Message Service

FAQs

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What is Message Service?

- Alibaba Cloud Message Service (Message Service) is an auto scalable and distributed message service featuring efficiency, reliability, security, and convenience.
- Message Service helps application developers transfer data freely on distributed components of their applications to build a loosely coupled system.

What can Message Service do?

Typical application scenarios:

1. Integrate Message Service with other Alibaba Cloud products, making applications more reliable and flexible.
2. Use Message Service as a working queue. Each message in the queue represents one task and must be completed in one process. One or multiple ECSs can read and execute tasks from the queue.
3. Store notifications of major events in service processes. Each event has one corresponding message in the queue. The application that needs to acquire the event can read and process the corresponding message.

Relationship between regions and Alibaba Cloud products

As Alibaba Cloud services develop, products are launched in more regions. To regulate naming and adapt for international development, regions for Alibaba Cloud products were renamed on March 29, 2016. The following table lists the old and new region names.

Old name	New name	English name
Qingdao	China North 1	North China 1
Beijing	China North 2	North China 2
Hangzhou	China East 1	East China 1
Shanghai	China East 2	East China 2

Shenzhen	China South 1	South China 1

What are the access addresses of Message Service in different regions?

Region	Public access address	Private access address	VPC private access address
China North 1 (Qingdao)	http(s)://{AccountId}.mns.cn-qingdao.aliyuncs.com	http://{AccountId}.mns.cn-qingdao-internal.aliyuncs.com	Unavailable for the moment
China North 2 (Beijing)	http(s)://{AccountId}.mns.cn-beijing.aliyuncs.com	http://{AccountId}.mns.cn-beijing-internal.aliyuncs.com	http://{AccountId}.mns.cn-beijing-internal-vpc.aliyuncs.com
China East 1 (Hangzhou)	http(s)://{AccountId}.mns.cn-hangzhou.aliyuncs.com	http://{AccountId}.mns.cn-hangzhou-internal.aliyuncs.com	http://{AccountId}.mns.cn-hangzhou-internal-vpc.aliyuncs.com
China East 2 (Shanghai)	http(s)://{AccountId}.mns.cn-shanghai.aliyuncs.com	http://{AccountId}.mns.cn-shanghai-internal.aliyuncs.com	http://{AccountId}.mns.cn-shanghai-internal-vpc.aliyuncs.com
China South 1 (Shenzhen)	http(s)://{AccountId}.mns.cn-shenzhen.aliyuncs.com	http://{AccountId}.mns.cn-shenzhen-internal.aliyuncs.com	http://{AccountId}.mns.cn-shenzhen-internal-vpc.aliyuncs.com
Asia Pacific (Singapore)	http(s)://{AccountId}.mns.ap-southeast-1.aliyuncs.com	http://{AccountId}.mns.ap-southeast-1-internal.aliyuncs.com	http://{AccountId}.mns.ap-southeast-1-internal-vpc.aliyuncs.com
US West 1 (Silicon Valley)	http(s)://{AccountId}.mns.us-west-1.aliyuncs.com	http://{AccountId}.mns.us-west-1-internal.aliyuncs.com	http://{AccountId}.mns.us-west-1-internal-vpc.aliyuncs.com
Asia Pacific NE 1 (Japan)	http(s)://{AccountId}.mns.ap-northeast-1.aliyuncs.com	http://{AccountId}.mns.ap-northeast-1-internal.aliyuncs.com	
Asia Pacific SE 2 (Sydney)	http(s)://{AccountId}.mns.ap-southeast-2.aliyuncs.com	http://{AccountId}.mns.ap-southeast-2-internal.aliyuncs.com	
Germany 1 (Frankfurt)	http(s)://{AccountId}.mns.eu-central-1.aliyuncs.com	http://{AccountId}.mns.eu-central-1-internal.aliyuncs.com	
Middle East 1	http(s)://{AccountId}.	http://{AccountId}.m	

(Dubai)	mns.me-east-1.aliyuncs.com	ns.me-east-1-internal.aliyuncs.com	

To help protect your data security, Message Service provides HTTPS interfaces on the public network. You only need to change http:// of the public access address to https://.

What is the account ID?

The account ID is provided when a user registers at Alibaba Cloud, which can be viewed at Alibaba Cloud’ s website.

What operations does Message Service support?

The following table lists operation commands supported by the Message Service queue model.

Operation	Description
CreateQueue	Creates a new message queue.
SetQueueAttributes	Modifies the attributes of a queue.
GetQueueAttributes	Obtains the attributes of a queue.
DeleteQueue	Deletes a queue.
ListQueue	Lists the queue lists under a user name.
SendMessage	The producer sends messages to a specified queue.
BatchSendMessage	The producer sends messages in batch to a specified queue.
ReceiveMessage	The consumer consumes messages in a queue.
BatchReceiveMessage	The consumer consumes messages in batch in a queue.
DeleteMessage	Deletes a message that has been consumed.
BatchDeleteMessage	Deletes messages that have been consumed in batch.
PeekMessage	The consumer views a message in a queue.
BatchPeekMessage	The consumer views messages in a queue in batch.
ChangeMessageVisibility	Modifies the next consumable time of a message that has been consumed and is now inactive.

The following table lists operation commands supported by the Message Service topic model.

Operation	Description
CreateTopic	Creates a new topic.
SetTopicAttributes	Modifies the attributes of a topic.
GetTopicAttributes	Obtains the attributes of a topic.
DeleteTopic	Deletes a topic.
ListTopic	Lists the topic lists under a user name.
Subscribe	Subscribes to a topic.
SetSubscriptionAttributes	Modifies the attributes of a subscription.
GetSubscriptionAttributes	Obtains the attributes of a subscription.
Unsubscribe	Cancels a subscribed topic.
ListSubscriptionByTopic	Lists the subscription lists of a topic.
PublishMessage	Publishes a message to a topic.

What are the advantages of Message Service over self-developed, commercial, or open source message queue systems?

Compared with systems built to manage message queues or using a commercial or open source message and notification service, Message Service has the following advantages:

1. There is no need of large investments in development and configuration at the early stage.
2. There is no need to consecutively engage hardware and management resources with the increase of your service volume.
3. Redundant message storage is implemented by default, ensuring that messages are not lost as a result of hardware failure, and making system investment, development, configuration, and deployment easier.
4. There is no need to input deployment and maintenance resources for the message service at the later stage. Message Service can be applied to production environments after simple configuration.

How to use Message Service?

1. Create an Alibaba Cloud account and subscribe to Message Service online.
2. Choose **Console-Account Management** to obtain the account ID, and click **AccessKeys** to

obtain the AccessKeyID.
3. Perform basic operations visually at Message Service console, such as creating and deleting queues, and receiving and sending messages.
4. Call APIs (SDKs) in the applications to execute all Message Service operations.

How is a message identified in the system?

- MessageID is used to identify a message in a message queue/topic. In one message queue/topic, each message has a unique MessageID, but MessageIDs in different message queues/topics may be the same.
- When a message is sent to a Message Service queue/topic, Message Service generates a MessageID which will not change.
- When a message in queue mode is removed, Message Service returns the message body, MessageID, and temporary ReceiptHandle of this request to the user. ReceiptHandle is used to delete the message after the message consumption is complete within the validity period.

Does Message Service support LongPolling?

Yes. Compared with traditional ShortPolling, in LongPolling, a response is returned only when a message enters the queue or LongPolling times out. Once the message is available, LongPolling can immediately retrieve the message in the Message Service queue in a simple and economical manner.

For details about LongPolling settings, refer to related description on the PollingWaitSeconds attribute in Message Service API documentation.

Does Message Service support message first-in-first-out (FIFO)?

Message Service tries its best to ensure that messages are consumed in an FIFO manner. However, due to some features of distributed message queues, it cannot be ensured that you can consume messages in the order they are sent. If your service requires FIFO, you are advised to add sequence numbers to messages so that messages are resorted after consumption.

Can Message Service work with other Alibaba Cloud products?

Message Service can work with other Alibaba Cloud services, such as ECS, OSS, and Table Store,

making applications more flexible and scalable.Common uses include: Create multiple components or modules that have mutual communication demands but cannot process the same workload at the same time. In this scenario, the Message Service queue can carry messages so that applications running on the ECS instance can process the messages in sequence. The ECS instance can read the queue, process tasks, and then publish the result to another Message Service queue as a message (which may be further processed by other applications). Because ECS allows dynamic scalability of applications, application developers can easily change the number of computing instances based on the number of messages (service volume) in the Message Service queue, ensuring timely processing of the tasks.

How can reliability of data stored in Message Service be ensured?

Message Service stores all queues and messages on a network formed by highly reliable and highly available data centers of Alibaba Cloud. All messages are stored on multiple servers in redundancy mode. When one server fails, redundant data will be automatically copied to other servers. This means that the security of messages in the Message Service queue is not affected in the case of a single server fault or network failure.

How does Message Service ensure that no messages are lost or repeatedly consumed when multiple consumers access the same message queue?

Each Message Service queue has the configurable invisibility period attribute (that is, the hidden period of a message taken out from the queue). When one message is taken out from the queue, other consumers cannot obtain this message during its invisibility period. If the user completes the consumption within the invisibility period, the temporary handle (ReceiptHandle) is used to delete the message. If the user does not complete the consumption within the invisibility period, a request for extending the invisibility period (ChangeVisibilityTimeout) must be sent; otherwise, the message will be obtained by other consumers after the invisibility period expires.

How many times is each message received?

The system is designed to ensure that all messages in a queue will be consumed at least once. You are advised to improve fault tolerance of application services, preventing faults or inconsistency when a message is processed for multiple times.

How is security of messages in my Message Queue ensured?

Alibaba Cloud offers secure and reliable identity verification mechanism to protect your Message Service queues from unauthorized access. Only Alibaba Cloud account owners can access the queues created by themselves.

How can I configure Message Service to support a longer message retention period?

To configure the message retention period, use SetQueueAttributes to set the MessageRetentionPeriod attribute. This attribute specifies the retention seconds of a message in the Message Service queue. At present, the message retention period is four days by default. You can set MessageRetentionPeriod to a value between 60 seconds (one minute) and 1,296,000 seconds (15 days).

Hong long can messages be retained in Message Service?

The message retention period is configurable in Message Service. You can set it to any value between one minute and 15 days. The default value is four days. Once the message retention period expires, your message will be deleted automatically. A longer message retention period offers higher flexibility, allowing a longer interval between the generation and consumption of messages.

How is Message Service configured to support messages of larger size?

To configure the maximum message size, use SetQueueAttributes to set the MaximumMessageSize attribute. This attribute specifies the number of bytes of a message in the Message Service queue. It can be set to any value between 1,024 bytes (1 KB) and 65,536 bytes (64 KB). If the message length exceeds 64 KB, you are advised to store the data in OSS, and store only the access address of the data in Message Service.

What will happen to a queue that contains

no message for a long time?

When you use Message Service normally, Alibaba Cloud does not delete inactive queues or topics. However, if your Message Service is suspended due to overdue charge or other reasons, all your queues and topics will be deleted.

Why is my computed signature always incorrect?

For signature computation principles and precautions, refer to the Message Service API reference manual. The following is an example of signature methods:The HTTP header of the request is:

```
GET /MyQueue HTTP/1.1
Host: $AccountId.mns.cn-hangzhou.aliyuncs.com
Date: Thu, 09 Jul 2015 03:01:34 GMT
x-mns-version:2015-06-06
```

The source string of the signature to be encrypted is:

```
GET
(Line feed)
(Line feed)
Thu, 09 Jul 2015 03:01:34 GMT
x-mns-version:2015-06-06
/MyQueue
```

Assume that the accessID is TestAccessID, and accesskey is TestAccessSecret.The signature value obtained by the encryption algorithm is uwx3yeWoILzgmvesW0BQSgfM7b8=.

Are queues with the same name in different regions the same?

No. Queues with the same name in different regions are independent from each other.

Does billing continue after a queue instance is deleted?

If you no longer need a queue, you need to stop all API requests for the queue after deleting the

queue instance. Otherwise, Message Service continues billing according to the number of API requests.

Does billing continue after a topic instance is deleted?

If you no longer need a topic, the instance occupation fee will not be charged the next day after the topic instance is deleted. You need to stop all API requests fro the topic. Otherwise, Message Service continues billing according to the number of API requests.

What should I do if HttpEndpoint does not receive messages? How do I perform quick debugging?

- You are strongly advised to use the Auxiliary development tool for debugging to check whether the HttpEndpoint message reception logic is correct. With this tool, you can perform debugging on the authentication logic and message processing logic.
- If you confirm that HttpEndpoint can receive push requests normally by using the auxiliary development tool, but you still cannot receive push messages from online services, you are advised to use the Log management function to obtain logs related to messages received and sent by Message Service and push messages. You can check the Message Service push process and result based on the logs. You can also join the TradeManager group (group ID: 51222373) to contact technical support personnel for Message Service customer technical support.

How can I confirm that the certificate address identified by x-mns-signing-cert-url of the push request is provided by Message Service?

- Ensure that a push request is sent by Message Service by confirming the certificate address.
- At present, Message Service stores the public key certificate in the fixed Bucket (mnstest) of OSS, with the address of https://mnstest.oss-cn-hangzhou.aliyuncs.com/x509_public_certificate.pem. For security purpose, the certificate

regularly changes, and the file is renamed accordingly. However, the certificate must be stored in the Bucket (mnstest). You can check whether the prefix of the certificate address is https://mnstest.oss-cn-hangzhou.aliyuncs.com/ to determine the certificate address validity.
- The certificate may be stored in a safer place in the future. Then, you will be notified.

It takes a long period for HttpEndpoint to remotely request a public key certificate during authentication each time, how can performance be improved?

- You are strongly advised to cache the certificate in Key-Value mode based on the public key certificate address, so that you can obtain the certificate from the buffer. Each push request of Message Service carries the public key certificate address. If the certificate changes, the address is updated accordingly (the file will be renamed, for example, the version number will be added). As long as the address is not updated, HttpEndpoint performs authentication using the cached certificate. When processing a push request, you can obtain the certificate from the buffer based on the address described in x-mns-signing-cert-url. If this address cannot be obtained, you can remotely request the certificate and save it to the buffer for future use.
- For example, the certificate address is https://mnstest.oss-cn-hangzhou.aliyuncs.com/x509_public_certificate.pem. You can cache the certificate in a simple way as follows:

```
typedef map<string, string> cache;
cache["x509_public_certificate.pem"] = "$content";
cache["x509_public_certificate.pem.version2"] = "$content2";
```

How can I check whether HttpEndpoint signature authentication fails?

The following uses a case as an example:

- HttpEndpoint uses a certain HttpServer frame, which converts the format of the HttpHeader key. During signature authentication, the custom Message Service HttpHeader key has changed. (NOTE: The custom Message Service HttpHeader key is displayed in lowercase letters.) The most common symptom is that the key is displayed in start case. In this case, you only need to convert the format of the HttpHeader key to lowercase letters before

authentication. For example:

What should I do if I cannot receive the message body when I use PHP to compile HttpEndpoint?

Check whether $POST is used to obtain HttpBody in your processing logic. If yes, try the following method:

```
file_get_contents("php://input");
```

Cause: The most common $_POST[‘fieldname’] method can only be used to receive data submitted by Content-Type: application/x-www-form-urlencoded, that is, data posted by the form. However, Content-Type in the Message Service push request only supports the following types:

```
text/xml;charset=utf-8
text/plain;charset=utf-8
application/json;charset=utf-8
```

The file_get_contents(“php://input”) method can be used to read original data of posted data with different Content-Types, even original data with unspecified types. You are advised to use this method to process push requests.