TDSQL-C for MySQL

Serverless Service

Product Documentation

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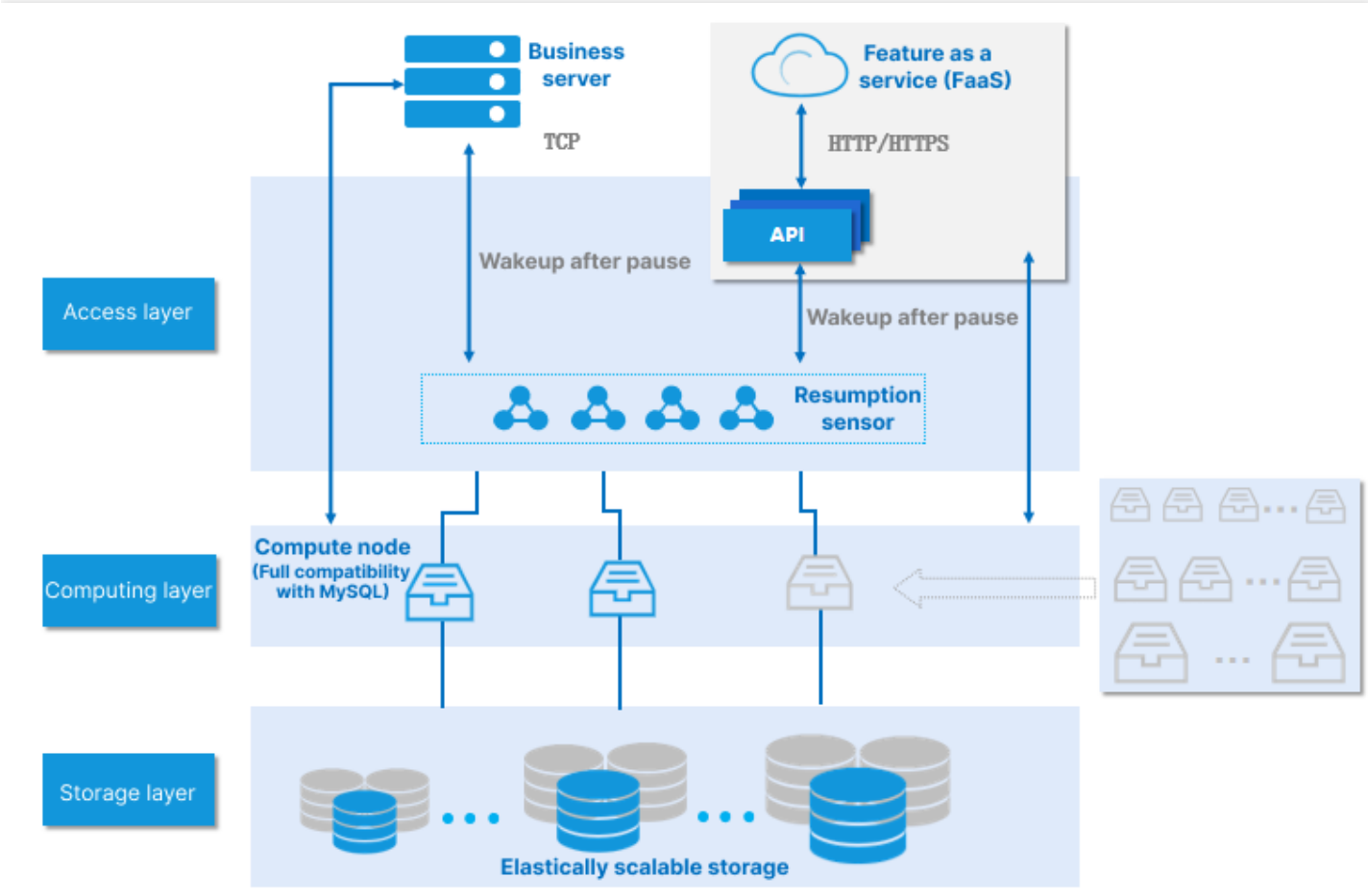
Serverless Service
Serverless Introduction
Overview

Last updated：2023-03-01 14:33:46

TDSQL-C for MySQL Serverless adopts Tencent Cloud's proprietary serverless architecture for next-gen cloud-native relational database services. It is billed based on the actual computing and storage resource usage, so you only need to pay for what you use while benefiting from Tencent Cloud native technologies.

Serverless service architecture



- Startup and shutdown on demand.
- Automatic scaling.
- Application-independent scaling.

Serverless service strengths

- Autopilot: The database can automatically start/stop according to the business load and scale in an imperceptible manner without causing disconnections.
- Utility pricing: The database is billed based on the actual computing and storage usage which is calculated by second and settled by hour.

Use cases

- Low-frequency database usage scenarios such as development and test environments.
- Scenarios where the load is uncertain, such as IoT and edge computing.
- SaaS application scenarios such as Mini Program Cloud Base and SME website development.
- Education scenarios such as experiment and teaching environment.
- Fully managed and Ops-free scenarios.
- Business scenarios with uncertain and intermittent fluctuations.

References

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Service Features

Last updated：2024-03-22 14:42:51

TDSQL-C for MySQL provides the serverless service to meet your database requirements in specific business scenarios, helping you reduce costs and increase efficiency. This document describes the major features of the serverless service.

Feature	Description
Resource scaling range (CCU)	You can adjust the range of elastic CCU scaling. The serverless cluster will automatically increase or decrease the number of CCUs within this range based on the actual business load.
Elastic policy	The serverless cluster will continuously monitor your CPU, memory, and other workloads and trigger automatic scaling policies according to certain rules.
Automatic start/stop	The serverless service allows you to customize the automatic pause time of the instance when there is no connection. When a task connection is established, the instance will be automatically started in seconds.

Resource Scaling Range (CCU)

TDSQL-C Compute Unit (CCU) is the computing and billing unit for the Serverless Edition. A CCU is approximately equal to 1 CPU core and 2 GB memory. The number of CCUs used in each billing cycle is the greater of the number of CPU cores used by the database and 1/2 of the memory size.

You need to set the scaling range for the serverless service. For more information, see Compute Unit.

We recommend that you set the minimum capacity to 0.25 CCUs and select a higher value for the maximum capacity when setting the scaling range for the first time. A small capacity allows your cluster to scale in to the maximum extent when it is completely idle, avoiding additional fees, while a large capacity allows your cluster to scale out to the maximum extent when the load gets too high, stably sustaining the business in peak hours.

Note:

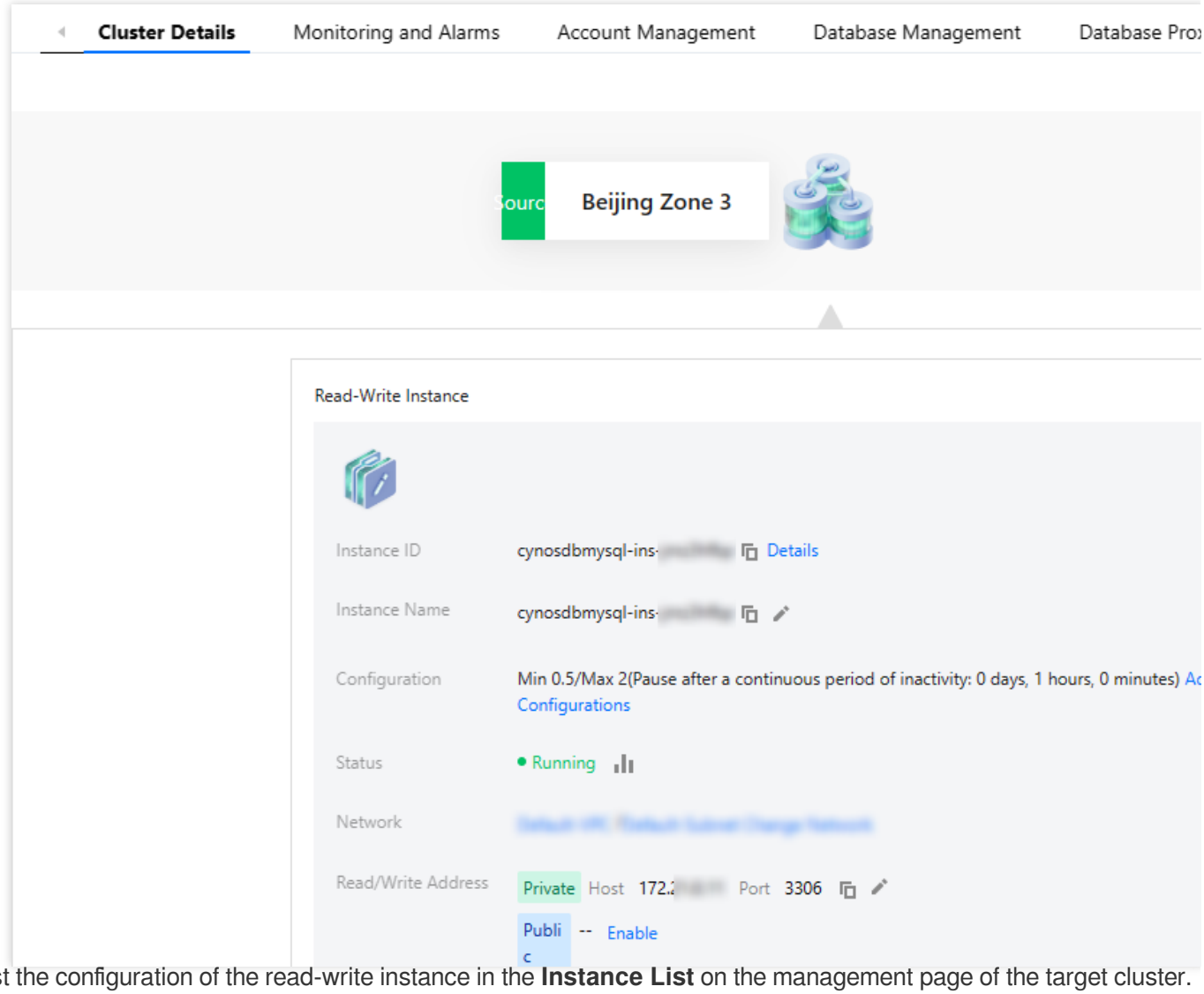
If your business requires fast scale-out to a very high capacity, consider increasing the value of the minimum capacity.

To adjust the resource scaling range, log in to the console and make the change based on the actual view mode.

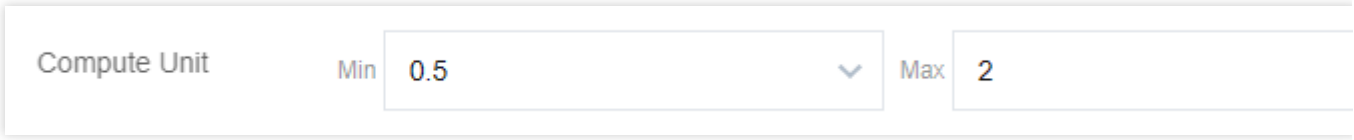
Tab view

List view

On the **Cluster Details** tab on the management page of the target cluster, click **Adjust Configurations** in the top right of the read-write instance, and change the compute unit configuration on the page redirected to. The change will take effect immediately, which is imperceptible to the business.



Adjust the configuration of the read-write instance in the **Instance List** on the management page of the target cluster. The change will take effect immediately, which is imperceptible to the business.



Elastic Policy

The elastic policy of the serverless service is implemented by monitoring the computing layer. By monitoring the business load, the system automatically scales computing resources and bills the resources consumed at that moment. When there is no database request, the monitoring service will repossess computing resources and notify the access layer. When you access the cluster again, the access layer will wake up the cluster to make it accessible. Initially, the elastic policy of the serverless service will limit the CPU and memory resources to the maximum specifications based on the capacity range you selected during purchase, greatly reducing the time impact and usage restrictions caused by CPU and memory scaling. When the cluster triggers the automatic scaling load threshold, the

buffer pool will be adjusted within minutes in advance based on the monitoring data. Under this scheme, the CPU can be scaled in an imperceptible manner when you use the database, and no instance OOM events will occur due to the connection surge.

Note:

Currently, only vertical scaling is allowed for read-only nodes, with no support for horizontal scaling.

Automatic Pause/Start

Pausing the service

You can enable/disable the auto-pause feature in the console based on your business needs.

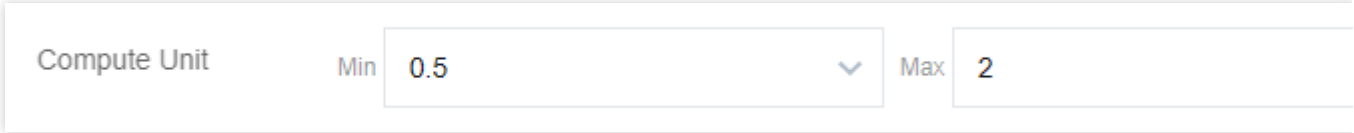
Note:

To enable or disable the auto-pause feature, proceed based on the actual view mode.

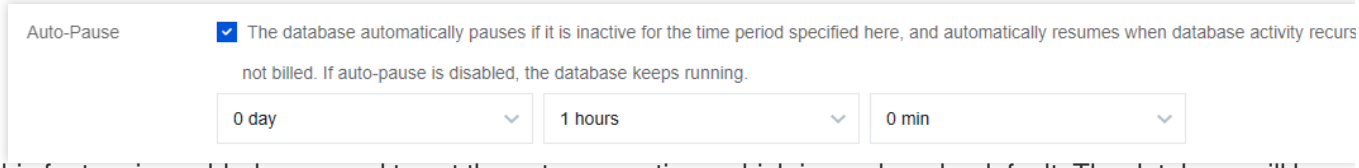
Tab view

List view

On the **Cluster Details** tab on the management page of the target cluster, click **Adjust Configurations** in the top right of the read-write instance, and enable or disable the auto-pause feature on the page redirected to.



Click **More** > **Adjust Configurations** in the **Operation** column in **Instance List** > **Read-Write Instance** on the target cluster management page.



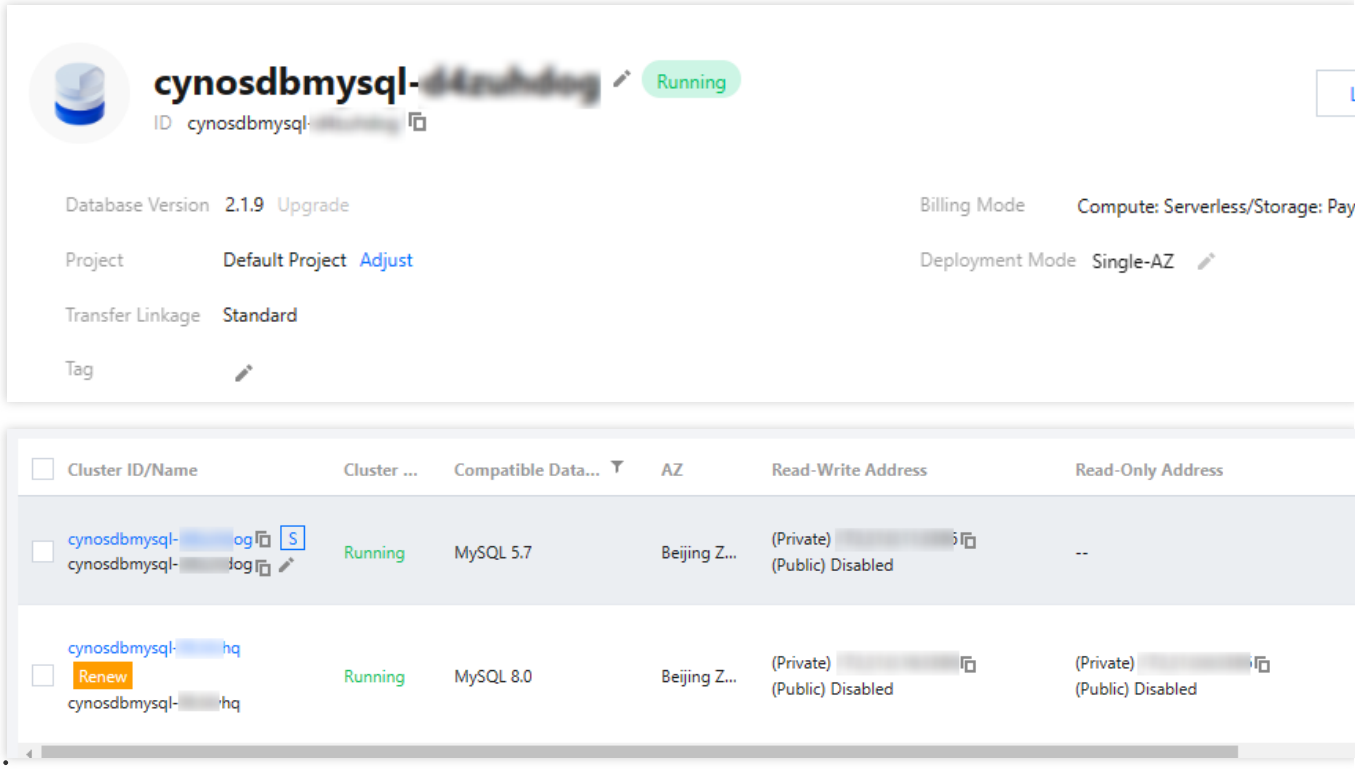
After this feature is enabled, you need to set the auto-pause time, which is one hour by default. The database will be automatically paused if it has no active connections and CPU usage during this time. After the pause, the computing resources will not be billed, and the storage resources will be billed by the actual usage.

If this feature is disabled, the database will keep running. When there are no active connections and CPU usage, the database will be billed based on the minimum CCU you configure. This is suitable for scenarios where your business has a heartbeat connection.

You can also manually pause specified databases in the console based on the actual view mode.

Tab view

List view



Note：

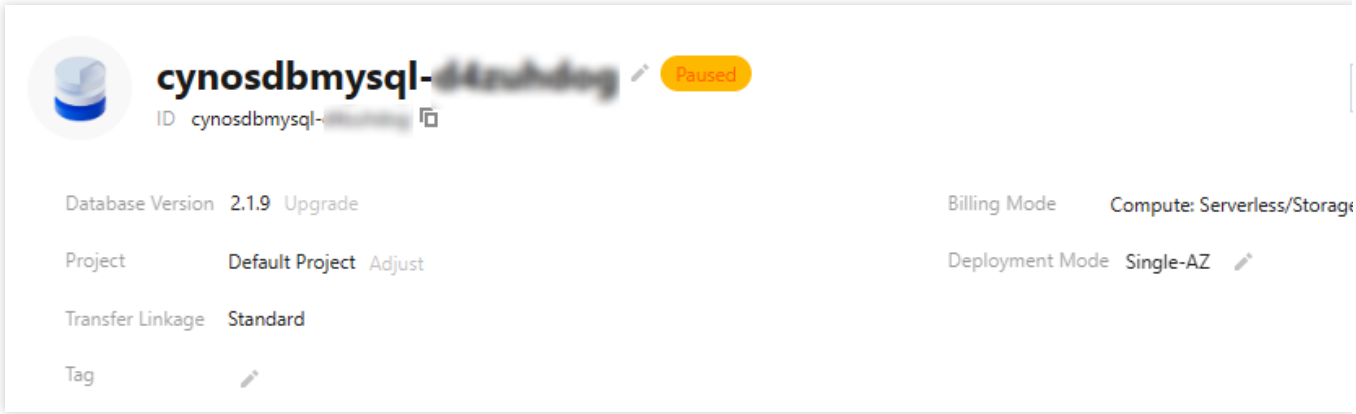
The serverless service will be automatically paused when there is no user connection. If your business needs to use `event_scheduler` to trigger SQL regularly, we recommend you not enable the auto-pause feature.

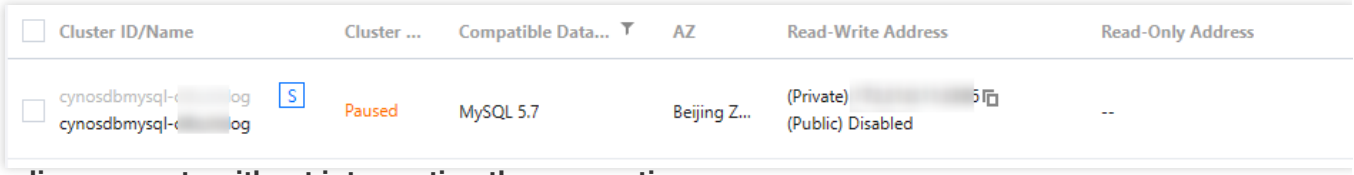
Starting the service

You cannot use the features in the console for a paused serverless database until it is automatically started or its serverless data is manually started based on the actual view mode.

Tab view

List view



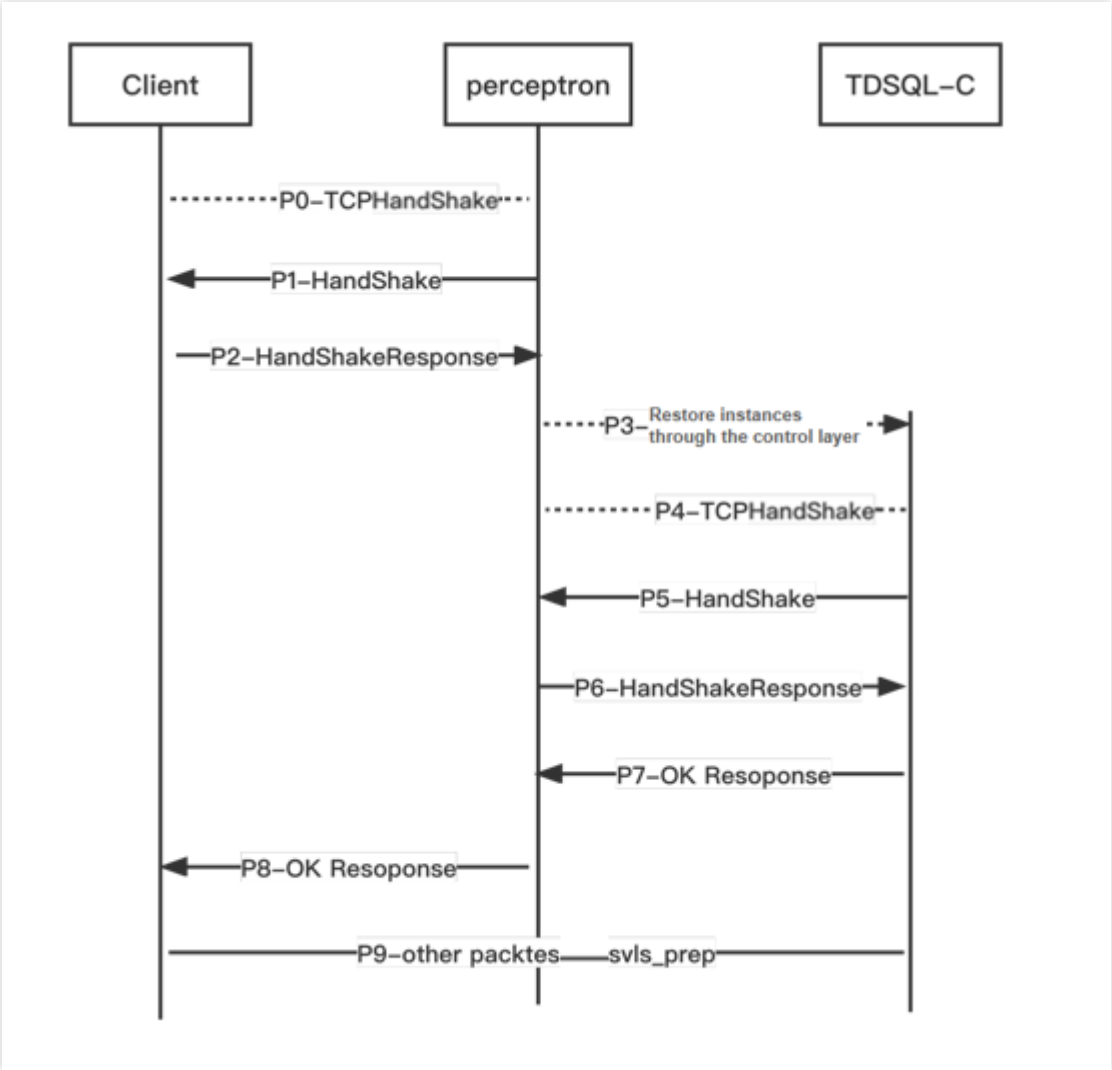


Forwarding requests without interrupting the connection

When a paused database is accessed, the system will automatically start it in seconds, so you don't need to configure a reconnection mechanism.

The access layer of TDSQL-C for MySQL has a resumption perceptron module to implement request forwarding. After the perceptron shakes hands with the client, the TDSQL-C for MySQL cluster will be resumed, without interrupting the user connection. Then, it will shake hands with the cluster and forward layer-4 packets.

The overall process uses two random challenge numbers for authentication, so that the perceptron can verify the username and password without storing them. This ensures the security of the user password and eliminates the inconsistency issue of stored passwords.



When the instance is paused, if a connection is initiated to it, the MySQL client will first perform a TCP handshake (P0) with the perceptron. After the TCP handshake is completed, the perceptron will send "random number A" to the

client for challenge (P1). The MySQL client will use its own account and password and "random number A" to calculate and reply with its own "login response A" (P2). As the perceptron does not store the user's account and password, it cannot verify whether "login response A" is correct, but it can tell whether the client is a MySQL client or not (it is a classifier in the machine learning field, and distinguishing between different types of clients is one of the reasons why it is named perceptron). The verification of "login response A" will be completed by the computing layer of TDSQL-C for MySQL. After the perceptron wakes up TDSQL-C through control (P3), the next step of the login verification process will begin.

After handshaking with perceptron TCP (P4), TDSQL-C will regard the perceptron as a general MySQL client, so it will send "random number B" (P5) to the perceptron for challenge. The perceptron's reply is a special MySQL packet (P6). First, it uses "random number B" and its own authentication mechanism to calculate "login response B" and puts it into the packet; then, it adds "random number A" and "login response A" to the packet. TDSQL-C will perform two checks after receiving the special response packet: it will first check the correctness of "random number B" and "login response B" and the authenticity of the perceptron, and if the check is passed, it will check the correctness of "random number A" and "login response A", and if the check is also passed, it will log in as the user and reply to the perceptron that the login is successful (P7). Then, the perceptron will reply to the user that the login is successful (P8).

When the cluster is paused, only the route of the perceptron will be retained. After the cluster is resumed, the system will retain the routes of both the perceptron and TDSQL-C and set the route weight of the perceptron to 0, so that new connections can be directly made to TDSQL-C, while existing connections to the perceptron can still communicate.

Billing Overview

Last updated：2024-04-25 11:26:19

This document describes the pricing of TDSQL-C for MySQL Serverless.

Billing Mode

In the serverless mode, computing and storage are billed separately: computing is billed by the number of CCUs, while storage is billed by the usage in GB. The billing system calculates the usage by second and settles fees by hour.

Billing Formula

Total serverless fees = compute node fees + storage space fees = serverless computing power price *number of CCUs + storage space price* storage space

Serverless Computing Power Pricing

	CCU Pay-per-Use Pricing (USD/unit/second)	
Billing Unit	Supported regions: Guangzhou, Shanghai, Beijing, and Nanjing Regions to be supported: Chengdu and Chongqing	Supported regions: Hong Kong (China), Singapore, Silicon Valley, and Virginia Regions to be supported: Frankfurt
Serverless Instances	0.00001397	0.00001529

Note:
TDSQL-C Compute Unit (CCU) is the computing and billing unit for the Serverless Edition. A CCU is approximately equal to 1 CPU core and 2 GB memory. The number of CCUs used in each billing cycle is the greater of the number of CPU cores used by the database and 1/2 of the memory size.
You can refer to Compute Unit to select the corresponding maximum and minimum CCU values. The storage space upper limit is the same as the maximum storage space corresponding to the common compute node specifications as described in Product Specifications.

Storage Space Pricing

Serverless service edition cluster storage space is billed on a pay-as-you-go basis. In Guangzhou, Shanghai, Beijing, Nanjing, Chengdu, and Chongqing, the price is USD0.00072/GB/hour, while in Hong Kong (China), Singapore, Silicon Valley, Virginia, Seoul, Tokyo, and Frankfurt, the price is USD0.000792/GB/hour.

Serverless Resource Package Overview

TDSQL-C for MySQL has launched the resource package service, allowing for the advance purchase of compute and Storage resources at lower unit prices, achieving cost savings. The following will introduce the definition and billing sequence of the resource package.

A resource package is a type of prepaid resource, divided into compute resource packages and storage resource packages. They can be used to offset the compute or Storage resources generated by a Serverless service edition cluster. After a user purchases and binds a resource package to a cluster, it will first consume the compute or storage resources from the resource package. When the resources are fully consumed within the validity period, you can purchase a new resource package and continue to bind it for use. If no new resource package is bound for deduction, the cluster will switch to a pay-as-you-go billing method. At that time, the fees incurred by using the cluster will be deducted from your Tencent Cloud account balance.

Note:

For easier understanding, you can compare the resource package to a mobile data plan package. Suppose the normal price for mobile data is USD1/GB, and a user spends USD10 to buy a 50 GB mobile data plan for one month at USD0.2/GB. Thus, the user can enjoy the discounted unit price of USD0.2/GB during the one-month validity period. Once the data plan is used up within the validity period, the user can continue to purchase new mobile data plan packages to enjoy the discounted price. If the user does not purchase and use new mobile data plan packages, the fees of data will revert to USD1/GB.

Notes on Arrears

Last updated：2024-04-25 09:52:42

This document introduces the overdue policy for Serverless cluster instances.

Note:

Your actual resource consumption may vary from time to time, so there might be some deviation in the balance alert.

Alerts

Charges for Serverless cluster resources are incurred on the hour. When your account balance falls below 0, the system will send a notification to the creator of the Tencent Cloud account and to the global resource collaborators and financial collaborators via email and Short Message Service (SMS), according to the subscription configuration in the Message Center.

Arrears Processing

1. **From the moment your account balance is less than 0:**

You can continue to use your TDSQL-C for MySQL cluster in 24 hours. The billing will continue for this period.

Your TDSQL-C for MySQL cluster will be automatically isolated and moved into the recycle bin after 24 hours, and the billing will stop.

2. **After it is isolated:**

If you top up your account within 3 days after the isolation to a positive balance, the billing will continue, and the cluster will be automatically recovered for normal use.

After it is isolated for 3 days, if your account balance is still below 0, the isolated cluster will be taken offline and placed into the recycle queue. Upon recycling, all data will be cleared and cannot be retrieved.

When a cluster is being recycled, the system will send a notification to the creator of the Tencent Cloud account and to the global resource collaborators and financial collaborators via email and SMS, according to the subscription configuration in the Message Center.

Compute Unit

Last updated：2024-06-17 14:16:06

This document describes the computing power specification of TDSQL-C for MySQL Serverless to help you understand the historical and latest compute unit information.

Note:

The current list of compute unit configurations may include some specifications that have been discontinued. Refer to the actual purchase page for the available specifications.

The compute unit configurations supported vary by region. Refer to the table below for the support status in each region.

For the purchase of compute unit configurations of 32 CCU and above, submit a ticket to contact our staff for assistance.

Serverless compute unit

Guangzhou , Nanjing

Shanghai , Hong Kong (China) , Beijing , Silicon Valley

Singapore , Virginia , Tokyo

Seoul

Min Compute Unit	Max Compute Unit	Supported Max Storage Space (GB)
0.25	0.5	1000
0.25	1	1000
0.25	2	5000
0.25	4	10000
0.25	8	10000
0.25	16	20000
0.25	32	30000
0.5	1	1000
0.5	2	5000
0.5	4	10000

0.5	8	10000
0.5	16	20000
0.5	32	30000
1	2	5000
1	4	10000
1	8	10000
1	16	20000
1	32	30000
2	4	10000
2	8	10000
2	16	20000
2	32	30000
4	8	10000
4	16	20000
4	32	30000
8	16	20000
8	32	30000
8	64	40000
16	32	30000
16	64	40000
32	64	40000

Min Compute Unit	Max Compute Unit	Supported Max Storage Space (GB)
0.25	0.5	1000
0.25	1	1000
0.25	2	5000

0.25	4	10000
0.25	8	10000
0.25	16	20000
0.25	32	30000
0.5	1	1000
0.5	2	5000
0.5	4	10000
0.5	8	10000
0.5	16	20000
0.5	32	30000
1	2	5000
1	4	10000
1	8	10000
1	16	20000
1	32	30000
2	4	10000
2	8	10000
2	16	20000
2	32	30000
4	8	10000
4	16	20000
4	32	30000
8	16	20000
8	32	30000
16	32	30000

Min Compute Unit	Max Compute Unit	Supported Max Storage Space (GB)
0.25	0.5	1000
0.25	1	1000
0.25	2	5000
0.25	4	10000
0.25	8	10000
0.25	16	20000
0.5	1	1000
0.5	2	5000
0.5	4	10000
0.5	8	10000
0.5	16	20000
1	2	5000
1	4	10000
1	8	10000
1	16	20000
2	4	10000
2	8	10000
2	16	20000
4	8	10000
4	16	20000

Min Compute Unit	Max Compute Unit	Supported Max Storage Space (GB)
0.25	0.5	1000
0.25	1	1000

0.25	2	5000
0.25	4	10000
0.25	8	10000
0.25	16	20000
0.5	1	1000
0.5	2	5000
0.5	4	10000
0.5	8	10000
0.5	16	20000
1	2	5000
1	4	10000
1	8	10000
1	16	20000
2	4	10000
2	8	10000
2	16	20000
4	8	10000
4	16	20000
8	16	20000

Creating Serverless Cluster

Last updated：2024-06-17 14:24:26

This document describes how to create a serverless cluster in the TDSQL-C for MySQL console.

Prerequisite

To make a purchase, you need to complete identity verification first. For more information, see Identity Verification Guide.

Directions

1. Log in to the purchase page and complete the **Database Configuration** settings.

Parameter	Description
Instance Mode	Select **Serverless**.
Database Engine	Select **MySQL**.
Region	Select a region for database deployment. Currently, the serverless billing mode is supported only in Guangzhou, Shanghai, Beijing, Nanjing, Hong Kong (China), Silicon Valley, Virginia, Singapore,Tokyo and Seoul regions. If you need to use it in other regions, submit a ticket for assistance.
Source AZ	Select an AZ for deployment. Specific AZs in the selected region are shown on the actual purchase page.
Multi-AZ Deployment	Select whether to enable multi-AZ deployment. If Yes is chosen, the option for a secondary availability zone will appear.
Secondary Availability Zone	By default, this feature is disabled. Upon enabling multi-AZ deployment, you may select your standby availability zone. For regions and availability zones that support multi-AZ deployment, please refer to the Multi-AZ Deployment section. For the most up-to-date supported regions and availability zones, see the purchase page for accurate information.
Transfer Linkage	It is "High IO" by default.
Network	For performance and security considerations, only VPC network is supported currently. CVM

	instances can communicate with TDSQL-C instances only in the same VPC.
Database Version	MySQL 5.7 and 8.0 are supported.
Serverless Architecture	Supports the selection of either a Single-Node or Cluster architecture. Single-node architecture: The cluster contains only one read-write instance. After purchase, you can switch to a Cluster architecture by adding read-only instances through configuration adjustments in the console. Cluster architecture: The cluster comprises one read-write instance and 1 to 8 optional read-only instances.
Compute Unit	Select the upper and lower limits of the TDSQL-C compute unit (CCU), and the instance will be automatically and elastically scaled within the selected resource range. CCU is the computing and billing unit for the serverless mode. A CCU is approximately equal to 1 CPU core and 2 GB memory. The number of CCUs used in each billing cycle is the greater of the number of CPU cores used by the database and 1/2 of the memory size. For more information, see Compute Unit. Single-node architecture: It is only necessary to configure the computational power range for the read-write instance. Cluster architecture: It is required to configure the computational power range for the read-write instance, select the number of read-only instances within the read-only group (1 - 8), and set the computational power range for the read-only instances.
Auto-Pause	Configure the automatic pause time of the instance. If there is no connection to access the database within the set time, the instance will be automatically paused, with billing stopped.

2. Complete the **Specification Billing** configuration and click **Next**.

Note:

Total serverless cluster fees = compute node fees + storage space fees = serverless computing power price *number of CCUs + storage space price* storage space.

Parameter	Description
Compute Billing Mode	Resource pack (monthly subscription) and pay-as-you-go billing are supported. The compute resource pack will be used preferably for the deduction of actual usage of pay-as-you-go products. When the pack is used up, the resource usage will be pay-as-you-go. Compute resource packs are deducted based on the actual CCU used per second. The resource pack mode is more cost-effective and flexible than the pay-as-you-go option.
Compute resource pack (displayed when selecting **Resource Pack** in	Binding a resource pack allows you to associate one or more (up to a maximum of ten) compute resource packs with the cluster selected in the region under the current account, provided they are within their validity period. If there are no available resource packs, you may proceed to purchase a resource package first.

the compute billing mode)	
Storage Billing Mode	Resource pack (monthly subscription) and pay-as-you-go billing are supported. The storage resource pack will be used preferably for the deduction of actual usage of pay-as-you-go products. When the pack is used up, the resource usage will be pay-as-you-go. Storage resource packs are deducted based on the actual storage used per hour. The resource pack mode is more cost-effective and flexible than the pay-as-you-go option.
Storage resource pack (displayed when selecting **Resource Pack** in the storage billing mode)	Binding a resource pack allows you to associate one or more (up to a maximum of ten) storage resource packs with the cluster selected in the region under the current account, provided they are within their validity period. If there are no available resource packs, you may proceed to purchase a resource package first.

3. Select the number of clusters. You can batch purchase multiple clusters of the same specification. Then, click **Next**.
4. Complete the **Basic Info** and **Advanced Configuration** settings, confirm the fees, and click **Buy Now**.

Basic Info

Parameter	Description
Cluster Name	Set a name for the cluster now or later. It must contain less than 60 letters, digits, or symbols (-_.).
Admin Username	It is `root` by default.
Password	The password can contain 8–64 characters in at least three of the following character types: uppercase letters, lowercase letters, digits, and symbols ~!@#$%^&*_-+=|\\(){}[]:;',.?/.
Default Character Set	UTF8, GBK, LATIN1, and UTF8MB4 are supported.
Custom Port	It is 3306 by default and can be customized.

Advanced Configuration

Parameter	Description
Security Group	Select or create a security group.
Parameter Template	Select or create a parameter template.
Table Name Case Sensitivity	Select **Case-Insensitive** or **Case-Sensitive**.

Project	Specify a project for the cluster to be created.
Alarm Policy	Select or create an alarm policy.
Tag	Add a tag to facilitate resource categorization and management.
Terms and Conditions	Read and indicate your consent to the terms and conditions.

5. After the purchase is completed, you will be redirected to the cluster list. After the status of the cluster becomes **Running**, it can be used normally.

Note:

If only the compute resource pack is bound, the compute nodes of the serverless cluster will be deducted by using the bound compute resource pack, while the storage nodes will be billed on a pay-as-you-go basis.

If only the storage resource pack is bound, the storage nodes of the serverless cluster will be deducted by using the bound storage resource pack, while the compute nodes will be billed on a pay-as-you-go basis.

If both the compute and storage resource packs are bound, both the compute and storage nodes of the serverless cluster will be deducted by using the bound compute and storage resource packs.

Managing Read-Only Instance

Last updated：2024-06-17 10:36:57

Serverless clusters support mounting read-only instances to enhance read performance and concurrency while reducing the load on the read-write instance. This document describes how to create a read-only instance and modify its configuration for a serverless cluster.

Billing Description

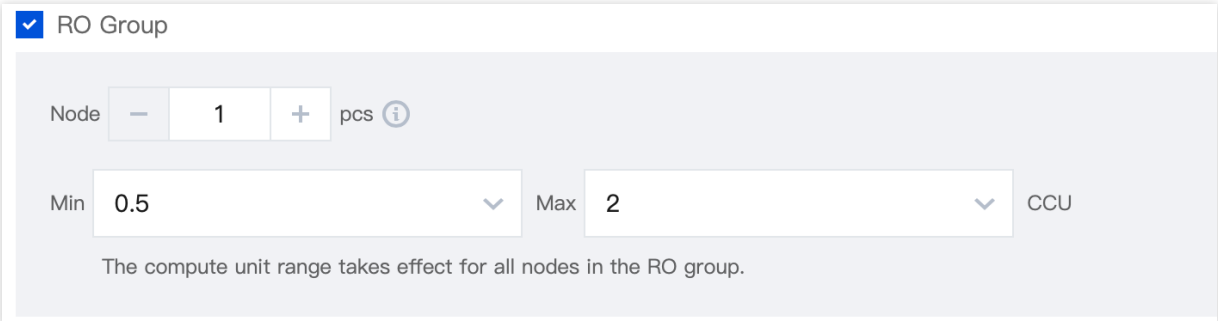
The read-only and read-write instances have the same billing logic. For more information, see Billing Overview.

Creating Read-Only Instance

Note:
Read-only instance on the current version only supports vertical scaling but not horizontal scaling.
After purchasing a read-only instance group, you can adjust its compute unit and quantity.
The computing power of read-write instances or read-only instances has no impact on each other.
Read-only instances can only be automatically enabled and disabled, and a single instance can't be enabled or disabled manually.

Creating a read-only instance when purchasing a cluster

1. Log in to the TDSQL-C for MySQL console
2. Behind the **Serverless Architecture**, select the **Cluster Edition**.
3. Beneath the **Read-Only Group**, select the number of read-only nodes within the group. You can add a maximum of eight read-only nodes.



4. The configured compute unit range only takes effect for all the read-only nodes in the read-only group.
5. After configuring other configuration items for the serverless clusters, click **Buy Now**. For more information on the other configuration description of the serverless clusters, see Creating Serverless Cluster.

Adding Read-Only Instances to Existing Serverless Clusters

Note：

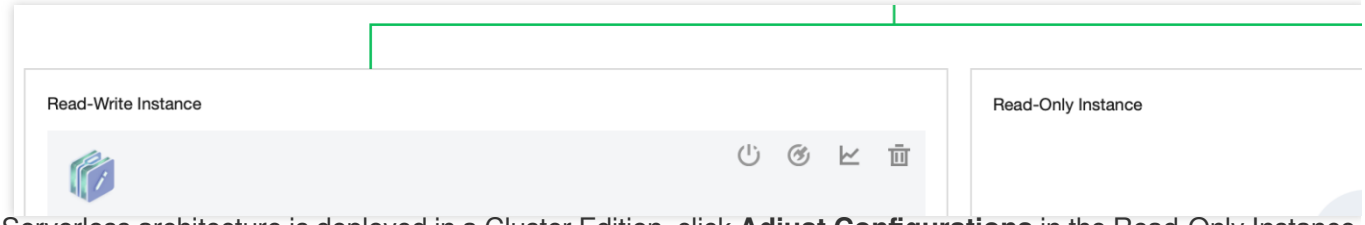
You can only perform the operations on the cluster in the running status.

1. Log in to the TDSQL-C for MySQL console, and select a region at the top.

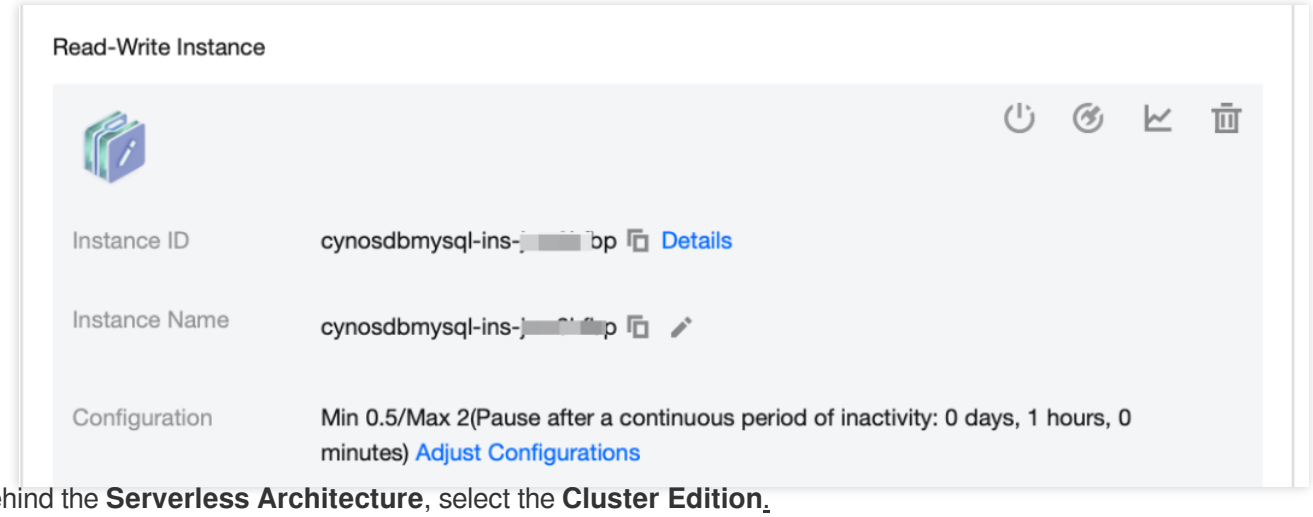
2. Click **Target Cluster** in the cluster list on the left to enter the cluster management page.

3. On the **Cluster Management** page, navigate to the **Cluster Details** section to locate the Read-Only Instance section. Proceed based on the scenarios described.

If the Serverless architecture is deployed in a Single-Node Edition, then in the Read-Only Instance section, click **Add Read-Only Instance**.



If the Serverless architecture is deployed in a Cluster Edition, click **Adjust Configurations** in the Read-Only Instance section.



4. Behind the **Serverless Architecture**, select the **Cluster Edition**.

5. Select the read-only group, and increase the number of read-only nodes within the read-only group as required. You can add a maximum of eight read-only nodes.

6. Configure the computational power range for the read-only group, which will be effective for all read-only nodes in the group.

7. Click **Buy Now** to add a read-only instance.

Modifying the configuration of the read-only instance

You can adjust the number of the read-only instances and the compute unit range of the read-only group.

Note：

The cluster must be in a running state; configuration changes for read-only instances cannot be made while it is in a paused state.

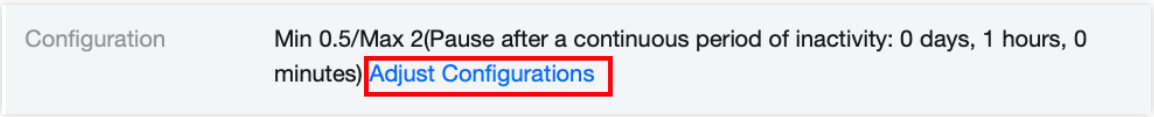
After adjusting the number of read-only instances, you can manually trigger a load balancing to balance traffic.

You can adjust the number of the read-only instances on the configuration modification page. But you can't add or delete a read-only instance manually.

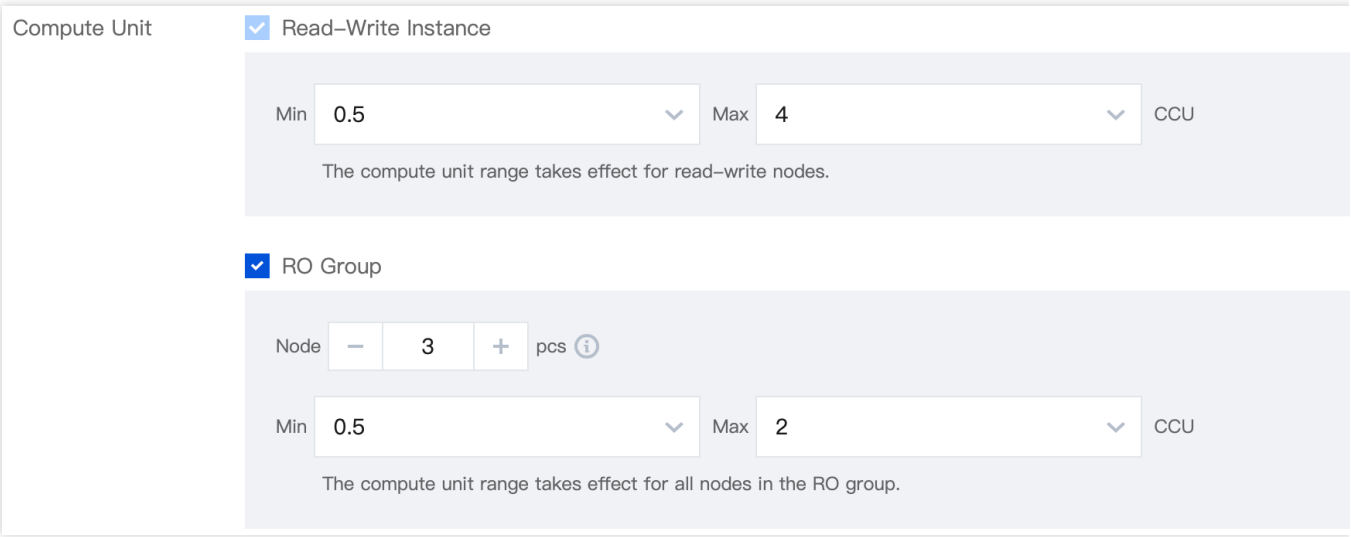
After a downgrade, the removed read-only instances will not be isolated in the Recycle Bin but will be eliminated directly. If you need to add read-only instances, please do so by adjusting the configuration to create read-only instances.

When the database proxy is enabled, the business will not be interrupted during the configuration modification.

1. Log in to the TDSQL-C for MySQL console, and select a region at the top.
2. Click the target cluster in the cluster list on the left to enter the cluster management page.
3. Find a read-only instance in the read-only group under **Cluster Management** page > **Cluster Details**, click **Adjust Configurations** after **Configuration**.



4. You will be redirected to the configuration modification page, select the desired number of read-only nodes and compute unit range to complete the modification.



Serverless Resource Pack
Resource Pack Overview

Last updated：2024-06-17 14:29:56

In TDSQL-C for MySQL, there are two different types of prepaid resource packs: compute resource packs and storage resource packs, which can be used to deduct the storage and compute resources used by the serverless cluster. By purchasing resource packs, you can reserve resources in advance. Compared to the pay-as-you-go option, the resource packs can help you save more costs. It is more cost-effective to purchase larger capacity and longer validity period.

Resource Pack Description

Prepaid Resource Pack	Compute Resource Pack	Storage Resource Pack
Deduction object	The compute resource pack will be used preferably for the deduction of actual compute resources used by its bound severless cluster. When the pack is used up, the resource usage will be pay-as-you-go.	The storage resource pack will be used preferably for the deduction of actual storage resources used by its bound severless cluster. When the pack is used up, the resource usage will be pay-as-you-go.
Deduction rules	The compute resource pack will be deducted based on the actual CCU usage per second, which is more cost-effective and flexible than the pay-as-you-go option. Before the deduction of the serverless cluster, you must first bind a resource pack. The cluster will not be terminated when the resource pack is unbound, used up, or expires. It will instead be billed on a pay-as-you-go basis.	The storage resource pack will be deducted based on the actual storage used per hour, which is more cost-effective and flexible than the pay-as-you-go option. Before the deduction of the serverless cluster, you must first bind a resource pack. The cluster will not be terminated when the resource pack is unbound, used up, or expires. It will instead be billed on a pay-as-you-go basis.
Renewal	Not supported	
Batch Binding	Up to 10 compute resource packs can be bound to a single cluster at a time.	Up to 10 storage resource packs can be bound to a single cluster at a time.

Resource Packs		
Consumption priority	When a cluster is bound to multiple resource packs, the system automatically sets the consumption priority sequence based on the order of binding. It also supports manually adjustment of consumption priority order. The resources are consumed according to the consumption priority level (1 to 10), from the lowest to the highest. **Note：** The consumption priorities of compute resource packs and storage resource packs are set separately, and the set priorities are only effective for the same type of resource pack. For example, if a cluster is bound with two compute resource packs, and their consumption priorities are set as 1 and 2 respectively, then the compute resource pack with a priority level of 1 will be consumed first. The consumption priority of the resource pack that is bound by default is set to 1, with subsequent priorities assigned in ascending order. Upon the depletion or expiration of a resource pack, the priority ranking for the consumption of the corresponding resource pack will be annulled.	
Deduction period	The compute resource pack will be deducted based on the actual accumulated usage per second.	The storage resource pack will be deducted based on the actual average usage per hour.
Validity period	It is valid for 6 months (180 days) or 1 year (365 days) and can’t be used any longer once expired.	It is valid for 6 months (180 days) or 1 year (365 days) and can’t be used any longer once expired.
Region	It is available in or out of the Chinese mainland.	It is available in or out of the Chinese mainland.
Use Instructions	Purchasing Resource Pack Binding and Unbinding Resource Pack	Purchasing Resource Pack Binding and Unbinding Resource Pack

Available Region

In Chinese Mainland	Outside Chinese Mainland
Guangzhou, Nanjing, Shanghai, Beijing, Chengdu, Chongqing, Beijing Finance, Shanghai Finance	Hong Kong (China), Singapore, Seoul, Tokyo, Silicon Valley, Virginia, Toronto, Frankfurt

Billing Mode

Serverless clusters offer the following four billing modes for you to choose flexibly. If you choose the fourth mode of **resource pack for both compute and storage**, you can enjoy a more favorable price than the monthly subscription option.

Pay-as-you-go for compute + resource pack for storage

Resource pack for compute + pay-as-you-go for storage

Pay-as-you-go for both compute and storage

Resource pack for both compute and storage

For more information, see Compute Resource Pack and Storage Resource Pack.

Purchasing Resource Pack

Last updated：2023-06-14 16:28:21

This document describes how to purchase a resource pack.

Prerequisites

You have registered a Tencent Cloud account and completed identity verification.

Register a Tencent Cloud account.

Complete identity verification.

Purchasing Resource Pack

1. Log in to the TDSQL-C for MySQL console.

2. On the left sidebar, select **Resource Pack** and click **Purchase Resource Pack**.

Note:

You can also directly purchase one on the resource pack purchase page.

3. Select various configuration items based on your actual needs, confirm that everything is correct, and click **Buy Now**.

Parameter	Description
Resource Pack Type	Select a resource pack type as needed, which can be compute resource pack or storage resource pack.
Region	Set the pack deduction region same as the region where your cluster is deployed. The region can be in or out of the Chinese mainland.
Resource Pack Specifications	Select one of the three specifications: Basic Edition, General Edition, and Enterprise Edition.
Name Resource Pack	Select one of the options: **Name It Later** (default) or **Name It Now**. If the latter is selected, you can customize the a name, which can contain up to 60 letters, digits, or symbols (-_.).
Terms and Conditions	Read and indicate your consent to the terms and conditions.
Quantity	Select the quantity of resource packs. You can purchase multiple resource packs of the same

	specifications in batches.

Relevant Documents

Resource Pack Overview

Compute Resource Pack

Storage Resource Pack

Binding and Unbinding Resource Pack

Compute Resource Pack

Last updated：2024-06-17 14:37:10

The compute resource pack is a prepaid resource type in TDSQL-C for MySQL, which can be used to deduct the compute resources used by the serverless cluster. This document describes the specification types and prices of compute resource packs.

Specification Types and Prices

Specification Type	Applicable Scope of CCU	Unit Price in Chinese Mainland (USD/Thousand CCU)	Unit Price Outside Chinese Mainland (USD/Thousand CCU)
Basic Edition	400–10,000 thousand CCU (10,000 exclusive)	6-month validity period: 0.0119 1-year validity period: 0.0126	6-month validity period: 0.013 1-year validity period: 0.0138
General Edition	10,000–40,000 thousand CCU (40,000 exclusive)	6-month validity period: 0.0112 1-year validity period: 0.0119	6-month validity period: 0.0122 1-year validity period: 0.013
Enterprise Edition	40,000–200,000 thousand CCU (200,000 exclusive)	6-month validity period: 0.0105 1-year validity period: 0.0112	6-month validity period: 0.0115 1-year validity period: 0.0122

Case

Note:

TDSQL-C Compute Unit (CCU) is the computing and billing unit for the serverless instance. A CCU is approximately equal to 1 CPU core and 2 GB memory. The number of CCUs used in each billing cycle is the greater of the number of CPU cores used by the database and 1/2 of the memory size.

Overview

In the Beijing region, there are two serverless instances, A and B. Serverless instance B has purchased and been bound to a basic edition compute resource pack, with a purchase of 400,000 CCUs, a 6-month validity period, and a

unit price of 0.00000119 USD/CCU. The compute unit price for the serverless instance in the Beijing region is 0.00001397 USD per unit per second.

Scenario

Serverless instances A and B each run continuously for 10 hours at a rate of 1 CCU per second (equivalent to 1 core and 2 GB full load), resulting in a total CCU amount for 10 hours of: 1 CCU x 3600 seconds x 10 hours = 36,000.

Serverless cluster A

Compute resource fees = Serverless compute unit price × CCU amount = 0.00001397 x 36000 = 0.50 USD.

Serverless cluster B

Compute resource fees = 0.00000119 x 36000 = 0.04 USD.

After 36,000 CCU is deducted for the compute resource pack consumption, the remaining balance is 364,000 CCU.

Note

The compute resource pack will be deducted based on the actual CCU usage per second, which is more cost-effective and flexible than the pay-as-you-go option. Before the deduction of the serverless cluster, you must first bind a compute resource pack. The cluster will not be terminated when the resource pack is unbound, used up, or expires. It will instead be billed on a pay-as-you-go basis. It is important to note the following points:

Compute resource packs are classified into two types: those for the Chinese mainland and those for regions outside the Chinese mainland. Each type is specified to be shared by all serverless clusters in the region, that is, one compute resource pack can be shared by multiple serverless clusters.

A serverless cluster can be bound to a maximum of ten compute resource packs, with support for adjusting the consumption priority order of multiple compute resource packs. The cluster will consume resources in ascending order based on the priority level numbers.

A compute resource pack is deducted based on the accumulated usage per second.

A compute resource pack doesn't support downgrade once purchased.

Management

Binding and Unbinding Resource Pack

Viewing Resource Pack Usage

Modifying Resource Pack Name

Refund

For resource packages that remain unused within their validity periods, each Tencent Cloud account (root account) is eligible for a maximum of 20 refund instances per calendar year. Refunds are not available for resource packages that have either expired or been fully used. For detailed refund instructions, please see the Requesting Refund for Resource Package.

Note：

Regarding the limitations on the number of refunds, the system calculates this on a calendar year basis. The first calendar year cycle is from June 30, 2023, at 23:59:59 to July 1, 2024, at 00:00:00. The count resets annually on July 1 at 00:00:00. Therefore, the second calendar year cycle is from July 1, 2024, at 00:00:00 to June 30, 2025, at 23:59:59, and so on.

Relevant Documents

Storage Resource Pack

Purchasing Resource Pack

Storage Resource Pack

Last updated：2024-06-17 14:41:04

The storage resource pack is a prepaid resource type in TDSQL-C for MySQL, which can be used to deduct the storage resources used by the serverless cluster. This document describes the specification types and prices of storage resource packs.

Specification Types and Prices

Specification Type	Applicable Scope of Storage Capacity	Unit Price in Chinese Mainland (USD/TB)	Unit Price Outside Chinese Mainland (USD/TB)
Basic Edition	2–200TB (200 exclusive)	6-month validity period: 0.2568 1-year validity period: 0.271	6-month validity period: 0.2806 1-year validity period: 0.2962
General Edition	200–2000 TB (2000 exclusive)	6-month validity period: 0.2425 1-year validity period: 0.2568	6-month validity period: 0.265 1-year validity period: 0.2806
Enterprise Edition	2000–20,000 TB (20,000 exclusive)	6-month validity period: 0.2282 1-year validity period: 0.2425	6-month validity period: 0.2494 1-year validity period: 0.265

Case

Overview

In the Beijing region, there are two Serverless clusters, A and B. Serverless cluster B has purchased and bound a basic edition storage resource package, with a storage capacity of 10 TB and a validity period of six months, at a unit price of USD0.2568 per TB per hour. Serverless cluster A has not bound any storage resource package and is subject to the standard storage space price of USD0.00072 per GB per hour, approximately USD0.72 per TB per hour.

Scenario

Assuming both Serverless clusters A and B operate continuously for three hours, with the storage space utilization being 0.5TB in the first hour, 1 TB in the second hour, and 2 TB in the third hour.

Serverless Cluster A

The storage resource fees for the first hour = Serverless storage space price x storage space = 0.72 x 0.5 = USD0.36.

The storage resource fees for the second hour = Serverless storage space price x storage space = 0.72 x 1 = USD0.72.

The storage resource fees for the third hour = Serverless storage space price x storage space = 0.72 x 2 = USD1.44.

The total storage resource fees for running three hours = fees for the first hour + fees for the second hour + fees for the third hour = USD2.52.

Serverless Cluster B

The storage resource fees for the first hour = 0.2568 x 0.5 = USD0.1284.

The storage resource fees for the second hour = 0.2568 x 1 = USD0.2568.

The storage resource fees for the third hour = 0.2568 x 2 = USD0.5136.

The total storage resource fees for running three hours = USD0.8988.

The storage resource package offsets a consumption of 2 TB, leaving a remaining balance of 8 TB.

Note

The storage resource pack will be deducted based on the actual storage used per hour, which is more cost-effective and flexible than the pay-as-you-go option. Before the deduction of the serverless cluster, you must first bind a storage resource pack. The cluster will not be terminated when the resource pack is unbound, used up, or expires. It will instead be billed on a pay-as-you-go basis. It is important to note the following points:

Storage resource packs are classified into two types: those for the Chinese mainland and those for regions outside the Chinese mainland. Each type is specified to be shared by all serverless clusters in the region, that is, one storage resource pack can be shared by multiple serverless clusters.

A serverless cluster can be bound to a maximum of ten storage resource packs, with support for adjusting the consumption priority order of multiple storage resource packs. The cluster will consume resources in ascending order based on the priority level numbers.

A storage resource pack is deducted based on the actual usage per hour.

A storage resource pack doesn't support downgrade once purchased.

Management

Binding and Unbinding Resource Pack

Viewing Resource Pack Usage

Modifying Resource Pack Name

Refund

For resource packages that remain unused within their validity period, each Tencent Cloud account (primary account) is calculated on a calendar year basis, with a maximum of 20 refundable resource packages per year. As for resource packages that have expired or been fully utilized, refunds are currently not supported. For detailed refund instructions, see Requesting Refund for Resource Pack.

Note：

Regarding the limitation on the number of refunds, the system calculates this on a calendar year basis. The first calendar year cycle is from June 30, 2023, at 23:59:59 to July 1, 2024, at 00:00:00. The count refreshes on July 1 at 00:00:00 every year, thus the second calendar year cycle is from July 1, 2024, at 00:00:00 to June 30, 2025, at 23:59:59, and so on.

Relevant Documents

Storage Resource Pack

Purchasing Resource Pack

Binding and Unbinding Resource Pack

Last updated：2024-06-18 09:28:00

If you want to use a resource pack, you need to bind the resource pack after purchasing it. You can also unbind a resource pack that has been bound to clusters. This document describes how to bind or unbind a resource pack.

Note:

A resource pack can be bound to multiple serverless clusters.

A serverless cluster can be associated with a maximum of 10 compute resource packs and 10 storage resource packs.

Prerequisites

You have created a serverless cluster. For more information, see Creating Serverless Cluster.

You have purchased a resource pack. For more information, see Purchasing Resource Pack.

Binding a resource pack

Scenario 1: Binding a resource pack when creating a serverless cluster

1. Go to the purchase page and complete the **Database Configuration** settings.

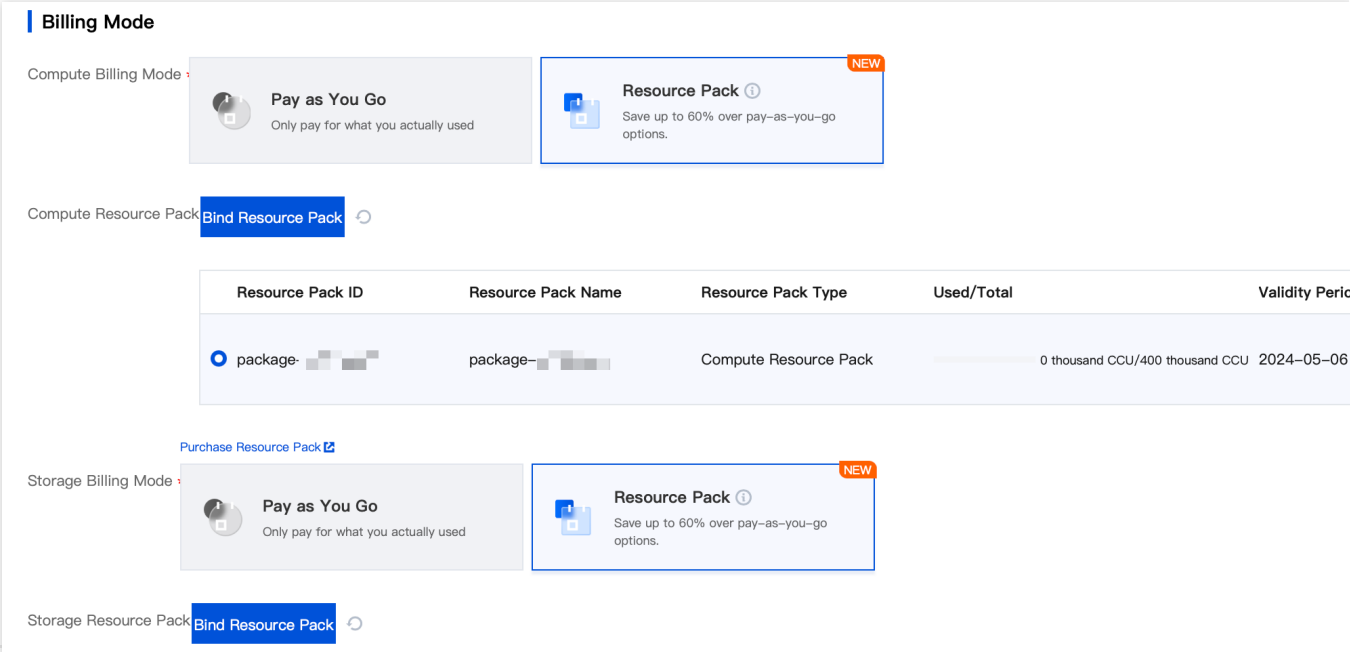
Parameter	Description
Instance Mode	Select **Serverless**.
Database Engine	Select **MySQL**.
Region	Select a region for database deployment. Currently, the serverless mode is supported only in Guangzhou, Shanghai, Beijing, Nanjing, Hong Kong (China), Silicon Valley, Singapore, and Virginia regions. If you need to use it in other regions, submit a ticket for assistance.
Source AZ	Select an AZ for deployment. Specific AZs in the selected region are shown on the actual purchase page.
Multi-AZ Deployment	Currently, serverless instances don't support multi-AZ deployment.
Transfer	It is "High IO" by default.

Linkage	
Network	For performance and security considerations, only VPC network is supported currently. CVM instances can communicate with TDSQL-C for MySQL instances only in the same VPC.
Database Version	MySQL 5.7 and 8.0 are supported.
Compute Unit	Select the upper and lower limits of the TDSQL-C compute unit (CCU), and the instance will be automatically and elastically scaled within the selected resource range. CCU is the computing and billing unit for the serverless mode. A CCU is approximately equal to 1 CPU core and 2 GB memory. The number of CCUs used in each billing cycle is the greater of the number of CPU cores used by the database and 1/2 of the memory size. For more information, see Compute Unit.
Auto-Pause	Configure the automatic pause time of the instance. If there is no connection to access the database within the set time, the instance will be automatically paused, with billing stopped.

2. Complete the **Specification Billing** configuration and click **Next**.

Note:

Total serverless cluster fees = compute node fees + storage space fees = serverless computing power price *number of CCUs + storage space price* storage space



Parameter	Description
Compute Billing Mode	Select **Resource Pack**. The compute resource pack will be used preferably for the deduction of actual usage of pay-as-you-go products. When the pack is used up, the resource usage will be pay-as-you-go. Compute

	resource packs are deducted based on the actual CCU used per second. The resource pack mode is more cost-effective and flexible than the pay-as-you-go option.
Compute Resource Pack	Binding a resource pack allows you to associate one or more (up to a maximum of ten) compute resource packs with the cluster selected in the region under the current account, provided they are within their validity period. If there are no available resource packs, you may proceed to purchase a resource package first.
Storage Billing Mode	Select **Resource Pack**. The storage resource pack will be used preferably for the deduction of actual usage of pay-as-you-go products. When the pack is used up, the resource usage will be pay-as-you-go. Storage resource packs are deducted based on the actual storage used per hour. The resource pack mode is more cost-effective and flexible than the pay-as-you-go option.
Storage Resource Pack	Binding a resource pack allows you to associate one or multiple (up to a maximum of ten) storage resource packs with the cluster selected in the region under the current account, provided they are within their validity period. If there are no available resource packs, you may proceed to purchase a resource package first.

3. Select the number of clusters. You can batch purchase multiple clusters of the same specification. Then, click **Next**.

4. Complete the **Basic Info** and **Advanced Configuration** settings, confirm the fees, and click **Buy Now**.

Basic Info

Parameter	Description
Cluster Name	Name the instance now or later. It must contain less than 60 letters, digits, or symbols (-_.).
Admin Username	It is `root` by default.
Password	The password can contain 8–64 characters in at least three of the following character types: uppercase letters, lowercase letters, digits, and symbols ~!@#$%^&*_-+=|\\(){}[]:;'<>,.?/.
Default Character Set	UTF8, GBK, LATIN1, and UTF8MB4 are supported.
Custom Port	It is 3306 by default and can be customized.

Advanced Configuration

Parameter	Description
Security Group	Select or create a security group.

Parameter Template	Select or create a parameter template.
Table Name Case Sensitivity	Select **Case-Insensitive** or **Case-Sensitive**.
Project	Specify a project for the cluster to be created.
Alarm Policy	Select or create an alarm policy.
Tag	Add a tag to facilitate resource categorization and management.
Terms and Conditions	Read and indicate your consent to the terms and conditions.

5. After the purchase is completed, you will be redirected to the cluster list. After the status of the cluster becomes **Running**, it can be used normally.

Note:

If only the compute resource pack is bound, the compute nodes of the serverless cluster will be deducted by using the bound compute resource pack, while the storage nodes will be billed on a pay-as-you-go basis.

If only the storage resource pack is bound, the storage nodes of the serverless cluster will be deducted by using the bound storage resource pack, while the compute nodes will be billed on a pay-as-you-go basis.

If both the compute and storage resource packs are bound, both the compute and storage nodes of the serverless cluster will be deducted by using the bound compute and storage resource packs.

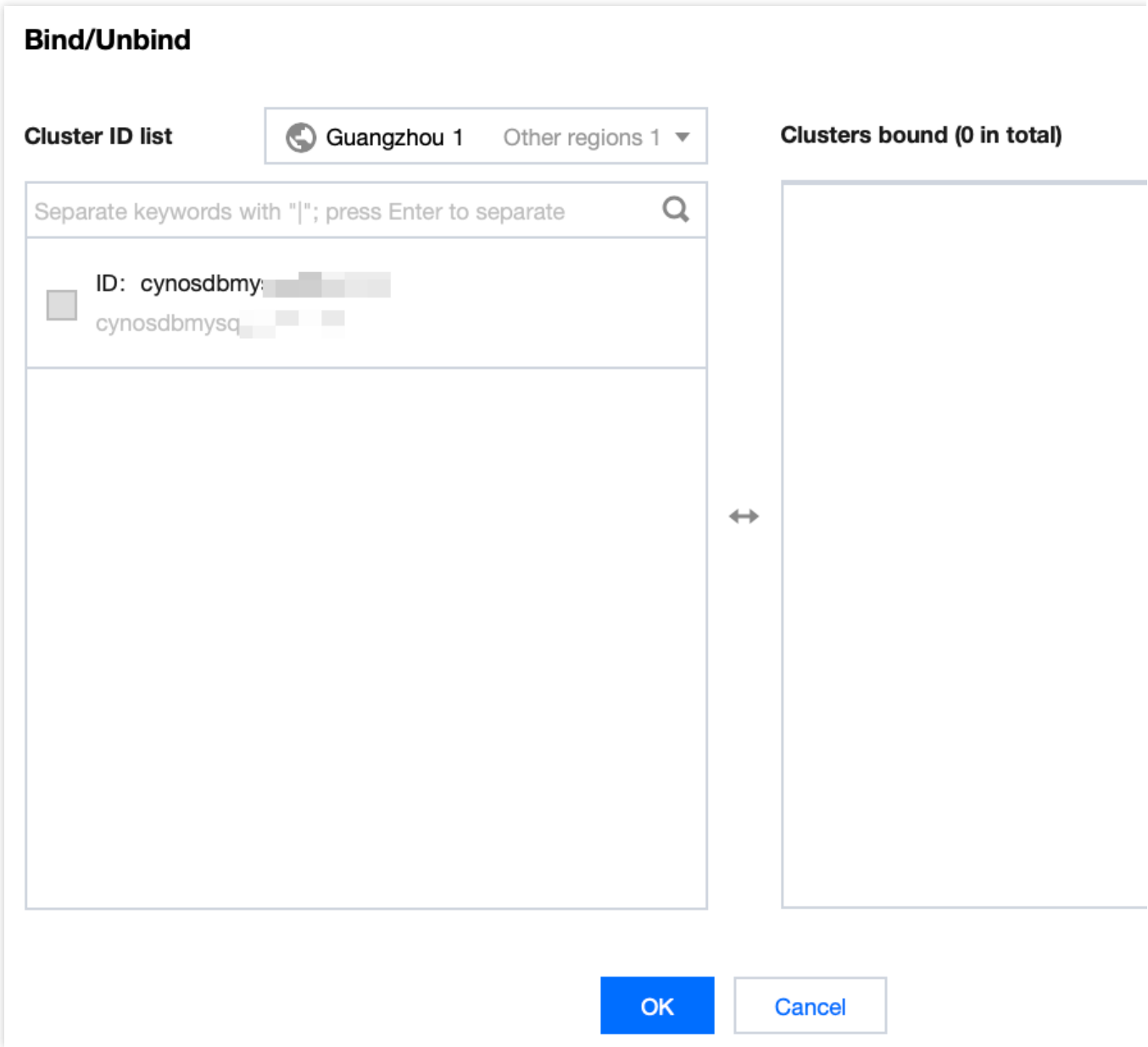
Scenario 2: Binding a resource pack to an existing serverless cluster

Binding a resource pack to an existing serverless cluster in the resource pack list

After purchasing a resource pack, you can bind it to an existing serverless cluster in the resource pack list.

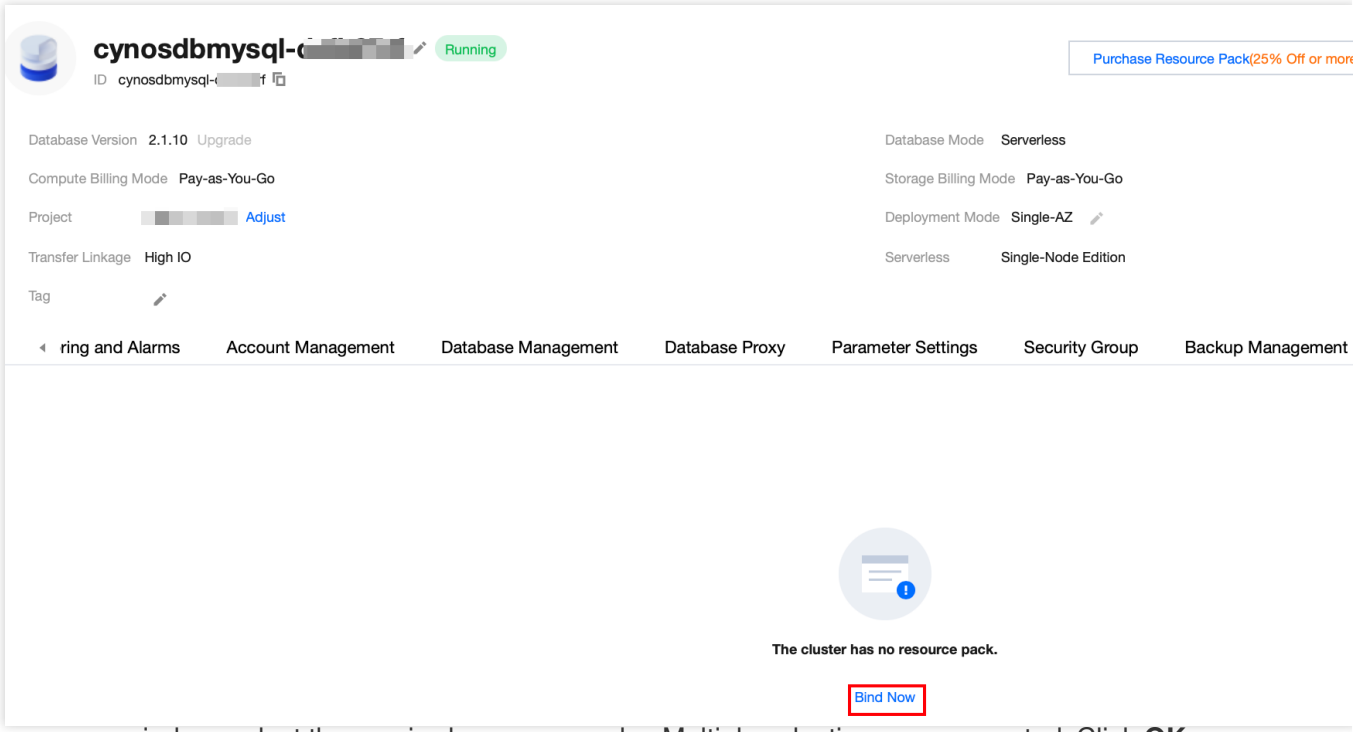
1. Log in to the TDSQL-C for MySQL console.
2. On the left sidebar, click **Resource Pack** to enter the resource pack management page.
3. Find the target resource pack directly on the page or quickly filter it out in the search box on the right, and click **Bind/Unbind** in the **Operation** column.

4. In the pop-up window, select a region, select one or more serverless clusters to which the resource pack is bound, and click **OK**.

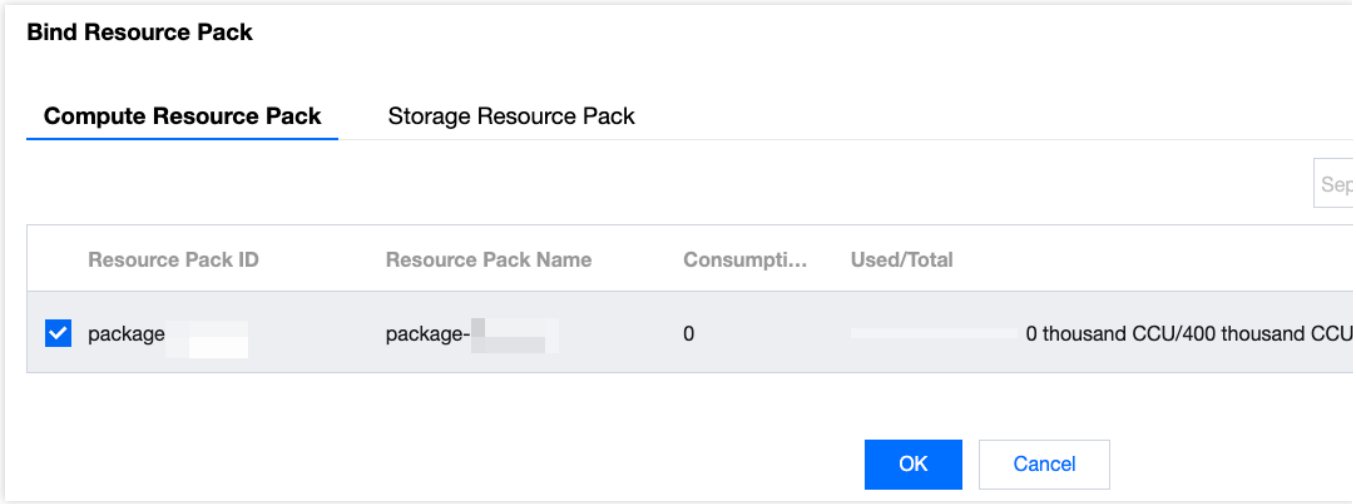


Binding a resource pack to an existing serverless cluster on the cluster management page

1. Log in to the TDSQL-C for MySQL console.
2. Click the target cluster in the cluster list on the left to enter the cluster management page.
3. On the cluster management page, select **Resource Pack** and click **Bind Now**.



4. In the pop-up window, select the required resource packs. Multiple selections are supported. Click **OK**.



Unbinding a resource pack

When a resource pack expires or is used up, the resource pack will be automatically unbound. You can also unbind it manually.

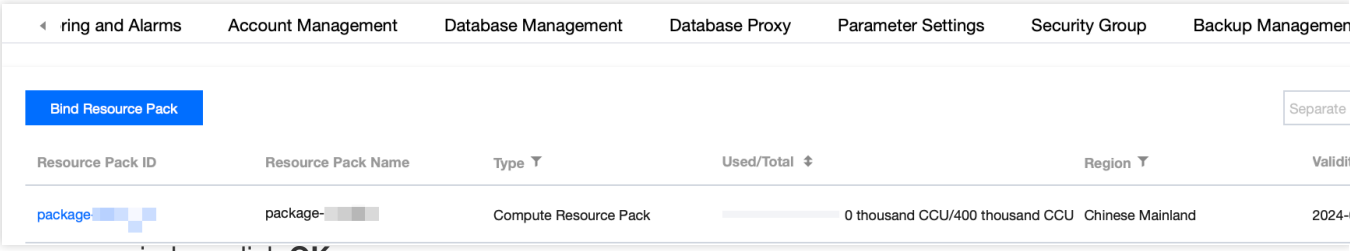
Unbinding a resource pack from an existing serverless cluster in the resource pack list

1. Log in to the TDSQL-C for MySQL console.
2. On the left sidebar, click **Resource Pack** to enter the resource pack management page.
3. Find the target resource pack directly on the page or quickly filter it out in the search box on the right, and click **Bind/Unbind** in the **Operation** column.

4. In the pop-up window, select a region, select the target bound serverless cluster, and click **OK**.

Unbinding a resource pack from an existing serverless cluster on the cluster management page

1. Log in to the TDSQL-C for MySQL console.
2. Click the target cluster in the cluster list on the left to enter the cluster management page.
3. On the cluster management page, select **Resource Pack**.
4. Find the target resource pack, and click **Unbind** in the **Operation** column.



5. In the pop-up window, click **OK**.

Adjusting Consumption Priority Order

Last updated：2024-06-07 14:18:59

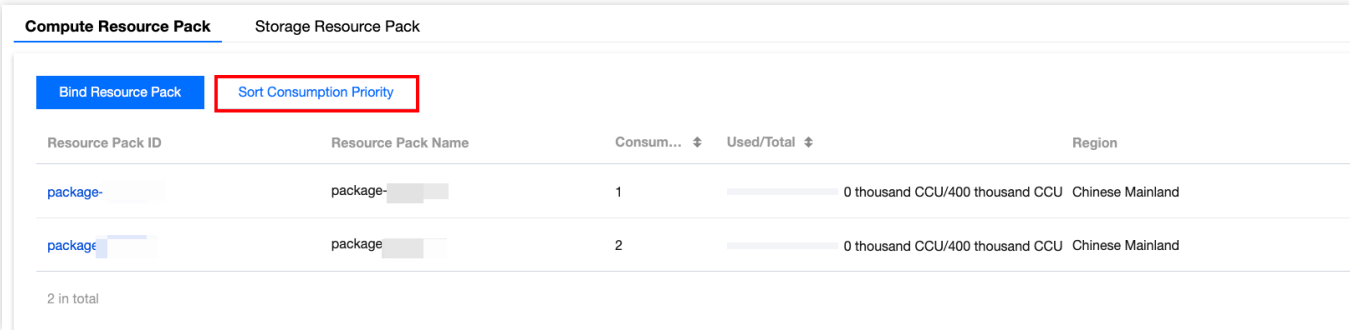
A serverless cluster supports binding multiple resource packs. When multiple resource packs of the same type (compute or storage) are bound, the system automatically sets the consumption order of the resource packs according to the order of binding. You can also manually adjust this order, that is, adjust the consumption priority sorting of the resource packs. Resources are consumed from the lowest to the highest consumption priority level (1 to 10).
This topic introduces how to adjust the consumption priority order of resource packs through the console.

Prerequisites

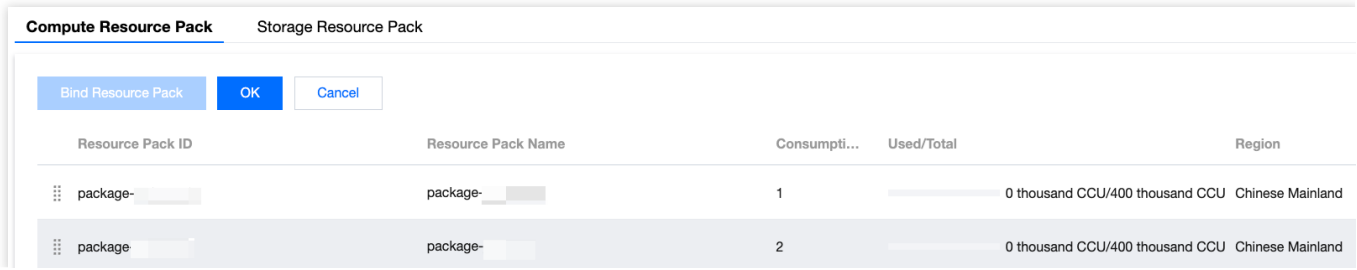
A serverless cluster has been created.
You have purchased a resource pack.
You have bound multiple resource packs.

Adjusting Consumption Priority Order

1. Log in to the TDSQL-C for MySQL console.
2. On the left, click a cluster in the **Cluster List**, and select the **target cluster** to enter the **cluster management page**.
3. On the cluster management page, select **Resource Pack**, choose either **Compute Resource Pack** or **Storage Resource Pack** according to the actual situation, and then click **Sort Consumption Priority**.



4. Adjust the needed consumption priority order by dragging with the mouse, and click **OK**.



Viewing Resource Pack Usage

Last updated：2023-06-14 17:07:59

This document describes how to view the usage of a resource pack.

Prerequisites

You have purchased a resource pack. For more information, see Purchasing Resource Pack.
You have bound the resource pack. For more information, see Binding and Unbinding Resource Pack.

Directions

Option 1:
1. Log in to the TDSQL-C for MySQL console.
2. On the left sidebar, click **Resource Pack** to enter the resource pack management page.
3. Find the target resource pack directly on the page or quickly filter it out in the search box on the right, and click **Usage Details** in the **Operation** column.
4. On the **Usage Details** page, select the target cluster to be queried in the upper right corner, or select all clusters to view the resource pack usage.

Note:
You can view the resource pack usage in the last 24 hours, last 48 hours, last 7 days, last 30 days, a custom time range, or all time ranges.
You can check the following usage details fields: Deduction Period (Hour), Resource Pack ID, Used/Total, and Cluster ID.

Option 2:
1. Log in to the TDSQL-C for MySQL console.
2. Click **Target Cluster** in the cluster list on the left to enter the cluster management page.
3. On the cluster management page, select **Resource Pack**.
4. Find the target resource pack, and click **Resource Pack ID** or **Details** in the **Operation** column.
5. On the **Usage Details** page, select the target cluster to be queried in the upper right corner, or select all clusters to view the resource pack usage.

Resource Pack Reminder Policy

Last updated：2024-03-25 15:36:20

This document describes the reminder policies regarding the usage and validity of a resource pack.

Reminder Policy for Resource Pack Usage

Scenario: Resource pack is about to run out

Reminder messages will be sent when the remaining resource pack usage reaches 30%, 20%, or 10%.
Channels: Message Center, email, and SMS.
Sample message:
Dear user,
You have already used 280,000 CCUs of your TDSQL-C: cynosdbmysql resource pack (ID: package-***, name: to--1) under your account (ID: 100028***, nickname: ce***), and the remaining 120,000 CCUs is less than 30% of the total capacity. Please purchase the resource pack promptly to avoid interruptions.
Reminder messages will be sent when the resource pack runs out.
Channels: Message Center, email, and SMS.
Sample message:
Dear user,
You have used up 400,000 CCUs of your TDSQL-C: cynosdbmysql resource pack (ID: package-***, name: to--1) under your account (ID: 100028***, nickname: ce***) at 11:43:43 on 2023-05-31. Please purchase the resource pack promptly to avoid interruptions.

Reminder Policy for Resource Pack Validity

Scenario: Resource pack is about to expire

Reminder messages will be sent when the resource pack is 30 days, 7 days, 5 days, 3 days, or 1 day from expiration.
Channels: Message Center, email, and SMS.
Sample message:
Dear user,
Your TDSQL-C: cynosdbmysql resource package (ID: package-***, name: to--1) under your account (ID: 100028***, nickname: ce***) will expire at 11:43:43 on November 10, 2023. Once the resource pack has expired, it cannot be refunded. Please purchase the resource pack promptly to avoid interruptions.
Reminder messages will be sent when the resource pack expires.
Channels: Message Center, email, and SMS.

Sample message:

Dear user,

The TDSQL-C resource pack cynosdbmysql- ***(resource pack ID: package-, resource package name: to--1) you purchased for your account (account ID: 100028***, nickname: ce***) has expired at 11:43:43 on November 10, 2023. Please purchase the resource pack promptly to avoid interruptions.

Modifying Resource Pack Name

Last updated：2023-06-14 17:09:18

This document describes how to modify the name of a resource pack.

Prerequisites

You have purchased a resource pack. For more information, see Purchasing Resource Pack.

Directions

1. Log in to the TDSQL-C for MySQL console.
2. On the left sidebar, click **Resource Pack** to enter the resource pack management page.
3. Find the target resource pack directly on the page or quickly filter it out in the search box on the right, and click the edit icon under the **Resource Pack ID/Name**.
4. In the pop-up window for modifying the resource pack name, enter the new name of the resource pack and click **OK**.

> Note：
> The resource pack name can contain up to 60 letters, digits, or symbols (-_.).

Requesting Refund for Resource Pack

Last updated：2024-04-25 12:45:31

This document describes how to request a refund for a resource pack.

Prerequisites

You have purchased a resource pack. For more information, see Purchasing Resource Pack.

Refund Rule

You can request a refund for a valid resource pack in a self-service manner in the console.
Refund policy: For resource packages that remain unused within their validity period, each Tencent Cloud account (primary account) is eligible for a maximum of 20 refund instances per calendar year. Refunds are not available for resource packages that have either expired or been fully used.
Note：
Regarding the limitation on the number of refunds, the system calculates this on a calendar year basis. The first calendar year cycle is from June 30, 2023, at 23:59:59 to July 1, 2024, at 00:00:00. The count resets annually on July 1 at 00:00:00. Therefore, the second calendar year cycle is from July 1, 2024, at 00:00:00 to June 30, 2025, at 23:59:59, and so on.

Refund Amount

Refund amount = paid amount - (consumed usage x unit price x discount applicable)

Directions

1. Log in to the TDSQL-C for MySQL console.
2. On the left sidebar, click **Resource Pack** to enter the resource pack management page.
3. Find the target resource pack directly on the page or quickly filter it out in the search box on the right, and click **More** > **Refund** in the **Operation** column.
4. In the pop-up window, confirm the requested refund and click **OK**.

Multi-AZ Deployment

Last updated：2024-04-25 09:44:59

TDSQL-C for MySQL offers both preset resources and Serverless cluster types, all supporting multi-availability zone deployment. Compared to single availability zone deployment, multi-availability zone deployment offers higher disaster recovery capabilities, ensuring database protection against instance failures or availability zone interrupts, and providing resilience against data center level failures. Multi-availability zone deployment enhances database instances with high availability and failover support. A multi-availability zone configuration involves combining multiple single availability zones within the same region into a physical zone. This article introduces multi-availability zone deployment for Serverless clusters. For information on multi-availability zone deployment with preset resources, please see Overview of Multi-availability zone Deployment.

Prerequisites

The cluster region has at least two AZs.
The target AZ has sufficient computing resources.
Database version requirements:
Database version 5.7 with kernel minor version 2.0.15 or later.
Database version 8.0 with kernel minor version 3.0.1 or later.

Supported Regions and AZs

Currently, this feature is in beta test and only supports the following regions and AZs.
This feature will gradually support more regions and AZs.
If your business requires it, you can Submit a Ticket to request deployment in other Regions and AZs.

Supported Regions	Supports primary availability zone	Supports standby availability zone
Beijing	Beijing Zone 3	Beijing Zone 5
	Beijing Zone 6	Beijing Zone 7
	Beijing Zone 7	Beijing Zone 5
Shanghai	Shanghai Zone 2	Shanghai Zone 4
	Shanghai Zone 4	Shanghai Zone 2
Hong Kong (China)	Hong Kong (China) Zone 2	Hong Kong Zone 3

Multi-AZ Deployment Fee Description

There are no additional fees for the Multi-AZ Deployment feature for the time being.

Multi-AZ Deployment Feature Operations

The operations for Serverless cluster and those pre-configured for Multi-AZ Deployment are consistent. You can refer to the table below.

Functional Item	Directions
Set multi-AZ deployment.	Supports setting Multi-AZ deployment during and after cluster creation via the Console. For operations, see Setting Multi-AZ Deployment.
Switching AZs	Supports the primary-standby switch for clusters with Multi-AZ Deployment. For operations, see Switch Availability Zone.
Modifying AZ deployment	Supports upgrading from Single AZ to Multi-AZ, as well as downgrading from Multi-AZ to Single AZ. For operations, see Modify AZ Deployment.

Adjusting Configurations

Last updated：2024-04-25 09:48:09

After creating a Serverless cluster instance, you can modify the cluster's architecture and computing power configuration, and enable/disable automatic suspension by adjusting the configuration in the console.

Prerequisites

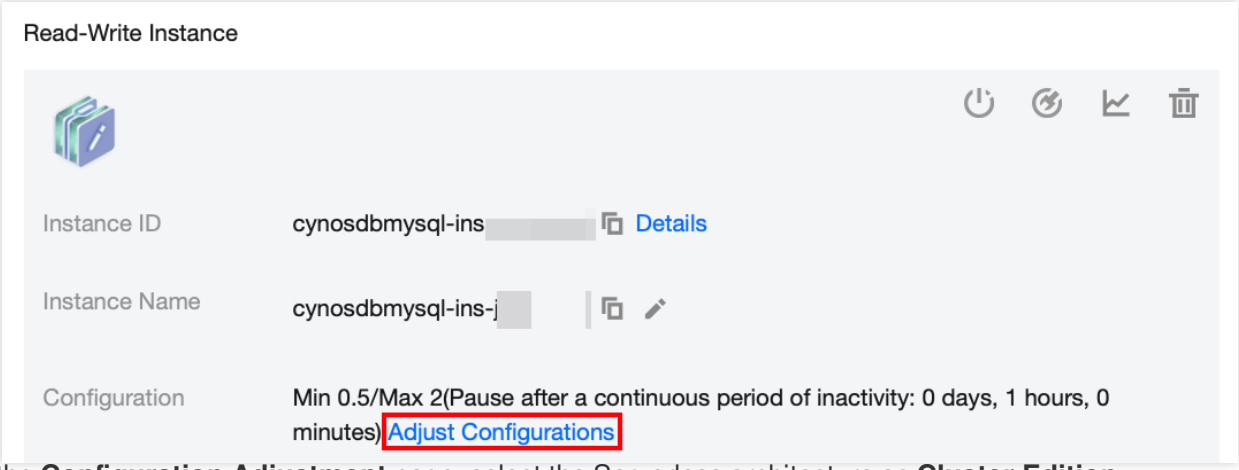
A Serverless cluster has been created.
The cluster status is started.

Modify the cluster's architecture

A Serverless cluster supports two architectures: single-node and cluster editions. The single-node edition has only one read/write instance. After purchase, you can switch to the cluster edition by adding read-only instances through configuration adjustments in the console. The cluster edition includes one read/write instance and 1 - 8 optional read-only instances. After purchase, you can switch back to the single-node edition through configuration adjustments in the console. The corresponding operations are as follows:

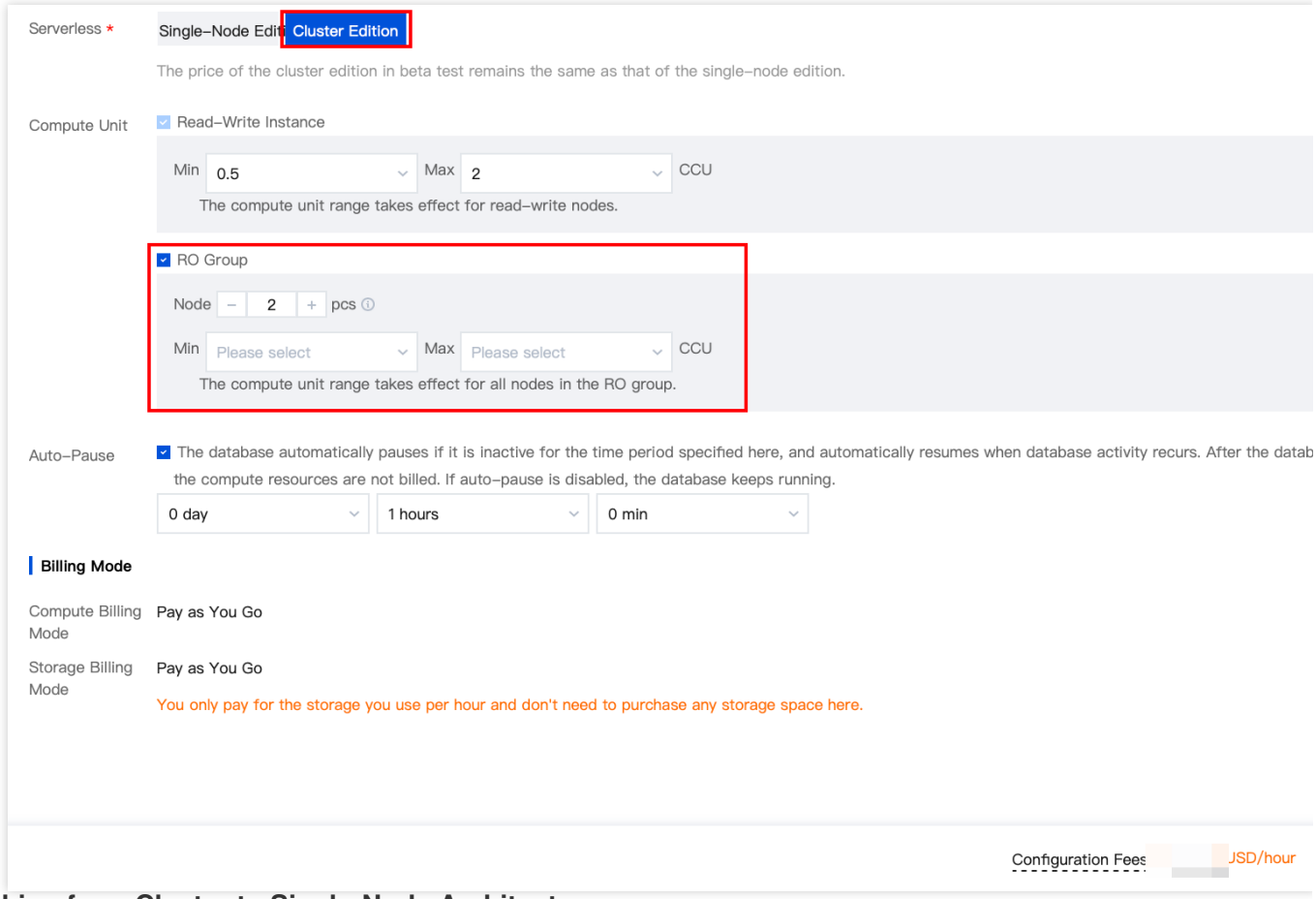
Switching from Single-Node to Cluster Architecture

1. Log in to TencentDB for CynosDB console, and select a region at the top.
2. Click **Target cluster** in the cluster list on the left to enter the cluster management page.
3. On the cluster details page, click **Adjust Configurations**.



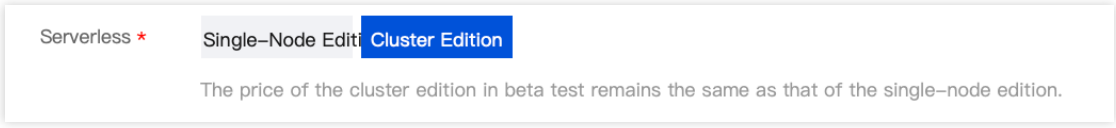
4. On the **Configuration Adjustment** page, select the Serverless architecture as **Cluster Edition**.

5. Select the desired number of read-only instances under the Read-only Group, and set the computing power range within the group. Then, click **Buy Now**.



Switching from Cluster to Single-Node Architecture

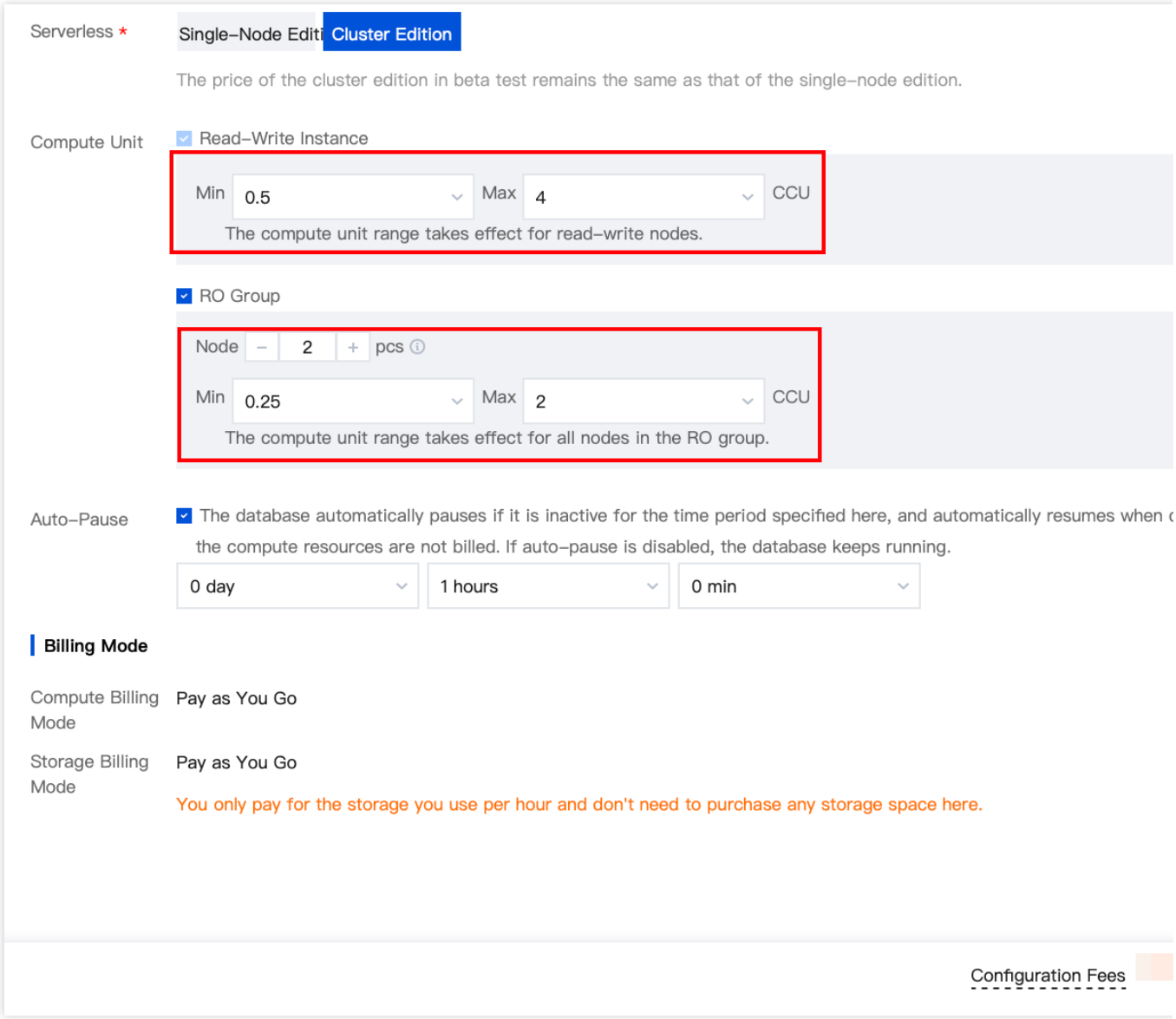
1. Log in to TencentDB for CynosDB console, and select a region at the top.
2. Click **Target Cluster** in the cluster list on the left to enter the cluster management page.
3. On the cluster details page, click **Adjust Configurations**.
4. On the **Configuration Adjustment** page, select the Serverless architecture as **Single-Node Edition**, and click **Buy Now**.



Modifying the Computing Power Configuration of the Cluster

1. Log in to TencentDB for CynosDB console, and select a region at the top.
2. Click **Target Cluster** in the cluster list on the left to enter the cluster management page.
3. On the cluster details page, click **Adjust configurations**.

4. On the **Configuration Adjustment** page, adjust the computing power configuration for the Read/Write instance and the Read-only Group (for Cluster architecture only), then click **Purchase Now**.



Enabling/Disabling Automatic Suspension

On the **Configuration Adjustment** page, you can enable or disable automatic suspension. For service features and operation methods related to cluster automatic suspension, see Automatic Start and Stop.