

# **TDMQ for Apache Pulsar**

## **Purchase Guide**

### **Product Documentation**



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# Purchase Guide

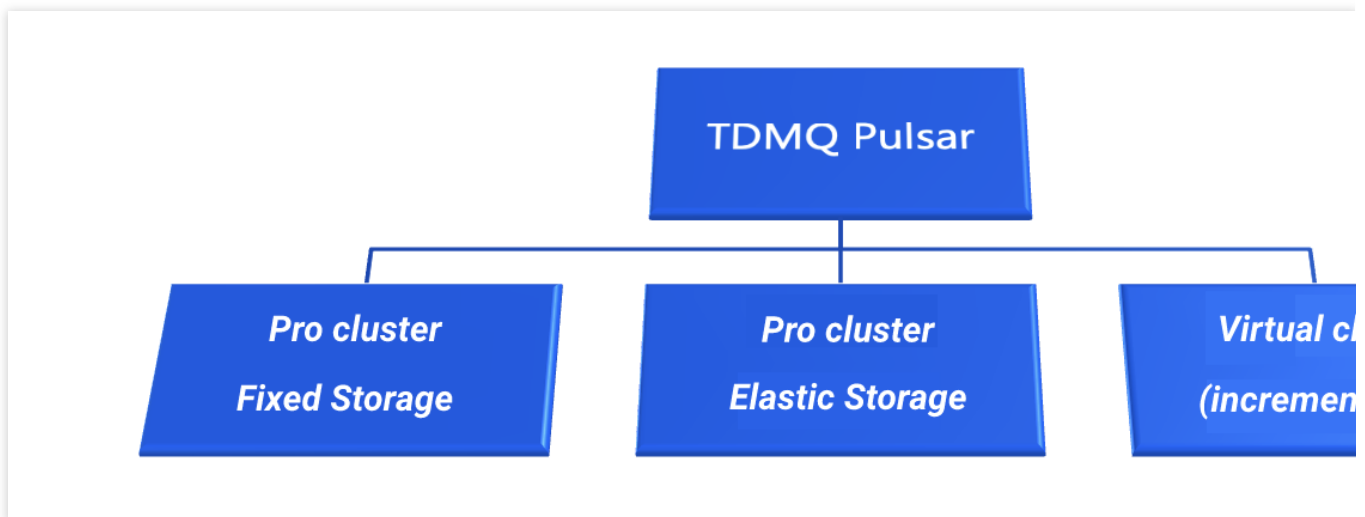
## Product Selection

Last updated : 2024-04-25 15:37:21

To meet user needs in different scenarios, TDMQ for Apache Pulsar offers product forms of `Pro Cluster - Elastic Storage` , `Pro Cluster - Fixed Storage` , and `Virtual Cluster (Increment Limit)` . When purchasing a Pulsar cluster, it is recommended to consider business application scenarios, product capabilities, use costs, and other factors to make a product selection decision.

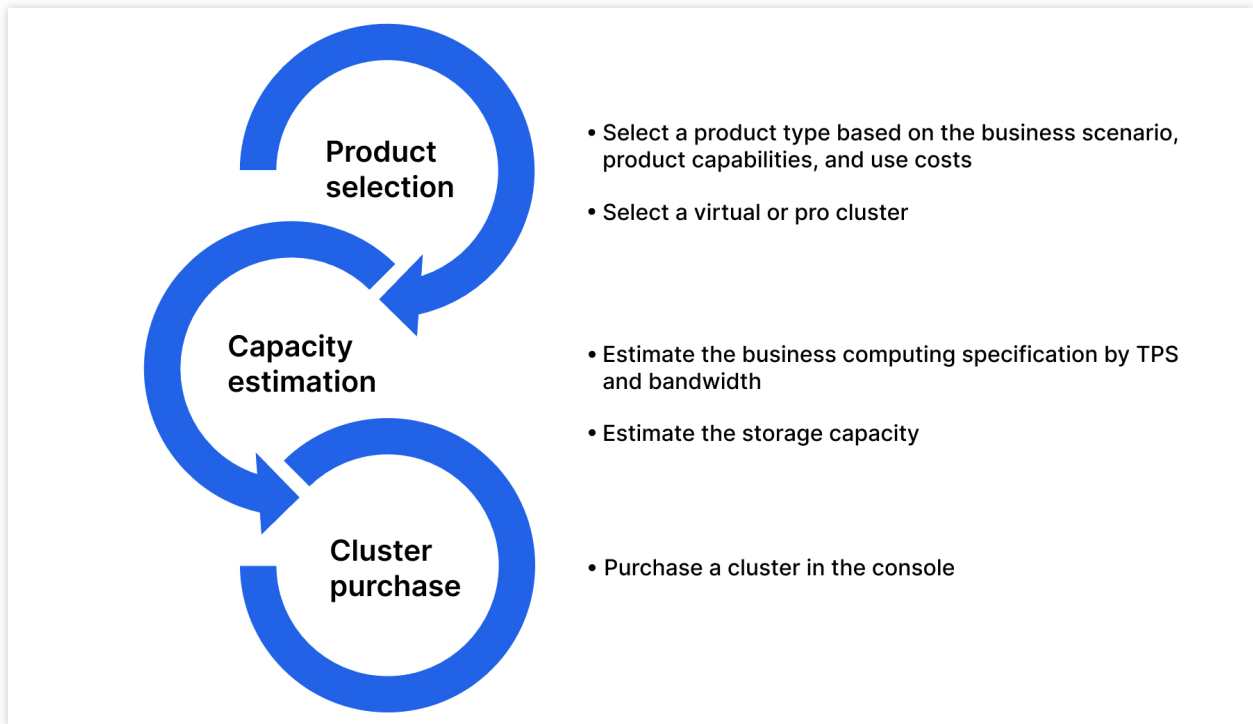
## Product Series

TDMQ for Apache Pulsar product portfolio is shown as below.



## Recommended Selection Process

It is recommended to select a product type based on the following process.



## Product Selection Analysis

The features of two different types of TDMQ for Apache Pulsar clusters across various dimensions are compared as below:

Comparison item	Pro Cluster (Fixed Storage)	Pro Cluster (Elastic Storage)	Virtual Cluster (Increment Limit)
Instance type	Physical isolation	Compute layer physical isolation, storage layer sharing	Physical sharing, logical multi-tenancy
Customer group and scenario	Key customers with high demands on stability and resource isolation, and high business traffic in the production environment	Key customers with high demands on stability and resource isolation, and high business traffic in the production environment	Entry-level customers with moderate business volume, for short-term testing, with significant differences between peak and average traffic
Billing mode	Monthly subscription - prepaid	Monthly subscription - prepaid	Pay-as-you-go (postpaid)
Billing item	Based on supported cluster specifications, mainly including TPS, bandwidth billing, and fixed storage	Based on supported cluster specifications, mainly including TPS, bandwidth billing, and storage pay-as-you-go	API call fees, message storage fees, partition topic resource occupancy fees

Receiving/Sending TPS	On-demand purchase according to different compute and storage specifications (starting from 2,000 TPS)	On-demand purchase according to different compute specifications (starting from 1,000 TPS)	5,000 TPS for production and consumption each per cluster per Topic
Storage	Requirements for message durability, resulting in stable storage consumption	Primarily scenarios where messages are deleted upon consumption, resulting in minimal or highly variable storage consumption	Pay-as-you-go
SLA	Data reliability: 99.99999999% Service availability: 99.99%	Data reliability: 99.99999999% Service availability: 99.99%	Data reliability: 99.999999% Service availability: 99.95%
Pulsar engine	2.9.2, 3.0 (planned)	2.9.2, 3.0 (planned)	2.7.2
Upper limit for expansion	High flexibility, supporting up to millions of TPS	High flexibility, supporting up to millions of TPS	Elastic expansion and use within a certain range
High availability	Supports custom multi-AZ deployment in the same region to improve disaster recovery capabilities	Supports custom multi-AZ deployment in the same region to improve disaster recovery capabilities	Does not support cross-AZ deployment in the same city
Expert services	Provides escort services such as product upgrades, new business launches, and large-scale marketing campaigns, ensuring stable business operations	Provides escort services such as product upgrades, new business launches, and large-scale marketing campaigns, ensuring stable business operations	Provides Tencent Cloud standard ticket service

## Capacity Estimation

After selecting the cluster type, you need to estimate instance specifications actually needed by your business, including the compute and storage specifications.

**Compute specifications:** In TDMQ for Apache Pulsar Pro, the compute specifications refer to the upper limits of TPS for receiving and sending messages and bandwidth for this cluster instance. You need to select appropriate compute specifications based on actual business operations.

**Storage specifications:** You can estimate the required storage space based on your projected message volume and size. In a pro cluster with a fixed storage form, the storage capacity is fixed with a monthly subscription. In a pro cluster with an elastic storage form, storage can be used on a pay-as-you-go basis, but it should be noted that the maximum storage limit varies among different cluster specifications.

The message storage in TDMQ for Apache Pulsar Pro defaults to a `3 replica` mode. Be aware during estimation.

## Purchasing a Cluster

Select a region and create/purchase a cluster. [Proceed Now](#).

# Billing Overview

Last updated : 2024-01-03 14:11:30

This document describes TDMQ for Apache Pulsar's billing mode and billable items.

## Billing Modes

TDMQ for Apache Pulsar offers two billing modes: monthly subscription (prepaid) and pay-as-you-go (postpaid).

### Pay-as-you-go

Pay-as-you-go is a flexible billing mode of TDMQ for Apache Pulsar virtual cluster. You can start and terminate instances at any time and only pay for what you use. The billable usage is accurate down to the hour with fees settled daily, and you don't need to make upfront payments. This billing mode is suitable for application scenarios where the number of messages is low or fluctuates greatly and can effectively avoid the waste of resources.

For the specific pay-as-you-go prices of TDMQ for Apache Pulsar, see [Virtual Cluster Billing](#).

### Billable items

Billable Item	Description
API call	The number of API calls refers to the total number of API calls made by you to send and receive messages with TDMQ for Apache Pulsar. It equals to the number of API calls for sending messages plus the number of API calls for subscribing to messages. The API call price varies by region.
Message storage	This billable item linearly charges you for the total size in GB of all your messages, and the price varies by region.
Partition topic resource usage	This billable item linearly charges you for the number of partition topics you create, and the price varies by region.

### Monthly subscription

Monthly subscription is the billing mode of TDMQ for Apache Pulsar pro cluster. You can purchase a cluster of the desired specification, and the final fees are cluster specification fees plus storage specification fees. This billing mode is suitable for scenarios where the business is stable, requires a strong SLA guarantee, and uses the service for a long term. For more information, see [Pro Cluster Billing](#).

### Billable items

Billable Item	Description
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Cluster specification	TDMQ for Apache Pulsar pro cluster provides different computing specifications determined by the messaging TPS and peak bandwidth.
Storage specification	TDMQ for Apache Pulsar pro cluster provides SSD cloud disks to store cluster data with three copies by default.

# Purchase Methods

Last updated : 2024-06-20 16:49:45

This document describes how to purchase TDMQ for Apache Pulsar.

You can purchase TDMQ for Apache Pulsar in the console. Currently, it is pay-as-you-go. For more information, see [Billing Mode](#).

## Prerequisites

You have [signed up for a Tencent Cloud account](#).

## Directions

1. Log in to the [TDMQ for Apache Pulsar console](#).
2. On the **Cluster Management** page, create a pay-as-you-go cluster in the target region as needed and prompted.
3. Create a topic and partition in the cluster, and then pay-as-you-go billing will start automatically.

# Pricing Overview

## Virtual Cluster Billing

Last updated : 2024-06-20 17:05:16

This document describes the pricing details and free tiers of each billable item of TDMQ for Apache Pulsar virtual cluster.

## Pay-as-You-Go

### API call price

TDMQ for Apache Pulsar virtual cluster adopts tiered pricing for API calls. **API call fees = (number of API calls for message sending + number of API calls for message consumption) \* API call unit price.**

The unit price of API call (USD/million calls) is as shown below:

Billing Tier	API Calls (Million/Month)	Call Unit Price (USD/Million Calls)		
		Guangzhou, Shanghai, Nanjing, Beijing, Chengdu	Hong Kong (China), Singapore, Seoul, Silicon Valley, Toronto, Frankfurt	Shenzhen Finance, Beijing Finance
Tier 1	$N \leq 1,000$	0.3265	0.2512	0.4019
Tier 2	$1,000 < N \leq 5,000$	0.2939	0.226	0.3617
Tier 3	$5,000 < N \leq 10,000$	0.2449	0.1884	0.3014
Tier 4	$10,000 < N \leq 50,000$	0.2122	0.1633	0.2612
Tier 5	$N > 50,000$	0.1959	0.1507	0.2411

The maximum message body size is 5 MB, and the number of API calls is calculated at different rates according to the message size:

Message Size	Rate
$N \leq 2$ KB	1

2 KB < N ≤ 4 KB	2
4 KB < N ≤ 16 KB	4
16 KB < N ≤ 100 KB	16
100 KB < N ≤ 1 MB	64
1 MB < N ≤ 5 MB	256

For example, one 10 KB message (publishing or subscribing) request will be charged as **4** API calls.

**Note:**

The number of API calls for consuming messages refers to the number of messages pushed by the broker to consumers, which may be numerically greater than the number of messages actually acknowledged by consumers.

Scenarios where this happens include:

1. When a large number of messages are retained, consumers will prefetch a certain number of messages during connection, and multiple unacknowledged messages will be recorded as multiple API calls for consuming messages. In this case, the number of API calls for consuming messages will be greater than the number of messages actually acknowledged by consumers.
2. When tag messages are consumed, multiple consumers are usually started. In this case, the number of API calls for consuming messages will be greater than the number of messages actually acknowledged by consumers.

## Message storage price

TDMQ for Apache Pulsar virtual cluster adopts linear billing for message storage. **Message storage fees = message storage size \* message storage unit price.**

**Note:**

TDMQ for Apache Pulsar stores a message in three copies by default. Therefore, the billable storage capacity is three times of the total message size.

The unit price of message storage (USD/GB/hour) is as shown below:

Region	Guangzhou, Shanghai, Nanjing, Beijing, Chengdu	Hong Kong (China), Singapore, Seoul, Silicon Valley, Toronto, Frankfurt	Shenzhen Finance, Beijing Finance
Unit price (USD/GB/hour)	0.0003	0.0003	0.0006

**Note:**

1. When the message retention policy is set to persistent retention, even if a message is consumed, it will still be persistently stored according to the maximum retention time, resulting in additional message storage fees.

2. In TDMQ for Apache Pulsar, message data is stored on the Bookie storage node of the BookKeeper cluster in the form of ledger. Even if deletion after consumption is configured, when the ledger is turned on, the async cleaner will not clear the message data. If some messages are not consumed for a long time, other messages in the same ledger may keep consuming the storage space, resulting in additional message storage fees.

### Partition topic resource usage price

TDMQ for Apache Pulsar virtual cluster adopts linear billing for partition topic resource usage. **Partition topic resource usage fees = number of partition topics \* partition topic resource usage unit price.**

The number of partition topics in TDMQ for Apache Pulsar refers to the sum of all partitions of all topics; that is, if there are two three-partition topics, the number of partition topics is  $2 * 3 = 6$ .

The unit price of partition topic resource usage (USD/piece/day) is as shown below:

Region	Guangzhou, Shanghai, Nanjing, Beijing, Chengdu	Hong Kong (China), Singapore, Seoul, Silicon Valley, Toronto, and Frankfurt	Shenzhen Finance, Beijing Finance
Unit price (USD/piece/day)	0.025	0.032	0.040

#### Note:

The partition topic resource usage fees in TDMQ for Apache Pulsar virtual cluster are charged by day; that is, a partition topic resource created at any time on a natural day will incur a full day's fees on the next natural day even if its actual usage time is less than 24 hours.

## Free Tiers

TDMQ for Apache Pulsar offers certain free tiers to each root account for pay-as-you-go billable items in each region:

Billable Item	Free Tier	Accumulation Method
API call	10 million	Accumulated monthly by region
Message storage	1 GB	Accumulated monthly by region
Partition topic	2000	Accumulated monthly by region

The free tiers will be used first to deduct the cumulative usage of all clusters in each region under each root account, and they are shared between different clusters in the same region.

# Pro Cluster Billing

Last updated : 2024-06-20 17:05:16

This document describes the billing mode of TDMQ for Apache Pulsar pro cluster.

## Billable Items

TDMQ for Apache Pulsar pro cluster is monthly subscribed (prepaid) with the following billable items:

Cluster specifications

Storage specifications

## Billable Specification

### Cluster specification limits

**Max Messaging TPS:** Indicates the upper limit on the messaging (production and consumption) TPS of a TDMQ for Apache Pulsar pro cluster.

**Note:**

The max messaging TPS varies by cluster specification. For more information, see [Pro Cluster Specification](#).

**Peak Bandwidth:** If it is set to 45 MB/s, both the outbound and inbound bandwidth of the TDMQ for Apache Pulsar pro cluster can reach up to 45 MB/s, including the traffic of three replicas.

**Other resource limits:** Besides TPS and bandwidth, cluster specifications also vary in terms of certain controlled resources and configuration limits. For details, see [Pro Cluster Specification](#).

### Exceeded Specification Limits

#### Pro Cluster - Fixed Storage

If your actual usage exceeds the purchased cluster's specification limit, the current platform will not implement throttling measures (expected to be launched in Q3 2024). It is recommended to subscribe to the alarms for the cluster's core metrics, pay attention to metric changes and corresponding performance, promptly upgrade the cluster specification, and ensure stable business operation. We will consider providing elasticity in the future to avoid this issue.

#### Pro Cluster - Elastic Storage

If your actual usage exceeds the purchased cluster's specification limit, based on the `sending/receiving ratio` that you configured when creating the cluster, the platform will **implement throttling**. This will affect the

normal sending and receiving of messages. It is recommended to subscribe to the cluster's core metric alarms and promptly upgrade the cluster specification to ensure stable business operation.

## Cluster TPS Specification

1. Messaging TPS refers to the maximum sum of messages sent and subscribed per second.

2. For advanced feature messages, there are two scenarios:

For scheduled/delayed messages, transaction messages, and Key-Share subscription, the number of calls when sending messages should be multiplied by a factor of 5 times the rate of normal messages. For example, sending 1,000 delayed messages per second would result in a message send TPS of  $1,000 \times 5 = 5,000$  times/second.

For tag messages, production is calculated as normal messages, and the filtered message count will be increased in consumption measurement. For example, sending 1,000 messages per second, with a message subscription volume of 2,000 and a message filtered volume of 5,000, the message sending/receiving TPS would be  $1,000 + 2,000 + 5,000 = 8,000$  times/second.

3. Message size is measured in 4 KB, and TPS is calculated based on different multiples depending on message size:

Message size	Multiples
$N \leq 4 \text{ KB}$	1
$4\text{KB} < N \leq 16\text{KB}$	2
$16 \text{ KB} < N \leq 100 \text{ KB}$	8
$100 \text{ KB} < N \leq 1 \text{ MB}$	32
$1 \text{ MB} < N \leq 5 \text{ MB}$	128

For example, if the message receiving volume is 5,000 messages per second, and the message sending volume is 5,000 messages per second, with an average message body size of 8 KB, then the message sending and receiving TPS is  $(8/4) \times (5,000 + 5,000) = 20,000$  times/second.

## Billing Description

### Cluster specification billing

TDMQ for Apache Pulsar pro cluster provides different computing specifications determined by the messaging TPS and peak bandwidth.

Item	Description
Billable item	Fees are charged based on the purchased cluster specification.

Billing method	Billing cycle: It is subject to the actual validity period of the cluster.
Billing formula	Monthly subscription: Cluster specification fees = validity period (month) x unit price (USD/month).
Unit price	It is subject to the price on the purchase page.

## Fixed Storage Costs

TDMQ for Apache Pulsar pro cluster provides SSD to store cluster data with **three replicas** by default. You can purchase the storage space as needed.

Item	Description
Billable item	Fees are charged based on the storage specification configured during cluster purchase.
Billing method	Billing cycle: It is subject to the actual validity period of the cluster.
Billing formula	Monthly subscription: Storage specification fees = selected specification (GB) * 3 validity period (month) * unit price (USD/GB/month).
Unit price	See the table below.

## Storage unit price

Unit: USD/GB/month

Region	Cloud Disk Type
	SSD
South China (Guangzhou)	0.1397
East China (Shanghai)	0.1397
East China (Nanjing)	0.1397
North China (Beijing)	0.1397
Southwest China (Chengdu)	0.1397
Southwest China (Chongqing)	0.1397
East China (Shanghai Finance Zone)	0.2458
South China (Shenzhen Finance Zone)	0.2458
North China (Beijing Finance Zone)	0.2458



Hong Kong, Macao and Taiwan, China (Hong Kong)	0.1536
North America (Toronto)	0.1536
Southeast Asia (Singapore)	0.1746
Southeast Asia (Jakarta)	0.1746
West US (Silicon Valley)	0.1606
Europe (Frankfurt)	0.1746
Northeast Asia (Seoul)	0.1816
Asia Pacific (Mumbai)	0.1676
East US (Virginia)	0.1746
Southeast Asia Pacific (Bangkok)	0.1746
Northeast Asia (Tokyo)	0.2095
South America (São Paulo)	0.1746

## Elastic Storage Costs

TDMQ for Apache Pulsar pro cluster (elastic storage) employs linear pricing for storage. **Storage Costs = Message Storage Size x Storage Unit Price x Duration .**

### Note

Pulsar by default stores messages in three replicas, so the billed storage size is approximately three times the total size of the monitored messages.

The following table shows the storage unit price (Unit: USD/GB/hour):

Region	Guangzhou, Shanghai, Nanjing, Beijing, Chengdu, Chongqing, Qingyuan	Shenzhen Finance, Beijing Finance, Shanghai Finance	Hong Kong (China), Toronto	São Paulo, Singapore, Thailand, Jakarta, Virginia, Frankfurt	Seoul, Northeastern Europe	Mumbai
Unit Price (USD/GB/Hour)	0.00032551	0.00058902	0.00038751	0.00046502	0.00048052	0.0004495

### Note

1. Billing is calculated on an hourly basis, with the peak storage value within an hour considered as the actual usage. Any time less than one hour is billed as one hour.
2. Settlement occurs every hour, and a bill is pushed every 24 hours. The costs will be automatically deducted from the account balance.

# Pro Cluster Elastic Storage

Last updated : 2024-06-20 17:05:16

This document mainly describes the specifications of the TDMQ for Apache Pulsar Pro cluster (elastic storage), including TPS, bandwidth, and topic quantity limit. They are used for your selection.

## Note:

1. Pro cluster storage uses a triple replica mechanism to ensure data high availability.
2. Pro clusters support online upgrade configuration. For specific operations, see the document [Upgrading Cluster](#).

Theoretically, the upgrade process should be seamless for the business. However, during server-side Rebalance Topic operations, clients may experience disconnections followed by reconnections.

## Cluster Specification

Serial Number	Cluster Specification Code	Message Receiving/Sending TPS Limit	Peak Bandwidth (MB/s)	Single Cluster Topic Limit	Topic * Number of Partitions	Maximum Storage Usage (GB)
1	PULSAR.P2.MINI1	1,000	20	200	500	80
2	PULSAR.P2.MINI2	2,000	45	1,000	3,000	160
3	PULSAR.P2.SMALL4	4,000	90	1,000	3,000	320
4	PULSAR.P2SMALL6	6,000	120	1,000	3,000	640
5	PULSAR.P2.SMALL10	10,000	180	2,000	10,000	1,280
6	PULSAR.P2.MEDIUM15	15,000	300	2,000	10,000	1,280
7	PULSAR.P2.MEDIUM20	20,000	480	2,000	10,000	1,280
8	PULSAR.P2.MEDIUM40	40,000	720	2,000	10,000	1,280
9	PULSAR.P2.MEDIUM60	60,000	1,080	2,000	10,000	1,280
10	PULSAR.P2.MEDIUM100	100,000	1,920	3,000	20,000	2,560
11	PULSAR.P2.LARGE150	150,000	2,400	3,000	20,000	2,560

12	PULSAR.P2.LARGE200	200,000	3,600	3,000	20,000	2,560
13	PULSAR.P2.LARGE400	400,000	4,200	3,000	20,000	2,560
14	PULSAR.P2.LARGE600	600,000	4,800	3,000	20,000	2,560
15	PULSAR.P2.LARGE1000	1,000,000	6,000	3,000	20,000	2,560

## Notes

Message receiving/sending TPS limit is calculated based on the sum of sent and received messages assuming standard message type and a message size of 4 KB. Calculations for advanced feature messages and large messages need to be multiplied by the corresponding rate. Peak bandwidth refers to the exact values for inbound and outbound bandwidth. For the specific calculation method, see [Pro Cluster Billing](#).

*Topic Number of Partitions* refers to the sum of the number of partitions for all topics under a cluster, i.e., if a cluster has 2 topics with 3 partitions each and 1 topic with 2 partitions, then the *Topic Number of Partitions* is:  $3 * 2 + 2 = 8$ .

# Fixed Storage

Last updated : 2024-06-20 17:05:16

This document mainly describes the specifications of the TDMQ for Apache Pulsar Pro cluster (fixed storage), including TPS, bandwidth, and topic quantity limit. They are used for your selection and usage.

## Note:

1. Pro cluster storage uses a triple replica mechanism to ensure data high availability.
2. Pro clusters support online upgrade configuration. For specific operations, see the document [Upgrading Cluster](#). Theoretically, the upgrade process should be seamless for the business. However, during server-side Rebalance Topic operations, clients may experience disconnections followed by reconnections.

## Pro Cluster Specification

No.	Cluster Specification Code	Max Messaging TPS	Peak Bandwidth (MB/s)	Max Topics per Cluster	Min Storage (GB)
1	PULSAR.P1.MINI2	2000	45	1000	200
2	PULSAR.P1.SMALL4	4000	90	1000	200
3	PULSAR.P1.SMALL6	6000	120	1000	267
4	PULSAR.P1.SMALL10	10000	180	2000	400
5	PULSAR.P1.MEDIUM15	15000	300	2000	333
6	PULSAR.P1.MEDIUM20	20000	480	2000	400
7	PULSAR.P1.MEDIUM40	40000	720	2000	533
8	PULSAR.P1.MEDIUM60	60000	1080	2000	533
9	PULSAR.P1.MEDIUM100	100000	1920	3000	533
10	PULSAR.P1.LARGE150	150000	2400	3000	667
11	PULSAR.P1.LARGE200	200000	3600	3000	800
12	PULSAR.P1.LARGE400	400000	4200	3000	1000
13	PULSAR.P1.LARGE600	600000	4800	3000	1200

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14	PULSAR.P1.LARGE1000	1000000	6000	3000	1667
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## Notes

The max messaging TPS is calculated based on the general message type and message size of 4 KB. The values for advanced messages and large messages need to be multiplied accordingly. The peak bandwidth indicates the maximum inbound and outbound bandwidth. For specific calculation methods, see [Pro Cluster Billing](#).

# Payment Overdue

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## Note:

If you are a customer of a Tencent Cloud partner, the rules regarding resources when there are overdue payments are subject to the agreement between you and the partner.

## Notes

When you no longer use pay-as-you-go TDMQ for Apache Pulsar resources, terminate them as soon as possible to avoid further fee deductions.

After TDMQ for Apache Pulsar is terminated/repossessed, the data in it will be cleared and cannot be recovered.

As your actual resource consumption may change over time, there may be some deviation in the balance alert.

## Overdue Payment Reminder

Pay-as-You-Go resources are billed on the hour. When your account balance becomes negative, your Tencent Cloud account creator, global resource collaborators, and financial collaborators will be notified by email and SMS.

## Overdue Payment Policy

You can continue to use TDMQ for Apache Pulsar for 2 hours after your account balance becomes negative. We will also continue to bill you for this period. After 2 hours, the TDMQ for Apache Pulsar service will be stopped, and billing will also stop.

After the service is stopped, the system will process TDMQ for Apache Pulsar as follows:

Time after service suspension	Description
≤ 15 days	If your account is topped up to a positive balance, the billing will continue, and you can restart TDMQ for Apache Pulsar.
	If your account balance remains negative, TDMQ for Apache Pulsar cannot be restarted.
>15 days	If your account is not topped up to a positive balance, your pay-as-you-go TDMQ for Apache Pulsar resources will be repossessed and released. All data will be deleted

and cannot be recovered. When your resources are repossessed, your Tencent Cloud account creator and all collaborators will be notified by email and SMS.



# Pro Cluster Specification

Last updated : 2024-01-03 14:11:30

This document mainly describes the specifications of the TDMQ for Apache Pulsar Pro cluster (fixed storage), including TPS, bandwidth, and topic quantity limit. They are used for your selection and usage.

## Note:

1. Pro cluster storage uses a triple replica mechanism to ensure data high availability.
2. Pro clusters support online upgrade configuration. For specific operations, see the document [Upgrading Cluster](#).

Theoretically, the upgrade process should be seamless for the business. However, during server-side Rebalance Topic operations, clients may experience disconnections followed by reconnections.

## Pro Cluster Specification

No.	Cluster Specification Code	Max Messaging TPS	Peak Bandwidth (MB/s)	Max Topics per Cluster	Min Storage (GB)
1	PULSAR.P1.MINI2	2000	45	1000	200
2	PULSAR.P1.SMALL4	4000	90	1000	200
3	PULSAR.P1.SMALL6	6000	120	1000	267
4	PULSAR.P1.SMALL10	10000	180	2000	400
5	PULSAR.P1.MEDIUM15	15000	300	2000	333
6	PULSAR.P1.MEDIUM20	20000	480	2000	400
7	PULSAR.P1.MEDIUM40	40000	720	2000	533
8	PULSAR.P1.MEDIUM60	60000	1080	2000	533
9	PULSAR.P1.MEDIUM100	100000	1920	3000	533
10	PULSAR.P1.LARGE150	150000	2400	3000	667
11	PULSAR.P1.LARGE200	200000	3600	3000	800
12	PULSAR.P1.LARGE400	400000	4200	3000	1000
13	PULSAR.P1.LARGE600	600000	4800	3000	1200

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14	PULSAR.P1.LARGE1000	1000000	6000	3000	1667
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## Notes

The max messaging TPS is calculated based on the general message type and message size of 4 KB. The values for advanced messages and large messages need to be multiplied accordingly. The peak bandwidth indicates the maximum inbound and outbound bandwidth. For specific calculation methods, see [Pro Cluster Billing](#).

# Refund Policy

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TDMQ for Apache Pulsar virtual clusters are billed on a pay-as-you-go (postpaid) basis, and no refunds are involved. TDMQ for Apache Pulsar pro clusters are billed on a monthly subscription (prepaid) basis, and refunds can be requested. When you delete such cluster instances, the refund amount will be calculated based on the actual usage time of the cluster.