

TencentDB for SQL Server

Operation Guide

Product Documentation



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Operation Guide

Data Migration

Migrate Data from CVM-based SQL Server Instance

Last updated : 2019-11-06 16:21:31

Operation Scenarios

TencentDB for SQL Server supports migrating data from a CVM-based SQL Server database to a TencentDB for SQL Server instance. This document describes how to configure and run such migration task.

- Before migration, please make sure that the SQL Server version of the target instance is not below that of the source instance.
- For the .bak files used for migration, please make sure that each .bak file contains only one database.
- The name of the migrated database cannot be the same as that of the TencentDB for SQL Server instance.**

Directions

Creating a Migration Task

1. Log in to the [TencentDB for SQL Server Console](#) and select **Data Transfer** in the left sidebar.
2. Click **Create Task**, enter the task name, source database information, and destination database information, and select **CVM-based SQL Server Database** as the source instance type.

[Back](#) | **CreateTasks**

1 Task Initialization > 2 Sync type and Database Table

Task Configuration

Task Name * The task name can contain up to 60 chars, and cannot include <, >, " and /

Source Database Info

Source instance type *

Region *

SQLServer Instance ID *

Account *

Password *

Destination Database Information

Destination Database Type *

Region *

Instance ID *

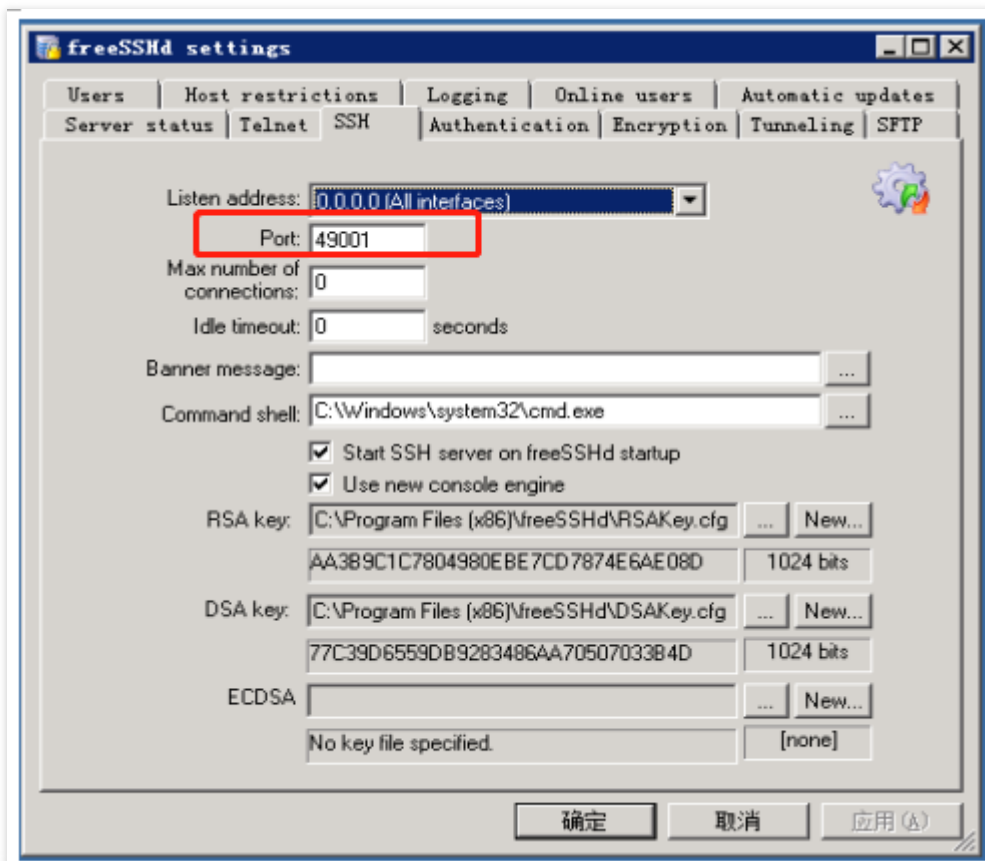
3. After clicking **Next**, you need to [configure the source SQL Server instance](#) first and then [configure the migration task](#).

If the error message "Source instance info checking failed!" is prompted, please check the following items for troubleshooting:

- Whether the sa account of the source SQL Server instance exists.
- Whether the sa account password of the source SQL Server instance is correct.
- Whether the IP and port connectivity of the source SQL Server instance work properly.

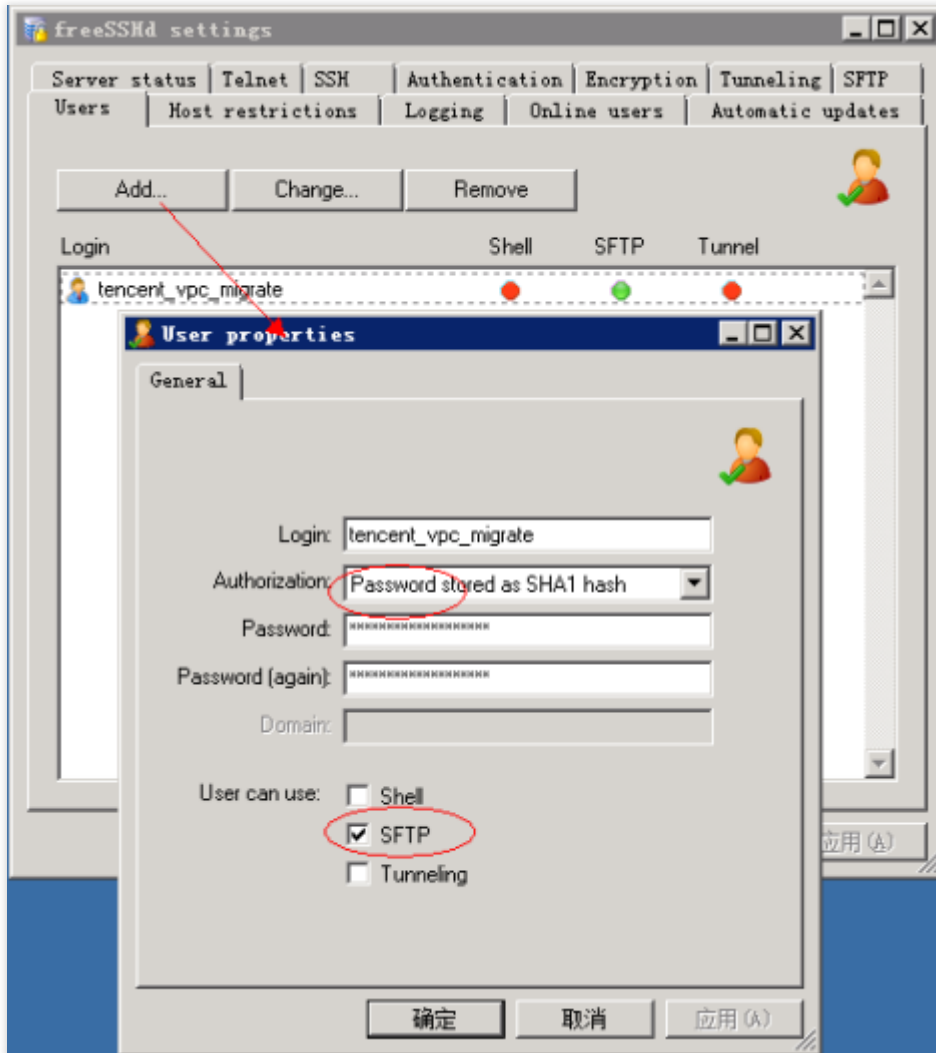
Configuring the Source SQL Server Instance

1. Enable the sa account for the source SQL Server instance.
2. Select **Allow remote connections to this server** in **Connections** and set a reasonable remote query timeout.
3. Select **SQL Server and Windows Authentication mode** in **Security**.
4. Enable TCP/IP.
5. Enable the built-in account and select **localsystem**.
6. Allow SQL Server port communication and open port 445 (for basic network) or 49001 (for VPC) in Windows Firewall.
7. (Optional) If **VPC** is selected as the **CVM Network**, you need to configure the freeSSHd tool.
 - i. Download and install [freeSSHd](#) with the default options, and agree to start the freeSSHd service.
 - ii. Double-click the freeSSHd icon on the desktop. Then, right-click the freeSSHd icon in the taskbar to open the Settings page for configuration.
 - iii. Select the **SSH** tab and set the port to 49001 (the default port here is 22, which should be changed to



49001).

- iv. Select the **Server status** tab and start the SSH server.
- v. Select the **Authentication** tab and select **Allowed** for password authentication.
- vi. Select the **Users** tab and enter the user `tencent_vpc_migrate` (this username cannot be changed) and the password `tencent_vpc_migrate` (this password cannot be changed) as shown below:



- vii. Use `D:\dbbackup\` (this path cannot be changed) as the backup folder used during SQL Server migration. Select the **SFTP** tab and configure this path as the "SFTP home path".

Configuring the Migration Task

Select the migration type, set the database (by selecting the database tables to be migrated), and click **Save and Verify**. If the verification fails, you can troubleshoot as prompted.

Starting the Migration Task

After the task is created, return to the task list. At this time, the task status is **initializing**. Select the task and click **Start** to sync the task.

Completing the Migration Task

After the data synchronization is completed (i.e., the progress bar shows 100%), you need to click **Complete** to end the synchronization process. If you selected **Incremental Synchronization** when configuring the migration task, you need to click **Complete** when the progress bar shows 99%. You can check whether the migration is successful on the **Status**.

- If the task status is **task successful*, the data migration is successful.
- If the status is **task failed*, the data migration failed. Please check the failure information, fix it accordingly, and then migrate again.

Migrating Data from Alibaba Cloud or a Self-built SQL Server Instance

Last updated : 2019-11-05 10:09:07

Scenario

TencentDB for SQL Server supports data migration using COS files, which helps you migrate from Alibaba Cloud or a self-built SQL Server instance to TencentDB for SQL Server.

- Before migration, make sure that the destination instance SQL Server edition is not simpler than that of the source instance.
- For bak files used for migration, make sure each bak file contains only one database.
- The name of the migrated database cannot be the same as that of the TencentDB for SQL Server instance.**

Directions

Uploading the Backup File to COS

1. Log in to the [Tencent Cloud Console](#) and select **Products** > **Cloud Object Storage** in the top-left corner of the page to enter the COS Console. Or, log in to the [COS Console](#) directly.
2. Select **Bucket List** and click **Create a Bucket**.
3. In the creation page that pops up, enter the relevant information and click **OK**.
 - The region of the bucket needs to be the same as that of the SQL Server instance to migrate to.
 - Cross-region migration with COS is not supported.
4. Return to the bucket list, select the created bucket, and click **File list** in the **Operation** column.
5. On the file list page, click **Upload File** and select one or more files for upload.
6. After the file is uploaded, click **File info** in the **Action** column to view the **object address**.

Migrating Data Through a Source File in COS

1. Log in to the [Tencent Cloud Console](#) and select **Products** > **TencentDB** > **SQL Server** in the top-left corner of the page to enter the TencentDB for SQL Server Console. Or, log in to the [TencentDB for SQL Server Console](#) directly.
2. Select **Data Transmission** in the left sidebar and click **Create Task** to create an offline migration task.

- **Task Name:** Custom.
 - **Source Instance Type:** Select **SQL Server backup and restoration (in COS mode)**.
 - **Region:** The region of the source database must be the same as that of the source file in COS.
 - **Link to Source File in COS:** You can view the file information to get the COS object address after uploading the source file.
 - **Destination Database Type** and **Destination Database Region:** They are automatically populated by the system based on the source database configuration.
 - **Instance ID:** Select the destination instance. You can only select an instance in the same region.
3. After completing the configuration, click **Next**.
 4. Currently, **type** and **database settings** can be changed. Click **Create Task**.
 5. Return to the task list. At this time, the task status is **initializing**. Select the task and click **Start** to sync the task.
 6. After the data synchronization is completed (i.e., the progress bar shows 100%), you need to click **Finish** to end the synchronization process. You can check whether the migration is successful based on the **status**.
 - If the task status is **task succeeded*, the data migration is successful.
 - If the status is **task failed*, the migration failed. Please check the failure information, fix it accordingly, and then migrate again.

Backup and Restoration

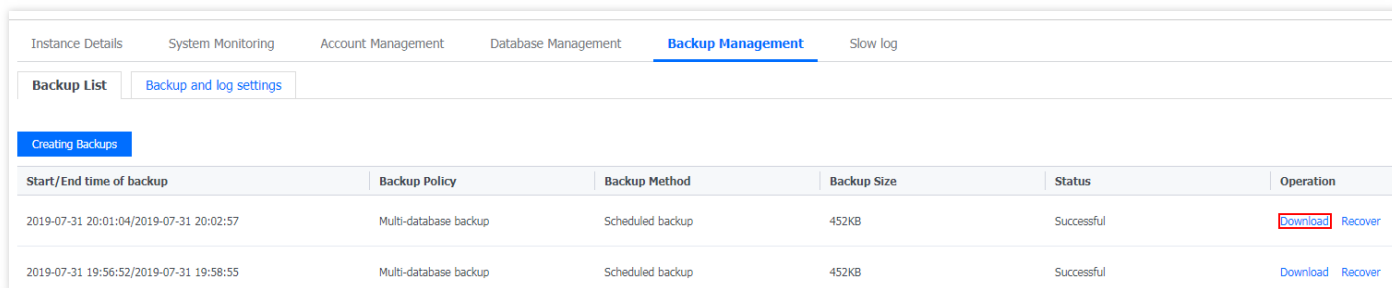
Database Instance Backup

Last updated : 2019-08-14 16:14:13

In the TencentDB for SQL Server Console, you can view the list of backup files and download them over a private or public network. You can then restore the database to another instance (such as a self-built instance) using a downloaded backup file.

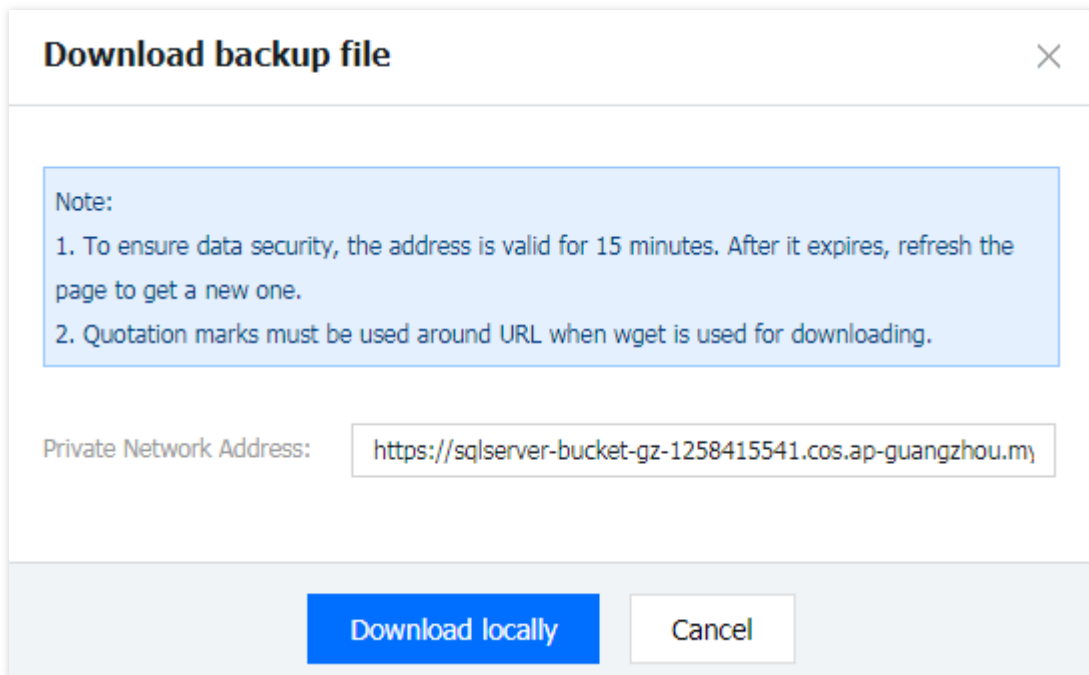
Directions:

1. Enter the backup management page under Instance Management. You will see the list of backup files. Click Download to enter the download page.



Start/End time of backup	Backup Policy	Backup Method	Backup Size	Status	Operation
2019-07-31 20:01:04/2019-07-31 20:02:57	Multi-database backup	Scheduled backup	452KB	Successful	Download Recover
2019-07-31 19:56:52/2019-07-31 19:58:55	Multi-database backup	Scheduled backup	452KB	Successful	Download Recover

2. On the download page, you can see the private and public addresses for download. Select the address you want to download from and copy it.



Download backup file ✕

Note:

1. To ensure data security, the address is valid for 15 minutes. After it expires, refresh the page to get a new one.
2. Quotation marks must be used around URL when wget is used for downloading.

Private Network Address:

[Download locally](#) [Cancel](#)

Note: The download address is valid for 15 minutes, after which you will need to enter the backup management page and download page again to get a new download address.

Database Instance Rollback

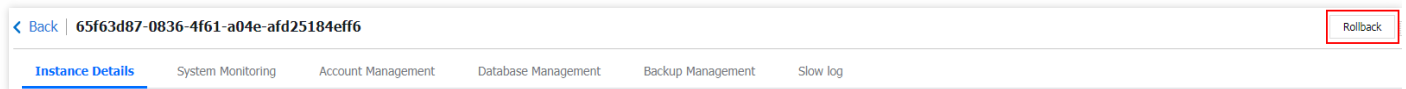
Last updated : 2019-08-14 16:14:17

Scenario

TencentDB for SQL Server provides a rollback tool for rolling back an instance. Historical data can be reconstructed using periodical image backup and real-time transactions to roll back the instance to a specified time where the time slices of all data are guaranteed to be identical. The full and log backups in TencentDB for SQL Server are retained for 7 days. Therefore, you can roll back the instance data to any time point within the past 7 days. This document describes how to roll back an instance in the console.

Directions

1. Log in to the [TencentDB for SQL Server Console](#), click the instance name to enter the instance details page, and click **Rollback** in the top-right corner.



2. Select the database to be rolled back, set the rollback time, decide if the original database should be overwritten, and click **Next**.

Batch rollback of database table data ×

① Set rollback time > ② Confirm rollback info

Select a database table to be rolled back. ⓘ	Set Rollback Time ⓘ	Overwrite original database ⓘ
<input type="checkbox"/> 65f63d87-0836-4f61-a04e-af...	<input type="text"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> test	--	No

3. After confirming that the parameters are correctly set, click **Rollback** to start the rollback task.

4. Return to the instance list. You should see the instance status change to **task in progress**. You can view the rollback progress in the task list.

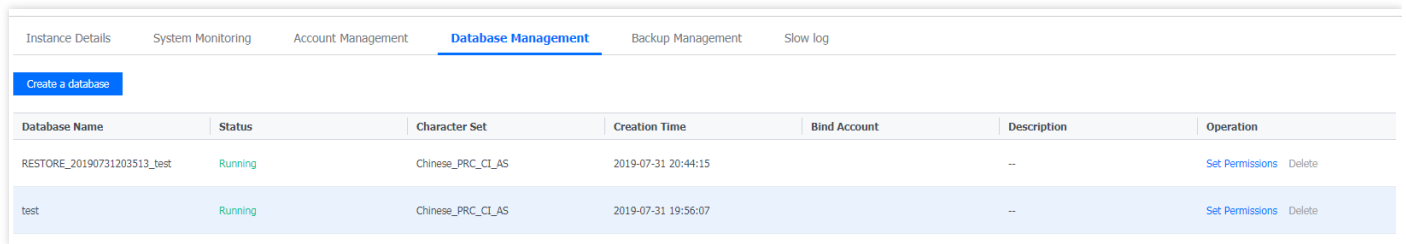
☰ 1

SQL Server - Current Task [Show all tasks](#)

65f63d87-0836-4f61-a04e-afd25184eff6

Data rollback	Running
<div style="width: 50%;"><div style="background-color: #007bff; height: 10px; border-radius: 5px;"></div></div>	
Start Time 2019-07-31 20:42:03	

5. The rollback task is successful. As "Overwrite Original Database" was not selected, you can see the generated duplicate database on the database management page.



The screenshot shows the 'Database Management' tab in the TencentDB console. It features a 'Create a database' button and a table with the following columns: Database Name, Status, Character Set, Creation Time, Bind Account, Description, and Operation. Two databases are listed: 'RESTORE_20190731203513_test' and 'test', both with a 'Running' status and 'Chinese_PRC_CI_AS' character set.

Database Name	Status	Character Set	Creation Time	Bind Account	Description	Operation
RESTORE_20190731203513_test	Running	Chinese_PRC_CI_AS	2019-07-31 20:44:15		--	Set Permissions Delete
test	Running	Chinese_PRC_CI_AS	2019-07-31 19:56:07		--	Set Permissions Delete

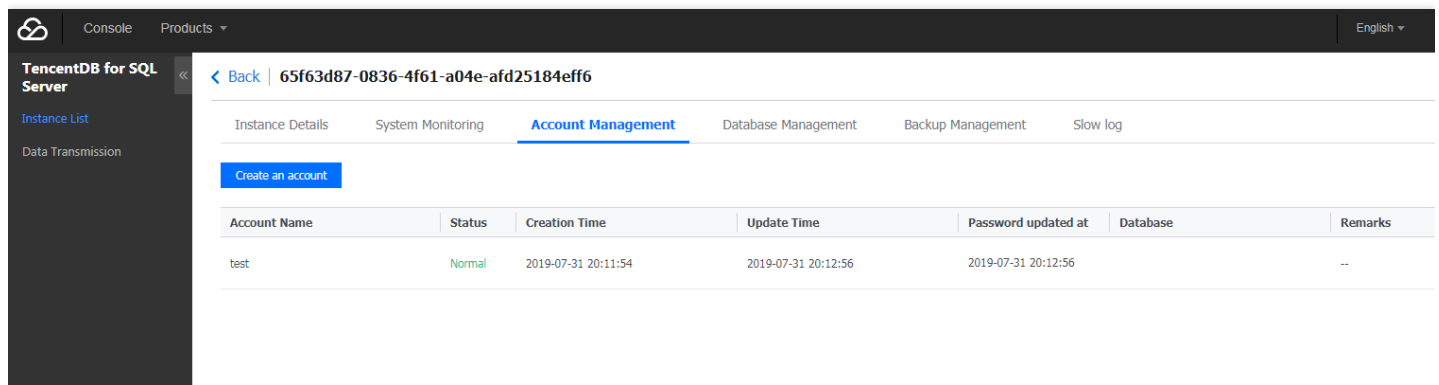
- Rollback is currently only supported for local instances, and you can choose to overwrite the original database or generate a duplicate database.
- If you choose to generate a duplicate database, note that the disk capacity after rolling back cannot exceed the disk capacity available for the instance; otherwise, rollback will fail.

Account Management

Last updated : 2019-10-25 12:23:17

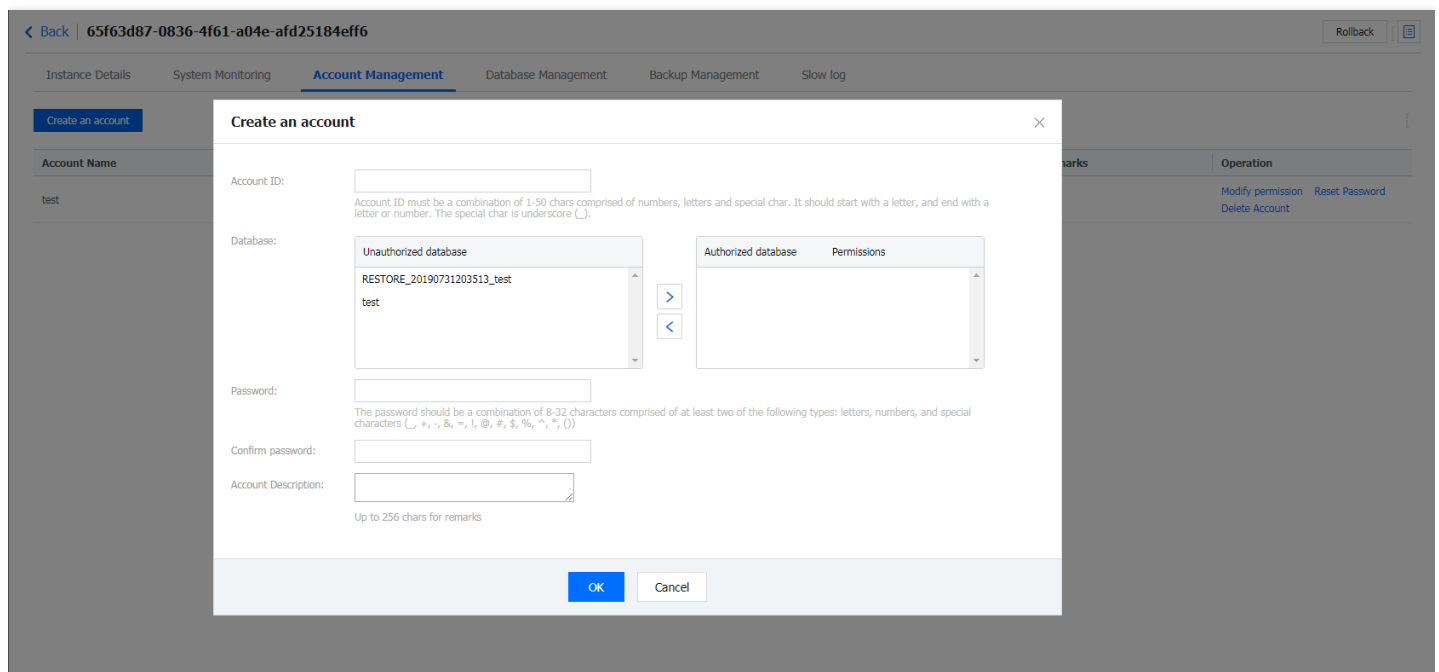
TencentDB for SQL Server do not allow the creation/deletion of databases and creating/deleting/modifying accounts via Microsoft SQL Server Management. Currently, you can go to "Console > TencentDB > SQL Server > Management > Account Management" to grant permissions for creating, deleting or modifying accounts.

Permission Management



Account Name	Status	Creation Time	Update Time	Password updated at	Database	Remarks
test	Normal	2019-07-31 20:11:54	2019-07-31 20:12:56	2019-07-31 20:12:56		--

Account Creation



Account ID:

Account ID must be a combination of 1-50 chars comprised of numbers, letters and special char. It should start with a letter, and end with a letter or number. The special char is underscore (_).

Database:

Unauthorized database	Authorized database	Permissions
RESTORE_20190731203513_test test		

Password:

The password should be a combination of 8-32 characters comprised of at least two of the following types: letters, numbers, and special characters (., +, -, &, =, !, @, #, \$, %, ^, *, ~, `).

Confirm password:

Account Description:

Up to 256 chars for remarks

OK Cancel

Currently, the console only allows you to use the "read-write" and "read-only" permissions. If you need higher level permissions, please submit a ticket. (No sa account is provided.)

Monitoring and Alarming

Last updated : 2019-10-25 12:55:47

The system monitoring of TencentDB for SQL Server supports 25 common parameters of SQL Server. You can collect statistics of other parameters by configuring the counters of SSMS.

Currently Supported Parameters

Common Parameters

Metric	Description (Unit)	Five-minute Value	Optimization Suggestion
CPU utilization (Total Processor Time)	Actual CPU utilization (%)	max	< 30% Good < 60% Good > 60% Attention required
Number of transactions (Transaction/sec)	Average transactions per second (times/second)	max	Dependent on business needs
Number of connections (User Connection)	Average users connections to the database per second (-)	max	Dependent on business needs
Number of requests (Batch Requests/sec)	- (times/second)	max	Dependent on business needs
Number of logins per second (Logins/sec)	Logins per second (times/second)	max	Dependent on business needs
Number of logouts per second (Logouts/sec)	Logouts per second (times/second)	max	Dependent on business needs

Metric	Description (Unit)	Five-minute Value	Optimization Suggestion
Used storage space (Storage Space)	Sum of space occupied by instance database files and log files (GB)	max	<30% Good <60% Good >60% Attention required
Incoming network traffic (Network Receive Throughput)	Sum of all incoming packets of all connections (MB/s)	max	Dependent on business needs
Outgoing network traffic (Network Transmit Throughput)	Sum of all outgoing packets of all connections (MB/s)	max	Dependent on business needs
Disk IOPS (IPOS)	Disk reads/writes (times/second)	max	Follow the suggestions for IOPS in the instance specs center < 30% Good < 60% Good > 60% Attention required
Number of disk reads (Read IOPS)	Disk reads per second (times/second)	max	Dependent on business needs
Number of disk writes (Write IOPS)	Disk writes per second (times/second)	max	Dependent on business needs

Performance Optimization Parameters

Metric	Description (Unit)	Five-minute Value	Optimization Suggestion
Slow queries (SlowQuery)	Number of queries running for more than one second (-)	avg	< 1 Good < 10 Normal > 10 Attention required

Metric	Description (Unit)	Five-minute Value	Optimization Suggestion
Blocking processes (Processes blocked)	Current number of blocking processes (-)	avg	Dependent on business needs
Number of lock requests (Lock Requests/sec)	Average lock requests per second (times/second)	avg	Dependent on business needs
Number of user errors (User Error/sec)	Average errors per second (times/second)	avg	0 Good > 0 Attention required
Number of lock waits (Lock waits)	Lock requests requiring caller to wait per second (times/second)	avg	Dependent on business needs
Number of SQL compilations (SQL Compilation/sec)	Average SQL compilations per second (times/second)	avg	Dependent on business needs
Number of SQL recompilations (SQL Re-Compilation/sec)	Average SQL recompilations per second (times/second)	avg	Dependent on business needs
Incoming network traffic (Network Receive Throughput)	Sum of all incoming packets of all connections (MB/s)	avg	Dependent on business needs
Outgoing network traffic (Network Transmit Throughput)	Sum of all outgoing packets of all connections (MB/s)	avg	Dependent on business needs
Number of full-table scans by SQL per second (Full Scans/sec)	Disk reads/writes (times/second)	avg	Follow the suggestions for IOPS in the instance specs center < 30% Good < 60% Good > 60% Attention required

Metric	Description (Unit)	Five-minute Value	Optimization Suggestion
Buffer cache hit rate (Buffer cache hit ratio)	Data cache (memory) hit rate (%)	avg	>= 95% Good >= 90% Normal < 90% Attention required
Number of latch waits per second (Latch Waits/sec)	Latch waits per second (times/sec)	avg	Dependent on business needs
Average lock wait delay (Average Wait Time)	Average wait time for each lock request that causes a wait (ms)	max	Dependent on business needs
Average network IO delay (Network IO waits)	Average network IO delay time (ms)	max	Dependent on business needs
Plan cache hit rate (Plan Cache: Cache Hit Ratio)	Hit rate of the execution plan of each SQL (%)	max	>= 95% Good >= 90% Normal < 90% Attention required

As SQL Server adopts a full-use mechanism for the memory, there is no need to monitor the direct memory space metric. You can check the memory usage by viewing the cache hit rate.

Currently Supported Alarm Metrics

Currently, alarm is available only for the key performance metrics. For other metrics, alarm is not supported in Cloud Monitor. You can configure the alarm feature in Tencent Cloud's "Console" -> "Cloud Monitor" -> "My Alarm" -> "Alarm Policy".

Currently, alarming is supported for the following monitoring metrics. The recommended alarm thresholds are as detailed above (in Table 1).

- CPU utilization
- Connection count
- TrafficIn
- TrafficOut
- IOPS

- Storage capacity

Functional Limitations

Last updated : 2019-08-14 16:14:34

Use Limitations

1. TencentDB for SQL Server **do not allow the creation/deletion of databases and creatin/deleting/modifying accounts via Microsoft SQL Server Management**. If needed, please log in to the Tencent Cloud [Console](#) to do so.
When you try to manage databases in Microsoft SQL Server Management, the system may prompt "An exception occurred while executing a Transact-SQL statement or batch processing".
2. Tencent Cloud **prohibits the sysadmin role**. If your business has to use this role, please contact your Tencent Cloud account manager.
When you try to manage databases in Microsoft SQL Server Management, the system may prompt "You must be a member of the sysadmin role to perform this operation".
3. **The use of SQL Server agent is supported.**

Remote Management

Last updated : 2019-10-25 12:11:13

TencentDB for SQL Server doesn't come with SQL Server Management Studio (SSMS). You can choose to install the SSMS that supports SQL Server 2008R2 directly in the TencentDB instance if you need it.

Recommended environment for installation: Windows Server 2012 R2 Standard Edition 64-bit English Version

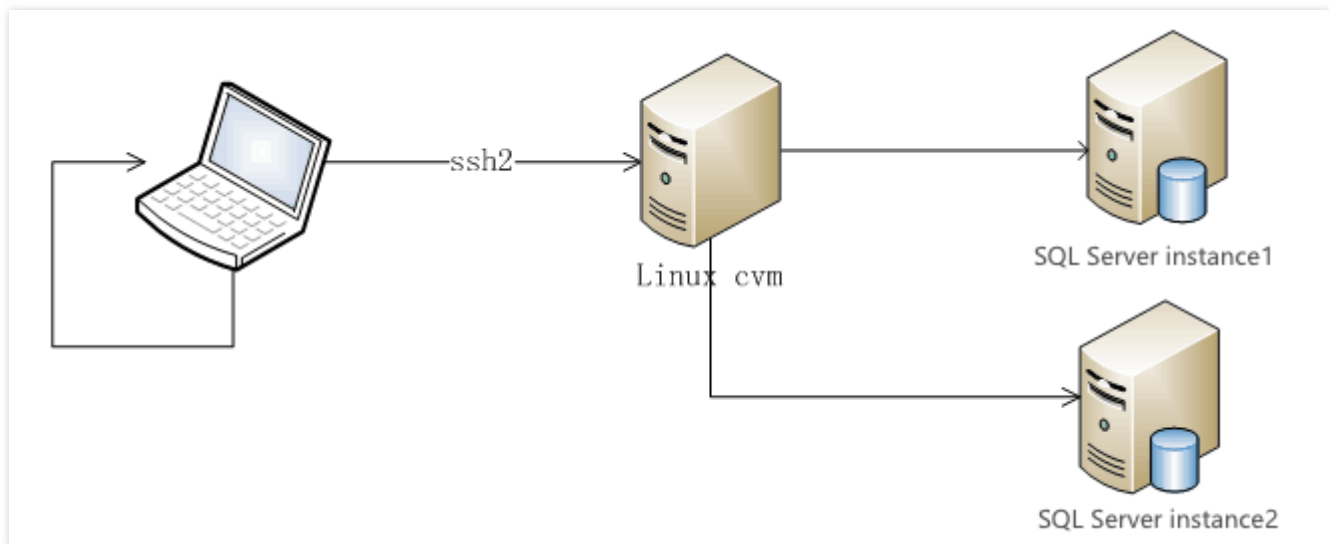
[Official software download address](#)

[Official software instructions](#)

Using SSMS Locally

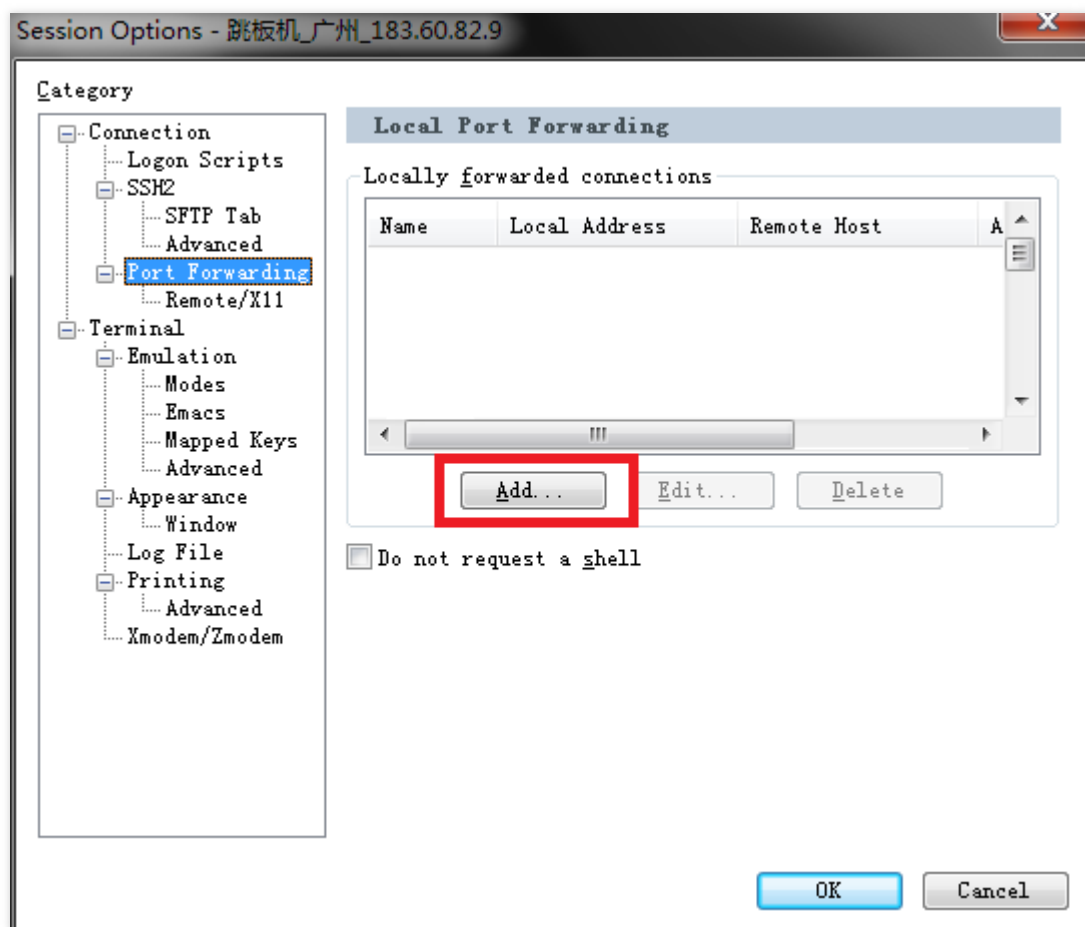
Currently, public IP is not supported by TencentDB for SQL Server for data security considerations. If you need to use a public IP, you can use the port mapping function of SSH2 to connect to, configure and manage an instance from the Internet by following the simple steps below:

1. Prepare a Linux-based CVM instance with a public IP
2. Configure port mapping locally using an SSH tool (such as SecureCRT or PuTTY), start a service port locally, and use the SSH tool to establish a connection with the Linux instance. Then, you can connect to a local service port using SSMS.



Take SecureCRT as an example:

1. Go to the session properties settings and click Add.



2. In the session properties settings page, configure the corresponding parameters.

The screenshot shows the 'Local Port Forwarding Properties' dialog box with the following configuration:

- Name:** SQL Server
- Local:**
 - Manually select local IP address on which to allow connections.
 - IP address: [Empty]
 - Port: 4000
- Remote:**
 - Destination host is different from the SSH server.
 - Hostname: 10.66.159.22
 - Port: 1433
 - Dynamic forwarding using SOCKS 4 or 5
- Application:**
 - Application: [Empty]
 - Arguments: [Empty]

Buttons: OK, Cancel

3. Log in to the Linux-based CVM instance and establish a connection.

4. Connect to the SQL Server instance using SSMS