TDMQ for RabbitMQ Operation Guide

©2013-2024 Tencent Cloud. All rights reserved.

Copyright Notice

©2013-2024 Tencent Cloud. All rights reserved.

The complete copyright of this document, including all text, data, images, and other content, is solely and exclusively owned by Tencent Cloud Computing (Beijing) Co., Ltd. ("Tencent Cloud"); Without prior explicit written permission from Tencent Cloud, no entity shall reproduce, modify, use, plagiarize, or disseminate the entire or partial content of this document in any form. Such actions constitute an infringement of Tencent Cloud's copyright, and Tencent Cloud will take legal measures to pursue liability under the applicable laws.

Trademark Notice

Tencent Cloud

This trademark and its related service trademarks are owned by Tencent Cloud Computing (Beijing) Co., Ltd. and its affiliated companies("Tencent Cloud"). The trademarks of third parties mentioned in this document are the property of their respective owners under the applicable laws. Without the written permission of Tencent Cloud and the relevant trademark rights owners, no entity shall use, reproduce, modify, disseminate, or copy the trademarks as mentioned above in any way. Any such actions will constitute an infringement of Tencent Cloud's and the relevant owners' trademark rights, and Tencent Cloud will take legal measures to pursue liability under the applicable laws.

Service Notice

This document provides an overview of the as-is details of Tencent Cloud's products and services in their entirety or part. The descriptions of certain products and services may be subject to adjustments from time to time.

The commercial contract concluded by you and Tencent Cloud will provide the specific types of Tencent Cloud products and services you purchase and the service standards. Unless otherwise agreed upon by both parties, Tencent Cloud does not make any explicit or implied commitments or warranties regarding the content of this document.

Contact Us

We are committed to providing personalized pre-sales consultation and technical after-sale support. Don't hesitate to contact us at 4009100100 or 95716 for any inquiries or concerns.

Contents

- Operation Guide
  - Cluster Management
    - Creating cluster
    - Viewing Cluster
    - Upgrading Cluster
    - Deleting cluster
    - Accessing Native Console
    - Create a routing policy
    - Public Network Bandwidth Management
    - Connecting to Prometheus
  - Node Management
  - Vhost Management
  - Exchange Management
  - Queue Management
  - Binding
  - User and Permission Management
  - Monitoring alarm
  - Policy list
    - Policy Management
    - Default Image Policy
  - Intelligent Patrol
  - Change Records
  - Extension Management
  - Message Query
  - Access Management (CAM)
  - Managing Resource with Tag
    - Managing Resource with Tag
    - Edit tag
  - Cloud Migration Plan
    - Migration Scheme Overview
    - Step 1. Purchasing a TDMQ Instance
    - Step 2. Migrating Metadata to Cloud
    - Step 3: Enable Dual Read and Write

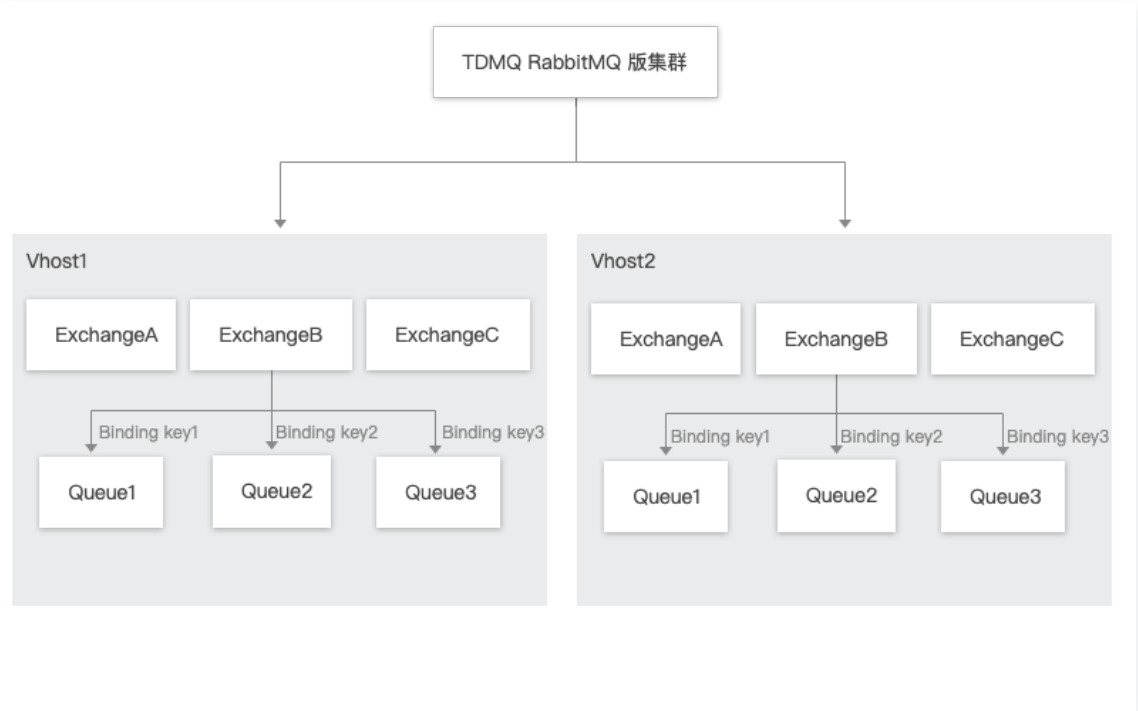
©2013–2024 Tencent Cloud. All rights reserved.

Operation Guide
Cluster Management
Creating cluster

Last updated: 2024-08-02 15:26:01

Operation scenarios

Cluster is a resource dimension in TDMQ for RabbitMQ, and vhosts, exchanges, and queues of different clusters are completely isolated. It is common for the development, test, and production environments to use their respective dedicated clusters.
This document describes the steps to create an exclusive cluster in the TDMQ for RabbitMQ console.



Operation step

1. Log in to RabbitMQ Console.
2. In the left sidebar, select **Cluster Management** > **Cluster List**, click **Create Cluster**, and go to the purchase page.
3. On the purchase page, select the target instance specification.

Parameter	Require	Description

©2013-2024 Tencent Cloud. All rights reserved.

	d	
Cluster Type	Yes	Select Exclusive cluster.
Billing mode	Yes	TDMQ for RabbitMQ exclusive cluster adopts the annual and monthly subscription billing model.
Region	Yes	Select a region close to resources of the deployed client. Tencent Cloud services in different regions are not interconnected over private networks and the region cannot be changed after you purchase the service. Proceed with caution.
RabbitMQ Version	Yes	Supports versions 3.8.30 and 3.11.8.
Availability Zone	Yes	Select an AZ as needed. Cross-availability zone deployment is supported.
Node Specification	Yes	Select an appropriate node specification based on your business needs.
Number of nodes	Yes	Select an appropriate number of nodes based on your business needs.
Single-Node Storage Specification	Yes	Message storage is billed separately, and messages can be retained without limit in the purchased storage capacity. The actual storage usage can be estimated by multiplying the message production traffic by the retention period.
Virtual Private Cloud (VPC)	Yes	Bind the domain name of the new cluster's access point to the specified VPC.
Cluster Name	Yes	Enter a cluster name, 3-64 characters long, can include numbers, letters, "-" and "_".
Mirrored Queue	No	It is recommended to enable image queueing to ensure availability. Once enabled, a default policy will be created in the Instance Details - Policy List, which can be deleted or overridden by a new policy created from the Definition. For more details, refer to Policy List.
Tag	No	Used for categorizing and managing resources, specific

©2013-2024 Tencent Cloud. All rights reserved.

		methods of use can be found in Tag Management.

4. Select **I have read and agree to the TDMQ for RabbitMQ Terms of Service**, then click **Buy Now**.
5. On the order payment page, click **Payment**, and within 3–5 minutes, you will see the created cluster on the Cluster Management List Page.

©2013–2024 Tencent Cloud. All rights reserved.

Viewing Cluster

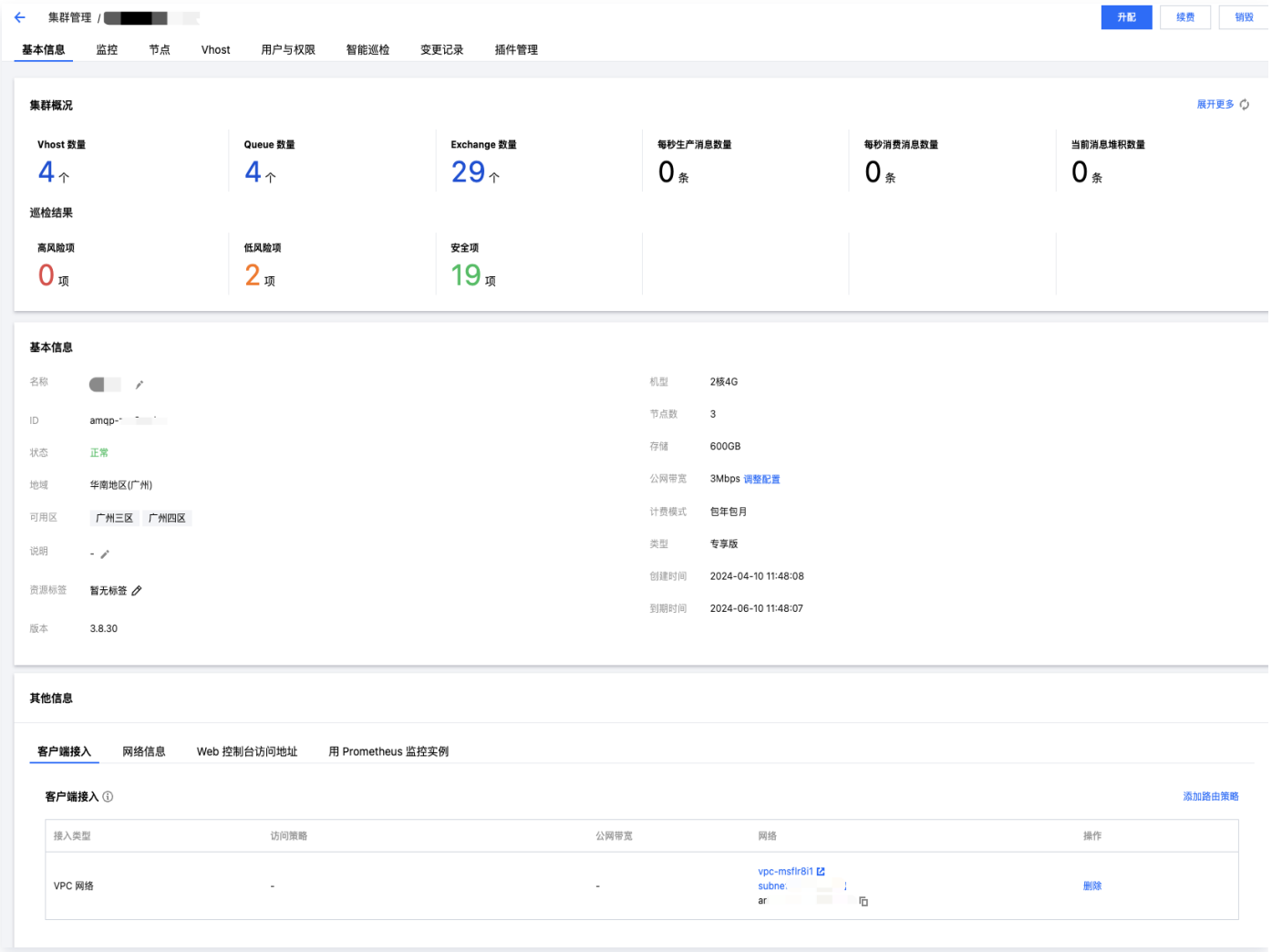
Last updated: 2024-08-02 15:29:39

Operation scenarios

This document guides you in using TDMQ RabbitMQ Edition to view the cluster's configuration information and health status on the console.

Operation step

1. Log in to RabbitMQ Console.
2. In the Left Navigation Bar, select **Cluster Management** > **Cluster List**, choose the region, and click the target cluster's ID to view the Resource Overview, Health Status, Basic Information, Connection Method, and Web Console Access Address on the **Basic Information** page.



Health Status Description

©2013-2024 Tencent Cloud. All rights reserved.

TDMQ RabbitMQ Edition sets inspection procedures for each cluster. The inspection procedure checks the cluster’s node status, disk utilization, memory utilization, and other metrics. When these metrics exceed certain thresholds, different health statuses are triggered. Descriptions are as follows:

Metric	Threshold (N)	Status Description
Node not started	–	Abnormal
Node connection abnormal	–	Abnormal
Disk remaining space	N ⩾ 100GB	Healthy
	50MB ⩽ N < 100GB	Alarm Metrics
	N < 50MB	Abnormal
Memory utilization	N ⩽ 60%	Healthy
	60% < N ⩽ 90%	Alarm Metrics
	N > 90%	Abnormal
Socket utilization	N ⩽ 90%	Healthy
	N > 90%	Abnormal
Erlang process utilization	N ⩽ 90%	Healthy
	N > 90%	Abnormal
FD utilization	N ⩽ 90%	Healthy
	N > 90%	Abnormal

©2013–2024 Tencent Cloud. All rights reserved.

Upgrading Cluster

Last updated: 2024-08-02 15:30:54

Operation scenarios

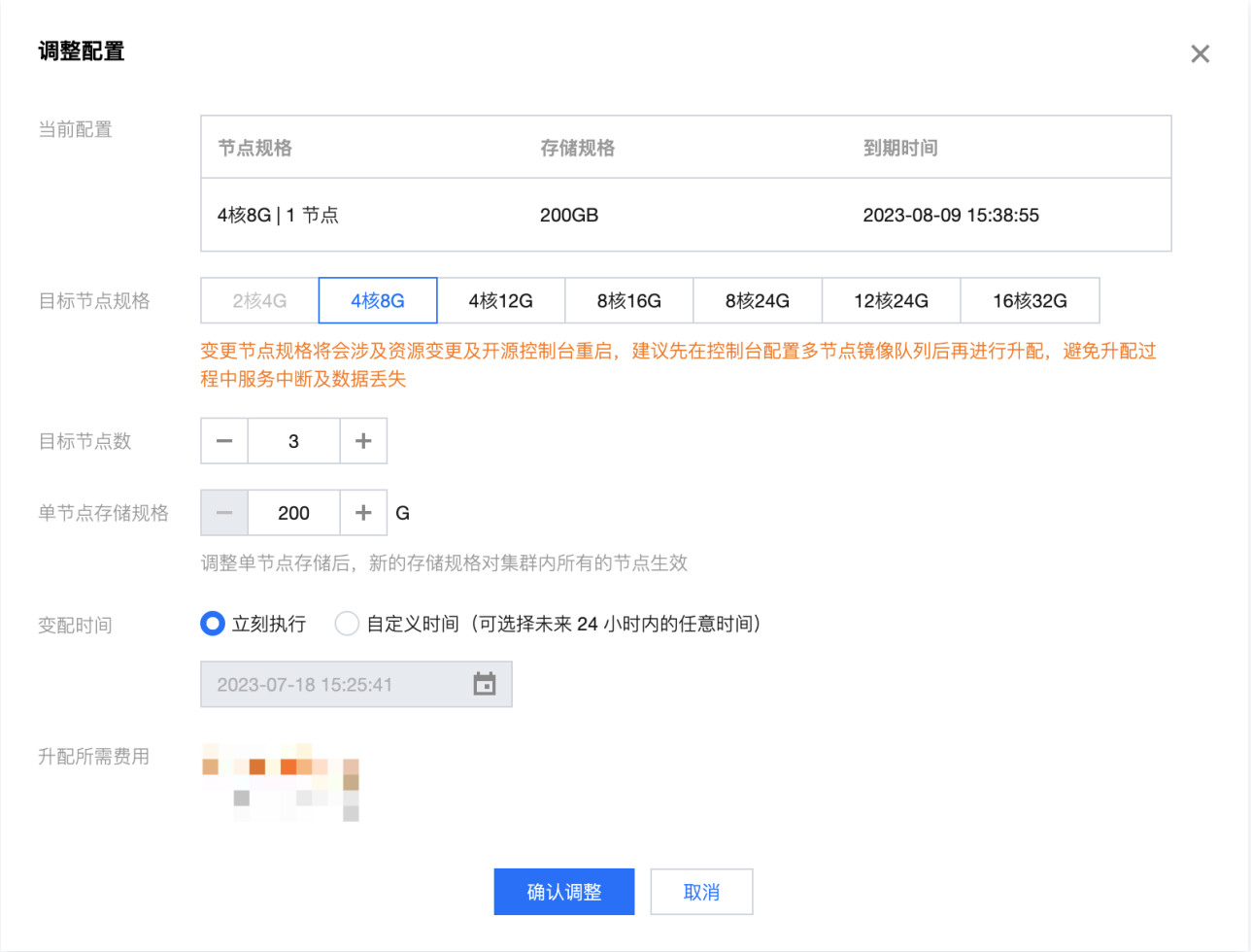
If the current cluster specifications do not meet your business needs, you can upgrade the node specifications, node count, and single node storage specification in the console.

> **Notes:**
> Currently, only node specifications, node count, and node storage specification can be increased, downgrades are not supported.

Operation step

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. On the cluster management list page, click **Upgrade Configurations** in the operation column.
3. After selecting the target node specifications, click **Confirm Adjustment**.
   - Target Node Specifications: Changing the node specifications will involve resource changes and will restart the open source console. It is recommended to configure a multi-node mirror queue in the console first to avoid service interruptions and data loss during the upgrade.
   - Target Node Count: Supports 3, 5, or 7 nodes.
   - Single Node Storage Specification: After adjusting the single node storage, the new storage specifications will take effect for all nodes within the cluster.
   - Configuration Time: You can choose **Execute Immediately** or **Customized Time (Recommended to execute at night to minimize business impact)**.

©2013-2024 Tencent Cloud. All rights reserved.



©2013-2024 Tencent Cloud. All rights reserved.

Deleting cluster

Last updated: 2024-08-02 15:31:47

Operation scenarios

When users no longer need the TDMQ RabbitMQ Edition cluster, they can delete it.
The lifecycle of a TDMQ RabbitMQ Edition cluster refers to the states the cluster goes through from starting to release. By reasonably managing the cluster from start to deletion, applications running on the cluster can provide services efficiently and economically. The cluster has the following states:

State	Status Attribute	Status Description
Creating	Intermediate status	After a cluster is created, it enters the state before running.
Running	Steady status	The cluster is running normally, indicating that metrics such as node condition and disk usage are within the normal range.
Deleting	Intermediate status	The cluster is being deleted through the console or API.
Isolated	Intermediate status	The cluster is overdue and has entered a 7-day isolation period. Instances in isolated status cannot produce or consume. Data and configurations saved in the cluster will not be deleted.
Creation failed	Intermediate status	You have purchased a cluster through the console or API but are not assigned the cluster. In this case, please contact Online Service for assistance.

©2013-2024 Tencent Cloud. All rights reserved.

Deletion failed	Steady status	The cluster is manually deleted or failed to release resources after 7 days from expiration without renewal.

Operation step

Manual deletion

You can choose to manually delete an annual and monthly cluster subscription before it expires by following the steps below:

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. On the Cluster Management list page, click More in the operation column **More** > **Terminate**.
3. In the deletion confirmation pop-up window, confirm the deletion once more to delete the cluster.

> **Notes:**
> After a cluster is deleted, all the configurations under it will be cleared and cannot be recovered. Therefore, caution should be exercised with this operation.

Automatic termination upon expiration/overdue payment

For instances with annual and monthly subscriptions, if they expire or become overdue, they will be retained in the TDMQ RabbitMQ Edition console for a maximum of 7 calendar days.

©2013-2024 Tencent Cloud. All rights reserved.

Renew within 7 days after expiration to continue using. For details, please see Overdue Explanation.
If your TDMQ RabbitMQ Edition cluster is not renewed within 7 days (including the 7th day) of expiration, the system will start releasing resources at 00:00 on the 8th day after expiration. Data in the expired instances will be cleared and cannot be recovered.

Notes:

- Clusters in a quarantined state cannot produce or consume. Data and configurations stored in the cluster will not be deleted.
- For clusters in a quarantined state within 7 days, you can renew them in the console cluster list page by clicking on **Renew** in the operation column. Once renewed successfully, the cluster will resume running status and can be used normally.

©2013-2024 Tencent Cloud. All rights reserved.

Accessing Native Console

Last updated: 2024-08-02 15:32:13

Operation scenarios

This document guides you on how to use TDMQ for RabbitMQ and log in to the native RabbitMQ console.

Operation step

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the target cluster's ID to go to the Basic Information page.
3. In the **Additional Information** > **Web Console Access Address** section, you can perform the following actions:
   - Enable or disable public or private network access addresses.
   - Use the **Public Network Access Address** and username and password to log in to the RabbitMQ native console.
   - Click the **Modification** button next to the Public Network Access Policy to set the console access allowlist.
     - You can add multiple IP addresses, separated by commas. Both IP addresses and IP ranges are supported.
     - All users are denied access to the console by default.

> **Notes:**
> Currently, only subnet masks from /28 to /32 are supported for IP ranges. For a /24 subnet mask, please Submit a Ticket to apply for the allowlist.

©2013-2024 Tencent Cloud. All rights reserved.

Create a routing policy

Last updated: 2024-08-02 15:33:16

Operation scenarios

This document guides you on configuring routing access rules through the console when using TDMQ RabbitMQ.

Operation step

> **Notes:**
> A cluster can create up to 5 routes, with only one public network route allowed. If more routes are needed, please Submit a ticket for consultation.

VPC

Operation scenarios: When you select a VPC and the corresponding VPC environment (e.g., VPC A) while purchasing a cluster, it means only the selected VPC A can access your TDMQ RabbitMQ service (e.g., production data, consumption data). If other VPCs (e.g., VPC B) need to access the TDMQ RabbitMQ service within VPC A later, you can configure the access method by choosing the VPC routing policy.

Follow the steps below:

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the target cluster ID to enter the Basic Information Page.
3. In the **Client Access** module, click **Add Routing Policy** at the top right.
4. In the pop-up window, select the routing type **VPC Network**, and choose the appropriate VPC and subnet.

©2013-2024 Tencent Cloud. All rights reserved.

> **Notes:** When selecting VPC network access, it supports specifying IP addresses. When changing the access method, you can keep the IP unchanged by specifying the IP.

5. Click **Submit** to complete the policy addition.

Public Domain Name Access

Operation scenario: When your consumers or producers are in a self-built data center or another cloud service, you can use the public network access method to produce and consume TDMQ RabbitMQ data.

Follow the steps below:

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the target cluster ID to enter the Basic Information Page.
3. In the **Client Access** module, click **Add Routing Policy** at the top right.
4. In the pop-up window, select the routing type **Public Domain Name Access**.

©2013-2024 Tencent Cloud. All rights reserved.

5. Click **Submit** to complete the policy addition.

Notes:

When using Public Domain Name Access, you can click the Edit Button next to Access Policy to set the Public Network Access White List.

©2013-2024 Tencent Cloud. All rights reserved.

Public Network Bandwidth Management

Last updated: 2024-08-02 15:33:51

Operation scenarios

By default, TDMQ RabbitMQ Edition uses internal network transmission. If you need to access it via a public network, you need to separately enable a public network route. For specific operations, refer to Add Routing Policy. Currently, 3Mbps of free public network bandwidth is provided by default.
If you need higher bandwidth, TDMQ RabbitMQ Edition supports upgrading public network bandwidth, which you can purchase for an additional fee. For specific pricing, refer to Billing Overview.
This document introduces the steps to adjust and delete the public network bandwidth configuration in the TDMQ RabbitMQ Edition console.

Operation step

Adjusting Public Network Bandwidth Configuration

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the target cluster's ID to go to the Basic Information page.
3. In the Basic Information Module, click **Adjust Configuration** next to the public network bandwidth.

4. Modify the public network bandwidth in the pop-up window. Click **Confirm** to complete the adjustment of the public network bandwidth configuration.

©2013-2024 Tencent Cloud. All rights reserved.

Deleting public network route

> **Notes:**
> You can only delete the public network route if the public network bandwidth is 3Mbps (no additional public network bandwidth purchased).

In the Basic Information Module's **Client Access** section, click **Delete** in the operation column of the public network bandwidth you want to delete.

©2013–2024 Tencent Cloud. All rights reserved.

Connecting to Prometheus

Last updated: 2024-08-02 15:34:19

Operation scenarios

Tencent Cloud TDMQ for RabbitMQ clusters currently provide Prometheus scrape node monitoring metrics, including basic metrics such as Queue, Channel, and Connection, as well as broker JMX exposed metrics.

Operation step

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the ID of the target cluster to enter the basic information page of the cluster.
3. In the **Additional Information** > **Monitor instances with Prometheus** module, click **Retrieve Monitoring Target** in the top right corner, and select the VPC and subnet.

4. Click **Submit** to get a set of monitoring targets.

5. Download Prometheus and configure the monitoring scrape address.
   5.1 Enter the directory of the Prometheus package and run the following command to decompress it.

```
tar -vxf prometheus-2.30.3.linux-amd64.tar.gz
```

©2013-2024 Tencent Cloud. All rights reserved.

5.2 Modify the configuration file `prometheus.yml` by adding the `jmx_exporter` and `node_exporter` scrape tasks.

```
scrape_configs:
  # The job name is added as a label job=<job_name> to any
timeseries scraped from this config.
  - job_name: "prometheus"
    # metrics_path defaults to '/metrics'
    # scheme defaults to 'http'.
    static_configs:
      - targets: ["localhost:9090"]

  - job_name: "broker-jmx-exporter"
    scrape_interval: 5s
    metrics_path: '/metrics'
    static_configs:
      - targets:
['10.x.x.0:60001','10.x.x.0:60003','10.x.x.0:60005']
        labels:
           application: 'broker-jmx'
  - job_name: "broker-node-exporter"
    scrape_interval: 10s
    metrics_path: '/metrics'
    static_configs:
       - targets:
['10.x.x.0:60002','10.x.x.0:60004','10.x.x.0:60006']
         labels:
           application: 'broker-node'
```

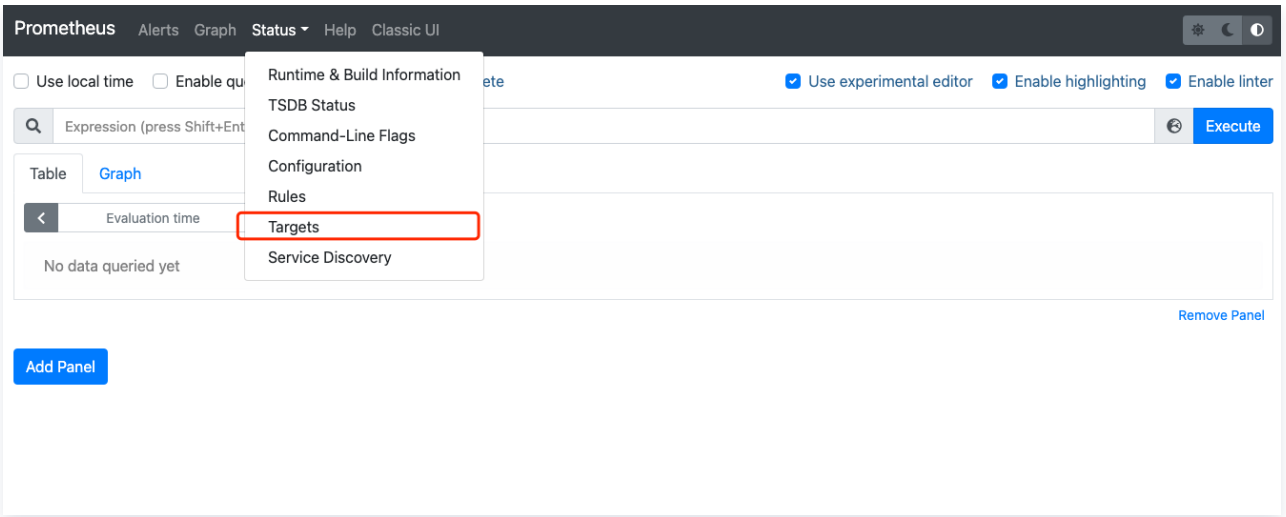
Among them, `broker-jmx-exporter` is the tag item for Prometheus to scrape the broker's JMX metrics. Targets include the mapped port information, while `broker-node-exporter` is the tag item for scraping the basic metrics of the node where the broker is located. `scrape_interval` is the frequency for scraping monitoring metrics data.

5.3 Start Prometheus.

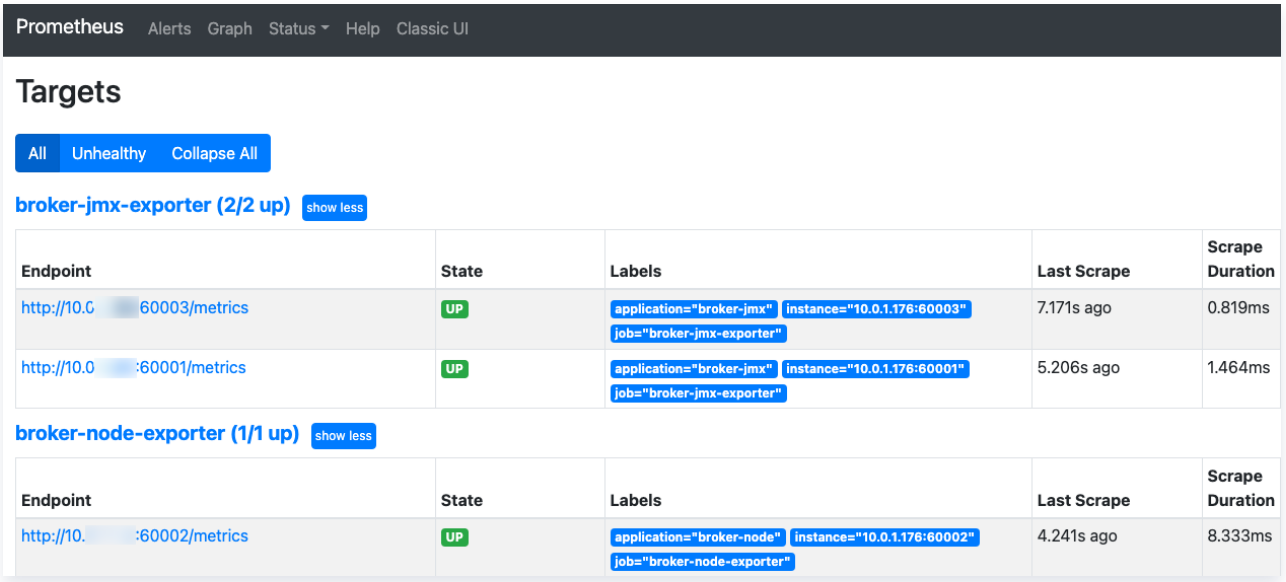
```
./prometheus --config.file=prometheus.yml --web.enable-lifecycle
```

5.4 Open the UI interface provided by Prometheus to check if the connected targets are normal. For example, enter `http://localhost:9090` in the browser.

©2013-2024 Tencent Cloud. All rights reserved.



5.5 Check that the targets' status is `UP` .

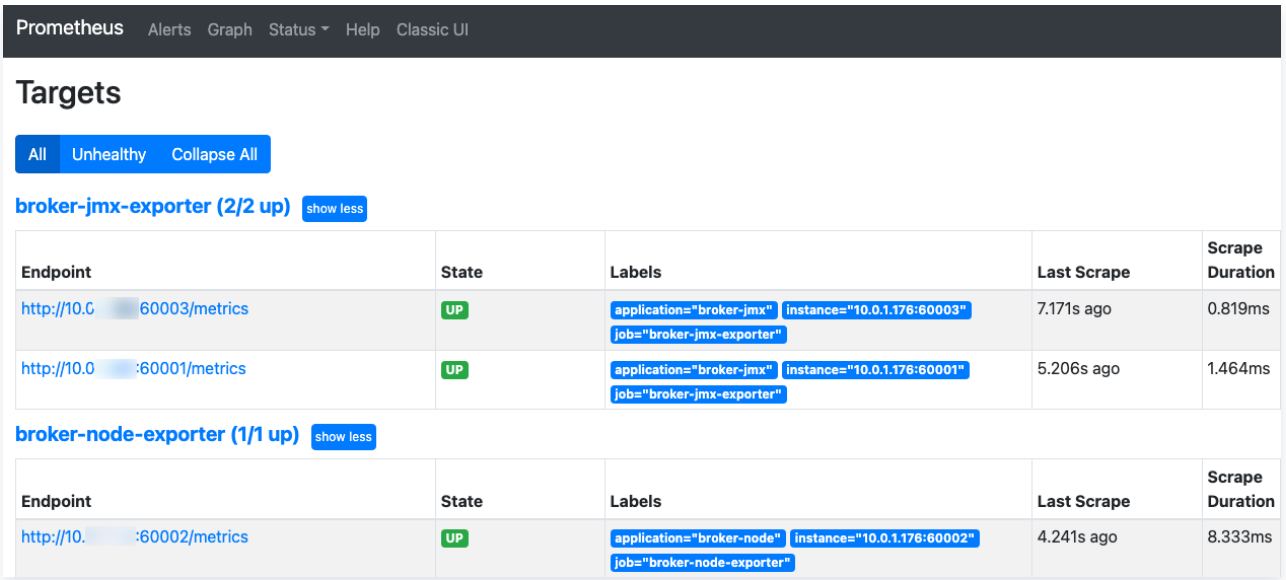


If the targets' status is `DOWN` , check whether network access is reachable or review the reason in the Error option at the lower status bar.

5.6 Query monitoring metric data.

Click the Graph option and enter the name of the metric to see the corresponding monitoring data. For example, enter `node_memory_MemAvailable_bytes` and click **Execute**.

©2013–2024 Tencent Cloud. All rights reserved.



©2013–2024 Tencent Cloud. All rights reserved.

Node Management

Last updated: 2024-08-02 15:35:35

Operation scenarios

The node management page displays a list of all nodes in the current cluster and node status metrics.
This document guides you on how to view the node list on the console when using TDMQ RabbitMQ edition.

Prerequisites

Cluster created.

Operation step

View Node

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**, choose the region, and click the target cluster's ID.
3. On the **Basic Information** page, select the top **Node** tab to view the current cluster's node information.

> **Notes:**
> On the node list page, click **View Monitoring** in the operation column to view detailed monitoring information of the corresponding node.

©2013-2024 Tencent Cloud. All rights reserved.

Vhost Management

Last updated: 2024-08-02 15:36:07

Operation scenarios

A virtual host (vhost) is a resource management concept in TDMQ for RabbitMQ. It is used for logical isolation, ensuring that exchanges and queues in different vhosts are isolated and do not interfere with each other.
Vhosts can be used to isolate different business scenarios and set specific configurations for each, such as message retention time.
This documentation guides you on using TDMQ for RabbitMQ by creating multiple vhosts, enabling you to apply it to different scenarios within the same cluster.

> **Notes:**
> Exchange and queue names within the same vhost must be unique.

Prerequisites

Cluster created.

Operation step

Create Vhost

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management > Vhost,** and click **Create** to enter the Create Vhost page.
3. In the Create Vhost dialog box, set the relevant attributes of the Vhost.
   - Vhost Name: Set the name of the vhost (cannot be modified after creation), 1-64 characters, only letters, numbers, '.', '-', and '_' are allowed
   - Trace Plugin: The rabbitmq_tracing plugin can track messages passing through RabbitMQ. Once enabled, you can use the console's message query capabilities.
   - Mirrored Queues: It is recommended to enable mirrored queues to ensure availability. Mirrored queues can replicate messages across multiple nodes in the RabbitMQ cluster, ensuring no message loss if a node fails. (Cannot be enabled in a single-node cluster.) For specific parameters, see Default Mirroring Policy.
   - Description: Remark description for the vhost
4. Click **Submit** to complete the creation of the Vhost in the cluster.

©2013-2024 Tencent Cloud. All rights reserved.

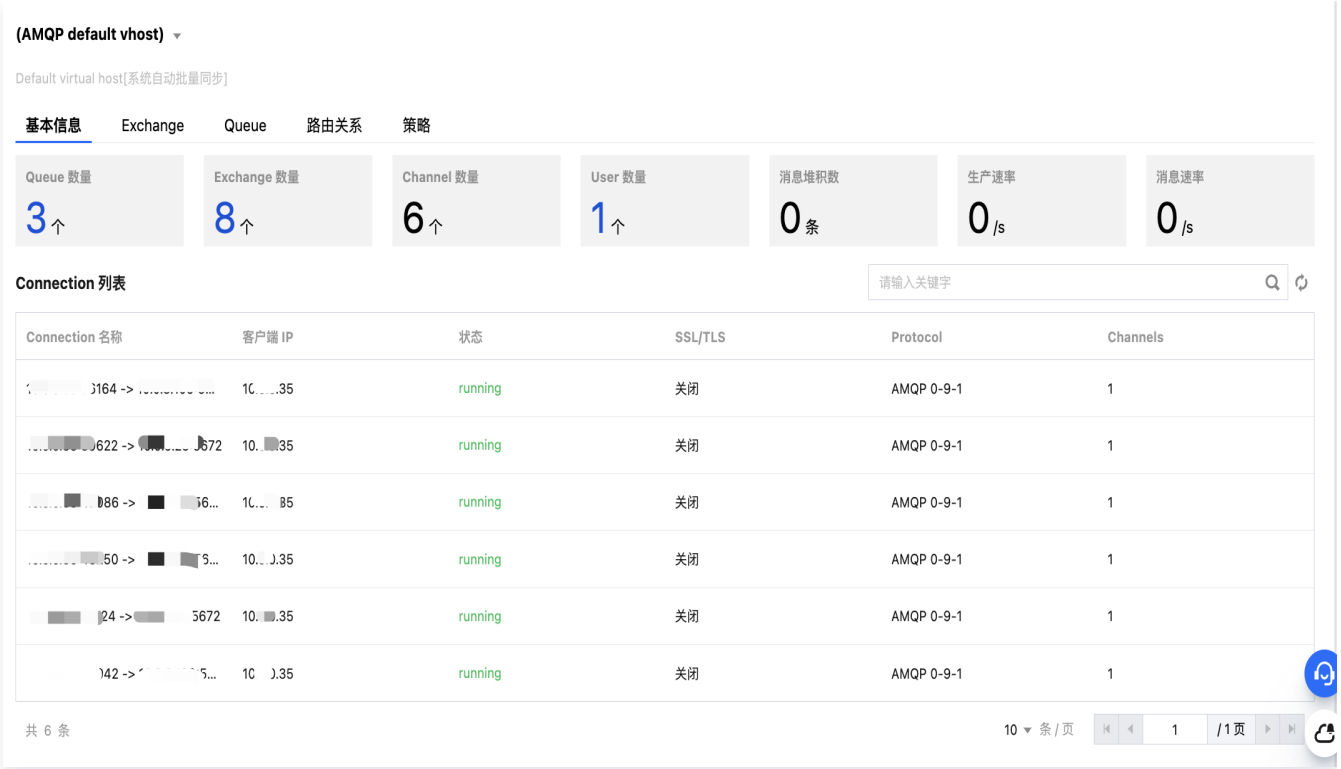
Next Steps: You can now create exchanges and queues within the vhost for message production and consumption.

View Vhost

On the Vhost List Page, click the ID of the vhost you want to view to enter the Basic Information Page.

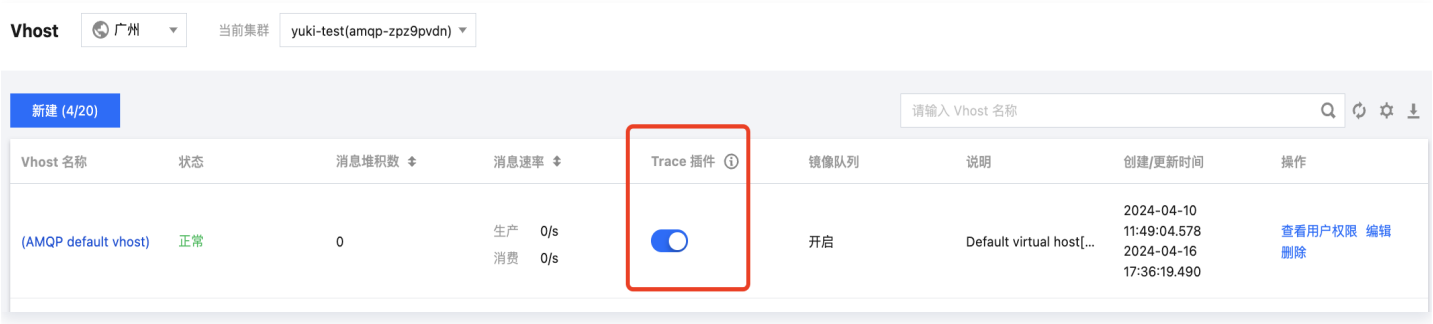
- Overview
  - Number of Queues: Displays the number of queues in the current vhost.
  - Number of Exchanges: Displays the number of exchanges in the current vhost.
  - Number of Channels: Displays the number of channels in the current vhost
  - Number of Users: Displays the number of users in the current vhost.
  - Accumulated Message Count: Displays the accumulated message count in the current vhost.
  - Production Rate: Displays the production rate in the current vhost.
  - Consumption Rate: Displays the consumption rate in the current vhost.
- Connection List
  - Displays the connection status under the current vhost and the number of channels for each connection

©2013–2024 Tencent Cloud. All rights reserved.



Modify Vhost

The Trace Plugin Switch can be turned on or off on the Vhost List Page. It is recommended to use the Trace plugin in low-traffic verification/troubleshooting scenarios. It is not recommended to enable it when the cluster sends TPS over 10000. Please read Message Query.



If you need to modify the Vhost description again, you can follow these steps:

1. On the **Vhost** List Page, click **Edit** in the action column to enter the Editing Page.
2. Modify the description and click **Submit** to complete the modification.

Delete Vhost

If you want to delete a created vhost, you can follow these steps:

1. On the **Vhost** list page, click the **delete** in the operation column.
2. In the delete confirmation dialog box, click **OK** to delete the Vhost.

©2013-2024 Tencent Cloud. All rights reserved.

> **Note**
> After the Vhost is deleted, all resources under this Vhost will be cleared and cannot be recovered.

©2013–2024 Tencent Cloud. All rights reserved.

Exchange Management

Last updated: 2024-08-02 15:37:02

Operation scenarios

A producer sends a message to an Exchange. The Exchange routes the message to one or more Queues based on its attributes or content (or discards it), and the Consumer pulls the message from the Queue for consumption.
This document describes how to create, delete, and query an exchange in the TDMQ for RabbitMQ console.

Prerequisites

You have created the corresponding Vhost (refer to Creating Vhost).

Operation step

Creating exchange

1. Log in to RabbitMQ Console.
2. In the left sidebar, select **Cluster Management > Exchange** tab. After selecting Vhost, click **Create New** to enter the Exchange creation page.
3. In the New Exchange dialog box, fill in the following information.

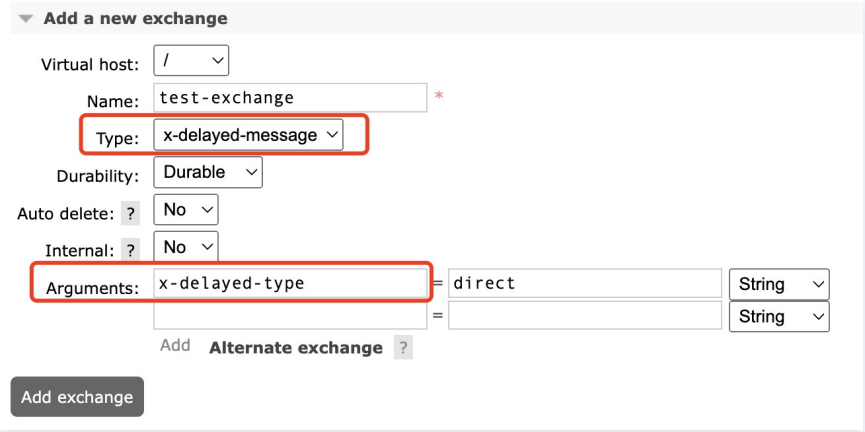
©2013-2024 Tencent Cloud. All rights reserved.

- Exchange Name: Fill in the Exchange name (cannot be modified after creation), 1-64 characters, can only include letters, numbers, ".", "-", and "_"
- Routing Type: Select the routing type, including Direct, Fanout, Topic, and Headers. The routing type cannot be modified once selected (for detailed descriptions of routing types, see Exchange)
  - Direct: This type of Exchange routes messages to Queues that match the Routing Key and Binding Key exactly
  - Fanout: This type of Exchange routes messages to all Queues bound to it
  - Topic: This type of Exchange supports multi-condition and fuzzy matching, meaning it routes messages to bound Queues using Routing Key pattern matching and string comparison.
  - Headers: Independent of the Routing Key, the matching mechanism is based on the message's Headers attributes. Declare a map key-value pair before binding a Queue to a Headers Exchange. This map object facilitates the binding of the message queue and the exchanger. When a message is sent to RabbitMQ, its Headers will be matched against the key-value pairs specified at the time of binding the Exchange; if they match exactly, the message is routed to the Queue, otherwise, it is not.

©2013-2024 Tencent Cloud. All rights reserved.

- X-Delayed-Message: This is a type of exchange with a specific definition used to achieve delayed message delivery. When a message is sent to an X-Delayed-Message type exchange, a delay time can be set for the message. RabbitMQ will route the message to the bound queue after the delay time has ended. This type of exchange allows you to control when a message is delivered to the consumer, enabling message timing and delayed processing. For methods to create this type of exchange, please see the explanation below **Explanation**.
- Durable: If set to true, the Exchange will persist after service restarts; if false, the Exchange will disappear after service restarts and will need to be recreated.
- AutoDelete: If set to true, the Exchange is automatically deleted when the last Queue bound to it is deleted.
- Internal: If set to true, the Exchange cannot be used directly by the Producer and can only be bound to other Exchanges.
- Exchange Instructions: Enter the description for the Exchange, up to 128 characters.
- Add Standby Exchange: Optional. By default, the standby Exchange is not used. If a message sent to the primary Exchange cannot be routed, it will be sent to the specified standby Exchange.

Explanation:
The console will subsequently support the X-Delayed-Message routing type. If needed, please create it first in the open-source console under -Exchanges-. When creating, Arguments needs to specify x-delayed-type, as shown below:



It is important to note that the X-Delayed-Message type is not a built-in RabbitMQ type. It requires enabling the rabbitmq_delayed_message_exchange plugin. For details, please see Plugin Management.

4. Click **Submit**, and you can see the created exchange in the exchange list.

Editing exchange

©2013-2024 Tencent Cloud. All rights reserved.

1. In the exchange list, find the exchange you need to edit, and click **Edit** in the operation column.
2. In the pop-up window, you can edit the exchange remarks.
3. Click **Submit** to complete the editing of the exchange.

Deleting exchange

1. In the exchange list, find the exchange you need to delete, and click **Delete** in the operation column.
2. In the pop-up window, click **Delete** to complete the deletion.

> **Note:**
> After an exchange is deleted, all the configurations under it will be cleared and cannot be recovered.

©2013-2024 Tencent Cloud. All rights reserved.

Queue Management

Last updated: 2024-08-02 15:37:41

Operation scenarios

Queues (Queue) are used to store messages. Each message will be put into one or more queues. The producer generates messages and eventually delivers them to the queue. Consumers can pull messages from the queue for consumption.
Multiple consumers can subscribe to the same queue. In this case, the messages in the queue will be evenly distributed among multiple consumers for processing, rather than each consumer receiving and processing all the messages.
This task guides you on how to create, delete, and query queues in the TDMQ for RabbitMQ console.

Prerequisites

You have created the corresponding Vhost (refer to Creating Vhost).

Operation step

Create Queue

> **Notes:**
> Support creating standard queues or quorum queues. You can click the following tabs to view the creation methods for different types of queues.

Standard Queue

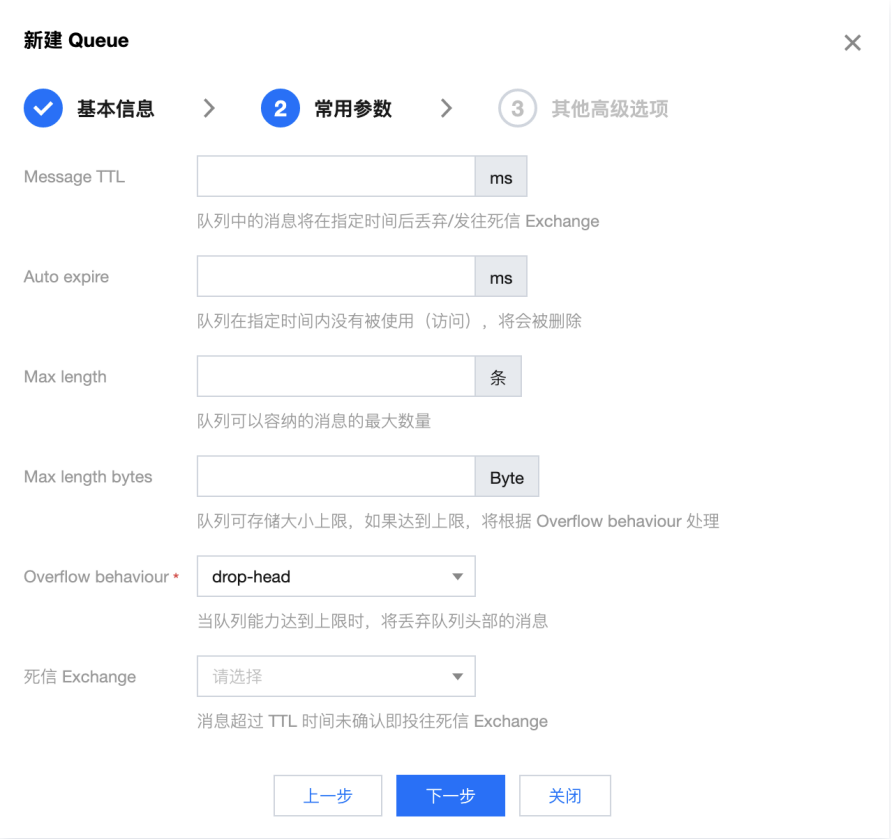
1. Log in to RabbitMQ Console.
2. In the left navigation pane, select **Cluster Management > Queue** tab, select the Vhost, then click **New** to enter the create queue page.
3. Enter the basic queue information.

©2013-2024 Tencent Cloud. All rights reserved.

- Queue name: Enter the Queue name (cannot be modified after creation), 3-64 characters, can only include letters, numbers, "-", and "_"
- Type: Standard Queue.
- Durable: Specify whether the queue should be durable.
- Node: Select the node where the queue is located.
- AutoDelete: When enabled, the queue will be deleted immediately after the last consumer cancels the subscription.
- Queue Description: Enter the queue description, up to 128 characters.

4. Click **Next**, and fill in the common parameters.

©2013-2024 Tencent Cloud. All rights reserved.



- Message TTL: Messages in the queue will be discarded or sent to Dead Letter Exchange after the specified time.
- Auto Expire: The queue will be deleted if it is not used (accessed) within the specified time.
- Max Length: The maximum number of messages the queue can hold.
- Max Length Bytes: The maximum storage size of the queue. If the limit is reached, it will be handled according to the overflow behavior.
- Overflow Behaviour: When the queue capacity is reached, the messages at the head of the queue will be discarded.
- Dead Letter Exchange: Messages not acknowledged within the TTL time will be sent to the Dead Letter Exchange.

5. Click **Next** to set other advanced options.

©2013-2024 Tencent Cloud. All rights reserved.

- Single Active Consumer: If enabled, ensure that only one consumer can consume messages from the queue at any time.
- Maximum Priority: Configure the maximum priority of messages in the queue.
- Lazy Mode: When enabled, the queue will prioritize saving incoming messages to disk to reduce memory usage.
- Master Locator: When a mirrored queue is configured, the method of allocating the node where the master resides.
  - Min-masters: When a mirrored queue is configured, select the node with the least number of hosted queue masters as the node where the current queue master resides.
  - Client-local: When a mirrored queue is configured, select the node to which the client declaring the queue is connected as the node where the current queue master resides.
  - Random: When a mirrored queue is configured, select a random node as the node where the current queue master resides.

6. Click **Submit** to complete the queue creation.

Quorum Queue

1. Log in to RabbitMQ Console.
2. In the left navigation pane, select **Cluster Management > Queue**, select the Vhost, then click **New** to enter the create queue page.
3. Enter the basic queue information.

©2013-2024 Tencent Cloud. All rights reserved.

- Queue name: Enter the Queue name (cannot be modified after creation), 3-64 characters, can only include letters, numbers, "-", and "_"
- Type: Quorum Queue.
- Node: Select the node where the queue is located.
- Queue Description: Enter the queue description, up to 128 characters.

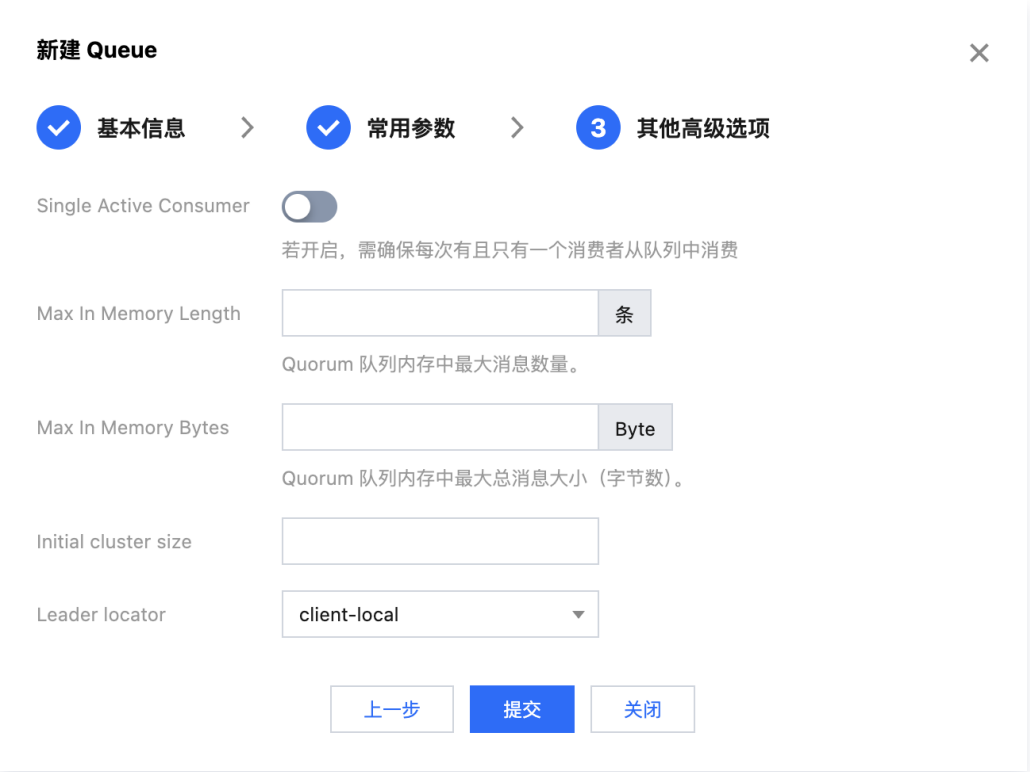
4. Click **Next**, and fill in the common parameters.

©2013-2024 Tencent Cloud. All rights reserved.

- Auto Expire: The queue will be deleted if it is not used (accessed) within the specified time.
- Max Length: The maximum number of messages the queue can hold.
- Max Length Bytes: The maximum storage size of the queue. If the limit is reached, it will be handled according to the overflow behavior.
- Delivery Limit: If message delivery in the queue fails, the allowed number of retries.
- Overflow Behaviour: When the queue capacity is reached, the messages at the head of the queue will be discarded.
- Dead Letter Policy: Options include at-most-once and at-least-once. The dead letter policy can only be set to at-least-once when the overflow behavior is set to reject-publish.
- Dead Letter Exchange: Messages not acknowledged within the TTL time will be sent to the Dead Letter Exchange.

5. Click **Next** to set other advanced options.

©2013-2024 Tencent Cloud. All rights reserved.



- Single Active Consumer: If enabled, ensure that only one consumer can consume messages from the queue at any time.
- Max in memory length: The maximum number of messages in memory for the Quorum queue.
- Max in memory bytes: The maximum total size of messages (in bytes) in the Quorum queue.
- Initial Cluster Size: The initial cluster size for the Quorum queue.
- Leader Locator: Options include client-local and balanced. If network latency significantly affects performance, choose the client-local strategy; if you need to balance the load across nodes, choose the balanced strategy.

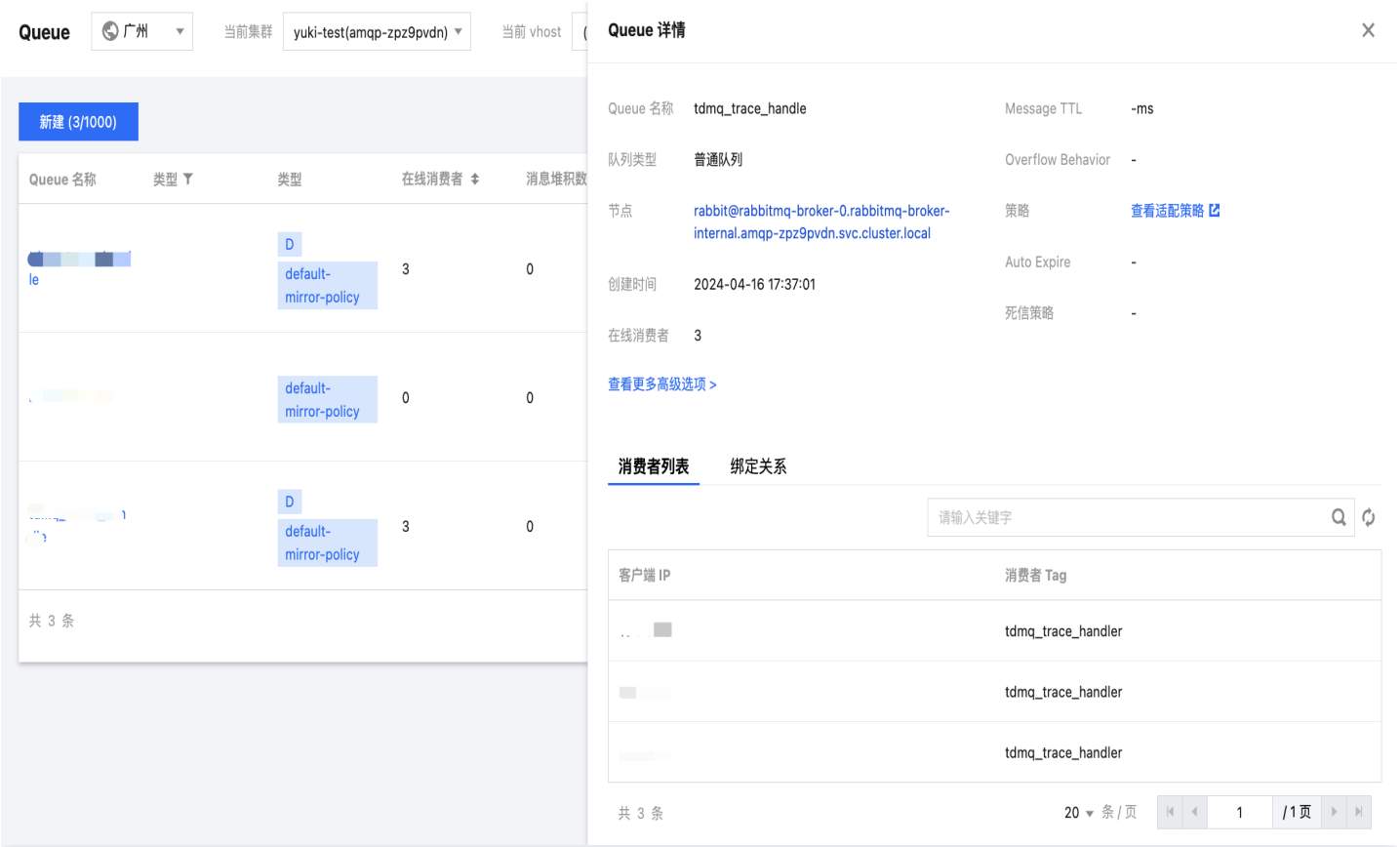
6. Click **Submit** to complete the queue creation.

View Queue Details

In the **Queue** list, click the Queue's "ID" to view its details.
You can see:

- Basic Information: Displays queue type, online consumers, Dead Letter Exchange, AutoDelete, and other information. Click **More Advanced Options** to view all parameter settings for the Queue.
- Consumer List: Displays information about consumers subscribed to the Queue.
- Binding Relationship: Displays the routing relationships bound to the Queue.

©2013-2024 Tencent Cloud. All rights reserved.



Edit Queue

1. In the Queue list, click **Edit** in the operation column of the target Queue.
2. In the pop-up window, edit the Queue information.
3. Click **Submit** to complete the modification.

Delete Queue

1. In the Queue list, find the Queue you want to delete and click **Delete** in the operation column.
2. In the pop-up window, click **Delete** to complete the deletion.

> **Note:**
> After the Queue is deleted, all configurations under it will be cleared and cannot be recovered.

©2013-2024 Tencent Cloud. All rights reserved.

Binding

Last updated: 2024-08-02 15:38:06

Operation scenarios

This document describes how to establish or cancel a binding between an exchange and a queue in the TDMQ console.

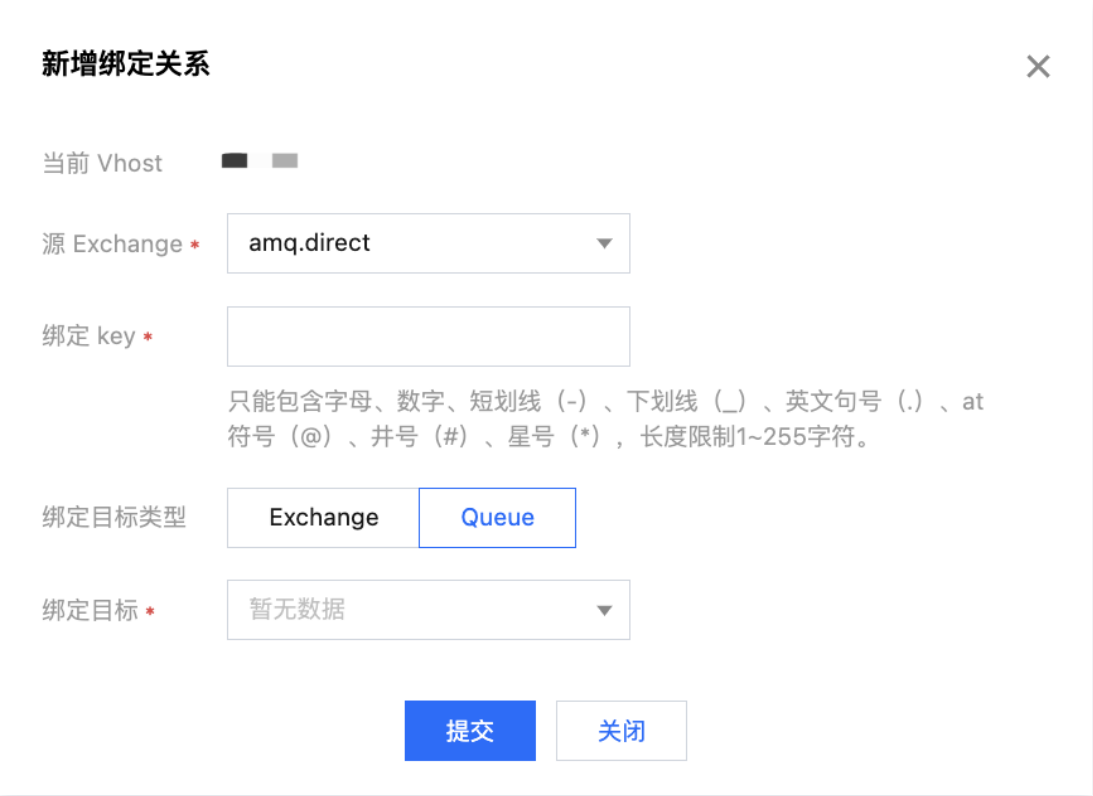
Prerequisites

- Created Exchange
- Created Queue

Operation step

Creating binding

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management > Vhost**, click the "ID" of the target Vhost, click **New** to enter the Basic Information page.
3. At the top of the page, select the **Routing Relationships** tab, click Create, set the source Exchange, Binding Key, Bind Target Type, and Bind Target.



4. Click **Submit** to complete the creation of the binding relationship.

©2013-2024 Tencent Cloud. All rights reserved.

Unbinding

1. In the routing relationships list, find the binding relationship you need to unbind, click **Unbind** in the action column.
2. In the pop-up window, click **Delete** to complete the unbinding of the routing relationship.

> **Note:**
> After a binding is deleted, it will no longer provide services and cannot be recovered.

©2013-2024 Tencent Cloud. All rights reserved.

User and Permission Management

Last updated: 2024-08-02 15:38:33

Definitions

- A user is the smallest unit for permission division within a TDMQ RabbitMQ Edition cluster. You can give different configurations and read/write permissions for different Vhosts by configuring permissions for the user.
- User password: The user can access the TDMQ RabbitMQ Edition cluster to produce/consume messages by adding the username and password in the client.
- Permissions refer to the user's operational permissions on Exchange and Queue under the Vhost, including configuration permissions and read/write permissions. Configuration permissions affect the declaration and deletion of Exchange and Queue. Read/write permissions affect reading messages from Queue, sending messages to Exchange, and binding Queue and Exchange.

Use Limits

The maximum number of users per cluster is 20.

Application scenario

- The user needs to securely use TDMQ RabbitMQ Edition to produce/consume messages.
- You need to set production and consumption permissions for different users under different Vhosts.

For example: a company has departments A and B. Department A’s system produces transaction data, and department B’s system performs data analysis and display based on these transaction data. Following the principle of least privilege, two users can be created. The user of department A is only granted the permission to produce messages to the transaction system Vhost, while the user of department B is only granted the permission to consume messages. This can greatly avoid problems such as data chaos and business dirty data caused by unclear permissions.

Operation step

Adding user

Each cluster has a default user named "admin". You can configure permissions for this default user or create a new user.

1. Log in to RabbitMQ Console.

©2013-2024 Tencent Cloud. All rights reserved.

2. In the left navigation bar, select **Cluster Management** > **Cluster List**, after selecting the region, click the target cluster's ID to enter the Basic Information page.
3. At the top of the page, select the **Users and Permissions** tab. On the User Management page, click Create User.
4. On the Create User page, enter the username, password, and description:
   - Username: Cannot be empty, cannot be only ".", 1-64 characters, can only contain letters, numbers, ".", "-", and "_".
   - User password: Cannot be empty, 8-64 characters, must contain at least two of the following: lowercase letters, uppercase letters, numbers, special characters [()`~!@#$%^&*_=|{}[]:;',.?/].
   - Role: Select the user role.

Roles	Permission Description
none	Unable to log in to the Web Console, usually ordinary producers and consumers.
management	Can log in to the Web Console; can view the Vhosts, queues, exchanges, and bindings under their name; can view and close the channels and connections under their name.
policymaker	On the basis of all permissions in "management": You can view, modify, and delete policies and parameters of the Vhost under your name.
monitoring	On the basis of all permissions in "management": You can view all Vhost, connection, and channel lists; You can view node-related information (such as disk usage, memory usage, number of processes, etc.).
administrator	Super Administrator, on the basis of all permissions in "policymaker" and "monitoring": You can create and delete Vhost; You can view, create, and delete users and permissions; Close other users' connections.

   - Description (optional): Fill in the user description.
5. Click **Submit** to complete the user creation for the current cluster.

©2013-2024 Tencent Cloud. All rights reserved.

Configuring permissions

1. In the **Users and Permissions** page, select the **Permission List** tab, enter the Permission List, and click **Configure Permissions**.
2. On the Permission Configuration page, select the Vhost and user for which you want to configure permissions, and set the permission rules.

   Permission rule settings support matching resources using **regular expressions**. For example, if you check "Configure" and enter "test-.*" in the input box, it means authorizing the user to configure permissions for all resources under the current Vhost that start with "test-".

©2013-2024 Tencent Cloud. All rights reserved.

3. Click **Submit** to complete the permission configuration.
4. Add the username and password to the client's parameters. For details on how to add key parameters in the client code, please refer to RabbitMQ's SDK Documentation, under Username and password.
5. Check whether the permissions have taken effect. You can run the configured client to access the Exchange and Queue resources in the corresponding Vhost and produce or consume messages according to the configured permissions. Check whether a no permission error is reported; if not, the permission has been configured successfully.

Deleting permission

Before deleting a permission, make sure that the current business no longer uses the user to produce/consume messages; otherwise, a client exception may occur due to the failure to produce/consume messages.

1. In the Users and Permissions list page, find the permission you want to delete, and click **Delete** in the operation column.
2. In the pop-up window, click **Confirm** to delete the permission.

©2013-2024 Tencent Cloud. All rights reserved.

©2013–2024 Tencent Cloud. All rights reserved.

Monitoring alarm

Last updated: 2024-08-02 15:39:02

Operation scenarios

TDMQ RabbitMQ Dedicated Clusters support monitoring resources created under your account, including clusters, nodes, and Vhosts. You can use this monitoring data to analyze cluster usage and handle potential risks promptly. Additionally, you can set alarm rules for monitoring items to receive alert messages when data is abnormal, enabling you to address risks in time and ensure the stable operation of the system.

Monitoring Metric

TDMQ RabbitMQ Dedicated Clusters support viewing monitoring data for clusters, nodes, Vhosts, queues, and exchanges from four dimensions. The supported monitoring metrics are as follows:

Cluster

Classification	Monitoring Metric	Unit	Monitoring Metric Meanings
Basic information	Number of Connections	Count	Number of Currently Open Connections
	Number of Channels	Count	Number of Currently Open Channels
	Number of Queues	Count	Total Number of Currently Available Queues
	Number of Consumers	Count	Total Number of Currently Online Consumers
	Number of Retained Messages	Count	Total Number of Messages in Ready State (retained and undelivered)
	Public Network Inbound	Mbps	Public Network Inbound Bandwidth

©2013-2024 Tencent Cloud. All rights reserved.

	Bandwidth		
	Public Network Outbound Bandwidth	Mbps	Public Network Outbound Bandwidth
	Recommended TPS Upper Limit (production + consumption)	Count/s	Recommended TPS Upper Limit When Cluster Mirroring Queue is Disabled
	Total Number of Open Channels	Count	Total Number of Open Channels
Production and Consumption	Production Confirmation Rate	Count/s	Broker Confirmation Return Rate After Client Message Production Success
	Number of Messages Produced per Second	Count/s	Client-side Message Production Rate
	Number of Unacknowledged Consumption Messages	Count	Total Number of Messages Delivered to Consumers but Unacknowledged
	Consumption Confirmation Rate	Count/s	Message Acknowledgement Rate by Consumers
	Messages Consumed Per Second	Count/s	Overall Messages Consumed Per Second Rate, including autoAck=false and autoAck=true cases
	Redelivery Rate	Count/s	Redelivery Rate of Messages to Consumers in the Channel
	Message Dropped Rate	Count/s	Message Dropped Rate when mandatory=false and no matching routing condition is found by the exchange
	Delayed Messages Count	Count	Count of Delayed Messages in the Current Cluster.

©2013-2024 Tencent Cloud. All rights reserved.

Node

Classification	Monitoring Metric	Unit	Monitoring Metric Meanings
Basic information	Number of Connections	Count	Number of Currently Open Connections
	Number of Channels	Count	Number of Currently Open Channels
	Number of Queues	Count	Total Number of Currently Available Queues
	Number of Consumers	Count	Total Number of Currently Online Consumers
	Number of Retained Messages	Count	Total Number of Messages in Ready State (retained and undelivered)
	CPU Utilization	%	CPU Utilization of Nodes
	Memory Utilization	%	Memory Utilization of Nodes
	Disk Utilization	%	Disk Utilization of Nodes
	Memory usage	GBytes	Memory Usage Size of Nodes
Production and Consumption	Number of Unacknowledged Consumption Messages	Count	Total Number of Messages Delivered to Consumers but Unacknowledged
	Consumption Confirmation Rate	Count/s	Message Acknowledgement Rate by Consumers
	Messages Consumed Per Second	Count/s	Overall messages consumed per second rate, including autoAck=false and autoAck=true cases

©2013-2024 Tencent Cloud. All rights reserved.

	Redelivery Rate	Count/s	Redelivery Rate of Messages to Consumers in the Channel
	Message Dropped Rate	Count/s	Message Dropped Rate when mandatory=false and no matching routing condition is found by the exchange
	Delayed Messages Count	Count	Count of Delayed Messages in the Current Node.

Vhost

Classification	Monitoring Metric	Unit	Monitoring Metric Meanings
Basic information	Number of Consumers	Count	Total Number of Currently Online Consumers
	Number of Retained Messages	Count	Total Number of Messages in Ready State (retained and undelivered)
Production and Consumption	Production Confirmation Rate	Count/s	Broker Confirmation Return Rate After Client Message Production Success
	Number of Messages Produced per Second	Count/s	Client-side Message Production Rate
	Number of Unacknowledged Consumption Messages	Count	Total Number of Messages Delivered to Consumers but Unacknowledged
	Consumption	Count/s	Message Acknowledgement Rate by Consumers

©2013-2024 Tencent Cloud. All rights reserved.

	Confirmation Rate		
	Messages Consumed Per Second	Count/s	Overall Messages Consumed Per Second Rate, including autoAck=false and autoAck=true cases
	Redelivery Rate	Count/s	Redelivery Rate of Messages to Consumers in the Channel
	Message Dropped Rate	Count/s	Message Dropped Rate when mandatory=false and no matching routing condition is found by the exchange

Queue

Classification	Monitoring Metric	Unit	Monitoring Metric Meanings
Basic information	Number of Consumers	Count	Total Number of Currently Online Consumers
	Number of Retained Messages	Count	Total Number of Messages in Ready State (retained and undelivered)
Production and Consumption	Number of Unacknowledged Consumption Messages	Count	Total Number of Messages Delivered to Consumers but Unacknowledged
	Consumption Confirmation Rate	Count/s	Message Acknowledgement Rate by Consumers
	Redelivery Rate	Count/s	Redelivery Rate of Messages to Consumers in the Channel

©2013-2024 Tencent Cloud. All rights reserved.

Exchange

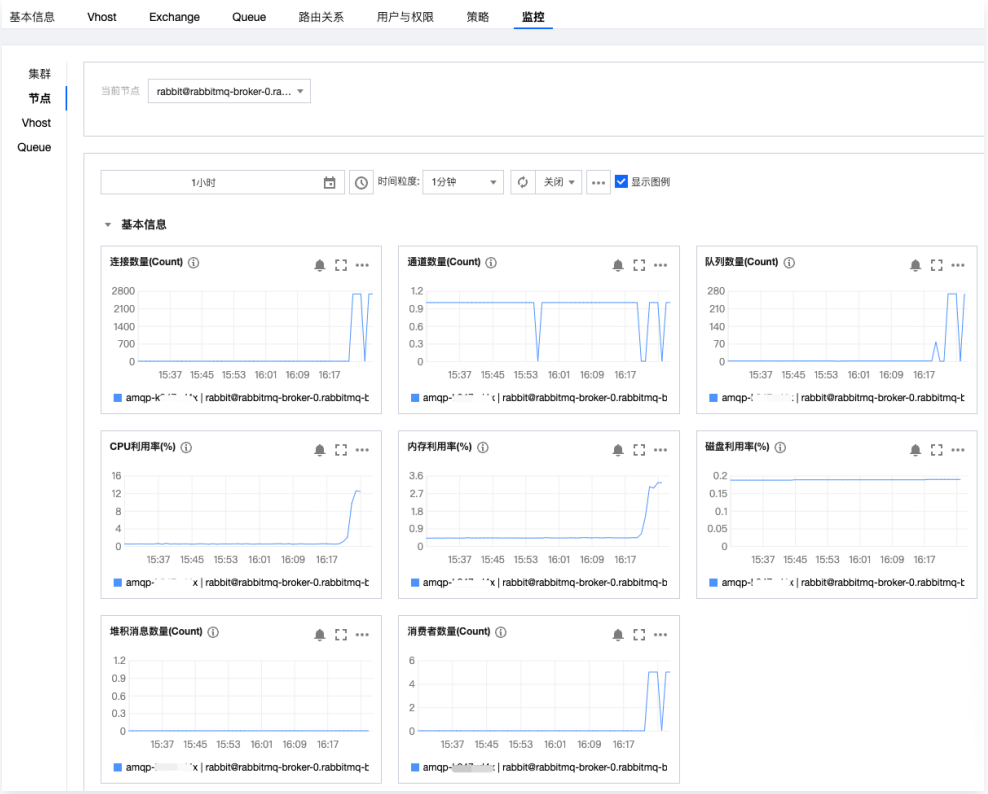
Classification	Monitoring Metric	Unit	Monitoring Metric Meanings
Production and Consumption	Delayed Messages Count	Count	Count of Delayed Messages in the Current Exchange.

Viewing Monitoring Data

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**, after selecting the region, click the target cluster's ID to enter the Basic Information page.
3. At the top of the Cluster Details page, select the **Monitoring** tab to enter the Monitoring page.
4. Select the target resource tab, choose the resource, set the time range, and view the corresponding monitoring data.

Icons	Description
	Click to view monitoring metric comparisons, including month-over-month, year-on-year, and custom date comparisons.
	Click to refresh and get the latest monitoring data. Supports auto-refresh at intervals of 30s, 5min, 30min, and 1h.
	Clicking allows you to copy the chart to the Dashboard, for more about Dashboard please see What is a Dashboard.
	Check to display legend information on the chart.

©2013-2024 Tencent Cloud. All rights reserved.



Configuring alarm policy

Creating alarm rule

You can configure alert rules for monitoring metrics. When the metrics reach the set notification threshold, TCOP can notify you via email, SMS, WeChat, or telephone, helping you respond to abnormal conditions promptly.

1. On the cluster's monitoring page, click the alarm button as shown below to jump to the TCOP Console to configure the alarm strategy.

2. On the alarm configuration page, select a policy type and instance, and set the alarm rule and notification template.
   - **Policy Type**: Select **TDMQ/RabbitMQ**.
   - **Alarm Object**: Select the RabbitMQ resource you want to configure with an alarm policy.
   - Trigger Conditions: Supports **Selecting a Template** and **Manual Configuration**, with Manual Configuration selected by default. See below for manual configuration instructions, and Creating a Trigger Condition Template for creating a new template.

©2013-2024 Tencent Cloud. All rights reserved.

> **Notes:**
> - Metric: For example, "Connection count". If you select 1 minute as the statistical period and the average production duration exceeds the threshold for N consecutive data points, an alarm will be triggered.
> - Alarm Frequency: For example, "Alarm once every 30 minutes" means that there will be only one alarm triggered every 30 minutes if a metric exceeds the threshold in several consecutive statistical periods. Another alarm will be triggered only if the metric exceeds the threshold again in the next 30 minutes.

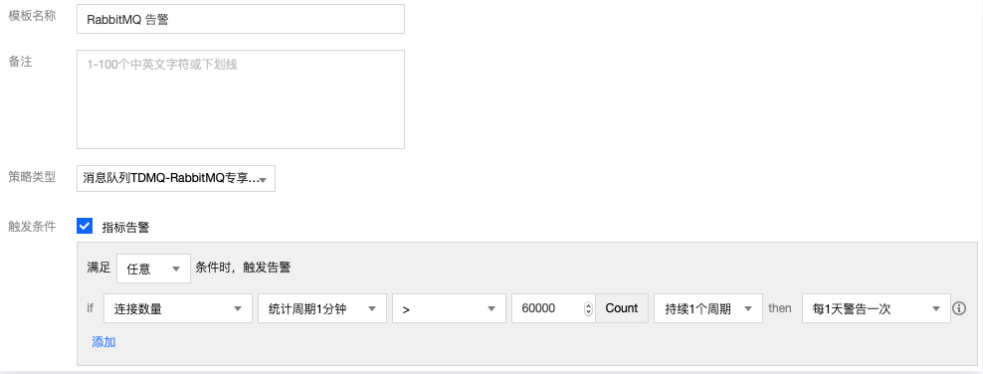
- **Notification Template**: Select a notification template, or create a new one to set the alarm recipients and notification channels.

3. click **Finish** to complete the configuration.

> **Notes:**
> For more information on alarms, please refer to TCOP Alarm Service.

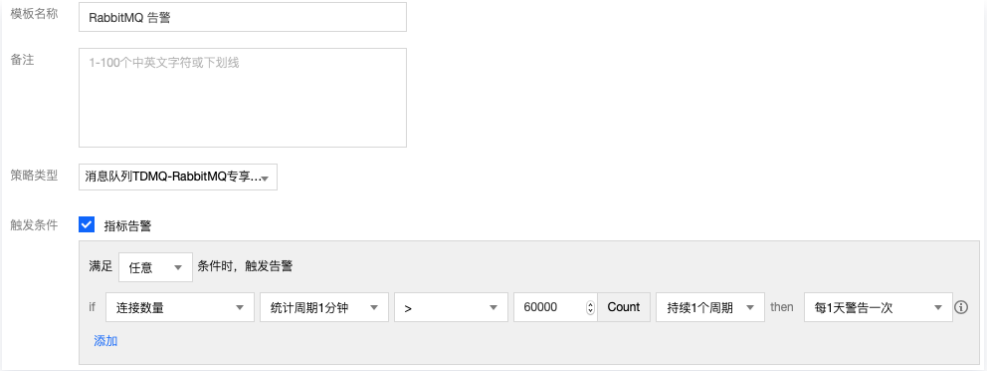
Create a new trigger template

1. log in to TCOP Console.
2. In the left navigation bar, click **Trigger Condition Templates** to enter the trigger condition list page.
3. On the trigger condition template page click **Create New**.
4. On the template creating page, configure the policy type.
   - **Policy Type**: Select **TDMQ/RabbitMQ**.
   - **Use Predefined Trigger Conditions**: Check this option to see suggested alarm strategies by the system.
5. After confirming it's correct, click **Save**.



©2013-2024 Tencent Cloud. All rights reserved.

6. Return to the new alarm policy page, click **Refresh**, and the newly configured alarm strategy template will appear.



Suggestions for Alarm Configuration

This section introduces some key metrics and suggested alarm configurations you need to focus on when using TDMQ RabbitMQ Edition:

Metric	Dimension	Suggested Alarm Configuration	Description
Disk Utilization (%)	Node	Granularity of 1 minute, "Disk utilization" value > 80%, persistent for 5 data points, alert every 30 minutes	Excessive disk usage will cause the node to run out of disk space to hold messages assigned to it, leading to the inability to write messages to disk. It is recommended to clean up data or expand the cluster when the average disk utilization exceeds 80%.
Memory utilization (%)	Node	Granularity of 1 minute, "Memory utilization" value > 50%, persistent for 5 data points, alert every 30 minutes	High memory utilization will block message production. It is recommended to speed up consumption, control production flow, or expand the cluster when memory utilization exceeds 50%.
CPU Utilization (%)	Node	Granularity of 1 minute, "CPU utilization" value > 70%, persistent for 5 data points, alert every 30 minutes	High CPU utilization will affect the speed of message production. It is recommended to expand the cluster when the CPU utilization exceeds 70%.

©2013-2024 Tencent Cloud. All rights reserved.

Message Backlog (Count)	Node	Granularity of 5 minutes, "Accumulated message count" value > business expected accumulated message count, persistent for 5 data points, alert every 30 minutes	Excessive message backlog will cause the Broker node's disk usage to rise rapidly, preventing it from accepting more messages. Expansion is needed.
Node Survival Status (%)	Node	Granularity of 1 minute, "Node Survival Status" value = 1, persistent for 3 data points, alert every 15 minutes	Abnormal node survival status/failure can lead to message loss, especially if persistence or image queue is not enabled. It will also increase the load on the remaining nodes, leading to a decline in cluster performance. It is recommended to check the cause along with other metrics and alarm information.

©2013–2024 Tencent Cloud. All rights reserved.

Policy list
Policy Management

Last updated: 2024-08-02 15:39:43

Operation scenarios

In the RabbitMQ message queue, besides mandatory attributes like durable and exclusive, you can configure some optional attributes when creating Queues or Exchanges to gain different features, such as x-message-ttl, x-expires, and x-max-length.
However, the attribute parameters set for Queues or Exchanges through RabbitMQ clients cannot be changed once they are successfully set, unless the original Queue or Exchange is deleted and a new one is created.
Policies are a special use of runtime parameters that support dynamic modification of some attribute parameters. Policies are applied at the Vhost level, and one policy can match one or multiple Queues or Exchanges, facilitating batch management. This solves the problem of RabbitMQ clients being unable to modify the properties of created exchanges and queues, greatly enhancing application flexibility.

Operation step

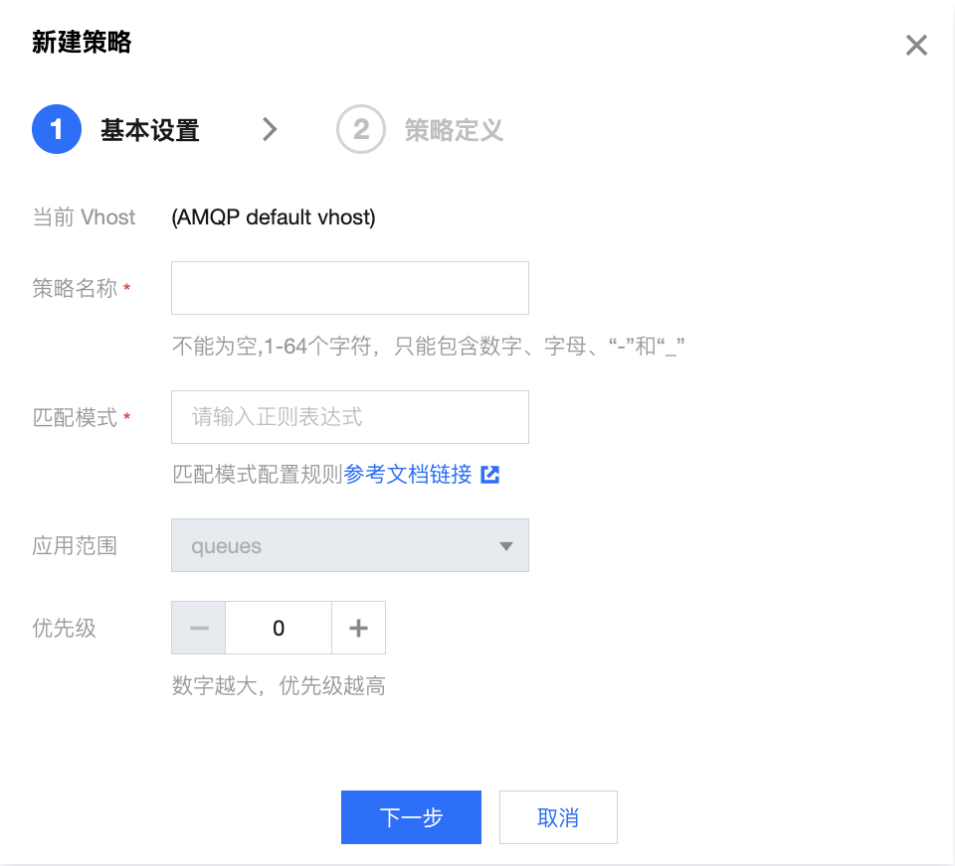
Creating a policy

When creating a new cluster, if the mirror queue is enabled, a default policy will appear under the **Policy** tab in the console, which can be deleted, allowing you to create a new policy.

1. Log in to RabbitMQ Console.
2. In the left-hand navigation bar, select **Cluster Management** > **Vhost**. After selecting the region, click the ID of the target Vhost to enter the basic information page.
3. Click the **Policy** tab at the top, click Create Policy, and fill in the basic information of the policy.
   - Policy name: 1-64 characters, can only contain numbers, letters, "-", and "_"
   - Matching pattern: A regular expression used to match the relevant Queues or Exchanges. For example, ^test.* will match all Queues or Exchanges that start with 'test'.
   - Application scope: Specifies the scope where the current policy is effective
     - Exchanges and queues: Applies to all Queues or Exchanges that match the pattern.
     - Exchanges: Applies to all Exchanges that match the pattern.
     - Queues: Applies to all Queues that match the pattern.

©2013-2024 Tencent Cloud. All rights reserved.

- Priority: Defines the policy's priority. If multiple policies apply to the same Queue or Exchange, the policy with the highest priority number will be effective.



4. Click Next to set the policy's definition information.
   - Mirror mode: The mode of the mirror queue. Valid values are all, exactly, and nodes.
     - all: indicates mirroring on all nodes in the cluster.
     - exactly: indicates mirroring on a specified number of nodes. The number of nodes is specified by the mirror parameters.
     - nodes: indicates mirroring on specified nodes. The node names are specified through the mirror parameters.
   - Message synchronization method: The synchronization method of messages in the mirror queue. Valid values are automatic and manual.
   - Primary node exit handling: Whether to allow election of unsynchronized mirrors as master when the primary node exits gracefully.
   - Primary node failure handling: When the primary node is faulty/fails, whether to allow the election of an unsynchronized replica as master. To ensure availability, it is recommended to keep it set to "allow choosing all replicas".

©2013-2024 Tencent Cloud. All rights reserved.

5. Click Complete to finalize policy creation.

Editing a policy

1. In the policy list, click the target policy operation column's **Editing**.
2. In the pop-up window, edit the policy information.
3. Click **Submit** to complete the modification.

DeletePolicy

1. In the policy list, find the policy you want to delete, and click the operation column's **Delete**.
2. In the pop-up window, click **Delete** to complete the deletion.

©2013-2024 Tencent Cloud. All rights reserved.

Default Image Policy

Last updated: 2024-08-02 15:40:08

Policy Description

To enhance the reliability and fault tolerance of the RabbitMQ message queue cluster, when a user creates a new RabbitMQ cluster or a new Vhost (with at least 3 nodes in the cluster), the option to enable the "default mirrored queue" is provided. This mirrored queue replicates the messages across multiple nodes in the RabbitMQ cluster to ensure that messages are not lost in case of a node failure.
The following is a detailed description of the "default mirrored queue" policy parameters provided by the RabbitMQ message queue:

Parameter Name	Configuration Parameter	Parameter Description
Name	pay-mirror-policy	Policy name used to identify and reference the policy.
Pattern	.*	The matching pattern of the policy adopts regular expression syntax. It matches any character and matches the previous character zero or more times, so .* indicates matching any queue name.
Apply to	Queues	The application object of the policy, set to Queues, indicates that the policy applies to the queue.
Priority	0	The priority of the policy. If a queue matches multiple policies, the higher priority policy will be applied. 0 indicates the lowest priority.
ha-mode	exactly	The replication mode of the mirrored queue. • exactly: indicates that the queue's messages will be replicated to a specified number of nodes • all: indicates that the queue's messages will be replicated to all nodes. Choosing exactly can ensure availability while reducing network and storage overhead, thus improving performance.
ha-params	3	Replication parameters of the mirrored queue. When ha-mode is set to exactly, the number of nodes to

©2013-2024 Tencent Cloud. All rights reserved.

		replicate must be set here. The default setting is 3, ensuring good performance even if expanded to 5 nodes in the future.
ha-promote-on-failure	always	Mirror queue promotion strategy during node failure. 'always' means that the mirror queue will be promoted to the main queue regardless of the reason for the node failure. 'when-synced' means that the mirror queue will only be promoted to the main queue when it is resynchronized after node failure. The default setting is 'always' to ensure service availability in any failure situation.
ha-promote-on-shutdown	when-synced	Mirror queue promotion strategy during node normal shutdown. • always: The mirror queue will be promoted to the main queue regardless of the reason for the node shutdown. • when-synced: The mirror queue will only be promoted to the main queue after resynchronization post node shutdown. The default setting is 'when-synced' to avoid unnecessary promotion operations.
ha-sync-mode	manual	Synchronization mode of the mirror queue. • automatic: The mirror queue is automatically synchronized with the main queue when the node starts or reconnects to the cluster. • manual: The synchronization operation needs to be manually triggered to synchronize the mirror queue with the main queue. The default setting is 'manual' to avoid impacting cluster performance during message accumulation.

By configuring the default mirror queue policy, RabbitMQ cluster reliability can be maintained while optimizing performance and resource utilization. Users can further adjust these parameters according to their own needs and scenarios, or delete and recreate policies.

Operation step

Enable Default Mirror Queue

1. When creating a cluster, enable the mirroring queue: Purchase page of the cluster > **Other settings** > **Enable mirroring queue.**

©2013-2024 Tencent Cloud. All rights reserved.

2. When creating a Vhost, enable the mirroring queue: **Cluster list> Vhost > Create Vhost > Enable mirroring queue.**

Limit

Message Queue RabbitMQ allows only clusters with **3 or more** nodes to enable the "default mirroring queue", mainly to ensure the high availability and fault tolerance of the cluster. In a cluster with 3 or more nodes, the mirroring queue can replicate messages across multiple nodes. This not only distributes the load on each node, improving performance, but also ensures the service continues to operate normally in the event of a node failure. Additionally, this provides more flexibility, allowing us to configure the parameters of the mirroring queue

©2013–2024 Tencent Cloud. All rights reserved.

according to actual needs. Thus, this restriction is made to provide a more stable and reliable service.

©2013–2024 Tencent Cloud. All rights reserved.

Intelligent Patrol

Last updated: 2024-08-02 15:40:39

Operation scenarios

As the monitoring indicators gradually increase, the requirements for understanding operation metrics also rise. TDMQ for RabbitMQ has introduced intelligent patrol capabilities to proactively detect cluster issues and hidden risks. Based on accumulated expert experience, it provides problem resolutions and automatically summarizes health check results into a report.
The intelligent patrol capability helps you extract key information, efficiently locate problems, provide professional resolution suggestions, and achieve a closed-loop operation and maintenance experience.

Enable Intelligent Patrol

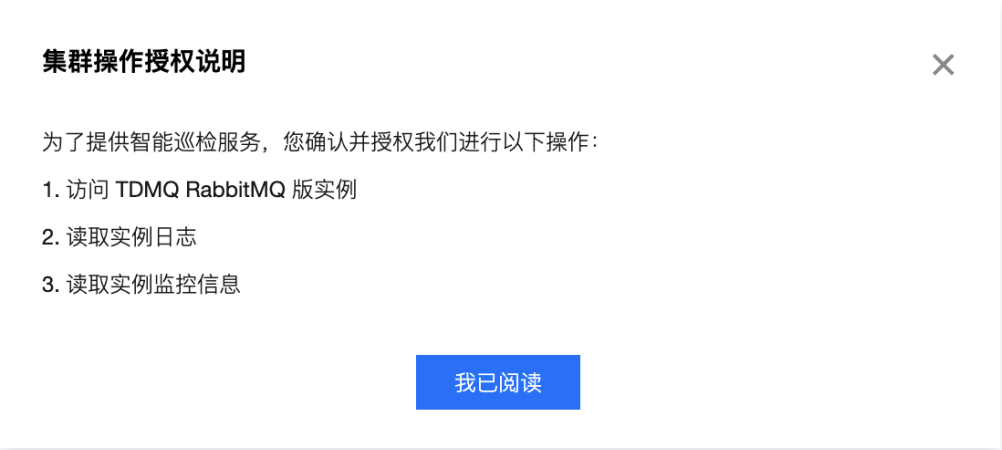
Intelligent patrol requires access to the basic information, logs, and monitoring data of user clusters. Therefore, when first enabling the intelligent patrol service, the user needs to grant access authorization.

Operation step

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management** > **Cluster List**, choose the region, and click the target cluster ID to enter the cluster details page.
3. At the top of the cluster details page, select the **Intelligent Patrol** tab to enter the intelligent patrol page.

©2013-2024 Tencent Cloud. All rights reserved.

4. In the initialization page, you can click **<Cluster Operation Authorization Instructions>** to read the relevant instructions and prompts.



5. Once confirmed, check **I have read and fully understand the <Cluster Operation Authorization Instructions>**, then click **Authorize to Enable Intelligent Patrol Service** to enter the intelligent patrol feature.

6. Click **Manual Patrol** to start the inspection immediately. You can set the **Intelligent Patrol Time** during business off-peak hours. TDMQ for RabbitMQ will perform intelligent patrols at the specified automatic patrol time each day.

View Inspection Results

The inspection results are compiled and displayed to show the cluster's inspection outcomes and their trend changes, making it convenient for users to check the recent health status of the cluster. The cluster's health status is displayed via three states: high risk, low risk, and safe:

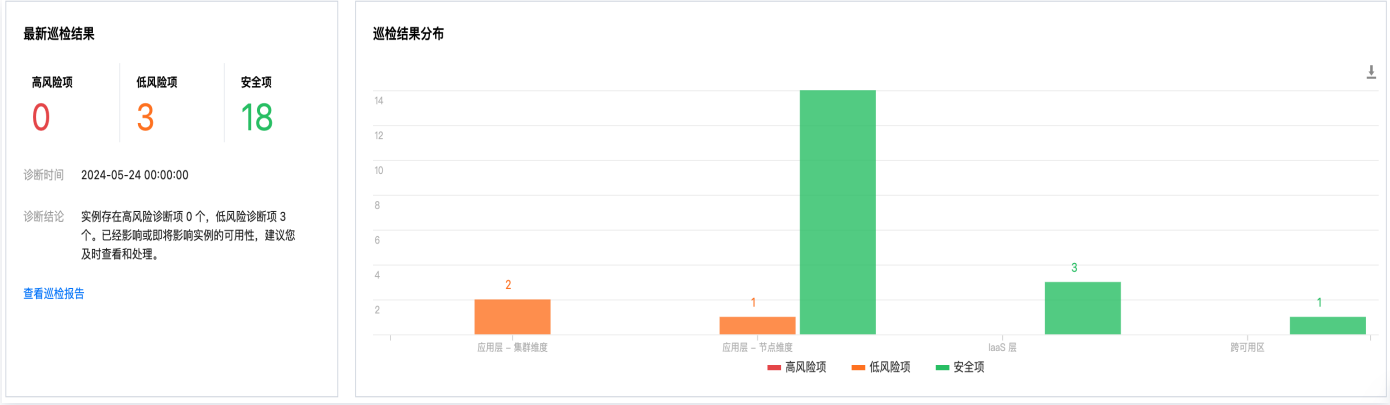
- High Risk: Indicates that the cluster has serious issues or hidden risks that already affect cluster availability and need immediate attention to avoid data loss, cluster faults, and other problems.
- Low Risk: Indicates that the cluster has relatively serious issues or hidden risks that might affect cluster availability. Prompt attention is advised.
- Safe: Indicates the cluster is in good health.

Operation step

1. log in to TDMQ console.

©2013-2024 Tencent Cloud. All rights reserved.

2. In the left navigation bar, select **Cluster Management** > **Cluster List**, choose the region, and click the target cluster ID to enter the cluster details page.
3. At the top of the cluster details page, select the **Intelligent Patrol** tab to enter the intelligent patrol page.
4. In the inspection results page, the latest inspection results and their distribution for the cluster are displayed.



5. Click **View Patrol Inspection Report** to view the detailed report of this inspection, including the inspection time, resource ID, inspection conclusion, inspection item explanation, and detailed inspection results.

©2013–2024 Tencent Cloud. All rights reserved.

6. Click the **download** icon in the top left corner of the report to download this inspection report.
7. Click the right-side directory to view and download inspection reports from the last 30 days.

Turn off Intelligent Patrol

When users no longer need the Intelligent Patrol feature, they can turn off this service. After turning off, the system will no longer perform scheduled inspections on the cluster or generate new inspection reports.

Operation step

1. Log in to RabbitMQ Console.

©2013-2024 Tencent Cloud. All rights reserved.

2. In the left navigation bar, select **Cluster Management** > **Cluster List**. After selecting the region, click the target cluster's ID to enter the cluster details page.
3. At the top of the cluster details page, select the **Intelligent Patrol** tab to enter the Intelligent Patrol page. Click **Turn off Intelligent Patrol**.

4. Click **Off** to disable the Intelligent Patrol service.

©2013-2024 Tencent Cloud. All rights reserved.

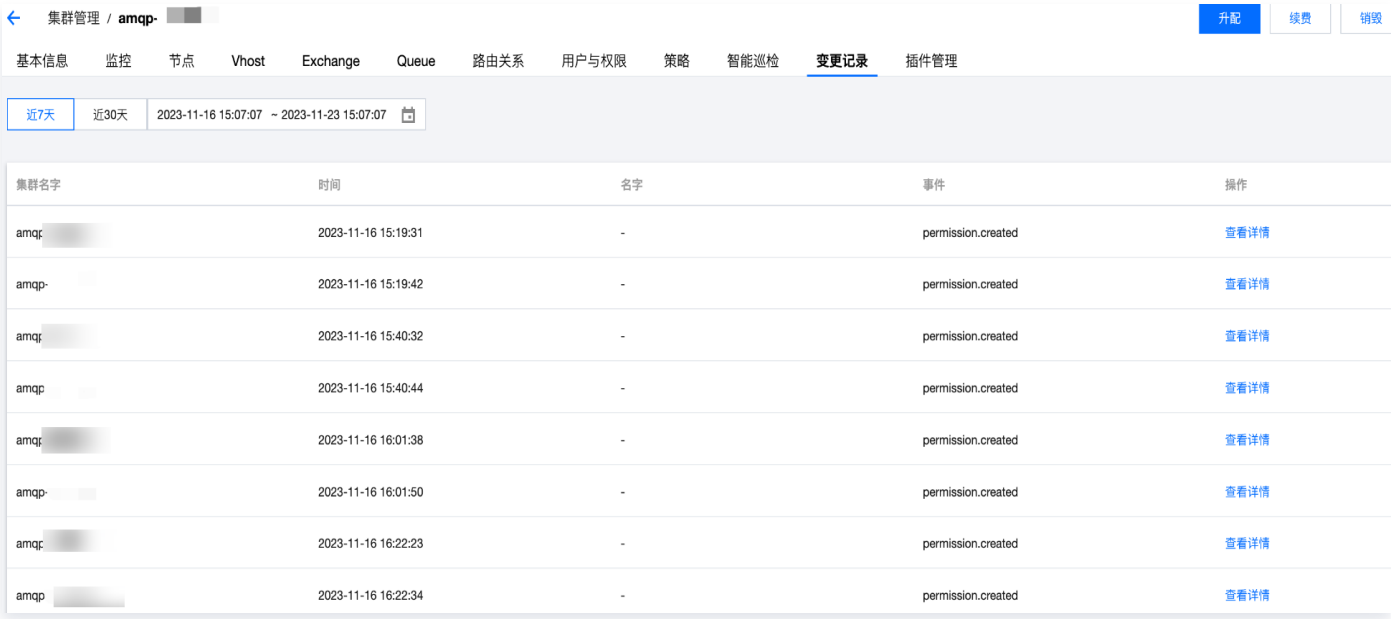
Change Records

Last updated: 2024-08-02 15:41:14

Change Records manage, store, analyze, and display the Change Event Data generated by TDMQ RabbitMQ Edition in a unified manner, making it convenient for you to view and analyze. You can view details in the Change Record module.
This article introduces how to view Change Record details on the TDMQ RabbitMQ Edition console.

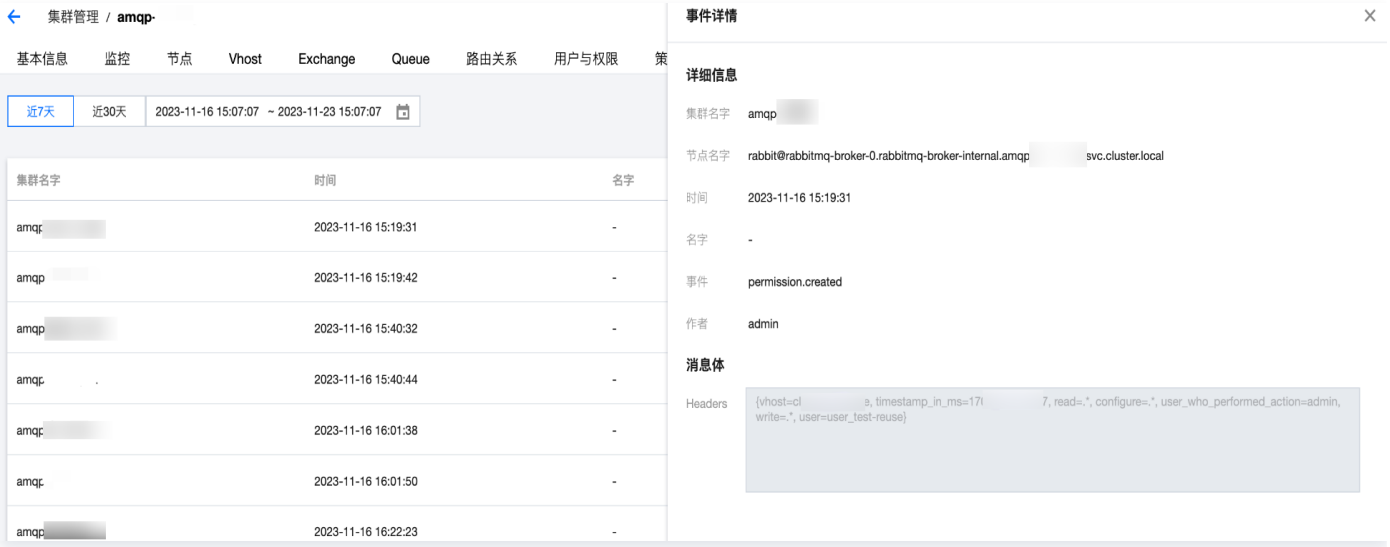
View Change Record

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management**, choose the region, click the "ID" of the cluster you want to view, and enter the cluster details page.
3. At the top of the cluster details page, select the **Change Record** tab to enter the Change Record page.
4. Set the time range (supporting the last 7 days, last 30 days, and custom time range) to view change events within the specified period.



5. Click **View Details** in the operation column to view the event details in the right sidebar.

©2013-2024 Tencent Cloud. All rights reserved.



©2013-2024 Tencent Cloud. All rights reserved.

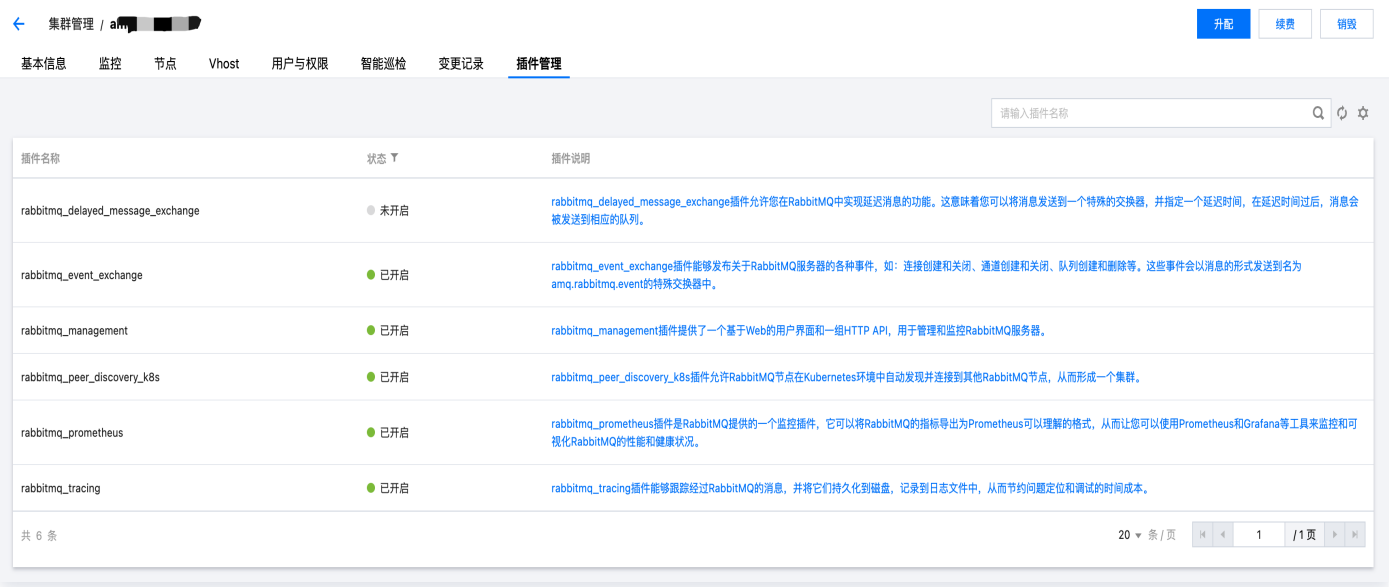
Extension Management

Last updated：2024-08-02 15:41:40

The Plugin Management Module provides unified viewing and management of plugins supported by the TDMQ RabbitMQ Edition cluster.
This article introduces how to view supported plugins on the TDMQ RabbitMQ Console.

Viewing extension

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **Cluster Management**, choose the region, click the "ID" of the cluster you want to view, and enter the cluster details page.
3. At the top of the Cluster Detail Page, select the **Plugin Management** tab to access the plugin management list.



After creating the TDMQ RabbitMQ Edition cluster, the following plugins are enabled by default:

Plugin Name	Plugin Descriptions
rabbitmq_event_exchange	The rabbitmq_event_exchange plugin can publish various events about the RabbitMQ server, such as connection creation and closure, channel creation and closure, queue creation and deletion, etc. These events are sent as messages to a special exchange named amq.rabbitmq.event.
rabbitmq_management	The rabbitmq_management plugin provides a web-based user interface and a set of HTTP APIs for managing and monitoring

©2013-2024 Tencent Cloud. All rights reserved.

	the RabbitMQ server.
rabbitmq_peer_discovery_k8s	The rabbitmq_peer_discovery_k8s plugin allows RabbitMQ nodes to auto-discover and connect to other RabbitMQ nodes in a Kubernetes environment, forming a cluster.
rabbitmq_prometheus	The rabbitmq_prometheus plugin is a monitoring plugin provided by RabbitMQ. It can export RabbitMQ metrics in a format understandable by Prometheus, allowing you to use tools like Prometheus and Grafana to monitor and visualize RabbitMQ's performance and health status.
rabbitmq_tracing	The rabbitmq_tracing plugin can trace messages passing through RabbitMQ and persist them to disk, logging them to files, thereby saving time in problem localization and debugging.

Note:

TDMQ RabbitMQ has **defaulted off** the "rabbitmq_delayed_message_exchange" delayed message plugin because of the following risks and restrictions:

1. The current plugin design is not suitable for scenarios with a large volume of delayed messages (hundreds of thousands or even millions of un-scheduled messages). In a production environment, please carefully assess the message volume to avoid unexpected long delays and message loss.
2. Delayed messages have only one persistent replica on each node. If the node cannot run properly (e.g., due to continuous OOM caused by message accumulation, leading to a restart and failure to recover), the delayed messages on that node cannot be consumed by the consumer.
3. The delayed exchange does not support setting **mandatory**, and the producer cannot sense unroutable messages through the **basic.return** event. Therefore, please ensure the corresponding exchange, queue, and routing relationships exist before sending delayed messages.

The risks and restrictions can be found in the official usage limitations of the RabbitMQ delayed message plugin.
Additionally, refer to the Tencent Cloud Documentation TDMQ for RabbitMQ > Development Guide > Delayed Messages for descriptions of the two implementation methods for delayed messages.

©2013-2024 Tencent Cloud. All rights reserved.

Message Query

Last updated：2024-08-02 15:42:06

Operation scenarios

If there are issues like abnormal message delivery or missing messages, you can use the message query feature in the TDMQ RabbitMQ console for timely analysis and problem localization.
This article guides you in querying messages through the TDMQ RabbitMQ console.

Prerequisites

The Vhost that requires message queries has the **Trace Plugin** enabled.

Use Limits

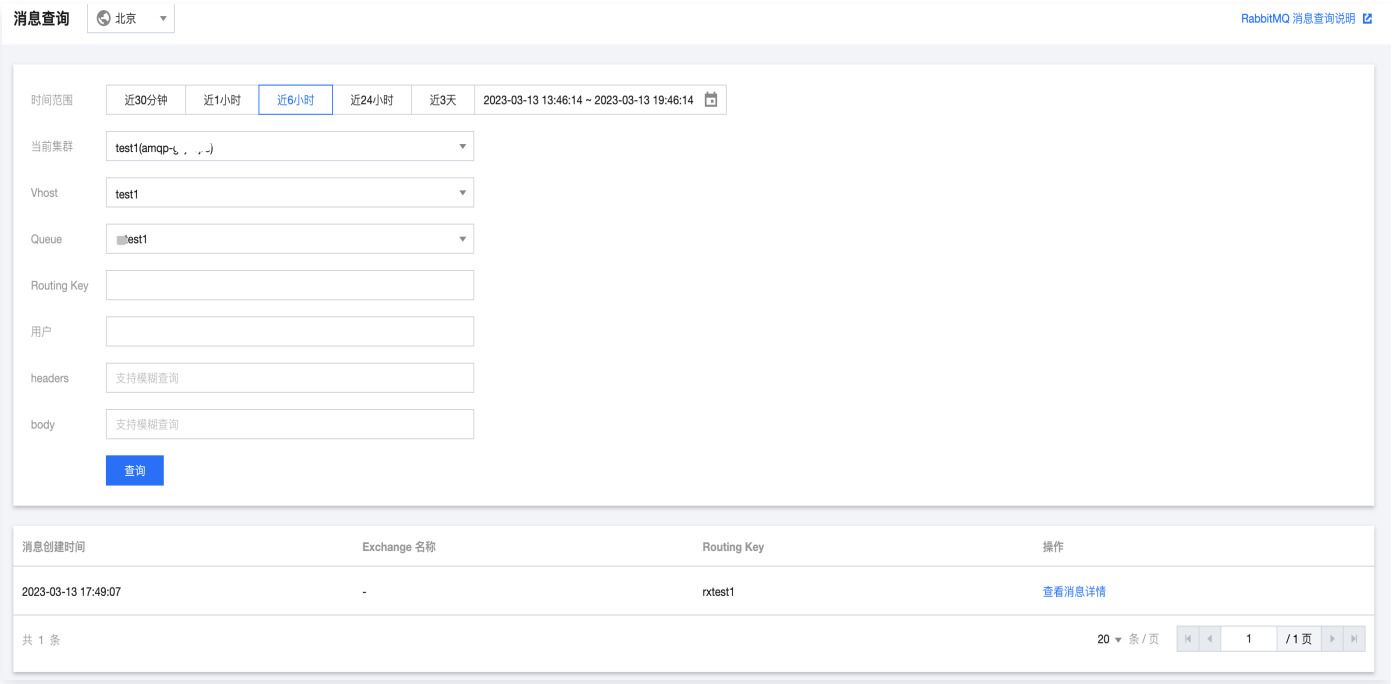
Overview of the message query implementation principle: After enabling the Trace Plugin for the VHost, the service component will consume the corresponding RabbitMQ cluster's trajectory messages. Through a series of processes, it can realize the console’s message tracking feature.
Based on this principle, message tracking relies on service components consuming trajectory messages. Since the service component is a fundamental public service, it cannot ensure the timely consumption of high-volume RabbitMQ cluster trajectory messages. If trajectory messages accumulate, it can cause high cluster memory load and affect the stability of the RabbitMQ cluster.
Therefore, it is not recommended to enable the Trace Plugin in production environments, especially in scenarios where the entire cluster (including all VHosts) has a TPS exceeding **10000**. The Trace Plugin is recommended for low traffic validation/troubleshooting scenarios.

Operation step

1. Log in to RabbitMQ Console.

©2013-2024 Tencent Cloud. All rights reserved.

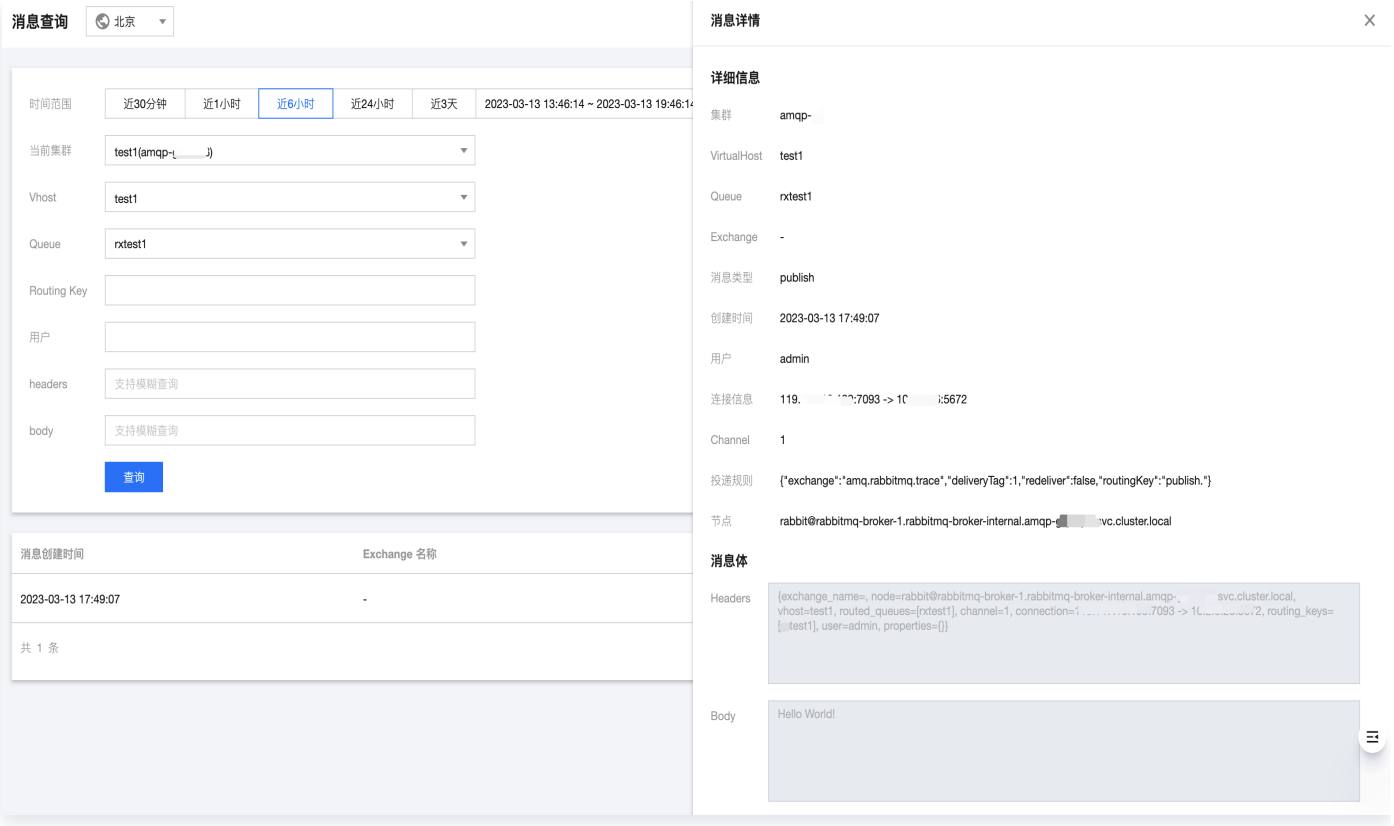
2. Select **Message Query** from the left sidebar, choose the region and time range for the query.
3. Select the cluster, Vhost, and Queue you need to query. You can also fill in the Routing Key, users, message headers, and body to further narrow the search.
4. Click **Inquiry**, and the results will be displayed in the list below.



> **Note:**
> To ensure cluster stability, the console limits the number and dimensions of message queries. Users can query messages in specific queues, with a maximum return of 10000 results, filtered by the queue and optionally the Routing Key. Users can also add filters for users, headers, and body for further inquiry, but queries will be conducted within the previously mentioned maximum of 10000 results. Therefore, it is recommended to use the message query feature in low-traffic validation/troubleshooting scenarios.

5. Find the message for which you want to view details, and click **View Message Details** in the operations column to see detailed information and content (message body).

©2013-2024 Tencent Cloud. All rights reserved.



©2013-2024 Tencent Cloud. All rights reserved.

Access Management (CAM)

Last updated: 2024-08-02 15:42:31

Basic CAM Concepts

The primary account authorizes the sub-accounts by binding policies, with policy settings precise to the **[API, resource, user/user group, allow/deny, condition]** dimensions.

Account

- **Primary account**: Has access to all Tencent Cloud resources and can access any of them.
- **Sub-account**: Includes Sub-users and Collaborators.
- **Sub-user**: Created by the primary account, fully belongs to the primary account that created this Sub-user.
- **Collaborator**: Already possesses a primary account identity, added as a Collaborator of the current primary account, becomes one of its sub-accounts, can switch back to the primary account identity.
- **Credential**: Includes login credentials and access certificates, **login credentials** refer to the user login name and password, **access certificates** refer to the TencentCloud API keys (SecretId and SecretKey).

Resource and permission

- **Resource**: Resources are the objects operated on in cloud services, in TDMQ RabbitMQ edition, resources include clusters, Vhosts, Exchanges, Queues, routeRelations, etc.
- **Permission**: Permission refers to allowing or denying certain users to perform certain actions. By default, **the primary account has access to all its resources**, while **sub-accounts do not have access to any resources under the primary account**.
- **Policy**: A policy is a definition and a syntax specification that describes one or more permissions. **The primary account** authorizes by associating **policies** to users/user groups.

Click to view more CAM documentation >>

Sub-account uses RabbitMQ

To ensure that the sub-account can use RabbitMQ smoothly, the root account needs to authorize the sub-account.
Primary account logins to the CAM Console, finds the corresponding sub-account in the sub-account list, clicks on the **Authorize** option in the operations column.
RabbitMQ provides two preset policies for sub-accounts: QcloudTDMQReadOnlyaccess and QcloudTDMQFullAccess. The former can only view related information in the console, while

©2013-2024 Tencent Cloud. All rights reserved.

the latter can perform read and write operations in the product console.

Documentation

Target	Link
Relationship between policy and user	Policy Management
Basic policy structure	Policy Syntax
More CAM-compatible products	List of Tencent Cloud CAM-compatible Products

List of APIs supporting authorization at resource level

TDMQ RabbitMQ Edition supports resource-level authorization. You can grant a specified sub-account the API permission of a specified resource.
APIs supporting resource-level authorization include:

API Name	API Description	Resource Type	Six-Segment Example of Resource

©2013-2024 Tencent Cloud. All rights reserved.

DeleteAMQPCluster	Delete AMQP Cluster	cluster	qcs::tdmq:${region}:uin/${uin}:cluster/${clusterId}
ModifyAMQPCluster	Modify AMQP Cluster	cluster	qcs::tdmq:${region}:uin/${uin}:cluster/${clusterId}
CreateAMQPVHost	Create AMQP VHost	cluster	qcs::tdmq:${region}:uin/${uin}:cluster/${clusterId}
DescribeAMQPClusters	Query AMQP Cluster List	cluster	qcs::tdmq:${region}:uin/${uin}:cluster/${clusterId}
DescribeAMQPCluster	Get Information of a Specific AMQP Cluster	cluster	qcs::tdmq:${region}:uin/${uin}:cluster/${clusterId}
CreateAMQPExchange	Create AMQP Exchange	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
ModifyAMQPVHost	Modify AMQP VHost	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
DeleteAMQPVHost	Delete AMQP VHost	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
CreateAMQPQueue	Create AMQP Queue	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
CreateAMQPRouteRelation	Create AMQP Routing Relationship	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
DescribeAMQPVHostConnections	Query AMQP VHost	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}

©2013-2024 Tencent Cloud. All rights reserved.

	Connection List		
DescribeAMQPVHosts	Query AMQP VHost List	vHost	qcs::tdmq:${region}:uin/${uin}:vHost/${clusterId}/${vHostId}
DeleteAMQPExchange	Delete AMQP Exchange	exchange	qcs::tdmq:${region}:uin/${uin}:exchange/${clusterId}/${vHostId}/${exchangeName}
ModifyAMQPExchange	Modify AMQP Exchange	exchange	qcs::tdmq:${region}:uin/${uin}:exchange/${clusterId}/${vHostId}/${exchangeName}
DescribeAMQPExchanges	Query AMQP Exchange List	exchange	qcs::tdmq:${region}:uin/${uin}:exchange/${clusterId}/${vHostId}/${exchangeName}
DeleteAMQPQueue	Delete AMQP Queue	queue	qcs::tdmq:${region}:uin/${uin}:queue/${clusterId}/${vHostId}/${queueName}
DescribeAMQPQueueConsumers	Get Consumer List under Specified Queue	queue	qcs::tdmq:${region}:uin/${uin}:queue/${clusterId}/${vHostId}/${queueName}
ModifyAMQPQueue	Modify AMQP Queue	queue	qcs::tdmq:${region}:uin/${uin}:queue/${clusterId}/${vHostId}/${queueName}
DescribeAMQPQueues	Query AMQP Queue List	queue	qcs::tdmq:${region}:uin/${uin}:queue/${clusterId}/${vHostId}/${queueName}
DescribeAMQPRouteRelations	Query AMQP Routing Relationship List	routeRelation	qcs::tdmq:${region}:uin/${uin}:routeRelation/${clusterId}/${vHostId}/${routeRelationId}
DeleteAMQPRouteRelation	Delete AMQP	routeRelation	qcs::tdmq:${region}:uin/${uin}:routeRelation/${clusterId}/${vHostId}/${routeRelationId}

©2013-2024 Tencent Cloud. All rights reserved.

	Routing Relationship		

List of APIs not supporting authorization at resource level

API Name	API Description	6-Segment Resource Description
CreateAMQPCluster	Create AMQP Cluster	*
DescribeAMQPCreateQuota	Get User Quota	*

Authorization Scheme Example

Full Read-Write Policy

Grant a sub-user full administrative privileges for the TDMQ RabbitMQ Service (creating, managing, etc.).

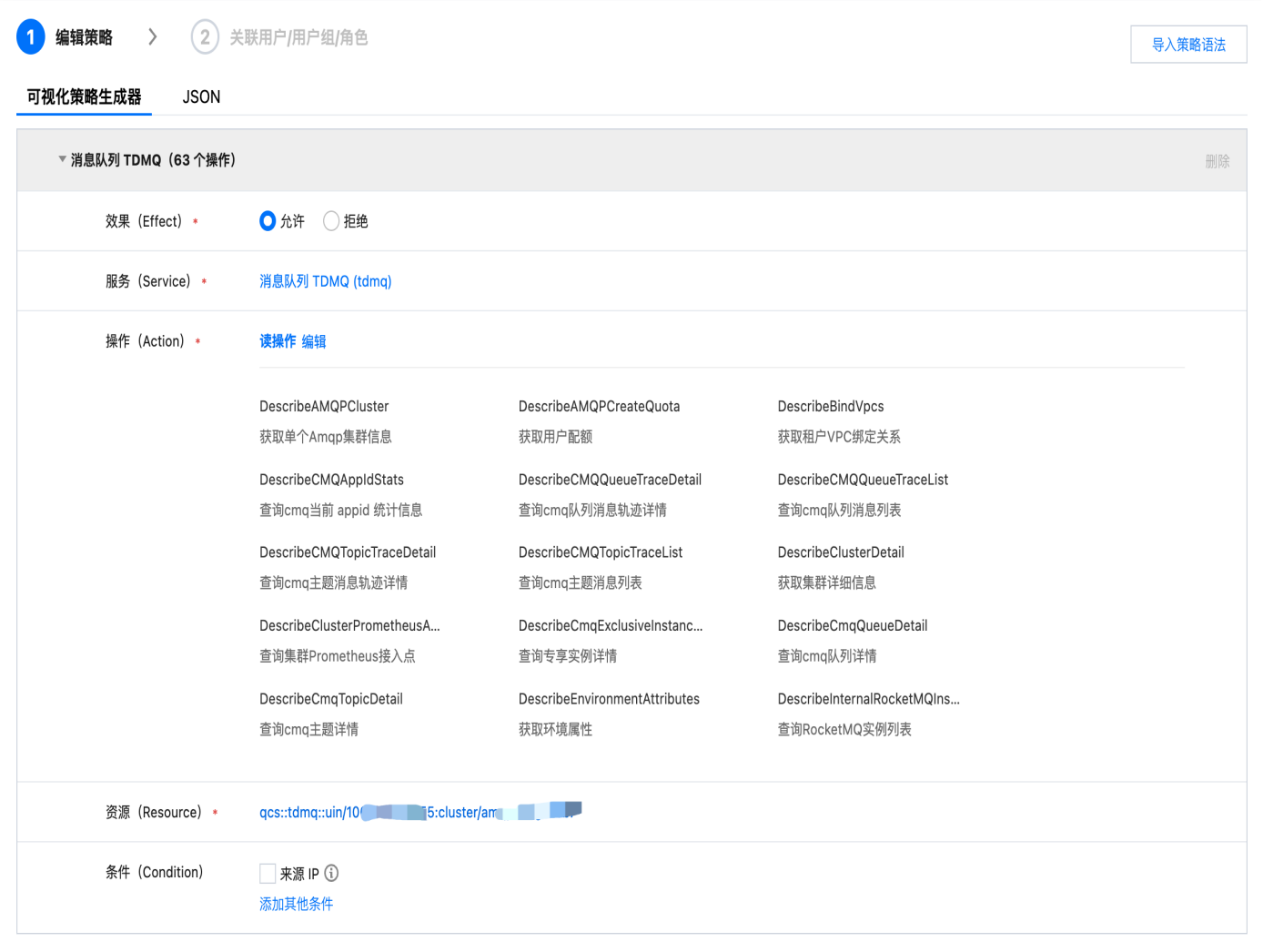
1. Log in to the CAM Console.
2. On the left sidebar, click Policy.
3. In the policy list, click **Create New Custom Policy**.
4. In the pop-up window, select **Create by Policy Generator**.
5. On the Edit Policy page, click the upper right corner **Import Policy Syntax**.
6. On the Import Policy Syntax page, search for "TDMQ", check QcloudTDMQFullAccess in the search results, and click **OK**.
7. On the Edit Policy page, click **Next**, enter the policy name and description, and select the user/user group you want to associate.
8. Click **Complete** to finish creating and authorizing the policy.

Resource Read-Only Policy

As an example of granting read-only permissions to a single cluster.

1. Log in to the CAM Console.
2. On the left sidebar, click **Policy**.
3. In the policy list, click **Create New Custom Policy**.
4. In the pop-up window for choosing the method to create a policy, select **Creating by policy generator** and fill in the policy information.

©2013-2024 Tencent Cloud. All rights reserved.



Parameter	Description
Effect	Select **Allow**
Service	Select **TDMQ (tdmq)**
Action	Select **Read Operation**
Resource	Select **Specific Resources**, click **Add a custom Six-Segment Resource Description** • Region: select the resource region • Account: auto-filled by the system • Resource prefix: cluster • Enter the cluster ID you want to authorize
Condition	Allow access to specified operations only when the request is from the specified IP range

©2013-2024 Tencent Cloud. All rights reserved.

5. Click **Next**, enter the policy name and description, and select the user/user group you want to associate.
6. Click **Complete** to finish creating and authorizing the policy.

©2013–2024 Tencent Cloud. All rights reserved.

Managing Resource with Tag
Managing Resource with Tag

Last updated: 2024-08-02 15:43:49

Operation scenarios

Tag is a key-value pair provided by Tencent Cloud to identify a resource in the cloud. Tag can help you easily categorize and manage TDMQ for RabbitMQ resources in many dimensions such as business, purpose, and owner information.

> **Note**
> Tencent Cloud will not use the tags you set, and they are only used for your management of TDMQ for RabbitMQ resources.

Use Limits

You need to pay attention to the following use limits of tags:

Limit	Restrictions
Quantity Limit	Each cloud resource can have up to 50 tags.
Requirements for tag keys	• `qcloud`, `tencent`, and `project` are system reserved tag keys and are not allowed to be created. • A tag key can contain up to 255 characters. Only `numbers`, `letters`, and `+=.@-` symbols are supported.
Requirements for tag values	A tag value can contain up to 127 characters. Only `null strings or numbers`, `letters`, and `+=.@-` symbols are supported.

Methods and Cases

Case Description

A company has 6 TDMQ for RabbitMQ clusters, with the department, business scope, and owner information as described below:

©2013-2024 Tencent Cloud. All rights reserved.

Queue ID	Department	Business Scope	Owner
amqp-78383dp8p8w1	E-commerce	Marketing campaigns	Zhang San
amqp-78383dp8p8w2	E-commerce	Marketing campaigns	Wang Wu
amqp-78383dp8p8w3	Games	Game A	Li Si
amqp-78383dp8p8w4	Games	Game B	Wang Wu
amqp-78383dp8p8w5	Entertainment	Post-production	Wang Wu
amqp-78383dp8p8w6	Entertainment	Post-production	Zhang San

For example, with amqp-78383dp8p8w1, we can add the following three sets of tags:

Tag key	Tag value
dept	ecommerce
business	mkt
owner	zhangsan

Similarly, you can also set appropriate tags for other resources based on their department, business scope, and owner information.

Setting tag in TDMQ for RabbitMQ console

After designing the tag keys and values as detailed above, you can log in to the TDMQ for RabbitMQ console to set tags.

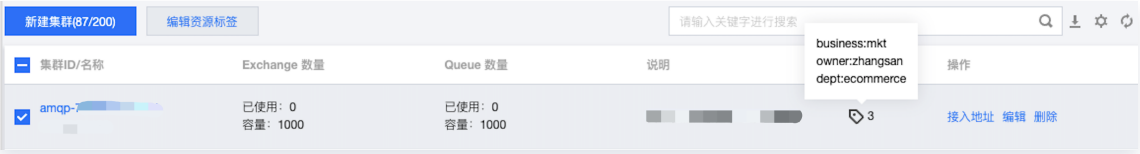
1. Log in to TDMQ for RabbitMQ console.
2. In the Cluster Management list page, select the region, check the clusters to edit tags for, and click **Edit Resource Tags** at the top of the page.

3. In the pop-up "Edit Tags" window, set the tags.
   For example: add three sets of tags to the amqp-78383dp8p8w1 cluster.

©2013-2024 Tencent Cloud. All rights reserved.

> **Note**
> If the existing tags do not meet your needs, go to Tag Management to create new tags.

4. Click **Confirm**. The system will display a success message, and you can view the bound tags in the cluster's Resource Tag column.



Filtering resource by tag key

When you want to filter clusters bound with specific tags, you can do so as follows.

1. In the search box at the top-right corner of the page, select **Tag**.
2. In the pop-up window after **Tag:**, choose the tag you want to search for, and click **Confirm** to search.
   For example: selecting `tag:owner:zhangsan` filters out clusters bound with the tag key

©2013-2024 Tencent Cloud. All rights reserved.

`owner:zhangsan`.

©2013-2024 Tencent Cloud. All rights reserved.

Edit tag

Last updated: 2024-08-02 15:44:13

Operation scenarios

This document describes how to edit the tags of resources.

Use Limits

For the use limits of tags, see Managing Resource with Tag - Use Limits.

Prerequisites

Log in to the RabbitMQ Console.

Operation step

1. On the cluster management list page, after selecting the region, check the clusters that need tag editing, and click **Edit Resource Tag** at the top of the page.

> **Note**
> You can batch edit tags for up to 20 resources at a time.

2. In the pop-up "Edit Tag" window, add, modify, or delete tags as needed.

Operation examples

For directions on how to use tags, see Managing Resource with Tag.

©2013-2024 Tencent Cloud. All rights reserved.

Cloud Migration Plan
Migration Scheme Overview

Last updated：2024-08-02 15:45:00

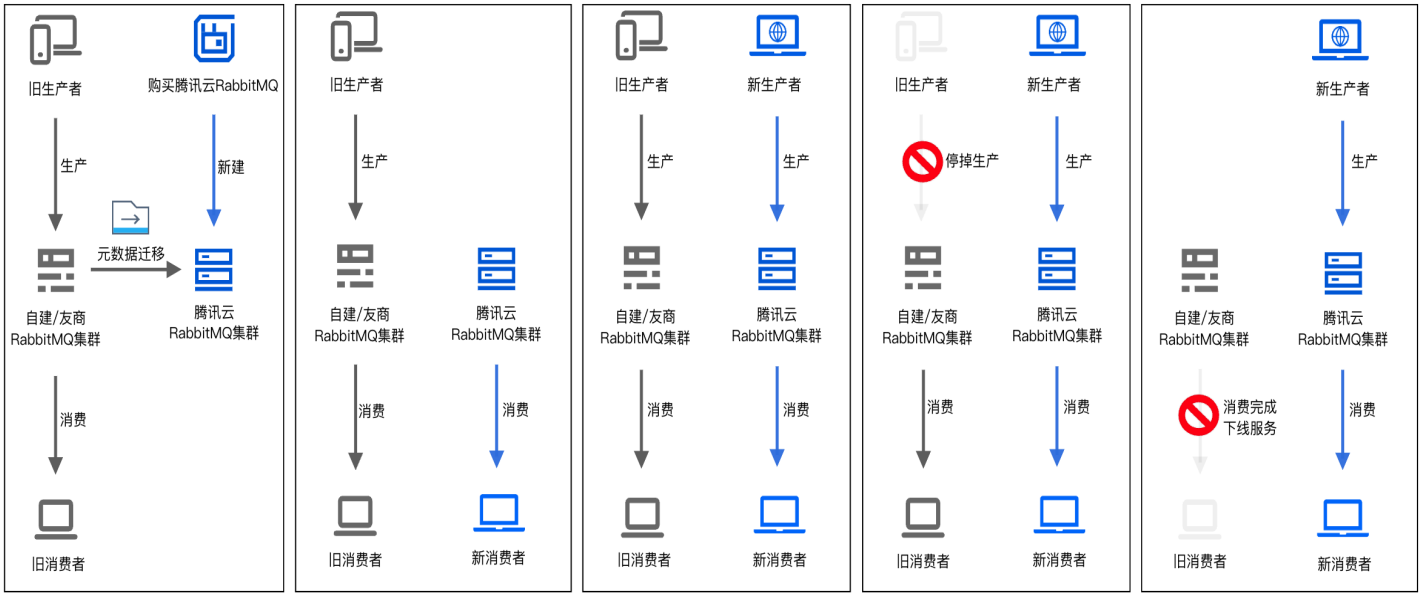
Operation scenarios

This document provides an overview of feasible solutions for migrating a self-built/other cloud RabbitMQ cluster to Tencent Cloud's Message Queue RabbitMQ cluster.

Scheme Description: Dual Write and Consumption

This scheme is simple, clear, and easy to implement, with no data heap, ensuring messages are consumed in a timely manner.
The steps are as follows:

1. Purchase a RabbitMQ cluster on Tencent Cloud. Initially, read and write operations take place in the old cluster. With the new cluster ready, complete the metadata migration of RabbitMQ.
2. Deploy the new consumer to the new cluster and enable the Dual Read Mode.
3. Deploy the new producer and gradually switch the traffic to the new cluster, enabling the Dual Write and Read Mode.
4. Stop the production traffic in the old cluster, temporarily retain the old consumer, and switch to the Single Write and Dual Read Mode.
5. Once the data in the old cluster is consumed and no messages are pending, decommission the old consumer service to complete the migration process.



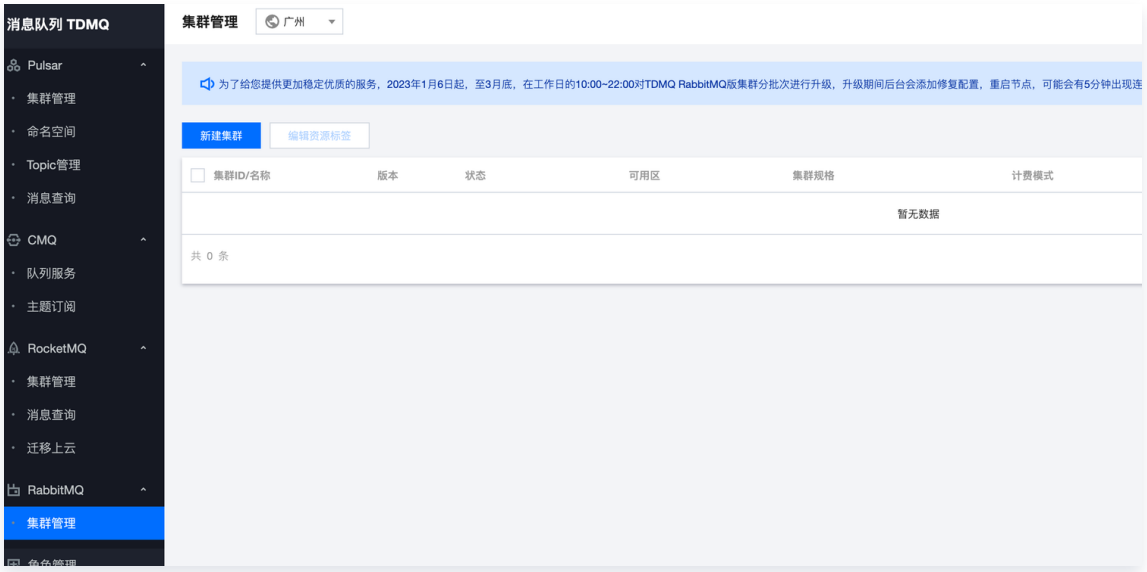
1. 元数据迁移 2. 开启双读 3. 双写双读 4. 单写双读 5. 完成迁移

©2013-2024 Tencent Cloud. All rights reserved.

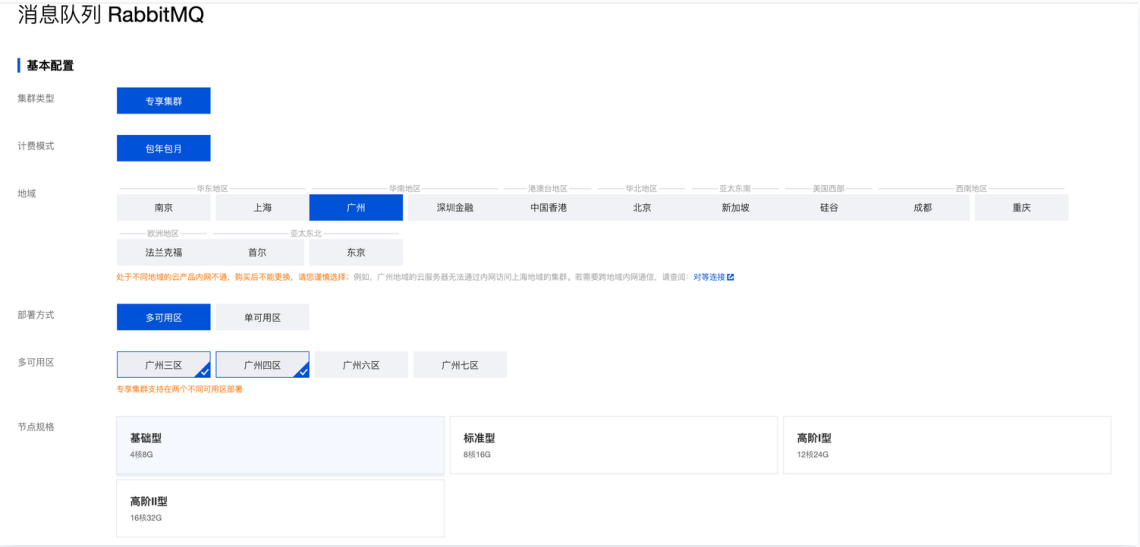
Step 1. Purchasing a TDMQ Instance

Last updated：2024-08-02 15:45:29

1. Log in to RabbitMQ Console.
2. In the left navigation bar, select **rabbitmq** under **Cluster Management**, click **Create Cluster** to enter the purchase page.



3. On the purchase page, select the target instance specification.



Parameter	Required	Description
Cluster Type	Yes	Select Exclusive cluster.
Billing mode	Yes	TDMQ RabbitMQ exclusive cluster offers a **yearly and monthly** subscription model.

©2013-2024 Tencent Cloud. All rights reserved.

Region	Yes	Select a region close to resources of the deployed client. Tencent Cloud services in different regions are not interconnected over private networks and the region cannot be changed after you purchase the service. Proceed with caution.
Availability Zone	Yes	Select an AZ as needed. Cross-availability zone deployment is supported.
Node Specification	Yes	Select an appropriate node specification based on your business needs.
Number of nodes	Yes	Select an appropriate number of nodes based on your business needs.
Single-Node Storage Specification	Yes	Message storage is billed separately, and messages can be retained without limit in the purchased storage capacity. The actual storage usage can be estimated by multiplying the message production traffic by the retention period.
Virtual Private Cloud (VPC)	Yes	Bind the domain name of the new cluster's access point to the specified VPC.
Cluster Name	Yes	Enter the cluster name, consisting of 3-64 characters, and can only include numbers, letters, "-", ".", and "_".
Tag	No	Tags are used to categorize and manage resources. For more information, see Tag Management.

4. Select **I have read and agree to the TDMQ for RabbitMQ Terms of Service**, then click **Buy Now**.
5. On the order payment page, click **Payment**, and within 3-5 minutes, you will see the created cluster on the Cluster Management List Page.

©2013-2024 Tencent Cloud. All rights reserved.

Step 2. Migrating Metadata to Cloud

Last updated: 2024-08-02 15:45:59

Operation scenarios

This document describes how to migrate metadata from open-source RabbitMQ to TDMQ for RabbitMQ.

Prerequisites

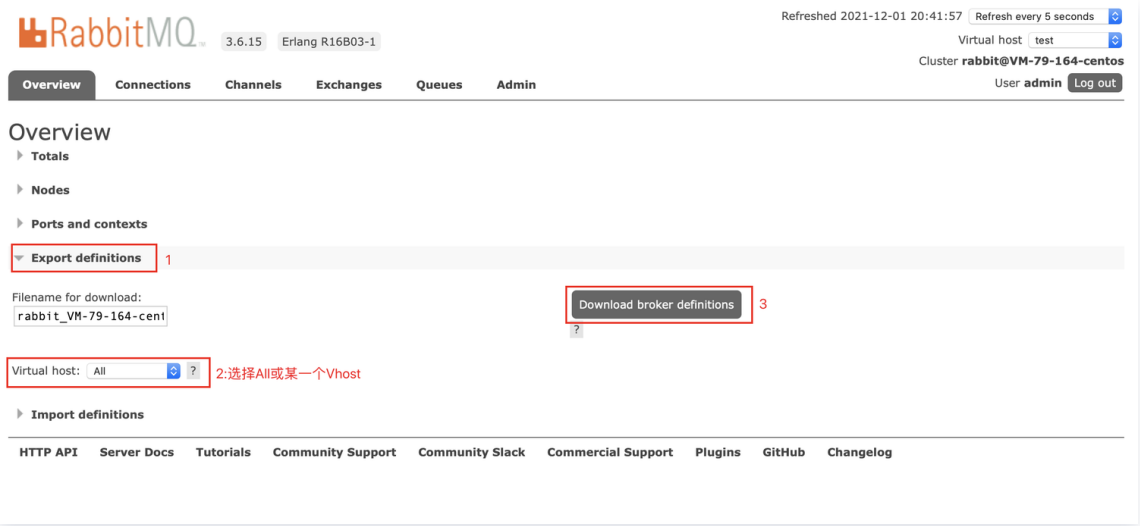
When importing metadata files to TDMQ for RabbitMQ, you need to first export the metadata files from the open-source RabbitMQ.

Operation step

Export metadata from a self-built RabbitMQ cluster

1. Open your browser and log in to the self-built open-source RabbitMQ Console.

2. On the Overview page, click **Export definitions**. After entering the desired file name in the text box, select either "All" or a specific Vhost at "Virtual host", then click **Download broker definitions** on the right to export the metadata file for all Vhosts or a specific Vhost.



©2013-2024 Tencent Cloud. All rights reserved.

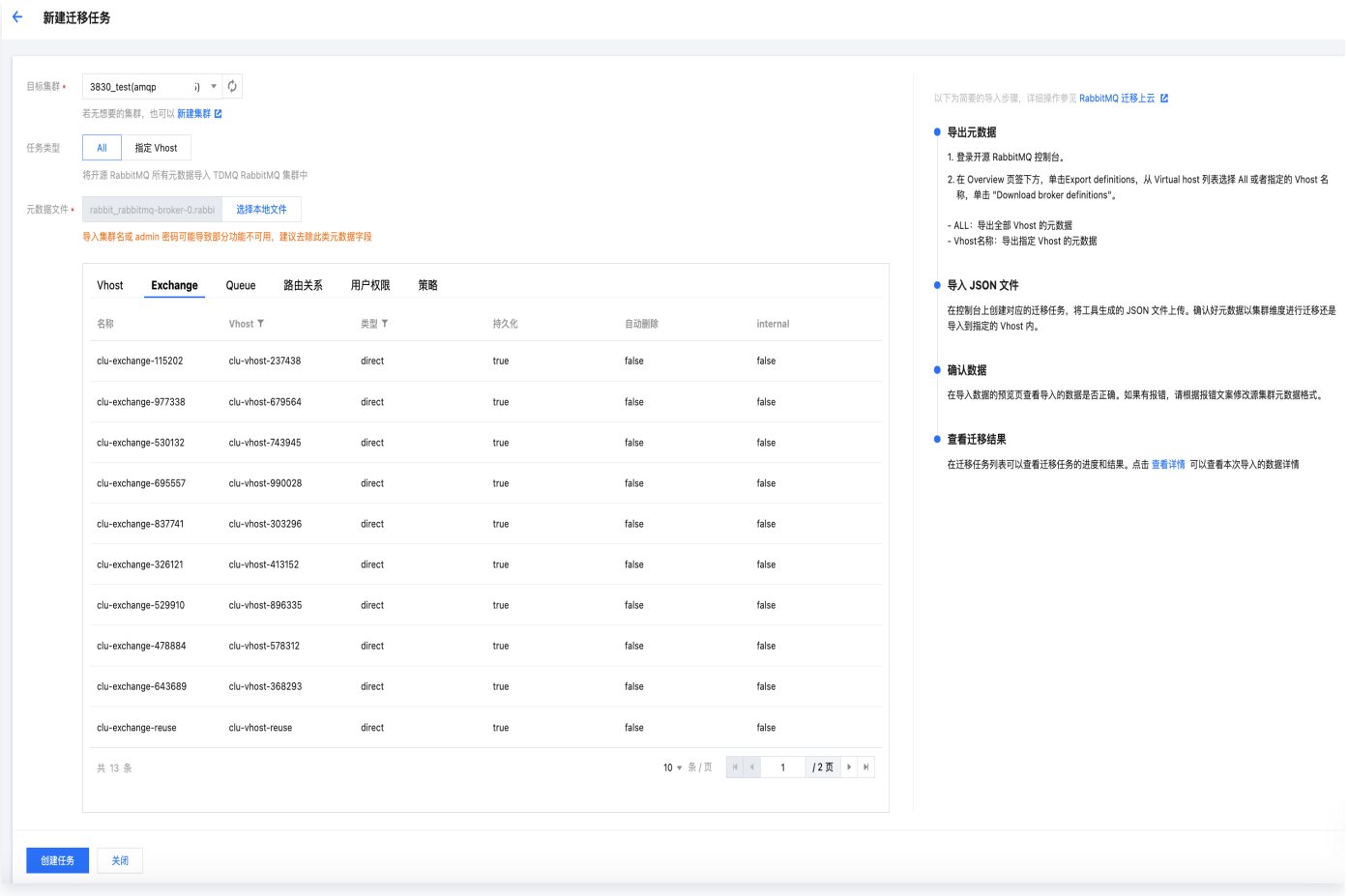
3. Check the content of the exported metadata file


```
{
  "rabbit_version": "3.8.30",
  "rabbitmq_version": "3.8.30",
  "product_name": "RabbitMQ",
  "product_version": "3.8.30",
  "users": [ … ], // 1 item
  "vhosts": [ … ], // 1 item
  "permissions": [ … ], // 1 item
  "topic_permissions": [],
  "parameters": [],
  "global_parameters": [ … ], // 2 items
  "policies": [ … ], // 1 item
  "queues": [ … ], // 2 items
  "exchanges": [],
  "bindings": [ … ] // 8 items
}
```


Import metadata into the Tencent Cloud RabbitMQ cluster

1. Open the Tencent Cloud console and click **Migration to Cloud**.
2. On the Migration to Cloud task list page, click **Create Task**.

©2013-2024 Tencent Cloud. All rights reserved.



- Target cluster: Select the target TDMQ for RabbitMQ cluster for metadata import.
- Task Type

  All: Import all metadata from the open-source RabbitMQ cluster into the TDMQ for RabbitMQ cluster

  Specify Vhost: Import metadata for a specified Vhost from the open-source RabbitMQ cluster into a specific Vhost in the TDMQ for RabbitMQ cluster.
- Metadata file: Select the local metadata file.

> **Notes:**
> Importing cluster names or admin passwords may cause some features to be unavailable. It is recommended to remove such metadata fields.

3. In the data import preview page, check if the imported data is correct. If there are errors, please modify the source cluster metadata format according to the error messages.
4. Click **Create Task**. A task record will be generated in the Cloud Migration Task List page.
5. Click **View details** to view the details of this migration task.

©2013-2024 Tencent Cloud. All rights reserved.

任务详情

目标集群 ID	amqp[redacted] (3830_test)
导入模式	指定 Vhost
任务状态	迁移成功
创建时间	2024-01-29 11:22:27

©2013–2024 Tencent Cloud. All rights reserved.

Step 3: Enable Dual Read and Write

Last updated: 2024-08-02 15:46:25

Operation scenarios

This article mainly introduces the method of switching the service of a self-built RabbitMQ cluster to Tencent Cloud Message Queue RabbitMQ using the dual write and dual consumption scheme.

Scheme: Dual Write and Dual Consumption Mode

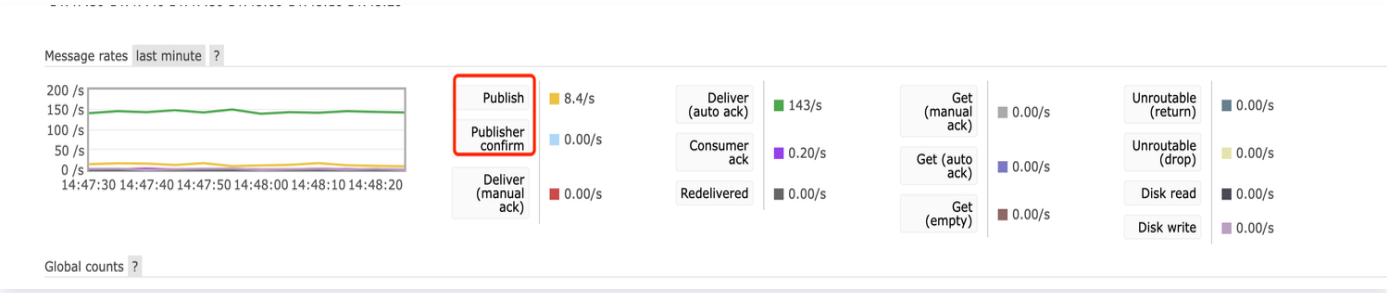
Prerequisites

1. Purchased a RabbitMQ instance on the cloud
2. Migrated the metadata of the self-built RabbitMQ cluster to Tencent Cloud RabbitMQ.

Operation step

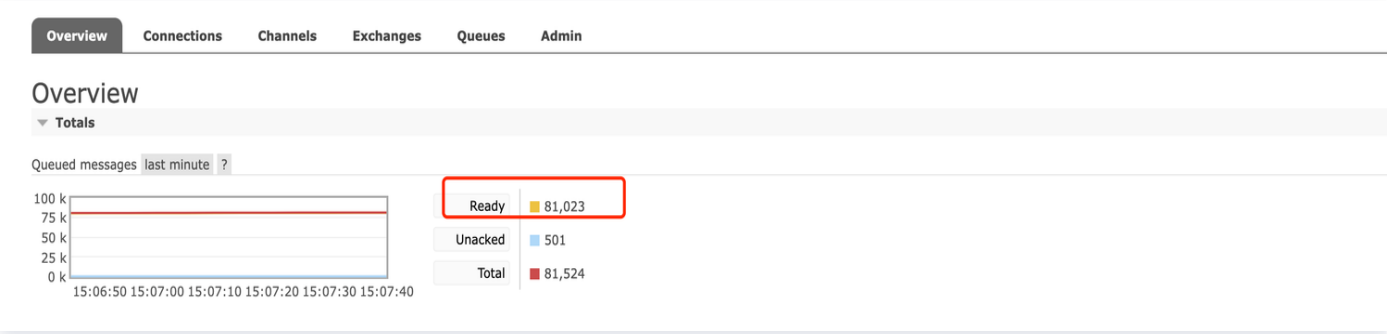
1. Modify the access information of certain nodes in the consumer cluster to connect corresponding consumers to the new RabbitMQ cluster. They will consume messages in the new cluster, while the rest will continue to consume messages in the old cluster.
2. Modify the access information of certain nodes in the producer cluster to connect corresponding producers to the new RabbitMQ cluster. They will send messages to the new cluster, while the rest will continue to send messages to the old cluster. To avoid message repetition or loss, implement the idempotency logic for message consumption in advance.
3. Connect the remaining producers to the new RabbitMQ cluster. Then, all messages will be sent to the new RabbitMQ cluster.

- **Tips 1:** You can confirm that the production traffic of the self-built cluster has stopped on the RabbitMQ community management console of the self-built cluster.



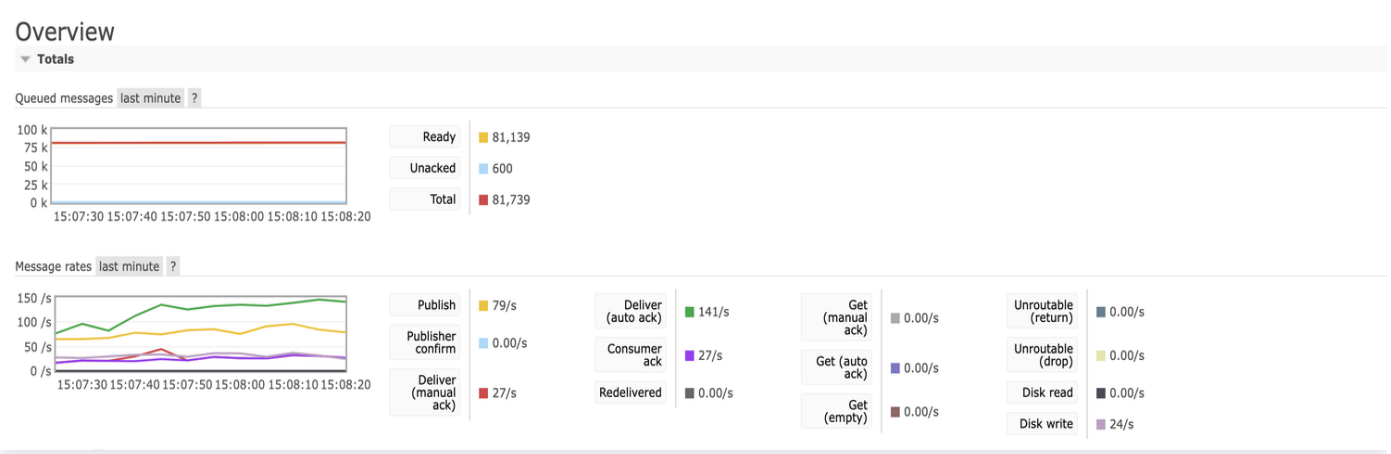
- **Tips 2:** You can confirm that the backlog of messages in the self-built RabbitMQ cluster is decreasing on the RabbitMQ community management console of the self-built cluster.

©2013-2024 Tencent Cloud. All rights reserved.



4. Check whether there are heaped messages that are not consumed in the old RabbitMQ cluster, and if not, connect the remaining consumers to the new RabbitMQ cluster. At this point, the migration is completed.

- **Tips:** Confirm the message writing and consumption status in the cloud RabbitMQ cluster and ensure that there are no heaped messages.



Note:

- If you don't follow the above steps strictly, for example, if you switch producers first and then consumers, message loss may occur.
- Before switching the remaining consumers, make sure that all messages in the old RabbitMQ cluster have been consumed; otherwise, some messages may not be consumed.

Possible Issues

Order issues

Message sequence cannot be guaranteed due to cluster switch.

Message repetition

©2013–2024 Tencent Cloud. All rights reserved.

In theory, it won’t repeat messages, but in extreme cases, it might happen. For example, during the switch, a consumer consumes a message but has not yet acknowledged (ACK) it to the server (old RabbitMQ cluster), leading the message to enter the retry queue and causing duplicate consumption. Implementing idempotency logic for message processing can avoid this issue.

Consumption delays

During the read switch, partitions are reallocated with rebalancing between the queue and consumer client. This may cause a short consumption delay, but you don't need to handle it because it won’t persist after the switch.

©2013–2024 Tencent Cloud. All rights reserved.