm information to the SMN topic
if a job fails to work.
File jar = new File("/path/to/file.txt"); // File | JAR file uploaded by the user. This parameter has a higher
priority than the jar_url parameter.
String jarUrl = "jarUrl_example"; // String | OBS path of the JAR package uploaded by the user.
File config = new File("/path/to/file.txt"); // File | Configuration file uploaded by the user. This parameter
has a higher priority than the config_url parameter.
String configUrl = "configUrl_example"; // String | OBS path of the config package uploaded by the user.
String mainClass = "mainClass_example"; // String | Job main class.
String args = "args_example"; // String | Job main class arguments.
try {
    JobStatusResponse result = apiInstance.submitJarJob(xProjectId, name, desc, clusterId, managerSpu,
jobType, spuNumber, parallelNumber, executorNumber, executorSpu, logEnabled, obsBucket, smnTopic, jar,
jarUrl, config, configUrl, mainClass, args);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#submitJarJob");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}

```

Parameter Description

Table 6-11 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
name	Yes	String	Job name.
desc	Yes	String	Job description.
clusterId	Yes	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.

Parameter	Mandatory	Type	Description
spuNumber	No	Integer	Number of SPUs selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job. <ul style="list-style-type: none"> • Minimum value: 2 • Maximum value: 400
managerSpu	Yes	Integer	Number of management node SPUs selected by a user for a job. For user-defined Flink jobs, the parameter value is the number of Flink job managers. For user-defined Spark jobs, the parameter value is the number of Spark drivers. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 4
parallelNumber	No	Integer	Number of parallel tasks selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 2000
executorNumber	No	Integer	Number of executors selected by a user for a Spark job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 100
executorSpu	No	Integer	Number of SPUs used by each executor in a job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 4
logEnabled	No	Boolean	Whether to enable the job log function. The default value is false . <ul style="list-style-type: none"> • true: The job log function is enabled. • false: The job log function is disabled.
obsBucket	No	String	OBS path where users are authorized to save the snapshot. This parameter is used only when log_enabled is set to true .
smnTopic	No	String	SMN topic. If a job fails, the system will send a message to users who have subscribed to the SMN topic.
jar	No	File	JAR file uploaded by the user. This parameter has a higher priority than the jar_url parameter.
jarUrl	No	String	OBS path of the JAR package uploaded by the user.
config	No	File	Configuration file uploaded by the user. This parameter has a higher priority than the config_url parameter.

Parameter	Mandatory	Type	Description
configUrl	No	String	OBS path of the config package uploaded by the user.
jobType	Yes	String	Job type. <ul style="list-style-type: none"> • flink_jar_job: user-defined Flink job • spark_streaming_jar_job: user-defined Spark Streaming job
mainClass	No	String	Job main class.
args	No	String	Job main class arguments.
restartWhenException	No	Boolean	Whether to enable restart upon exception. The default value is false .
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.

Table 6-12 Parameters involved in **JobStatusResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	JobStatusInfo	For details about parameter types, see Table 6-13 .

Table 6-13 Parameters involved in **JobStatusInfo**

Parameter	Mandatory	Type	Description
jobId	No	Long	Job ID.
statusName	No	String	Status name.
statusDesc	No	String	Status description.

6.1.7 Updating a SQL Job

Sample Code

You can use the API to update Stream SQL jobs. The Stream SQL syntax is developed based on Apache Flink SQL. For details, see the [Cloud Stream Service SQL Syntax Reference](#). Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
UpdateSqlJobRequest body = new UpdateSqlJobRequest(); // UpdateSqlJobRequest | Submit a request for
modifying the SQL job.
try {
    JobUpdateResponse result = apiInstance.updateSqlJob(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#updateSqlJob");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-14 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	-	This parameter is used to submit a request for modifying the SQL job. For details about parameter types, see Table 6-15 .

Table 6-15 Parameters involved in UpdateSqlJobRequest

Parameter	Mandatory	Type	Description
jobId	Yes	Integer	Job ID.
name	No	String	Job name.
desc	No	String	Job description.
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.
sqlBody	No	String	Stream SQL statement, which includes at least the following three parts: source, query, and sink.

Parameter	Mandatory	Type	Description
runMode	No	RunModeEnum	Job running mode. The options are as follows: <ul style="list-style-type: none"> ● shared_cluster: A job is running on a shared cluster. ● exclusive_cluster: A job is running on an exclusive cluster. ● edge_node: A job is running on an edge node.
spuNumber	No	Integer	Number of SPUs selected for a job. <ul style="list-style-type: none"> ● Minimum value: 2 ● Maximum value: 400 ● Default value: 5
parallelNumber	No	Integer	Number of parallel jobs set by a user. <ul style="list-style-type: none"> ● Minimum value: 1 ● Maximum value: 2000 ● Default value: 1
checkpointEnabled	No	Boolean	Whether to enable the automatic job snapshot function. The default value is true . <ul style="list-style-type: none"> ● true: The job log function is enabled. ● false: The job log function is disabled.
checkpointMode	No	String	Snapshot mode. The following two options are available: <ul style="list-style-type: none"> ● exactly_once ● at_least_once
checkpointInterval	No	Integer	Snapshot interval, expressed by seconds. The default value is 10 .
obsBucket	No	String	OBS path where users are authorized to save the snapshot. This parameter is valid only when checkpoint_enabled is set to true .
logEnabled	No	Boolean	Whether to enable the function of uploading job logs to users' OBS buckets. The default value is false .
smnTopic	No	String	SMN topic. If a job fails, the system will send a message to users who have subscribed to the SMN topic.
restartWhenException	No	Boolean	Whether to enable the function of restart upon exceptions. The default value is false .
idleStateRetention	No	Integer	Maximum retention duration for the idle state, which defines for how long the state of a key is retained without being updated before it is removed. The parameter value is expressed by seconds. The default value is 3600 .

Parameter	Mandatory	Type	Description
edgeGroupIds	No	String	List of edge computing group IDs that are separated by commas (,).
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.
udfJarUrl	No	String	OBS address where the SQL job UDF JAR file is stored.
dirtyDataStrategy	No	String	Dirty data policy of a job. <ul style="list-style-type: none"> • 2:obs-wan-wulan3/jobs: Save. • 1: Trigger a job exception. • 0: Ignore.

Table 6-16 Parameters involved in **JobUpdateResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-20 .

Table 6-17 Parameters involved in **JobUpdateTime**

Parameter	Mandatory	Type	Description
updateTime	No	Integer	Job update time, expressed by milliseconds.

6.1.8 Updating a User-Defined Job

Sample Code

You can use the API to update user-defined jobs, which currently support the JAR format and run in exclusive clusters. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;
```

```

JobApi apiInstance = new JobApi(apiClient); //apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
Integer managerSpu = 56; // Integer | Number of management node SPUs selected by a user for a job. For user-defined Flink jobs, the parameter value is the number of Flink job managers. For user-defined Spark jobs, the parameter value is the number of Spark drivers.
String name = "name_example"; // String | Job name.
String desc = "desc_example"; // String | Job description.
Integer clusterId = 56; // Integer | Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.
Integer spuNumber = 56; // Integer | Number of SPUs selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job.
Integer parallelNumber = 56; // Integer | Number of parallel tasks selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job.
Integer executorNumber = 56; // Integer | Number of executors selected by a user for a Spark job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job.
Integer executorSpu = 56; // Integer | Number of SPUs for each executor of a Spark job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job.
Boolean logEnabled = true; // Boolean | Whether to enable the job log function. Value true indicates that the job log function is enabled, and value false indicates that the job log function is disabled.
String obsBucket = "obsBucket_example"; // String | OBS path where users are authorized to save the snapshot. This parameter is valid only when log_enabled is set to true.
String smnTopic = "smnTopic_example"; // String | Whether CS pushes alarm information to the SMN topic if a job fails to work.
File jar = new File("/path/to/file.txt"); // File | JAR file uploaded by the user. This parameter has a higher priority than the jar_url parameter.
String jarUrl = "jarUrl_example"; // String | OBS path of the JAR package uploaded by the user.
File config = new File("/path/to/file.txt"); // File | Configuration file uploaded by the user. This parameter has a higher priority than the config_url parameter.
String configUrl = "configUrl_example"; // String | OBS path of the config package uploaded by the user.
String mainClass = "mainClass_example"; // String | Job main class.
String args = "args_example"; // String | Job main class arguments.
try {
    JobUpdateResponse result = apiInstance.updateJarJob(xProjectId, jobId, managerSpu, name, desc, clusterId, spuNumber, parallelNumber, executorNumber, executorSpu, logEnabled, obsBucket, smnTopic, jar, jarUrl, config, configUrl, mainClass, args);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#updateJarJob");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
    
```

Parameter Description

Table 6-18 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.
name	No	String	Job name.
desc	No	String	Job description.

Parameter	Mandatory	Type	Description
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.
spuNumber	No	Integer	Number of SPUs selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job. <ul style="list-style-type: none"> • Minimum value: 2 • Maximum value: 400
managerSpu	Yes	Integer	Number of management node SPUs selected by a user for a job. For user-defined Flink jobs, the parameter value is the number of Flink job managers. For user-defined Spark jobs, the parameter value is the number of Spark drivers. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 4
parallelNumber	No	Integer	Number of parallel tasks selected by a user for a job. You need to set this parameter when submitting a user-defined Flink job, but not when submitting a user-defined Spark job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 2000
executorNumber	No	Integer	Number of executors selected by a user for a Spark job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 100
executorSpu	No	Integer	Number of SPUs used by each executor in a job. You need to set this parameter when submitting a user-defined Spark job, but not when submitting a user-defined Flink job. <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 4
logEnabled	No	Boolean	Whether to enable the job log function. The default value is false . <ul style="list-style-type: none"> • true: Enabled. • false: Disabled.
obsBucket	No	String	OBS path where users are authorized to save the snapshot. This parameter is used only when log_enabled is set to true .
smnTopic	No	String	SMN topic. If a job fails, the system will send a message to users who have subscribed to the SMN topic.

Parameter	Mandatory	Type	Description
jar	No	File	JAR file uploaded by the user. This parameter has a higher priority than the jar_url parameter.
jarUrl	No	String	OBS path of the JAR package uploaded by the user.
config	No	File	Configuration file uploaded by the user. This parameter has a higher priority than the config_url parameter.
configUrl	No	String	OBS path of the config package uploaded by the user.
mainClass	No	String	Job main class.
args	No	String	Job main class arguments.
restartWhenException	No	Boolean	Whether to enable restart upon exception. The default value is false .
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.

Table 6-19 Parameters involved in **JobUpdateResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-20 .

Table 6-20 Parameters involved in **JobUpdateTime**

Parameter	Mandatory	Type	Description
updateTime	No	Integer	Job update time, expressed by milliseconds.

6.1.9 Querying the Job List

Sample Code

You can use the API to query the job list. The following parameters are involved in this API: **name**, **status**, **show_detail**, **cursor**, **next**, **limit**, and **order**. In this example, the query results are displayed in descending order and information about the jobs whose IDs are less than the value of **cursor** is displayed. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient); //apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String name = "name_example"; // String | Job name.
String status = "status_example"; // String | Job status code. For details, see CS documentation.
Integer clusterId = 56; // Integer | ID of an exclusive cluster of a user.
Boolean showDetail = false; // Boolean | Whether to return job details.
Long cursor = 789L; // Long | Job ID.
Boolean next = true; // Boolean | Whether to turn to the previous or next page.
Integer limit = 20; // Integer | Number of returned data records.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or descending order.
Long rootJobId = 789L; // Long | Edge parent job ID, which is used to query sub-jobs of a specified edge job. If this parameter is not specified, all non-edge jobs and edge parent jobs, instead of edge sub-jobs, are queried.
try {
    QueryJobListResponse result = apiInstance.getJobs(xProjectId, name, status, clusterId, showDetail, cursor, next, limit, order, rootJobId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#getJobs");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-21 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
name	No	String	Job name.

Parameter	Mandatory	Type	Description
status	No	String	Job status code. The options are as follows: <ul style="list-style-type: none"> • jobInit • jobSubmitting • jobSubmitFail • jobRunning • jobRunningException • jobCanceling • jobCancelSuccess • jobCancelFail
clusterId	No	Integer	ID of an exclusive cluster.
showDetail	No	Boolean	Whether to return the job details. The default value is false .
cursor	No	String	Job ID.
next	No	Boolean	Whether to switch to the next page. The default value is true .
limit	No	Integer	Number of returned data records. The default value is 20 .
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .
rootJobId	No	Integer	Edge parent job ID, which is used to query sub-jobs of a specified edge job. If this parameter is not specified, all non-edge jobs and edge parent jobs, instead of edge sub-jobs, are queried.

Table 6-22 Parameters involved in **QueryJobListResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	QueryJobListResponsePayload	For details about parameter types, see Table 6-76 .

Table 6-23 Parameters involved in **QueryJobListResponsePayload**

Parameter	Mandatory	Type	Description
total	No	Integer	Number of records in the query result.
jobs	No	Array	For details about parameter types, see Table 6-77 .

Table 6-24 Parameters involved in **JobEntity**

Parameter	Mandatory	Type	Description
jobId	No	Long	Job ID.
name	No	String	Job name.
desc	No	String	Job description.
username	No	String	Username. This parameter is used only when show_detail is set to false .
jobType	No	String	Job type.
status	No	String	Job status.
statusDesc	No	String	Description of job status.
createTime	No	Long	Time when a job is created.
startTime	No	Long	Time when a job is enabled. 0 indicates that the job has not been enabled.
duration	No	Long	Job running duration, expressed by milliseconds. This parameter is used only when show_detail is set to false .
userId	No	String	ID of the user who creates the job. This parameter is used only when show_detail is set to true .
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster. This parameter is used only when show_detail is set to true .
projectId	No	String	ID of the project to which a job belongs. This parameter is used only when show_detail is set to true .
sqlBody	No	String	Stream SQL statement. This parameter is used only when show_detail is set to true .

Parameter	Mandatory	Type	Description
runMode	No	RunModeEnum	Job running mode. This parameter is used only when show_detail is set to true . <ul style="list-style-type: none"> • shared_cluster: A job is running on a shared cluster. • exclusive_cluster: A job is running on an exclusive cluster. • edge_node: A job is running on an edge node.
jobConfig	No	JobConfig	For details about the parameter, see Table 6-78 .
jarUrl	No	String	OBS path of the JAR package. This parameter is used only when show_detail is set to true .
mainClasses	No	String	OBS path where users are authorized to save the snapshot when checkpoint_enabled is set to true . This parameter is used only when show_detail is set to true .
args	No	String	Job running parameter of the JAR package. This parameter is used only when show_detail is set to true .
executionGraph	No	String	Job execution plan. This parameter is used only when show_detail is set to true .
updateTime	No	Long	Job update time. This parameter is used only when show_detail is set to true .

Table 6-25 Parameters involved in JobConfig

Parameter	Mandatory	Type	Description
checkpointEnabled	No	Boolean	Whether to enable the automatic job snapshot function. The default value is false . <ul style="list-style-type: none"> • true: The automatic job snapshot function is enabled. • false: The automatic job snapshot function is disabled.
checkpointMode	No	String	Snapshot mode. The following two options are available: exactly_once and at_least_once .
checkpointInterval	No	Integer	Snapshot interval, expressed by seconds.
logEnabled	No	Boolean	Whether to enable the log storage function.
obsBucket	No	String	Name of an OBS bucket.
smnTopic	No	String	SMN topic name.
rootId	No	Integer	Parent job ID.

Parameter	Mandatory	Type	Description
edgeGroupIds	No	String	List of edge computing group IDs that are separated by commas (,).
managerSpu	No	Integer	Number of SPUs of the management unit.
spuNumber	No	Integer	Number of SPUs selected by a user for a job. This parameter is used only when show_detail is set to true .
parallelNumber	No	Integer	Number of parallel jobs set by a user. This parameter is unique when show_detail is set to true .

6.1.10 Viewing Job Details

Sample Code

You can use the API to view details of a job. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
try {
    GetJobDetailResponse result = apiInstance.getJobDetail(xProjectId, jobId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#getJobDetail");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-26 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.

Table 6-27 Parameters involved in **GetJobDetailResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-28 .

Table 6-28 Parameters involved in **JobDetailEntity**

Parameter	Mandatory	Type	Description
jobId	No	Integer	Job ID.
name	No	String	Job name.
desc	No	String	Job description.
jobType	No	String	Job type.
status	No	String	Job status.
statusDesc	No	String	Description of job status.
createTime	No	Integer	Time when a job is created.
startTime	No	Integer	Time when a job is started. 0 indicates that a job has not been started.
userId	No	String	ID of the user who creates the job.
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster.
projectId	No	String	ID of the project to which a job belongs.
sqlBody	No	String	Stream SQL statement.
runMode	No	String	Job running mode. The options are as follows: <ul style="list-style-type: none"> • sharedCluster: A job is running on a shared cluster. • exclusiveCluster: A job is running on an exclusive cluster. • edgeNode: A job is running on an edge node.
jobConfig	No	-	Job configuration. This parameter is available only when showDetail is set to true in section Querying the List of Jobs Running in an Exclusive Cluster . For details about parameter types, see Table 6-29 .

Parameter	Mandatory	Type	Description
jarUrl	No	String	OBS path of the JAR package.
mainClass	No	String	OBS path where users are authorized to save the snapshot. This parameter is valid only when checkpoint_enabled is set to true .
args	No	String	Job running parameter of the JAR package.
executionGraph	No	String	Job execution plan.
updateTime	No	Long	Time when a job is updated.

Table 6-29 Parameters involved in JobConfig

Parameter	Mandatory	Type	Description
checkpointEnabled	No	Boolean	Whether to enable the automatic job snapshot function. The default value is false . <ul style="list-style-type: none"> • true: The automatic job snapshot function is enabled. • false: The automatic job snapshot function is disabled.
checkpointMode	No	String	Snapshot mode. The following two options are available: exactly_once and at_least_once .
checkpointInterval	No	Integer	Snapshot interval, expressed by seconds.
logEnabled	No	Boolean	Whether to enable the log storage function.
obsBucket	No	String	Name of an OBS bucket.
smnTopic	No	String	SMN topic name.
rootId	No	Integer	Parent job ID.
edgeGroupIds	No	String	List of edge computing group IDs that are separated by commas (,).
managerSpu	No	Integer	Number of SPUs of the management unit.
spuNumber	No	Integer	Number of SPUs selected for a job. This parameter is available only when showDetail is set to true in section Querying the List of Jobs Running in an Exclusive Cluster . <ul style="list-style-type: none"> • Minimum value: 2 • Maximum value: 400

Parameter	Mandatory	Type	Description
parallelNumber	No	Integer	<p>Number of parallel jobs set by a user. This parameter is available only when showDetail is set to true in section Querying the List of Jobs Running in an Exclusive Cluster.</p> <ul style="list-style-type: none"> • Minimum value: 1 • Maximum value: 2000

6.1.11 Querying the Job Execution Plan Diagram

Sample Code

You can use the API to query the job execution plan diagram. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
try {
    JobExecutePlanResponse result = apiInstance.getJobExecuteGraph(xProjectId, jobId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#getJobExecuteGraph");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-30 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.

Table 6-31 Parameters involved in **JobExecutePlanResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.

Parameter	Mandatory	Type	Description
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-32 .

Table 6-32 Parameters involved in **JobExecutePlan**

Parameter	Type	Description
executePlanItems	String	Items to be executed. For example, [{"key":"value"}].

6.1.12 Querying Job Audit Logs

Sample Code

You can use the API to query job audit logs. Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.LogApi;

LogApi apiInstance = new LogApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String resourceType = "resourceType_example"; // String | Resource type, including job, template, and cluster.
String cursor = "cursor_example"; // String | Job ID, template ID, or cluster ID.
String resourceId = "resourceId_example"; // String | Resource ID.
Integer pageNumber = 0; // Integer | Queried page.
Integer limit = 10; // Integer | Maximum number of records to be displayed.
try {
    AuditLogResponse result = apiInstance.getAuditLogs(xProjectId, resourceType, cursor, resourceId,
pageNumber, limit);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling LogApi#getAuditLogs");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-33 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.

Parameter	Mandatory	Type	Description
resourceType	Yes	String	Resource type. The parameter value can be job , template , and cluster .
cursor	No	String	Event ID. If cursor is specified, the request parameter page_number is invalid.
resourceId	No	String	Resource ID.
pageNumber	No	Integer	Page number that is queried. The default value is 0 .
limit	No	Integer	Maximum number of records that can be queried. The default value is 10 .

Table 6-34 Parameters involved in **AuditLogResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-35 .

Table 6-35 Parameters involved in **AuditLogResponsePayload**

Parameter	Mandatory	Type	Description
total	No	Integer	Number audit log records in the query result.
traces	No	List<Audit Log>	For details about parameter types, see Table 6-36 .

Table 6-36 Parameters involved in **AuditLog**

Parameter	Mandatory	Type	Description
resourceId	No	String	Resource ID.
resourceName	No	String	Resource name.

Parameter	Mandatory	Type	Description
eventName	No	String	Event name.
eventType	No	String	Source type of an event. <ul style="list-style-type: none">• ConsoleAction• ApiCall• SystemAction
eventRating	No	String	Event level. Values include the following: <ul style="list-style-type: none">• normal• warning• incident
opUser	No	String	Information about the tenant that initiates the request.
opTime	No	Integer	Timestamp of the sent event.
opIp	No	String	IP address of the tenant that initiates the request.
opResult	No	String	Event response content.

6.1.13 Querying Job Monitoring Information

Sample Code

You can use the API to query job monitoring information. Monitoring information about multiple jobs can be queried at the same time. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.MetricApi;

MetricApi apiInstance = new MetricApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Body3 body = new Body3(); // Body3 | Query job monitoring information. Monitoring information about
multiple jobs can be queried at the same time. Request parameters are in the JSON format.
List<Integer> jobIds = new ArrayList<Integer>();
Integer jobId = 49717; // ID of the monitored job.
jobIds.add(jobId);
body.setJobIds(jobIds);
try {
    QueryJobMetricsResponse result = apiInstance.getJobsMetrics(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling MetricApi#getJobsMetrics");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-37 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	List<Integer>	Monitoring information to be queried. Multiple job monitoring tasks can be queried at the same time. Request parameters are in the JSON format.

Table 6-38 Parameters involved in `QueryJobMetricsResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-39 .

Table 6-39 Parameters involved in `JobMetric`

Parameter	Mandatory	Type	Description
jobId	No	Integer	Job ID.
metrics	No	-	For details about parameter types, see Table 6-40 .

Table 6-40 Parameters involved in `JobMetricDetail`

Parameter	Mandatory	Type	Description
sources	No	-	For details about parameter types, see Table 6-41 .
sinks	No	-	
totalReadRate	No	Double	Total read rate. Unit: records per second
totalWriteRate	No	Double	Total write rate. Unit: records per second

Table 6-41 Parameters involved in **OperatorMetric**

Parameter	Mandatory	Type	Description
name	No	String	Name of an operator.
records	No	Integer	Number of records.
corruptedRecords	No	Integer	Number of dirty data records.

6.1.14 Querying the APIG Address of a Job

Sample Code

You can use the API to query the APIG access address of a job. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
try {
    JobApiSinksResponse result = apiInstance.getApiSinks(xProjectId, jobId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#getApiSinks");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-42 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.

Table 6-43 Parameters involved in **JobApiSinksResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.

Parameter	Mandatory	Type	Description
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-44 .

Table 6-44 Parameters involved in **JobApigSinks**

Parameter	Mandatory	Type	Description
sinks	No	List<JobApigSinkEntity>	For details about parameter types, see Table 6-45 .
metadata	No	List<JobMetaDataEntity>	For details about parameter types, see Table 6-46 .

Table 6-45 Parameters involved in **JobApigSinkEntity**

Parameter	Mandatory	Type	Description
appId	No	String	ID of the application created on the APIG management console.
sinkName	No	String	Name of a sink stream.
url	No	String	Address of the API created for accessing APIG.

Table 6-46 Parameters involved in **JobMetaDataEntity**

Parameter	Mandatory	Type	Description
name	No	String	Name of a sink stream.
encode	No	String	Format of the sink stream data.
delimiter	No	String	Delimiter of the sink stream data.
attrs	No	List<JobMetaDataAttrEntity>	Name and type of each field in the sink stream. For details about parameter types, see Table 6-47 .

Table 6-47 Parameters involved in **JobMetaDataAttrEntity**

Parameter	Mandatory	Type	Description
name	No	String	Field name.
type	No	String	Field type

6.1.15 Collecting Summary Statistics

Sample Code

You can use the API to collect summary statistics on users' jobs and prices. Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.StatisticsApi;

StatisticsApi apiInstance = new StatisticsApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
try {
    OverviewResponse result = apiInstance.overview(xProjectId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling StatisticsApi#overview");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-48 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.

Table 6-49 Parameters involved in **OverviewResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	OverviewEntity	For details about parameter types, see Table 6-50 .

Table 6-50 Parameters involved in **OverviewEntity**

Parameter	Mandatory	Type	Description
totalCost	No	Double	Total price.
jobOverview	No	JobOverviewEntity	For details about parameter types, see Table 6-51 .
clusterOverview	No	ClusterOverviewEntity	For details about parameter types, see Table 6-52 .

Table 6-51 Parameters involved in **JobOverviewEntity**

Parameter	Mandatory	Type	Description
totalJobs	No	Integer	Total number of jobs.
runningJobsCount	No	Integer	Number of running jobs.
finishedJobCount	No	Integer	Number of completed jobs.
exceptionJobCount	No	Integer	Number of jobs experiencing exceptions.
otherJobCount	No	Integer	Number of jobs in other status.
runningJobCharge	No	Double	Total price charged for running jobs.
runningJobPrice	No	Double	Sum of prices per hour charged for all running jobs.
runningJobTotalSpu	No	Integer	Total number of SPUs consumed by running jobs.
runningJobTotalTime	No	Double	Total running duration of running jobs.
billingUnit	No	String	Settlement currency. Possible values are: <ul style="list-style-type: none"> • CNY • HKD • EUR • DEM • USD
timeUnit	No	String	Time unit. The value is HOUR .

Table 6-52 Parameters involved in **ClusterOverviewEntity**

Parameter	Mandatory	Type	Description
totalClusters	No	Integer	Total number of clusters.
runningClusterCount	No	Integer	Total number of running clusters.
exceptionClusterCount	No	Integer	Total number of completed clusters.
otherClusterCount	No	Integer	Total number of abnormal clusters.
runningClusterCharge	No	Double	Total price charged for running clusters.
runningClusterPrice	No	Double	Sum of prices per hour charged for all running clusters.
runningClusterTotalSpu	No	Integer	Total number of SPUs consumed by running clusters.
runningClusterTotalTime	No	Double	Total running duration of running clusters.
billingUnit	No	String	Settlement currency. Possible values are: <ul style="list-style-type: none"> • CNY • HKD • EUR • DEM • USD
timeUnit	No	String	Time unit. The value is HOURLY .

6.1.16 Running a Job

Sample Code

You can use the API to run jobs. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
Boolean resumeSavePoint = false; // Boolean |
try {
    GlobalResponse result = apiInstance.runJob(xProjectId, jobId, resumeSavePoint);
    System.out.println(result);
} catch (ApiException e) {
```

```

System.err.println("Exception when calling JobApi#runJob");
System.err.println(e.getResponseBody());
e.printStackTrace();
}

```

Parameter Description

Table 6-53 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.
resumeSavePoint	No	Boolean	Whether to restore a job from the latest savepoint. <ul style="list-style-type: none"> If this parameter is set to true, the job is restored from the latest savepoint. If this parameter is set to false, the job is started normally, not from a specific savepoint. The default value is false.

Table 6-54 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.1.17 Stopping a Job

Sample Code

You can use the API to stop a running job. Sample code is as follows:

```

// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
Boolean triggerSavePoint = false; // Boolean |
try {
    GlobalResponse result = apiInstance.stopJob(xProjectId, jobId, triggerSavePoint);
    System.out.println(result);
} catch (ApiException e) {

```

```
System.err.println("Exception when calling JobApi#stopJob");
System.err.println(e.getResponseBody());
e.printStackTrace();
}
```

Parameter Description

Table 6-55 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.
triggerSavePoint	No	Boolean	Whether to create a savepoint for a job to store the job status information before stopping it. <ul style="list-style-type: none"> If this parameter is set to true, a savepoint is created. If this parameter is set to false, no savepoint is created. The default value is false.

Table 6-56 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.1.18 Deleting a Job

Sample Code

You can use the API to delete a job in any status. Sample code is as follows:

```
//Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.JobApi;

JobApi apiInstance = new JobApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long jobId = 789L; // Long | Job ID.
try {
    GlobalResponse result = apiInstance.deleteJob(xProjectId, jobId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling JobApi#deleteJob");
    System.err.println(e.getResponseBody());
}
```

```
e.printStackTrace();
}
```

Parameter Description

Table 6-57 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
jobId	Yes	Integer	Job ID.

Table 6-58 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2 Cluster Management

6.2.1 Creating an Exclusive Cluster

Sample Code

You can use the API to create an exclusive cluster for CS users with the **cs_admin** role. The exclusive cluster is converted to stream processing units (SPUs) for on-demand charging. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
NewReservedClusterRequest body = new NewReservedClusterRequest(); // NewReservedClusterRequest |
Create an exclusive cluster, for which the request parameters are in JSON format.
try {
    CreateClusterResponse result = apiInstance.createReservedCluster(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#createReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-59 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	NewReservedClusterRequest	Create an exclusive cluster, for which the request parameters are in JSON format. For details about parameter types, see Table 6-60 .

Table 6-60 Parameters involved in **NewReservedClusterRequest**

Parameter	Mandatory	Type	Description
name	Yes	String	Cluster name.
desc	No	String	Cluster description.
maximumSpuQuota	No	Integer	Maximum SPU quota of a cluster.
vpcCidr	No	String	VPC CIDR block.
subnetCidr	No	String	Subnet CIDR block.
subnetGateway	No	String	Subnet gateway.
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.
managerNodeSpec	No	String	SPU specifications of management nodes.

Table 6-61 Parameters involved in **CreateClusterResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	Integer	Cluster ID.

6.2.2 Querying Information About Exclusive Clusters

Sample Code

You can use the API to query information about created exclusive clusters. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
try {
    QueryClusterResponse result = apiInstance.describeReservedCluster(xProjectId, clusterId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#describeReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-62 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.

Table 6-63 Parameters involved in `QueryClusterResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	ClusterInfo	For details about parameter types, see Table 6-64 .

Table 6-64 Parameters involved in ClusterInfo

Parameter	Mandatory	Type	Description
clusterId	No	Integer	Cluster ID.
name	No	String	Cluster name.
desc	No	String	Cluster description.
statusCode	No	Integer	Current status code of a cluster.
statusName	No	String	Current status name of a cluster.
statusDesc	No	String	Current status description of a cluster.
regionId	No	String	Region where a cluster is currently located.
spuUsed	No	Integer	SPU quota used by a cluster.
maximumSpuQuota	No	Integer	Maximum SPU quota of a cluster.
errorReason	No	String	Cause of the error that results in cluster status exceptions.
createdAt	No	Long	Time when a cluster is created.

6.2.3 Deleting an Exclusive Cluster

Sample Code

You can use the API provided CS to delete an exclusive cluster. If there are jobs running in the exclusive cluster to be deleted, jobs will stop automatically and immediately. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient); // apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
try {
    GlobalResponse result = apiInstance.deleteReservedCluster(xProjectId, clusterId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#deleteReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-65 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.

Table 6-66 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2.4 Updating an Exclusive Cluster

Sample Code

You can use the API to update exclusive clusters created by a user. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
UpdateClusterRequest body = new UpdateClusterRequest(); // UpdateClusterRequest | Submit a request for
modifying a cluster.
try {
    GlobalResponse result = apiInstance.updateReservedCluster(xProjectId, clusterId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#updateReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-67 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
body	Yes	UpdateClusterRequest	This parameter is used to submit the request for modifying an exclusive cluster. For details about parameter types, see Table 6-68 .

Table 6-68 Parameters involved in **UpdateClusterRequest**

Parameter	Mandatory	Type	Description
name	No	String	Cluster name.
desc	No	String	Cluster description.
maximumSpuQuota	No	Integer	Maximum SPU quota of a cluster.
tags	No	String	Job tag.
sysEnterpriseProjectId	No	String	ID of the enterprise project to which a job belongs.
managerNodeSpu	No	String	SPU specifications of management nodes.

Table 6-69 Parameters involved in **GlobalResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2.5 Terminating an Exclusive Cluster

Sample Code

You can use the API to terminate running exclusive clusters. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
try {
    StopReservedClusterResponse result = apiInstance.stopReservedCluster(xProjectId, clusterId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#stopReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-70 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.

Table 6-71 Parameters involved in **StopReservedClusterResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2.6 Restarting an Exclusive Cluster

Sample Code

You can use the API to restart an exclusive cluster. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
```

```
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
System.err.println(e.getResponseBody());
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
try {
    RestartReservedClusterResponse result = apiInstance.restartReservedCluster(xProjectId, clusterId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#restartReservedCluster");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-72 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.

Table 6-73 Parameters involved in **RestartReservedClusterResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2.7 Querying the List of Jobs Running in an Exclusive Cluster

Sample Code

You can use the API to query the list of jobs running in an exclusive cluster. Sample code is as follows: In this example, the query results are displayed in descending order and information about the jobs whose IDs are less than the value of **cursor** is displayed. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
```

```
String name = "name_example"; // String | Job name.
String status = "status_example"; // String | Job status code. For details, see CS documentation.
Boolean showDetail = false; // Boolean | Whether to return job details.
Long cursor = 789L; // Long | Job ID.
Boolean next = true; // Boolean | Whether to turn to the previous or next page.
Integer limit = 20; // Integer | Number of returned data records.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or
descending order.
try {
    QueryJobListResponse result = apiInstance.getClusterJobs(xProjectId, clusterId, name, status, showDetail,
cursor, next, limit, order);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getClusterJobs");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-74 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
name	No	String	Job name.
status	No	String	Job status code. Possible values are: <ul style="list-style-type: none"> • job_init • job_submitting • job_submit_fail • job_running • job_running_exception • job_canceling • job_cancel_success • job_cancel_fail
showDetail	No	Boolean	Whether to return the job details. The default value is false .
cursor	No	Long	Job ID.
next	No	Boolean	Whether to switch to the next page. The default value is true .
limit	No	Integer	Number of returned data records. The default value is 20 .

Parameter	Mandatory	Type	Description
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .

Table 6-75 Parameters involved in **QueryJobListResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	QueryJobListResponsePayload	For details about parameter types, see Table 6-76 .

Table 6-76 Parameters involved in **QueryJobListResponsePayload**

Parameter	Mandatory	Type	Description
total	No	Integer	Number of records in the query result.
jobs	No	Array	For details about parameter types, see Table 6-77 .

Table 6-77 Parameters involved in **JobEntity**

Parameter	Mandatory	Type	Description
jobId	No	Long	Job ID.
name	No	String	Job name.
desc	No	String	Job description.
username	No	String	Username. This parameter is used only when show_detail is set to false .
jobType	No	String	Job type.
status	No	String	Job status.

Parameter	Mandatory	Type	Description
statusDesc	No	String	Description of job status.
createTime	No	Long	Time when a job is created.
startTime	No	Long	Time when a job is enabled. 0 indicates that the job has not been enabled.
duration	No	Long	Job running duration, expressed by milliseconds. This parameter is used only when show_detail is set to false .
userId	No	String	ID of the user who creates the job. This parameter is used only when show_detail is set to true .
clusterId	No	Integer	Resource ID of an exclusive cluster. Ensure that the current user has been authorized to use resources of the exclusive cluster. This parameter is used only when show_detail is set to true .
projectId	No	String	ID of the project to which a job belongs. This parameter is used only when show_detail is set to true .
sqlBody	No	String	Stream SQL statement. This parameter is used only when show_detail is set to true .
runMode	No	RunModeEnum	Job running mode. This parameter is used only when show_detail is set to true . <ul style="list-style-type: none"> • shared_cluster: A job is running on a shared cluster. • exclusive_cluster: A job is running on an exclusive cluster. • edge_node: A job is running on an edge node.
jobConfig	No	JobConfig	For details about the parameter, see Table 6-78 .
jarUrl	No	String	OBS path of the JAR package. This parameter is used only when show_detail is set to true .
mainClasses	No	String	OBS path where users are authorized to save the snapshot when checkpoint_enabled is set to true . This parameter is used only when show_detail is set to true .
args	No	String	Job running parameter of the JAR package. This parameter is used only when show_detail is set to true .
executionGraph	No	String	Job execution plan. This parameter is used only when show_detail is set to true .
updateTime	No	Long	Job update time. This parameter is used only when show_detail is set to true .

Table 6-78 Parameters involved in JobConfig

Parameter	Mandatory	Type	Description
checkpointEnabled	No	Boolean	Whether to enable the automatic job snapshot function. The default value is false . <ul style="list-style-type: none"> true: The automatic job snapshot function is enabled. false: The automatic job snapshot function is disabled.
checkpointMode	No	String	Snapshot mode. The following two options are available: exactly_once and at_least_once .
checkpointInterval	No	Integer	Snapshot interval, expressed by seconds.
logEnabled	No	Boolean	Whether to enable the log storage function.
obsBucket	No	String	Name of an OBS bucket.
smnTopic	No	String	SMN topic name.
rootId	No	Integer	Parent job ID.
edgeGroupIds	No	String	List of edge computing group IDs that are separated by commas (,).
managerSpu	No	Integer	Number of SPUs of the management unit.
spuNumber	No	Integer	Number of SPUs selected by a user for a job. This parameter is used only when show_detail is set to true .
parallelNumber	No	Integer	Number of parallel jobs set by a user. This parameter is unique when show_detail is set to true .

6.2.8 Querying the Cluster List of a Tenant

Sample Code

You can use the API to the list of clusters of a tenant. The following parameters are involved in this API: **name**, **status**, **cursor**, **next**, **limit**, and **order**. In this example, the query results are displayed in descending order and information about the clusters whose IDs are less than the value of **cursor** is displayed. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient); //apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String name = "name_example"; // String | Cluster name.
```

```
String status = "status_example"; // String | Cluster status code. For details, see CS documentation.
Long cursor = 789L; // Long | Cluster ID.
Boolean next = true; // Boolean | Whether to turn to the previous or next page.
Integer limit = 10; // Integer | Number of returned data records.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or
descending order.
try {
    QueryClustersResponse result = apiInstance.getReservedClusters(xProjectId, name, status, cursor, next,
limit, order);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getReservedClusters");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-79 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
name	No	String	Cluster name.
status	No	String	Indicates the status code of a cluster. Possible values are: <ul style="list-style-type: none"> • cluster_creating • cluster_create_fail • cluster_create_success • cluster_starting • cluster_running • cluster_deleting • cluster_delete_fail
cursor	No	Integer	Cluster ID.
next	No	Boolean	Whether to switch to the previous or next page. The default value is true .
limit	No	Integer	Number of returned data records. The default value is 10 .
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .

Table 6-80 Parameters involved in **QueryClustersResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	Integer	Number of records in the query result.
clusters	No	Array	For details about parameter types, see Table 6-81 .

Table 6-81 Parameters involved in **ClusterInfo**

Parameter	Mandatory	Type	Description
clusterId	No	Integer	Cluster ID.
name	No	String	Cluster name.
desc	No	String	Cluster description.
statusCode	No	Integer	Current status code of a cluster.
statusName	No	String	Current status name of a cluster.
statusDesc	No	String	Current status description of a cluster.
regionId	No	String	Region where a cluster is currently located.
spuUsed	No	Integer	SPU quota used by a cluster.
maximumSpuQuota	No	Integer	Maximum SPU quota of a cluster.
errorReason	No	String	Cause of the error that results in cluster status exceptions.
createdAt	No	Long	Time when a cluster is created.

6.2.9 Querying Quota Information About a Specified User

Sample Code

You can use the API to query quota information about a specified user. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
```

```
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String userId = "userId_example"; // String | User ID
try {
    QueryUserQuotaResponse result = apiInstance.getUserQuota(xProjectId, userId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getUserQuota");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-82 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
userId	Yes	String	User ID.

Table 6-83 Parameters involved in `QueryUserQuotaResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-84 .

Table 6-84 Parameters involved in `UserQuotaInfo`

Parameter	Mandatory	Type	Description
userId	No	String	User ID.
userName	No	String	Username.
spuUsed	No	Integer	SPU quota used by a user.
spuQuota	No	Integer	Maximum SPU quota of a user.

Parameter	Mandatory	Type	Description
clusters	No	Array	List of clusters that users can use. For details about parameter types, see Table 6-85 .

Table 6-85 Parameters involved in **UserCluster**

Parameter	Mandatory	Type	Description
id	No	Integer	Cluster ID.
name	No	String	Cluster name.

6.2.10 Updating Quota Information About a Specified User

Sample Code

You can use the API to update quota information about a specified user. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String userId = "userId_example"; // String | User ID
UpdateUserQuotaRequest body = new UpdateUserQuotaRequest(); // UpdateUserQuotaRequest | Request
body in the JSON format.
try {
    GlobalResponse result = apiInstance.updateUserQuota(xProjectId, userId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#updateUserQuota");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-86 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
userId	Yes	String	User ID.

Parameter	Mandatory	Type	Description
body	Yes	-	Request body in the JSON format. For details about parameter types, see Table 6-87 .

Table 6-87 Parameters involved in `UpdateUserQuotaResponse`

Parameter	Mandatory	Type	Description
spuQuota	No	Integer	Maximum SPU quota of a user.
clusters	No	List<Integer>	List of cluster IDs allocated to a user.

Table 6-88 Parameters involved in `GlobalResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.

6.2.11 Obtaining User Quota Information About a Tenant

Sample Code

You can use the API to query user quota information about a tenant. The following parameters are involved in this API: **name**, **order**, **cursor**, **next**, and **limit**. In this example, the query results are displayed in descending order and information about quotas of the users whose IDs are less than the value of **cursor** is displayed. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
String name = "name_example"; // String | Username.
String cursor = "cursor_example"; // String | User ID.
Boolean next = true; // Boolean | Whether to turn to the previous or next page.
Integer limit = 20; // Integer | Number of returned data records.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or descending order.
try {
    QueryUserQuotasResponse result = apiInstance.getUserQuotas(xProjectId, name, cursor, next, limit,
```

```

order);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getUserQuotas");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}

```

Parameter Description

Table 6-89 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
name	No	String	Username.
cursor	No	String	User ID cursor.
next	No	Boolean	Whether to switch to the previous or next page. The default value is true .
limit	No	Integer	Number of returned data records. The default value is 20 .
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .

Table 6-90 Parameters involved in `QueryUserQuotasResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	Integer	Number of user quota query results.
users	No	-	For details, see Table 6-91 .

Table 6-91 Parameters involved in **UserQuotaInfo**

Parameter	Mandatory	Type	Description
userId	No	String	User ID.
userName	No	String	Username.
spuUsed	No	Integer	SPU quota used by a user.
spuQuota	No	Integer	Maximum SPU quota of a user.
clusters	No	Array	List of clusters that users can use. For details about parameter types, see Table 6-85 .

Table 6-92 Parameters involved in **UserCluster**

Parameter	Mandatory	Type	Description
id	No	Integer	Cluster ID.
name	No	String	Cluster name.

6.2.12 Creating a VPC Peering Connection

Sample Code

You can use the API to create a VPC peering connection. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
CreatePeeringRequest body = new CreatePeeringRequest(); // CreatePeeringRequest | Create a VPC peering
connection with request parameters being in the JSON format.
try {
    CreatePeeringResponse result = apiInstance.createPeering(xProjectId, clusterId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#createPeering");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-93 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
ClusterId	Yes	Integer	User ID.
body	Yes	-	Whether to create a VPC peering connection with request parameters being in the JSON format. For details about parameter types, see Table 6-94 .

Table 6-94 Parameters involved in `CreatePeeringRequest`

Parameter	Mandatory	Type	Description
vpclId	No	String	ID of a VPC.
name	No	String	Name of a VPC.
acceptTenantId	No	String	ID of the tenant to which the peer VPC belongs.

Table 6-95 Parameters involved in `CreatePeeringResponse`

Parameter	Mandatory	Type	Description
peering	No	-	VPC peering connection information. For details about parameter types, see Table 6-96 .

Table 6-96 Parameters involved in `Peering`

Parameter	Mandatory	Type	Description
name	No	String	Name of a VPC peering connection.
id	No	String	ID of a VPC peering connection.
requestVpcInfo	No	-	Information about the local VPC. For details, see Table 6-97 .
acceptVpcInfo	No	-	Information about the peer VPC. For details, see Table 6-97 .

Parameter	Mandatory	Type	Description
status	No	String	Status of a VPC peering connection.

Table 6-97 Parameters involved in VpcInfo

Parameter	Mandatory	Type	Description
vpclId	No	String	ID of a VPC peering connection.
tenantId	No	String	Tenant ID.

6.2.13 Querying a VPC Peering Connection

Sample Code

You can use the API to query a VPC peering connection. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
String peeringId = "peeringId_example"; // String |
try {
    CreatePeeringResponse result = apiInstance.getPeering(xProjectId, clusterId, peeringId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getPeering");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-98 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
peeringId	Yes	String	ID of a VPC peering connection.

Table 6-99 Parameters involved in **CreatePeeringResponse**

Parameter	Mandatory	Type	Description
peering	No	-	VPC peering connection information. For details about parameter types, see Table 6-96 .

Table 6-100 Parameters involved in **Peering**

Parameter	Mandatory	Type	Description
name	No	String	Name of a VPC peering connection.
id	No	String	ID of a VPC peering connection.
requestVpcInfo	No	-	Information about the local VPC. For details, see Table 6-97 .
acceptVpcInfo	No	-	Information about the peer VPC. For details, see Table 6-97 .
status	No	String	Status of a VPC peering connection.

Table 6-101 Parameters involved in **VpcInfo**

Parameter	Mandatory	Type	Description
vpcId	No	String	ID of a VPC peering connection.
tenantId	No	String	Tenant ID.

6.2.14 Querying the List of VPC Peering Connections

Sample Code

You can use the API to query the list of VPC peering connections. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
try {
    GetPeeringsResponse result = apiInstance.getPeerings(xProjectId, clusterId);
    System.out.println(result);
} catch (ApiException e) {
```

```

System.err.println("Exception when calling ClusterApi#getPeerings");
System.err.println(e.getResponseBody());
e.printStackTrace();
}

```

Parameters

Table 6-102 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.

Table 6-103 Parameters involved in **GetPeeringsResponse**

Parameter	Mandatory	Type	Description
peerings	No	-	Information about the list of VPC peering connections. For details about parameter types, see Table 6-104 .

Table 6-104 Parameters involved in **Peering**

Parameter	Mandatory	Type	Description
name	No	String	Name of a VPC peering connection.
id	No	String	ID of a VPC peering connection.
requestVpcInfo	No	-	Information about the local VPC. For details, see Table 6-97 .
acceptVpcInfo	No	-	Information about the peer VPC. For details, see Table 6-97 .
status	No	String	Status of a VPC peering connection.

Table 6-105 Parameters involved in **VpcInfo**

Parameter	Mandatory	Type	Description
vpcId	No	String	ID of a VPC peering connection.

Parameter	Mandatory	Type	Description
tenantId	No	String	Tenant ID.

6.2.15 Creating a Route

Sample Code

You can use the API to create a route. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
String peeringId = "peeringId_example"; // String |
CreateRouteRequest body = new CreateRouteRequest(); // CreateRouteRequest | Create a route with the
request parameters being in the JSON format.
try {
    CreateRouteResponse result = apiInstance.createRoute(xProjectId, clusterId, peeringId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#createRoute");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-106 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
peeringId	Yes	String	ID of a VPC peering connection.
body	Yes	-	Whether to create a route with request parameters being in the JSON format. For details about parameter types, see Table 6-107 .

Table 6-107 Parameters involved in `GCreateRouteRequest`

Parameter	Mandatory	Type	Description
destination	No	String	DestinationCIDR of a route.

Table 6-108 Parameters involved in **CreateRouteResponse**

Parameter	Mandatory	Type	Description
route	No	-	Information about a route. For details about parameter types, see Table 6-109 .

Table 6-109 Parameters involved in **Route**

Parameter	Mandatory	Type	Description
type	No	String	Route type. Generally, this parameter is set to peering .
nexthop	No	String	Next-hop address, which is the ID of the VPC peering connection.
destination	No	String	DestinationCIDR of a route.
vpclId	No	String	ID of the VPC for which a route is to be added.
tenantId	No	String	ID of the tenant who requests to add a route.
id	No	String	ID of a route.

6.2.16 Query the List of Routes

Sample Code

You can use the API to query the list of routes in a cluster. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
String peeringId = "peeringId_example"; // String |
try {
    GetRoutesResponse result = apiInstance.getRoutes(xProjectId, clusterId, peeringId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getRoutes");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-110 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
peeringId	Yes	String	ID of a VPC peering connection.

Table 6-111 Parameters involved in `GetRoutesResponse`

Parameter	Mandatory	Type	Description
routes	No	-	Information about the list of routes. For details about parameter types, see Table 6-112 .

Table 6-112 Parameters involved in `Route`

Parameter	Mandatory	Type	Description
type	No	String	Route type. Generally, this parameter is set to peering .
nexthop	No	String	Next-hop address, which is the ID of the VPC peering connection.
destination	No	String	DestinationCIDR of a route.
vpclId	No	String	ID of the VPC for which a route is to be added.
tenantId	No	String	ID of the tenant who requests to add a route.
id	No	String	ID of a route.

6.2.17 Deleting a Route

Sample Code

You can use the API to delete a route. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
String peeringId = "peeringId_example"; // String |
String routeId = "routeId_example"; // String |
try {
    apiInstance.deleteRoute(xProjectId, clusterId, peeringId, routeId);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#deleteRoute");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-113 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
peeringId	Yes	String	ID of a VPC peering connection.
routeId	Yes	String	ID of a route.

6.2.18 Deleting a VPC Peering Connection

Sample Code

You can use the API to delete a VPC peering connection. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String |
Integer clusterId = 56; // Integer |
String peeringId = "peeringId_example"; // String |
try {
    apiInstance.deletePeering(xProjectId, clusterId, peeringId);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#deletePeering");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-114 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
peeringId	Yes	String	ID of a VPC peering connection.

6.2.19 Adding an IP-Domain Mapping

Sample Code

You can use the API to add an IP-domain mapping. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
Body body = new Body(); // Body | Request body in the JSON format.
try {
    List<AddHostsInfoResponse> result = apiInstance.addHostsInfo(xProjectId, clusterId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#addHostsInfo");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-115 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
body	Yes	-	Request body in the JSON format. For details about parameter types, see Table 6-116 .

Table 6-116 Parameters involved in **Body**

Parameter	Mandatory	Type	Description
hostsInfo	No	Array	Information about the domain name. For details about parameter types, see Table 6-117 .

Table 6-117 Parameters involved in **HostIpInfo**

Parameter	Mandatory	Type	Description
hostname	No	String	Information about the domain name.
ip	No	String	IP address.

Table 6-118 Parameters involved in **AddHostsInfoResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-119 .

Table 6-119 Parameters involved in **AddHostsInfoResponsePayload**

Parameter	Mandatory	Type	Description
hostId	No	Integer	Domain name ID.

6.2.20 Querying Information About IP-Domain Mappings of a Specified Cluster

Sample Code

You can use the API provided CS to query information about IP-domain mappings of a specified cluster. In this example, the query results are displayed in descending

order and information about the IP-domain mappings with IDs less than the value of **cursor** is displayed. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
String queryString = "queryString_example"; // String | IP address or domain name to be queried.
Long cursor = 789L; // Long | Domain name ID.
Boolean next = true; // Boolean | Whether to turn to the previous or next page.
Integer limit = 10; // Integer | Number of returned data records.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or descending order.
try {
    QueryClusterHostsInfoResponse result = apiInstance.getHostsInfo(xProjectId, clusterId, queryString, cursor, next, limit, order);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#getHostsInfo");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-120 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
queryString	No	String	IP address or domain name to be queried.
cursor	No	Long	Domain ID cursor.
next	Yes	Boolean	Whether to switch to the previous or next page. The default value is true .
limit	No	Integer	Number of returned data records. The default value is 10 .
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .

Table 6-121 Parameters involved in **QueryClusterHostsInfoResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	-	Information about the IP-domain mappings of the cluster. For details about parameter types, see Table 6-122 .

Table 6-122 Parameters involved in **ClusterHostsInfo**

Parameter	Mandatory	Type	Description
hostsInfo	No	List<ClusterHostsInfo HostsInfo>	List of the IP-domain mappings of the cluster. For details about parameter types, see Table 6-123 .
total	No	Integer	Total number of IP-domain mappings.

Table 6-123 Parameters involved in **ClusterHostsInfoHostsInfo**

Parameter	Mandatory	Type	Description
id	No	integer	Domain name ID.
info	No	-	Information about the IP-domain mapping. For details about parameter types, see Table 6-124 .

Table 6-124 Parameters involved in **HostIpInfo**

Parameter	Mandatory	Type	Description
hostname	No	String	Information about the domain name.
ip	No	String	IP address.

6.2.21 Updating Information About an IP-Domain Mapping

Sample Code

You can use the API to update information about an IP-domain mapping. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
Long hostId = 789L; // Long | Domain name ID.
Body2 body = new Body2(); // Body2 | Request body in the JSON format.
try {
    UpdateHostsInfoResponse result = apiInstance.updateHostsInfo(xProjectId, clusterId, hostId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#updateHostsInfo");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-125 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
hostId	Yes	Integer	Domain name ID.
body	Yes	-	Request body in the JSON format. For details about parameter types, see Table 6-126 .

Table 6-126 Parameters involved in **Body2**

Parameter	Mandatory	Type	Description
hostsInfo	No	-	Information about the domain name. For details about parameter types, see Table 6-127 .

Table 6-127 Parameters involved in **HostIpInfo**

Parameter	Mandatory	Type	Description
hostname	No	String	Information about the domain name.
ip	No	String	IP address.

Table 6-128 Parameters involved in **UpdateHostsInfoResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.

6.2.22 Adding the hosts File

Sample Code

You can use the API to add the **hosts** file. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
File hostsFile = new File("/path/to/file.txt"); // File | hosts file to be uploaded.
try {
    List<AddHostsInfoResponse> result = apiInstance.addHostsFile(xProjectId, clusterId, hostsFile);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#addHostsFile");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-129 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.

Parameter	Mandatory	Type	Description
clusterId	Yes	Integer	ID of an exclusive cluster.
hostsFile	Yes	File	hosts file to be uploaded.

Table 6-130 Parameters involved in **AddHostsInfoResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Long	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-119 .

Table 6-131 Parameters involved in **AddHostsInfoResponsePayload**

Parameter	Mandatory	Type	Description
hostId	No	Integer	Domain name ID.

6.2.23 Deleting Information About an IP-Domain Mapping

Sample Code

You can use the API to delete information about an IP-domain mapping. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.ClusterApi;

ClusterApi apiInstance = new ClusterApi(apiClient); // apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Integer clusterId = 56; // Integer | ID of an exclusive cluster.
Body1 body = new Body1(); // Body1 | Request body in the JSON format.
try {
    List<DeleteHostsInfoResponse> result = apiInstance.deleteHostsInfo(xProjectId, clusterId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling ClusterApi#deleteHostsInfo");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-132 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
clusterId	Yes	Integer	ID of an exclusive cluster.
body	Yes	-	Request body in the JSON format. For details about parameter types, see Table 6-133 .

Table 6-133 Parameters involved in **Body1**

Parameter	Mandatory	Type	Description
hostsId	Yes	Integer	List of domain name IDs.

Table 6-134 Parameters involved in **DeleteHostsInfoResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.

6.3 Job Template Management

6.3.1 Creating a Job Template

Sample Code

You can use the API to create a job template. Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.TemplateApi;

TemplateApi apiInstance = new TemplateApi(apiClient);//apiClient is created when initializing a CS API client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
CreateJobTemplateRequest body = new CreateJobTemplateRequest(); // CreateJobTemplateRequest | Create job template request
try {
    JobTemplateCreateResponse result = apiInstance.createJobTemplate(xProjectId, body);
```

```

        System.out.println(result);
    } catch (ApiException e) {
        System.err.println("Exception when calling TemplateApi#createJobTemplate");
        System.err.println(e.getResponseBody());
        e.printStackTrace();
    }
}

```

Parameter Description

Table 6-135 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	-	Request for creating a job template. For details about parameter types, see Table 6-136 .

Table 6-136 Parameters involved in `CreateJobTemplateRequest`

Parameter	Mandatory	Type	Description
name	Yes	String	Template name.
desc	No	String	Template description.
sqlBody	No	String	Stream SQL statement, which includes at least the following three parts: source, query, and sink.
tags	No	String	Template tag.

Table 6-137 Parameters involved in `JobTemplateCreateResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-138 .

Table 6-138 Parameters involved in JobTemplateCreated

Parameter	Mandatory	Type	Description
templateId	No	Integer	Template ID.
name	No	String	Template name.
desc	No	String	Template description.
createTime	No	Integer	Time when the template is created.
isSuccess	No	Boolean	Whether the template is successfully created.

6.3.2 Updating a Job Template

Sample Code

You can use the API to update a job template. Sample code is as follows:

```
// Import classes:
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.TemplateApi;

TemplateApi apiInstance = new TemplateApi(apiClient);//apiClient is created when initializing a CS API
client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
UpdateJobTemplateRequest body = new UpdateJobTemplateRequest(); // UpdateJobTemplateRequest |
Submit the request for modifying the SQL job template.
try {
    JobTemplateUpdateResponse result = apiInstance.updateJobTemplate(xProjectId, body);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling TemplateApi#updateJobTemplate");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameters

Table 6-139 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
body	Yes	-	Whether to submit a request for modifying the SQL job template. For details about parameter types, see Table 6-140 .

Table 6-140 Parameters involved in **UpdateJobTemplateRequest**

Parameter	Mandatory	Type	Description
id	Yes	Integer	Template ID.
name	No	String	Template name.
desc	No	String	Template description.
sqlBody	No	String	Stream SQL statement, which includes at least the following three parts: source, query, and sink.
tags	No	String	Template tag.

Table 6-141 Parameters involved in **JobTemplateUpdateResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.

6.3.3 Querying the Job Template List

Sample Code

You can use the API to query the job template list. In this example, the query results are displayed in descending order and information about the job templates whose IDs are less than the value of **cursor** is displayed. Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.TemplateApi;

TemplateApi apiInstance = new TemplateApi(apiClient);//apiClient is created when initializing a CS API
client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long cursor = 789L; // Long | Job template ID.
Integer limit = 56; // Integer | Maximum number of records that can be queried.
String order = "desc"; // String | Query result display. The query results can be displayed in ascending or
descending order.
try {
    JobTemplateListResponse result = apiInstance.getJobTemplates(xProjectId, cursor, limit, order);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling TemplateApi#getJobTemplates");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-142 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
cursor	No	Integer	Job template ID.
limit	No	Integer	Maximum number of records that can be queried.
order	No	String	Query result display. Value asc indicates that the query results are displayed in ascending order, and value desc indicates that the query results are displayed in descending order. The default value is desc .

Table 6-143 Parameters involved in `JobTemplateListResponse`

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-144 .

Table 6-144 Parameters involved in `JobTemplateListResponsePayload`

Parameter	Mandatory	Type	Description
total	No	Integer	Number of records in the query result.
templates	No	List<JobTemplate>	Template name. For details about parameter types, see Table 6-145 .

Table 6-145 Parameters involved in `JobTemplate`

Parameter	Mandatory	Type	Description
templateId	No	Integer	Template ID.

Parameter	Mandatory	Type	Description
name	No	String	Template name.
desc	No	String	Template description.
createTime	No	Integer	Time when the template is created.
updateTime	No	Integer	Update time of the template.
sqlBody	No	String	Stream SQL statement, which includes at least the following three parts: source, query, and sink.

6.3.4 Deleting a Job Template

Sample Code

You can use the API to delete a template. A template used by jobs can also be deleted. Sample code is as follows:

```
import com.huaweicloud.cs.java.v1.client.ApiException;
import com.huaweicloud.cs.java.v1.TemplateApi;

TemplateApi apiInstance = new TemplateApi(apiClient);//apiClient is created when initializing a CS API
client.
String xProjectId = "xProjectId_example"; // String | Project ID used for obtaining the token for the project.
Long templateId = 789L; // Long |
try {
    JobTemplateDeleteResponse result = apiInstance.deleteJobTemplate(xProjectId, templateId);
    System.out.println(result);
} catch (ApiException e) {
    System.err.println("Exception when calling TemplateApi#deleteJobTemplate");
    System.err.println(e.getResponseBody());
    e.printStackTrace();
}
```

Parameter Description

Table 6-146 Parameters

Parameter	Mandatory	Type	Description
xProjectId	Yes	String	Project ID. This parameter is used to obtain the token for the project.
templateId	Yes	Integer	Template ID.

Table 6-147 Parameters involved in **JobTemplateDeleteResponse**

Parameter	Mandatory	Type	Description
messageId	No	String	Message type ID.
message	No	String	Message content.
currentTime	No	Integer	Current time, expressed by milliseconds.
payload	No	-	For details about parameter types, see Table 6-148 .

Table 6-148 Parameters involved in **JobTemplateDeleted**

Parameter	Mandatory	Type	Description
templateId	No	Integer	Template ID.
isSuccess	No	Boolean	Whether the template is successfully deleted.

7 Mapping between API & SDK (Java)

Table 7-1 Mapping between API & SDK

Class	Method	API
AuthorizeApi	authorizeBucket	POST /{X-Project-Id}/obs_authorize
ClusterApi	addHostsFile	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/hosts_file
	addHostsInfo	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/hosts
	createPeering	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/peering
	createReservedCluster	POST /{X-Project-Id}/reserved_cluster
	createRoute	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/peering/{peering_id}/route
	deleteHostsInfo	DELETE /{X-Project-Id}/reserved_cluster/{cluster_id}/hosts
	deletePeering	DELETE /{X-Project-Id}/reserved_cluster/{cluster_id}/peering/{peering_id}
	deleteReservedCluster	DELETE /{X-Project-Id}/reserved_cluster/{cluster_id}
	deleteRoute	DELETE /{X-Project-Id}/reserved_cluster/{cluster_id}/peering/{peering_id}/route/{route_id}

Class	Method	API
	describeReservedCluster	GET /{X-Project-Id}/reserved_cluster/{cluster_id}
	getClusterJobs	GET /{X-Project-Id}/reserved_cluster/{cluster_id}
	getHostsInfo	GET /{X-Project-Id}/reserved_cluster/{cluster_id}/hosts
	getPeering	GET /{X-Project-Id}/reserved_cluster/{cluster_id}/peering/{peering_id}
	getPeerings	GET /{X-Project-Id}/reserved_cluster/{cluster_id}/peering
	getReservedClusters	GET /{X-Project-Id}/reserved_clusters
	getRoutes	GET /{X-Project-Id}/reserved_cluster/{cluster_id}/peering/{peering_id}/route
	getUserQuota	GET /{X-Project-Id}/user_quota/{user_id}
	getUserQuotas	GET /{X-Project-Id}/user_quotas
	restartReservedCluster	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/restart
	stopReservedCluster	POST /{X-Project-Id}/reserved_cluster/{cluster_id}/stop
	updateHostsInfo	PATCH /{X-Project-Id}/reserved_cluster/{cluster_id}/hosts/{host_id}
	updateReservedCluster	PATCH /{X-Project-Id}/reserved_cluster/{cluster_id}
	updateUserQuota	PATCH /{X-Project-Id}/user_quota/{user_id}
JobApi	deleteJob	DELETE /{X-Project-Id}/job
	getJobDetail	GET /{X-Project-Id}/job/{job_id}
	getJobExecuteGraph	GET /{X-Project-Id}/job/{job_id}/execute_graph
	getJobs	GET /{X-Project-Id}/jobs
	runJob	POST /{X-Project-Id}/job/run

Class	Method	API
	stopJob	POST /{X-Project-Id}/job/stop
	submitJarJob	POST /{X-Project-Id}/jar_job
	submitSqlJob	POST /{X-Project-Id}/sql_job
	updateJarJob	PATCH /{X-Project-Id}/jar_job
	updateSqlJob	PATCH /{X-Project-Id}/sql_job
	getApigSinks	GET /{X-Project-Id}/job/{job_id}/apig_sinks
LogApi	getAuditLogs	GET /{X-Project-Id}/audit_logs
<i>MetricApi</i>	getJobsMetrics	POST /{X-Project-Id}/jobs/metrics
StatisticsApi	overview	GET /{X-Project-Id}/overview
TemplateApi	createJobTemplate	POST /{X-Project-Id}/job_template
	deleteJobTemplate	DELETE /{X-Project-Id}/job_template/{template_id}
	getJobTemplates	GET /{X-Project-Id}/job_templates
	updateJobTemplate	PATCH /{X-Project-Id}/job_template
<i>UserApi</i>	userRegister	POST /{X-Project-Id}/user_register

8 Change History

Date	Description
2019-8-16	Added the descriptions about whether Java parameters are mandatory.
2019-05-15	This issue is the tenth official release. Added the following sections: <ul style="list-style-type: none">• Registering to Use CS• Querying Job Monitoring Information• Querying the APIG Address of a Job Modified the following sections: <ul style="list-style-type: none">• Downloading SDK• Mapping between API & SDK (Java)
2019-03-26	This issue is the ninth official release. Modified the following section: <ul style="list-style-type: none">• Downloading SDK• Getting Started with SDK (Java)
2019-02-26	This issue is the eighth official release. Modified the following sections: <ul style="list-style-type: none">• Downloading SDK• Initializing the API Client
2019-02-01	This issue is the seventh official release. Modified the following sections: <ul style="list-style-type: none">• Downloading SDK• Getting Started with SDK (Java)• Mapping between API & SDK (Java)

Date	Description
2018-12-13	This issue is the sixth official release. Modified the following sections: <ul style="list-style-type: none"> • Downloading SDK • Initializing the API Client
2018-11-15	This issue is the fifth official release, which incorporates the following changes: Modified the following sections: <ul style="list-style-type: none"> • Downloading SDK • Querying the List of Jobs Running in an Exclusive Cluster • Querying the Cluster List of a Tenant • Querying the Job List • Updating a SQL Job
2018-08-15	This issue is the fourth official release. Modified the following section: Downloading SDK
2018-07-02	This issue is the third official release. Modified the following section: Downloading SDK
2018-05-17	This issue is the second official release and incorporates the following change: Changed the document name from <i>Cloud Stream Service SDK Development Guide</i> to <i>Cloud Stream Service SDK Reference</i> .
2018-03-07	This issue is the first official release.