

Alibaba Cloud MQTT

SDK Reference

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Generic conventions

Table -1: Style conventions

Style	Description	Example
	This warning information 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.
	This warning information 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 restore business.
	This indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: Take the necessary precautions to save exported data containing sensitive information.
	This indicates supplemental instructions, best practices, tips, and other content that is good to know for the user.	 Note: You can use Ctrl + A to select all files.
>	Multi-level menu cascade.	Settings > Network > Set network type
Bold	It is used for buttons, menus, page names, and other UI elements.	Click OK.
Courier font	It is used for commands.	Run the <code>cd / d C :/ windows</code> command to enter the Windows system folder.
<i>Italics</i>	It is used for parameters and variables.	<code>bae log list --instanceid Instance_ID</code>
[] or [a b]	It indicates that it is an optional value, and only one item can be selected.	<code>ipconfig [-all -t]</code>

Style	Description	Example
<code>{}</code> or <code>{a b}</code>	It indicates that it is a required value, and only one item can be selected.	<code>switch {stand slave}</code>

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1 Demo project

The demo project includes the use instructions on MQ for MQTT in various scenarios. For more information, see the document comments of the application source code.

If you use MQ for MQTT with other backend message storage services, such as MQ, see [#unique_4](#) "Understand the message-property mappings."



Note:

The demo project integrity may vary depending on specific languages, which will be updated in the future. If some features do not have any demo, test these features based on the Java example.

Download the demo project

Download the demo project from <https://github.com/AlwareMQ/lmq-demo> to your local device.

Figure 1-1: Download the demo

Demo for LMQ

31 commits		1 branch		1 release		1 contributor	
Branch: master ▾		New pull request		Find File		Clone or download ▾	
zhongliang.czl add php demo				Latest commit 3dab8d1 yesterday			
lmq-DoNet-demo		add p2p demo		last month			
lmq-c-demo/src/c		add p2p demo		last month			
lmq-ios-demo/MQTTChatDemo		add ios demo		3 months ago			
lmq-java-demo		add php demo		yesterday			
lmq-js-demo		add p2p demo		last month			
lmq-nodejs-demo		nodejs		29 days ago			
lmq-php-demo		add php demo		yesterday			
lmq-python-demo		add p2p demo		last month			
.gitignore		add lmq android demo		10 months ago			
README.md		add php demo		yesterday			

Decompress the package after the download is complete. The `lmq - demo` folder is added. Level-1 folders are categorized based on the development language. Perform debugging as needed.

2 Download the SDK

Before using an Message Queue for MQTT client (referred to here as the MQTT client) to send and receive messages, you need to download an SDK based on the development languages that are supported by Message Queue for MQTT.

By default, Message Queue for MQTT supports the standard MQTT 3.1.1 protocol and is theoretically compatible with all MQTT clients. However, some MQTT clients may still have compatibility issues.

Table 2-1: SDK download URL lists the recommended third-party SDKs for languages and platforms that are widely used by MQTT users.

Table 2-1: SDK download URL

Language or platform	Recommended third-party SDK	Download URL
Java	Eclipse Paho SDK	http://www.eclipse.org/paho/clients/java
iOS	MQTT-Client-Framework	https://github.com/ckrey/MQTT-Client-Framework
Android	Eclipse Paho SDK	https://github.com/eclipse/paho.mqtt.android
JavaScript	Eclipse Paho JavaScript	http://www.eclipse.org/paho/clients/js
Python	Eclipse Paho Python SDK	https://pypi.python.org/pypi/paho-mqtt
C	Eclipse Paho C SDK	https://eclipse.org/paho/clients/c
C#	Eclipse Paho C# SDK	https://github.com/eclipse/paho.mqtt.m2mqtt
Golang	Eclipse Paho Golang SDK	https://github.com/eclipse/paho.mqtt.golang
Node.js	MQTT-JS	https://github.com/mqttjs/MQTT.js
PHP	Mosquitto-PHP	https://github.com/mgdm/Mosquitto-PHP

MQTT client SDKs in other languages have not been tested yet. To download these SDKs, visit <https://github.com/mqtt/mqtt.github.io/wiki/libraries>.

3 Limits

MQ for MQTT imposes restrictions and specifications on certain metrics. When using MQ for MQTT, to avoid application errors, ensure that the relevant limits are not exceeded. The following table lists the limits imposed by MQ for MQTT.

If you are using MQ for MQTT Enterprise Platinum Edition, you can customize some metrics as needed (marked in the following table). For more information, [submit a ticket](#).

Table 3-1: Limits on using MQ for MQTT

Item	Threshold	Description
Topic length	64 characters	The topic length cannot exceed 64 characters when MQ for MQTT is used for sending and receiving messages. Otherwise, you may fail to send or subscribe to messages.
Characters available for topics and client IDs	Digits 0-9, letters a-z or A-Z, hyphen (-), and underscore (_)	MQ for MQTT does not support non-conventional characters such as slashes (/), colons (:), commas (,), and percent signs (%) in client IDs and topics. If these characters are used, connection setup may fail , and messages cannot be sent or received.
Client ID length	64 characters	The client ID length cannot exceed 64 characters when MQ for MQTT is used for sending and receiving messages. Otherwise, the client may be disconnected .

Item	Threshold	Description
Message size	64 KB	The size of a message cannot exceed 64 KB. Otherwise, the message may be discarded. (This metric is customizable in the Enterprise Platinum Edition.)
Message retention period	Three days	Offline messages are retained for a maximum of three days only when QoS = 1 and cleanSession = false. After three days, the offline messages are automatically deleted in a scrolling manner. (This metric is customizable in the Enterprise Platinum Edition.)
Message sending/receiving TPS	Depends on the instance specification.	For a subscription instance , throttling is imposed based on the purchased specifications. Message delivery is not guaranteed when the limit is exceeded . For a Pay-As-You-Go instance, throttling is not imposed, but the monitoring and alarm functions are provided by default. You must adjust the monitoring threshold appropriately.

Item	Threshold	Description
Number of client connections	Depends on the instance specification.	For a subscription instance , throttling is imposed based on the purchased specifications. Connection stability is not guaranteed when the limit is exceeded . For a Pay-As-You-Go instance, throttling is not imposed, but the monitoring and alarm functions are provided by default. You must adjust the monitoring threshold appropriately.
Number of subscription relationships	Depends on the instance specification.	For a subscription instance , throttling is imposed based on the purchased specifications. The integrity of the subscription is not guaranteed when the limit is exceeded . For a Pay-As-You-Go instance, throttling is not imposed, but the monitoring and alarm functions are provided by default. You must adjust the monitoring threshold appropriately.
Topics subscribed by a single client	30	Each MQTT client can subscribe to a maximum of 30 topics at a time when MQ for MQTT is used for sending and receiving messages. New subscriptions cannot be added when the limit is exceeded. (This metric is customizable in the Enterprise Platinum Edition.)

Item	Threshold	Description
QoS and cleanSession	Currently, cleanSession cannot be set to false when QoS is 2.	Currently, the MQTT broker does not support cleanSession = false in case of QoS = 2 during message subscription if MQ for MQTT is used for sending and receiving messages. To receive offline messages, set QoS to 1 and cleanSession to false during message subscription.
Message sequence	Uplink sequence	Currently, only the uplink sequence is guaranteed when MQ for MQTT is used for sending and receiving messages. That is, each MQTT client sends messages in order. If messages must be consumed in order, you must use MQ TCP to receive messages.
Offline message identification delay	10 seconds	When the MQTT broker pushes a message for the first time, it determines whether the message is converted to an offline message only after the message times out or fails. The corresponding delay ranges from 5 seconds to 10 seconds.

Item	Threshold	Description
Number of stored offline messages	1,000,000 (If you require a higher limit, submit a ticket .)	The MQTT broker limits the number of offline messages that are stored by each instance. If the limit is exceeded, the MQTT broker performs message cleansing from the earliest message. Set cleanSession to false appropriately during message subscription to avoid too many useless offline messages.