

# Distributed Message Service for RabbitMQ

## FAQs

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# 1 Instances

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## 1.1 What RabbitMQ Version Does DMS for RabbitMQ Use?

RabbitMQ 3.8.35.

## 1.2 What SSL Version Does DMS for RabbitMQ Use?

TLS 1.2.

## 1.3 Why Can't I View the Subnet and Security Group Information During Instance Creation?

This may be because you do not have the permissions of the server administrator and VPC administrator. For details about how to add user permissions, see [Modifying User Group Permissions](#).

## 1.4 What If One RabbitMQ VM Fails to Be Restarted When a Cluster RabbitMQ Instance Is Being Restarted?

Restarting a RabbitMQ instance will restart only the RabbitMQ processes instead of VMs on which the instance runs.

For a cluster RabbitMQ instance, if the RabbitMQ process fails to be restarted on one VM, the instance will be still in the **Running** state after the restart and a message will be displayed indicating that some nodes are faulty. A RabbitMQ daemon process runs on each VM and periodically checks whether the RabbitMQ process exists. If the RabbitMQ process does not exist, the RabbitMQ process will be automatically started.

If a RabbitMQ instance exception lasts for more than 1 minute, an alarm will be reported, and HUAWEI CLOUD technical support will take follow-up actions.

## 1.5 How Are Requests Evenly Distributed to Each VM of a Cluster RabbitMQ Instance?

A cluster uses Linux virtual servers (LVSs) inside for load balancing, which evenly distribute requests to each VM.

## 1.6 Do Queues Inside a Cluster RabbitMQ Instance Have Any Redundancy Backup?

Whether queue mirroring (that is, redundancy backup) is implemented depends on your service requirements. If you configure mirroring, queue replicas are stored on multiple brokers in a cluster. If a broker is faulty, queue data is synchronized from another normal broker.

## 1.7 Does DMS for RabbitMQ Support Data Persistence? How Do I Perform Scheduled Data Backups?

DMS for RabbitMQ supports data persistence, which can be configured by connecting to a RabbitMQ instance using a client, or by configuring persistence when creating queues using the RabbitMQ Management interface.

Unfortunately, data backup scheduling and backup operations on the console are not supported.

## 1.8 How Do I Obtain the Certificate After SSL Has Been Enabled?

DMS for RabbitMQ uses one-way authentication and does not involve any certificates.

## 1.9 Can I Change the SSL Setting of a RabbitMQ Instance?

No. Once the instance has been created, you cannot enable or disable SSL. You are advised to enable SSL when creating the instance.

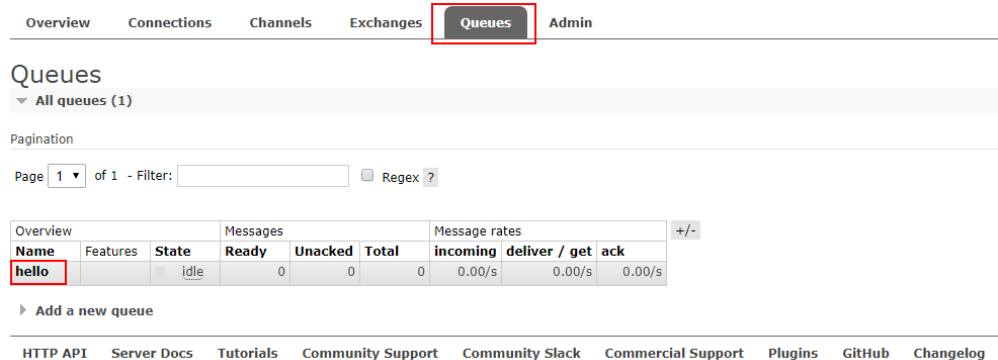
## 1.10 Can RabbitMQ Instances Be Scaled Up?

Single-node RabbitMQ instances: The storage space can be increased, and the broker flavor can be increased or decreased.

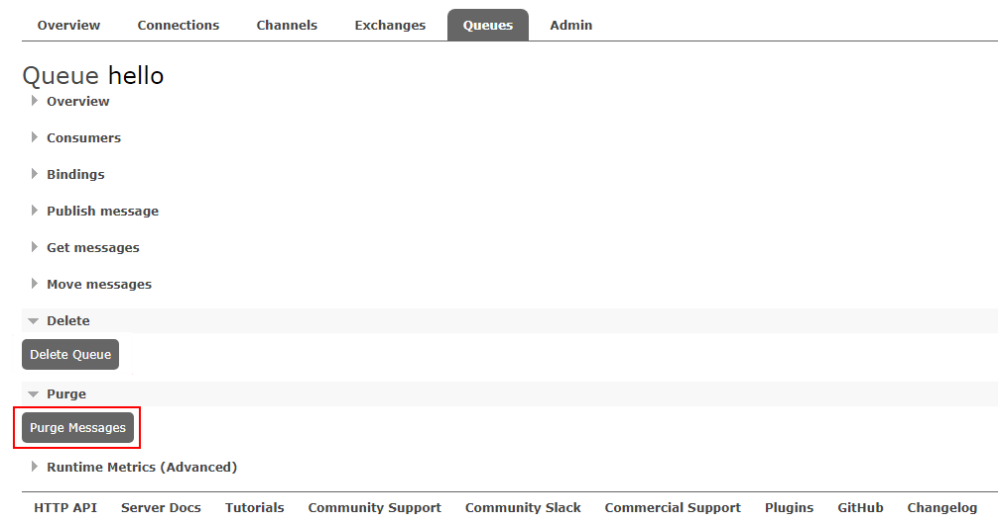
Cluster RabbitMQ instances: The storage space and broker quantity can be increased, and the broker flavor can be increased or decreased.

## 1.11 How Do I Clear Queue Data?

1. [Log in to the management UI](#).
2. On the **Queues** tab page, click the name of a queue.



3. Click **Purge Messages** to remove messages from the queue.



## 1.12 Does RabbitMQ Support Two-Way Authentication?

No.

## 1.13 Does DMS for RabbitMQ Support CPU and Memory Upgrades?

Yes. The broker flavors of RabbitMQ instances can be increased or decreased. For details, see [Modifying Instance Specifications](#).

## 1.14 How Do I Disable the RabbitMQ Management UI?

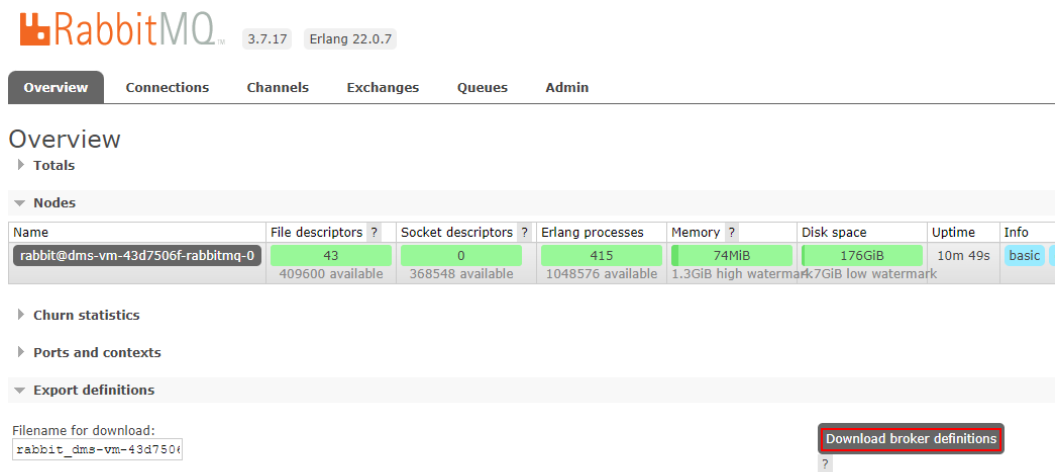
If you want to disable login to the management UI of a RabbitMQ instance, do not allow inbound access over port 15672 (if SSL is disabled for the instance) or 15671 (if SSL is enabled for the instance) in the security group rules.

## 1.15 Can I Change the AZ for an Instance?

No. To use a different AZ, buy another instance and migrate metadata to it.

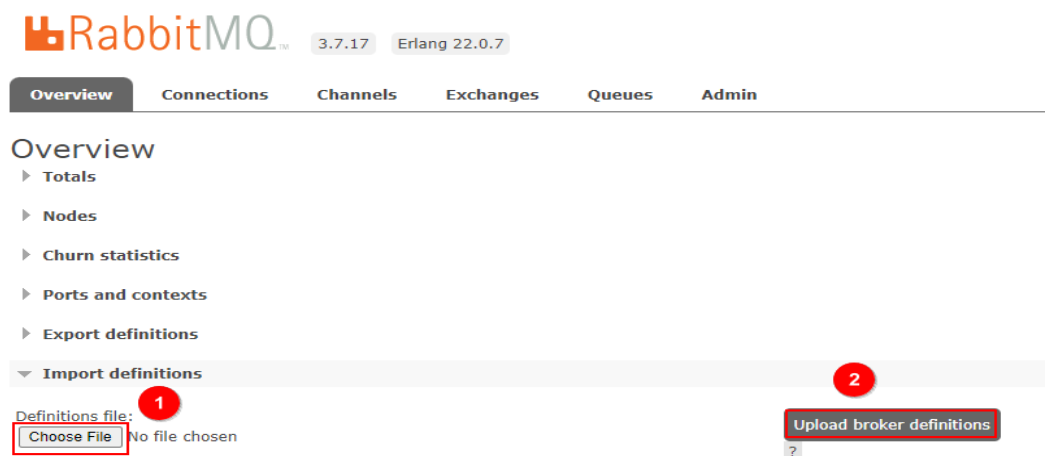
To migrate instance metadata, perform the following steps:

- Step 1** [Log in to the management UI of the original instance.](#)
- Step 2** On the **Overview** tab page, click **Download broker definitions** to export the metadata.



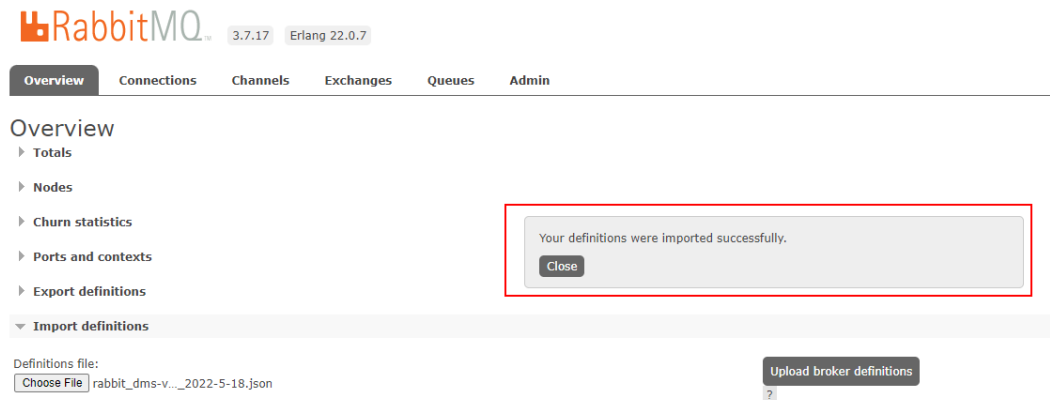
- Step 3** Log in to the management UI of the new instance. On the **Overview** tab page, click **Choose File** and select the metadata exported from [Step 2](#).

- Step 4** Click **Upload broker definitions** to upload the metadata.





If the upload is successful, the following information is displayed:



----End

## 1.16 How Do I Obtain the Region ID?

To obtain the region ID,

**Step 1** Go to the **Regions and Endpoints** page.

**Step 2** Obtain region IDs from the **Region** column.

----End

## 1.17 Why Can't I Select Two AZs?

To improve the reliability of a RabbitMQ instance, you are advised to select three AZs or more when creating the instance. To avoid split-brain risks, do not select two AZs.

# 2 Connections

## 2.1 How Do I Configure a Security Group?

To access a RabbitMQ instance within a VPC or over public networks, configure the security group rules as follows.

- Intra-VPC Access

To access a RabbitMQ instance, you must deploy your client on an ECS in the same VPC as the instance.

In addition, before you can access the instance through your client, you must configure correct rules for the security groups of both the ECS and RabbitMQ instance.

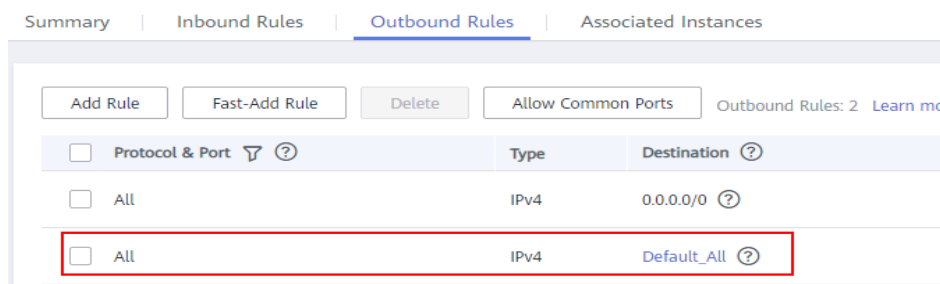
- You are advised to configure the same security group for the ECS and RabbitMQ instance. After a security group is created, network access in the group is not restricted by default.
- If different security groups are configured, you may need to refer to the following configurations:

**NOTE**

- Assume that security groups **sg-53d4**, **sg-RabbitMQ**, and **Default\_All** are configured respectively for your ECS and RabbitMQ instance.
- You can specify a security group or IP address as the remote end in the following rules.

Add the following security group rule to allow the ECS to access the RabbitMQ instance.

**Figure 2-1** Configuring security group rules for the ECS

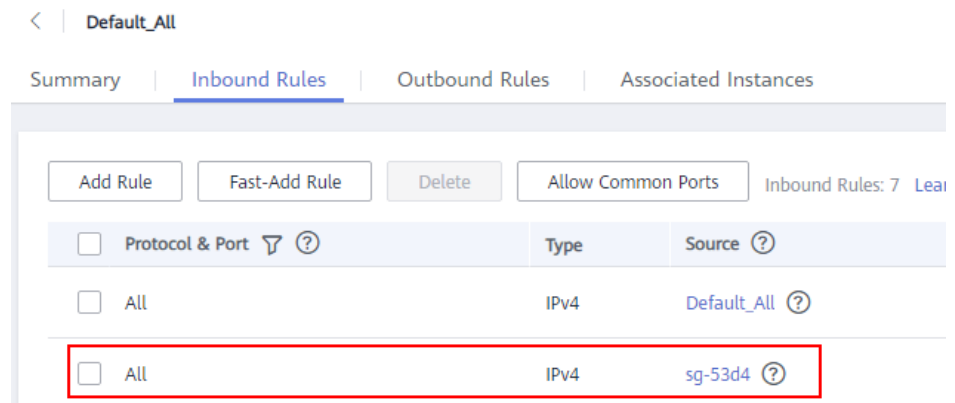


**Table 2-1** Security group rule

Direction	Protocol & Port	Destination
Outbound	All	Default_All

To ensure that your client can access the RabbitMQ instance, add the following rule to the security group configured for the RabbitMQ instance.

**Figure 2-2** Configuring security group for the RabbitMQ instance



**Table 2-2** Security group rule

Direction	Protocol & Port	Source
Inbound	All	sg-53d4

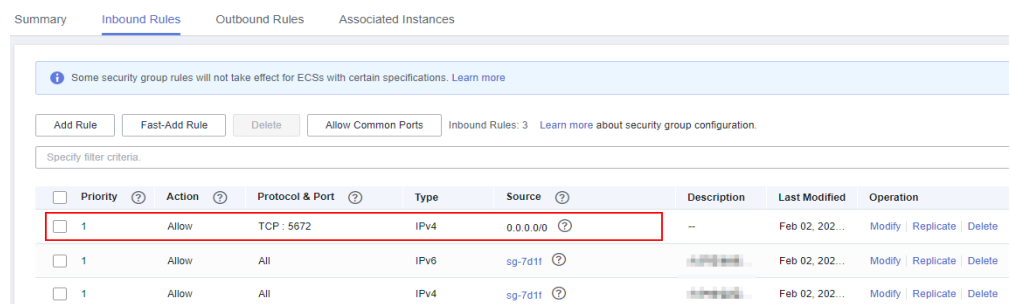
- Public access:  
To ensure that your client can access the RabbitMQ instance, add the following rule to the security group configured for the RabbitMQ instance.

**Table 2-3** Security group rule

Direction	Protocol & Port	Source
Inbound	TCP:5672	0.0.0.0/0

**Figure 2-3** show the rules.

**Figure 2-3** Rule 1 for the security group



## 2.2 Why Does a Client Fail to Connect to a RabbitMQ Instance?

This problem occurs when the connection address, port number, username, password, or virtual host name is incorrect, or when there is no virtual host or the maximum allowed number of connections is exceeded.

### Possible Cause 1: Incorrect Connection Address

Error message displayed when an incorrect connection address is used during intra-VPC access:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp ./rabbitmq-tutorial.jar Send 192.168.125.110 5672 user *****
Exception in thread "main" java.net.NoRouteToHostException: No route to host (Host unreachable)
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
at java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:206)
```

Error message displayed when an incorrect connection address is used during public access:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp ./rabbitmq-tutorial.jar Send 139.xxx.178 5672 user *****
Exception in thread "main" java.net.SocketTimeoutException: connect timed out
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
```

**Solution:** On the **Basic Information** page of the RabbitMQ console, obtain the private or public network connection address and modify the connection address in the code.

### Possible Cause 2: Incorrect Port

Error message displayed when an incorrect port is used during intra-VPC access:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp ./rabbitmq-tutorial.jar Send 192.168.125.111 5673 user *****
Exception in thread "main" java.net.ConnectException: Connection refused (Connection refused)
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
at java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:206)
```

Error message displayed when an incorrect port is used during public access:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp ./rabbitmq-tutorial.jar Send 139.xxx.179 5673 user *****
Exception in thread "main" java.net.SocketTimeoutException: connect timed out
at java.net.PlainSocketImpl.socketConnect(Native Method)
at java.net.AbstractPlainSocketImpl.doConnect(AbstractPlainSocketImpl.java:350)
at java.net.AbstractPlainSocketImpl.connectToAddress(AbstractPlainSocketImpl.java:206)
```

**Solution:** Change the port number.

### Possible Cause 3: Incorrect Username or Password

The error information is as follows:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp ./rabbitmq-tutorial.jar Send 192.168.125.111 5672 user *****
Exception in thread "main" com.rabbitmq.client.AuthenticationFailureException: ACCESS_REFUSED - Login
was refused using authentication mechanism PLAIN. For details
see the broker logfile.
at com.rabbitmq.client.impl.AMQConnection.start(AMQConnection.java:351)
at
```

```
com.rabbitmq.client.impl.recovery.RecoveryAwareAMQConnectionFactory.newConnection(RecoveryAwareAMQConnectionFactory.java:64)
```

**Solution:** Change the username or password. If you forget the password, set a new one by referring to [Resetting the Instance Password](#).

## Possible Cause 4: Maximum Number of Connections Exceeded

The error information is as follows:

```

Producer [1] Consumer [1]
D:\jdk1.8.0_272\bin\java.exe ...
SLF4J: Failed to load class "org.slf4j.impl.StaticLoggerBinder".
SLF4J: Defaulting to no-operation (NOP) logger implementation
SLF4J: See http://www.slf4j.org/codes.html#StaticLoggerBinder for further details.
Exception in thread "main" java.util.concurrent.TimeoutException
    at com.rabbitmq.utility.BlockingCell.get(BlockingCell.java:77)
    at com.rabbitmq.utility.BlockingCell.uninterruptibleGet(BlockingCell.java:120)
    at com.rabbitmq.utility.BlockingValueOrException.uninterruptibleGetValue(BlockingValueOrException.java:36)
    at com.rabbitmq.client.impl.AMQChannel$BlockingRpcContinuation.getReply(AMQChannel.java:502)
    at com.rabbitmq.client.impl.AMQConnection.start(AMQConnection.java:326)
    at com.rabbitmq.client.impl.recovery.RecoveryAwareAMQConnectionFactory.newConnection(RecoveryAwareAMQConnectionFactory.java:64)
    at com.rabbitmq.client.impl.recovery.AutorecoveringConnection.init(AutorecoveringConnection.java:156)
    at com.rabbitmq.client.ConnectionFactory.newConnection(ConnectionFactory.java:1130)
    at com.rabbitmq.client.ConnectionFactory.newConnection(ConnectionFactory.java:1087)
    at com.rabbitmq.client.ConnectionFactory.newConnection(ConnectionFactory.java:1045)
    at com.rabbitmq.client.ConnectionFactory.newConnection(ConnectionFactory.java:1207)
    at com.yll.demo8.Producer.main(Producer.java:35)
    
```

**Solution:** Close unused connections.

## Possible Cause 5: No Virtual Host Available or Incorrect Virtual Host Name

The error information is as follows:

```
Couldn't log in: server connection error 530, message: NOT_ALLOWED - vhost /localdev/ not found
```

**Solutions:**

- If no virtual host is available, go to the **Virtual Hosts** page of the RabbitMQ console and create one.
- If the virtual host name is incorrect, modify the connection URL and configuration file according to the virtual host name displayed on the **Virtual Hosts** page of the RabbitMQ console.

## 2.3 Does DMS for RabbitMQ Support Public Access?

Yes. You can enable public access on the instance creation page when creating the instance, or on the instance details page after the instance has been created.

## 2.4 Does DMS for RabbitMQ Support Cross-Region Deployment?

No. Currently, only cross-AZ deployment is supported. Cross-region deployment is not supported.

## 2.5 Do RabbitMQ Instances Support Cross-VPC Access?

Yes. RabbitMQ instances support cross-VPC access. By establishing a peering connection between two VPCs, ECSs in one VPC can access instances in the other VPC.

For details about VPC peering connections, see [VPC Peering Connection](#).

## 2.6 Do RabbitMQ Instances Support Cross-Subnet Access?

Yes.

If the client and the instance are in the same VPC, cross-subnet access is supported. By default, subnets in the same VPC can communicate with each other.

## 2.7 What Should I Do If I Fail to Access a RabbitMQ Instance with SSL Encryption?

1. Check the inbound rule of the security group. You must allow access using port 5671 (with SSL encryption) or 5672 (without SSL encryption).
2. Configure one-way SSL authentication as follows:

```
ConnectionFactory factory = new ConnectionFactory();  
factory.setHost(host);  
factory.setPort(port);  
factory.setUsername(user);  
factory.setPassword(password);  
factory.useSslProtocol();  
Connection connection = factory.newConnection();  
Channel channel = connection.createChannel();
```

## 2.8 Can I Access a RabbitMQ Instance Using DNAT?

No. You can only use a proxy, VPN, Direct Connect, FullNAT, or reverse proxy to access a RabbitMQ instance.

## 2.9 Why Can't I Open the Management Web UI?

Possible cause: The security group of the instance is incorrectly configured.

Solution: Do as follows to reconfigure the security group.

1. In the **Network** section on the **Basic Information** tab page, click the name of the security group.
2. Click the **Inbound Rules** tab to view the inbound rules of the security group.
  - SSL disabled

- For intra-VPC access, inbound access through port 5672 must be allowed.
- For public access, inbound access through port 15672 must be allowed.
- SSL enabled
  - For intra-VPC access, inbound access through port 5671 must be allowed.
  - For public access, inbound access through port 15671 must be allowed.

## 2.10 Can a Client Connect to Multiple Virtual Hosts of a RabbitMQ Instance?

Yes.

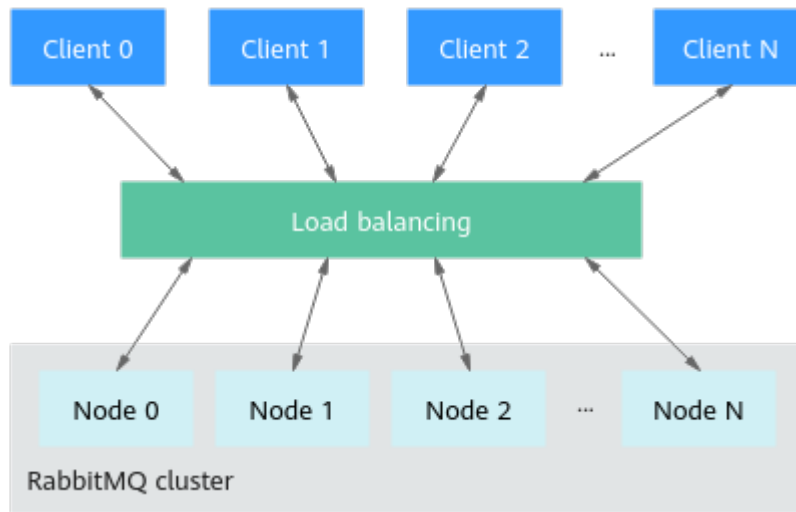
Virtual hosting is a basic feature of RabbitMQ. Each virtual host (vhost) serves as an independent RabbitMQ server. Different vhosts have different data directories but share the same process. Connecting to multiple vhosts does not differ much in performance from connecting to one vhost. The only difference is that the RabbitMQ process has more objects. You are advised to test the performance by using the service model.

For details, see [Virtual Hosts](#) on the official RabbitMQ website.

## 2.11 Why Does a RabbitMQ Cluster Have Only One Connection Address?

The connection address of a cluster RabbitMQ instance is actually the LVS node address (load balancing address) of the instance. When clients connect to the instance, the load balancer distributes the client request to each node of the cluster instance.

**Figure 2-4** Connections





# 3 Plug-ins

## 3.1 What Plug-ins Does DMS for RabbitMQ Support?

### What Plug-ins Does DMS for RabbitMQ Support?

The supported plug-ins are listed as follows. In the following list, an empty square bracket indicates that the plug-in is not installed; **[E\*]** indicates that the plug-in has been explicitly installed; **[e\*]** indicates that the plug-in has been implicitly installed, that is, the plug-in is installed as the dependency of other plug-ins.

```
[ ] rabbitmq_amqp1_0      3.8.35
[ ] rabbitmq_auth_backend_cache  3.8.35
[ ] rabbitmq_auth_backend_http  3.8.35
[ ] rabbitmq_auth_backend_ldap  3.8.35
[ ] rabbitmq_auth_mechanism_ssl  3.8.35
[ ] rabbitmq_consistent_hash_exchange 3.8.35
[ ] rabbitmq_delayed_message_exchange 3.8.9
[ ] rabbitmq_event_exchange      3.8.35
[ ] rabbitmq_federation          3.8.35
[ ] rabbitmq_federation_management 3.8.35
[ ] rabbitmq_jms_topic_exchange  3.8.35
[E*] rabbitmq_management         3.8.35
[e*] rabbitmq_management_agent   3.8.35
[ ] rabbitmq_mqtt                3.8.35
[ ] rabbitmq_peer_discovery_aws  3.8.35
[ ] rabbitmq_peer_discovery_common 3.8.35
[ ] rabbitmq_peer_discovery_consul 3.8.35
[ ] rabbitmq_peer_discovery_etcd 3.8.35
[ ] rabbitmq_peer_discovery_k8s  3.8.35
[ ] rabbitmq_random_exchange     3.8.35
[ ] rabbitmq_recent_history_exchange 3.8.35
[ ] rabbitmq_sharding            3.8.35
[ ] rabbitmq_shovel              3.8.35
[ ] rabbitmq_shovel_management   3.8.35
[ ] rabbitmq_stomp                3.8.35
[E*] rabbitmq_top                 3.8.35
[ ] rabbitmq_tracing             3.8.35
[ ] rabbitmq_trust_store         3.8.35
[e*] rabbitmq_web_dispatch       3.8.35
[ ] rabbitmq_web_mqtt            3.8.35
[ ] rabbitmq_web_mqtt_examples   3.8.35
[ ] rabbitmq_web_stomp           3.8.35
[ ] rabbitmq_web_stomp_examples  3.8.35
```

The plug-ins that you can enable on the RabbitMQ console are `rabbitmq_amqp1_0`, `rabbitmq_delayed_message_exchange`, `rabbitmq_federation`, `rabbitmq_sharding`, `rabbitmq_shovel`, `rabbitmq_tracing`, `rabbitmq_mqtt`, `rabbitmq_web_mqtt`, `rabbitmq_stomp`, `rabbitmq_web_stomp`, and `rabbitmq_consistent_hash_exchange`. When an instance is created, these plug-ins are disabled by default. To enable them, go to the **Plug-ins** page of an instance on the RabbitMQ console by following the instructions in [Enabling Plug-ins](#).

RabbitMQ plug-ins can be used for testing and service migration. Do not use them for production. For details, see [Notes and Constraints](#).

To install plug-ins that cannot be enabled on the console (such as `rabbitmq_random_exchange`), contact customer service. Services are not affected during the installation.

# 4 Messages

---

## 4.1 Does DMS for RabbitMQ Support Delayed Message Delivery?

Yes. To delay message delivery, you can set the time-to-live (TTL) and dead letter exchanges (DLX). You can also use plug-ins to delay message delivery. Currently, the following plug-ins are supported: `rabbitmq_amqp1_0`, `rabbitmq_delayed_message_exchange`, `rabbitmq_federation`, `rabbitmq_sharding`, `rabbitmq_shovel`, `rabbitmq_tracing`, `rabbitmq_mqtt`, `rabbitmq_web_mqtt`, `rabbitmq_stomp`, `rabbitmq_web_stomp`, and `rabbitmq_consistent_hash_exchange`.

## 4.2 How Does Message Accumulation Affect Services? What Can I Do?

### How Does Message Accumulation Affect Services?

Excessive message accumulation in a queue may cause memory or disk alarms. As a result, all connections will be blocked, other queues cannot be used, and the overall service quality deteriorates.

### Causes of Message Accumulation

1. Messages are published much faster than they are retrieved. For example, consumers process messages slowly in a certain period. It may take only 3 seconds to send a message, but 1 minute to retrieve the message. If 20 messages are sent per minute, and only one message is processed by consumers, a large number of messages will be stacked in the queue.
2. Consumers are abnormal and cannot retrieve messages, while publishers keep sending messages.
3. Consumers are normal, but their subscriptions to queues are abnormal.
4. Consumers and their subscriptions to queues are normal, but the code logic of consumers is time-consuming, which reduces the consumption capability and results in a situation similar to [1](#).

## Solutions to Message Accumulation

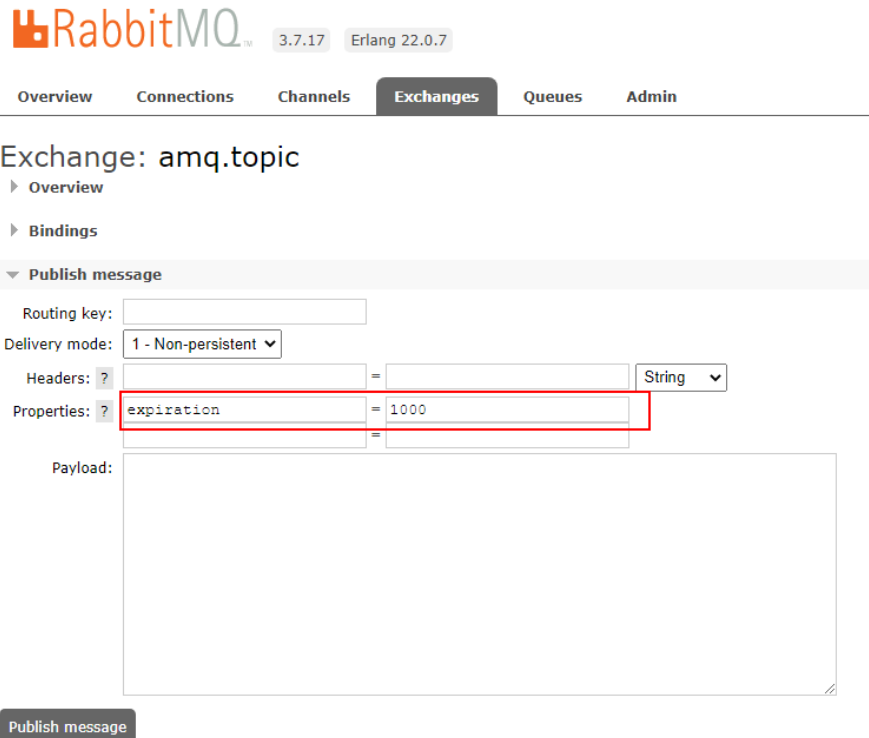
1. If messages are published much faster than they are retrieved, solve the problem in the following ways:
  - Add consumers to accelerate message retrieval.
  - Use publisher confirms and monitor the publishing rate and duration on the publishing end. When the duration increases significantly, apply flow control.
2. If consumers are abnormal, check whether the consumer logic is correct and optimize the program.
3. Check whether consumers' subscriptions to queues are normal.
4. If the code logic of consumers is time-consuming, set expiration time on messages using either of the following methods:

- Set the value of **expiration** in **properties**. The unit is ms.

```
AMQP.BasicProperties properties = new AMQP.BasicProperties().builder()  
    .deliveryMode(2)  
    .contentEncoding("UTF-8")  
    .expiration("10000")  
    .build();
```

```
String message = "hello rabbitmq";  
channel.basicPublish(exchange, routingKey, properties,  
message.getBytes(StandardCharsets.UTF_8));
```

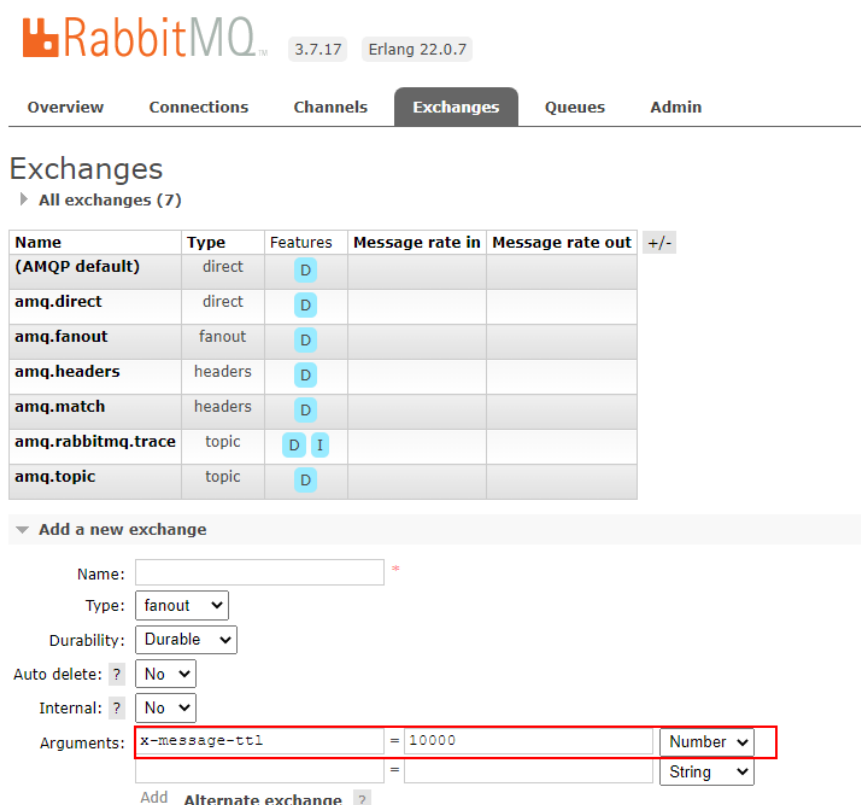
- Set the value of **expiration** on the management UI. The unit is ms. [Log in to the management UI](#). On the **Exchanges** tab page, click an exchange name to view its details. In the **Publish message** area, set **expiration**, as shown in the following figure.



- Set the queue expiration time by using the **x-message-ttl** parameter. The expiration time starts when messages enter the queue. When the expiration time elapses, the messages are automatically deleted.
  - Set the value of **x-message-ttl** in the client code. The unit is ms.
 

```
Map<String, Object> arguments = new HashMap<String, Object>();
arguments.put("x-message-ttl", 10000);
channel.queueDeclare(queueName, true, false, false, arguments);
```
  - Set the value of **x-message-ttl** when creating a queue on the management UI. The unit is ms.

**Log in to the management UI.** On the **Exchanges** tab page, create a queue and set the value of **x-message-ttl**, as shown in the following figure.



### 4.3 How Long Are Messages Be Retained?

Normally, messages are retained until they are retrieved. However, if a message has a time to live (TTL), it will be retained until expiry.

### 4.4 Where Is Message Creation Time Set?

The message creation time is set by the producer during message production.

## 4.5 What Is the Maximum Size of a Message that Can be Created?

50 MB. Larger messages will fail to be produced.

# 5 Monitoring & Alarm

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## 5.1 Why Can't I View the Monitoring Data of a RabbitMQ Instance?

The monitoring data cannot be displayed if the queue name starts with a special character, such as a period (.) or underscore (\_). You are advised to delete the queue whose name starts with a special character.

## 5.2 What Should I Do If the Number of Channels Keeps Rising?

A maximum of 2047 channels are allowed in each connection. If this limit is exceeded, new channels cannot be created. Check if unused resources are not released.