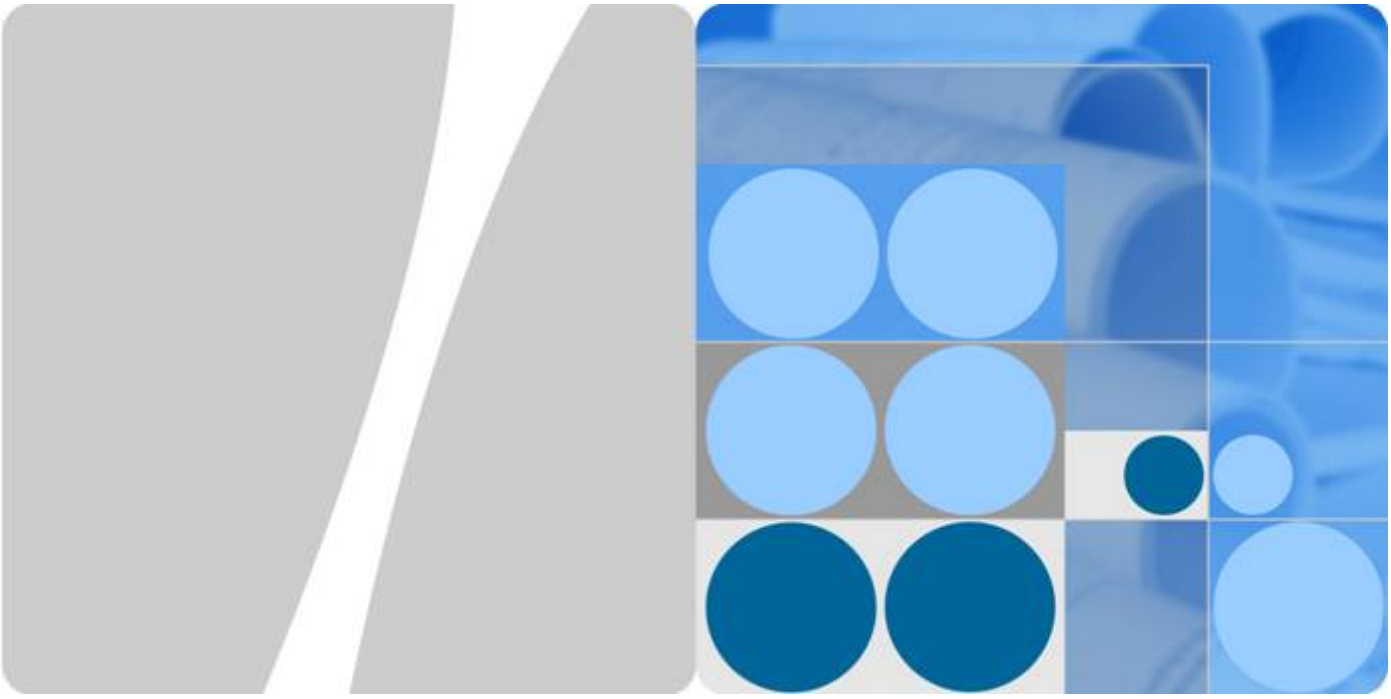


Distributed Message Service

API Reference

Date **2019-04-28**

Contents

1 Before You Start

1.1 Overview

Welcome to *Distributed Message Service API Reference*. Distributed Message Service (DMS) is a message middleware service using the distributed, high-availability clustering technology. It provides reliable, scalable, and fully managed queues for sending, receiving, and storing messages.

This document describes functions, syntax, parameters, and examples of the application programming interfaces (APIs) of Distributed Message Service (DMS).

NOTICE

DMS is continuously upgraded with new functions, and the existing APIs are inevitably adjusted. For example, new response parameters are added.

To reduce the impact of API changes, DMS is backward compatible with existing APIs. When using DMS, you should accept and ignore unused parameters and parameter values in JSON responses.

1.2 API Calling

DMS supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see **3 Calling APIs**.

1.3 Endpoints

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

1.4 Constraints

- The number of queues that you can create is determined by your quota. For details, see **Service Quota**.
- For more constraints, see the API description.

1.5 Concepts

- Account

  An account is created upon successful registration and has full access permissions for all the resources and cloud services under the account. It can reset user passwords and grant users permissions. The account is a payment entity, which should not be used directly to perform routine management. To ensure account security, create IAM users and grant them permissions for routine management.

- IAM user

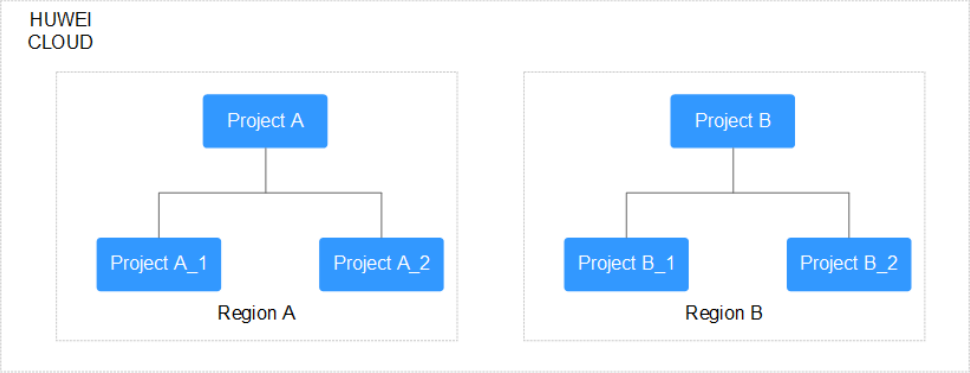
  An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).

  An IAM user can view the account ID and user ID on the **My Credentials** page of the management console. API authentication requires information such as the account name, username, and password.

- Region: A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.
- AZ: An AZ comprises of one or multiple physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.
- Project

  A project corresponds to a region. Default projects are defined to a group and have physically isolated resources (including computing, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolating model



To view a project ID, go to the **My Credentials** page.

2 API Overview

Table 2-1 Queue and message management APIs

API	Description
5.1 Creating a Queue	Creates a standard queue.
5.2 Viewing All Queues	Views all queues.
5.3 Viewing a Queue	Views a specified queue.
5.4 Deleting a Queue	Deletes a specified queue.
5.5 Creating a Consumer Group	Creates one or more consumer groups for a specified queue.
5.6 Viewing All Consumer Groups of a Specified Queue	Views all consumer groups of a specified queue.
5.7 Deleting a Consumer Group	Deletes a specified consumer group.
5.8 Sending Messages to a Queue	Sends messages to a specified queue. Multiple messages can be sent at a time.
5.9 Consuming Messages	Consumes messages in a specified queue. Multiple messages can be consumed at a time. The load of messages consumed each time cannot exceed 512 KB.
5.10 Acknowledging Consumption of Specified Messages	Acknowledges consumption of specified messages.
5.11 Viewing Quotas	Views the quota of the current project.
5.12 Consuming Dead Letter Messages	Consumes the dead letter messages generated by a specified consumer group. Multiple messages can be consumed at a time. The load of messages consumed each time cannot exceed 512 KB.

API	Description
5.13 Acknowledging Consumption of Specified Dead Letter Messages	Acknowledges consumption of specified dead letter messages.

3 Calling APIs

3.1 Making an API Request

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

Request URI

A request URI is in the following format:

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

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

- **URI-scheme**:

  Protocol used to transmit requests. All APIs use HTTPS.

- **Endpoint**:

  Domain name or IP address of the server bearing the REST service endpoint. Obtain the value from **Regions and Endpoints**.

  For example, the endpoint of IAM in region CN North-Beijing1 is iam.cn-north-1.myhuaweicloud.com.

- **resource-path**:

  API access path for performing a specified operation. Obtain the value from the URI of the API. For example, the resource-path of the API for **obtaining a user token** is **/v3/auth/tokens**.

- **query-string**:

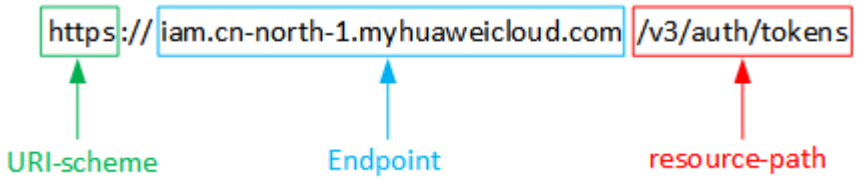
  Query parameter, which is optional. Not all APIs have a query parameter. Ensure that a question mark (?) is included before a query parameter that is in the format of "Parameter name=Parameter value". For example, **? limit=10** indicates that a maximum of 10 pieces of data is to be viewed.

For example, to obtain the IAM token in region CN North-Beijing1, obtain the endpoint (iam.cn-north-1.myhuaweicloud.com) of this region and the resource-

path (/v3/auth/tokens) in the URI of the API, which is used for **obtaining a user token**. Then, assemble these fields as follows:

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

Figure 3-1 Example URI



NOTE

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

Request Methods

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

- **GET**: requests the server to return specified resources.
- **PUT**: requests the server to update specified resources.
- **POST**: requests the server to add resources or perform special operations.
- **DELETE**: requests the server to delete specified resources, for example, an object.
- **HEAD**: requests a server resource header.
- **PATCH**: requests the server to update partial content of a specified resource. If the resource is unavailable, the PATCH method is used to create a resource.

For example, in the URI for **obtaining a user token**, the request method is POST, and the request is as follows:

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

Request Header

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

Common request headers are as follows:

- **Content-Type**: specifies the request body type or format. This field is mandatory and its default value is **application/json**. For other values, the description will be provided for specific APIs.
- **X-Auth-Token**: specifies a user token, which is a response to the API for **obtaining a user token** (only this API does not require authentication). X-Auth-Token is optional. It is mandatory only for authentication using tokens.

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

The API for **obtaining a user token** does not require authentication. Therefore, this API only requires adding the **Content-Type** field. The request with the added Content-Type header is as follows:

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

Request Body

A request body is generally sent in a structured format. It corresponds to **Content-Type** in the request header and transfers data except for the request header. If the request body contains Chinese characters, these characters must be coded in UTF-8.

The request body varies according to the APIs. Certain APIs do not require the request body, such as the GET and DELETE APIs.

For the API of **obtaining a user token**, obtain the request parameters and parameter description in the API request. The following provides an example request with a body included. Replace *username*, *domainname*, ******** (login password), and *xxxxxxxxxxxxxxxxx* (project ID, such as cn-north-1) with the actual values. Obtain the project ID from the **Region** column of **Regions and Endpoints**.

> **NOTE**
>
> **scope** specifies where a token takes effect. In the following example, the token takes effect only on the resources specified by the project ID. You can set the scope to an account or a project under an account. For details, see **obtaining a user token**.

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

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

If all data required by a request is available, you can send the request to call an API through **curl**, **Postman**, or coding. For the API of obtaining a user token, **x-subject-token** in the response header is the desired user token. Then, you can use the token to authenticate the calling of other APIs.

3.2 Authentication

Calling an API can be authenticated using either of the following methods:

- Authentication using tokens: General requests are authenticated using tokens.
- Authentication using AK/SK: Requests are encrypted using access key ID (AK)/ secret access key (SK). AK/SK authentication is recommended because it provides higher security than token authentication.

Authentication Using Tokens

NOTE

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

A token specifies certain permissions in a computer system Authentication using a token adds the token in a request as its header during API calling to obtain permissions to operate APIs through IAM.

In **3.1 Making an API Request**, the process of calling the API for **obtaining a user token** is described as an example. After obtaining the token, add the **X-Auth-Token** header in a request to specify the token when calling other APIs. For example, if the token is **ABCDEFJ....**, add **X-Auth-Token: ABCDEFJ....** in a request as follows:

```
POST https://iam.cn-north-1.myhuaweicloud.com/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

Authentication Using AK/SK

NOTE

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

In authentication using AK/SK, AK/SK is used to sign a request and add the signature in a request as its header for authentication.

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

In authentication using AK/SK, you can use AK/SK to sign requests based on the signature algorithm or use a dedicated signature SDK to sign the requests. For details about how to sign requests and use the signature SDK, see **API Signature Guide**.

NOTICE

The signature SDK only supports signature, which is different from the SDKs provided by services.

3.3 Returned Values

Status Code

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

A status code is a group of digits ranging from 1xx to 5xx. It indicates the status of a response. For more information, see **7.1 Status Code**.

If status code 201 is returned for the calling of the API for **obtaining a user token**, the request is successful.

Response Header

A response header corresponds to a request header, for example, **Content-type**.

Figure 3-2 shows the response header for the API of **obtaining a user token**, in which **x-subject-token** is the desired user token. Then, you can use the token to authenticate the calling of other APIs.

Figure 3-2 Header of the response to the request for obtaining a user token

(Optional) Response Body

A response body is generally returned in a structured format, corresponding to the **Content-Type** in the response header, and is used to transfer content other than the response header.

The following shows part of the response body for the API to **obtaining a user token**.

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

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

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

In the preceding information, **error_code** is an error code, and **error_msg** describes the error.

4 Getting Started

Scenarios

This section describes how to call an API to create a standard queue to store messages.

For details on how to call APIs, see **3 Calling APIs**.

Prerequisites

- IAM endpoint obtained from **Regions and Endpoints**.
- DMS endpoint obtained from **Regions and Endpoints**.

Creating a Queue

The following is an example request for creating a first-in-first-out (FIFO) queue:

```
{
  "name" : "queue-001",
  "queue_mode" : "FIFO",
  "redrive_policy" : "enable",
  "max_consume_count" : 3
}
```

- **name**: unique name of the queue
- **queue_mode**: type of the queue. Options:
  - **NORMAL**: Standard queue, which supports high concurrency performance but cannot guarantee that messages are retrieved in the exact sequence as how they are received.
  - **FIFO**: FIFO queue, which guarantees that messages are retrieved in the exact sequence as how they are received.
  - **KAFKA_HA**: High-reliability Kafka queue. All message replicas are flushed to a disk synchronously, ensuring message reliability.
  - **KAFKA_HT**: High-throughput Kafka queue. All message replicas are flushed to a disk asynchronously, ensuring high performance.
- **redrive_policy**: whether to enable dead letter messages. Options:
  - **enable**
  - **disable**

- **max_consume_count**: maximum number of allowed message consumption failures. When a message fails to be consumed after the number of consumption attempts of this message reaches this value, DMS stores this message into the dead letter queue.

For details about the parameters, see **5.1 Creating a Queue**.

5 APIs for Managing Queues and Messages

5.1 Creating a Queue

Function

By default, a maximum of 30 queues can be created for a project.

NOTE

When a queue is created, it takes one to three seconds to initialize the queue. Therefore, if operations such as message production, message consumption, queue details query, consumer group creation, and queue deletion are performed immediately after a queue is created, the operations may fail. You are advised to perform these operations three seconds after creating the queue.

URI

POST /v1.0/{project_id}/queues

Table 5-1 describes the parameter of this API.

Table 5-1 Parameter

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.

Request

Request parameters

Table 5-2 describes the parameters.

Table 5-2 Request parameters

Parameter	Type	Mandatory	Description
name	String	Yes	Indicates the unique name of a queue. The value is a string of 1 to 64 characters that contain letters, digits, hyphens (-), and underscores (_). The name cannot be modified once specified.
queue_mode	String	No	Indicates the queue type. Options: ● **NORMAL**: Standard queue, which supports high concurrency performance but cannot guarantee that messages are retrieved in the exact sequence as how they are received. ● **FIFO**: First-in-first-out (FIFO) queue, which guarantees that messages are retrieved in the exact sequence as how they are received. ● **KAFKA_HA**: High-reliability Kafka queue. All message replicas are flushed to a disk synchronously, ensuring message reliability. ● **KAFKA_HT**: High-throughput Kafka queue. All message replicas are flushed to a disk asynchronously, ensuring high performance. The default value is **NORMAL**.
description	String	No	Indicates the basic information about a queue. The value is a string of a maximum of 160 characters and cannot contain the angle brackets (<>).

Parameter	Type	Mandatory	Description
redrive_policy	String	No	This parameter is valid only when queue_mode is set to **NORMAL** or **FIFO**. This parameter specifies whether to enable dead letter messages. Dead letter messages are messages that cannot be normally consumed. When a message fails to be consumed after the number of consumption attempts of this message reaches this value, DMS stores this message into the dead letter queue. This message will be retained in the deal letter queue for 72 hours. During this period, consumers can consume the dead letter message. Dead letter messages can be consumed only by the consumer group that generated these dead letter messages. Dead letter messages of a FIFO queue are stored and consumed based on the FIFO sequence. Options: ● **enable** ● **disable** The default value is **disable**.
max_consume_count	Integer	No	This parameter is mandatory only when **redrive_policy** is set to **enable**. Indicates the maximum number of allowed message consumption failures. When a message fails to be consumed after the number of consumption attempts of this message reaches this value, DMS stores this message into the dead letter queue. Value range: 1–100.
retention_hours	Integer	No	Indicates the hours of storing messages in the Kafka queue. This parameter is valid only when **queue_mode** is set to **KAFKA_HA** or **KAFKA_HT**. Value range: 1–72.

Example request

Creating a FIFO queue:

```
{
  "name" : "queue-001",
  "description" : "This is a FIFO queue.",
  "queue_mode" : "FIFO",
  "redrive_policy" : "enable",
  "max_consume_count" : 3
}
```

Creating a Kafka queue:

```
{
  "name" : "queue-002",
  "description" : "This is a Kafka queue.",
  "queue_mode" : "KAFKA_HA",
  "retention_hours" : 36
}
```

Response

Response parameters

Table 5-3 describes the response parameters.

Table 5-3 Response parameters

Parameter	Type	Description
id	String	Indicates the queue ID.
name	String	Indicates the name of a queue.
kafka_topic	String	This parameter is returned only for Kafka queues. Indicates the Kafka topic ID when Kafka SDK is used.

Example response

Creating a FIFO queue:

```
{
    "id": "9bf46390-38a2-462d-b392-4d5b2d519c55",
    "name": "queue_001"
}
```

Creating a Kafka queue:

```
{
  "id" : "3ec7a4a2-541b-430a-9c2b-77fa4b64ed8",
  "name" : "queue_002",
  "kafka_topic" : "k-fdc60cfe407a4b2a96a498efda55c785-3ec7a4a2-541b-430a-9c2b-77fa4b64ed8"
}
```

Status Code

Table 5-4 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-4 Status code

Status Code	Description
201	The queue is created successfully.

5.2 Viewing All Queues

Function

This API is used to view all queues.

URI

GET /v1.0/{project_id}/queues?include_deadletter={include_deadletter}

Table 5-5 describes the parameters of this API.

Table 5-5 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the project ID.
include_deadletter	Boolean	No	Indicates whether to list dead letter parameters in the response message. Options: • **true**: Include dead letter messages. • **false**: Do not include dead letter messages. The default value is **false**. Kafka queues do not support dead letter messages. This parameter is invalid for Kafka queues.

Example

```
GET v1.0/b78a90ae2a134b4b8b2ba30acab4e23a/queues?&include_deadletter=true
```

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-6 and Table 5-7 describe the response parameters.

Table 5-6 Response parameters

Parameter	Type	Description
total	Integer	Indicates the total number of queues that belong to the tenant.
queues	Array	Indicates the total number of all queue arrays that belong to the tenant.

Table 5-7 queues parameters description

Parameter	Type	Description
id	String	Indicates the queue ID.
name	String	Indicates the queue name.
created	String	Indicates the time when a queue is created.
description	String	Indicates the basic information about a queue.
queue_mode	String	Indicates the queue type.
reservation	Integer	Indicates the retention period (unit: min) of a message in a queue.
max_msg_size_byte	Integer	Indicates the maximum message size (unit: byte) that is allowed in a queue.
produced_messages	Integer	Indicates the total number of messages in a queue.
redrive_policy	String	Indicates whether to enable dead letter messages. This parameter is displayed only when **include_deadletter** is set to **true**. Options: • **enable** • **disable**

Parameter	Type	Description
max_consume_count	Integer	Indicates the maximum number of allowed message consumption failures. When a message fails to be consumed after the number of consumption attempts of this message reaches this value, DMS stores this message into the dead letter queue. This parameter is displayed only when **include_deadletter** is set to **true**.
group_count	Integer	Indicates the number of consumption groups in a queue.
eff_date	String	Indicates the time when a queue is created.

Example response


```
{
  "queues" : [{
     "id" : "ef808d2d-58c2-4a36-9e58-d018b2193f80",
     "name" : "aaa_fifo_525",
     "description" : "test_fifo_detail",
     "queue_mode" : "NORMAL",
     "reservation" : 4320,
     "created" : 1495701557000,
     "max_msg_size_byte" : 524288,
     "produced_messages" : 1,
     "redrive_policy" : "enable",
     "max_consume_count" : 3,
     "eff_date": 1495701557000,
     "group_count" : 0
   }, {
     "id" : "bc0ac1ec-a4d6-4490-84cb-9d475f1ec3c5",
     "name" : "aaa_normal_525",
     "description" : "test",
     "queue_mode" : "NORMAL",
     "reservation" : 4320,
     "created" : 1495701490000,
     "max_msg_size_byte" : 524288,
     "produced_messages" : 0,
     "redrive_policy" : "enable",
     "max_consume_count" : 3,
     "eff_date": 1495701490000,
     "group_count" : 0
   }, {
     "id" : "1aaf34d0-7bb0-43be-9b71-f4b719d7ca47",
     "name" : "queue-normal",
     "description" : null,
     "queue_mode" : "NORMAL",
     "reservation" : 4320,
     "created" : 1495447342000,
     "max_msg_size_byte" : 524288,
     "produced_messages" : 2,
     "redrive_policy" : "enable",
     "max_consume_count" : 3,
     "eff_date": 1495447342000,
     "group_count" : 0
   }, {
     "id" : "f685ed59-43f4-4cf9-b609-7f333820d72d",
     "name" : "queue-835807102",
     "description" : "",
     "reservation" : 2160,
```

```
    "created" : 1517379348000,
    "queue_mode" : "KAFKA_HA",
    "max_msg_size_byte" : 524288,
    "produced_messages" : 0,
    "eff_date": 1517379348000,
    "group_count" : 0
   }
 ],
 "total" : 4
}
```


Status Code

Table 5-8 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-8 Status code

Status Code	Description
200	The information is obtained successfully.

5.3 Viewing a Queue

Function

This API is used to view a specified queue.

URI

GET /v1.0/{project_id}/queues/{queue_id}?include_deadletter={include_deadletter}

Table 5-9 describes the parameters of this API.

Table 5-9 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the ID of the queue to be viewed.

Parameter	Type	Mandatory	Description
include_deadletter	Boolean	No	Indicates whether to list dead letter parameters in the response message. Options: • **true**: Include dead letter messages. • **false**: Do not include dead letter messages. The default value is **false**. Kafka queues do not support dead letter messages. This parameter is invalid for Kafka queues.

Example

```
GET v1.0/b78a90ae2a134b4b8b2ba30acab4e23a/queues/075ae7da-6ce5-4966-940c-17c19fb5175e?include_deadletter=true
```

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-10 describes the response parameters.

Table 5-10 Response parameters

Parameter	Type	Description
id	String	Indicates the queue ID.
name	String	Indicates the queue name.
created	String	Indicates the time when a queue is created.
description	String	Indicates the basic information about a queue.
queue_mode	String	Indicates the queue type.
reservation	Integer	Indicates the retention period (unit: min) of a message in a queue.
max_msg_size_byte	Integer	Indicates the maximum message size (unit: byte) that is allowed in a queue.

Parameter	Type	Description
produced_messages	Integer	Indicates the total number of messages in a queue.
redrive_policy	String	Indicates whether to enable dead letter messages. This parameter is displayed only when **include_deadletter** is set to **true**. Options: • **enable** • **disable**
max_consume_count	Integer	Indicates the maximum number of allowed message consumption failures. When a message fails to be consumed after the number of consumption attempts of this message reaches this value, DMS stores this message into the dead letter queue. This parameter is displayed only when **include_deadletter** is set to **true**.
group_count	Integer	Indicates the number of consumption groups in a queue.
kafka_topic	String	This parameter is returned only for Kafka queues.
eff_date	String	Indicates the time when a queue is created.

Example response

```
{
   "id": "0611d466-a327-4b7b-8034-f84a0f6a6f42",
   "name": "queue-001",
   "description": "This is a FIFO queue.",
   "reservation": 4320,
   "created": 1558691803000,
   "queue_mode": "FIFO",
   "max_msg_size_byte": 524288,
   "produced_messages": 14,
   "eff_date": 1558691803000,
   "group_count": 1
}
```

Status Code

Table 5-11 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-11 Status code

Status Code	Description
200	The information is obtained successfully.

5.4 Deleting a Queue

Function

This API is used to delete a specified queue.

URI

DELETE /v1.0/{project_id}/queues/{queue_id}

Table 5-12 describes the parameters of this API.

Table 5-12 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the ID of the queue to be deleted.

Request

Request parameters

None.

Example request

None.

Response

Response parameters

None.

Example response

None.

Status Code

Table 5-13 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-13 Status code

Status Code	Description
204	The queue is deleted successfully.

5.5 Creating a Consumer Group

Function

This API is used to create a consumer group.

Multiple consumer groups can be created for a queue at a time.

NOTE

After you create a consumer group, it takes 1s to 3s to initialize the system. If you operate the queue immediately after creating the consumer group, the consumption may fail. You are advised to perform these operations three seconds after creating the queue.

URI

POST /v1.0/{project_id}/queues/{queue_id}/groups

Table 5-14 describes the parameters of this API.

Table 5-14 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the ID of a queue.

Request

Request parameters

Table 5-15 describes the request parameters.

Table 5-15 Request parameters

Parameter	Type	Mandatory	Description
groups	Array	Yes	Indicates the consumer group information. A maximum of three consumer groups can be created for a queue. If there are more than three consumer groups in the request, the request will fail and consumer groups cannot be created.

Table 5-16 groups parameter description

Parameter	Type	Mandatory	Description
name	String	Yes	Indicates the name of a consumer group. The value is a string of 1 to 32 characters that contain letters, digits, hyphens (-), and underscores (_).

Example request

```
{
  "groups" : [{
     "name" : "group-aa"
   }
  ]
}
```

Response

Response parameters

Table 5-17 describes the response parameters.

Table 5-17 Response parameters

Parameter	Type	Description
id	String	Indicates the consumer group ID.
name	String	Indicates the name of a consumer group.

Example response

```
{
  "groups" : [{
```

```
    "id" : "g-02fb1974-9be1-4eee-8448-ed2d3e89884a",
    "name" : "group-aa"
  }
 ]
}
```

Status Code

Table 5-18 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-18 Status code

Status Code	Description
201	The consumer group is created successfully.

5.6 Viewing All Consumer Groups of a Specified Queue

Function

This API is used to view all consumer groups of a specified queue.

URI

GET /v1.0/{project_id}/queues/{queue_id}/groups?include_deadletter={include_deadletter}&include_messages_num={boolean}&page_size={page_size}&current_page={current_page}

Table 5-19 describes the parameters of this API.

Table 5-19 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the project ID.
queue_id	String	Yes	Indicates the queue ID.
include_deadletter	Boolean	No	Indicates whether to list dead letter parameters in the response message. The default value is **false**.
include_messages_num	Boolean	No	Indicates whether to query the details of consumer groups. Default value: **true**. If this parameter is set to false, consumption details of a consumer group are not queried, and the API responses in a short time.

Parameter	Type	Mandatory	Description
page_size	Integer	No	Indicates the number of consumer groups displayed on each page. If **page_size** and **current_page** are not set to a valid value at the same time, consumer groups displayed on all pages are queried by default.
current_page	Integer	No	Indicates the number of a page on which consumer groups are to be queried. If **page_size** and **current_page** are not set to a valid value at the same time, consumer groups displayed on all pages are queried by default.

Example

```
GET v1.0/b78a90ae2a134b4b8b2ba30acab4e23a/queues/075ae7da-6ce5-4966-940c-17c19fb5175e/groups?include_deadletter=true
```

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-20 and **Table 5-21** describe the response parameters.

Table 5-20 Response parameters

Parameter	Type	Description
queue_id	String	Indicates the queue ID.
queue_name	String	Indicates the queue name.
groups	Array	Indicates the consumer group list.

Parameter	Type	Description
redrive_policy	String	Indicates whether to enable dead letter messages. This parameter is displayed only when **include_deadletter** is set to **true**. Options: • **enable** • **disable**

Table 5-21 groups parameter description

Parameter	Type	Description
id	String	Indicates the consumer group ID.
name	String	Indicates the name of a consumer group.
produced_messages	Integer	Indicates the total number of messages (not including the messages that have expired and been deleted) in a queue.
consumed_messages	Integer	Indicates the total number of messages that are successfully consumed.
available_messages	Integer	Indicates the accumulated number of normal messages available to the consumer group.
produced_deadletters	Integer	Indicates the total number of dead letter messages generated by the consumer group. This parameter is displayed only when **include_deadletter** is set to **true**.
available_deadletters	Integer	Indicates the accumulated number of dead letter messages not consumed in the consumer group. This parameter is displayed only when **include_deadletter** is set to **true**.

Example response

```
{
   "queue_name" : "queue-772289871",
   "groups" : [{
          "name" : "group-1690260950",
          "id" : "g-eb9305bb-5bec-4712-84ab-0a36fbe9c2c0",
          "consumed_messages" : 0,
          "available_messages" : 8,
          "produced_messages" : 10,
      }
   ],
   "redrive_policy" : "enable",
   "queue_id" : "f5b6dd28-08dd-4f0f-866c-2eadf6788163"
}
```

When **include_messages_num** is set to **false**:

```
{
   "queue_name" : "queue-586845368",
   "groups" : [{
          "name" : "group-364417183",
          "id" : "g-33d53064-2ab9-4acc-8566-3faa8c8578bf",
          "consumed_messages" : 0,
          "available_messages" : 0,
          "produced_messages" : 0,
      }, {
          "name" : "group-1722391629",
          "id" : "g-876fc3a2-e8c1-4a81-af3e-9ef68e3e46cf",
          "consumed_messages" : 0,
          "available_messages" : 0,
          "produced_messages" : 0,
      }
   ],
   "queue_id" : "e7e6d7f6-c555-470a-b9ee-3175e3408250"
}
```

Status Code

Table 5-22 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-22 Status code

Status Code	Description
200	The information is obtained successfully.

5.7 Deleting a Consumer Group

Function

This API is used to delete a specified consumer group.

URI

DELETE /v1.0/{project_id}/queues/{queue_id}/groups/{group_id}

Table 5-23 describes the parameters of this API.

Table 5-23 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the queue ID.
group_id	String	Yes	Indicates the ID of the consumer group to be deleted.

Request

Request parameters

None.

Example request

None.

Response

Response parameters

None.

Example response

None.

Status Code

Table 5-24 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-24 Status code

Status Code	Description
204	The consumer group is deleted successfully.

5.8 Sending Messages to a Queue

Function

This API is used to send messages to a queue. Multiple messages can be sent at a time. The following requirements must be met:

- A maximum of 10 messages can be sent at a time.
- The aggregated size of messages sent at a time cannot exceed 512 KB.
- In Kafka queues, messages are retained for 1 to 72 hours, depending on what you choose when creating a queue. In the other queues, messages are retained for at least 72 hours and will be deleted after expiry.

URI

POST /v1.0/{project_id}/queues/{queue_id}/messages

Table 5-25 describes the parameters of this API.

Table 5-25 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the project ID.
queue_id	String	Yes	Indicates the queue ID.

Request

Request parameters

Table 5-26 and Table 5-27 list the parameter description.

Table 5-26 Request parameters

Parameter	Type	Mandatory	Description
messages	Array	Yes	Indicates the message list.
returnId	Boolean	No	Indicates whether to return a message ID after a message is sent successfully. The default value is **false**. A message ID is returned only if the value is set to **true**.

Table 5-27 messages parameter description

Parameter	Type	Mandatory	Description
body	JSON	Yes	Indicates the message body.
attributes	JSON object	No	Indicates the list of attributes, including attribute names and values. The attribute name must be unique for a message.
tags	JSON object	No	Indicates the message label, which is used to identify message types. You can use message labels to filter the messages you want to retrieve from the chosen queue. A message label is 1 to 64 characters long. Only letters, digits, hyphens (-), and underscores (_) are allowed. A maximum of 3 labels can be added for a message.

Parameter	Type	Mandatory	Description
delayTime	Long	No	Indicates the delay time of a delay message delivery. Amount of time to delay delivery of all messages added to this queue. Value range: 0–604800000 Unit: ms If this parameter is not set or is set to **0**, there is no delivery delay. If this parameter is set to a floating point number, the integer value before the decimal point is automatically used. For example, if this parameter is set to **6000.9**, the value is automatically set to **6000**. Only FIFO and NORMAL queues support message delivery delay. If you enable delivery delay for messages in a Kafka queue, an error message "{"code":10540010, "message":"Invalid request format: kafka queue message could not have delayTime."}" is displayed.

Example request

```
{
   "messages" : [{
          "body" : "TEST11",
          "attributes" : {
              "attribute1" : "value1",
              "attribute2" : "value2"
          },
          "tags" : ["tag1", "tag2"],
           "delayTime":60000
       }, {
          "body" : {
              "foo" : "test02"
          },
          "attributes" : {
              "attribute1" : "value1",
              "attribute2" : "value2"
          },
          "tags" : ["tag1", "tag2"],
          "delayTime":10000
       }
   ],
   "returnId" : "true"
}
```

Response

Response parameters

Table 5-28 and Table 5-29 describe the response parameters.

Table 5-28 Response parameters

Parameter	Type	Description
message	Array	Indicates the message list.

Table 5-29 messages response parameter

Parameter	Type	Description
error	String	Indicates the error information.
error_code	Integer	Indicates the error code (if any).
state	Integer	Indicates the message sending status. **0**: Messages are successfully sent. **1**: Messages failed to be sent. The **error** and **error_code** parameters indicate the cause of failure.
id	String	Indicates the message ID.

Example response


```
{
  "messages" : [{
      "error" : null,
      "state" : 0,
      "id" :
"eyJ0b3BpYyI6InEtNjdjMDFiOTI5NDQxNDRhMTlkMmRhOTY4ZWYzNGE5MTItNGZhMWQ5YTQtNjRhNC00M
mYxLTk3MzAtZGU4NTFjMTU0Mjg2Iiwib2Zmc2V0IjoyMzQ4LCJwYXJ0aXRpb24iOjIsInRhcmdldFRvcGljIjpudWxs
fQ==",
      "error_code" : null
    },
    {
      "error" : null,
      "state" : 0,
      "id" : "jhGwdWEpnyrXMlauz72j+7cD8W9F4I2HAk6GyQFJCJMX6Va3W7KlA2IVCZ
+hYHFcKqA0n1DQLdKMCyGKvd0ZrQRfwHzjAabgYnWg2VCHtb12fJkzKMQB4JwwcyHvsPNffmFW6gxC4VVaT
4cHf8sLYzrZmES1fd36r5o9wpbpqOgi2I==",
      "error_code" : null
    }
  ]
}
```


Status Code

Table 5-30 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-30 Status code

Status Code	Description
201	Messages are sent successfully.

5.9 Consuming Messages

Function

This API is used to consume messages in a specified queue. Multiple messages can be consumed at a time. The load of messages consumed each time cannot exceed 512 KB.

When there are only a few messages in a queue, the number of messages actually consumed at a time may be less than the message quantity specified in the consumption request. However, all messages in the queue will be eventually obtained by the message consumer after multiple rounds of consumption. If the queue is empty, no message will be returned to the consumer.

Once a consumer group specifies a message label, the consumer group must use the label for all subsequent retrievals. If a consumer group changes a label during the next retrieval, the next retrieval will fail.

URI

GET /v1.0/{project_id}/queues/{queue_id}/groups/{consumer_group_id}/messages?max_msgs={max_msgs}&time_wait={time_wait}&ack_wait={ack_wait}&tag={tag1}&tag={tag2}&tag_type={TYPE}

Table 5-31 describes the parameters of this API.

Table 5-31 Parameters

Parameter	Type	Mandatory	Description	Value Range
project_id	String	Yes	Indicates the ID of a project.	N/A
queue_id	String	Yes	Indicates the queue ID.	N/A
consumer_group_id	String	Yes	Indicates the consumer group ID. Obtain the consumer group ID from the response message in **5.6 Viewing All Consumer Groups of a Specified Queue**.	N/A

Parameter	Type	Mandatory	Description	Value Range
max_msgs	Integer	No	Indicates the number of consumable messages that can be obtained per time.	Value range: 1–10. Default Value: **10**.
time_wait	Integer	No	Indicates the amount of time that the API call can wait for a message to arrive in the empty queue before returning an empty response. If a message is available during the wait period, the call will return the message consumption result immediately. If no message is available until the wait period expires, the call will return an empty response after the wait period expires.	Value range: 1 to 60 seconds. Default value: **3s**. The default wait period is 3 seconds even if the API request does not carry the **time_wait** parameter or the **time_wait** parameter in the API request is left unspecified.
ack_wait	Integer	No	Indicates the timeout duration that the API call can wait for message consumption acknowledgement. The client needs to submit the message consumption acknowledgement within the specified time. If the message consumption is not acknowledged within this period of time, the system displays a message, indicating that message consumption acknowledgement has timed out or the handler is invalid. In this case, the system determines that the message fails to be consumed by default.	Value range: 15 to 300 seconds. Default value: **30s**. If this parameter is left unspecified or empty, the default value **30s** is used.

Parameter	Type	Mandatory	Description	Value Range
tag	String	No	Indicates the message label. You can use message labels to filter the messages you want to retrieve from the chosen queue.	The number of labels cannot exceed 3. A label contains a maximum of 64 characters.
tag_type	String	No	Indicates the message filter mode when multiple message labels are configured.	Options: • **and**: Only messages that match all labels are consumed. • **or**: Messages that match any one label are consumed. Default value: **or**.

Example

```
GET v1.0/b78a90ae2a134b4b8b2ba30acab4e23a/queues/075ae7da-6ce5-4966-940c-17c19fb5175e/groups/g-5ec247fd-d4a2-4d4f-9876-e4ff3280c461/messages?max_msgs=10&ack_wait=30&tag=tag1&tag=tag2&tag_type=or
```

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-32 and Table 5-33 describe the response parameters.

Table 5-32 Response parameters

Parameter	Type	Description
message	JSON object	Indicates the message content.
handler	String	Indicates the message handler.

Table 5-33 message parameter description

Parameter	Type	Description
body	JSON	Indicates the message body.
attributes	JSON object	Indicates the list of attributes.
tags	JSON array	Indicates the message label.

Example response

```
[{
  "message" : {
   "body" : {
    "foo" : "123="
   },
   "attributes": {
       "attribute1": "value1",
       "attribute2": "value2"
        }
  },
  "tags":["tag1","tag2"],
  "handler" :
"eyJjZyI6Im15X2pzb25fZ3JvdXAiLCJjaSI6InJlc3QtY29uc3VtZXItYzNlNThiNjEtYzA0NC00NGJkLTkxM2ItZDgzNjljNmJhYTQxIiwiY291bnQiOjAsIm9mZnNldCI6MCwicCI6MCwidCI6InRlc3QyIn0="
 }, {
  "message" : {
   "body" : {
    "foo" : "123="
   },
   "attributes": {
       "attribute1": "value1",
       "attribute2": "value2"
        }
  },
  "tags":["tag1","tag2"],
  "handler" :
"eyJjZyI6Im15X2pzb25fZ3JvdXAiLCJjaSI6InJlc3QtY29uc3VtZXItYzNlNThiNjEtYzA0NC00NGJkLTkxM2ItZDgzNjljNmJhYTQxIiwiY291bnQiOjAsIm9mZnNldCI6MSwicCI6MCwidCI6InRlc3QyIn0="
 }
]
```

Status Code

Table 5-34 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-34 Status code

Status Code	Description
200	The information is obtained successfully.

5.10 Acknowledging Consumption of Specified Messages

Function

This API is used to confirm the consumption of specified messages.

While a message is being consumed, it remains in the queue and cannot be consumed again within 30s. If the message fails to be consumed within 30s, it can be consumed again.

If a message is consumed, it cannot be consumed again by the consumer group. However, it is retained in the queue (unless the queue is deleted) and can be consumed by other consumer groups. The retention period is 72 hours by default and the message will be deleted 72 hours later.

After a batch of messages is consumed, consumers must acknowledge the message consumption in the exact order that the messages are consumed. DMS checks whether messages are successfully consumed in the same order. If a message has not been acknowledged as a consumed message or failed to be consumed, DMS stops checking and determines that all the subsequent messages fail to be consumed. Therefore, when a consumer fails to acknowledge the consumption of a message (in a batch of messages), you are advised to stop the consumer from consuming the rest of the messages, and acknowledge the consumption of messages that have been successfully consumed.

If the consumption of a message fails to be acknowledged, this message can be re-consumed and its consumption can also be acknowledged again. If dead letter messages are enabled and a message fails to be consumed for a preset number of times, the message will be sent to the dead letter queue and retained in the dead letter queue for a maximum of 72 hours. You can then consume the message from the dead letter queue.

URI

POST /v1.0/{project_id}/queues/{queue_id}/groups/{consumer_group_id}/ack

Table 5-35 describes the parameters of this API.

Table 5-35 Parameter description

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the queue ID.
consumer_group_id	String	Yes	Indicates the consumer group ID.

Request

Request parameters

Table 5-36 and Table 5-37 list the parameter description.

Table 5-36 Request parameters

Parameter	Type	Mandatory	Description
message	Array	Yes	Indicates the message confirmation arrays.

Table 5-37 message parameter description

Parameter	Type	Mandatory	Description
handler	String	Yes	Indicates the ID returned during the consumption.
status	String	No	Indicates the message consumption status. The value can be **success** or **fail**.

Example request

```
{
  "message": [
    {
      "handler":
"eyJjb25zdW1lckdyb3VwIjoibXFzX2NvbnN1bWVyXzMiLCJjb25zdW1lckluc3RhbmNlIjoicmVzdC1jb25zdW1lci1hMWM5YTRlMy1mNTY5LTQyYTgtOTQ1Ni1hYmU0NDVmZjUxYzkiLCJjb3VudCI6MSwib2Zmc2V0IjowLCJvZmZzZXRJbmRleCI6LTEsInBhcnRpdGlvbiI6MiwidG9waWMiOiJxLWI3OGE5MGFlMmExMzRiNGI4YjJiYTMwYWNhYjRlMjNhLTA3NWFlN2RhLTZjZTUtNDk2Ni05NDBjLTE3YzE5ZmI1MTc1ZSJ9",
      "status": "success"
    }
  ]
}
```

Response

Response parameters

Table 5-38 describes the response parameters.

Table 5-38 Response parameters

Parameter	Type	Description
success	Integer	Indicates the number of messages that are successfully acknowledged. The value **N** indicates that the first *N* messages are successfully acknowledged.

Parameter	Type	Description
fail	Integer	Indicates the number of messages that failed to be acknowledged. The value **N** indicates that the last *N* messages failed to be acknowledged.

Example response

```
{
  "success": 1,
  "fail": 2
}
```

Status Code

Table 5-39 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-39 Status code

Status Code	Description
200	The consumption of the message is successfully acknowledged.

5.11 Viewing Quotas

Function

This API is used to view the quota of the current project.

URI

GET /v1.0/{project_id}/quotas/dms

Table 5-40 describes the parameters of this API.

Table 5-40 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-41, Table 5-42, and Table 5-43 describe the response parameters.

Table 5-41 Response parameters

Parameter	Type	Description
quotas	JSON	Indicates the quotas of a tenant.

Table 5-42 quotas parameter description

Parameter	Type	Description
resources	Array	Indicates the list of quotas.

Table 5-43 resources parameter description

Parameter	Type	Description
type	String	Indicates the name of a quota.
quota	Integer	Indicates the total quota.
used	Integer	Indicates the used quota.
min	Integer	Indicates the minimum value that a quota must reach.
max	Integer	Indicates the maximum value that a quota cannot exceed.

Example response

```
{
  "quotas" : {
    "resources" : [{
        "type" : "queue",
        "quota" : 30,
        "used" : 5,
        "min" : 0,
        "max" : 500
      }
    ]
  }
}
```

Status Code

Table 5-44 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-44 Status code

Status Code	Description
200	The information is obtained successfully.

5.12 Consuming Dead Letter Messages

Function

This API is used to consume the dead letter messages generated by a specified consumer group. Multiple messages can be consumed at a time. The load of messages consumed each time cannot exceed 512 KB.

Only NORMAL and FIFO queues can consume dead letter messages and therefore can have the Dead Letter Message function enabled.

URI

GET /v1.0/{project_id}/queues/{queue_id}/groups/{consumer_group_id}/deadletters?max_msgs={max_msgs}&time_wait={time_wait}&ack_wait={ack_wait}

Table 5-45 describes the parameters of this API.

Table 5-45 Parameters

Parameter	Type	Mandatory	Description	Value Range
project_id	String	Yes	Indicates the ID of a project.	N/A
queue_id	String	Yes	Indicates the queue ID.	N/A
consumer_group_id	String	Yes	Indicates the consumer group ID. You can obtain the consumer group ID from the response message returned after you call the API to view all consumer groups of a specified queue. For details, see 5.6 Viewing All Consumer Groups of a Specified Queue.	N/A

Parameter	Type	Mandatory	Description	Value Range
max_msgs	Integer	No	Indicates the number of consumable dead letter messages that can be obtained a time. **NOTE** The number of dead letter messages actually consumed at a time may be less than the message quantity specified in the consumption request. However, all dead letter messages in the queue will be eventually obtained by the consumer after multiple rounds of consumption.	Value range: 1–10. Default Value: **10**.
time_wait	Integer	No	Indicates the waiting time for reading messages when the number of dead letter messages that can be consumed by a consumer group is 0. If a dead letter message is available during the wait period, the message consumption result is returned immediately. If no dead letter message is available until the wait period expires, an empty response will be returned after the wait period ends.	Value range: 1 to 60 seconds. Default value: **3s**. The default wait period is 3 seconds even if the API request does not carry the **time_wait** parameter or the **time_wait** parameter in the API request is left unspecified.

Parameter	Type	Mandatory	Description	Value Range
ack_wait	Integer	No	Indicates the commit submission timeout interval. Acknowledgement within the time specified by this parameter is valid. Otherwise, the system displays a message indicating that the message acknowledgement times out or the handler is invalid.	Value range: 15 to 300 seconds. Default value: **30s**. If this parameter is left unspecified or empty, the default value **30s** is used.

Example

```
v1.0/b78a90ae2a134b4b8b2ba30acab4e23a/queues/075ae7da-6ce5-4966-940c-17c19fb5175e/groups/g-5ec247fd-d4a2-4d4f-9876-e4ff3280c461/deadletters?max_msgs=10&ack_wait=30
```

Request

Request parameters

None.

Example request

None.

Response

Response parameters

Table 5-46 and Table 5-47 describe the response parameters.

Table 5-46 Response parameters

Parameter	Type	Description
message	JSON object	Indicates the message content.
handler	String	Indicates the message handler.

Table 5-47 message parameter description

Parameter	Type	Description
body	JSON	Indicates the message body.
attributes	JSON object	Indicates the list of attributes.

Example response

```
[{
  "message" : {
   "body" : {
    "foo" : "123="
   },
   "attributes": {
       "attribute1": "value1",
       "attribute2": "value2"
        }
  },
  "handler" :
"eyJjZyI6Im15X2pzb25fZ3JvdXAiLCJjaSI6InJlc3QtY29uc3VtZXItYzNlNThiNjEtYzA0NC00NGJkLTkxM2ItZDgzNjljNmJhYTQxIiwiY291bnQiOjAsIm9mZnNldCI6MCwicCI6MCwidCI6InRlc3QyIn0="
 }, {
  "message" : {
   "body" : {
    "foo" : "123="
   },
   "attributes": {
       "attribute1": "value1",
       "attribute2": "value2"
        }
  },
  "handler" :
"eyJjZyI6Im15X2pzb25fZ3JvdXAiLCJjaSI6InJlc3QtY29uc3VtZXItYzNlNThiNjEtYzA0NC00NGJkLTkxM2ItZDgzNjljNmJhYTQxIiwiY291bnQiOjAsIm9mZnNldCI6MSwicCI6MCwidCI6InRlc3QyIn0="
 }
]
```

Status Code

Table 5-48 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see 7.1 Status Code.

Table 5-48 Status code

Status Code	Description
200	The information is obtained successfully.

5.13 Acknowledging Consumption of Specified Dead Letter Messages

Function

This API is used to confirm the consumption of specified dead letter messages.

When a dead letter message is being consumed, it remains in the queue. It cannot be consumed again by the same consumer group within 30s since the start of the consumption. If consumption is not acknowledged within this period, DMS determines that this dead letter message fails to be consumed, and this dead letter message can be consumed again.

Once consumption is acknowledged, this dead letter message can no longer be consumed by the same consumer group. Dead letter messages remain in the queue for 72 hours (unless the consumer group is deleted) and will be deleted after this period.

After a batch of messages is consumed, consumers must submit their consumption acknowledgement by strictly following the message consumption sequence. DMS sequentially checks whether messages are successfully consumed. If DMS finds that a message is not acknowledged as a consumed message or fails to be consumed, DMS stops checking but directly determines that all the subsequent messages fail to be consumed. Therefore, when a consumer fails to acknowledge the consumption of a message (in a batch of messages), you are advised to stop the consumer from consuming the rest of the messages, and acknowledge the consumption of messages that have been successfully consumed.

Only NORMAL and FIFO queues can consume dead letter messages and therefore can have the Dead Letter Message function enabled.

URI

POST /v1.0/{project_id}/queues/{queue_id}/groups/{consumer_group_id}/deadletters/ack

Table 5-49 describes the parameters of this API.

Table 5-49 Parameters

Parameter	Type	Mandatory	Description
project_id	String	Yes	Indicates the ID of a project.
queue_id	String	Yes	Indicates the queue ID.
consumer_group_id	String	Yes	Indicates the consumer group ID.

Request

Request parameters

Table 5-50 and Table 5-51 list the parameter description.

Table 5-50 Request parameters

Parameter	Type	Mandatory	Description
message	Array	Yes	Indicates the message confirmation arrays.

Table 5-51 message parameter description

Parameter	Type	Mandatory	Description
handler	String	Yes	Indicates the ID returned during the consumption.
status	String	No	Indicates the message consumption status. The value can be **success** or **fail**.

Example request

```
{
  "message": [
    {
      "handler":
"eyJjb25zdW1lckdyb3VwIjoibXFzX2NvbnN1bWVyXzMiLCJjb25zdW1lckluc3RhbmNlIjoicmVzdC1jb25zdW1lci1hMWM5YTRlMy1mNTY5LTQyYTgtOTQ1Ni1hYmU0NDVmZjUxYzkiLCJjb3VudCI6MSwib2Zmc2V0IjowLCJvZmZzZXRJbmRleCI6LTEsInBhcnRpdGlvbiI6MiwidG9waWMiOiJxLWI3OGE5MGFlMmExMzRiNGI4YjJiYTMwYWNhYjRlMjNhLTA3NWFlN2RhLTZjZTUtNDk2Ni05NDBjLTE3YzE5ZmI1MTc1ZSJ9",
      "status": "success"
    }
  ]
}
```

Response

Response parameters

Table 5-52 describes the response parameters.

Table 5-52 Response parameters

Parameter	Type	Description
success	Integer	Indicates the number of dead letter messages that are successfully acknowledged. The value **N** indicates that the first *N* dead letter messages are successfully acknowledged.

Parameter	Type	Description
fail	Integer	Indicates the number of dead letter messages that failed to be acknowledged. The value **N** indicates that the first *N* dead letter messages failed to be acknowledged.

Example response

```
{
  "success": 1,
  "fail": 2
}
```

Status Code

Table 5-53 lists the status code indicating that the operation is successful. For details about the status codes indicating that the operation fails, see **7.1 Status Code**.

Table 5-53 Status code

Status Code	Description
200	The consumption of the dead letter message is successfully acknowledged.

6 FAQ

6.1 Why Is the Message "Connect IAM Timeout" Displayed When I Attempt to Access DMS?

Symptom

An error message "Connect IAM Timeout" is displayed when I attempt to use the API to access DMS.

```
Get quota fail: 401
{"message": "Connect IAM Timeout", "request_id":
"5ACB6B21-DAF6-47C8-B7A4-45A7BDC57FC6"}
```

Possible Cause

The AK/SK pair is deleted on the web-based DMS console.

Troubleshooting Method

Step 1 Log in to the management console.

Step 2 Click the username and select **My Credential** from the drop-down list.

Step 3 Click **Access Keys**.

Step 4 Click **Add Access Key**.

Step 5 Enter **Login Password** and **Verification Code** and click **OK**. Download the access key and keep it secure.

Step 6 Use the new AK/SK pair to access DMS.

----End

7 Appendix

7.1 Status Code

Table 7-1 lists status codes.

Table 7-1 Status codes

Status Code	Name	Description
100	Continue	The server has received the initial part of the request and the client should continue to send the remaining part.
101	Switching Protocols	The requester has asked the server to switch protocols and the server has agreed to do so. The target protocol must be more advanced than the source protocol. For example, the current HTTP protocol is switched to a later version of HTTP.
200	OK	Request sent successfully.
201	Created	The request has been fulfilled, resulting in the creation of a new resource.
202	Accepted	The request has been accepted for processing, but the processing has not been completed.
203	Non-Authoritative Information	The request has been fulfilled.
204	NoContent	The server has successfully processed the request, but is not returning any response body. The status code is returned in response to an HTTP OPTIONS request.

Status Code	Name	Description
205	Reset Content	The server has fulfilled the request, but the requester is required to reset the content.
206	Partial Content	The server has successfully processed a part of the GET request.
300	Multiple Choices	There are multiple options for the requested resource. For example, this code could be used to present a list of resource characteristics and addresses from which the client such as a browser may choose.
301	Moved Permanently	This and all future requests have been permanently moved to the given URI indicated in this response.
302	Found	The requested resource was temporarily moved.
303	See Other	The response to the request can be found under another URI using a GET or POST method.
304	Not Modified	The requested resource has not been modified. When the server returns this status code, it does not return any resources.
305	Use Proxy	The requested resource is available only through a proxy.
306	Unused	This HTTP status code is no longer used.
400	BadRequest	Invalid request. The client should modify the request instead of re-initiating it.
401	Unauthorized	The authorization information provided by the client is incorrect or invalid.
402	Payment Required	Reserved for future use.
403	Forbidden	The server has received the request and understood it, but the server is refusing to respond to it. The client should modify the request instead of re-initiating it.
404	NotFound	The requested resource cannot be found. The client should modify the request instead of re-initiating it.

Status Code	Name	Description
405	MethodNotAllowed	A request method is not supported for the requested resource. The client should modify the request instead of re-initiating it.
406	Not Acceptable	The server cannot fulfill the request based on the content characteristics of the request.
407	Proxy Authentication Required	This code is similar to 401, but indicates that the client must first authenticate itself with the proxy.
408	Request Time-out	The server timed out when waiting for the request. The client may re-initiate the request without any modification at any time.
409	Conflict	The request cannot be processed due to a conflict, such as an edit conflict between multiple simultaneous updates or the resource that the client attempts to create already exits.
410	Gone	The requested resource has been deleted permanently and will not be available again.
411	Length Required	The server refused to process the request because the request does not specify the length of its content.
412	Precondition Failed	The server does not meet one of the preconditions that the requester puts on the request.
413	Request Entity Too Large	The server refuses to process a request because the request is too large. The server may close the connection to prevent the client from continuing the request. If the server cannot process the request temporarily, the response will contain a Retry-After field.
414	Request-URI Too Large	The URI provided was too long for the server to process.
415	Unsupported Media Type	The server does not support the media type in the request.
416	Requested range not satisfiable	The requested range is invalid.
417	Expectation Failed	The server fails to meet the requirements of the Expect request-header field.

Status Code	Name	Description
422	UnprocessableEntity	The request is well-formed but is unable to be processed due to semantic errors.
429	TooManyRequests	The client has sent more requests than its rate limit is allowed within a given amount of time, or the server has received more requests than it is able to process within a given amount of time. In this case, the client should re-initiate requests after the time specified in the Retry-After header of the response expires.
500	InternalServerError	The server is able to receive the request but it could not understand the request.
501	Not Implemented	The server does not support the requested function.
502	Bad Gateway	The server was acting as a gateway or proxy and received an invalid request from a remote server.
503	ServiceUnavailable	The requested service is invalid. The client should modify the request instead of re-initiating it.
504	ServerTimeout	The request cannot be fulfilled within a given time. The response will reach the client only if the request carries the **timeout** parameter.
505	HTTP Version not supported	The server does not support the HTTP protocol version used in the request.

7.2 Error Code

Table 7-2 DMS error codes

Status Code	Error Code	Description
400	10240002	The number of queried queues exceeds the upper limit.
400	10240004	The tag name is invalid.
400	10240005	The project ID format is invalid.
400	10240007	The name contains invalid characters.
400	10240009	The message body is not in JSON format or contains invalid characters.
400	10240010	The description contains invalid characters.

Status Code	Error Code	Description
400	10240011	The name length must be 1 to 64 characters.
400	10240012	The name length must be 1 to 32 characters.
400	10240013	The description length must not exceed 160 characters.
400	10240014	The number of consumable messages exceeds the maximum limit.
400	10240015	The queue ID format is invalid.
400	10240016	The group ID format is invalid.
400	10240017	The queue already exists.
400	10240018	The consumer group already exists.
400	10240019	The number of consumer groups exceeds the upper limit.
400	10240020	The quota is insufficient.
400	10240021	The value of **time_wait** is not within the value range of 1–60.
400	10240022	The value of **max Consume Count** must be within the range of 1–100.
400	10240027	The value of **retention_hours** must be an integer in the range of 1–72.
400	10240028	Non-kafka queues do not support **retention_hours**.
400	10240032	The queue is being created.
401	10240101	Invalid token.
401	10240102	Expired token.
401	10240103	Missing token.
401	10240104	The project ID and token do not match.
403	10240304	Change the quota of a queue or consumer group to a value smaller than the used quota.
403	10240306	The tenant has been frozen. You cannot perform operations on DMS.
403	10240308	The queue quota must be within the range of 1–20.
403	10240309	Access denied. You cannot perform operations on DMS.
403	10240310	A tenant has read-only permissions and cannot perform operations on DMS.
403	10240311	This role does not have the permissions to perform this operation.

Status Code	Error Code	Description
403	10240312	The tenant is restricted and cannot perform operations on DMS.
404	10240401	The queue ID is incorrect or not found.
404	10240405	The consumer group ID is incorrect or not found.
404	10240406	The URL or endpoint does not exist.
500	10250002	Internal service error.
500	10250003	Internal service error.
500	10250004	Internal service error.
500	10250005	Internal communication error.
500	10250006	Internal service error.
400	10540001	The message body contains invalid fields.
400	10540003	Message ack status must be either 'success' or 'fail'. It should not be '{status}'.
400	10540004	Request error: The queue or group name does not match the handler.
400	10540010	The request format is incorrect: {error description}.
400	10540011	The message size is {message size}, larger than the size limit {max allowed size}.
400	10540012	The message body is not in JSON format or contains invalid characters.
400	10540014	The URL contains invalid parameters.
400	10540202	The request format is incorrect: {error description}.
400	10542204	Failed to consume messages due to {desc}.

Status Code	Error Code	Description
400	10542205	Failed to obtain the consumption instance because the handler does not exist. This may be because the consumer instance is released 1 minute after the message is consumed. As a result, the consumer instance fails to be obtained from the handler. This error code is returned in the following scenarios: ● The handler of another consumption instance is submitted. ● The message consumption is acknowledged more than 1 minute after the message is consumed. ● A dead letter message consumption API is used to acknowledge the consumption of normal messages. ● A normal message consumption API is used to acknowledge the consumption of dead letter messages.
400	10542206	The value of **ack_wait** must be within the range of 15–300.
400	10542209	The handler does not exist because the handler fails to be parsed, the message consumption times out, or the message consumption is repeatedly acknowledged. This error code is returned in the following scenarios: ● A wrong handler is submitted after the message is consumed. ● The message is not consumed and a fake handler is used to acknowledge the message consumption. ● The message consumption is acknowledged more than 30s after the message is consumed. ● A used handler is used to repeatedly acknowledge message consumption within 30s after the message is consumed. Due to performance concerns, the system timeout timing mechanism is not very precise, and the system performs periodic timeout detection instead of real-time detection.
400	10542214	The request format is incorrect: {error description}.
404	10240407	The request is too frequent. Flow control is being performed. Please try again later.
404	10540401	The queue name does not exist.
500	10550035	**tag_type** must be either **or** or **and**.

Table 7-3 Error codes of DMS RabbitMQ or Kafka instances

Status Code	Error Code	Description
400	111400002	The project ID format is invalid.
400	111400004	The request body is empty.
400	111400005	The message body is not in JSON format or contains invalid characters.
400	111400007	Unsupported type.
400	111400008	Unsupported version.
400	111400009	Invalid **product_id**.
400	111400010	Invalid instance name. The name must be 4 to 64 characters long. Only letters, digits, underscores (_), and hyphens (-) are allowed.
400	111400011	The instance description can contain a maximum of 1024 characters.
400	111400012	The password does not meet the complexity requirements. An instance password must: ● Be a string consisting of 8 to 32 characters. ● Contain at least two of the following character types: – Lowercase letters – Uppercase letters – Digits – Special characters `~!@#$%^&*()-_=+|[{}];:',<.>/?
400	111400013	**vpc_id** in the request is empty.
400	111400014	**security_group_id** in the request is empty.
400	111400015	Invalid username. A username must be 4 to 64 characters long and consist of only letters, digits, and hyphens (-).
400	111400016	**subnet_id** in the request is empty.
400	111400018	This subnet must exist in the VPC.

Status Code	Error Code	Description
400	111400019	The password does not meet the complexity requirements.
400	111400020	DHCP must be enabled for this subnet.
400	111400026	This operation is not allowed due to the instance status.
400	111400037	The **instanceParams** parameter in the request contains invalid characters or is not in JSON format.
400	111400038	The **periodNum** parameter in the request must be an integer.
400	111400042	The AZ does not exist.
400	111400045	The instance is not frozen and cannot be unfrozen.
400	111400046	This security group does not exist.
400	111400048	Invalid security group rules. Ensure that rules with the protocol being **ANY** are configured for both the inbound and outbound directions.
400	111400060	This instance name already exists.
400	111400061	Invalid instance ID format.
400	111400062	Invalid request parameter. The status of an instance to be queried must be a value listed in **Table 7-4**.
400	111400063	Invalid configuration parameter {0}.
400	111400064	The **action** parameter in the request must be **delete** or **restart**.
400	111400065	The **instances** parameter in the request is empty.
400	111400066	Invalid configuration parameter {0}.
400	111400067	The **available_zones** parameter in the request must be an array that contains only one AZ ID.
400	111400068	The VPC does not exist.

Status Code	Error Code	Description
400	111400080	Incorrect instance password.
400	111400081	Duplicate instance name.
400	111400099	The following instances in the Creating, Starting, Stopping, or Restarting state cannot be deleted: {}
400	111400100	The **instances** array can contain a maximum of 50 instance IDs.
400	111400101	The name of a Kafka topic must be 4 to 64 characters long and start with a letter. Only letters, digits, underscores (_), and hyphens (-) are allowed.
400	111400102	The number of partitions created for a Kafka topic must be within the range of 1–20.
400	111400103	The number of replicas created for a Kafka topic must be within the range of 1–20.
400	111400105	The message retention period of a Kafka topic must be within the range of 1–168.
400	111400106	Invalid maintenance time window.
400	111400800	• Duplicate topic name. • Invalid request. You can create, delete, or query a topic only for a Kafka instance. • Invalid parameter. Error information varies by scenario.
401	111401001	Invalid token.
401	111401003	The token is missing.
401	111401004	The project ID and token do not match.
403	111403002	A tenant has the read-only permission and cannot perform operations on DMS.
403	111403003	This role does not have the permissions to perform this operation.
404	111404001	The requested URL does not exist.
404	111404022	This instance does not exist.

Status Code	Error Code	Description
404	111404024	Connector does not exist.
404	111404026	The dumping task does not exist.
404	111404027	Connector already exists.
404	111404029	The dumping task quota has been reached.
405	111405001	This request method is not allowed.
400	111400500	Invalid disk space.
400	111400125	Invalid **SPEC_CODE**.
400	111400124	The maximum number of disk expansion times has been reached.
500	111500000	Internal service error.
500	111500006	Internal service error.
500	111500017	Internal service error.
500	111500023	Internal service error.
500	111500024	Internal service error.
500	111500025	Internal service error.
500	111500041	Internal service error.
500	111500051	Internal service error.
500	111500052	Internal service error.
500	111500053	Internal service error.

Status Code	Error Code	Description
500	111500054	Internal service error.
500	111500070	Internal service error.
500	111500071	Internal service error.
500	111500094	Internal service error.
500	111500106	Internal service error.

7.3 Instance Status

Table 7-4 Instance status description

Status	Description
CREATING	The instance is being created.
CREATEFAILED	The instance failed to be created.
RUNNING	The instance is running properly. Only instances in the **Running** state can provide services.
ERROR	The instance is not running properly.
STARTING	The instance is being started.
RESTARTING	The instance is being restarted.
CLOSING	The instance is being stopped.
FROZEN	The instance has been frozen due to insufficient account balance. You can unfreeze the instance by topping up your account in **My Order**.

7.4 Obtaining a Project ID

Obtaining a Project ID by Calling an API

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

The API for obtaining a project ID is **GET https://*{Endpoint}*/v3/projects**, where *{Endpoint}* indicates the IAM endpoint obtained from **Regions and Endpoints**. For details on API calling authentication, see **3.2 Authentication**.

The following is an example response. The value of **id** in the **projects** section is the project ID:


```
{
    "projects": [
        {
            "domain_id": "65382450e8f64ac0870cd180d14e684b",
            "is_domain": false,
            "parent_id": "65382450e8f64ac0870cd180d14e684b",
            "name": "cn-north-4",
            "description": "",
            "links": {
                "next": null,
                "previous": null,
                "self": "https://www.example.com/v3/projects/a4a5d4098fb4474fa22cd05f897d6b99"
            },
            "id": "a4a5d4098fb4474fa22cd05f897d6b99",
            "enabled": true
        }
    ],
    "links": {
        "next": null,
        "previous": null,
        "self": "https://www.example.com/v3/projects"
    }
}
```


Obtaining a Project ID on the Console

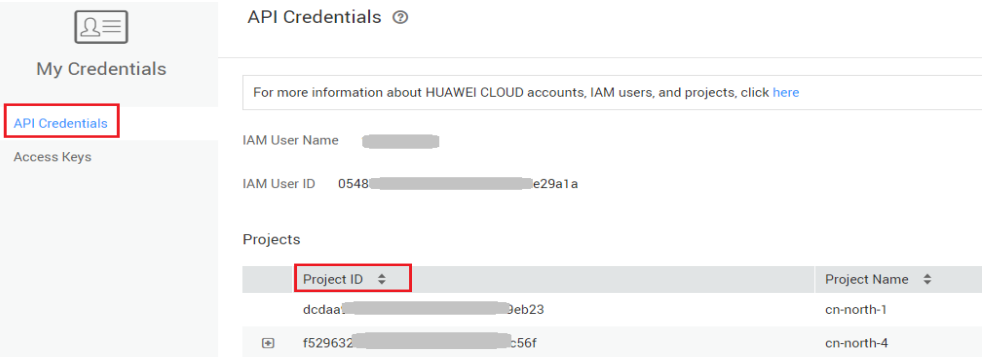
A project ID is required for some URLs when an API is called. You can obtain a project ID on the console.

The following procedure describes how to obtain a project ID:

Step 1 Log in to the management console.

Step 2 Click the username in the upper right corner, choose **My Credentials** from the drop-down list, and then view the project ID on the **Project List** tab page.

Figure 7-1 Viewing the project ID



----End

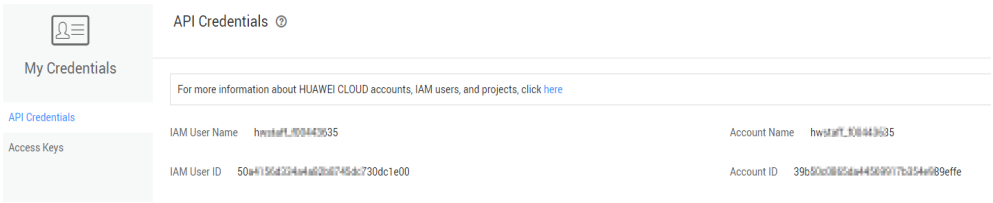
7.5 Obtaining Account Name and Account ID

When calling APIs, you need to specify your account name and account ID in certain URLs. To do so, you need to obtain account name and account ID on the console first. The following procedure describes how to obtain the account name and account ID:

1. Log in to the management console.
2. Click the username in the upper right corner and choose **My Credential** from the drop-down list.

   View the account name and account ID.

Figure 7-2 Viewing the account name and account ID



A Change History

Released On	Description
2019-05-30	This issue is the eighteenth official release. • Added description about DMS permissions policies and supported actions.
2019-01-04	This issue is the seventeenth official release. • Removed the ActiveMQ queue type.
2018-11-15	This issue is the sixteenth official release. • Added parameters **is_logical_volume** and **extend_times** to the API for querying a specified instance and the API for querying all instances.
2018-10-29	This issue is the fifteenth official release. • Revised description in the previous issue.
2018-08-15	This issue is the fourteenth official release. • Added the function of enabling SSL in the API for creating an instance. • Added the function of synchronous replication in the API for creating a topic in a Kafka instance. • Added quotas of RabbitMQ instances and Kafka premium instances in **5.11 Viewing Quotas**.

Released On	Description
2018-07-10	This issue is the thirteenth official release. • Added parameters for enabling public access to a RabbitMQ instance in the section on creating an instance. • Added parameters for querying public access to a RabbitMQ instance in the section on querying an instance. • Added parameters for modifying public access to a RabbitMQ instance in the section on modifying an instance. • Added pagination query parameters in **5.6 Viewing All Consumer Groups of a Specified Queue**.
2018-06-15	This issue is the twelfth official release. • Added the API for creating a topic in a Kafka instance. • Added the API for querying a topic in a Kafka instance. • Added the API for deleting topics in a Kafka instance in batches. • Added parameters about Kafka premium instances to the API for creating an instance. • Optimized the navigation structure of this document.
2018-05-14	This issue is the eleventh official release. • Added nine APIs for instance management.
2018-03-15	This issue is the tenth official release. • Added description about the delay message delivery function for standard and FIFO queues. • Added the AMQP queue type.
2018-01-15	This issue is the ninth official release. Added description about the **retention_hours** parameter for Kafka queues.
2017-12-18	This issue is the eighth official release. • Added description about obtaining request authentication information.
2017-10-16	This issue is the seventh official release. • Added description about message labels. • Added description about Kafka queues.

Released On	Description
2017-08-17	This issue is the sixth official release. • Added parameters of dead letter queues in **5.1 Creating a Queue**, **5.2 Viewing All Queues**, and **5.3 Viewing a Queue**. • Added **5.12 Consuming Dead Letter Messages** and **5.13 Acknowledging Consumption of Specified Dead Letter Messages**.
2017-05-31	This issue is the fifth official release. Added description about the **queue_mode** parameter in **5.1 Creating a Queue**.
2017-05-20	This issue is the fourth official release. Added description about the **time_wait** parameter in **5.9 Consuming Messages**.
2017-04-21	This issue is the third official release.
2017-02-13	This issue is the second official release.
2016-08-25	This issue is the first official release.