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Alibaba Cloud Message Queue for MQTT

Console User Guide

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Document conventions

Style	Description	Example
Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	**Danger:** Resetting will result in the loss of user configuration data.
Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	**Warning:** Restarting will cause business interruption. About 10 minutes are required to restart an instance.
Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	**Notice:** If the weight is set to 0, the server no longer receives new requests.
Note	A note indicates supplemental instructions, best practices, tips, and other content.	**Note:** You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click **Settings**> **Network**> **Set network type**.
Bold	Bold formatting is used for buttons , menus, page names, and other UI elements.	Click **OK**.
`Courier font`	Courier font is used for commands	Run the `cd /d C:/window` command to enter the Windows system folder.
Italic	Italic formatting is used for parameters and variables.	`bae log list --instanceid` *Instance_ID*
[] or [a|b]	This format is used for an optional value, where only one item can be selected.	`ipconfig [-all|-t]`
{} or {a|b}	This format is used for a required value, where only one item can be selected.	`switch {active|stand}`

Table of Contents

1.Manage instances

This topic describes how to create, update, and delete an instance, and view the details of an instance in the Message Queue for MQTT console.

Background information

An instance is a VM of Message Queue for MQTT. An instance stores topics and group IDs.

Message Queue for MQTT provides two types of instances based on the billing method: subscription instances and pay-as-you-go instances. Subscription instances are divided into instances of Enterprise Platinum Edition, Basic Edition, and Lite Edition. For more information about the differences in specifications and the billing information of different instance types, see Instance types and Billing.

Limits

For more information, see Limits.

Create an instance

1. On the **Instances** page, click **Create Instance** in the upper-left corner.
2. In the panel that appears, select a billing method as needed.

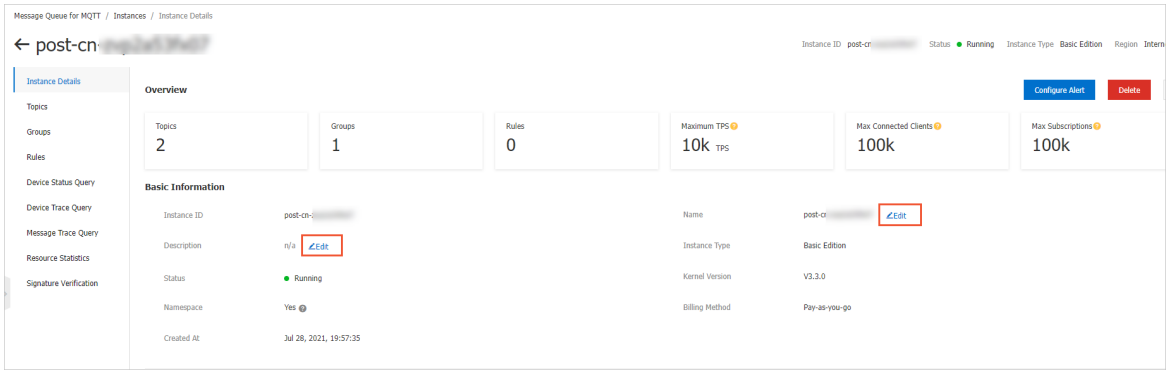
   Message Queue for MQTT supports the **Pay-as-you-go** and **Subscription** billing methods. For more information about the two billing methods, see Billing.

   - **Create a pay-as-you-go instance**:
     a. Set **Billing Method** to **Pay-as-you-go** and click **OK**.
     b. In the panel that appears, set the parameters as needed and click **Buy Now**.
   - **Create a subscription instance**:
     a. Set **Billing Method** to **Subscription** and click **OK**.
     b. In the panel that appears, set the parameters as needed and click **Buy Now**.
     c. In the panel that appears, click **Purchase**.

   After you complete the purchase, refresh the **Instances** page in the Message Queue for MQTT console. The instance that you created appears in the instance list.

Update an instance

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select the region where your instance is located.
4. On the Instances page, find the instance that you want to update, and click the instance name or click **Details** in the **Actions** column.
5. In the **Basic Information** section of the **Instance Details** page, click the **Edit** icon next to **Name** or **Description**. Modify the name or description of the instance in the field and click **OK**.

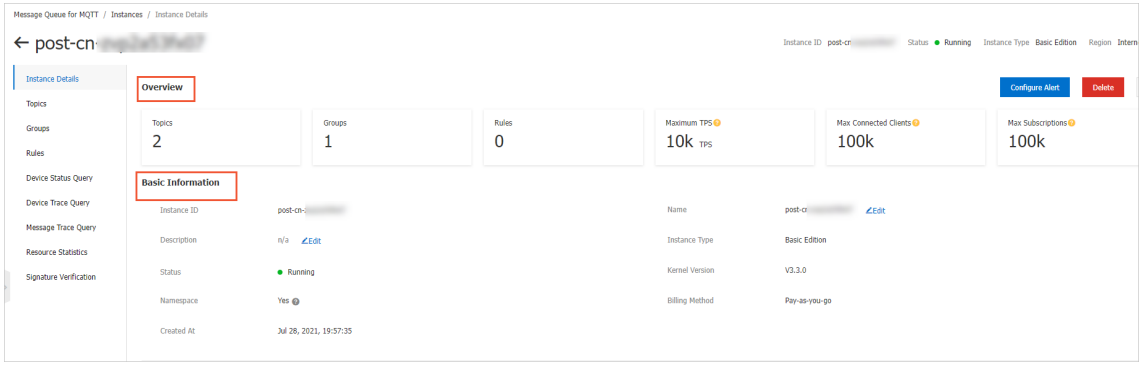


View the details of an instance

After an instance is created, you can go to the Instance Details page to view the details of the instance, including the basic information of the instance, the statistics about the messages that are sent and received for the instance, and the endpoints of the instance.

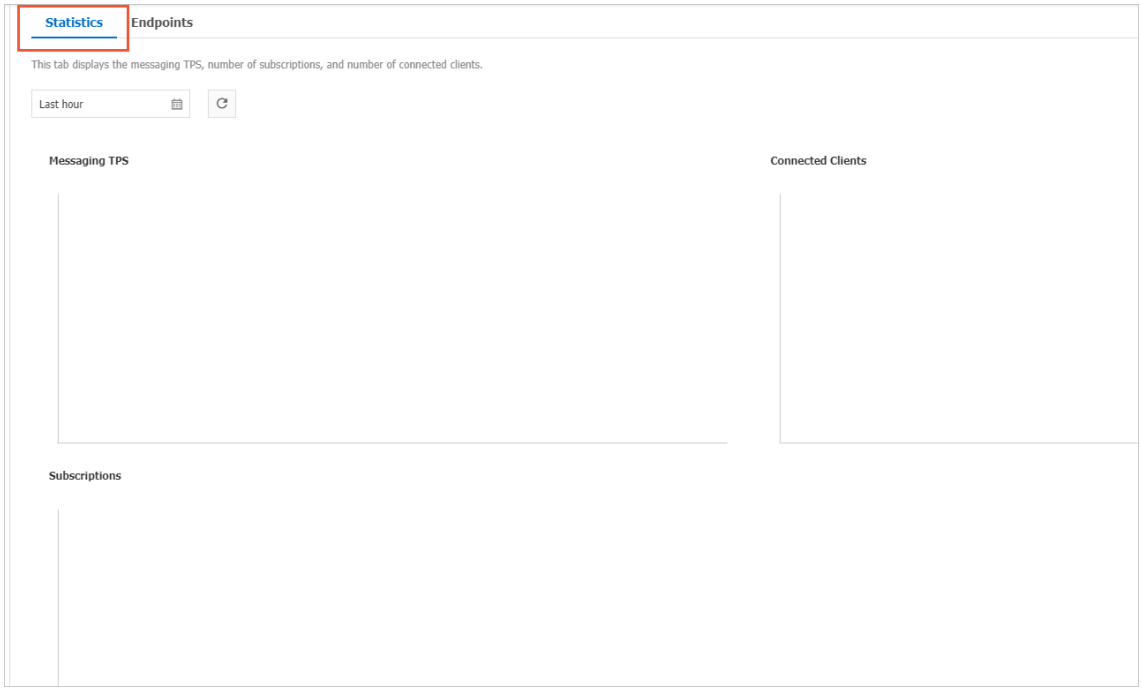
1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select the region where your instance is located.
4. On the Instances page, find the instance that you want to view, and click the instance name or click **Details** in the **Actions** column. The **Instance Details** page appears.
   - **View the basic information**

     In the **Overview** and **Basic Information** sections of the **Instance Details** page, you can view the basic information of the instance, such as the instance type, instance ID, instance status, and billing method.

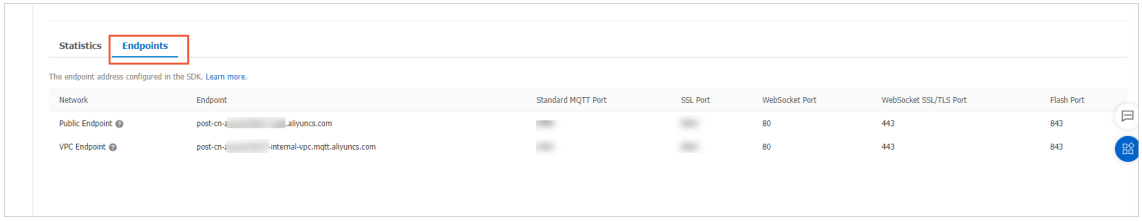
   - **View instance statistics**

On the **Instance Details** page, click the **Statistics** tab. Set a time range to query the statistics about the messages that are sent and received for the instance within the specified time range. The statistics include the messaging transactions per second (TPS), the number of subscription relationships, and the number of connected clients.



- **Obtain an endpoint**

  On the **Instance Details** page, click the **Endpoints** tab. In the endpoint list, you can view the public endpoint and virtual private cloud (VPC) endpoint that are provided by Message Queue for MQTT. For more information about the endpoints, see Endpoints.



Delete an instance

> **Notice**
>
> - After an instance is deleted, its data cannot be recovered. Exercise caution when you delete an instance.
> - You cannot manually release a subscription instance. You can delete the instance only after it expires.
> - Before you delete an instance, you must clear all topics and groups in the instance.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select the region where your instance is located.

4. On the Instances page, find the instance that you want to delete and choose **More > Delete** in the **Actions** column.
5. In the **Note** message, click **OK**.

What to do next

- Change the billing method of an instance from subscription to pay-as-you-go

  After you create a Message Queue for MQTT subscription instance, you can change its billing method from subscription to pay-as-you-go. After the change, you can recoup part of your cost and use the Message Queue for MQTT instance on demand.

- Renew an instance and upgrade or downgrade the configuration of an instance

  If you need to use an instance for a long time, you can enable the auto-renewal feature for the instance. This avoids the business impact caused by the failure to renew the instance in time when the instance expires. During the use of the instance, you can also flexibly upgrade or downgrade the configuration of the instance based on the actual business traffic.

2.Manage topics

This article describes how to create, delete, update, and search for a topic in the Message Queue for MQTT console.

Context

Message Queuing Telemetry Transport (MQTT) is a messaging protocol based on the publish-subscribe model. Therefore, each message belongs to a topic. MQTT supports multiple levels of topics. A level 1 topic is a parent topic. Before you use Message Queue for MQTT, you must create a parent topic in the Message Queue for MQTT console.

For more information, see Terms.

Usage notes

- Topics cannot be used across instances. For example, you cannot use the endpoint of instance B to subscribe to the topic that is created in instance A.
- The topic name can be 3 to 64 characters in length and can contain only letters, digits, hyphen (-), and underscores (_).

Create a topic

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a topic in the instance list. In the **Actions** column, choose **More > Topics**.
5. In the upper-left corner of the **Topics** page, click **Create Topic**.
6. In the Create Topic panel, set the **Name** and **Description** parameters for the topic and click **OK** in the lower-left corner.
   You can view the topic that you create on the **Topics** page.

Update the description of a topic

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to update a topic in the instance list. In the **Actions** column, choose **More > Topics**.
5. In the topic list, find the topic that you want to update. Click the topic name or click **Details** in the **Actions** column to go to the **Topic Details** page.
6. In the **Basic Information** section, click **Edit** next to **Description**. In the field that appears, enter the new description. Then, click **OK**.
   You can view the topic description that you update on the **Topics** page.

Delete a topic

> **Notice** After a topic is deleted, the producers stop sending messages to the topic and the consumers stop consuming messages from the topic. The metadata and messages of the topic are deleted and cannot be recovered. Therefore, exercise caution when you delete a topic.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to delete a topic in the instance list. In the **Actions** column, choose **More > Topics**.
5. In the topic list, find the topic that you want to delete. In the **Actions** column, choose **More > Delete**.
6. In the message that appears, click **OK**.
   On the **Topics** page, you cannot view the deleted topic.

Query the details of a topic

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to query a topic in the instance list. In the **Actions** column, choose **More > Topics**.
5. In the topic list, find the topic that you want to query. Click the topic name or click **Details** in the **Actions** column to go to the **Topic Details** page.
   On the Topic Details page, you can query the details of the specified topic.

References

You can also create data inbound or outbound rules for a topic. For more information, see Manage rules.

3.Manage groups

This topic describes how to create and delete groups, and query group details in the Message Queue for MQTT console.

Context

A group ID specifies the name of a group of nodes (devices) with identical logic and features. You must create a group in the Message Queue for MQTT console before you can use it.

Usage notes

- Group IDs must be unique within an instance, but can be repeated in different instances.
- A group ID must start with "GID_" or "GID-" and must be 7 to 64 characters in length. It can contain only letters, digits, hyphens (-), and underscores (_).

Create a group

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a group in the instance list. In the **Actions** column, choose **More > Groups**.
5. In the upper-left corner of the **Groups** page, click **Create Group**.
6. In the Create Group panel, set the **Group ID** parameter and click **OK**.
   You can view the created group on the **Groups** page.

Delete a group

Notice After you delete a group, disconnected producers and consumers of this group ID fail the authentication when they attempt to reconnect to Message Queue MQTT. The deletion operation does not affect clients that are connected to Message Queue MQTT.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to delete a group in the instance list. In the **Actions** column, choose **More > Groups**.
5. In the group list, find the group that you want to delete. In the **Actions** column, choose **More > Delete**.
6. On the dialog box that appears, click **OK**.
   On the **Groups** page, you cannot view the deleted group.

Query the details of a group

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.

4. Find the instance for which you want to query group details in the instance list. In the **Actions** column, choose **More > Groups**.
5. In the group list, find the group that you want to query. Click the group ID or click **Details** in the **Actions** column to go to the **Group Details** page.
   On the Group Details page, you can query the details of the specified group.

4.Manage rules

4.1. Manage data inbound rules

This article describes how to manage data inbound rules in the Message Queue for MQTT console.

Create a data inbound rule

For more information about the limits on rules, see Limits.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data inbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the upper-left corner of the **Rules** page, click **Create Rule**.
6. On the **Create Rule** page, perform the following steps:
   i. In the **Configure Basic Information** step, set the following parameters and click **Next**.

Parameter	Example	Description
Rule ID	111111	The global unique identifier of a rule. ■ It can contain only letters, digits, hyphens (-), and underscores (_) and must contain at least one letter or digit. ■ It must be 3 to 64 characters in length. If the value contains more than 64 characters, it is automatically truncated. ■ It cannot be updated after the rule is created.
Description	migrate from rocketmq	The description of the rule.
Status	Enable	Specifies whether to enable the current rule. Valid values: ■ Enable ■ Disable

Parameter	Example	Description
Rule Type	Data Inbound	The type of the rule. Valid values: ■ Data Outbound: The rule is used to export data from Message Queue for MQTT to other Alibaba Cloud services. For more information, see Export data from Message Queue for MQTT to other Alibaba Cloud services. ■ Data Inbound: The rule is used to import data from other Alibaba Cloud services to Message Queue for MQTT. For more information, see Data inflow across cloud products. ■ Online/Offline Notification: The rule is used to export the status event data of a Message Queue for MQTT client to other Alibaba Cloud services. For more information, see Export online and offline events of Message Queue for MQTT clients.

ii. In the **Configure Rule Source** step, specify the data source and click **Next**.

Parameter	Example	Description
Source Service Type	Message Queue for Apache RocketMQ	The cloud service from which the data is forwarded to Message Queue for MQTT. **Note** Only Message Queue for Apache RocketMQ is supported.
Message Queue for Apache RocketMQ Instance	MQ_INST_13801563067*****_BbyOD2jQ	The ID of the Message Queue for Apache RocketMQ instance from which the data is forwarded.
Topic	TopicA	The Message Queue for Apache RocketMQ topic from which the data is forwarded. In this example, the messages of TopicA are forwarded to a topic in Message Queue for MQTT.

iii. In the **Configure Rule Destination** step, specify the source from which the data is forwarded and click **Create**.

Parameter	Example	Description
Topic	TpoicB	The topic in Message Queue for MQTT to which the data is forwarded from other Alibaba Cloud services.

You can view the data inbound rule that you create on the **Rules** page.

> **Note** For more information about the message structure mappings between Message Queue for MQTT and
>
> Message Queue for Apache RocketMQ
>
> , see Message structure mappings between Message Queue for MQTT and Message Queue for Apache RocketMQ.

Edit a data inbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to edit. In the **Actions** column, choose **More > Edit**.
6. On the **Edit Rule** page, you can change all parameter values except the rule ID.
7. After you change parameter values as needed, click **Save** in the **Configure Rule Destination** step.

Delete a data inbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to delete. In the **Actions** column, choose **More > Delete**.
6. In the message that appears, click **OK**.

Enable a data inbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to enable. In the **Actions** column, choose **More > Enable**.
6. In the message that appears, click **OK**.

Disable a data inbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.

4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to disable. In the **Actions** column, choose **More > Disable**.
6. In the message that appears, click **OK**.

4.2. Manage data outbound rules

This article describes how to manage data outbound rules in the Message Queue for MQTT console.

Create a data outbound rule

For more information about the limits on rules, see Limits.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the upper-left corner of the **Rules** page, click **Create Rule**.
6. On the **Create Rule** page, perform the following steps:
   i. In the **Configure Basic Information** step, set the following parameters and click **Next**.

Parameter	Example	Description
Rule ID	111111	The global unique identifier of a rule. ■ It can contain only letters, digits, hyphens (-), and underscores (_) and must contain at least one letter or digit. ■ It must be 3 to 64 characters in length. If the value contains more than 64 characters, it is automatically truncated. ■ It cannot be updated after the rule is created.
Description	migrate from rocketmq	The description of the rule.
Status	Enable	Specifies whether to enable the current rule. Valid values: ■ Enable ■ Disable

Parameter	Example	Description
Rule Type	Data Outbound	The type of the rule. Valid values: ■ Data Outbound: The rule is used to export data from Message Queue for MQTT to other Alibaba Cloud services. For more information, see Export data from Message Queue for MQTT to other Alibaba Cloud services. ■ Data Inbound: The rule is used to import data from other Alibaba Cloud services to Message Queue for MQTT. For more information, see Data inflow across cloud products. ■ Online/Offline Notification: The rule is used to export the status event data of a Message Queue for MQTT client to other Alibaba Cloud services. For more information, see Export online and offline events of Message Queue for MQTT clients.

ii. In the **Configure Rule Source** step, specify the data source and click **Next**.

Parameter	Example	Description
Topic	TpoicA	The source topic from which you want to export data. Specify a topic in Message Queue for MQTT.

iii. In the **Configure Rule Destination** step, specify the destination to which the data is forwarded and click **Create**.

Parameter	Example	Description
Destination Service Type	Message Queue for Apache RocketMQ	The cloud service to which the data of the source topic is forwarded. **Note** Only Message Queue for Apache RocketMQ is supported.
Message Queue for Apache RocketMQ Instance	MQ_INST_13801563067*****_BbyOD2jQ	The ID of the Message Queue for Apache RocketMQ instance to which the data is forwarded.
Topic	TopicB	The Message Queue for Apache RocketMQ topic to which the data is forwarded. In this example, the data of the source topic is forwarded to TopicB.

You can view the data outbound rule that you create on the **Rules** page.

Note For more information about the message structure mappings between Message Queue for MQTT and Message Queue for Apache RocketMQ, see Message structure mappings between Message Queue for MQTT and Message Queue for Apache RocketMQ.

Edit a data outbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to edit. In the **Actions** column, choose **More > Edit**.
6. On the **Edit Rule** page, you can change all parameter values except the rule ID.

7. After you change parameter values as needed, click **Save** in the **Configure Rule Destination** step.

Delete a data outbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to delete. In the **Actions** column, choose **More > Delete**.
6. In the message that appears, click **OK**.

Enable a data outbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to enable. In the **Actions** column, choose **More > Enable**.
6. In the message that appears, click **OK**.

Disable a data outbound rule

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to disable. In the **Actions** column, choose **More > Disable**.
6. In the message that appears, click **OK**.

4.3. Manage rules for client status notification

This article describes how to manage rules for client status notification in the Message Queue for MQTT console.

Create a rule for client status notification

For more information about the limits on rules, see Limits.

1. Log on to the Message Queue for MQTT console.

2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4.
5.
6. On the **Create Rule** page, perform the following steps:
   i. In the **Configure Basic Information** step, set the following parameters and click **Next**.

Parameter	Example	Description
Rule ID	111111	The global unique identifier of a rule. ■ It can contain only letters, digits, hyphens (-), and underscores (_) and must contain at least one letter or digit. ■ It must be 3 to 64 characters in length. If the value contains more than 64 characters, it is automatically truncated. ■ It cannot be updated after the rule is created.
Description	migrate from rocketmq	The description of the rule.
Status	Enable	Specifies whether to enable the current rule. Valid values: ■ Enable ■ Disable

Parameter	Example	Description
Rule Type	Online/Offline Notification	The type of the rule. Valid values: ■ Data Outbound: The rule is used to export data from Message Queue for MQTT to other Alibaba Cloud services. For more information, see Export data from Message Queue for MQTT to other Alibaba Cloud services. ■ Data Inbound: The rule is used to import data from other Alibaba Cloud services to Message Queue for MQTT. For more information, see Data inflow across cloud products. ■ Online/Offline Notification: The rule is used to export the status event data of a Message Queue for MQTT client to other Alibaba Cloud services. For more information, see Export online and offline events of Message Queue for MQTT clients.

ii. In the **Configure Rule Source** step, specify the data source and click **Next**.

Parameter	Example	Description
Group ID	GID_Client_Status	The group ID of the devices from which the status event data is exported. For more information about group IDs, see Terms.

iii. In the **Configure Rule Destination** step, specify the destination to which the data is forwarded and click **Create**.

Parameter	Example	Description
Destination Service Type	Message Queue for Apache RocketMQ	The cloud service to which you want to forward the status event data of a Message Queue for MQTT client. **Note** Only Message Queue for Apache RocketMQ is supported.
Message Queue for Apache RocketMQ Instance	MQ_INST_13801563067*****_BbyOD2jQ	The ID of the Message Queue for Apache RocketMQ instance to which the data is forwarded.
Topic	TopicB	The Message Queue for Apache RocketMQ topic to which the data is forwarded. In this example, the notifications about the online or offline events of a Message Queue for MQTT client are forwarded to TopicB.

You can view the client status notification rule that you create on **Rules** page.

Note For more information about the message structure mappings between Message Queue for MQTT and Message Queue for Apache RocketMQ, see Message structure mappings between Message Queue for MQTT and Message Queue for Apache RocketMQ.

Edit a rule for client status notification

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.

4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to edit. In the **Actions** column, choose **More > Edit**.
6. On the **Edit Rule** page, you can change all parameter values except the rule ID.
7. After you change parameter values as needed, click **Save** in the **Configure Rule Destination** step.

Delete a rule for client status notification

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to delete. In the **Actions** column, choose **More > Delete**.
6. In the message that appears, click **OK**.

Enable a rule for client status notification

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to enable. In the **Actions** column, choose **More > Enable**.
6. In the message that appears, click **OK**.

Disable a rule for client status notification

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a data outbound rule in the instance list. In the **Actions** column, choose **More > Rules**.
5. In the rule list, find the rule that you want to disable. In the **Actions** column, choose **More > Disable**.
6. In the message that appears, click **OK**.

5.View resource statistics

This article describes how to query the total number of messages that are received by or sent from the topics of an instance and the transactions per second (TPS) of the topics in the Message Queue for MQTT console.

Context

You can specify multiple filters and the time range for a query. Message Queue for MQTT allows you to query the statistics on the messages that are produced or consumed within the last three days.

Procedure

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance that you want to view in the instance list. Click the instance name or click **Details** in the **Actions** column to go to the **Instance Details** page.
5. In the left-side navigation pane, click **Resource Statistics**.
6. On the **Resource Statistics** page, set the following parameters to specify filters: **Parent Topic**, **Subtopic**, **QoS**, **Message Type**, and **Time Range**.
7. Click **Search**.
   Results are displayed in charts.

6.Query the status of a device

This topic describes how to query the online status, subscriptions, connection history, and messages of a specified device in the console. When an exception occurs on a device or messages are not sent or received as expected, you can use this feature to obtain the status information of the Message Queue for MQTT client. Based on the status information, you can locate the exception and identify the cause of the exception.

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance on which you want to query the status of a device in the instance list. In the **Actions** column, choose **More > Device Status Query**.
5. On the **Device Status Query** page, set the **Group ID** and **Device ID** parameters and click **Search**.

Parameter	Description
Device Status	
Client ID	The ID of the client.
Status	The online status of the client. ○ Online ○ Offline
Client Address	The IP address of the client.
cleanSession	Indicates whether the previous subscriptions and offline messages are cleaned up. For more information, see the "cleanSession" section in the Terms topic.
Last Updated At	The time when the client status was last updated.
Subscription	
Parent Topic	The parent topic to which the client subscribes. A parent topic is a level 1 topic in Message Queue for MQTT.
Subtopic	The subtopic to which the client subscribes. A subtopic is a level 2 or level 3 topic in Message Queue for MQTT.
QoS	The quality of service (QoS) level in message transmission between the client and the server. For more information, see the "QoS" section of the Terms topic.

On the query results page, click the **Device Trace** and **Message Trace** tabs. You can view the

device traces and messages of the specified device on each tab. For more information about the parameters and parameter description on each tab, see Query the connection history of a device and Query the message traces.

7.Query the connection history of a device

This topic describes how to use the device trace query feature of Message Queue for MQTT to troubleshoot issues when a device is in an abnormal state. When a device is in an abnormal state, you can use the device trace query feature to query the connection history of the device. This helps you locate the exception and identify the cause of the exception.

Procedure

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance on which you want to query the status of a device in the instance list. In the **Actions** column, choose **More > Device Trace Query**.
5. On the **Device Trace Query** page, set the **Group ID**, **Device ID**, and **Time Range** parameters and click **Search**.

> **Note** The maximum time span is one day.

Parameter	Description
Channel ID	The ID of a connection.
Device Action	◦ connect: The Message Queue for MQTT client requests a connection to the Message Queue for MQTT broker. ◦ close: The TCP connection is closed. ◦ disconnect: The Message Queue for MQTT client sends a request to disconnect from the Message Queue for MQTT broker.

Parameter	Description
Action Description	○ accepted: The Message Queue for MQTT broker receives the connection request from the Message Queue for MQTT client. ○ not authorized: The TCP connection is closed because the permission verification of the client to access the instance fails. ○ clientId conflict: The TCP connection is closed due to a conflict in the ID of the Message Queue for MQTT client. ○ topic auth failed: The TCP connection is closed because the permission verification of the client to access topics fails. ○ no heart: The TCP connection is closed due to no heartbeat. ○ closed by client: The TCP connection is closed due to an exception on the Message Queue for MQTT client. **Note** The Message Queue for MQTT client does not send a disconnect message. ○ disconnected by client: The Message Queue for MQTT client requests a disconnection.
Time	The time when the device action occurred.

8.Query the message traces

This topic describes how to use the message trace query feature of Message Queue for MQTT. When messages are not sent and received as expected, you can use the message trace query feature to query the sending and delivery traces of messages.

Procedure

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance on which you want to query the message traces in the instance list. In the **Actions** column, choose **More > Message Trace Query**.
5. On the **Message Trace Query** page, set the query conditions and the **Time Range** parameter as needed. Then, click **Search**.

   > **Note** The maximum time span is one day.

   You must specify at least one query condition. You must set the **Message ID** parameter or both of the **Group ID** and **Device ID** parameters.

   - **Query message traces by setting the Message ID parameter**: You can use this method to perform an exact match to query the sending and delivery traces of a message.
   - **Query message traces by setting the Group ID and Device ID parameters**: You can use this method to perform a fuzzy match to query the messages of a Message Queue for MQTT client.

     In the query results, you can click **Message Trace** in the **Actions** column to view the sending and delivery traces of a message.

9.Clear subscriptions for a topic

This topic describes how to configure the subscription cleanup feature for a specified topic in the Message Queue for MQTT console.

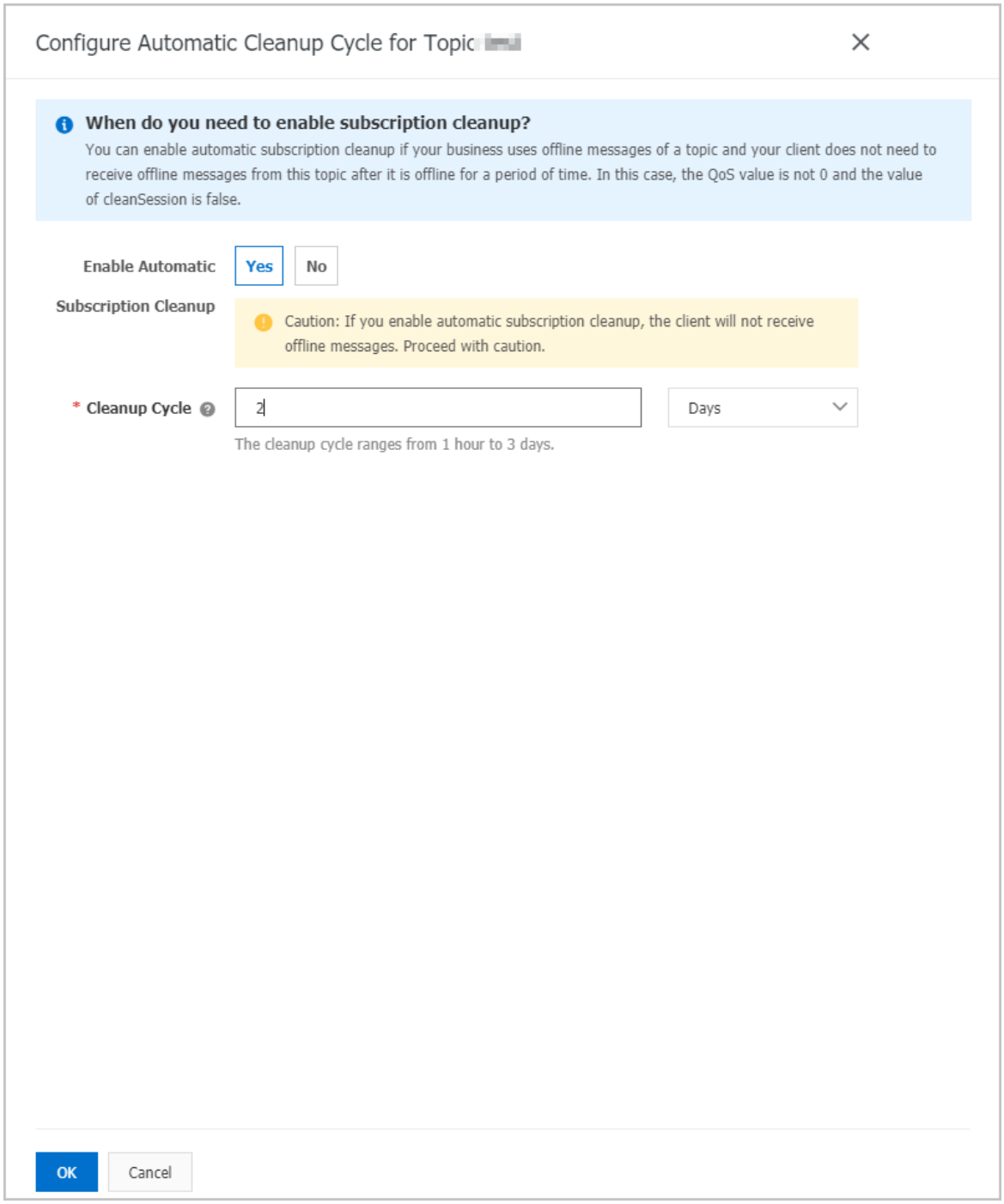
Context

The following items provide the background and billing information about the subscription cleanup feature:

- After the subscription cleanup feature is configured for a topic, Message Queue for MQTT deletes the subscription between the subscriber and the topic if the subscriber client keeps offline for a period of time that exceeds the specified limit. If the subscription is not cleared, the subscription remains valid when the subscriber client is offline. When the client goes online again, Message Queue for MQTT automatically loads offline messages and sends them to the client.
- Assume that you have a freshness requirement for offline messages or you determine that a subscriber is invalid and is no longer needed for specific business. In this case, you can enable this feature to clear the subscriptions between the subscriber and the topics to which it subscribed.
- Message Queue for MQTT determines whether to automatically load offline messages and send them to the client based on the values of the QoS and cleanSession parameters. For more information, see Terms.
- Subscription changes affect the billing of the related instance. For more information, see Billing.

Procedure

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. Find the instance for which you want to create a topic in the instance list. In the **Actions** column, choose **More > Topics**.
5. On the **Topics** page, find the topic for which you want to configure the subscription cleanup feature, click **More** in the **Actions** column, and then select **Subscription Cleanup**.
6. In the **Subscription Relationship Clearance** panel, set **Enable Automatic Subscription Cleanup** and **Cleanup Cycle**, and click **OK**.



- Assume that you set **Enable Automatic Subscription Cleanup** to Yes. In this case, the system clears the subscription between the subscriber and the topic if the value obtained by subtracting the last heartbeat time of the client from the current system time is no less than the value of **Cleanup Cycle**. After the subscription is cleared, the client no longer receives offline messages generated by the topic.

  > **Notice** When the client goes online again, it can still receive offline messages that are generated before the subscription is cleared and are within the validity period.

- Assume that you set **Enable Automatic Subscription Cleanup** to No. In this case, the system does not clear the subscription between the subscriber and the topic when the subscriber client

is offline. The subscription remains valid.

After the configuration is complete, you can view the subscription cleanup cycle in the **Subscription Cleanup Cycle** column of the topic.

10.Configure alert rules

Message Queue for MQTT allows you to configure an alert rule for monitoring related metrics. You can specify an alert threshold for each metric. After the specified threshold of a metric is exceeded, Message Queue for MQTT automatically sends an alert notification. This way, you can know the statuses of metrics and take measures to handle exceptions at the earliest opportunity. This topic describes how to configure an alert rule for an instance in the Message Queue for MQTT console.

Context

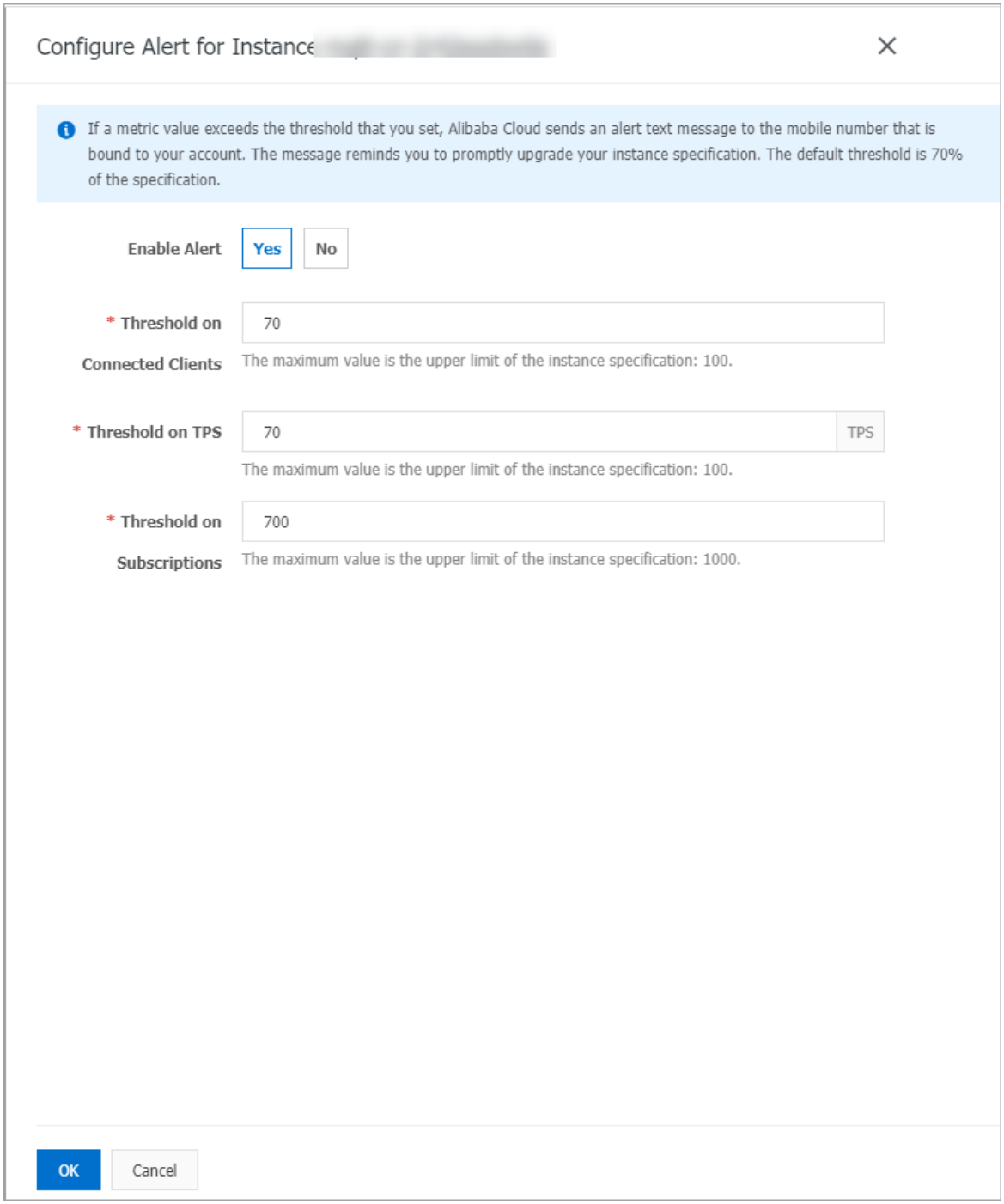
Message Queue for MQTT allows you to configure an alert rule to monitor the following metrics. You can specify an alert threshold for each metric. This way, when the specified threshold of a metric is exceeded, Message Queue for MQTT sends alert notifications to the contacts by using text messages.

- **Connections**: the number of clients that are connected to a single instance
- **Message TPS**: the number of transactions per second (TPS) for sending and receiving messages on a single instance
- **Subscriptions**: the number of subscriptions on a single instance

By default, an alert rule is enabled after it is created in Message Queue for MQTT. The default threshold of each metric is 70% of the maximum value supported by the instance specifications. For more information about the metric limits of instance specifications, see Limits.

Procedure

1. Log on to the Message Queue for MQTT console.
2. In the left-side navigation pane, click **Instances**.
3. In the top navigation bar, select a region.
4. On the Instances page, find the instance for which you want to configure an alert rule and click **Configure Alert** in the Actions column.
5. In the Configure Alert for Instance panel, set the Enable Alert parameter, specify an alert threshold for each metric, and then click **OK**.
   - If you set the **Enable Alert** parameter to **Yes**, the alert rule is enabled. In this case, if the specified threshold of a metric is exceeded, Message Queue for MQTT sends an alert notification.
   - If you set the **Enable Alert** parameter to **No**, the alert rule is disabled. In this case, no alert is triggered even if the specified threshold of a metric is exceeded.


Configure Alert for Instance
If a metric value exceeds the threshold that you set, Alibaba Cloud sends an alert text message to the mobile number that is bound to your account. The message reminds you to promptly upgrade your instance specification. The default threshold is 70% of the specification.
Enable Alert
Yes
No
* Threshold on Connected Clients
70
The maximum value is the upper limit of the instance specification: 100.
* Threshold on TPS
70
TPS
The maximum value is the upper limit of the instance specification: 100.
* Threshold on Subscriptions
700
The maximum value is the upper limit of the instance specification: 1000.
OK
Cancel