Distributed Message Service for RocketMQ

User Guide

Issue 01

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HUAWEI

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Contents

1 Permission Management

1.1 Creating a User and Granting DMS for RocketMQ Permissions

This section describes how to use **Identity and Access Management (IAM)** for fine-grained permissions control for your Distributed Message Service (DMS) for RocketMQ resources. With IAM, you can:

- Create IAM users for employees based on your enterprise's organizational structure. Each IAM user will have their own security credentials for accessing DMS for RocketMQ resources.
- Manage permissions on a principle of least permissions (PoLP) basis.
- Entrust a Huawei Cloud account or cloud service to perform efficient O&M on your DMS for RocketMQ resources.

If your Huawei Cloud account does not need IAM, skip this section.

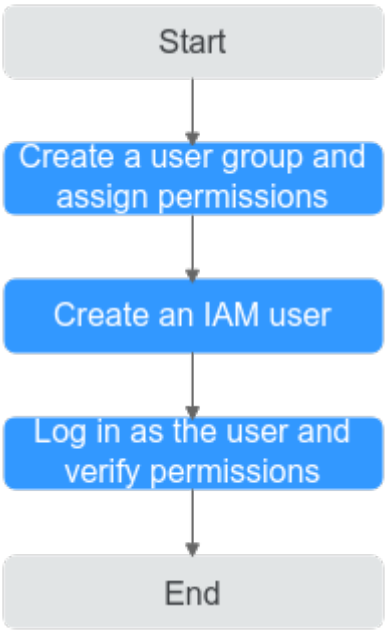
This section describes the procedure for granting permissions (see **Figure 1-1**).

Prerequisites

Learn about the permissions (see **Permissions Management**) supported by DMS for RocketMQ and choose policies or roles according to your requirements. For the system policies of other services, see **System Permissions**.

Process Flow

Figure 1-1 Process for granting DMS for RocketMQ permissions



1. **Create a user group and assign permissions**.

   Create a user group on the IAM console, and assign the **DMS ReadOnlyAccess** policy to the group.
2. **Create a user and add it to the user group**.

   Create a user on the IAM console and add the user to the group created in **1**.
3. **Log in as the created user** and verify permissions.

   Log in to the DMS for RocketMQ console using the user you just created, and verify that the user has the administrator permissions for DMS for RocketMQ.

1.2 DMS for RocketMQ Custom Policies

Custom policies can be created to supplement the system-defined policies of DMS for RocketMQ. For the actions that can be added to custom policies, see **Permissions Policies and Supported Actions**.

You can create custom policies in either of the following ways:

- Visual editor: Select cloud services, actions, resources, and request conditions. This does not require knowledge of policy syntax.
- JSON: Edit JSON policies from scratch or based on an existing policy.

For details, see **Creating a Custom Policy**. The following section contains examples of common DMS for RocketMQ custom policies.

NOTE

DMS for RocketMQ permissions policies are based on DMS. Therefore, when assigning permissions, select DMS permissions policies.

Example Custom Policies

- Example 1: Allowing users to delete and restart instances

```
{
   "Version": "1.1",
   "Statement": [
      {
         "Effect": "Allow",
         "Action": [
            "
                dms:instance:delete
                dms:instance:modifyStatus
             "
         ]
      }
   ]
}
```

- Example 2: Denying instance deletion

  A policy with only "Deny" permissions must be used in conjunction with other policies to take effect. If the permissions assigned to a user include both "Allow" and "Deny", the "Deny" permissions take precedence over the "Allow" permissions.

  The following method can be used if you need to assign permissions of the **DMS FullAccess** policy to a user but you want to prevent the user from deleting instances. Create a custom policy for denying instance deletion, and attach both policies to the group to which the user belongs. Then, the user can perform all operations on DMS for RocketMQ except deleting instances. The following is an example of a deny policy:

```
{
    "Version": "1.1",
    "Statement": [
        {
            "Effect": "Deny",
            "Action": [
                "dms:instance:delete"
            ]
        }
    ]
}
```


2 Preparing Required Resources

Overview

Before purchasing a RocketMQ instance, prepare the required resources, including a virtual private cloud (VPC), subnet, and security group with proper rules. Each RocketMQ instance is deployed in a VPC and bound to a specific subnet and security group, which provide an isolated virtual network environment and allow you to easily configure and manage security protection policies.

Required Resources

Table 2-1 lists the resources required by a RocketMQ instance.

Table 2-1 RocketMQ resources

Resource	Requirement	Operations
VPC and subnet	Different RocketMQ instances can use the same or different VPCs and subnets based on site requirements. Note the following when creating a VPC and subnet: • The VPC and the RocketMQ instance must be in the same region. • Use the default settings when creating a VPC and subnet.	For details on how to create a VPC and subnet, see **Creating a VPC**. If you need to create and use a new subnet in an existing VPC, see **Creating a Subnet for the VPC**.

Resource	Requirement	Operations
Security group	Different RocketMQ instances can use the same security group or different security groups. Note the following when creating a security group: • Set **Template** to **Custom**. • To use DMS for RocketMQ, add the security group rules described in **Table 2-2**. You can also add other rules based on site requirements. **NOTE** After a security group is created, its default inbound rule allows communication among ECSs within the security group and its default outbound rule allows all outbound traffic. In this case, you can access a RocketMQ instance within a VPC, and do not need to add rules according to **Table 2-2**.	For details on how to create a security group, see **Creating a Security Group**. For details on how to add rules to a security group, see **Adding a Security Group Rule**.
EIP	Note the following when creating EIPs: • The EIPs must be created in the same region as the RocketMQ instance. • **The RocketMQ console cannot identify IPv6 EIPs.**	For details about how to create an EIP, see **Assigning an EIP**.

Table 2-2 Security group rules

Direction	Protocol	Port	Source	Description
Inbound	TCP	8100	0.0.0.0/0	The port is used for intra-VPC access to metadata nodes.
Inbound	TCP	8200	0.0.0.0/0	The port is used for public access to metadata nodes.
Inbound	TCP	10100-10199	0.0.0.0/0	The port is used for accessing service nodes.

3 Buying an Instance

Scenario

Your RocketMQ instance will be deployed in physical isolation and exclusively used by you. You can customize the computing capabilities and storage space of an instance based on service requirements.

Prerequisites

A VPC configured with security groups and subnets is available. For details, see **Preparing Required Resources**.

Buying an Instance

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region your application is in.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click **Buy RocketMQ Instance** in the upper right corner of the page.

Step 5 Specify **Billing Mode**, **Region**, **Project**, and **AZ**.

Step 6 Configure the following instance parameters:

1. **Instance Name**: Enter a name for the instance.
2. **Enterprise Project**: Select an enterprise project based on service requirements.
3. **Specifications**: Select **Default** or **Custom**.

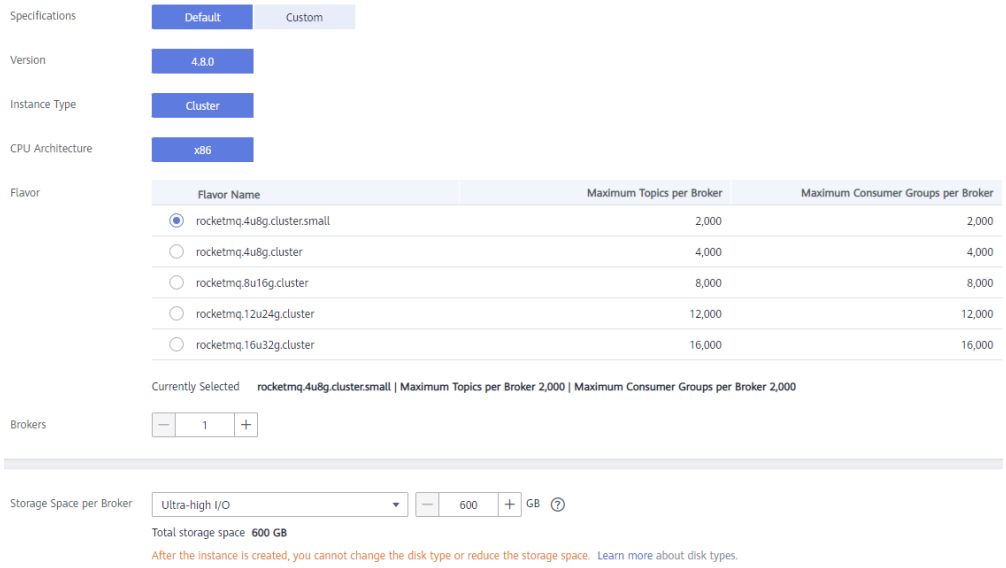
   If you select Default, specify the flavor, number of brokers, and broker storage space to be supported by the RocketMQ instance based on the site requirements.

   - **Version**: RocketMQ version. Currently, only version 4.8.0 is supported.

- **Instance Type**: Currently, only cluster instances are supported.
- **CPU Architecture**: Currently, only x86 architecture is supported.
- **Specifications**: Select specifications based on service requirements.
- **Brokers**: Number of brokers.
- **Storage Space per Broker**: Disk type and total storage space of each broker.

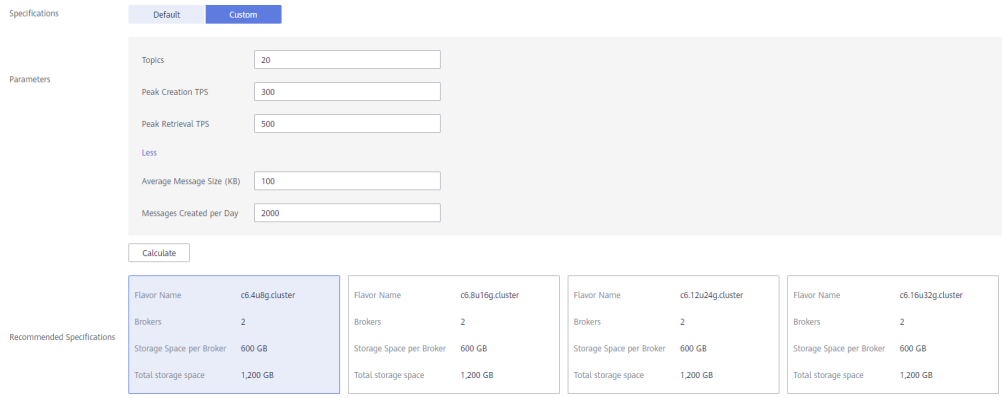
  The disk type can be high I/O or ultra-high I/O. For details on how to select a disk type, see **Disk Types and Disk Performance**.

Figure 3-1 Default specifications



If you select Custom, the system calculates the number of brokers and broker storage space for different flavors based on your specified number of topics, peak creation TPS, peak retrieval TPS, average message size, and number of messages created every day. You can select one of the recommended flavors as required.

Figure 3-2 Specification calculation



Step 7 Configure the instance network parameters.

1. Select a VPC and a subnet.

A VPC provides an isolated virtual network for your RocketMQ instances. You can configure and manage the network.

NOTE

After the RocketMQ instance is created, its VPC and subnet cannot be changed.

2. Select a security group.

   A security group is a set of rules for accessing a RocketMQ instance.

Step 8 Select the required duration.

This parameter is displayed only if the billing mode is yearly/monthly.

Step 9 Click **More Settings** to configure more parameters.

- Configure **Public Access**.

  Public access is disabled by default. You can enable or disable it as required. After public access is enabled, configure an IPv4 EIP for each broker.

- Configure **SSL**.

  This parameter indicates whether to enable SSL authentication when a client connects to the RocketMQ instance. If **SSL** is enabled, data will be encrypted before transmission for enhanced security.

  This setting cannot be changed after the instance is created. If you want to use a different SSL setting after the instance is created, you must create another instance.

- Specify tags.

  Tags are used to identify cloud resources. When you have many cloud resources of the same type, you can use tags to classify cloud resources by dimension (for example, usage, owner, or environment).

  – If you have created predefined tags, select a predefined pair of tag key and value. To view or create predefined tags, click **View predefined tags** on the right. You will then be directed to the TMS console.

  – You can also create new tags by entering **Tag key** and **Tag value**.

  Up to 20 tags can be added to each RocketMQ instance.

- Enter a description of the instance.

Step 10 Click **Buy**.

Step 11 Confirm the instance information, and read and agree to the *HUAWEI CLOUD Customer Agreement*. If you have selected the yearly/monthly billing mode, click **Pay Now** and make the payment as prompted. If you have selected the pay-per-use mode, click **Submit**.

Step 12 Return to the instance list and check whether the instance has been created.

It takes 3 to 15 minutes to create an instance. During this period, the instance status is **Creating**.

- If the instance is created successfully, its status changes to **Running**.

- If the instance fails to be created, view **Instance Creation Failures**. Delete the instance by referring to **Deleting an Instance** and create another instance. If the instance creation fails again, contact customer service.

----End

4 Accessing an Instance

4.1 Accessing a RocketMQ Instance Without SSL Enabled

This section describes how to connect to a RocketMQ instance in a VPC or over a public network using CLI but without using SSL.

Intra-VPC access and public access differ only in the connection IP addresses and ports. For intra-VPC access, use port 8100. For public access, use port 8200.

The following describes only the procedure for public access. For intra-VPC access, replace the IP addresses with the actual ones.

Prerequisites

- A RocketMQ instance has been created and you have obtained the metadata connection addresses for intra-VPC access or public network access.
- **Security group rules** have been configured.
- **A topic** has been created.
- An ECS has been created. For intra-VPC access, ensure that its VPC, subnet, and security group configurations are the same as those of the RocketMQ instance.
- **JDK v1.8.111 or later** has been installed, and related environment variables have been configured.

Accessing the Instance with CLI

Step 1 Download the **rocketmq-tutorial** software package.

```
wget https://dms-demo.obs.cn-north-1.myhuaweicloud.com/rocketmq-tutorial.zip
```

Step 2 Decompress the **rocketmq-tutorial** package.

```
unzip rocketmq-tutorial.zip
```

Step 3 Go to the **rocketmq-tutorial/bin** directory.

```
cd rocketmq-tutorial/bin
```


Step 4 Create normal messages using the sample project.

```
sh mqadmin sendMessage -n "${Connection addresses}" -t ${Topic name} -p "hello rocketmq"
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
sh mqadmin sendMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -p "hello rocketmq"
```

Press **Ctrl**+**C** to exit.

Step 5 Retrieve normal messages using the sample project.

```
sh mqadmin consumeMessage -n "${Connection addresses}" -t ${Topic name}
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
sh mqadmin consumeMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test
```

To stop consuming messages, press **Ctrl**+**C** to exit.

Step 6 Create messages with traces using the sample project.

```
sh mqadmin sendMessage -n "${Connection addresses}" -t ${Topic name} -p "hello rocketmq" -m true
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
sh mqadmin sendMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -p "hello rocketmq" -
m true
```

Press **Ctrl**+**C** to exit.

Step 7 Retrieve messages and send the message traces using the sample project.

```
sh mqadmin consumeMessage -n "${Connection addresses}" -t ${Topic name} -m true
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
sh mqadmin consumeMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -m true
```

Press **Ctrl**+**C** to exit.

----End

4.2 Accessing a RocketMQ Instance with SSL Enabled

If SSL is enabled, data will be encrypted before transmission for enhanced security. This section describes how to connect to a RocketMQ instance in a VPC or over a public network using CLI and SSL.

Intra-VPC access and public access differ only in the connection IP addresses and ports. For intra-VPC access, use port 8100. For public access, use port 8200.

The following describes only the procedure for public access. For intra-VPC access, replace the IP addresses with the actual ones.

Prerequisites

- A RocketMQ instance has been created and you have obtained the metadata connection addresses for intra-VPC access or public network access.
- **Security group rules** have been configured.
- **A topic** has been created.
- An ECS has been created. For intra-VPC access, ensure that its VPC, subnet, and security group configurations are the same as those of the RocketMQ instance.
- **JDK v1.8.111 or later** has been installed, and related environment variables have been configured.

Accessing the Instance with CLI

Step 1 Download the **rocketmq-tutorial** software package.

```
wget https://dms-demo.obs.cn-north-1.myhuaweicloud.com/rocketmq-tutorial.zip
```

Step 2 Decompress the **rocketmq-tutorial** package.

```
unzip rocketmq-tutorial.zip
```

Step 3 Go to the **rocketmq-tutorial/bin** directory.

```
cd rocketmq-tutorial/bin
```

Step 4 Create normal messages using the sample project.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin sendMessage -n "${Connection addresses}" -t ${Topic name} -p "hello rocketmq"
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin sendMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -p "hello rocketmq"
```

Press **Ctrl**+**C** to exit.

Step 5 Retrieve normal messages using the sample project.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin consumeMessage -n "${Connection addresses}" -t ${Topic name}
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin consumeMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test
```

To stop consuming messages, press **Ctrl**+**C** to exit.

Step 6 Create messages with traces using the sample project.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin sendMessage -n "${Connection addresses}" -t ${Topic name} -p "hello rocketmq" -m true
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin sendMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -p "hello rocketmq" -m true
```

Press **Ctrl**+**C** to exit.

Step 7 Retrieve messages and send the message traces using the sample project.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin consumeMessage -n "${Connection addresses}" -t ${Topic name} -m true
```

Parameter description:

- **Connection addresses**: the **metadata connection addresses** for intra-VPC access or public network access to the RocketMQ instance
- **Topic name**: name of the topic created for the RocketMQ instance

In the following example, **100.xxx.xxx.89:8200;100.xxx.xxx.144:8200** are the metadata connection addresses for public network access to the RocketMQ instance, and **topic-test** is the topic name.

```
JAVA_OPT=-Dtls.enable=true sh mqadmin consumeMessage -n "100.xxx.xxx.89:8200;100.xxx.xxx.144:8200" -t topic-test -m true
```


Press **Ctrl**+**C** to exit.

----End

5 Managing Instances

5.1 Modifying Specifications

Scenario

After creating a RocketMQ instance, you can expand its storage space and increase the number of brokers. The storage space and the number of brokers can only be changed separately.

The specifications can only be expanded. You can expand the storage space 20 times. If you increase the number of brokers, the maximum number of partitions will also be increased.

Prerequisites

A RocketMQ instance has been created and is in the **Running** state.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Modify the instance specifications using either of the following methods:

- In the row containing the desired instance, click **Modify Specifications**.
- Click a RocketMQ instance to go to the instance details page. In the upper right corner, click **Modify Specifications**.

Step 5 Specify the required storage space or the number of brokers.

The storage space and the number of brokers can only be changed separately.

- Expand the storage space.

  For **Modify By**, select **Storage**. For **Storage Space per Broker**, specify a new storage space, and click **Next**. Confirm the configurations and click **Submit**.

  View the new storage space (Storage space per broker x Number of brokers) in the **Used/Available Storage Space (GB)** column in the instance list.

  NOTE

  - Storage space expansion does not affect services.
  - Available storage space = Actual storage space – Storage space for storing logs – Disk formatting loss

    For example, if the storage space is expanded to 700 GB, the storage space for storing logs is 100 GB, and the disk formatting loss is 7 GB, then the available storage space after capacity expansion will be 593 GB.

- Add brokers.

  For **Modify By**, select **Brokers**. Then, enter the number of brokers and click **Next**. Confirm the configurations and click **Submit**.

  View the number of brokers in the **Specifications** column in the instance list.

  NOTE

  - Adding brokers does not affect the original brokers or services.
  - Only new topics are created on new brokers. The original topics are still on the original brokers. To use the new brokers, **associate them with existing topics** or create new topics.
  - If public access is enabled and EIPs are configured for the instance, configure EIPs for the new brokers.

----End

5.2 Viewing an Instance

Scenario

View detailed information about a RocketMQ instance on the DMS for RocketMQ console, for example, the IP address and port number for accessing the RocketMQ instance.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click  and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Search for a RocketMQ instance by specifying the instance status, name, connection address, or ID. **Table 5-1** describes the various possible statuses of a RocketMQ instance.

Table 5-1 RocketMQ instance status description

Status	Description
Creating	The instance is being created.
Running	The instance is running properly. Only instances in the **Running** state can provide services.
Faulty	The instance is not running properly.
Starting	The status between **Frozen** and **Running**.
Restarting	The instance is being restarted.
Changing	The instance specifications or public access configurations are being modified.
Change failed	The instance specifications or public access configurations failed to be modified.
Frozen	The instance is frozen.
Freezing	The status between **Running** and **Frozen**.
Upgrading	The instance is being upgraded.
Rolling back	The instance is being rolled back.

Step 5 Click the name of the chosen RocketMQ instance and view the instance details on the page that is displayed.

Table 5-2 describes the parameters for connecting to an instance. For details about other parameters, see the **Basic Information** tab page of the instance on the console.

Table 5-2 Instance parameters

Parameter	Description
Metadata Address	Addresses for metadata management when public access is disabled. In most scenarios, simply configure these addresses on the client.
Service Address	Addresses for service processing when public access is disabled. To perform an operation on a single service node, use any of the addresses.
Public Access	Indicates whether public access is enabled. Click  to enable or disable public access.

Parameter	Description
Metadata Address (Public)	This parameter is displayed only when public access is enabled. Addresses for metadata management when public access is enabled. In most scenarios, simply configure these addresses on the client.
Service Address (Public)	This parameter is displayed only when public access is enabled. Addresses for service processing when public access is enabled.
SSL	SSL status of the instance.
ACL	ACL status of the instance. Click  to enable ACL. **NOTE** This parameter can be configured only for instances purchased after August 21, 2021.

----End

5.3 Deleting an Instance

Scenario

With a few clicks on the console, you can delete one or multiple RocketMQ instances that have been created or multiple RocketMQ instances that failed to be created.

NOTICE

After a RocketMQ instance is deleted, the instance data will be deleted without backup.

Prerequisites

- The status of the RocketMQ instance you want to delete is **Running**, **Faulty**, or **Frozen**.
- RocketMQ instances in billed in the yearly/monthly mode cannot be deleted. To disable such an instance, choose **More** > **Unsubscribe** in the row containing the instance.

Deleting a RocketMQ Instance

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click ☰ and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Delete instances using any of the following methods:

- In the row containing the RocketMQ instance you want to delete, click **Delete**.
- Click a RocketMQ instance to go to the instance details page. In the upper right corner, choose **More** > **Delete**.
- To delete multiple instances at a time, select the instances, and click **Delete** above the instance list.

NOTE

RocketMQ instances in the **Creating** or **Restarting** state cannot be deleted.

Step 5 Click **Yes**.

It takes 1 to 60 seconds to delete a RocketMQ instance.

----End

Deleting a RocketMQ Instance That Failed to Be Created

Step 1 Log in to the management console.

Step 2 Click 📍 in the upper left corner to select a region.

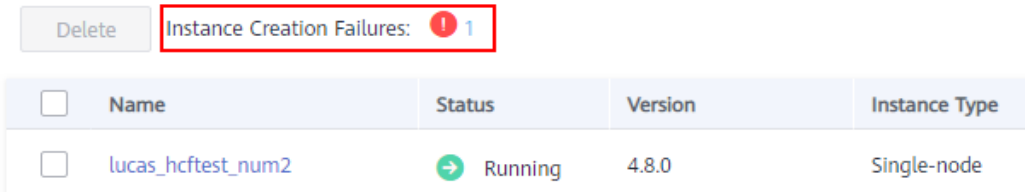
NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click ☰ and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 If there are RocketMQ instances that failed to be created, **Instance Creation Failures** and quantity information will be displayed. Click **Instance Creation Failures** or the icon or quantity next to it.

Figure 5-1 Instance creation failures



Step 5 Delete RocketMQ instances that failed to be created in either of the following ways:

- To delete all RocketMQ instances that failed to be created, click **Clear Failed Instance**.

- To delete a single RocketMQ instance that failed to be created, click **Delete** in the row containing the instance.

----End

5.4 Modifying Instance Information

Scenario

After purchasing a RocketMQ instance, you can modify parameters of the instance based on your service requirements, including the instance name, enterprise project, description, and security group.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click  and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 Modify the following parameters if needed:

- Instance name
- Enterprise project
- Description
- Public Access (For details about how to change the public access configuration, see **Configuring Public Access**.)
- Security group
- ACL (This setting can be changed only for instances purchased after August 21, 2021.)

After the parameters are modified, view the modification result in the following ways:

- If **Public Access** has been modified, you will be redirected to the **Background Tasks** page, which displays the modification progress and result.
- If **Instance Name**, **Description**, **ACL**, **Enterprise Project**, or **Security Group** has been modified, the modification result will be displayed in the upper right corner of the page.

----End

5.5 Configuring Public Access

To access a RocketMQ instance over a public network, enable public access and configure EIPs for the instance. If you no longer need public access to the instance, disable it.

Prerequisites

You can change the public access setting only when the RocketMQ instance is in the **Running** state.

Enabling Public Access

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

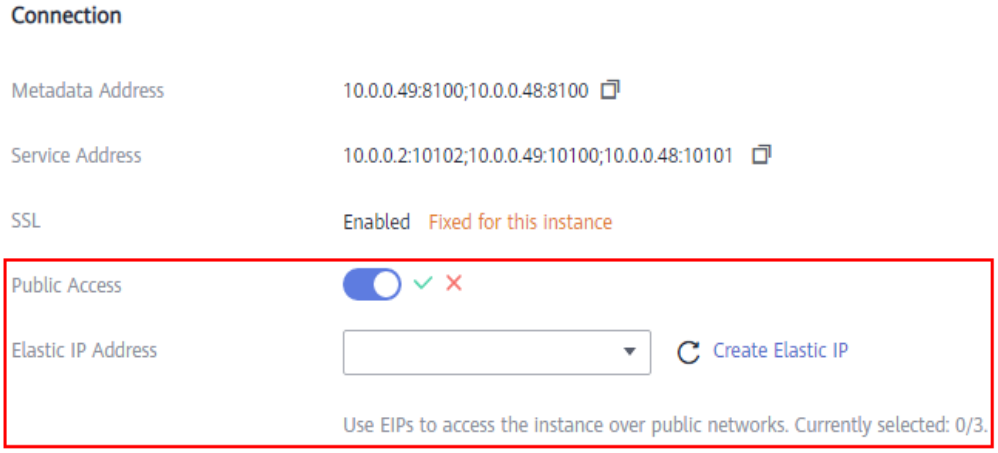
Step 5 Click next to **Public Access**.

Step 6 Click to enable public access. For **Elastic IP Address**, select an EIP for each broker. Then click .

NOTE

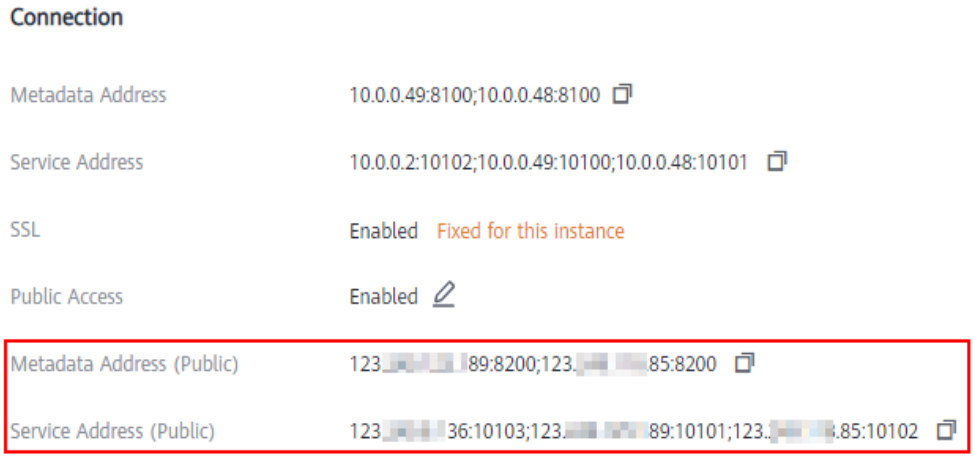
Only IPv4 EIPs can be bound to RocketMQ instances.

Figure 5-2 Enabling public access



After public access is enabled, **Metadata Address (Public)** and **Service Address (Public)** will be displayed.

Figure 5-3 Public access addresses



After public access is enabled, modify security group rules as listed in **Table 5-3** before attempting to access the RocketMQ instance.

Table 5-3 Security group rules

Direction	Protocol	Port	Source	Description
Inbound	TCP	8200	0.0.0.0/0	The port is used for public access to metadata nodes.
Inbound	TCP	10100-10199	0.0.0.0/0	The port is used for accessing service nodes.

----End

Disabling Public Access

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 Click next to **Public Access**.

Step 6 Click  and then ✓ to disable public access.

After public access is disabled, modify security group rules as listed in **Table 5-4** before attempting to access the RocketMQ instance.

Table 5-4 Security group rules

Direction	Protocol	Port	Source	Description
Inbound	TCP	8100	0.0.0.0/0	The port is used for intra-VPC access to metadata nodes.
Inbound	TCP	10100-10199	0.0.0.0/0	The port is used for accessing service nodes.

----End

6 Managing Topics

6.1 Creating a Topic

Scenario

A topic is the basic unit for sending and receiving messages. After purchasing a RocketMQ instance, you must manually create topics before creating and retrieving messages.

Prerequisites

A RocketMQ instance has been purchased.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Topics**.

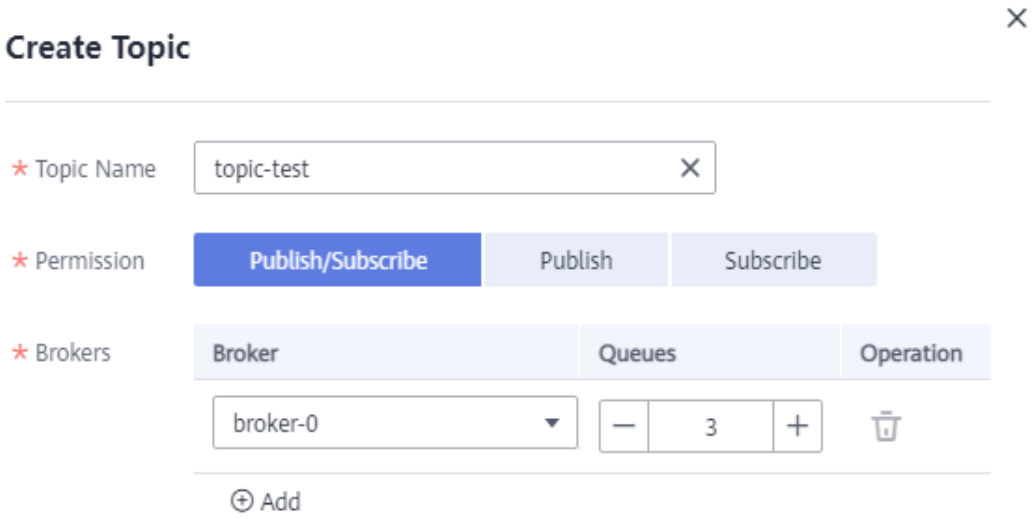
Step 6 Click **Create Topic**.

Step 7 Configure the topic name and other parameters by referring to **Table 6-1**.

Table 6-1 Topic parameters

Parameter	Description
Topic Name	Name of the topic. The topic name must be unique. Otherwise, the topic cannot be created. Once the topic is created, you cannot modify its name. **NOTE** A percent (%) or vertical bar (|) contained in a topic name will be converted to an underscore (_) by Cloud Eye. For example, if a topic name is **test%01**, it will be displayed as **test_01** on Cloud Eye.
Permission	Topic permission, which can be **publish/subscribe**, **publish**, or **subscribe**.
Brokers	Specify the broker to create the topic on, and the number of queues in the topic. If the instance is deployed on multiple brokers, click **Add** to add more brokers and set the number of queues in the topic.

Figure 6-1 Creating a topic



Step 8 Click **OK**.

----End

6.2 Querying Topic Details

Scenario

After a topic is created, you can query its configuration and status.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

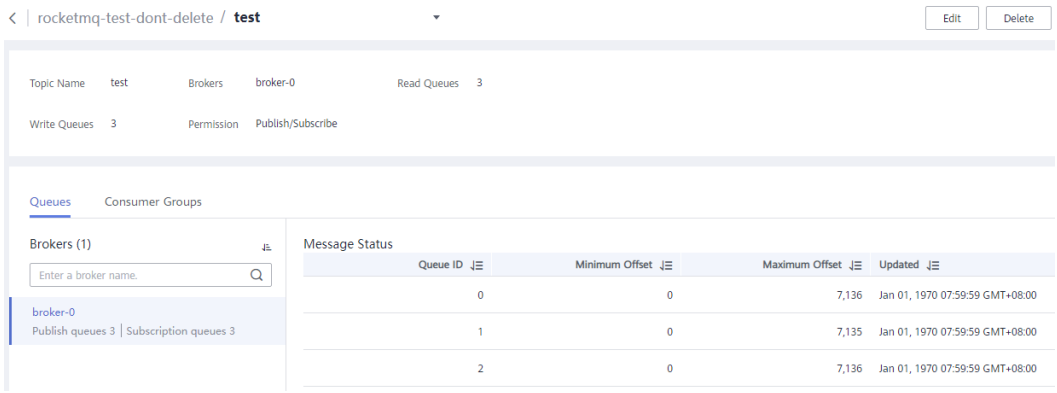
Step 5 In the navigation pane, choose **Topics**.

Step 6 Click the name of the desired topic, or choose **More** > **View Detail** in the row that contains the desired topic to go to the details page.

The upper part of the topic details page shows the topic name, permissions, the number of brokers, read queues, and write queues.

The lower part of the topic details page shows queues on each broker, including the queue ID, minimum offset, maximum offset, and message update time. You can also view information about consumer groups that retrieve messages from the topic, including the consumer group name, maximum number of retries, and whether message broadcasting is enabled.

Figure 6-2 Topic details



----End

6.3 Modifying Topic Parameters

Scenario

After a topic is created, you can modify the following parameters based on service requirements: the number of read queues, number of write queues, topic permission, and associated brokers.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Topics**.

Step 6 Modify topic parameters using either of the following methods:

- In the row containing the topic whose parameters you want to modify, click **Edit**.
- Click a topic to go to the topic details page and then click **Edit** in the upper right corner.

Step 7 Modify topic parameters by referring to **Table 6-2**.

Table 6-2 Topic parameters

Parameter	Description
Permission	Topic permission, which can be **publish/subscribe**, **publish**, or **subscribe**.
Brokers	Change the number of read queues or write queues. • Read queues: total number of available queues in the topic for reading data. • Write queues: total number of available queues in the topic for writing data. Existing topics can be distributed to new brokers in the following scenarios: • If an existing topic is not associated with all brokers during creation, click **Add** to distribute the topic to more brokers and set the number of read queues and write queues. • After increasing the broker quantity, click **Add** to distribute an existing topic to the new brokers.

Step 8 Click **OK**.

----End

6.4 Deleting a Topic

Scenario

Delete topics if they are no longer needed.

Prerequisites

Topics can be deleted only when the instance is in the **Running** state.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click  and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Topics**.

Step 6 Delete topics using any of the following methods:

- In the row containing the topic you want to delete, choose **More** > **Delete**.
- Click a topic to go to the topic details page and then click **Delete** in the upper right corner.
- To delete multiple topics at a time, select the topics, and click **Delete Topic** above the topic list.

NOTICE

Exercise caution when deleting topics because data will be lost.

Step 7 Click **Yes**.

----End

6.5 Producing a Message

Scenario

This section describes how to produce a specified message for a RocketMQ instance to verify service logic.

Prerequisites

Messages can be produced only when the instance is in the **Running** state.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click  and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the details page.

Step 5 In the navigation pane, choose **Topics**.

Step 6 Click **Produce Message** in the row that contains the desired topic. The **Produce Message** dialog box is displayed.

Step 7 Enter the message body, key, and tag (**Message Key** and **Message Tag** are optional) and click **OK**.

When "Message sent." is displayed in the upper right corner, the message is sent successfully. You can view the message on the **Message Query** page.

----End

7 Querying Messages

7.1 Querying Messages

Scenario

This section describes how to view the content of a message and check whether the message is successfully created or retrieved.

On the DMS for RocketMQ console, you can query messages by topic, message ID, or message key.

- By topic: All messages of a specified topic within a specified period will be queried. This is range query and may find a large number of messages.
- By message ID: The message with the specified message ID will be queried. This is exact search and can quickly find a specific message.
- By message key: The message with the specified message key will be queried. This is exact search and can quickly find a specific message.

NOTE

OBT instances do not support message query.

Message Deletion Mechanism

By default, RocketMQ messages are retained for 48 hours (not modifiable), regardless of whether they have been consumed. RocketMQ messages are stored in CommitLog files. Each CommitLog file is 1 GB. When a CommitLog file is full, a new CommitLog file is generated. Message deletion in RocketMQ means to delete the CommitLog files, instead of individual messages. CommitLog files are written in sequence. A CommitLog file expires when the last message written in it expires. CommitLog files are deleted in the following scenarios:

- Expired files are cleared at 04:00 every day. Earlier instances that do not have a time zone are cleared at 12:00 every day.
- Expired files are deleted immediately when the disk usage reaches 70%.
- The earliest files are deleted, regardless of whether they have expired, when the disk usage reaches 85%.

Prerequisites

- A RocketMQ instance and topics have been created.
- To query messages by message ID, you need the name of the topic to which the message belongs and the message ID.
- To query messages by message key, you need the name of the topic to which the message belongs and the message key.
- To query message traces, you must first **enable message tracing**.

Querying the Message Content

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Message Query**.

Step 6 Query messages in either of the following ways:

- By topic: Select the name of the topic and the queue to be queried from the **Topic** and **Queue** drop-down lists. For **Stored**, select a time period.
- By message ID: Select the name of the topic to be queried from the **Topic** drop-down list, enter the ID of the message to be queried, and click **Search**.
- By message key: Select the name of the topic to be queried from the **Topic** drop-down list, enter the key of the message to be queried, and click **Search**.

Step 7 In the row that contains the desired message, click **View Details** to view the message content.

NOTE

If the message body is greater than 4096 bytes, some content may not be displayed on the console. In this case, click **Download** to view the message body in the downloaded JSON file.

----End

Viewing the Message Trace

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click ☰ and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Message Query**.

Step 6 Query messages in either of the following ways:

- By topic: Select the name of the topic and the queue to be queried from the **Topic** and **Queue** drop-down lists. For **Stored**, select a time period.
- By message ID: Select the name of the topic to be queried from the **Topic** drop-down list, enter the ID of the message to be queried, and click **Search**.
- By message key: Select the name of the topic to be queried from the **Topic** drop-down list, enter the key of the message to be queried, and click **Search**.

Step 7 In the row that contains the desired message, click **View Trace** to check whether the message has been created or retrieved successfully.

Table 7-1 describes message trace parameters.

Table 7-1 Message trace parameters

Parameter	Description
Producer status	A producer can be in one of the following states: • Sent: The message is sent successfully, and the server has successfully stored the message. • Committed: The message can be retrieved by consumers. • Rollback: The message will be discarded and cannot be retrieved by consumers. • Unknown: The status of the message cannot be determined. After a period of time, the server initiates a check request to the producer.
Creation duration	Time taken to send the message by the producer.
Producer address	IP address and port of the producer.
Consumer status	A consumer can be in one of the following states: • Retrieved • Retrieval timed out • Abnormal retrieval • NULL returned • Retrieval failed
Retrieved	Time when the message is retrieved.
Retrieval duration	Time taken to retrieve the message by the consumer.
Consumer address	IP address and port of the consumer.

----End

7.2 Enabling Message Tracing

Scenario

To query message traces, you must first enable message tracing on clients.

The following procedures describe how to enable message tracing in Java and Go.

Procedure (Java)

Do as follows to enable message tracing on clients:

- Enabling message tracing on a producer client (**tracing messages other than transactional messages**)

  Set **enableMsgTrace** of the constructor to **true**. For example:

  ```
  DefaultMQProducer producer = new DefaultMQProducer("ProducerGroupName", true);
  ```

- Enabling message tracing on a producer client (**tracing transactional messages**)

  Set **enableMsgTrace** of the constructor to **true**. For example:

  ```
  TransactionMQProducer producer = new TransactionMQProducer(null, "ProducerGroupName", null,
  true, null);
  ```

  NOTICE

  Transactional message tracing is supported only if the producer client is v4.9.0 or later. If your client is earlier than v4.9.0, upgrade it to a later version.

- Enabling message tracing on a consumer

  Set **enableMsgTrace** of the constructor to **true**. For example:

  ```
  DefaultMQPushConsumer consumer = new DefaultMQPushConsumer("ConsumerGroupName", true);
  ```

Procedure (Go)

Do as follows to enable message tracing on clients:

Step 1 Run the following command to check whether Go has been installed:

```
go version
```

If the following information is displayed, Go has been installed.

```
[root@ecs-test sarama]# go version
go version go1.16.5 linux/amd64
```

If Go is not installed, **download** and install it.

Step 2 Create a **go.mod** file and add the following code to it to add the dependency:

```
module rocketmq-example-go

go 1.13
```



```
require (
    github.com/apache/rocketmq-client-go/v2 v2.1.0
)
```

Step 3 Enable message tracing on the producer. Replace the information in bold with the actual values.

```
package main

import (
    "context"
    "fmt"
    "os"
    "time"

    "github.com/apache/rocketmq-client-go/v2"
    "github.com/apache/rocketmq-client-go/v2/primitive"
    "github.com/apache/rocketmq-client-go/v2/producer"
)

func main() {
    namesrvs := []string{"192.168.0.1:8100"}
    traceCfg := &primitive.TraceConfig{
        Access:   primitive.Local,
        Resolver: primitive.NewPassthroughResolver(namesrvs),
    }

    p, _ := rocketmq.NewProducer(
        producer.WithNsResolver(primitive.NewPassthroughResolver([]string{"192.168.0.1:8100"})),
        producer.WithRetry(2),
        producer.WithTrace(traceCfg))
    err := p.Start()
    if err != nil {
        fmt.Printf("start producer error: %s", err.Error())
        os.Exit(1)
    }
    res, err := p.SendSync(context.Background(), primitive.NewMessage("topic1",
        []byte("Hello RocketMQ Go Client!")))

    if err != nil {
        fmt.Printf("send message error: %s\n", err)
    } else {
        fmt.Printf("send message success: result=%s\n", res.String())
    }

    time.Sleep(10 * time.Second)

    err = p.Shutdown()
    if err != nil {
        fmt.Printf("shutdown producer error: %s", err.Error())
    }
}
```

Step 4 Enable message tracing on the consumer. Replace the information in bold with the actual values.

```
package main

import (
    "context"
    "fmt"
    "os"
    "time"

    "github.com/apache/rocketmq-client-go/v2"
    "github.com/apache/rocketmq-client-go/v2/consumer"
    "github.com/apache/rocketmq-client-go/v2/primitive"
)
```



```
func main() {
    namesrvs := []string{"192.168.0.1:8100"}
    traceCfg := &primitive.TraceConfig{
        Access:   primitive.Local,
        Resolver: primitive.NewPassthroughResolver(namesrvs),
    }

    c, _ := rocketmq.NewPushConsumer(
        consumer.WithGroupName("testGroup"),
        consumer.WithNsResolver(primitive.NewPassthroughResolver([]string{"192.168.0.1:8100"})),
        consumer.WithTrace(traceCfg),
    )
    err := c.Subscribe("TopicTest", consumer.MessageSelector{}, func(ctx context.Context,
        msgs ...*primitive.MessageExt) (consumer.ConsumeResult, error) {
        fmt.Printf("subscribe callback: %v \n", msgs)
        return consumer.ConsumeSuccess, nil
    })
    if err != nil {
        fmt.Println(err.Error())
    }
    // Note: start after subscribe
    err = c.Start()
    if err != nil {
        fmt.Println(err.Error())
        os.Exit(-1)

    }
    time.Sleep(time.Hour)
    err = c.Shutdown()
    if err != nil {
        fmt.Printf("shutdown Consumer error: %s", err.Error())
    }
}
```

----End

7.3 Verifying Consumption

Scenario

Consumption verification is to resend messages to a specified online client to verify that the consumer can receive messages. Consumption verification causes repeated message consumption.

Prerequisites

- Consumption can be verified only when an instance is in the **Running** state.
- Ensure that the client for which consumption is to be verified is online and the consumer has subscribed to the topic whose message is to be resent.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click ☰ and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the details page.

Step 5 In the navigation pane, choose **Message Query**.

Step 6 Set search criteria on the top of the page.

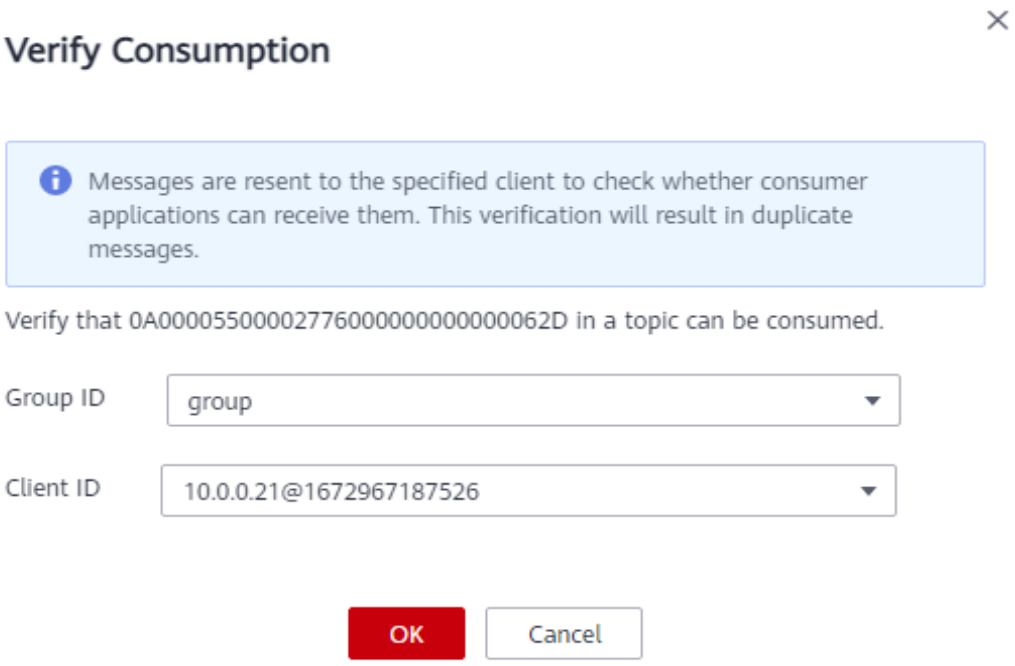
Step 7 In the row that contains the message to be resent, click **Verify Consumption**. The **Verify Consumption** dialog box is displayed.

Step 8 Set parameters by referring to **Table 7-2**.

Table 7-2 Consumption verification parameters

Parameter	Description
Group ID	Name of the consumer group for which consumption is to be verified.
Client ID	ID of the client for which consumption is to be verified.

Figure 7-1 Verifying consumption



Step 9 Click **OK**.

After the message is successfully resent, "Verified" is displayed on the top of the **Verify Consumption** dialog box. The client should have received the resent message.

NOTE

Consumption verification causes repeated message consumption.

----End

8 Managing Consumer Groups

8.1 Creating a Consumer Group

Scenario

A consumer group is a group of consumers with the same behavior and is used to manage and maintain message retrieval.

Prerequisites

A RocketMQ instance has been purchased.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Consumer Groups**.

Step 6 Click **Create Consumer Group**.

Step 7 Configure the consumer group name and other parameters by referring to **Table 8-1**.

Table 8-1 Consumer group parameters

Parameter	Description
Consumer Group Name	Name of the consumer group. Once the consumer group is created, you cannot modify its name.
Brokers	Select one or more brokers on which the consumer group is to be created. Once the consumer group is created, you cannot modify its brokers.
Maximum Retries	Maximum number of retry attempts allowed for normal messages. For ordered retrievals, this limit can be configured by using the **setMaxReconsumeTimes** method.
Broadcast	Indicates whether messages are broadcast. If this option is enabled, each message is retrieved by all consumers in the consumer group. If this option is disabled, each message is retrieved by only one consumer in the consumer group.

Step 8 Click **OK**.

----End

8.2 Querying Consumer Group Details

Scenario

After a consumer group is created, you can query its configuration and status.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

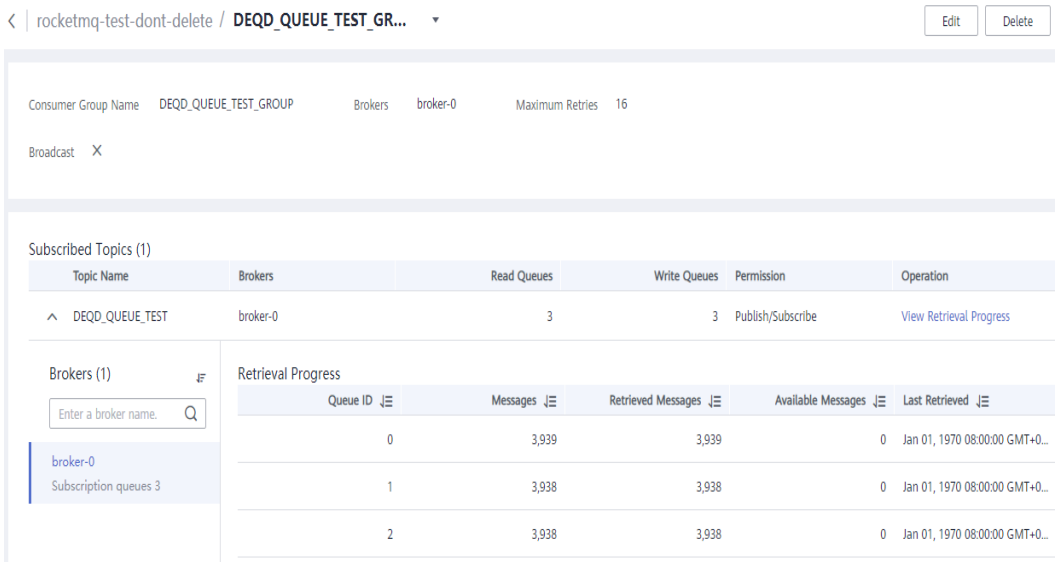
Step 5 In the navigation pane, choose **Consumer Groups**.

Step 6 Click the name of the desired consumer group, or choose **More** > **View Detail** in the row that contains the desired consumer group to go to the details page.

In the upper part of the page, you can view the consumer group name, brokers, the maximum number of retries, and whether messages are broadcast.

In the lower part of the page, you can view all topics subscribed by the consumer group and the retrieval progress.

Figure 8-1 Consumer group details



----End

8.3 Modifying Consumer Group Parameters

Scenario

After a consumer group is created, you can modify the maximum number of retries and specify whether to enable message broadcasting.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Consumer Groups**.

Step 6 Modify consumer group parameters using either of the following methods:

- In the row containing the consumer group whose parameters you want to modify, click **Edit**.
- Click a consumer group and then click **Edit** in the upper right corner of the consumer group details page.

Step 7 Modify consumer group parameters by referring to **Table 8-2**.

Table 8-2 Consumer group parameters

Parameter	Description
Maximum Retries	Maximum number of times that messages are resent upon retrieval failures.
Broadcast	Indicates whether messages are broadcast. If this option is enabled, each message is retrieved by all consumers in the consumer group. If this option is disabled, each message is retrieved by only one consumer in the consumer group.

Step 8 Click **OK**.

----End

8.4 Deleting a Consumer Group

Scenario

Delete consumer groups if they are no longer needed.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Consumer Groups**.

Step 6 Delete consumer groups using any of the following methods:

- In the row containing the consumer group you want to delete, click **Delete**.
- Click a consumer group to go to the consumer group details page and then click **Delete** in the upper right corner.

- To delete multiple consumer groups at a time, select the consumer groups, and click **Delete Consumer Group** above the consumer group list.

Step 7 Click **Yes**.

----End

8.5 Viewing Consumer Connection Addresses

Scenario

View consumer connection addresses on the DMS for RocketMQ console.

NOTE

A consumer's connection addresses can be viewed only when the consumer is connected to a RocketMQ instance.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

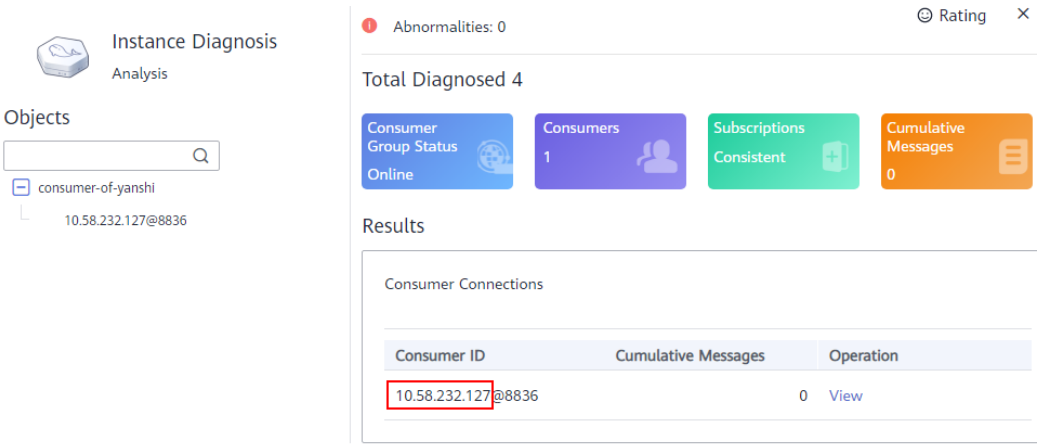
Step 5 In the navigation pane on the left, choose **Instance Diagnosis**.

Step 6 For **Consumer Group**, select the group whose consumer connection address you want to view. Then click **Start Diagnosis**.

Step 7 Locate the row that contains the target diagnosis record, and click **View**.

Step 8 In the **Results** area, view the consumer connection address.

Figure 8-2 Consumer connection addresses



----End

8.6 Resetting the Consumer Offset

Scenario

Resetting the consumer offset is to change the retrieval position of a consumer.

NOTICE

Messages may be retrieved more than once after the offset is reset. Exercise caution when performing this operation.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the details page.

Step 5 In the navigation pane, choose **Consumer Groups**.

Step 6 In the row that contains the desired consumer group, choose **More** > **Reset Consumer Offset**.

Step 7 Set parameters by referring to **Table 8-3**.

Table 8-3 Parameters for resetting the consumer offset

Parameter	Description
Topic Name	Select the topic whose consumer offset is to be reset.
Time	Select a time point. After the reset is complete, retrieval starts from this time point. • **Custom**: a custom time point • **Earliest**: the earliest offset • **Latest**: the latest offset

Step 8 Click **OK**.

Step 9 Click **Yes** in the confirmation dialog box. The consumer offset is reset.

----End

9 Managing Users

9.1 Creating a User

Scenario

RocketMQ instances support ACL-based permission control. You can create multiple users and assign different topic and consumer group permissions to them.

Prerequisites

A RocketMQ instance has been purchased.

Step 1: Enable ACL

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

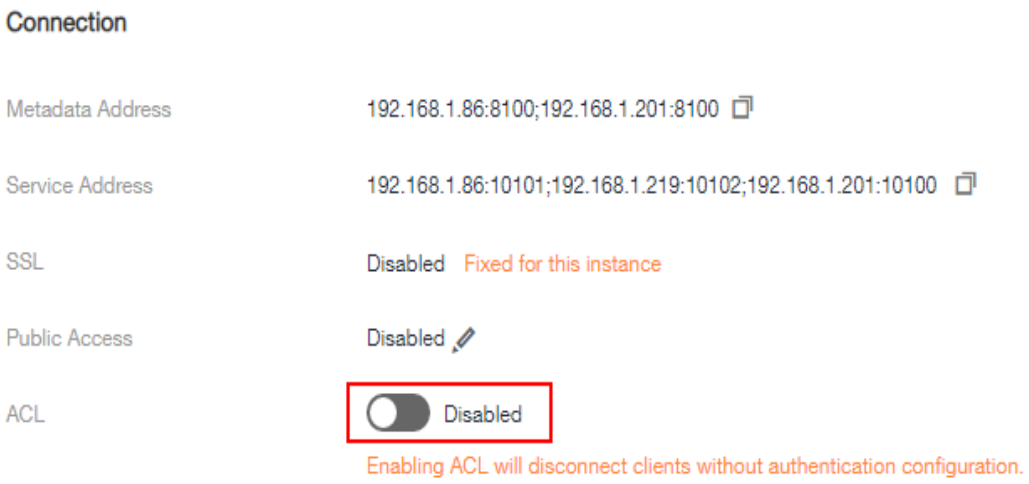
Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the **Connection** area, click next to **ACL** to enable ACL.

Figure 9-1 Enabling ACL



NOTICE

- ACL can be configured only for instances purchased after August 21, 2021.
- Enabling ACL will disconnect clients without authentication configuration.

----End

Step 2: Create a User

Step 1 In the navigation pane, choose **Users**.

Step 2 Click **Create User**.

Step 3 Configure the user's name and other parameters by referring to **Table 9-1**.

Table 9-1 User parameters

Parameter	Description
Name	Name of the user. The name cannot be changed after the user is created.
IP Whitelist	Users from whitelisted IP addresses have publish/subscribe permissions for all topics and consumer groups, and their secret keys will not be verified. The IP whitelist can be set to specific IP addresses or network segments. Example: **192.168.1.2,192.168.2.3** or **192.*.*.***
Administrator	A user configured as the administrator will have publish/subscribe permissions for all topics and consumer groups.

Parameter	Description
Default Topic Permissions	The user's default permissions for topics. The default permissions will be overwritten by the permissions configured for specific topics, if any. For example, if **Default Topic Permissions** is set to **Subscribe**, but a topic is configured with the **Publish/Subscribe** permissions, the topic's actual permissions will be **Publish/Subscribe**.
Default Consumer Group Permissions	The user's default permissions for consumer groups. The default permissions will be overwritten by the permissions configured for specific consumer groups, if any. For example, if **Default Consumer Group Permissions** is set to **Subscribe**, but a consumer group is configured with the **Publish/Subscribe** permissions, the consumer group's actual permissions will be **Publish/Subscribe**.
Secret Key	The user's secret key.

Step 4 Click **OK**.

----End

(Optional) Step 3: Configure Permissions for a Specific Topic or Consumer Group

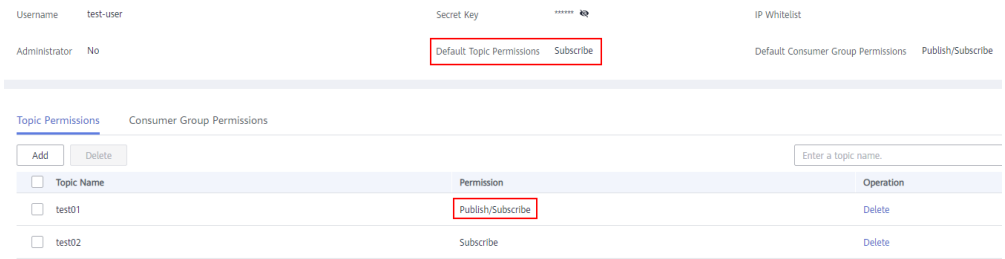
Step 1 Click a user to go to the user details page.

Step 2 On the **Topic Permissions** or **Consumer Group Permissions** tab page, click **Add**.

Step 3 Select desired topics or consumer groups, select the required permissions, and click **OK**.

These permissions overwrite the default permissions. For example, in **Figure 9-2**, users finally have publish/subscribe permissions for topic **test01**.

Figure 9-2 User details page



----End

Step 4: Access the Server as a User

After ACL is enabled for an instance, user authentication information must be added to both the producer and consumer configurations. For details, see the following instructions:

- **Java**
- **Go**
- **Python**

9.2 Modifying User Information

Scenario

After a user is created, you can modify its IP whitelist, administrator option, default topic and consumer group permissions, and secret key.

Procedure

Step 1 Log in to the management console.

Step 2 Click  in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click  and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Users**.

Step 6 In the row containing the user to edit, click **Edit**.

Step 7 Modify the information shown in **Table 9-2** as required.

Table 9-2 User parameters

Parameter	Description
IP Whitelist	Users from whitelisted IP addresses have publish/subscribe permissions for all topics and consumer groups, and their secret keys will not be verified. The IP whitelist can be set to specific IP addresses or network segments. Example: **192.168.1.2,192.168.2.3** or **192.*.*.***
Administrator	A user configured as the administrator will have publish/subscribe permissions for all topics and consumer groups.

Parameter	Description
Default Topic Permissions	The user's default permissions for topics. The default permissions will be overwritten by the permissions configured for specific topics, if any. For example, if **Default Topic Permissions** is set to **Subscribe**, but a topic is configured with the **Publish/Subscribe** permissions, the topic's actual permissions will be **Publish/Subscribe**.
Default Consumer Group Permissions	The user's default permissions for consumer groups. The default permissions will be overwritten by the permissions configured for specific consumer groups, if any. For example, if **Default Consumer Group Permissions** is set to **Subscribe**, but a consumer group is configured with the **Publish/Subscribe** permissions, the consumer group's actual permissions will be **Publish/Subscribe**.
Secret Key	The user's secret key.

Step 8 Click **OK**.

----End

9.3 Deleting a User

Scenario

Delete users if they are no longer needed.

NOTICE

Deleting a user will remove its authorization relationship and disconnect it from the instance.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Users**.

Step 6 In the row containing the user to delete, click **Delete**.

Step 7 Click **Yes**.

----End

10 Managing Dead Letter Queues

Introduction

Dead letter queues store messages that cannot be correctly retrieved.

If a message fails to be retrieved, the system will retry sending it. After the maximum number of retries (which is 16 by default and configurable on the client) is reached and the message retrieval still fails, the message becomes a dead letter message and is delivered to the dead letter queue that corresponds to the consumer.

Dead letter messages:

- Cannot be retrieved.
- Are retained for 48 hours before being automatically deleted.

Scenario

This section describes how to query, export, and resend dead letter messages.

On the DMS for RocketMQ console, you can query dead letter messages by group, message ID, and message key.

- By group: All dead letter messages of a specified consumer group within a specified period will be queried. This is range query and may find a large number of dead letter messages.
- By message ID: The message with the specified message ID will be queried. This is exact search and can quickly find a specific dead letter message.
- By message key: The message with the specified message key will be queried. This is exact search and can quickly find a specific dead letter message.

Prerequisites

- A RocketMQ instance and consumer groups have been created.
- To query by message ID, you need the name of the consumer group to which the message belongs and the message ID.
- To query by message key, you need the name of the consumer group to which the message belongs and the message key.

Querying Dead Letter Messages

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Dead Letter Queues**.

Step 6 Query dead letter messages in either of the following ways:

- By group: Select the name of the consumer group to be queried from the **Group** drop-down list. For **Stored**, select a time period.
- By message ID: Select the name of the consumer group to be queried from the **Group** drop-down list, enter the message ID of the dead letter message to be queried, and click **Search**.
- By message key: Select the name of the consumer group to be queried from the **Group** drop-down list, enter the message key of the dead letter message to be queried, and click **Search**.

----End

Exporting Dead Letter Messages

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Dead Letter Queues**.

Step 6 Click **Export Message** in the row containing the desired message.

The message will be exported in JSON format.

NOTE

To export multiple dead letter messages at a time, select them and click **Export Message** above the message list.

Table 10-1 describes the fields of an exported message.

Table 10-1 Message fields

Parameter	Description
msg_id	Message ID.
instance_id	Instance ID.
topic	Topic name.
store_timestamp	Time when the message is stored.
born_timestamp	Time when the message is generated.
reconsume_times	Number of retry times.
body	Message body.
body_crc	Message body checksum.
store_size	Storage size.
property_list	Message attribute list. • **name**: attribute name. • **value**: attribute value.
born_host	IP address of the host that generates the message.
store_host	IP address of the host that stores the message.
queue_id	Queue ID.
queue_offset	Offset in the queue.

----End

Resending a Dead Letter Message

Dead letter messages cannot be retrieved by consumers. Locate and rectify the fault, and then resend dead letter messages on the console.

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane, choose **Dead Letter Queues**.

Step 6 Resend dead letter messages in either of the following ways:

- In the row containing the dead letter message to be resent, click **Resend**.
- Select multiple dead letter messages to be resent and click **Resend**.

NOTICE

After a dead letter message is successfully resent, it still exists in the dead letter queue and will not be deleted. To avoid repeated retrieval, do not resend messages repeatedly.

----End

11 Diagnosing an Instance

Scenario

You can diagnose an instance to quickly locate faults when message retrieval is slow or fails.

Prerequisites

- **A consumer group has been created**, and there are consumers in the group.
- **A topic** has been created.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

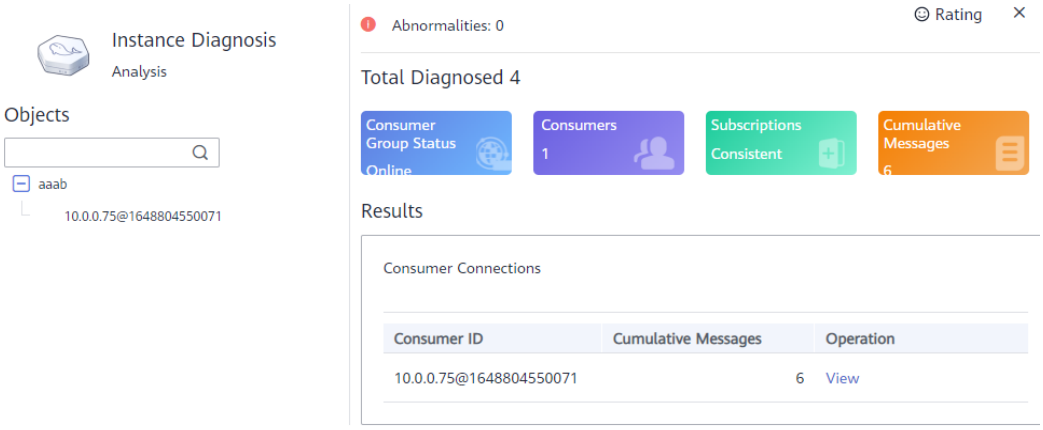
Step 5 In the navigation pane on the left, choose **Instance Diagnosis**.

Step 6 Select a consumer group and click **Start Diagnose**.

After the diagnosis is complete, a diagnosis record is displayed in the **Diagnosis Reports** area.

Step 7 Click **View** to view the diagnosis result.

Figure 11-1 Diagnosis result



NOTE

- If there is no consumer in the consumer group, the diagnosis fails.
- If the consumer group is not online, the diagnosis is successful, but one abnormality is displayed.

----End

Deleting Diagnosis Records

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the instance details page.

Step 5 In the navigation pane on the left, choose **Instance Diagnosis**.

Step 6 Use either of the following methods to delete diagnosis records:

- In the row containing the record you want to delete, click **Delete**.
- Select multiple records you want to delete and click **Delete** above the record list.

Step 7 In the confirmation dialog box, click **Yes**.

----End

12 Migrating Metadata

Scenario

On the console, you can migrate RocketMQ metadata from another cloud or self-hosted RocketMQ to your DMS RocketMQ instance.

Prerequisites

A RocketMQ instance has been purchased.

Step 1: Obtain RocketMQ Metadata from Another Cloud or Self-Hosted RocketMQ

Step 1 Download the RocketMQ software package.

```
wget https://dlcdn.apache.org/rocketmq/4.9.4/rocketmq-all-4.9.4-bin-release.zip
```

Step 2 Decompress the software package.

```
unzip rocketmq-all-4.9.4-bin-release.zip
```

Step 3 (Optional) If ACL is enabled for the RocketMQ instance, authentication is required when you run the **mqadmin** command.

Add the following content to the **conf/tools.yml** file in the RocketMQ instance installation directory:

```
accessKey:*******
secretKey:*******
```

accessKey and **secretKey** are the username and secret key set on the **Users** page of the console.

Step 4 Go to the RocketMQ installation directory and query the cluster name with the following command:

```
sh ./bin/mqadmin clusterList -n {nameserver address and port number}
```

For example, if the nameserver address and port number are **192.168.0.65:8100**, run the following command:

```
sh ./bin/mqadmin clusterList -n 192.168.0.65:8100
```

Step 5 Run the following command to export metadata:

- If SSL is disabled, run the following command:


```
sh ./bin/mqadmin exportMetadata -n {nameserver address and port number} -c {RocketMQ cluster name} -f {Path for storing the exported metadata file}
```

For example, if the nameserver address and port number are **192.168.0.65:8100**, the RocketMQ cluster name is **DmsCluster**, and the path for storing exported metadata files is **/tmp/rocketmq/export**, run the following command:

```
sh ./bin/mqadmin exportMetadata -n 192.168.0.65:8100 -c DmsCluster -f /tmp/rocketmq/export
```

- If SSL is enabled, run the following command:

```
JAVA_OPT=-Dtls.enable=true sh ./bin/mqadmin exportMetadata -n {nameserver address and port number} -c {RocketMQ cluster name} -f {path for storing the exported metadata file}
```

For example, if the nameserver address and port number are **192.168.0.65:8100**, the RocketMQ cluster name is **DmsCluster**, and the path for storing exported metadata files is **/tmp/rocketmq/export**, run the following command:

```
JAVA_OPT=-Dtls.enable=true sh ./bin/mqadmin exportMetadata -n 192.168.0.65:8100 -c DmsCluster -f /tmp/rocketmq/export
```

----End

Step 2: Migrate Metadata on the Console

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click a RocketMQ instance to go to the details page.

Step 5 In the navigation pane, choose **Metadata Migration**.

Step 6 Click **Create Migration Task**.

Step 7 Configure the migration task by referring to **Table 12-1**.

Table 12-1 Migration task parameters

Parameter	Description
Task Name	Unique name of the migration task.

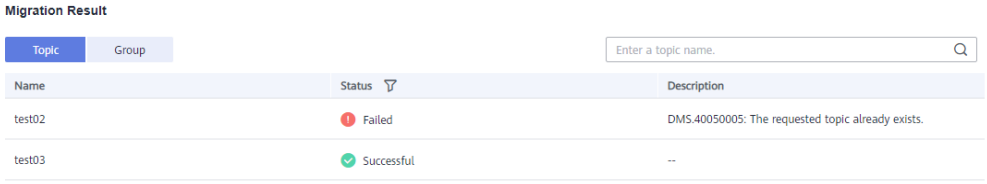
Parameter	Description
Overwrite	• If this option is enabled, configurations in the metadata file with the same name as the uploaded file will be modified. Assume that Topic01 on the source instance has three read queues, and Topic01 on the DMS instance has two read queues. If **Overwrite** is enabled, Topic01 on the DMS instance will have three read queues after migration. • If this option is disabled, migration of the metadata file with the same name as the uploaded file will fail. Assume that the source instance has Topic01 and Topic02, and the DMS instance has Topic01 and Topic03. If **Overwrite** is disabled, migration of the source Topic01 will fail.
Metadata	Upload the **RocketMQ metadata obtained from another cloud or self-hosted RocketMQ**.

Step 8 Click **OK**.

After the migration is complete, view **Task Status** in the migration task list.

- If **Task Status** is **Complete**, all metadata has been successfully migrated.
- If **Task Status** is **Failed**, some or all metadata fails to be migrated. Click the migration task name to go to the migration task details page. In the **Migration Result** area, view the name of the topic or consumer group that fails to be migrated and the failure cause.

Figure 12-1 Migration result



----End

13 Monitoring

13.1 DMS for RocketMQ Metrics

Introduction

This section describes the metrics that DMS for RocketMQ reports to Cloud Eye. You can view metrics and alarms by using the DMS for RocketMQ console.

Namespace

SYS.DMS

Instance Metrics

Table 13-1 Instance metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
instance_produce_msg	Created Messages	Number of messages received by the instance per minute Unit: count	> 0	RocketMQ instance	1 minute
instance_consume_msg	Retrieved Messages	Number of messages retrieved from the instance per minute Unit: count	> 0	RocketMQ instance	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
current_topics	Topics	Number of topics in the instance Unit: count **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance	1 minute
current_queues	Queues	Number of queues in the instance Unit: count **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance	1 minute
instance_accumulation	Accumulated Messages	Total number of messages accumulated in all consumer groups of the instance Unit: count **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance	1 minute

Broker Metrics

Table 13-2 Broker metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
broker_produce_msg	Created Messages	Number of messages received by the broker per minute Unit: count	> 0	RocketMQ instance broker	1 minute
broker_consume_msg	Retrieved Messages	Number of messages retrieved from the broker per minute Unit: count	> 0	RocketMQ instance broker	1 minute
broker_produce_rate	Message Creation Rate	Number of messages received by the broker per second Unit: count/s	> 0	RocketMQ instance broker	1 minute
broker_consume_rate	Message Retrieval Rate	Number of messages retrieved from the broker per second Unit: count/s	> 0	RocketMQ instance broker	1 minute
broker_total_bytes_in_rate	Inbound Traffic	Inbound traffic to the broker per second Unit: byte/s	> 0	RocketMQ instance broker	1 minute
broker_total_bytes_out_rate	Outbound Traffic	Outbound traffic from the broker per second Unit: byte/s	> 0	RocketMQ instance broker	1 minute
broker_cpu_core_load	Average Load per CPU Core	Average load of each CPU core in the broker VM	> 0	RocketMQ instance broker	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
broker_disk_usage	Disk Capacity Usage	Disk usage of the broker VM Unit: %	0–100	RocketMQ instance broker	1 minute
broker_memory_usage	Memory Usage	Memory usage of the broker VM Unit: %	0–100	RocketMQ instance broker	1 minute
broker_alive	Broker Status	Indicates whether the broker is alive. **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	**1**: alive **0**: not alive	RocketMQ instance broker	1 minute
broker_connections	Connections	Number of connections used by the VM Unit: count **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_cpu_usage	CPU Usage	CPU usage on the VM Unit: % **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
broker_disk_read_await	Average Disk Read Time	Average time for each disk I/O read Unit: ms **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_disk_write_await	Average Disk Write Time	Average time for each disk I/O write Unit: ms **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_produce_p99	Message Creation Processing (99th Percentile)	The 99th percentile of time taken to process all creation requests, in ascending order Unit: ms **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
broker_produce_p999	Message Creation Processing (99.9th Percentile)	The 99.9th percentile of time taken to process all creation requests, in ascending order Unit: ms **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_retention_period	Message Retention Period	How long ago the earliest message was saved on the broker Unit: hour **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_produce_success_rate	Creation Success Rate	Percentage of creations that were successfully requested on the broker Unit: % **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
broker_produce_scheduled_msg	Scheduled Messages Created per Minute	Number of scheduled messages created on the broker per minute Unit: count **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_disk_read_rate	Disk Read Speed	Read traffic on the disk Unit: byte/s **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute
broker_disk_write_rate	Disk Write Speed	Write traffic on the disk Unit: byte/s **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance broker	1 minute

Topic Metrics

Table 13-3 Topic metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
topic_produce_msg	Created Messages	Number of messages received by the topic per minute Unit: count	> 0	RocketMQ instance queue	1 minute
topic_consume_msg	Retrieved Messages	Number of messages retrieved from the topic per minute Unit: count	> 0	RocketMQ instance queue	1 minute
topic_produce_rate	Message Creation Rate	Number of messages received by the topic per second Unit: count/s	> 0	RocketMQ instance queue	1 minute
topic_consume_rate	Message Retrieval Rate	Number of messages retrieved from the topic per second Unit: count/s	> 0	RocketMQ instance queue	1 minute
topic_bytes_in_rate	Message Creation	Message creation traffic of the topic Unit: byte/s **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance queue	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
topic_bytes_out_rate	Message Retrieval	Message retrieval traffic of the topic Unit: byte/s **NOTE** This metric is supported for instances purchased on or after May 16, 2022.	≥ 0	RocketMQ instance queue	1 minute

Consumer Group Metrics

Table 13-4 Consumer group metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
group_consume_msg	Retrieved Messages	Number of messages retrieved by the consumer group per minute Unit: count **NOTE** This metric is available only when **Topic** is set to **All topics** on the **By Consumer Group** tab page.	> 0	Consumer group of a RocketMQ instance	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
group_accumulation	Available Messages	Number of messages accumulated in the consumer group Unit: count **NOTE** This metric is available only when **Topic** is set to **All topics** on the **By Consumer Group** tab page.	> 0	Consumer group of a RocketMQ instance	1 minute
group_topic_consume_msg	Retrieved Messages	Number of messages in the specified topic that are retrieved by the consumer group per minute Unit: count **NOTE** This metric is available only when **Topic** is set to a specified topic on the **By Consumer Group** tab page.	> 0	Consumer group of a RocketMQ instance	1 minute

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
group_topic_consume_rate	Message Retrieval Rate	Number of messages in the specified topic that are retrieved by the consumer group per second Unit: count/s **NOTE** This metric is available only when **Topic** is set to a specified topic on the **By Consumer Group** tab page.	> 0	Consumer group of a RocketMQ instance	1 minute
group_topic_accumulation	Available Messages	Number of messages in a specific topic Unit: count **NOTE** This metric is available only when **Topic** is set to a specified topic on the **By Consumer Group** tab page.	> 0	Consumer group of a RocketMQ instance	1 minute

Dead Letter Queue Metrics

Table 13-5 Dead letter queue metrics

Metric ID	Metric Name	Description	Value Range	Monitored Object	Monitoring Period (Raw Data)
dlq_accumulation	Messages in the Dead Letter Queue	Number of messages in the dead letter queue Unit: count	> 0	Dead letter queue of a RocketMQ instance	1 minute

Dimensions

Key	Value
reliablemq_instance_id	RocketMQ instance
reliablemq_broker	RocketMQ instance broker
reliablemq_topics	RocketMQ instance queue
reliablemq_groups	Consumer group of a RocketMQ instance
reliablemq_groups_topics	Consumer group of a RocketMQ instance queue
reliablemq_dlq_topics	Dead letter queue of a RocketMQ instance

13.2 Configuring Alarm Rules for Critical Metrics

This section describes the alarm policies of some metrics and how to configure them. In actual services, you are advised to configure alarm rules for metrics based on the following alarm policies.

NOTE

Approach Upper Limit in the following table indicates whether the threshold is close to the upper limit of the performance supported by current resources. If the threshold is close to the upper limit and usage continues to rise, services may be abnormal.

Table 13-6 RocketMQ instance metrics to configure alarm rules for

Metric Name	Normal Range	Alarm Policy	Approach Upper Limit	Metric Description and Alarm Handling Suggestions
Disk Capacity Usage	0–100	Alarm threshold: Raw data > 85 Number of consecutive periods: 3 Alarm severity: Critical	Yes	**Metric description:** disk usage of the RocketMQ VM. Unit: % **Handling suggestion**: If an alarm is generated for this metric, the current instance specifications are insufficient to carry services. The **storage space** needs to be expanded by referring to **Modifying Specifications**.
Average Load per CPU Core	0–2	Alarm threshold: Raw data > 1.5 Number of consecutive periods: 3 Alarm severity: Major	Yes	**Metric description:** average load of each CPU core of the RocketMQ VM. **Handling suggestion**: If an alarm is generated for this metric, perform the following operations: 1. Add brokers by referring to **Modifying Specifications**. 2. Redeploy existing topics to the new brokers by referring to **Modifying Topic Parameters**.
Memory Usage	0–100	Alarm threshold: Raw data > 85 Number of consecutive periods: 3 Alarm severity: Critical	Yes	**Metric description:** memory usage of the RocketMQ VM. Unit: % **Handling suggestion**: If an alarm is generated for this metric, perform the following operations: 1. Add brokers by referring to **Modifying Specifications**. 2. Redeploy existing topics to the new brokers by referring to **Modifying Topic Parameters**.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click ☰ and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 Click next to a RocketMQ instance name.

You are redirected to the metric monitoring page on the Cloud Eye console.

Step 5 Hover the mouse pointer over a metric and click  to create an alarm rule for the metric.

The **Create Alarm Rule** page is displayed.

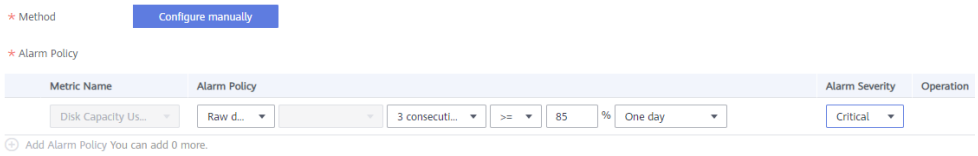
Step 6 Specify the alarm rule details.

For more information about creating alarm rules, see **Creating an Alarm Rule**.

1. Enter the alarm name and description.
2. Specify the alarm policy and alarm severity.

   As shown in the following figure, if the original disk capacity usage exceeds 85% for three consecutive periods, an alarm is generated. If the alarm is not handled on time, an alarm notification is sent.

   Figure 13-1 Setting the alarm policy and alarm severity

3. Set the alarm notification configurations. If you enable **Alarm Notification**, set the validity period, notification object, and trigger condition.
4. Click **Create**.

----End

13.3 Viewing Metrics

Scenario

Cloud Eye monitors RocketMQ instance metrics in real time. You can view these metrics on the console.

Prerequisites

A RocketMQ instance has been purchased.

Procedure

Step 1 Log in to the management console.

Step 2 Click in the upper left corner to select a region.

NOTE

Select the region where your RocketMQ instance is located.

Step 3 Click and choose **Application** > **Distributed Message Service (for RocketMQ)** to open the console of DMS for Kafka.

Step 4 View the instance metrics using either of the following methods:

- In the row containing the desired instance, click .
- Click a RocketMQ instance to go to the details page. In the navigation pane on the left, choose **Monitoring**.

Step 5 View the monitoring data of the instance, brokers, topics, consumer groups, and dead letter queues.

Rollup is the process in which Cloud Eye calculates the maximum, minimum, average, sum, or variance value of raw data sampled in different periods and persists the results. A calculation period is called a rollup period.

Step 6 (Optional) You can select the metrics to display on the page and rearrange the order of selected metrics.

For example, if you only need to view the **Created Messages** and **Retrieved Messages** metrics on the **Brokers** tab page, do as follows:

1. On the **Brokers** tab page, click **Select Metric**.
2. Select **Created Messages** and **Retrieved Messages**, and click **OK**.
3. Drag and drop the selected metrics to desired locations to rearrange the order.

----End

14 Auditing

14.1 Operations Logged by CTS

With Cloud Trace Service (CTS), you can record DMS for RocketMQ operations for later query, audit, and backtrack operations.

Table 14-1 DMS for RocketMQ operations that can be recorded by CTS

Operation	Resource Type	Trace Name
Successfully creating a topic	reliability	Reliability_Topic_CreationSuccess
Failing to create a topic	reliability	Reliability_Topic_CreationFailure
Successfully modifying a topic	reliability	Reliability_Topic_ModifySuccess
Failing to modify a topic	reliability	Reliability_Topic_ModifyFailure
Successfully deleting a topic	reliability	Reliability_Topic_DeletionSuccess
Failing to delete a topic	reliability	Reliability_Topic_DeletionFailure
Successfully creating a consumer group	reliability	Reliability_Create_GroupSuccess
Failing to create a consumer group	reliability	Reliability_Create_GroupFailure
Successfully editing a consumer group	reliability	Reliability_Group_ModifySuccess
Failing to edit a consumer group	reliability	Reliability_Group_ModifyFailure

Operation	Resource Type	Trace Name
Successfully deleting a consumer group	reliability	Reliability_Group_DeletionSuccess
Failing to delete a consumer group	reliability	Reliability_Group_DeletionFailure
Successfully deleting a background task	reliability	deleteDMSBackendJobSuccess
Failing to delete a background task	reliability	deleteDMSBackendJobFailure
Successfully creating an order for creating an instance	reliability	createDMSInstanceOrderSuccess
Failing to create an order for creating an instance	reliability	createDMSInstanceOrderFailure
Successfully submitting a request to modify an instance order	reliability	modifyDMSInstanceOrderSuccess
Failing to submit a request to modify an instance order	reliability	modifyDMSInstanceOrderFailure
Successfully submitting a request to scale up an instance	reliability	extendDMSInstanceSuccess
Failing to submit a request to scale up an instance	reliability	extendDMSInstanceFailure
Successfully deleting an instance that failed to be created	reliability	deleteDMSCreateFailureInstancesSuccess
Failing to delete an instance that failed to be created	reliability	deleteDMSCreateFailureInstancesFailure
Successfully submitting a request to delete multiple instances at a time	reliability	batchDeleteDMSInstanceSuccess

Operation	Resource Type	Trace Name
Failing to submit a request to delete multiple instances at a time	reliability	batchDeleteDMSInstanceFailure
Successfully submitting a request to modify instance information	reliability	modifyDMSInstanceInfoSuccess
Failing to submit a request to modify instance information	reliability	modifyDMSInstanceInfoFailure
Deleting multiple instance tasks at a time	reliability	batchDeleteDMSInstanceTask
Successfully unfreezing an instance	reliability	unfreezeDMSInstanceTaskSuccess
Failing to unfreeze an instance	reliability	unfreezeDMSInstanceTaskFailure
Successfully freezing an instance	reliability	freezeDMSInstanceTaskSuccess
Failing to freeze an instance	reliability	freezeDMSInstanceTaskFailure
Successfully deleting an instance	reliability	deleteDMSInstanceTaskSuccess
Failing to delete an instance	reliability	deleteDMSInstanceTaskFailure
Successfully creating an instance	reliability	createDMSInstanceTaskSuccess
Failing to create an instance	reliability	createDMSInstanceTaskFailure
Successfully scaling up an instance	reliability	extendDMSInstanceTaskSuccess
Failing to scale up an instance	reliability	extendDMSInstanceTaskFailure
Successfully modifying instance information	reliability	modifyDMSInstanceInfoTaskSuccess
Failing to modify instance information	reliability	modifyDMSInstanceInfoTaskFailure

14.2 Viewing Audit Logs

See **Querying Real-Time Traces**.

