TencentDB for MySQL

FAQs

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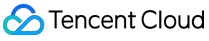

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Selection considerations

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How can I select a suitable TencentDB for MySQL instance?

Before you purchase a TencentDB for MySQL instance, you need to learn about the characteristics of different instances. The following describes how to select a suitable instance based on your business needs.

Overview

To purchase a suitable instance that is the most cost-effective, you need to consider the price, performance, workload, and business scenarios of the instance. The database storage engine, instance architecture, storage type, and isolation strategies are closely related. The following details the four factors to help you purchase a suitable instance.

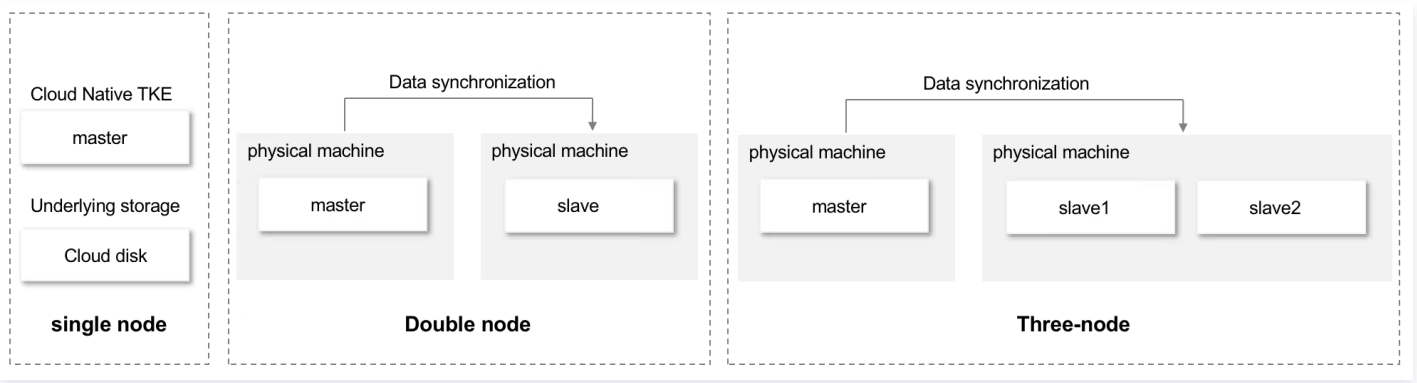
1. Database storage engine

The storage engine of a database indicates the table type and determines the way of table storage.

- **InnoDB**: It is the most commonly used OLTP storage engine. It adopts the multi-version concurrency control (MVCC) and row-level locking technologies to provide high-performance and reliable transaction processing capabilities. Compared with other storage engines of MySQL, InnoDB performs better in ensuring data integrity as it supports foreign key constraints and rollbacks. It also provides more advanced query features. Besides, Tencent Cloud has optimized the kernels of InnoDB, making it suitable for high-performance and high-concurrency scenarios.
- **RocksDB**: It is a high-performance and persistent key-value (KV) storage engine. By leveraging the LSM tree storage structure of RocksDB, Tencent Cloud's TXSQL team developed the TXRocks transactional storage engine which not only reduces wastes caused by InnoDB's half-full pages and fragments, but also uses the compact storage format. Therefore, TXRocks has a performance comparable to that of InnoDB but requires only a half or even smaller storage space. It is more suitable for businesses with a large data volume and high requirements for the transactional read/write performance.

2. Instance architecture

TencentDB for MySQL supports single-node, two-node, and three-node instance architectures.



Architecture	Note	Scenarios
Single-Node	• Supported for: MySQL 5.7/8.0. • Node: One single node.	Personal learning, small websites, non-core small enterprise systems, and medium-to-large enterprise development and testing.
Two-Node	• Supported for: MySQL 5.6/5.7/8.0. • Node: One source node and one replica node. • Source-replica replication mode: Async (default), and semi-sync.	The gaming, the internet, IoT, retail, e-commerce, logistics, insurance, and securities industries.
Three-Node	• Supported for: MySQL 5.6/5.7/8.0. • Node: One source node and two replica nodes. • The three-node architecture supports such source-replica replication modes as async (default), strong sync, and semi-sync.	The gaming, the internet, IoT, retail, e-commerce, logistics, insurance, and securities industries.

3. Storage type

The local SSD, cloud SSD, and enhanced SSD are supported for the underlying storage of TencentDB for MySQL.

Performance Metrics	Enhanced SSD	SSD cloud disk	Local SSD

Max capacity per disk (GB)	30000	30000	12000
Max IOPS of a single disk	Up to 100000 after stacking extra performance	26000	150000
Random IOPS performance	Basic performance: Random IOPS = min{1,800 + capacity (GiB) × 50, 50,000} Extra performance: Max IOPS = min{extra performance ×128, 50,000}. For more information, see Enhanced SSD Performance.	Random IOPS = Min {1800 + Capacity (GiB) x 30, 26000}	IOPS is related to the instance specification. For more information, see Adjusting Database Instance Specification > Instance Specification and Storage Table.
Maximum throughput per disk (MB/sec)	Up to 1000 after stacking extra performance	260	–
Throughput performance (MB/s)	Basic performance: Throughput = min{120 + capacity (GiB) × 0.5, 350} Extra performance: Throughput = min{extra performance ×1, 650}. For more information, see Enhanced SSD Performance.	Throughput = Min {120 + Capacity (GiB) x 0.2, 260}	–
One-way random read/write latency (ms)	0.2 – 1	0.5 – 3	In microseconds (μs)

4. Isolation policy

The table below describes three resource isolation policies of TencentDB for MySQL: Basic, general, and dedicated.

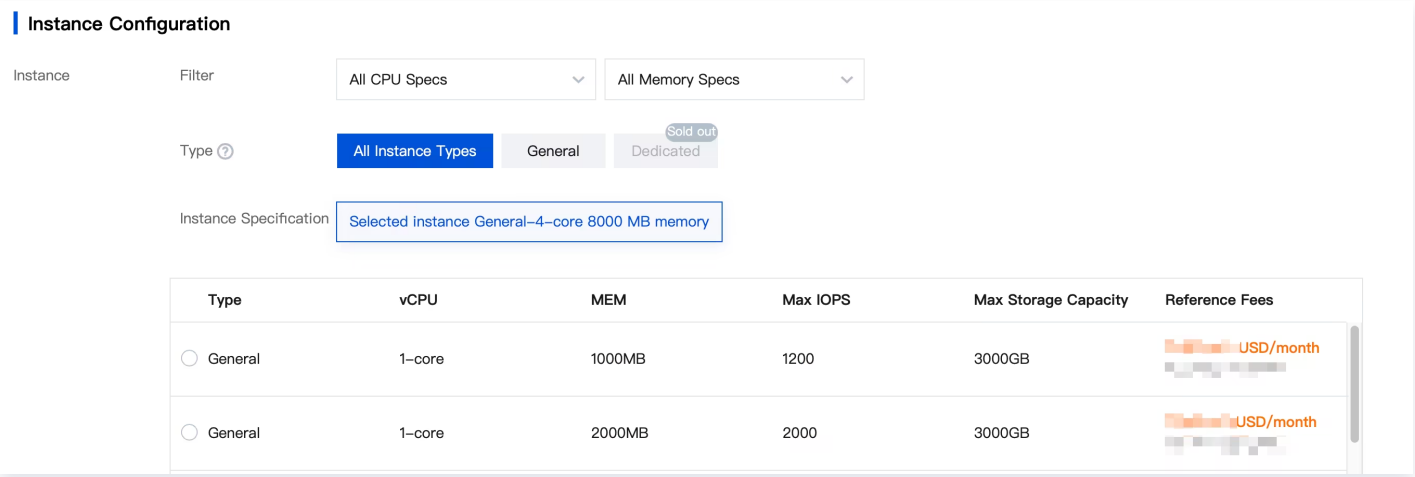
Resource isolation policy	Description
Basic	A basic single-node instance (formerly Basic Edition) supports computation-storage separation and stores data on cloud disks. Only single-node instances support this policy.
General	• A general instance exclusively uses the allocated memory and disk resources and shares the CPU resources with other general instances on the same physical machine. • A general instance benefits from higher specifications at a lower cost by sharing CPU resources. • A general instance's disk capacity is unaffected by its CPU and memory specs.
Dedicated	• A dedicated instance has exclusive access to the CPU, memory, and disk resources (if CPU pinning is enabled). It has long-term stability and is unaffected by the activities of other instances on the physical machine. • A dedicated instance with the highest configurations can monopolize a physical machine and all of its resources.

Getting started

You can follow the steps below to select an instance:

1. **Selecting a Database Storage Engine**
   - If your database needs to have better performance in transaction processing and high-concurrency read/write capabilities, InnoDB is recommended.
   - If you want to save the storage cost, RocksDB is recommended. This is because RocksDB and InnoDB have similar performance while the former saves half of or even more storage space.
2. **Select Instance Architecture**
   - Single-node: This architecture is suitable for scenarios such as personal learning, small websites, non-core small enterprise systems, and medium-to-large enterprise development and testing.
   - Two-node: This is a high-availability architecture with one source node and one replica node. It is suitable for the internet, IoT, retail, e-commerce, logistics, and gaming industries or medium-to-large enterprises.
   - Three-node: This architecture has finance-grade reliability, security, availability, and disaster recovery capabilities. It is suitable for the finance, securities, and insurance industries or the core databases of large enterprises.

3. **Select storage type**
   - Local SSD storage is supported for two-node and three-node instances; cloud SSD storage and enhanced SSD storage are supported for single-node instances.
   - Based on the cloud-native architecture, the single-node instance of cloud disk edition offers a storage space of up to 30 TB. It is suitable for scenarios such as testing, development, and personal learning. The IOPS is affected by the storage space.
   - For the performance metrics comparison between different storage types, see Storage type.
4. **Select isolation strategy and instance specifications**



The single-node architecture supports the "basic" isolation policy while the two-node and three-node architectures support the "general" and "dedicated" isolation policies. The instance specification parameters include vCPU, memory, max IOPS, and max storage capacity. You can select a suitable isolation policy and instance specification based on your business needs.

> **Note**
> For more information, see Purchase Methods.

Documentation

- Architecture Overview
- Isolation strategy
- Database Instance Types
- Database instance replication
- Database Instance Specifications

Billing

Last updated: 2023-09-04 11:36:33

How do I request a refund for a purchased instance if I don't need it anymore?

You can request a refund based on your instance type:

- Pay-as-you-go instance: TencentDB for MySQL will return resources directly. Refunds cannot be requested.
- Monthly subscribed instance:
  - 5-day unconditional return: Each account can return one monthly subscribed TencentDB for MySQL instance unconditionally within five (inclusive) days after purchase by default.
  - Standard return: If you have already returned one TencentDB instance unconditionally within five days after purchase, you can further return 199 monthly subscribed instances in the console at any time.

For more information, see Refund.

Will my business be affected if I switch the billing mode from pay-as-you-go to monthly subscription? How will I be charged then?

Rest assured that access to your business will not be affected during the billing switch from pay-as-you-go to monthly subscription.
For billing details, see Billing Overview.

Why are additional fees incurred for my monthly subscribed instance?

Usage of backup capacity that exceeds the free tier will be charged. Check whether your usage of backup capacity exceeds the free tier.
You can view the backup space usage on the database backup page in the TencentDB for MySQL console. For more information, see Backup Space Billing.

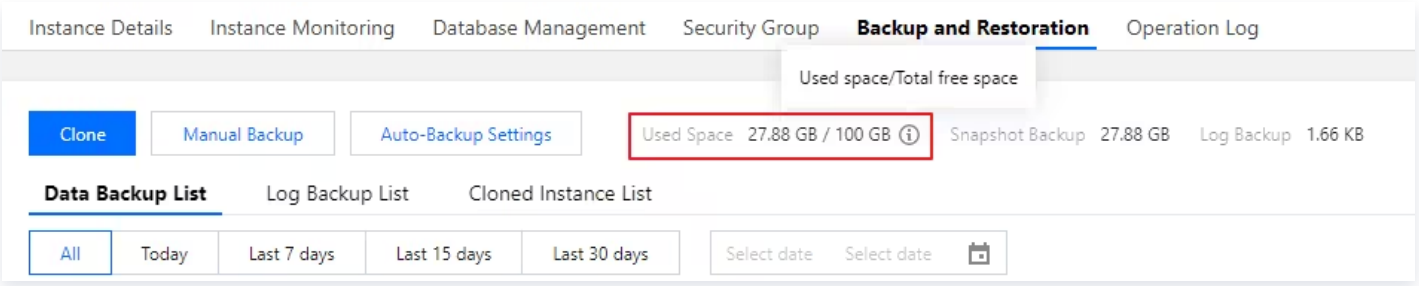
Will I be charged if my pay-as-you-go instances are idle?

Yes. If you stop using pay-as-you-go instances, terminate them as soon as possible to avoid further fees.

How is the backup capacity billed?

TencentDB for MySQL offers a certain amount of backup capacity for free based on the region. The capacity is equivalent to the sum of the storage capacity of all two-node and

three-node instances (including source instances and disaster recovery instances) in the region.
The used space and free space of a single-node instance of cloud disk edition are displayed separately, which can be viewed on the **Backup and Restoration** tab.



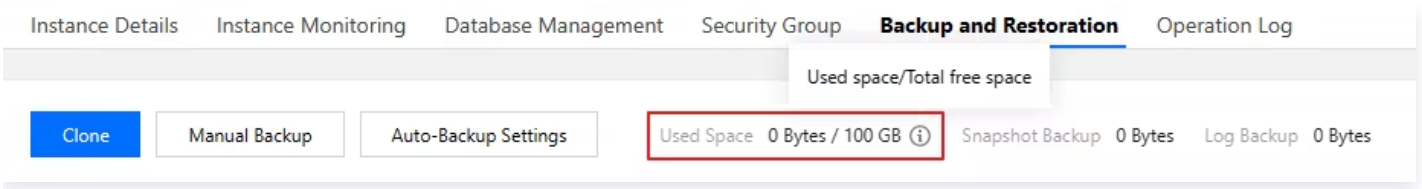
For prices of backup space that exceeds the free tier, see Backup Space Billing.
To reduce backup costs, see Suggestions for Reducing Backup Costs in Backup Space Billing.

Backup
Backup FAQs

Last updated: 2023-09-04 14:07:44

How Is Backup Space Billed?

TencentDB for MySQL provides a certain amount of free backup space by region. The size of the free backup space equals the total storage space of all two-node and three-node instances (including primary and disaster recovery instances) in the corresponding region. The actual space used and the free space allocated for single-node (cloud disk) instances and cloud disk edition instances are displayed separately. You can view them on the instance backup and restoration page.



For the pricing of backup space that exceeds the free tier, see Backup Space Billing.

How to Reduce Backup Space Usage?

- Delete manual backup data that is no longer in use. You can delete manual backups on the MySQL console by navigating to the instance management page > backup and restoration page.
- Reduce the automatic backup frequency for non-core business data. You can adjust the backup schedule and retention period in the console, with a minimum of two backups per week.

> ⓘ **Note:**
> Rollback relies on data backups and log backups (binlog) within the backup schedule and retention period. Shortening the automatic backup frequency and retention period will reduce the rollback time range for instance data. Please carefully consider your backup configuration.

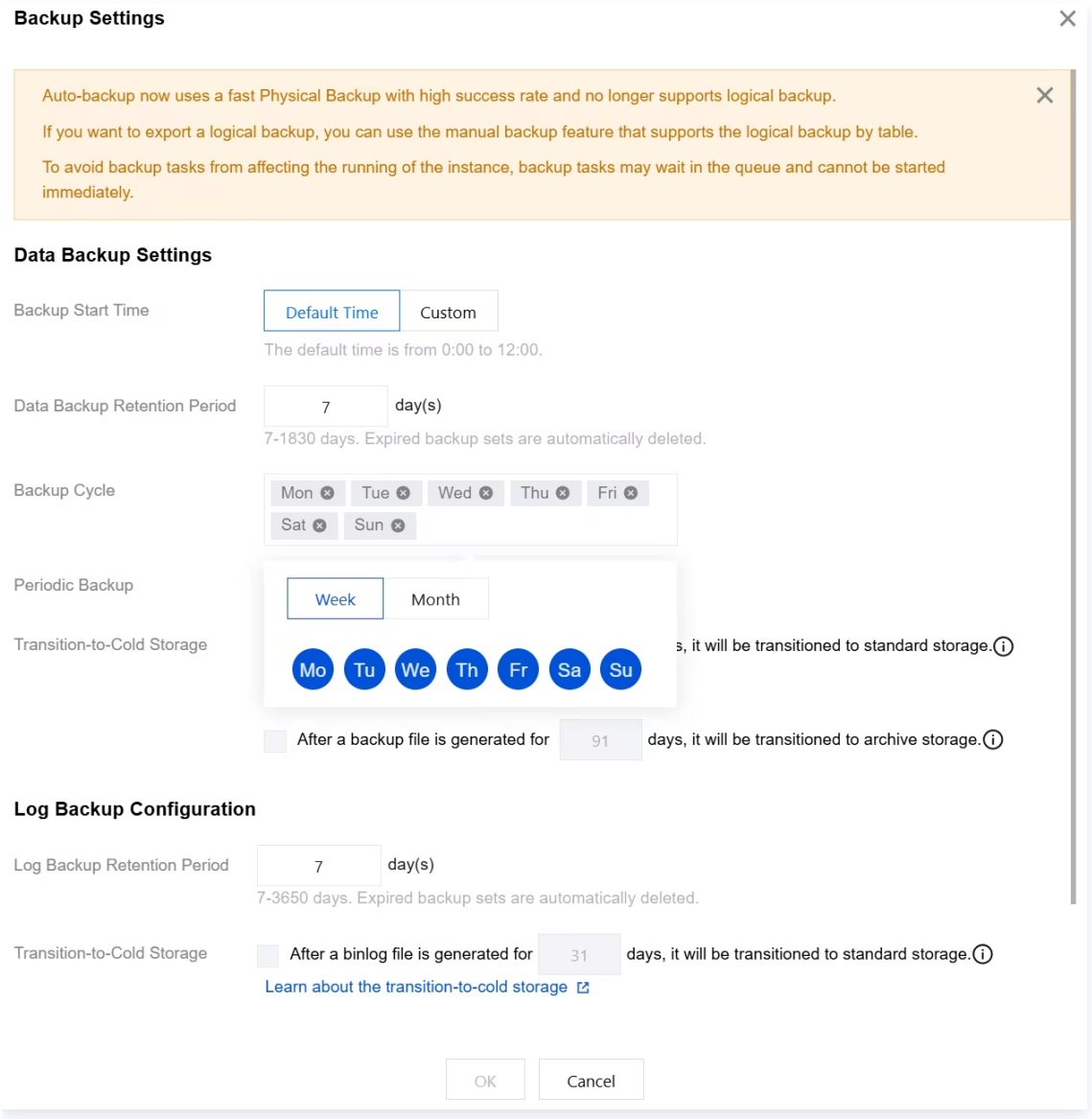
- Shorten the retention period for data backups and log backups of non-core businesses. A retention period of 7 days is sufficient for most scenarios.
- Configure the transition-to-cold storage policy to transition backup files and reduce the storage costs. For more information, see Configuring Transition-to-Cold Storage.

Business Scenario	Backup Retention Period
Core businesses	A retention period of 7 to 3650 days is recommended. Enable scheduled backups to retain backups for long-term storage on a regular basis.
Non-core and non-data businesses	Recommended: 7 days
Archiving businesses	It is recommended to set the backup retention period to 7 days. Manually back up data according to actual business needs and delete them promptly after use.
Testing businesses	It is recommended to set the backup retention period to 7 days. Manually back up data according to actual business needs and

delete them promptly after use.

How to Configure Automatic Backup?

You can configure the settings on the backup and restoration page of the instance in the MySQL console.



Why Are Some Time Periods Not Selectable When I Specify a Custom Backup Start Time?

The available backup start times may be limited by system scheduling resources. If certain time periods are not selectable, the backup queue for that time period is full. If this issue arises, it is recommended to select an idle time period to complete the settings.
For details about the description and operation of database backup, see Backing Up Databases.

How Do Developers Back Up Data?

TencentDB for MySQL instances are automatically fully backed up every day by default. For more information, see Backup Methods. To temporarily back up data, you can also back up data in the following ways:

- Back up data by yourself using the mysqldump tool.
- Back up data using third-party tools, such as Navicat Premium.
- Log in to phpMyAdmin, and back up data through **Export** in the top navigation.

How to Restore or Migrate a Single-Node Basic Instance Backup?

Single-node basic instances support only snapshot backup. To migrate data, see Migrating Data with Command Line Tools.

Why Do Errors Occur When Data Backup Files Are Downloaded?

When downloading a backup with the `wget -c 'backup file download address' -O custom filename.xb` command, enclose the download address in two single quotation marks `'` to help the program identify the address and prevent errors.

Can a Downloaded Backup Be Restored to Another TencentDB for MySQL Instance?

Restoring to another database using a downloaded backup file is supported. For detailed operations, see Restoring a Database from a Logical Backup.

Can Backups Be Deleted Manually?

- Automatic backups cannot be deleted manually. You can set a backup retention period, after which automatic backups are automatically deleted.
- Manual physical/logical backups can be manually deleted from the backup list. They are retained until manually deleted. Manual snapshot backups cannot be deleted.
  - Log in to the MySQL console, click the instance ID to go to the management page, and select the **Backup and Restoration** page.
  - In the backup list, click **Delete** in the **Operation** column to delete the backup.

How to Cancel a Backup Task?

Backup tasks cannot be canceled.

How to Resolve Slow Backup Downloads?

We recommend that you copy the download address on the backup and restoration page of the instance in the MySQL console, log in to a CVM (Linux system) in the VPC where the cloud database resides, and use the wget command for high-speed download over the private

network for greater efficiency.

`wget command format: wget -c 'backup file download address' -O custom filename.xb`

Can Backups Beyond the Retention Period Still Be Downloaded or Restored?

Expired backup sets are automatically deleted and cannot be downloaded for restoration.

- We recommend that you set an appropriate backup retention period based on your needs, or download the backup files to a local directory from the MySQL console.
- You can also manually back up instance data in the console. Manual backups are retained permanently.

> **Note:**
> Manual backups also occupy backup space. Use backup space wisely to avoid incurring additional fees.

Can Data and Log Backups Be Disabled?

It cannot be disabled. However, you can reduce backup frequency and delete unused manual backup data in the MySQL console to reduce backup space usage.

Why Can't a Manual Backup Task Be Started?

Check the time you set for the automatic backup task. If the instance is performing its daily automatic backup, you cannot initiate a manual backup.

Why Can't Logical Backup and Download of Sharded Tables Be Performed?

After the backup new version upgrade, both logical and physical backup features use a new compression algorithm, so some download features are temporarily unavailable. You can use the **Logical Backup** > **Specified Databases and Tables** feature in manual backup to perform logical backup of sharded tables, and you can also download the completed backup.

Why Does Extracting Downloaded Backup Files with tar Fail?

Because the new backup files use a new compression algorithm, they cannot be decompressed properly with the original tar tool. You need to use the xbstream and qpress tools to decompress them.
For detailed steps on using the xbstream and qpress tools to unpack and decompress files, see Restoring a Database from a Physical Backup and Restoring a Database from a Logical Backup.

How to Download xbstream and qpress Tools?

- xbstream is a subprogram of Percona's xtrabackup backup tool. To use xbstream, you need to install Percona's xtrabackup first. You can install xtrabackup using either the yum installation method or the binary installation method.
- After downloading qpress, use the tar command to extract the qpress binary file.
  For specific installation instructions for xtrabackup and qpress, see Restoring a Database from a Physical Backup.

Troubleshooting

Last updated: 2023-09-04 14:08:25

The number of tables in a single instance exceeds 1 million

If the number of tables in a single instance exceeds one million, backup may fail, and database monitoring may be affected. You need to control the number of tables in one single instance appropriately and make sure that it is below one million.

Large transactions caused by non-primary key tables

Cause Analysis

If there is no primary key table in the instance and the binlog is in row format, when a large amount of data is updated or deleted through a SQL statsment, playback on the slave machine will cause a large transaction, resulting in the backup thread unable to acquire the lock, resulting in backup failure.

Solution

1. Check all the non-primary key tables that exist in the instance through SQL statements.

```
select TABLE_SCHEMA,TABLE_NAME,TABLE_TYPE,ENGINE,TABLE_ROWS from
information_schema.tables where (table_schema,table_name) not in
(select table_schema,table_name from information_schema.columns where
COLUMN_KEY='PRI') and table_schema not in
('sys','mysql','information_schema','performance_schema');
```

2. Add a primary key to a table without a primary key.

```
alter table table_name add primary key(column_name);
```

Rollback

Last updated: 2017-12-21 11:50:51

1. Will the current table data be overwritten or a new table be created when a table is rolled back?

A rollback operation can generate a new database/table in the original instance. After the rollback is finished, you can see both the original database/table and the new database/table. The database table name after rollback is "original database table name _bak".

2. How to perform rollback operations in batch for MySQL?

See Batch Rollback.

3. Some of the data is accidentally deleted during the storage procedure which was just executed for MySQL and no backup was created for these data – Can the lost data be restored?

You can use the rollback feature in console.
You can restore the data generated at any time point in the last three days.

Connection and Login
One-Click Connectivity Checker

Last updated: 2023-09-04 14:08:43

If you are unable to access a TencentDB for MySQL instance over the private or public network, you can use the connectivity checker to easily troubleshoot connectivity issues.
If you encounter a connectivity issue when accessing a TencentDB for MySQL instance from a CVM instance over the private or public network, you can use the connectivity check tool provided in the TencentDB for MySQL console to easily troubleshoot the issue.

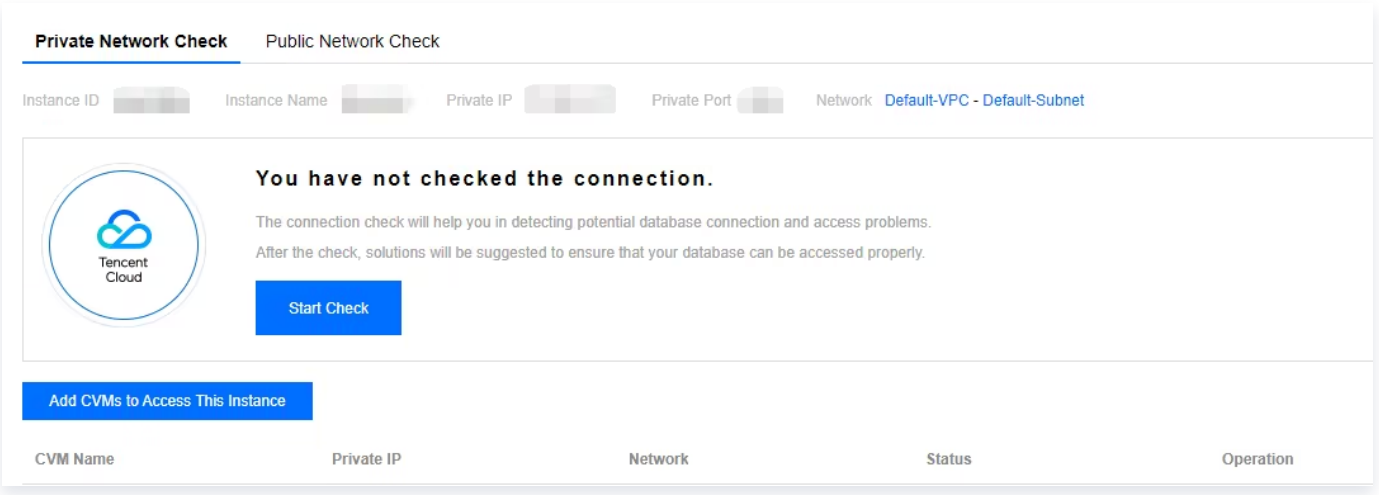
> **Note**
> One-click connectivity checker is not supported for single-node instances of the cloud disk edition.

Private Network Connectivity Check

1. Log in to the TencentDB for MySQL console. In the instance list, click the ID of the instance to be checked and access the instance management page.
2. Select **Connection Check** > **Private Network Check**.
3. Click **Add CVMs that can access this instance**.

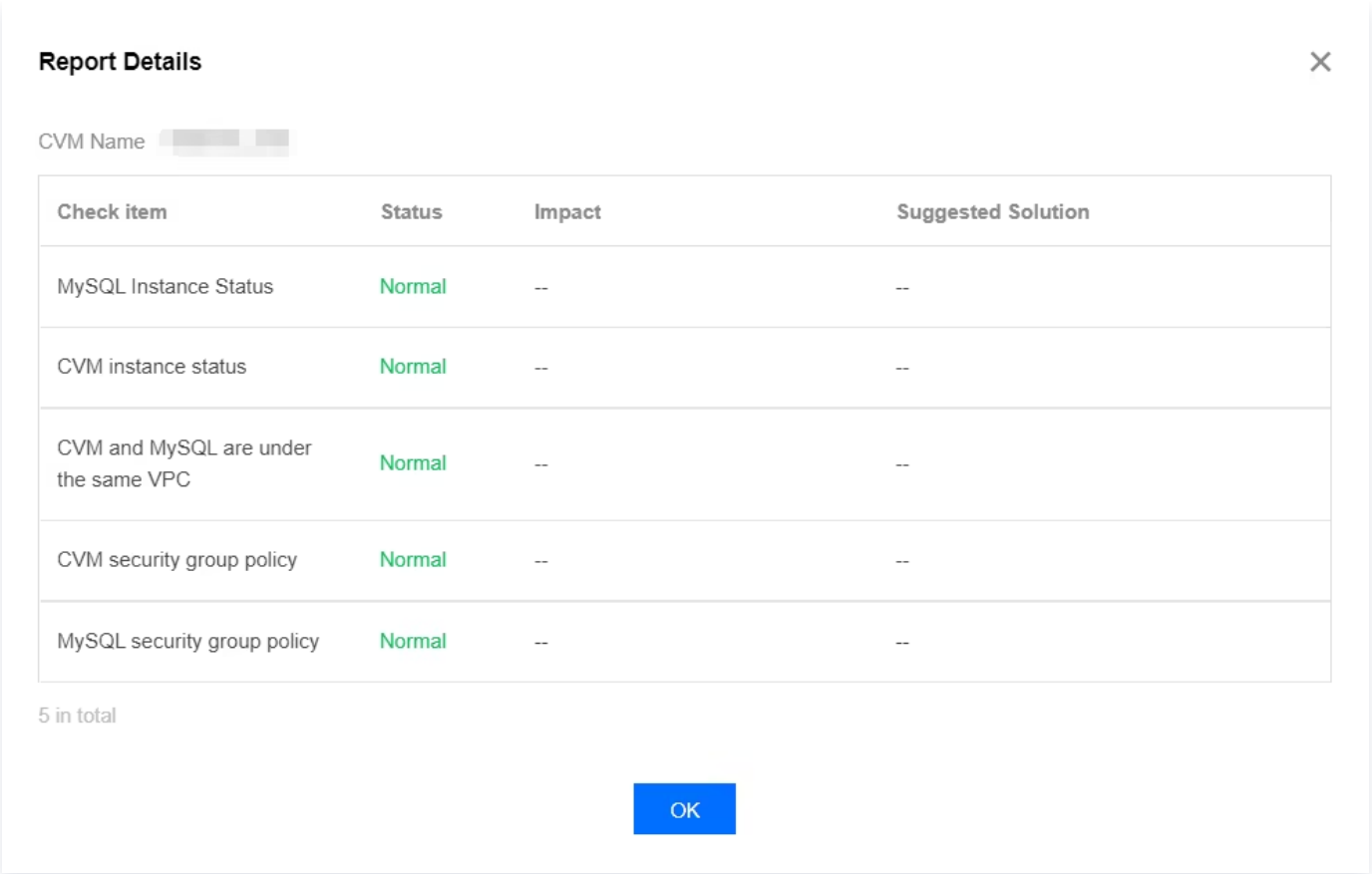
> **Note**
> Only CVM instances in the same region as the TencentDB for MySQL instance are listed by default. If you need cross-region access, enable network interconnection through Cloud Connect Network.

4. Click **Start Check** and a check report will be generated after the check is completed.



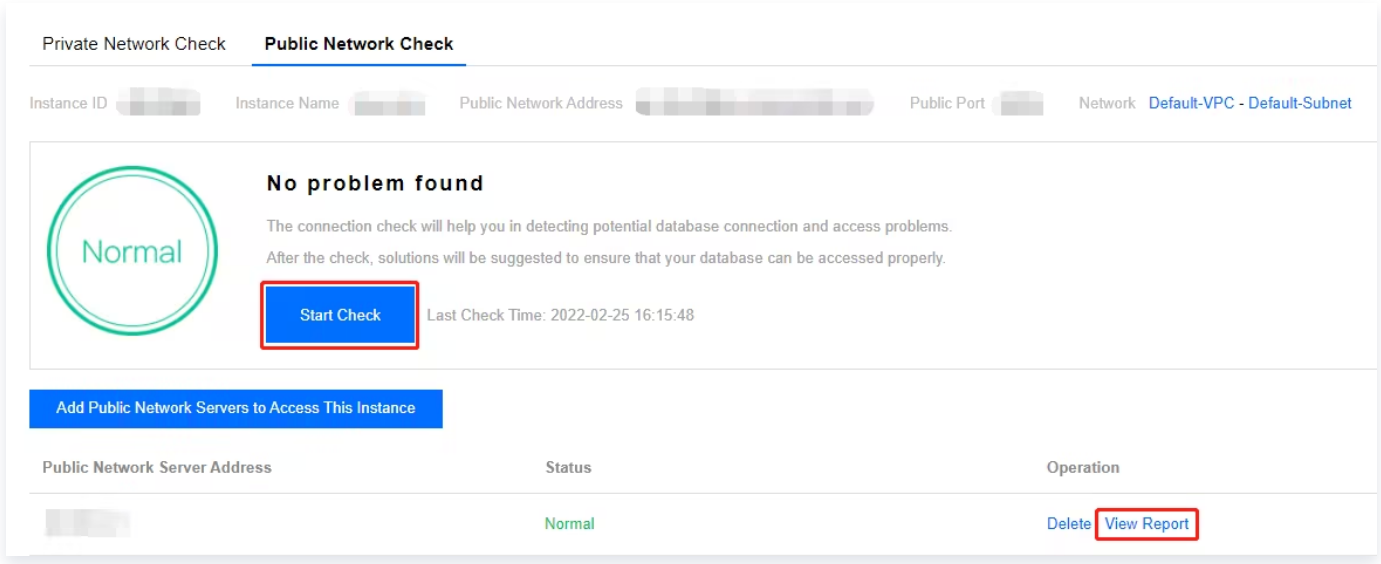
5. In the **Operation** column of the check report, click **View Report** to view the check result.
- If the check status is **Normal**, it means that the CVM instance is allowed to access this TencentDB for MySQL instance over the private network.
- If the check status is **abnormal**, it means that the CVM instance cannot access this TencentDB for MySQL instance over the private network. In this case, troubleshoot by following the suggestions in the **Exception Handling** column below and connect again.

Check Items	Exception Handling
MySQL instance status	The MySQL instance has been terminated. If it is terminated by mistake, go to the recycle bin to restore it.
CVM instance status	The CVM instance has been terminated. If it is terminated by mistake, go to the recycle bin to restore it.
	The CVM instance is shut down. To use it, start it up in the CVM console.
CVM and MySQL are in the same VPC	The network types of the CVM and MySQL instances are different. To make them in the same type of network, see Solutions to network issues to modify their network types.
	The CVM and MySQL instances are using different VPC IP ranges. To make them in the same VPC of the same region, see Solutions to network issues to modify their VPCs.
CVM security group policy	The outbound rule of the CVM instance's security group rejects the access to the IP and port of the MySQL instance. To allow the access to the IP and port of the MySQL instance, see Incorrect CVM security group configuration to modify the outbound rule.
MySQL security group policy	The inbound rule of the MySQL instance's security group rejects the access from the IP and port of the CVM instance. To allow the access from the IP and port of the CVM instance, see Incorrect MySQL security group configuration to modify the inbound rule.



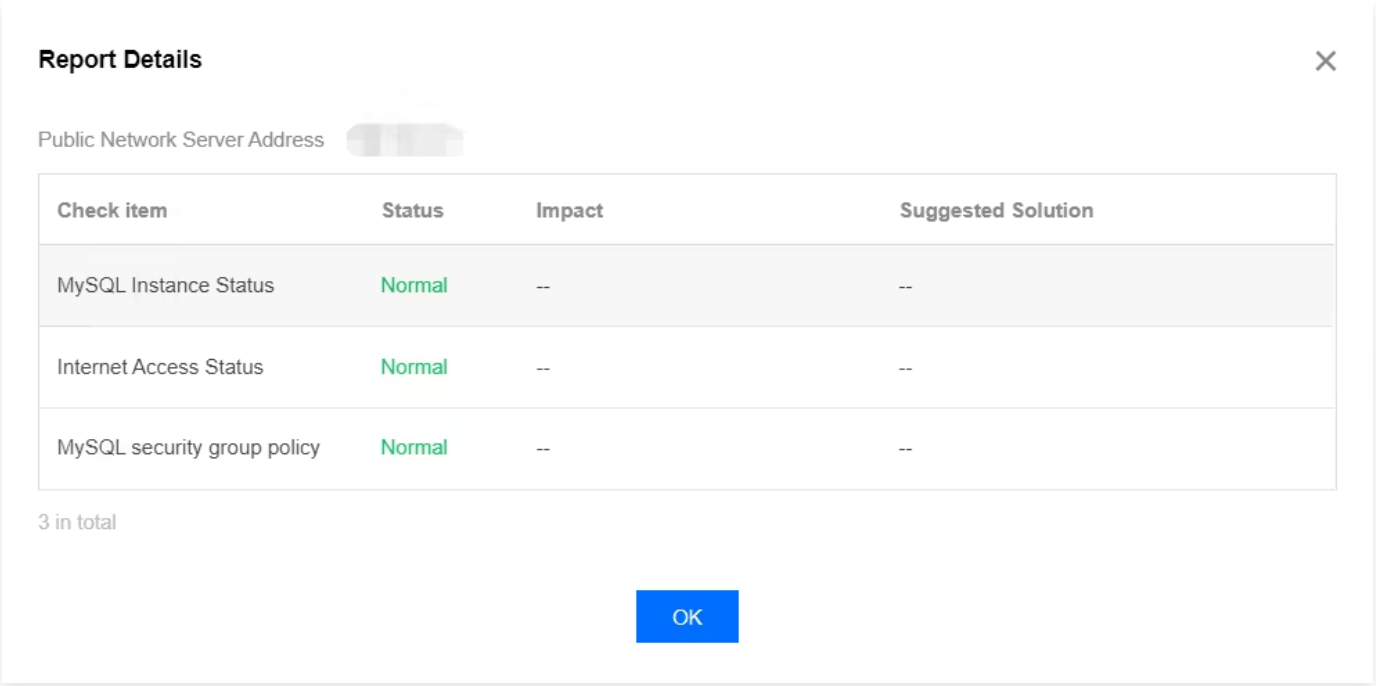
Public Network Connectivity Check

1. Log in to the TencentDB for MySQL console. In the instance list, click the ID of the instance to be checked and access the instance management page.
2. Select **Connection Check** > **Public Network Check**.
3. Click **Add an external server to access this instance** to check the public network connection issues.
4. Click **Start Check** and a check report will be generated after the check is completed.



5. In the **Operation** column of the check report, click **View Report** to view the check result.
   - If the check status is **Normal**, it means that the server is allowed to access this TencentDB for MySQL instance over the public network.
   - If the check status is **Abnormal**, it means that the server cannot access this TencentDB for MySQL instance over the public network. In this case, troubleshoot by following the suggestions in the **Exception Handling** column below and connect again.

Check Items	Exception Handling
MySQL instance status	The MySQL instance has been terminated. If it is terminated by mistake, go to the recycle bin to restore it.
Public network access status	The public network access has been disabled for the MySQL instance. To enable it, see Connecting to MySQL Instance.



Connection

Last updated: 2023-09-04 14:09:07

How do I connect to a TencentDB for MySQL instance?

You can connect to a TencentDB for MySQL instance in the following ways:

- **Private Network Connection**: Use a CVM instance to directly connect to the private network address of the TencentDB instance. This connection method utilizes high-speed private network with low latency. The CVM instance and the database must be under the same account and in the same VPC (ensuring they are in the same region), or both in the classic network.
- **Public network connection**: If you cannot access the private network, you can connect to your TencentDB for MySQL instance at its public network address. The public network address needs to be manually enabled. It can be viewed on the instance details page in the TencentDB for MySQL console and can be disabled if no longer needed.

For more information, see Connecting to MySQL Instance.

What should I do if the connection to TencentDB for MySQL failed?

Failure to connect to TencentDB for MySQL from CVM or local computer

1. Use the diagnosis tool to locate the causes
   The TencentDB for MySQL console provides a one-click connectivity check tool to help you locate the causes of connection failures. Then, you can make changes according to the prompts and retry to connect to the instance.
2. Locate the causes by yourself
   If you cannot locate the cause of the problem with the one-click connectivity check tool, you can try to locate the cause by yourself by referring to the failure causes as described in Instance Connection Failure.

Failure to connect to TencentDB for MySQL from DMC

1. Ensure that the login account's host restrictions have authorized all IPs of the DMC server in the region. For authorization, see Modify Authorized Host Addresses. You can also use the wildcard % to allow all IPs and rely solely on security groups to restrict database access sources.
2. If the IPs have been authorized, the issue may be caused by an incorrect password. Please re-enter the correct password, or you can reset the password or create a temporary account with the required permissions.

For more information, see Instance Connection Failure.

How do I query the private/public network address?

Log in to the TencentDB for MySQL console, click an instance ID in the instance list to enter the instance details page, and view the private/public network addresses.

How do I enable the public network address?

Log in to the TencentDB for MySQL console, click an instance ID in the instance list to enter the instance details page, and enable the public network address in **Public Network Address**.

What should I do if I have slow access over the public network?

We recommend that you use the private network. This connection method uses the high-speed private network with a low delay. For more information, see Connecting to MySQL Instance.

Can I use a CVM instance to connect to the private network address of a TencentDB for MySQL instance?

1. The following conditions must be met before you can use private network access:
   The two instances must be in the same VPC in the same region, or both in the classic network.
2. You can check whether they are in the same VPC or both in the classic network in the following ways:

- You can log in to the CVM console, and view the network information of a CVM instance in the instance list or on the instance details page.
- You can log in to the TencentDB for MySQL console, and view the network information of a MySQL instance in the instance list or on the instance details page.
  For more information, see Network Types/VPC Determination Methods.

What should I do if I can't use a CVM instance to connect to the private network address of a TencentDB for MySQL instance?

We recommend that you use the one-click connectivity check tool to troubleshoot the problem first and then find the corresponding solution in Instance Connection Failure according to the check report.

My CVM and TencentDB for MySQL instances are in different regions (such as Guangzhou and Shanghai, respectively). Can I use the private network for connection?

No. For solutions, see Instance Connection Failure > CVM and MySQL in different regions and different VPCs.

My CVM and TencentDB for MySQL instances are in different AZs (such as Shanghai Zone 2 and Shanghai Zone 1, respectively) in the same region. Can I use the private network for connection?

Even if the CVM and TencentDB for MySQL instances are in the same region, they may be in different VPCs.

- If they are in different AZs in the same VPC, they can interconnect over the private network.
- If they are in different VPCs (such as VPC1 and VPC2, respectively), they cannot interconnect over the private network. For solutions, see Instance Connection Failure > CVM and MySQL in the same region but different VPCs.

Can I use a CVM instance to connect to a TencentDB for MySQL instance directly over the private network when they are under different accounts?

You cannot directly connect via the private network, but you can use Cloud Connect Network to achieve cross-account private network connections.

The verification with telnet found that the network and port connectivity of the TencentDB instance was good, but an error was reported when I tried to log in to it on the command line in the CVM instance. What should I do?

- If you encounter the message "ERROR 1045(28000): Access denied for user...", please ensure that you have entered the correct TencentDB account and password. If you have forgotten your password, refer to Resetting Password. If the error persists after entering the correct information, check if your instance has IP restrictions for connections in the TencentDB for MySQL console under Instance Management > **Database Management** > **Account Management**.
- If "ERROR 1040(00000):Too many connections" is displayed, it indicates that the number of connections to the TencentDB instance has exceeded the limit. Common causes and solutions are as follows:
  i. There are too many sleeping threads. We recommend that you lower the values of `wait_timeout` and `interactive_timeout` in the console.
  ii. Slow queries heaped up. The `long_query_time` parameter is 10s by default. We recommend that you change it to 1-2s and then observe slow query logs.
  iii. If there are few sleeping threads and no slow queries heaped up, we recommend that you increase the value of the `max_connections` parameter in the console.
- If "ERROR 2003 (HY000): Can't connect to MySQL server..." is displayed, check whether the instance IP and port entered are correct. If the error persists after you enter the correct

information, check the security group policies of the instance in the console to verify whether the CVM instance has the permission to connect to the database. For more information, see TencentDB Security Group Management.

- If the connectivity test fails during data migration, check whether the security policy allows the prompted migration proxy IP.
- Check the `init_connect` parameter (if set), such as `mysql>set global init_connect='insert into db_monitor.accesslog(thread_id,log_time,localname,matchname) values(connection_id(),now(),user(),current_user())'` ;.
  This means that each connection to the database by each non-super-privileged user will insert an entry into the `db_monitor.accesslog` table. Once there are uncommitted transactions or relevant lock waits in the table, then `insert into db_monitor.accesslog` operations will be jammed, causing all connections by non-super-privileged users to be stuck and affecting the normal use of TencentDB. Therefore, configure the `init_connect` parameter with caution.

Parameter modification

Last updated: 2023-09-04 14:09:27

How do I modify the configuration parameters of a TencentDB for MySQL instance?

In the MySQL console, click the **instance ID** to enter the management page. Select **Database Management** > **Parameter Settings**. Common var_name variables include the following:

Variable	Note
character_set_server	Default character set of the server
connect_timeout	Connection timeout period
long_query_time	A query that takes longer than this time is a slow query
max_allowed_packet	Maximum packet length
max_connections	Max connections
sql_mode	Current SQL mode of the server
table_open_cache	Number of tables opened by all threads. Increasing this value will increase the number of file descriptors that mysqld is requested to open
wait_timeout	Non-interactive connection timeout period

You can view more configuration parameters in **Database Management** > **Parameter Settings** in the console.

How do I set Chinese queries in TencentDB for MySQL?

Chinese characters are currently not supported in TencentDB for MySQL.

How do I enable the scheduler feature in TencentDB for MySQL?

In the MySQL console, click the **instance ID** to enter the management page. Select **Database Management** > **Parameter Settings** page. In the parameter settings, set the event_scheduler parameter to ON.

How do I increase the connection timeout period in TencentDB for MySQL?

In the MySQL console, click the **instance ID** to enter the management page. Select **Database Management** > **Parameter Settings** page. Modify the wait_timeout parameter in the parameter settings.

How do I modify the `group_concat_max_len` parameter in TencentDB for MySQL?

In the MySQL console, click the **instance ID** to enter the management page. Select **Database Management** > **Parameter Settings** page. Modify the group_concat_max_len parameter in the parameter settings.

How do I locate the SQL statements for full-table scan in TencentDB for MySQL?

Full-table scan statements are not recorded by default. To locate them, set the `log_queries_not_using_indexes` parameter to `ON` in **Parameter Settings** in the TencentDB for MySQL console. We recommend that you only enable this parameter for a short period of time.

How do I change the default character set in TencentDB?

TencentDB for MySQL supports LATIN1, GBK, UTF8 (default), and UTF8MB4 character sets. Although TencentDB supports changing the default character set, we recommend that you explicitly specify the table encoding when creating a table and specify the connection encoding when establishing a connection for more portable application experience. For more information on MySQL default character set and how to modify it, see Use Limits. You can also modify the character set in the console.

How do I view the character set collation in TencentDB?

TencentDB for MySQL allows you to set the character set collation when creating an instance. You can select a character set to provide a case-sensitive, accent-sensitive, or binary collation for your data, but doing so will affect the results of relevant database operations. You can run the `show collation` command to view the collation.
Sample:

```
show collation where charset ='utf8mb4';
```

Collation Description

Collation option	Note
_CS	Case-sensitive.
_CI	Case-insensitive.
_AS	Accent-sensitive. This option indicates that the sorting will be accent-sensitive; for example, "a" and "á" are different characters.
_AI	Accent-insensitive.
_BIN	Binary.

Character Set Suffix Description

Instance character set suffix	Note
_CI_AI	Case-insensitive and accent-insensitive
_CI_AS	Case-insensitive and accent-sensitive
_CS_AI	Case-sensitive and accent-insensitive
_CS_AS	Case-sensitive and accent-sensitive

What should I do if the `lower_case_table_names` parameter failed to be modified?

You can modify the `lower_case_table_names` parameter in the TencentDB for MySQL console. If it is set to `1`, the case-insensitive mode is enabled. Pay attention to the following when modifying the parameter:

- Modifying the parameter will restart the instance.
- Make sure that all database names and table names in the instance are using lowercase letters before modifying the parameter; otherwise, an error will be reported if there is any database name or table name using uppercase letters.
- The parameter cannot be modified in MySQL v8.0 which supports the case-insensitive mode by default.

Check uppercase table names:

```
select table_schema,table_name from information_schema.tables where
table_schema not in("mysql","information_schema") and (md5(table_name)
<>md5(lower(table_name)) or md5(table_schema)
<>md5(lower(table_schema)));
```

Check uppercase database names:

```
select SCHEMA_NAME from information_schema.SCHEMATA where
md5(SCHEMA_NAME)<>md5(lower(SCHEMA_NAME));
```

Instance Upgrade
Instance Scaling

Last updated: 2023-09-04 14:09:46

What is the difference between read-only, slave, and disaster recovery instances?

- Read-only instance: it only allows the read operation and is deployed in the same region as the master instance. A master instance can have up to 5 read-only instances.
- Replica instance: It is used to back up the database and deployed in the same region as the source instance. A source instance can have 1 or 2 replica instances.
- Disaster recovery instance: it provides cross-AZ and cross-region disaster recovery capabilities. A master instance can have up to 1 disaster recovery instance.

Why can't I select a specific AZ when creating a read-only instance?

If you can't select an AZ, it means that there are no resources in this AZ. You can choose another AZ as displayed on the actual purchase page, which will not affect your use of the read-only instance.

Can I select an AZ different from that of the source instance when creating a read-only instance?

Yes. When creating a read-only instance, you can choose to create a new RO group for it and select an AZ different from that of the source instance. However, if you select an existing RO group, the AZ of the new read-only instance can only be the same as that of the selected existing RO group, which may not necessarily be the same as that of the source instance.

Can a TencentDB for MySQL read-only instance connect to the public network?

Read-only instances can connect to both public and private networks.

How often does a TencentDB for MySQL master instance sync with a disaster recovery instance?

After sync is enabled and initial sync is completed, the master instance and disaster recovery instance will sync data in real time.

Can a temporary instance be added to TencentDB for MySQL?

Currently not supported.

Why does instance upgrade fail?

If the number of tables in a single instance exceeds one million, upgrade may fail and database monitoring may be affected. Make sure that the number of tables in a single instance is below one million.

How do I sync real-time data in two instances with an intra-city active-active architecture configured?

For this purpose, you can purchase disaster recovery instances in the TencentDB for MySQL console.

Kernel Upgrade

Last updated: 2023-09-04 14:09:58

How do I upgrade the kernel minor version?

TencentDB for MySQL supports automatic or manual kernel minor version upgrade. Upgrading adds new features, improves performance, and fixes issues.

> **Note**
> Currently, basic single-node instances don't support kernel minor version upgrade.

- **Automatic upgrade**:
- Scenario 1: when a severe bug or security vulnerability occurs in TencentDB for MySQL, the system will perform database kernel minor version upgrade during the maintenance window and send upgrade notifications through the console Message Center and SMS.
- Scenario 2: when a TencentDB for MySQL instance is migrated due to instance configuration upgrade/downgrade, storage capacity expansion/reduction, or database version upgrade, etc., the system will automatically upgrade the instance's kernel to the latest minor version.
- **Manual upgrade**:
  Apart from automatic upgrades, users can manually upgrade the kernel minor version in the console. Please refer to Upgrade Kernel Minor Version.

  > **Note**
  > - The instance cannot be downgraded once upgraded to the latest kernel minor version.
  > - Operations such as database version upgrade and configuration adjustment are accompanied by a momentary disconnection from the TencentDB for MySQL instance. Please make sure that your business has a reconnection mechanism.

How do I check the kernel minor version?

1. Log in to the CVM instance as instructed in Customizing Linux CVM Configurations and run the following command to log in to the TencentDB for MySQL instance. For more information, see Connecting to MySQL Instance.

```
mysql -h hostname -u username -p
```

When accessing the internet:

```
mysql -h [database IP] -P[database port] -uroot -p
```

2. Run the following command to check the version number of the TencentDB for MySQL instance.

```
show variables like 'version_comment';
```

```
MySQL [(none)]> show variables like 'version_comment';
+-----------------+----------+
| Variable_name   | Value    |
+-----------------+----------+
| version_comment | 20190830 |
+-----------------+----------+
1 row in set (0.00 sec)
```

Account permission

Last updated: 2023-09-04 14:10:14

How do I modify the account permission?

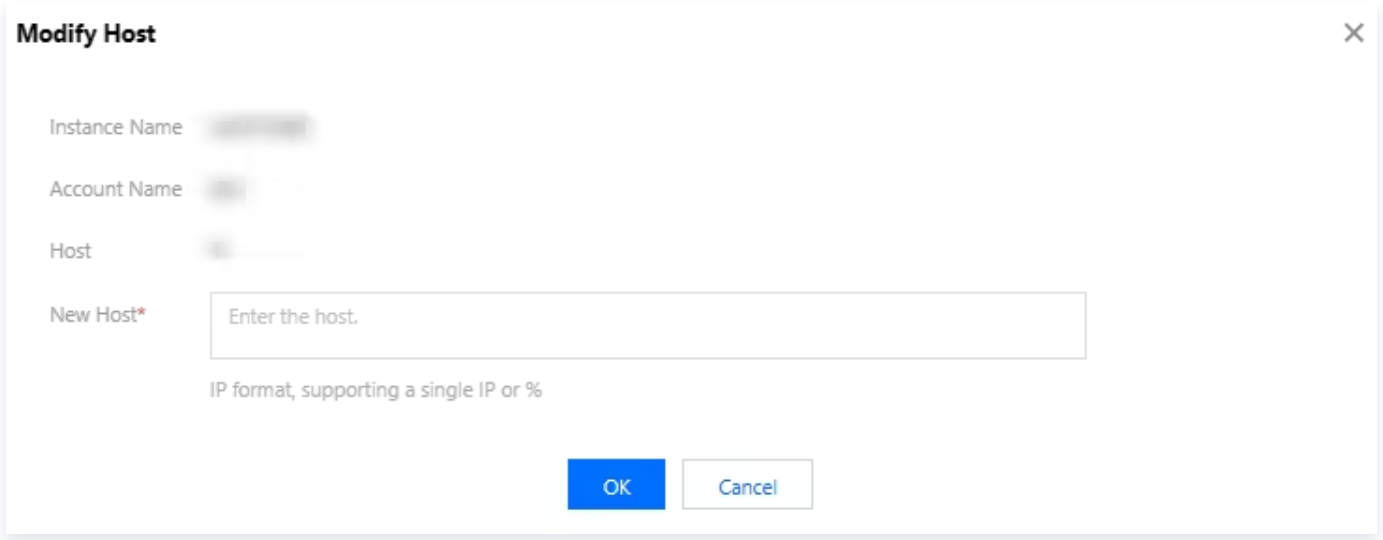
You can modify or revoke the permissions of existing database accounts in the TencentDB for MySQL console.
For directions, see Modifying Account Permissions.

How do I authorize a MySQL client installed on a server to access TencentDB for MySQL instances?

You can control access to the database by modifying the authorized host address of the database account in the TencentDB for MySQL console.
For more information, see Modifying Authorized Host Addresses.

What should I do if I cannot log in to the data management console (DMC)?

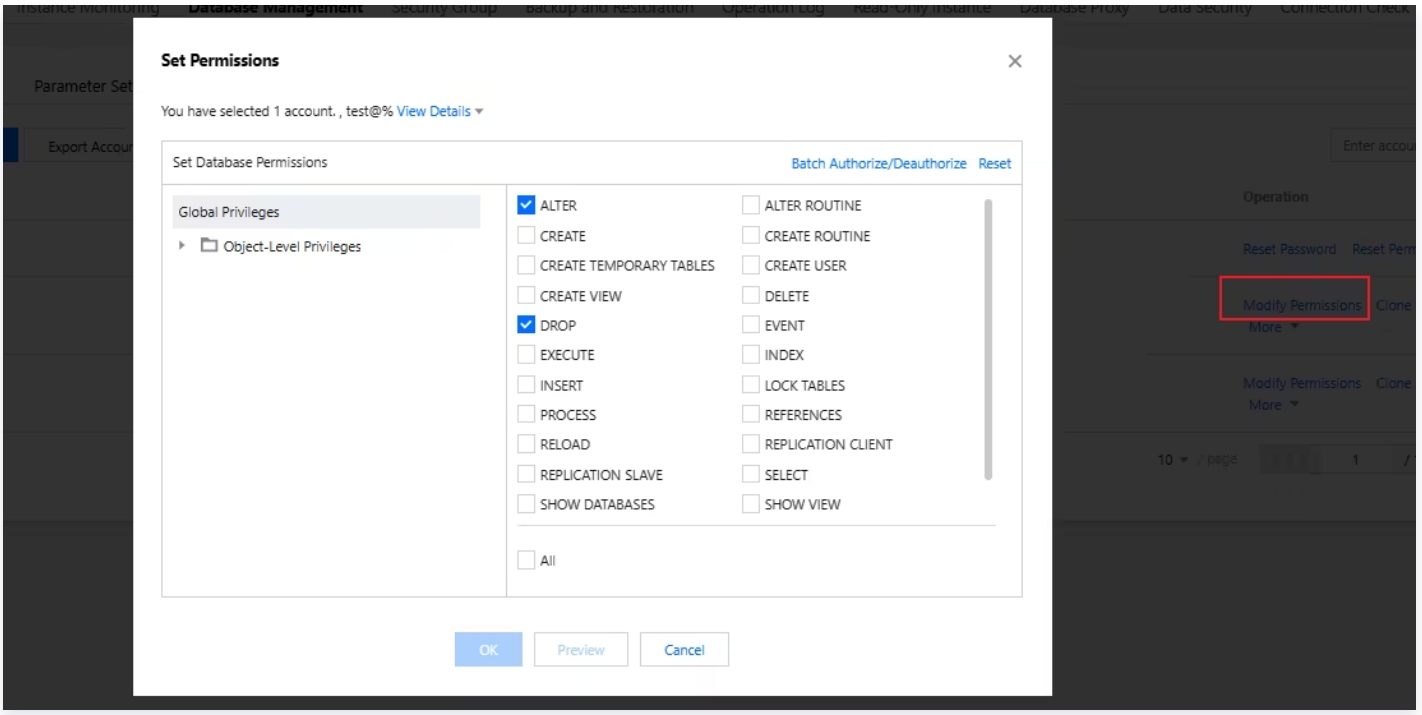
1. This issue may be due to the business account you are using. You need to go to Database Account Management and ensure that the login account has authorized the client host address to access the database. Set the host address to "%" or the client host address you want to authorize. For more information, see Modifying Authorized Host Addresses. You can also log in to the database management tool directly with the root account.



2. If none of the above issues apply, it's possible that your account password is incorrect. Please re-enter your password or reset your password.

What should I do if I cannot create any database or table?

It's possible that the account you're using to log in is a business account, which does not have the permission to create databases/tables. Please grant the necessary permissions to this account in the TencentDB for MySQL console, as shown in the following figure:



What should I do if I have no permissions to modify database parameters such as `sql_mode`?

You might be using a sub-account without parameter modification permissions. You can use the root account or grant the sub-account permissions as instructed in CAM > Overview.

How do I grant a sub-account permissions to modify TencentDB for MySQL instances?

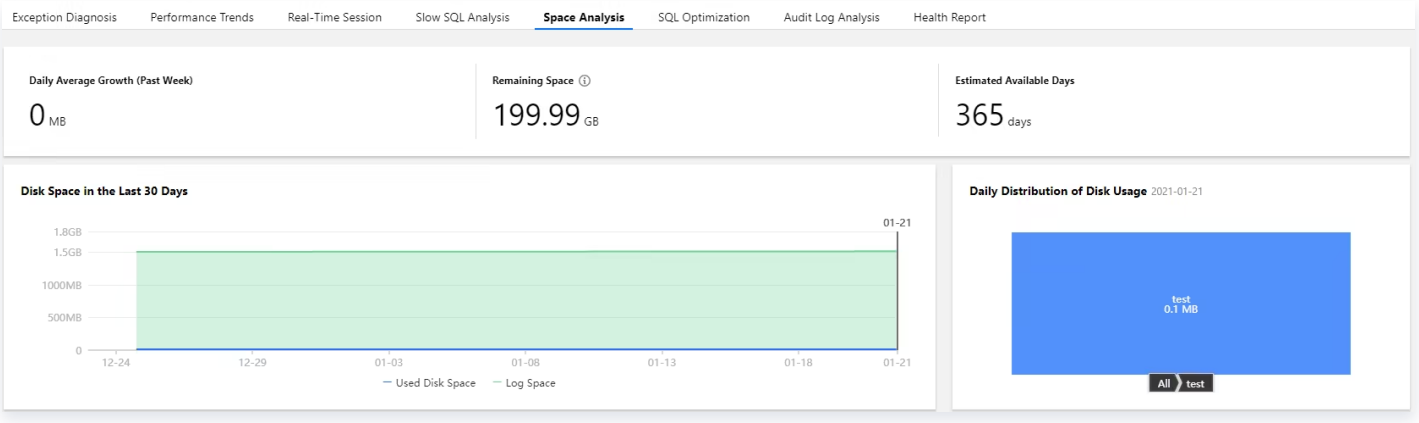
To grant a user permissions to create and manage TencentDB instances, you can implement the `QcloudCDBFullAccess` policy for the user. For more information, see Console Examples > Full Access Policy for TencentDB.

Performance Space Memory Performance FAQs

Last updated: 2023-09-04 14:12:04

How do I view the storage capacity usage of a TencentDB for MySQL instance?

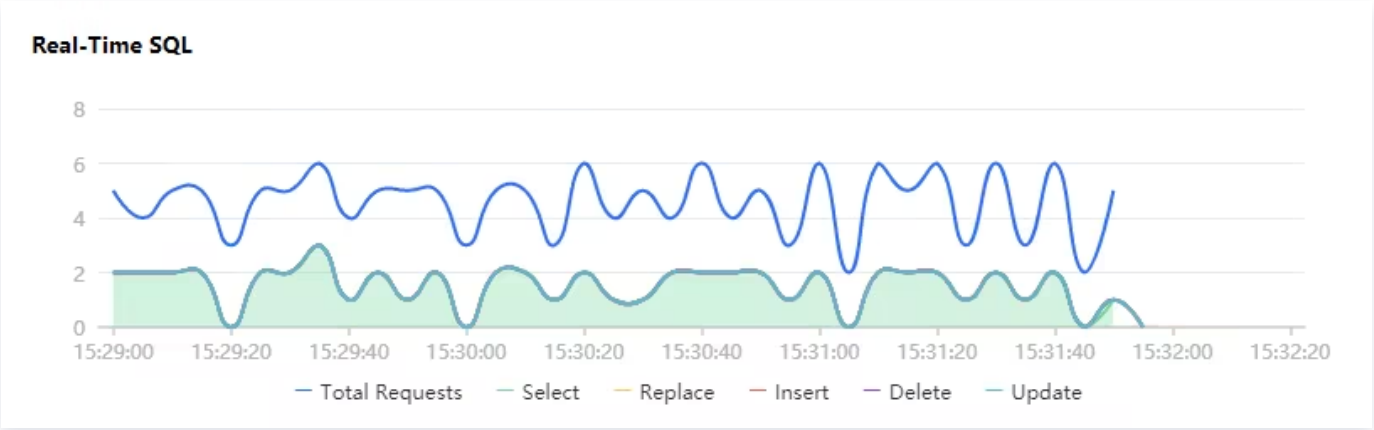
Log in to the DBbrain console and select **Performance Optimization** on the left sidebar. On the displayed page, select a database type and an instance at the top, and select the **Space Analysis** tab.
On the **Space Analysis** tab, you can view the daily average growth in the last week, available disk capacity, the estimated number of available days, and disk capacity usage trends in the last week. In addition, you can view the capacity utilization and fragmentation details of each database table in your instance.



How do I analyze the full SQL execution track of a TencentDB for MySQL instance?

Log in to the DBbrain console and select **Performance Optimization** on the left sidebar. On the displayed page, select a database type and an instance at the top, and select the **Audit Log Analysis** tab.

1. Under **Log AAS Analysis**, click **Create Analysis Task**, select a time period, and click **Confirm**.
2. Click **View SQL Analysis** in the task list to access the SQL analysis page.
3. On the SQL analysis page, you can display the view by **SQL Type**, **Host**, **User**, or **SQL Code**. You can specify a time period to expand the view and view data at specific time points.

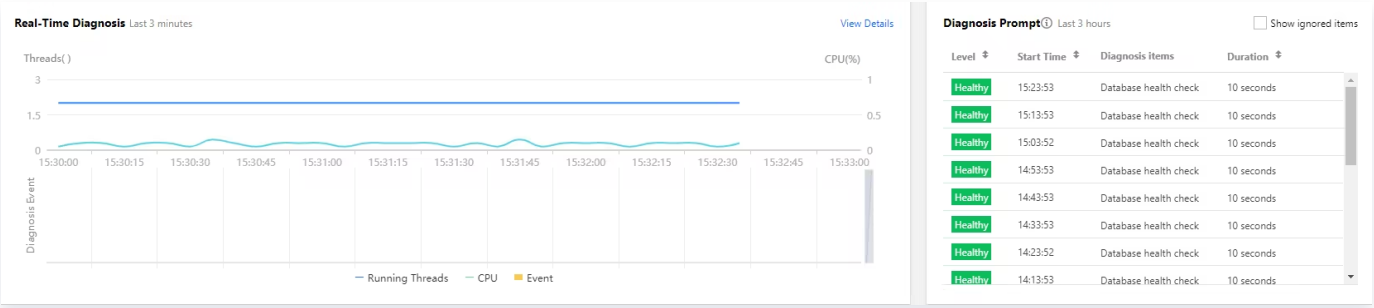


4. Click the SQL template on the target row, and the SQL statement details will be displayed on the right.

- On the analysis page, you can view and copy specific SQL statements and optimize them based on the provided optimization suggestion or description.
- On the statistics page, you can view the statistical analysis and execution duration track of the specified SQL statement type by Host, User, or SQL Code.

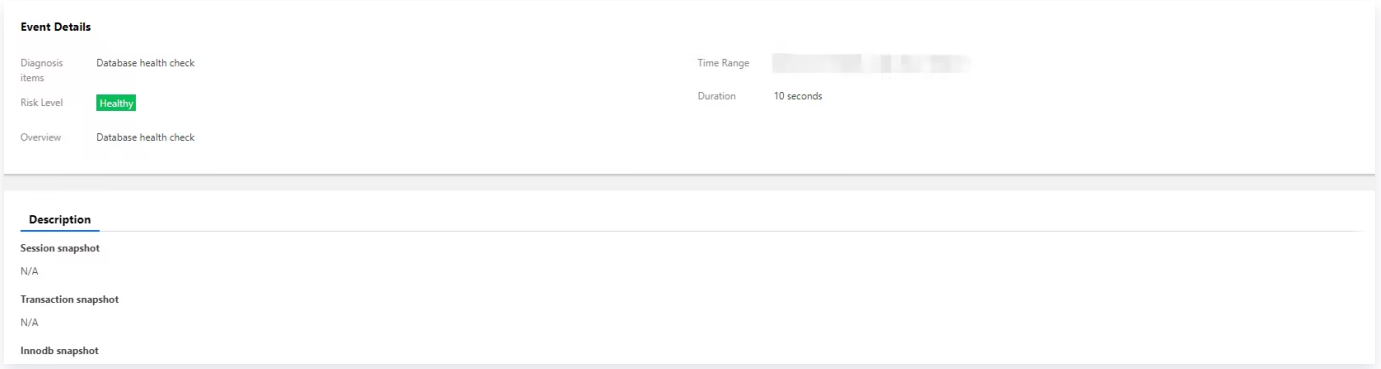
How do I perform diagnosis or optimization by myself when a TencentDB for MySQL instance is faulty or has an exception?

1. Log in to the DBbrain console and select **Performance Optimization** on the left sidebar. On the displayed page, select a database type and an instance at the top, and select the **Exception Diagnosis** tab.
2. The **Diagnosis Prompt** column displays the diagnosis event history, including the health level, start time, diagnosis items, and duration. DBbrain performs health checks on the instance regularly.



3. Click **View Details** or the diagnosis item in the **Diagnosis Prompt** column to access the diagnosis details page. Click a diagnosis event in the view, and the event details will be displayed below, including event summary, phenomenon description, intelligent analysis, and expert recommendations. Optimize according to the expert recommendations to

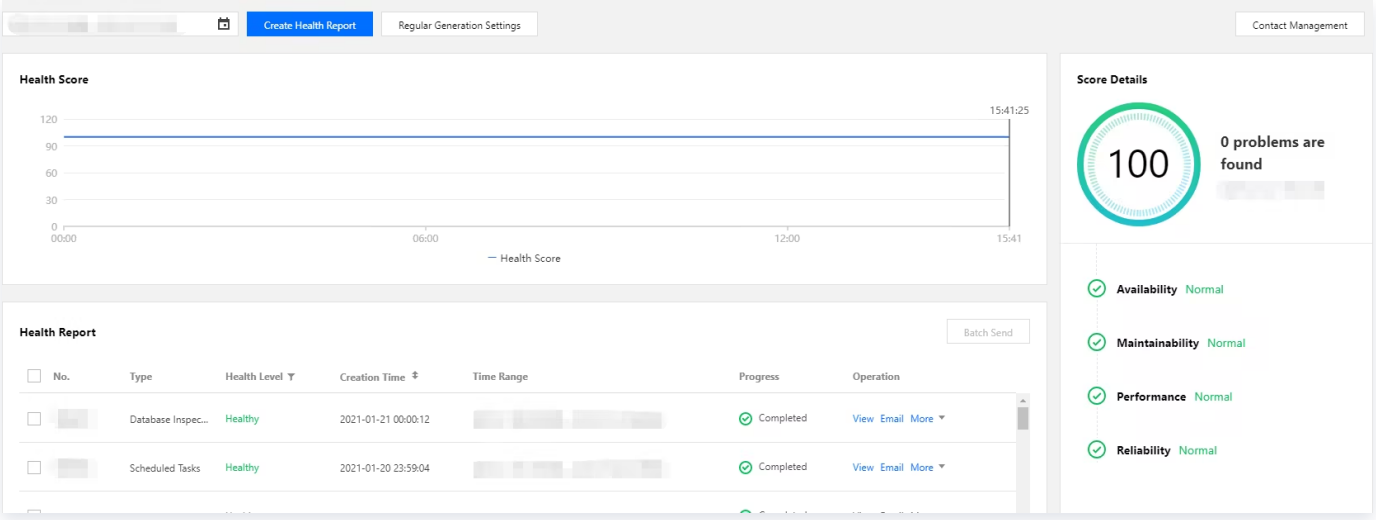
resolve database anomalies and improve instance performance.



How can I receive the TencentDB for MySQL health report regularly?

Log in to the DBbrain console and select **Performance Optimization** on the left sidebar. On the displayed page, select a database type and an instance at the top, and select the **Health Report** tab. You can view the health score trends and the problem overview for the specified time range.

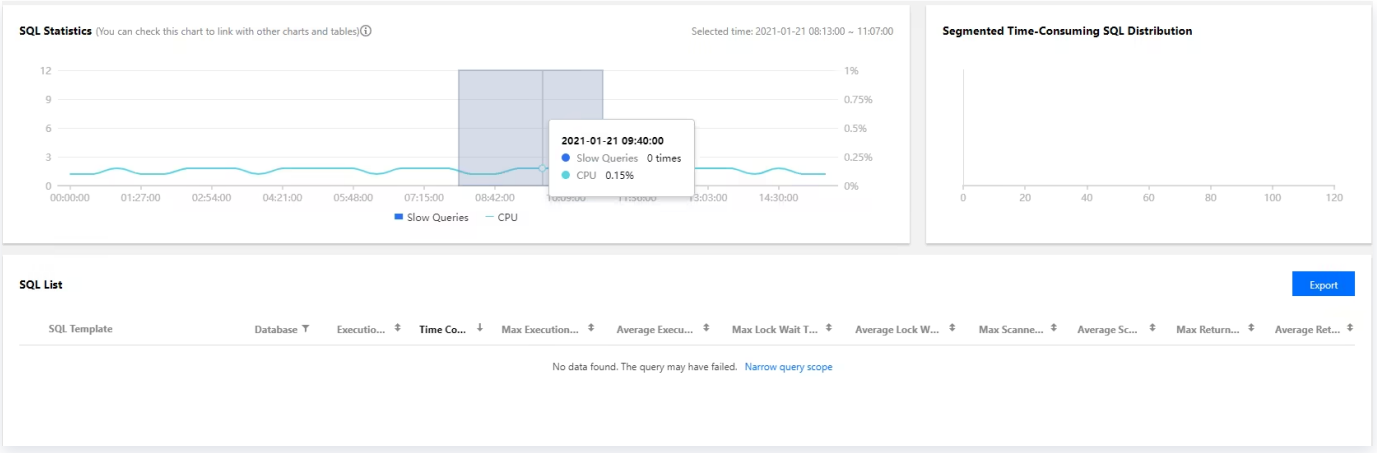
- Set the report time range and click **Create Health Report**. After the task is completed, you can view or download the health report for the specified time period.
- Click **Regular Reports** to configure the time period for automatically generating health reports.



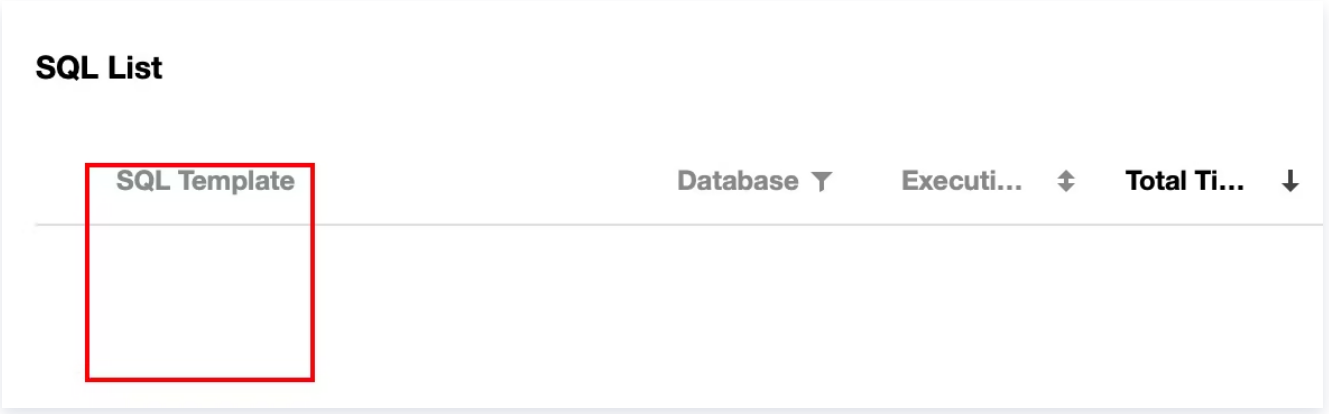
How do I view and optimize MySQL slow logs?

1. Log in to the DBbrain console and select **Performance Optimization** on the left sidebar. On the displayed page, select a database and an instance at the top, and select the **Slow SQL Analysis** tab. The **SQL Statistics** chart displays the number of slow queries and the CPU utilization of the instance.
2. You can click one slow query or select a time period in the **SQL Statistics** chart, and the aggregated SQL template and execution information will be displayed below. Each column

of data can be sorted in ascending or descending order. The **Segmented Time-Consuming SQL Distribution** chart on the right displays the distribution of the overall SQL statement execution duration for the selected time period.



3. Click an aggregated SQL template and the SQL optimization suggestions and statistics will be displayed on the right. You can rewrite the SQL statement or add appropriate indexes based on the optimization suggestion to improve the SQL statement execution efficiency and database performance.



Why does TencentDB for MySQL crash during task execution?

This is normal because it goes into a status of lock wait as the result of concurrent operations.

Why is Chinese data garbled in TencentDB for MySQL?

When storing data to TencentDB for MySQL, you need to log in to the console and enter the details page of the instance to view the default character set. When writing the program, set `character_set_client`, `character_set_results`, and `character_set_connection` to the same character sets in the instance; otherwise, garbled text will appear if the data to be stored contains Chinese characters.
For example, the default character set of the TencentDB instance is UTF-8. When writing a program to connect to the instance, you need to execute the following statements before storing Chinese data:

```
SET NAMES 'utf8';
```

What are the common reasons and solutions for issues where the maximum number of connections to TencentDB for MySQL is reached?

- There are too many sleeping threads. We recommend lowering the values of `wait_timeout` and `interactive_timeout` in the console.
- Slow logs heaped up. The long_query_time parameter is 10s by default. It is recommended to change it to 1–2s and then observe slow logs.
- If there are few sleeping threads and no slow logs heaped up, we recommend increasing the value of the `max_connections` parameter in the console.

What are the common reasons and solutions for a high utilization of CPU by TencentDB for MySQL?

- Slow logs heaped up. Please check for slow logs and full table scans in the instance monitor, then conduct analysis and optimization by referring to slow logs (which can be downloaded in the console). If no slow logs are found and there are only full table scans in the monitor, change the value of long_query_time to 1–2s and then analyze slow logs after using TencentDB for MySQL for a while.
- If no slow logs heaped up, please check the monitoring data of memory utilization. If it is much higher than the instance specification and the disk reads/writes increase significantly, there is a bottleneck in the memory, and we recommend upgrading the memory.

Which monitoring metrics of the instance should I usually pay attention to?

CPU utilization, memory utilization, and disk space utilization. You can configure alarms as needed, and when you receive alarms, you can take corresponding measures to resolve them. For more information, see Alarm Policies (TCOP).

How do I get the capacity statistics of multiple instances?

You can log in to the DBbrain console and view the summary of instance statistics on the instance overview page. You can also use the getmonitordata API to query the capacity statistics of multiple instances.

Memory Allocation

Last updated: 2023-09-04 14:12:15

Memory is an important performance parameter for TencentDB for MySQL. It is common to see the memory utilization increase due to the presence of exceptional SQL statements and lack of database optimization. In severe cases, OOM can even occur and cause master/slave switchover, which compromises business stability and availability.
In MySQL, memory can be roughly divided into two parts: globally shared memory and session-level private memory. Shared memory is allocated upon the creation of an instance and shared by all connections. Private memory is used to allocate cache upon connection to the MySQL server. Some special SQL statements or field types may cause the muliti-alloacation of cache to a single thread. Therefore, all OOM exceptions are caused by the private memory of each connection. The composition of each part is as detailed below:

Shared Memory

Run the following command to query how the shared memory of the instance is allocated:

```
show variables where variable_name in
('innodb_buffer_pool_size','innodb_log_buffer_size','innodb_additional_m
em_pool_size','key_buffer_size','query_cache_size');
```

> **Note**
> innodb_additional_mem_pool_size is not supported in v5.7.

The following parameters are the query results of how the shared memory is allocated in an instance with 1,000 MB memory (below is the configuration of the test instance):

```
+----------------------------------+-----------+
| Variable_name                    | Value     |
+----------------------------------+-----------+
| innodb_additional_mem_pool_size | 8388608   |
| innodb_buffer_pool_size          | 524288000 |
| innodb_log_buffer_size           | 67108864  |
| key_buffer_size                  | 16777216  |
| query_cache_size                 | 0         |
+----------------------------------+-----------+
5 rows in set (0.01 sec)
```

Parameters:

- **innodb_buffer_pool_size**
  It is the most important buffer area in InnoDB and also a major means to compensate physical data files through memory. For TencentDB for MySQL, it usually takes up 50–80% memory of an instance (1,000 MB*0.5=500 MB as shown in the above sample). This area mainly includes information such as data pages, index pages, undo pages, insert buffers, adaptive hash indexes, lock information, and data dictionaries. In SQL read/write operations, you should first manipulate `buffer_pool` rather than physical data files and then write back to data files through checkpoint or other mechanisms. This space can help improve database performance and accelerate SQL operations, but it may slow down failover.
- **innodb_log_buffer_size**
  It is mainly used to store redo logs and takes up 64 MB in TencentDB for MySQL. InnoDB will first write redo logs here and refresh them back to redo log files at a certain frequency. This space doesn't need to be large, because the buffer there is usually refreshed to redo logs at a relatively high frequency. Specifically, it will be refreshed for master thread (once every second), upon transactions committing, and when its available space is less than 1/2.
- **innodb_additional_mem_pool_size**
  It is mainly used to store some data structures within InnoDB and is uniformly set to 8 MB in TencentDB for MySQL. Generally, when applying for memory in `buffer_pool`, you also need to apply for space to store the object's structural information in additional memory. The size of this part is primarily dependent on the number of tables. The more tables, the larger the space should be.
- **key_buffer_size**
  It is an important buffer area of MyISAM tables and mainly used to store MyISAM table keys. It is uniformly set to 16 MB for all instances. Unlike InnoDB tables, MyISAM tables store index cache in `key_buffer` and data cache in the operating system memory. As TencentDB for MySQL uses MyISAM, this part should be allocated with a certain amount of space.
- **query_cache_size**
  It is used to cache query results to reduce the overhead of SQL parsing and execution. The caching feature of this part is disabled in TencentDB for MySQL. It is mainly suitable for application scenarios where there are more reads than writes, because it caches results based on the hash values of SQL statements and becomes invalid once table data changes.

Private Memory

Run the following command to query how the private memory of the instance session is allocated:

```
show variables where variable_name in
('read_buffer_size','read_rnd_buffer_size','sort_buffer_size','join_buff
er_size','binlog_cache_size','tmp_table_size');
```

The query result is displayed as follows (below is the configuration of the test instance):

```
+----------------------+-----------+
| Variable_name        | Value     |
+----------------------+-----------+
| binlog_cache_size    | 32768     |
| join_buffer_size     | 262144    |
| read_buffer_size     | 262144    |
| read_rnd_buffer_size | 524288    |
| sort_buffer_size     | 524288    |
| tmp_table_size       | 209715200 |
+----------------------+-----------+
6 rows in set (0.00 sec)
```

Parameter Description:

- **read_buffer_size**
  It stores the cache of sequential scans separately. When a thread scans data sequentially, it will first scan the buffer space to avoid causing more physical reads.
- **read_rnd_buffer_size**
  It stores the cache of random scans separately. When a thread scans data randomly, it will first scan the buffer space to avoid causing more physical reads.
- **sort_buffer_size**
  All the SQL statements that need to execute ORDER BY and GROUP BY will be allocated with `sort_buffer` to store the immediate results of the sorting operations. During sorting, if the storage size exceeds `sort_buffer_size`, a temporary table will be generated on the disk to complete the operation.
- **join_buffer_size**
  MySQL only supports the nested-loop join (NLJ) algorithm. The processing logic is to jointly search in one row of the driving table and the non-driving table, where the latter can be placed in join_buffer without having to access buffer_pool that has a concurrence protection mechanism.
- **binlog_cache_size**
  It is used to cache the thread's binlogs. Before a transaction is committed, its log will be

stored in binlog_cache. After the transaction is committed, its binlog will be refreshed back to the binlog file on the disk for persistent storage.

- **tmp_table_size**
  Different from the above session-level buffer, this parameter can be modified in the console. It refers to the size of a temporary in-memory table. If the temporary table created by the thread exceeds the specified size, it will be converted to a MyISAM temporary table on the disk.

Issues Related to Storage Space

Last updated: 2026-09-10 11:28:38

Why Is Disk Space Not Released After the delete Command Is Run to Delete Table Data on an Instance in TencentDB for MySQL?

When you delete table data from instances by running the delete command, disk space is not released due to the mechanism of TencentDB for MySQL. To free up disk space, you need to perform operations for rebuilding tables. For details, see the following command.

```
OPTIMIZE TABLE ${table_name};
```

Note:
If the table to be deleted is an InnoDB table, run the following command to release disk space.

```
ALTER TABLE ${table_name} ENGINE=INNODB;
```

Can Storage Space Be Scaled Out Directly? Is Data Migration Required? What Are the Impacts of Scaling Out?

Storage space can be directly scaled out. If the storage space on the host where the instance resides is insufficient, the system will migrate the instance data from the current host to a new host and synchronize the original instance data.
For instructions on how to scale out storage space and the impact of scaling out, see Adjusting Database Instance Specifications.

How Is Scale-out Billed?

Billing will change after instance scale-out. For details, see Adjusting Instance Billing Description.

How to Troubleshoot a Sudden Increase in Storage Space Usage?

1. Log in to the TencentDB for MySQL console, in the instance list, click **Instance ID** or **Operation** > **Manage**, and go to the instance management page.
2. You can view the disk space usage of each file in **Instance Details** > **Resource Usage** > **Disk Usage**, which helps identify the specific category causing a sudden increase in disk

usage. You can also view disk-related monitoring metric fluctuation charts on the instance monitoring page, and use the disk space usage within a specified time range to troubleshoot the main events and operations performed by your business during that period.

How to Delete Files to Free Up Space?

See Solutions for Full Instance Space Caused by Data Files.

Why Is Disk Usage Generated for a Newly Created Database That Contains No Data?

After a database is created, related system tables are created to store accounts, permissions, and other information. In addition, logs of the database system (such as Redo logs) also occupy disk space.

Does Storage Space of a TencentDB for MySQL Instance Include Backup Space?

The disk usage statistic in Resource Usage Statistics on the instance details page of the TencentDB for MySQL console refers only to instance space, excluding backup space. To query backup space usage, go to the Database Backup page.

How Long Does It Take for a TencentDB for MySQL Instance to Become Locked After Its Storage Space Is Full? What Should Be Done Once It Is Locked?

When the instance storage space is full, the instance will enter a pre-locked state, during which reads and writes continue to be allowed for 24 hours. After 24 hours in the pre-locked state, the instance will enter a locked state. Due to the system inspection mechanism, there may be a certain delay in the instance state change.
Once an instance is locked, data writes cannot be performed. We recommend that you set event alarms to prevent the instance from being locked due to full storage space. In addition, you can regularly check storage space and scale out the instance in a timely manner when storage space is insufficient.
For solutions, see Solutions for Full Instance Space Caused by Data Files.

How to Determine Whether Storage Space Is Overused

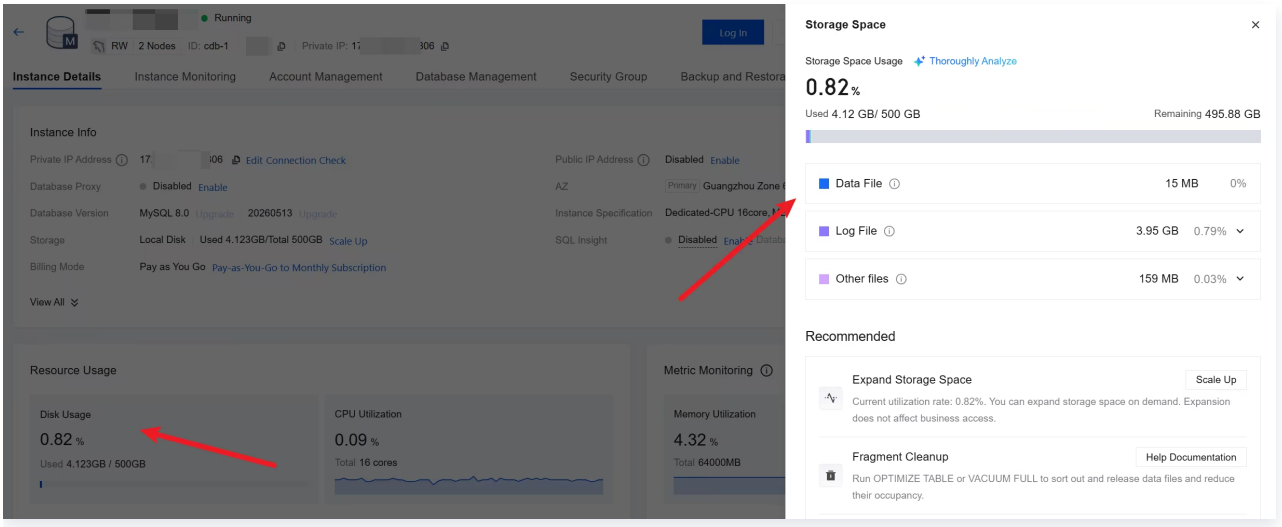
Last updated: 2026-09-10 11:39:00

When the storage space (disk) of a TencentDB for MySQL instance is full due to excessive data, the system automatically locks the instance to prevent host partition failures (the instance status becomes "Locked"). After being locked, the instance cannot be written to. This document describes how to determine whether the storage space of an instance is overused.

> **Note:**
> In this product document, "storage space overuse", "storage overuse", "disk space overuse", and "disk overuse" have the same meaning.

Causes of Storage Space Overuse

High data file usage: Data files occupy a large amount of disk space.
How to determine: The data file size of a local disk instance exceeds the purchased storage space.
You can monitor and determine whether the instance's storage space is overused in the console under **Instance Details** > **Disk Usage**.



Locking Rules for Storage Space Overuse

Local disk instances use a storage-compute integrated architecture, in which disk space is bound to the physical host and has a clear capacity limit. After this update, when the data file size of a local disk instance exceeds the purchased disk space (that is, disk overuse), the system manages the instance in two phases: "Pre-lock" and "Lock".

Control Phase	Trigger Timing	Instance State	Notification Method
Pre-lock	The data file size exceeds the purchased disk space.	Can read and write normally.	Trigger an "instance to be pre-locked" event alarm.
Locked	Still not restored to the non-overuse state 24 hours after pre-locking.	Only read operations are allowed, and write operations will be rejected.	Trigger a "disk usage overlimit lock" event alarm.

Monitoring Metric Updates

The latest storage space metrics for local disk instances are as follows:

Metric Value	English	Definition
Storage usage	Capacity	Amount of storage space (disk) used by users
Storage utilization	CapacityRate	(Amount of storage space (disk) used by users / purchased space) * 100% **Purpose: provided to users as a metric for determining billing for excess storage usage**
Data file usage	RealCapacity	Total storage space for data files
Data file space utilization	RealCapacityRate	(Instance data file storage space (disk) size / purchased space) * 100% **Purpose: provided to users as a metric for determining storage space overuse locking**
Log file usage	LogFileCapacity	Total storage space for log files
binlog file space	LogCapacityBinlog	binlog file storage space
redolog file space	LogCapacityRedolog	redolog file storage space
undolog file space	LogCapacityUndolog	undolog file storage space
relaylog file space	LogCapacityRelaylog	relaylog file storage space

slowlog file space	LogCapacitySlowlog	slowlog file storage space
errorlog file space	LogCapacityErrorlog	errorlog file storage space
Space for other log files	LogFileCapacityElse	Storage space for other log files
Log file space utilization	LogFileCapacityRate	(Total log file storage space / purchased space) * 100%
Other files	CapacityElse	Instance temporary files and other files
Temporary files	DiskTmpUsed	Temporary files generated by operations such as temporary tables and sorting
Unclassified files	OtherFileCapacity	Other unclassified files
Remaining storage space	RemainCapacity	Purchased space – storage usage
Remaining storage utilization	RemainCapacityRate	((Purchased space – storage usage) / purchased space) * 100%

For how to configure monitoring metric alarms, see Alarm Policy.

Event alarm

TCOP has added corresponding event metrics for storage space overuse events. After you configure event alarms for these event metrics and the alarm conditions are met, you will receive event alarm notifications from the system. Based on these notifications, you can detect and determine whether storage space is overused and check the lock status of the instance.

Alarm Metrics for Storage Space Overuse Events

Event Alarm Name	Trigger Timing	Recommended Action
The instance is to be pre-locked.	The data file size exceeds the purchased disk space.	The instance can still be read and written. Scale out or clean up data as soon as possible to avoid

		entering the locked state after 24 hours.
OverusedReadonlySet	Not restored to the non-overuse state within 24 hours after pre-locking.	The instance is read-only. Scale out or clean up data immediately to restore read and write access.
Instance pre-lock released	The data file size is restored to within the purchased disk space during the pre-locking period.	No processing is required.
OverusedReadWriteSet	Complete scale-out or data cleanup during the locking period.	Monitor the recovery of service writes.

Setting Event Alarms

For detailed instructions on configuring event alarms, see How to Configure Storage Overuse Lock Event Alarms.

How to Resolve Storage Overuse Locking

Last updated: 2026-09-10 11:38:34

As you use a TencentDB for MySQL instance, the storage space gradually fills up with the growing number of data files. To prevent data loss, the system automatically locks the instance. After being locked, the instance cannot be written to.

Issue Description

The data files of a TencentDB for MySQL instance have occupied all storage space of the current instance, causing a storage overuse lock issue. The instance status is **Locked (Capacity Limit Exceeded)**.

Cause of the Issue

When the storage space of a TencentDB for MySQL instance is full, the system automatically locks the instance to prevent data loss. After being locked, the instance cannot be written to.

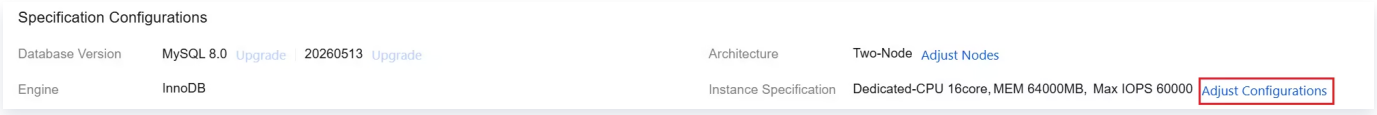
Problem-solving Ideas

1. Scale out the disk of the instance. When you create a TencentDB for MySQL instance, you allocate a certain amount of disk space to it. You can increase the disk capacity later by scaling it out. For more information, see Scaling Out Instance Disk Space.
2. Clean up useless data. Regularly clean up unnecessary historical data. For detailed instructions, see Cleaning Up Useless Data.

Solutions

I. Scaling Out Instance Disk Space

1. Log in to the TencentDB for MySQL console.
2. In the instance list, click **Instance ID** or **Manage** in the Operation column to go to the instance management page.
3. On the **Instance Details** > **Instance Specification** page, click **Adjust Configurations**.



4. Scale out the disk on the redirected page.

II. Cleaning Up Unused Data or Tables

Note:

- **Exercise caution when cleaning up data. We recommend against data cleanup unless necessary. Use scale-out methods to remove the lock. If cleanup is unavoidable, back up the database before cleaning it up to prevent data loss.**
- In TencentDB for MySQL, the `delete` command cannot release storage space. We recommend that you use the `drop` or `truncate` command to release storage space.
- When a MySQL table contains a large amount of data, cleaning up data with the DELETE statement does not directly release disk space. It only marks database records or data pages as reusable. To actually reclaim table space and reduce disk usage, you can use `OPTIMIZE TABLE`. Reference: Use the OPTIMIZE TABLE command to release the table space of a MySQL instance.
- Cleaning up data files may take some time. Please wait patiently for the used space of the instance to decrease.
- To use the asynchronous big table deletion capability, check whether the kernel minor version supports it. For more information, see Asynchronous Big Table Deletion. If the kernel minor version does not meet the requirement, upgrade it first and then perform the deletion. For upgrade instructions, see Upgrading the Kernel Minor Version.

1. Connect to your TencentDB for MySQL instance. For connection methods, see Connecting to a MySQL Instance.
2. Run the following command to view the table size of the database and identify historical or useless data that can be deleted.

```
SELECT file_name, concat(TOTAL_EXTENTS,'M') as 'FIle_size' FROM
INFORMATION_SCHEMA.FILES order by TOTAL_EXTENTS DESC
```

3. Use the `drop` or `truncate` command to clean up data.

   drop command:

```
drop the table <database_name>.<table_name>;
```

   truncate command:

```
truncate the table <database_name>.<table_name>;
```

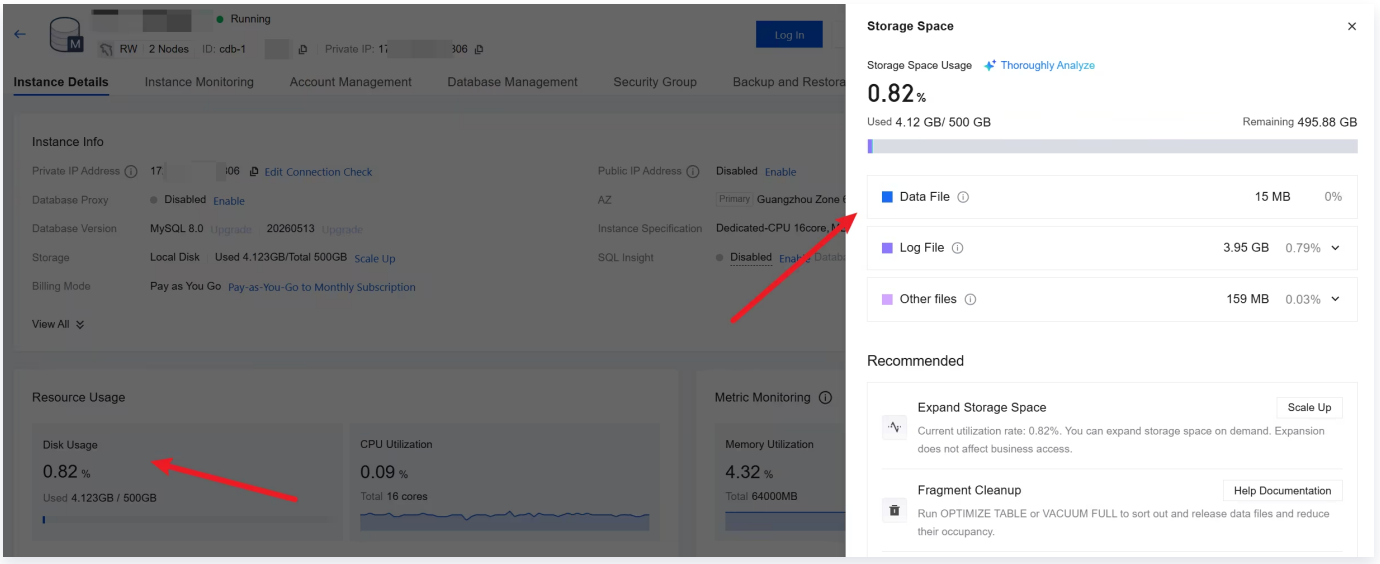
Follow-up Maintenance

If the instance running status changes from **Locked (Capacity Overrun)** to **Running**, the storage overuse lock has been removed. In subsequent use, you can pay attention to the following points to regularly maintain your database instance and prevent disk space overuse locking from occurring again.

1. Set an alarm for the storage space overuse lock event. The system monitors the storage space usage of your instance in real time and can push early warning notifications to help you stay informed about storage status. For configuration instructions, see How to Set an Alarm for the Disk Overuse Lock Event.
2. Set an appropriate retention period for automatic backup files. For configuration instructions, see Backing Up a Database.
3. Regularly delete unnecessary historical manual backups. For the operation procedure, see Deleting Backups.
4. Subscribe to monitoring metric alarms (for details, see Alarm Policy), and promptly clean up data or split data to keep disk usage below 80%. You can view the disk usage in the console under **Instance Management** > **Instance Monitoring**.
5. In scenarios with large temporary files, optimize SQL statements and avoid frequent use of `ORDER BY` and `GROUP BY` operations.

Appendix: How to View Disk Space (Storage Space) Usage of an Instance

1. Log in to the TencentDB for MySQL console.
2. In the instance list, click **Instance ID** or **Manage** in the Operation column to go to the instance management page.
3. In **Instance Details** > **Disk Usage**, view the storage usage.



Freeing Up Table Space in a MySQL Instance Using OPTIMIZE TABLE

Last updated: 2026-09-10 11:32:36

When a MySQL table contains a large amount of data, cleaning up data with the DELETE statement does not directly release disk space. Instead, it only marks database records or data pages as reusable. To actually reclaim table space and reduce disk usage, you can use OPTIMIZE TABLE.

Prerequisites

- Only the InnoDB and MyISAM engines support the OPTIMIZE TABLE statement.
- The remaining disk space of the instance must be greater than or equal to the space occupied by the table to be released.

> **Note:**
> If the remaining disk space of the instance is insufficient, make sure to scale out the disk space first. After subsequent operations are completed, you can scale in the disk space as needed. The system then calculates the unused resources and issues a refund.

Use Limits

- **Delete a large amount of data first**: If you do not delete a large amount of data with DELETE first, directly running OPTIMIZE TABLE cannot effectively reduce table space utilization.
- **Temporary increase in disk space usage**: When you run OPTIMIZE TABLE, MySQL creates a temporary table to store the reorganized data, which causes disk space usage to increase for a short period. After the operation is completed, the temporary table is deleted and disk space usage returns to normal.
- **The statistics of the table and indexes may remain unchanged after the release**: This is because the MySQL table statistics are not refreshed in a timely manner. For details, see FAQs.
- **Performance impact and peak-hour risks**: In TencentDB for MySQL 5.7 and 8.0, OPTIMIZE TABLE is executed using Online DDL and supports concurrent DML operations. However, running this operation on a big table may cause sudden IO and Buffer resource consumption, posing risks of table locking or resource contention. During peak hours, it may also lead to instance unavailability or monitoring interruptions. Therefore, it is

recommended to run this operation during off-peak hours to avoid impacting normal business.

- **Manually terminate a running OPTIMIZE TABLE:** Pressing Ctrl + C in a client (such as the MySQL command line or the SQL window of DMC) only disconnects the current client connection and does not terminate the OPTIMIZE TABLE operation running on the backend. To terminate the operation, run `SHOW PROCESSLIST;` through another database connection to view the thread list, find the thread ID of the OPTIMIZE TABLE operation in progress, and then run `KILL <thread ID>;` to terminate the thread.
- Note that for MySQL 8.0 from version 20221215 (inclusive) to version 20230703 (inclusive), MySQL table rebuild operations (ALTER/OPTIMIZE) may cause data loss. For details, see documentation.

Operations via the CLI

1. Connecting to a MySQL Instance.
2. Use the DELETE statement to clean up unnecessary data based on your actual business needs.
3. Run the OPTIMIZE TABLE command to release table space.

```
OPTIMIZE TABLE <$Database1>.<Table1>,<$Database2>.<Table2>;
```

> **Note:**
> 1. <$Database1> and <$Database2> are database names, and <Table1> and <Table2> are table names.
> 2. When you run the OPTIMIZE TABLE statement on the InnoDB engine, the following message appears. This message is a normal result of the operation, so you can ignore it and simply confirm that ok is returned. For details, see OPTIMIZE TABLE Statement.

```
Table does not support optimize, doing recreate + analyze instead
```

FAQs

Why Doesn't Disk Space Change After OPTIMIZE TABLE Is Run on TencentDB for MySQL?

Issue Description

After a user deletes a large amount of data with DELETE and runs OPTIMIZE TABLE to reclaim table space, they immediately query the DATA_FREE field in information_schema.tables and find that the value has not been updated. As a result, they assume that disk space has not been released and that the reclaim operation is ineffective.

Fault Cause

The actual disk space has been released, but this is because MySQL table statistics are not refreshed in a timely manner. After OPTIMIZE TABLE is executed, the statistics of the table and indexes are not automatically updated. As a result, the DATA_FREE value in information_schema.tables retains the old value and cannot accurately reflect the actual space usage. For details about this issue, see Bug #117426.

Solution

Temporary workaround: force refresh of statistics
You can run the command `ALTER TABLE table_name ENGINE=InnoDB;` on a table that has already undergone OPTIMIZE TABLE to force a rebuild of the table and update its statistics. After that, the DATA_FREE value in information_schema.tables will correctly show the space that has been released.

> **Note:**
> Note that for MySQL 8.0 from version 20221215 (inclusive) to version 20230703 (inclusive), MySQL table rebuild operations (ALTER/OPTIMIZE) may cause data loss. For details, see documentation.

What Should I Do If Disk Space Is Not Released After DELETE Is Executed on TencentDB for MySQL?

In TencentDB for MySQL, when you delete data with the DELETE statement, the command only marks the positions of records or data pages as reusable. The size of the disk file does not change, so table space is not directly reclaimed. This behavior prevents table space from being directly reclaimed, resulting in fragmented instance storage space and increased storage usage.
Note that **before running the operation, you must ensure that the instance has sufficient remaining space to prevent the instance from being locked due to full storage.**
To reclaim space fragments, run DDL operations such as `OPTIMIZE TABLE` or `ALTER TABLE <table_name> ENGINE=InnoDB;` to reorganize table data and index structures, thereby releasing fragmented space.

Important

When using native DDL commands, run them during off-peak hours to avoid blocking caused by metadata locks. For more important notes, see Precautions.

What Should I Do If Disk Space Is Not Released After TRUNCATE or DROP Is Executed on TencentDB for MySQL?

In TencentDB for MySQL, if disk space is not released after you run a TRUNCATE or DROP operation, handle the issue by following these steps:

1. **Confirm the space release logic**

   After running TRUNCATE or DROP, check monitoring metrics to confirm whether space has been released. Typically, the proportion of the deleted table size to the total instance space is reflected as decreases in storage space usage, data file usage, storage space utilization, and data file space utilization.
2. **Avoid relying on outdated information.**

   If you view the table size through information_schema.tables or the console (DBbrain > Diagnostics & Optimization > Space Analysis), the table space may appear unchanged due to data update delays. Therefore, it is recommended to prioritize disk utilization as the basis for judgment.
3. **Impact of Asynchronous Deletion**

   If the instance has the asynchronous big table deletion capability enabled, the space occupied by table files **will not be released immediately**. Instead, it will be gradually cleaned up by background processes. In this case, you need to wait for the asynchronous process to complete before the disk space is finally released.

Ops

Last updated: 2023-09-04 14:12:29

What if a problem with pt-online-schema-change occurs in TencentDB for MySQL?

TencentDB for MySQL v5.6 and higher supports Online DDL. To protect your business from being affected by table locking, you are recommended to change the table structure in v5.5 by using open-source tools such as pt-online-schema-change. However, you may encounter problems when using pt-online-schema-change to change the TencentDB for MySQL table structure through CVM.

- Common error message:
  `Use of uninitialized value $host in string eq at /usr/local/percona-toolkit-3.0.3/bin/pt-online-schema-change line 4284.`
- View the corresponding source code:

```
sub _find_slaves_by_processlist {
 my ( $self, $dsn_parser, $dbh, $dsn ) = @_;

 my @slaves = map  {
    my $slave        = $dsn_parser->parse("h=$_", $dsn);
    $slave->{source} = 'processlist';
    $slave;
 }
 grep { $_ }
 map  {
    my ( $host ) = $_->{host} =~ m/^([^:]+):/;
    if ( $host eq 'localhost' ) {
       $host = '127.0.0.1'; # Replication never uses sockets.
    }
    $host;
 } $self->get_connected_slaves($dbh);

 return @slaves;
}
```

As the code suggests, processlist cannot get the slave information it is looking for, because TencentDB has processed the information related to account replication.

- Solution:
  Add the following parameter so that pt-osc can be used without checking the slave status.
  `--recursion-method=none`

What if "Specified key was too long" is displayed during data import to TencentDB?

Cause:
TencentDB for MySQL returns the error message "Specified key was too long" when you import `XXXX.sql` file to the TencentDB for MySQL instance on the CVM command line.
The error message "ERROR 1071 (42000): Specified key was too long; max key length is 767 bytes" indicates that the index field is too long with over 767 bytes.

- For the InnoDB storage engine, the maximum length of multi-column index is as follows:
  The maximum length of a single index column is 767 bytes and the total length of all columns should not be greater than 3,072 bytes.
- For the MyISAM storage engine, the maximum length of multi-column index is as follows:
  The maximum length of a single index column is 1,000 bytes and the total length of all columns should not be greater than 1,000 bytes.

> **Note**
> In fields such as 768/2=384 double-bytes or 767/3=255 three-bytes, GBK is double-byte, UTF8 is three-byte, and UTF8MB4 is four-byte.

In MySQL v5.6 and higher, all MyISAM tables are automatically converted to InnoDB table. Therefore, with the MyISAM storage engine, a self-built database may contain combined index column of more than 767 bytes in length; however, due to the use of the MyISAM storage engine, the same table creation statement that can run in the self-built database won't work in MySQL v5.6 or higher.
Solution:

1. Modify the length of index columns in the erroneous rows in the backup file.
   Common erroneous row:
   `create table test(test varchar(255) primary key)charset=utf8;`
   -- Success
   `create table test(test varchar(256) primary key)charset=utf8;`
   -- Failure
   `ERROR 1071(42000):Specified key was too long; max key length is 767 bytes`
2. You can use TencentDB v5.5 where MyISAM won't be automatically converted into InnoDB.

What if an error occurs with "select * from XX into outfile xxxx"?

For the sake of platform security, file permission is unavailable, and data cannot be exported through "select into outfile". You are recommended to export the data in another way.

What if emojis inserted into a TencentDB for MySQL become garbled?

Check whether the TencentDB for MySQL instance, client, and connection to the instance all use or support the utf8mb4 character set.
To store an emoji in an instance, you need to follow the steps below.

1. Set the character set of the instance to utf8mb4 by logging in to the TencentDB for MySQL console and modifying the `character_set_server` parameter.

   > **Note**
   > Modifying this parameter will restart the database; therefore, you are recommended to back up your data in advance to prevent any loss.

2. The client of your application should use the utf8mb4 character set for the outputted string.
3. When creating a connection to your application, you should specify the executed character set. Take the common JDBC connection for example:
   MySQL Connector/J v5.1.13 or higher should be used. Below is the sample code:

```
String query = “set names utf8mb4”;
stat.execute(query);
```

Data Migration

Last updated: 2023-09-04 14:12:44

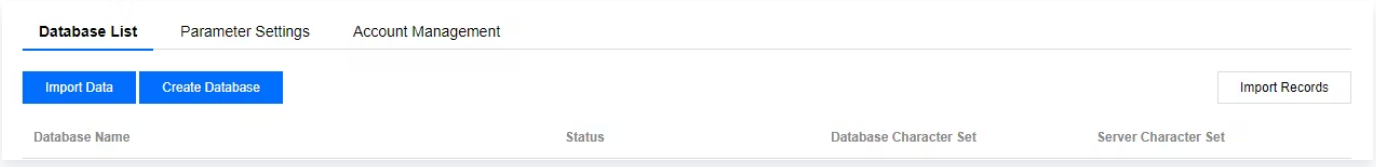
SQL File Import and Export

How do I import a local SQL file into a TencentDB for MySQL instance?

> **Note**
> Only two-node and three-node TencentDB for MySQL instances support importing SQL files.

1. Log in to the TencentDB for MySQL console and click an instance ID to enter the instance management page.
2. Select **Manage Database** > **Database List** > **Data Import**. Select the file to be imported and the target database and click **OK** to import the data.

> **Note**
> - To avoid database unavailability caused by corruption of system tables, do not import data from system tables such as the `mysql.user` table.
> - Only incremental import is supported. Clear any obsolete data in the database before importing.
> - A single file does not exceed 10GB. The file name only allows letters, numbers, and underscores.



For more information, see Importing SQL Files.

How do I export data from a database?

- To export backup data, go to the console, click an instance ID to enter the instance management page, and select the **Backup and Restoration** tab for download.
- To export real-time data, you can purchase a read-only instance, connect to it, and use `mysqldump` to obtain the real-time data.

Migration with DTS

What is the fastest way to migrate a 7 GB database to a TencentDB for MySQL instance?

We recommend that you use the data migration feature of DTS to directly migrate the source database.
For more information, see the DTS documentation Data Migration.

Intra-Region Instance Data Sync

How do I sync real-time data in two instances with an intra-city active-active solution?

You can purchase disaster recovery instances in the console to implement this solution.

Features

Last updated: 2023-09-04 14:12:57

What preparations do I need to use TencentDB for MySQL?

Before using TencentDB for MySQL, you need to consider the two questions:

- Is a database a good choice for your application? For example, if your business scenario involves frequent access to a small amount of key-value data, you should consider TencentDB for Memcached.
- Is your database appropriately designed? For example, you should consider splitting a table with obvious query hotspots or high data volume into multiple tables.

How does TencentDB for MySQL manage MySQL?

You don't need to worry about the daily maintenance and adjustment of MySQL, which is taken care of by the Ops system of TencentDB.
In case of an exception with MySQL, the Ops system can immediately identify the issue and notify the Ops team. Developers will not need to make any changes.

Is TencentDB for MySQL based on physical machines?

Yes.

Can TencentDB for MySQL help me split databases and tables?

No, because the standards for splitting databases and tables are subject to your specific business logic.

What is the difference between used capacity and occupied capacity in TencentDB for MySQL?

Used capacity: Includes only MySQL's data directories but not logs such as binlog, relaylog, undolog, errorlog, and slowlog.
Occupied capacity: Includes MySQL's data directories and logs such as binlog, relaylog, undolog, errorlog, and slowlog.

Does TencentDB for MySQL have any buffer during task execution?

Question:
If a large number of SQL statements (N) are sent to TencentDB for MySQL in a short period, will it execute them one by one or become unresponsive? If it becomes unresponsive, what is the limit for concurrent connections?
Answer:

TencentDB for MySQL instances are similar to self-installed MySQL instances. Whether the concurrent execution of statements will cause the system to become unresponsive depends on system resources and the SQL statements themselves.
If the connection limit (max_connections) is reached, the instance will generally be unable to provide normal service. This is usually caused by the following reasons:

- There are too many null sessions caused by bugs in the business application;
- Frontend access goes far beyond the instance's processing capability;
- A long-running connection takes up MySQL resources exclusively, resulting in a large number of blocked access requests.

What are the precautions for using TencentDB for MySQL?

For details, see Use Limits.

How do I enable or disable the read-only permission to the default replica of a TencentDB for MySQL instance?

The default replica cannot be read from or written to. It is primarily used for high-availability switchover.

Which monitoring metrics of the instance should I usually pay attention to?

CPU utilization, memory utilization, and disk space utilization. You can configure alarms as needed, and when you receive alarms, you can take corresponding measures to resolve them. For more information, see Alarm Policies (TCOP).

Does TencentDB for MySQL support replica access?

For database security purposes, TencentDB for MySQL doesn't allow you to read from or write to the replica. This allows you to, for example, quickly switch to the replica when the source fails.
If you need greater read/write capability, consider upgrading the instance configuration or purchasing a read-only instance.

What if I need to use the MyISAM database engine?

You can use MySQL 5.5 to support MyISAM. However, we recommend that you choose a later version like MySQL 5.7. This is because the InnoDB engine on later versions can provide row-level locking with a finer granularity, deliver higher write performances, guarantee data integrity, and avoid data loss in case of database failures.

Does TencentDB for MySQL support cross-region access?

Cross-region access is unavailable for instances in VPCs by default, as VPCs in different regions are isolated from each other. We recommend that you purchase TencentDB for MySQL instances in the same region as your CVM instances to enable local data access, which guarantees high service speed and stability.

Why can't I grant a user the "file" permission?

The `shutdown` and `file` permissions are unavailable to root users currently, so a root user cannot create users with all permissions. Refer to the following commands for authorization:

```
grant SELECT,INSERT, UPDATE, DELETE, CREATE, DROP, ALTER on *.* to
'myuser'@'%' identified by 'mypasswd';
```

How do I change the TencentDB for MySQL region?

Changing regions is not supported. You can use Data Transmission Service (DTS) to migrate data between instances in different regions, as DTS supports real-time data synchronization. After the data migration is complete, you can return the source instance.

What takes up the instance capacity?

User data (excluding backup data), the data needed for the instance to run (including the system database, database logs, indexes, etc.), and the binlogs generated by MySQL databases.

How many databases can I run in an instance?

The maximum number of databases and tables you can create on a TencentDB for MySQL instance depends on MySQL. For more information, see MySQL's official documentation.

Can single-node instances be upgraded to two-node or three-node instances?

No. Currently, only two-node instances can be upgraded to three-node instances.

Does the pay-as-you-go to monthly subscription billing mode change affect the database service?

Switching a pay-as-you-go instance to a monthly subscription will not affect the instance's operation, only the payment type. For the conversion steps, please refer to Switching from Pay-as-You-Go to Monthly Subscription.

Why can't I convert InnoDB to MyISAM?

Probably because the instance is running MySQL v5.6 or v5.7 which only support InnoDB. To support MyISAM, use MySQL v5.5.

Is there a limit to the number of real-only groups I can create?

By default, up to 5 read-only groups can be created for a source instance.

Can I use Canal to pull binlogs from TencentDB for MySQL?

Yes. Pay attention to the following when using Canal:

- The CVM instance where Canal is deployed and the TencentDB for MySQL instance must be in the same VPC.
- Create the corresponding database synchronization account on TencentDB for MySQL and grant the appropriate permissions.
- You need to set the following TencentDB for MySQL database parameters: `binlog_row_image=FULL` and `binlog_format=ROW`.

Are TencentDB for MySQL instances deployed on physical machines or CVMs?

TencentDB for MySQL instances are deployed in physical clusters with the virtualization technology. Different from physical clusters, CVM instances are mainly used to provide a scalable cloud computing service.

Does cloning have any impact on the original instance?

No, because TencentDB clones an instance by pulling the backup data. After cloning is completed, the original instance can be used normally, or terminated if you don't need it any more.

Console Operations

Last updated: 2023-09-04 14:13:10

How long does it take to create a TencentDB for MySQL instance?

Typically, creating a TencentDB for MySQL instance takes less than 10 minutes. The creation time for a read-only instance depends on the data volume of the primary instance; the larger the data volume, the longer the creation time. If it takes longer than expected, there may be an issue with the creation process. Please contact us promptly.

How do I return a database?

You can log in to the TencentDB for MySQL console and select **More** > **Terminate/Return** or **Terminate/Return & Refund** in the **Operation** column in the instance list to return an instance. For more information, see Terminating Instance.

What happens if a TencentDB for MySQL instance is terminated?

After an instance is returned, it will be retained in the recycle bin for seven days (in monthly subscription billing mode) or one day (in pay-as-you-go billing mode). During the retention period, it can be restored from the recycle bin.

What should I do if I accidentally deleted an account or forgot the password?

- If you accidentally deleted an account, you can log in to the TencentDB for MySQL console, click an instance ID to enter the instance management page, and select **Database Management** > **Account Management** > **Create Account** or use SQL statements to create a new account. For more information, see Create Account.
- If you forget the root password, you can go to **Database Management** > **Account Management** page to find the corresponding account and perform the **Reset Password** operation. For more information, see Resetting Password.
  The above operations can also be performed using the Cloud API.

What is the maximum number of connections to TencentDB for MySQL? How do I modify it?

You can view the maximum number of connections to TencentDB for MySQL in the console. If the number of connections gets too high, we recommend that you locate the cause and solve the problem first instead of directly increasing the maximum value.
You can log in to the TencentDB for MySQL console, click an instance ID to enter the instance

management page, select **Database Management** > **Parameter Settings**, and modify the `max_connections` parameter.

Why is the value of max_connections always displayed as 1,000 rather than the actual number of current maximum connections in MySQL instance monitoring?

`max_connections` represents the allowed maximum number of connections (1-100,000) in instance monitoring. **Open Connections** indicates the number of connections at the current moment, a value that changes in real time.

How can I get to know that the disk capacity is insufficient?

The monitoring center oversees the disk capacity of a TencentDB instance. When the disk utilization is over 90%, SMS and email alarms will be triggered. You can configure alarm recipients in Tencent Cloud Observability Platform (TCOP) to receive such alarms. For directions, see Alarm Policies (TCOP).

How do I modify the case sensitivity of table name after a TencentDB for MySQL instance is initialized?

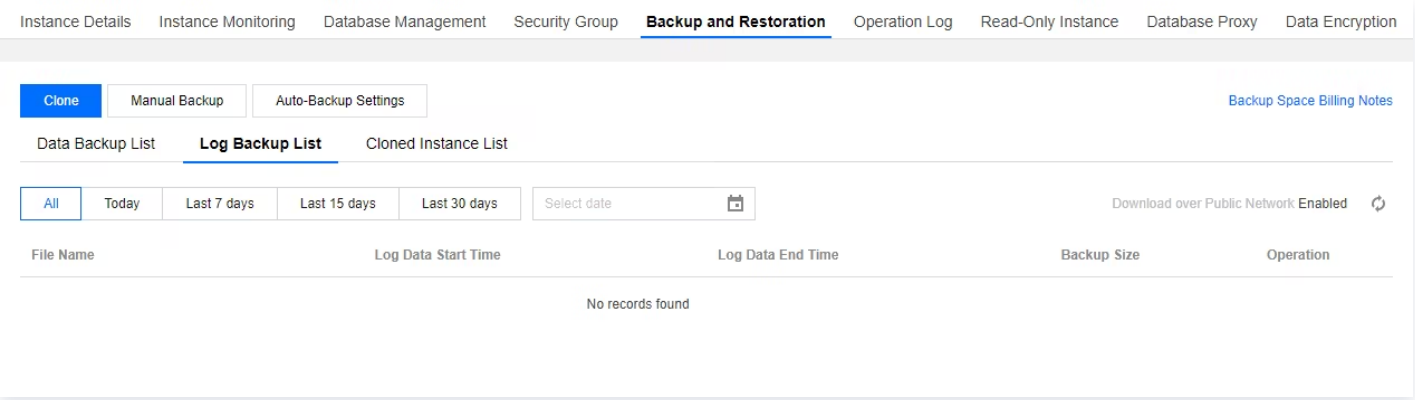
You need to adjust the `lower_case_table_names` parameter of the database.
Log in to the TencentDB for MySQL console, click the instance ID to enter the instance management page, select **Database Management** > **Parameter Settings**, and modify the `lower_case_table_names` parameter (`0` : Case-sensitive; `1` : Case-insensitive).

Logs

Last updated: 2023-09-04 14:13:22

How do I view binlogs?

Log in to the TencentDB for MySQL console and click an instance ID/name to access the **Instance Management** page. On the **Backup and Restoration** > **Log Backup List** tab, you can view or download binlogs.



Why does my instance have no binlog?

Probably because data is written slowly into the binlog, which, accordingly, has not been split yet. A non-split binlog will not be displayed in the TencentDB for MySQL console.
The procedure of displaying binlogs in the MySQL console is as follows:

1. When the binlog grows to 256 MB, it is split.
2. The split binlog is uploaded to COS.
3. The uploaded binlog is displayed in the MySQL console.

The above procedure takes about three minutes.
You can log in to the database and run the `flush logs` command, and then check the binlogs in the console about three minutes later.

How do I view the latest binlog?

Log in to the database and run the `flush logs` command, and then check the binlog in the TencentDB for MySQL console three minutes later.

How do I back up binlogs?

Binlogs are automatically backed up every day. To set the log backup retention period, you can log in to the TencentDB for MySQL console and click an instance ID/name to access the **Instance Management** page. On the **Backup and Restore** > **Log Backup List** tab, click **Auto Backup Settings** and set the log backup retention period in the pop-up dialog box.

Database audit

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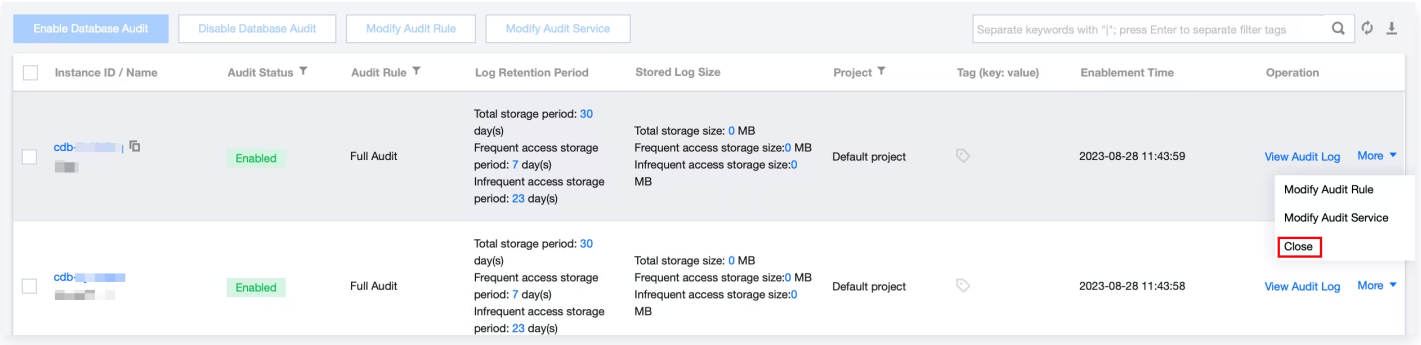
How is audit billed?

Database audit is billed by the stored log size every hour, and usage duration shorter than one hour is calculated as one hour. For more information, see Database Audit Billing Overview.

How do I disable audit?

Log in to the TencentDB for MySQL console. In the audit instance list, select the target instance, and click **More** > **Disable** in the **Operation** column.



> **Note**
> Once the service is disabled, the instance's audit policies, logs, and files will be cleared and cannot be recovered. You need to save the applicable logs and files in advance.

How long can audit data be retained?

Audit data can be retained for seven days to five years. You can set the retention period when enabling audit in the TencentDB for MySQL console. You can also modify the audit log retention period after enabling database audit by selecting **More** > **Modify Audit Service** in the **Operation** column of the target instance.

API 2.0 to 3.0 Switch Guide

Last updated: 2023-09-04 14:14:31

TencentDB for MySQL fully upgraded the API service to v3.0 on January 1, 2018 (UTC+8). Because API 2.0 has a higher access latency and is more complicated to use, technical support has been discontinued for API 2.0, which has been deactivated on March 31, 2023 (UTC+8).
We recommend you upgrade to TencentDB for MySQL API 3.0 as soon as possible to avoid affecting your business.
When using the API 3.0 service, you can go to the SDK Center to obtain the SDKs for multiple programming languages. Besides, API Explorer can be used to directly generate codes for you to call SDKs.
You can refer to the API 2.0 and 3.0 comparison table below, where you can find the new APIs you need to upgrade and complete the upgrade accordingly.

List of APIs switched from v2.0 to v3.0

API 2.0 Interface	API 3.0 Interface	API 3.0 Documentation	Input Parameter Change
DescribeCdbInstances	DescribeDBInstances	Queries the list of instances. For more information, see DescribeDBInstances.	To reduce complexity, some parameters have changed. Please refer to the relevant API documentation for details.
QueryCdbStatisticsInfo	GetAppStat	This API has been deprecated. To obtain the instance monitoring information, call `GetMonitorData`. For more information, see GetMonitorData.	No changes.
DescribeDBInstancesV3	DescribeDBInstances	Queries the list of instances. For more information, see DescribeDBInstances.	No changes.

GetCdbExportLogUrl	GetDownloadUrl	This API can be replaced with APIs in the production environment. type = slowlog_day: Queries slow logs. For more information, see DescribeSlowLogs. type = errlog_day: Queries the error logs of an instance. For more information, see DescribeErrorLogData. type = coldbackup: Queries the list of data backups. For more information, see DescribeBackups. type = binlog: Queries the list of log backups. For more information, see DescribeBinlogs.	In order to make the API easier to use, some parameters have been changed as described in: DescribeSlowLogs DescribeErrorLogData DescribeBackups DescribeBinlogs
RenewCdb	RenewDBInstance	Renews a TencentDB instance. For more information, see ModifyNameOrDescByDpId.	To reduce complexity, some parameters have changed. Please refer to the relevant API documentation for details.