# Distributed Message Service for RabbitMQ

# Getting Started

**Issue** 01

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HUAWEI

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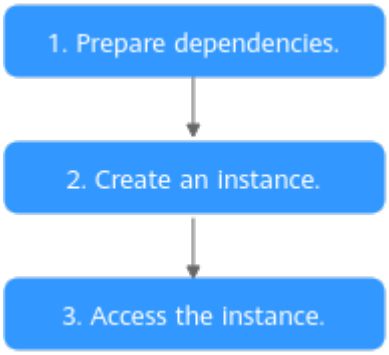
# 1 Getting Started with RabbitMQ for Message Production and Consumption

This section takes an example to get you started with DMS for RabbitMQ. The example creates a RabbitMQ instance with SSL disabled, and accesses it over a private network on a client within a VPC. As a result, messages can be produced and consumed.

**Figure 1-1** Procedure for using DMS for RabbitMQ




1. **Step 1: Preparations**

   A RabbitMQ instance runs in a Virtual Private Cloud (VPC). Before creating a RabbitMQ instance, ensure that a VPC is available.

2. **Step 2: Creating a RabbitMQ Instance**

   You can select the specifications and quantity when creating a RabbitMQ instance.

3. **Step 3: Accessing an Instance for Message Production and Consumption**

   A client connects to the instance with SSL disabled using the demo provided by RabbitMQ.

## Step 1: Preparations

**Step 1** Register a HUAWEI ID.

Before creating a RabbitMQ instance, register a HUAWEI ID. For details, see **Signing Up for a HUAWEI ID and Enabling Huawei Cloud Services**.

If you already have a HUAWEI ID, skip this step.

**Step 2** Grant RabbitMQ instance permissions.

To achieve fine-grained management of your cloud resources, create Identity and Access Management (IAM) user groups and users and grant specified permissions to the users. For more information, see **Creating a User and Granting DMS for RabbitMQ Permissions**.

**Step 3** Create a VPC and subnet.

Before creating a RabbitMQ instance, ensure that a VPC and a subnet are available. For details about how to create a VPC and subnet, see **Creating a VPC and Subnet**.

The VPC **must** be created in the **same** region as the RabbitMQ instance.

**Step 4** Create a security group and add security group rules.

Before creating a RabbitMQ instance, ensure that a security group is available. For details about how to create a security group, see **Creating a Security Group**.

The security group **must** be created in the **same** region as the RabbitMQ instance.

To connect to RabbitMQ instances, add the security group rules described in **Table 1-1**. Other rules can be added based on site requirements.

**Table 1-1** Security group rules

| Direction | Protocol | Port | Source address | Description |
|---|---|---|---|---|
| Inbound | TCP | 5672 | 0.0.0.0/0 | Accessing a RabbitMQ instance (SSL disabled) |

NOTE

After a security group is created, it has a default inbound rule that allows communication among ECSs within the security group and a default outbound rule that allows all outbound traffic. If you access your RabbitMQ instance over a private network within a VPC, you do not need to add the rules described in **Table 1-1**.

**Step 5** Construct a client for message production and consumption.

This section uses a Linux elastic cloud server (ECS) as the client. Before creating a RabbitMQ instance, create an ECS with elastic IPs (EIPs), install JDK, and configure the environment variables.

1. Log in to the console, click ☰ in the upper left corner, click **Elastic Cloud Server** under **Computing**, and then create an ECS.

   For details about how to create an ECS, see **Purchasing a Custom ECS**. If you already have an available ECS, skip this step.
2. Log in to an ECS as user **root**.
3. Install Java JDK and configure the environment variables **JAVA_HOME** and **PATH**.

a. Download a JDK.

NOTE

Use Oracle JDK instead of ECS's default JDK (for example, OpenJDK), because ECS's default JDK may not be suitable. Obtain Oracle JDK 1.8.111 or later from **Oracle's official website**.

b. Decompress the JDK.

```
tar -zxvf jdk-8u321-linux-x64.tar.gz
```

Change **jdk-8u321-linux-x64.tar.gz** to your JDK version.

c. Open the **.bash_profile** file.

```
vim ~/.bash_profile
```

d. Add the following content:

```
export JAVA_HOME=/opt/java/jdk1.8.0_321
export PATH=$JAVA_HOME/bin:$PATH
```

Change **/opt/java/jdk1.8.0_321** to the path where you install JDK.

e. Press **Esc**. Enter the following line and press **Enter**. Save the **.bash_profile** file and exit.

```
:wq
```

f. Run the following command to make the change take effect:

```
source .bash_profile
```

g. Check whether the JDK is installed.

```
java -version
```

If the following message is returned, the JDK is installed.

```
java version "1.8.0_321"
```

**----End**

## Step 2: Creating a RabbitMQ Instance

**Step 1** Go to the **Buy Instance page**.

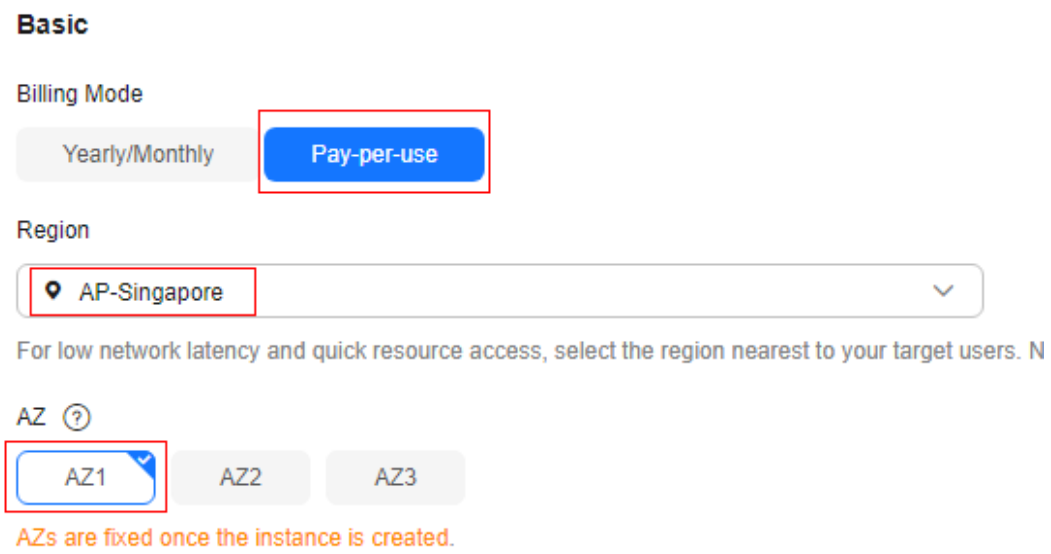
**Step 2** On the **Quick Config** tab page, set basic instance configurations shown in **Figure 1-2**. **Table 1-2** lists the configuration details.

**Table 1-2** Setting basic instance configurations

| Parameter | Description |
| --- | --- |
| Billing Mode | Select **Pay-per-use**, which is a postpaid mode. You can pay after using the service, and will be billed for your usage duration. The fees are calculated in seconds and settled by hour. |
| Region | DMS for RabbitMQ in different regions cannot communicate with each other over an intranet. Select a nearest location for low latency and fast access.<br>Select AP-Singapore. |
| AZ | An AZ is a physical region where resources use independent power supply and networks. AZs are physically isolated but interconnected through an internal network.<br>Select **AZ1**. |

**Figure 1-2** Setting basic instance configurations



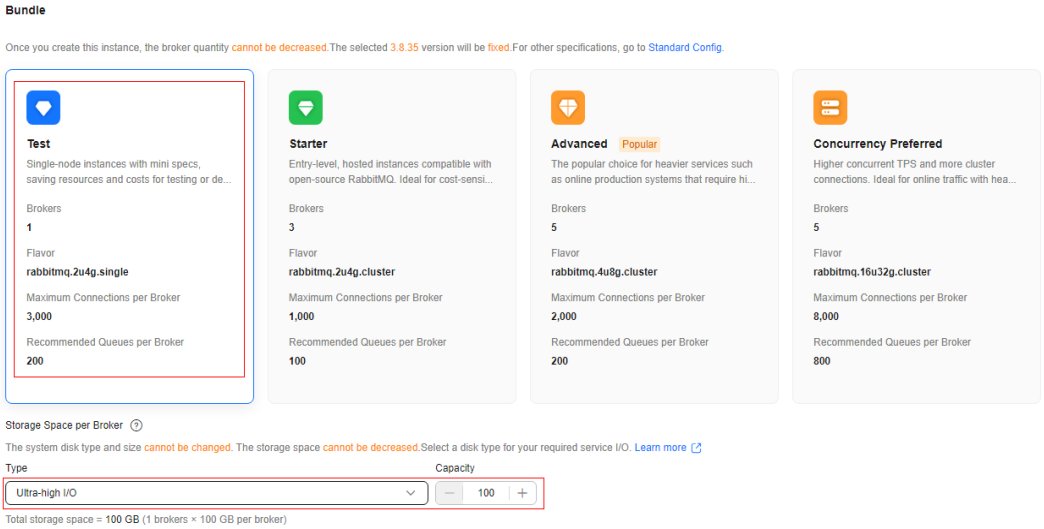

**Step 3** Set the instance specifications and storage space, as shown in **Figure 1-3**. For details, see **Table 1-3**.

**Table 1-3** Setting the instance specifications and storage space

| Parameter | Description |
| --- | --- |
| Bundle | Select **Test**: Single-node instances with mini specs, saving resources and costs for testing or debugging. Note that high availability is unavailable. |
| Storage Space per Broker | Select the disk type and specify the disk size as required.<br>Total storage space = Storage space per broker × Broker quantity. The disk type cannot be changed once the instance is created.<br>Select **Ultra-high I/O** and enter **100**. |

**Figure 1-3** Setting the instance specifications and storage space




**Step 4** Configure the instance network as shown in **Figure 1-4**. For details, see **Table 1-4**.

**Table 1-4** Configuring instance network

| Parameter | Description |
| --- | --- |
| VPC | After the RabbitMQ instance is created, its VPC cannot be changed.<br>Select the VPC prepared in **Step 3**. |
| Subnet | After the RabbitMQ instance is created, its subnet cannot be changed.<br>Select the subnet prepared in **Step 3**. |
| Security Group | Select the security group prepared in **Step 4**. |

**Figure 1-4** Configuring instance network

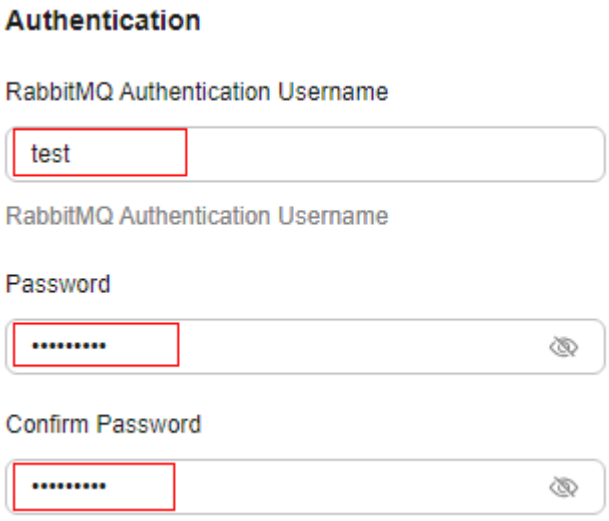
**Step 5** Set the instance access mode. Retain the default setting.

**Step 6** Set the instance authentication method as shown in **Figure 1-5**. For details, see **Table 1-5**.

**Table 1-5** Configuring the instance authentication method

| Parameter | Description |
| --- | --- |
| RabbitMQ Authentication Username | Enter the username used for accessing the instance.<br>A username should contain 4 to 64 characters, start with a letter, and contain only letters, digits, hyphens (-), and underscores (_).<br>Enter "test". |
| Password | Enter the password used for accessing the instance.<br>A password must meet the following requirements:<br>• Contains 8 to 32 characters.<br>• Contains at least three types of the following characters: uppercase letters, lowercase letters, digits, and special characters `~!@#$%^&*()-_=+\|[{}];:'",<.>? and spaces, and cannot start with a hyphen (-).<br>• Cannot be the username spelled forwards or backwards. |

**Figure 1-5** Configuring the instance authentication method



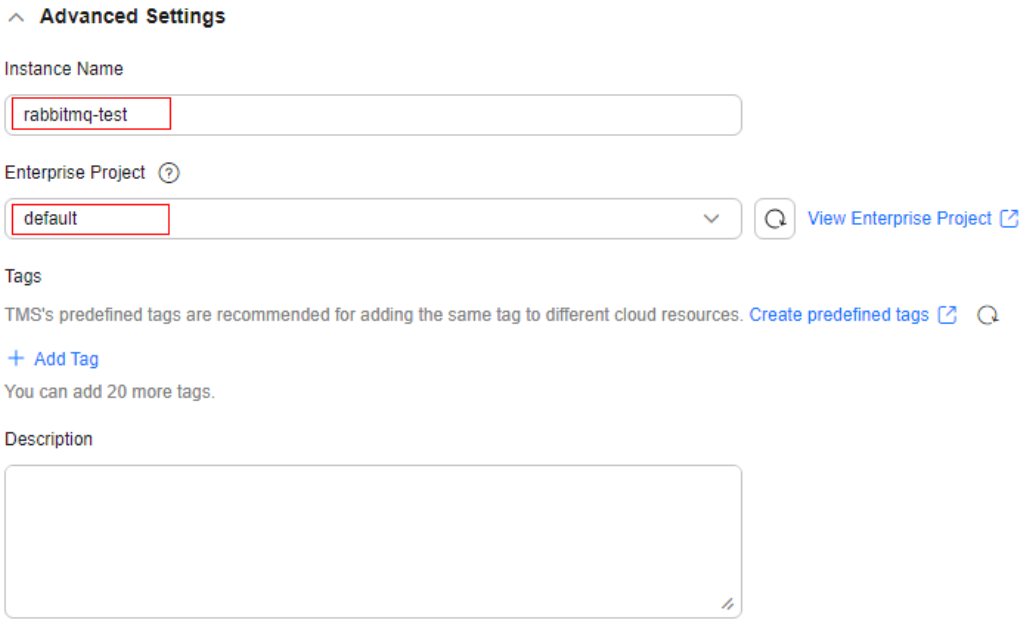

**Step 7** Configure **Advanced Settings**, as shown in **Figure 1-6**. For details, see **Table 1-6**. Retain default settings for other parameters.

**Table 1-6** Configuring instance advanced settings

| Parameter | Description |
| --- | --- |
| Instance Name | You can customize a name that complies with the rules: 4–64 characters; starts with a letter; can contain only letters, digits, hyphens (-), and underscores (_).<br>Enter "rabbitmq-test". |
| Enterprise Project | This parameter is for enterprise users. An enterprise project manages project resources in groups. Enterprise projects are logically isolated.<br>Select **default**. |

**Figure 1-6** Configuring instance advanced settings




**Step 8** Click **Confirm**.

**Step 9** Confirm the instance information, read and agree to the *Huawei Cloud Customer Agreement*, and then submit the request.

**Step 10** 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**.

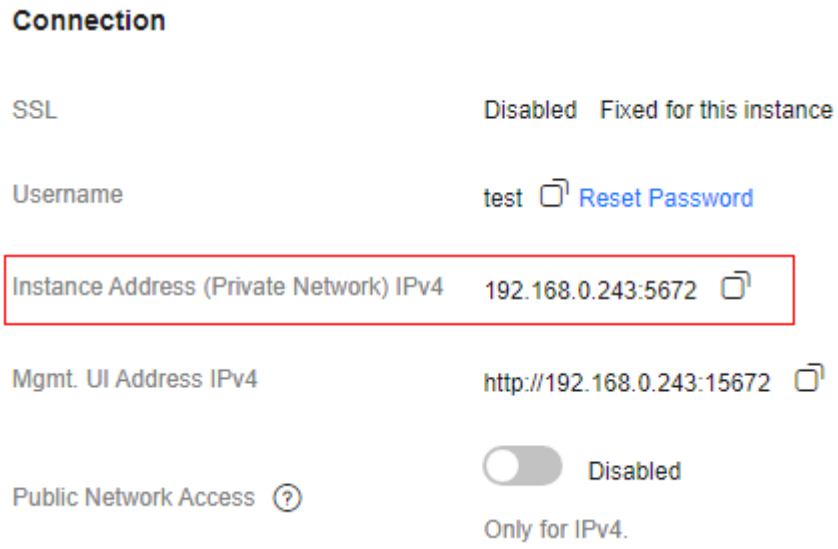
- If the instance is created successfully, its status changes to **Running**.
- If the instance is in the **Creation failed** state, delete it and try purchasing another one. If the instance purchase fails again, contact customer service.

**Step 11** After the instance is created, click its name to go to the instance details page.

**Step 12** In the **Connection** area, view and record the connection address.

**Figure 1-7** Connection address




**----End**

## Step 3: Accessing an Instance for Message Production and Consumption

**Step 1** Go to the **root** directory on the ECS and download the sample project code **RabbitMQ-Tutorial.zip**.

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

NOTE

**/root** is the path for storing the sample project code. Change it to the actual path if needed.

**Step 2** Run the following command to decompress **RabbitMQ-Tutorial.zip**:

```
unzip RabbitMQ-Tutorial.zip
```

**Step 3** Run the following command to navigate to the **RabbitMQ-Tutorial** directory, which contains the precompiled JAR file:

```
cd RabbitMQ-Tutorial
```

**Step 4** Produce messages using the sample project.

```
java -cp .:rabbitmq-tutorial.jar Send ${host} ${port} ${user} ${password}
```

Description:

- *host*: connection address obtained in the **instance creation**.
- *port*: port of the RabbitMQ instance. Enter **5672**.
- *user*: username set in **instance creation**.
- *password*: password set in **instance creation**.

Sample message production:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp .:rabbitmq-tutorial.jar Send 192.168.xx.40 5672 test Zxxxxxs
 [x] Sent 'Hello World!'
[root@ecs-test RabbitMQ-Tutorial]# java -cp .:rabbitmq-tutorial.jar Send 192.168.xx.40 5672 test Zxxxxxs
 [x] Sent 'Hello World!'
```

**Step 5** Consume messages using the sample project.

```
java -cp .:rabbitmq-tutorial.jar Recv ${host} ${port} ${user} ${password}
```

Description:

- *host*: connection address obtained in the **instance creation**.
- *port*: port of the RabbitMQ instance. Enter **5672**.
- *user*: username set in **instance creation**.
- *password*: password set in **instance creation**.

Sample message consumption:

```
[root@ecs-test RabbitMQ-Tutorial]# java -cp .:rabbitmq-tutorial.jar Recv 192.168.xx.40 5672 test Zxxxxxs
 [*] Waiting for messages. To exit press CTRL+C
 [x] Received 'Hello World!'
 [x] Received 'Hello World!'
```

Press **Ctrl+C** to cancel.

**----End**

## Related Information

- Learn more about the **basic concepts of RabbitMQ**.
- Learn more about **Distributed Message Service for RabbitMQ Pricing**.
- To log in to RabbitMQ management UI, see **Connecting to the Management Address of a RabbitMQ Instance**.
- To view monitoring metrics of a RabbitMQ instance, see **Viewing Metrics**.

# 2 Common Practices

You can use the common practices provided by DMS for RabbitMQ to meet your service requirements.

**Table 2-1** Common practices

| Practice | Description |
| --- | --- |
| Queue Migration | Configure queue load balancing to handle uneven queue distribution across nodes in a RabbitMQ cluster due to node scale-out or queue deletion. |