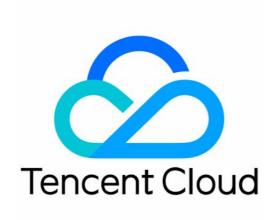


Cloud File Storage Getting Started Product Documentation



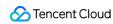


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Getting Started Creating File Systems and Mount Targets

Last updated: 2024-01-22 21:58:08

Overview

This document describes how to create a file system and mount target on the file system page in the CFS console.

Directions

Step 1. Sign up for a Tencent Cloud account

Sign up for a Tencent Cloud account. If you already have a Tencent Cloud account, ignore this step.

Step 2. Enter the file system page

Log in to the CFS console and click File System on the left sidebar to enter the file system list page.

Step 3. Determine the type of file system to create as needed

Select a type as needed. For more information, see Storage Classes and Performance.

Step 4. Create a file system

- 1. Click Create.
- 2. Configure the following information on the Create File System page:

Parameter	Description
File System Name	Customize the name of the file system to create.
Region	Select the region where the CFS file system will reside.
AZ	Select the AZ where the CFS file system will reside.
Protocol	Select the protocol type of the CFS file system, NFS or SMB. NFS is more suitable for Linux and Unix clients and CIFS/SMB for Windows clients. The Turbo series can only be used by private clients and does not allow the selection of file system protocols.
Permission group	Each file system must be bound to a permission group. The permission group specifies an allowlist that can access the file system and lists the read and write permissions.



Network	Specify the VPC of the file system. The file system can be mounted to instances in the VPC for access.
Storage capacity	Required only for the Turbo series. The Turbo series is an exclusive cluster and has restrictions on the minimum cluster scale and expansion step. For Standard Turbo, the minimum initial cluster scale is 40 TiB, and the expansion step is 20 TiB. For High-Performance Turbo, the minimum initial cluster scale is 20 TiB, and the expansion step is 10 TiB.
CCN Instance	Required only for the Turbo series. Select an existing CCN instance or create a new one. For more information, see Cloud Connect Network.
IP Range	Required only for the Turbo series. This parameter allows you to reserve a CIDR block for Turbo related components. Ensure that the selected CIDR block does not conflict with those of other instances on the cloud that need to communicate with Turbo. To ensure sufficient IP addresses in the CIDR block, the mask must have 16 to 24 bits, for example, 10.0.0.0/24.
Tag	If you already have a tag, you can add it to the new file system here. If you do not have a tag, log in to the Tag console to create a tag, and then bind it to the file system. You can also add a tag to the file system after it is created.

- 3. Click Next.
- 4. Click Create Now to create the file system and mount target.

Step 5. Get the mount target information

- 1. After the file system is created, return to the file system list.
- 2. Click the name of the file system to enter its basic information page.
- 3. Click Mount Target Info to get the mount commands on Linux and Windows.

We recommend you copy the mount command provided by the console for mounting.



Using CFS File Systems on Linux Clients

Last updated: 2024-01-22 21:58:08

Overview

This document describes how to use CFS file systems on Linux clients.

Step 1. Create a File System and Mount Target

For detailed directions, please see Creating File Systems and Mount Targets.

Step 2. Connect to an Instance

This section describes how to log in to a Linux-based CVM instance. The login method varies depending on the scenarios. Logging in to the instance through the console is described herein. For alternative login methods, please see Logging in to Linux Instance Using Standard Login Method.

Prerequisites

You have logged in to the CVM instance with an admin account.

Admin account ID: root for all Linux-based instances (ubuntu on Ubuntu).

Password: the password you specified when purchasing the CVM instance.

Logging in to a CVM instance in the console

Locate the instance in the CVM instance list, click **Log In** under **Operation**. Click **Log in Now** under **Alternative login methods** to connect to the Linux CVM instance through VNC.

Enter the account ID and its password to log in.

Note:

This instance is exclusive, meaning only one user can log in through the console at a time.

Verifying network communication

Before mounting, you need to check the network connectivity between the client and the file system. You can use the telnet command for verification. The specific protocols and ports as follows:

File System Protocol	Port	Check Network Connectivity
NFS 3.0	111, 892,and 2049	telnet 111,892,and 2049



NFS 4.0	2049	telnet 2049
CIFS/SMB	445	telnet 445

Note:

Currently, CFS does not support ping .

Step 3. Mount a File System

Mounting an NFS file system

1. Launch the NFS client

Before mounting, please make sure that <code>nfs-utils</code> or <code>nfs-common</code> has already been installed in the system.

The installation method is as follows:

CentOS:





sudo yum install nfs-utils

Ubuntu or Debian:



sudo apt-get install nfs-common

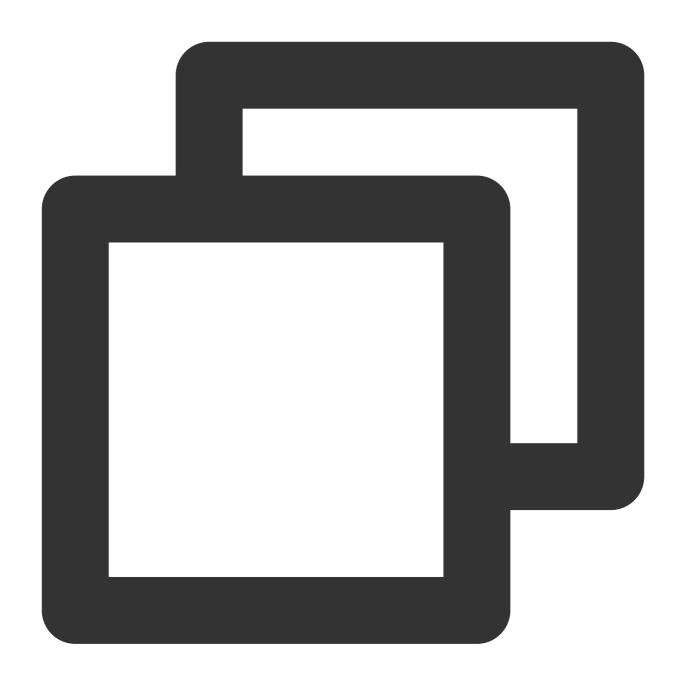
2. Create a destination mount directory

Create a destination mount directory with the following command:



mkdir <destination mount directory>

Example:

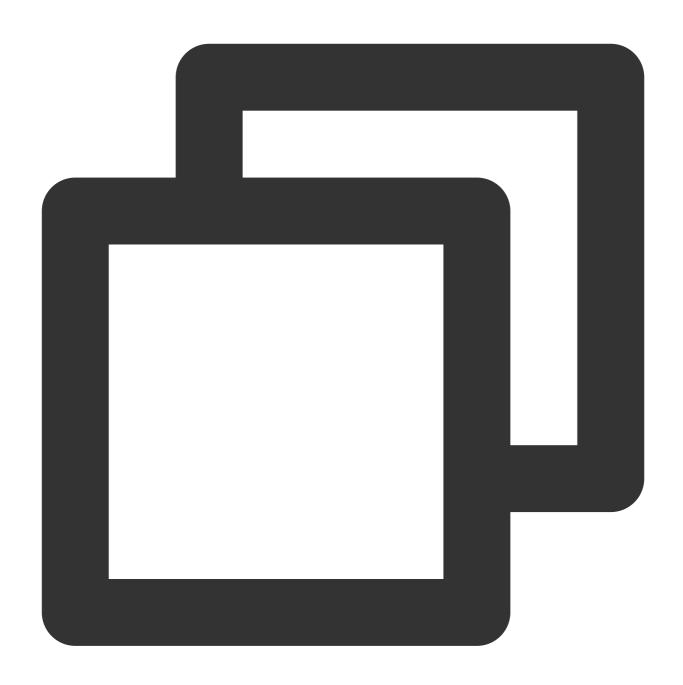


mkdir /localfolder/
mkdir /localfolder/test

3. Mount the file system

Mount NFS v4.0

Mount NFS v4.0 with the following command:



// You can go to the CFS console > File System > Mount Target Info to obtain the fo // Some old versions of Linux kernels need to be mounted using vers=4. If an except sudo mount -t nfs -o vers=4.0, noresvport <mount target IP>:/ <destination mount dir

Mount target IP: It is automatically generated when the file system is created.

By default, NFS v4 is mounted under the root directory of the file system. It can also be mounted to a subdirectory created in the file system.

Destination mount directory: This refers to the target directory to be mounted to on the current server. It needs to be created in advance.



Note:

Note that there is a space between <mount target IP>:/ and <destination mount directory> .

Example:

Mount to the root directory of CFS:



// You can go to the CFS console > File System > Mount Target Info to obtain the fo // Some old versions of Linux kernels need to be mounted using vers=4. If an except sudo mount -t nfs -o vers=4.0, noresvport 10.0.24.4://localfolder

Mount to the subdirectory of CFS:





// You can go to the CFS console > File System > Mount Target Info to obtain the fo // Some old versions of Linux kernels need to be mounted using vers=4. If an except sudo mount -t nfs -o vers=4.0, noresvport 10.0.24.4:/subfolder /localfolder

Mount NFS v3.0

Mount NFS v3.0 with the following command:





// You can go to the CFS console > File System > Mount Target Info to obtain the fo
// Some old versions of Linux kernels need to be mounted using vers=4. If an except
sudo mount -t nfs -o vers=3,nolock,proto=tcp,noresvport <mount target IP>:/<fsid>

Mount target IP: It is automatically generated when the file system is created.

NFS v3.0 can only be mounted to a subdirectory. The default file system subdirectory is FSID.

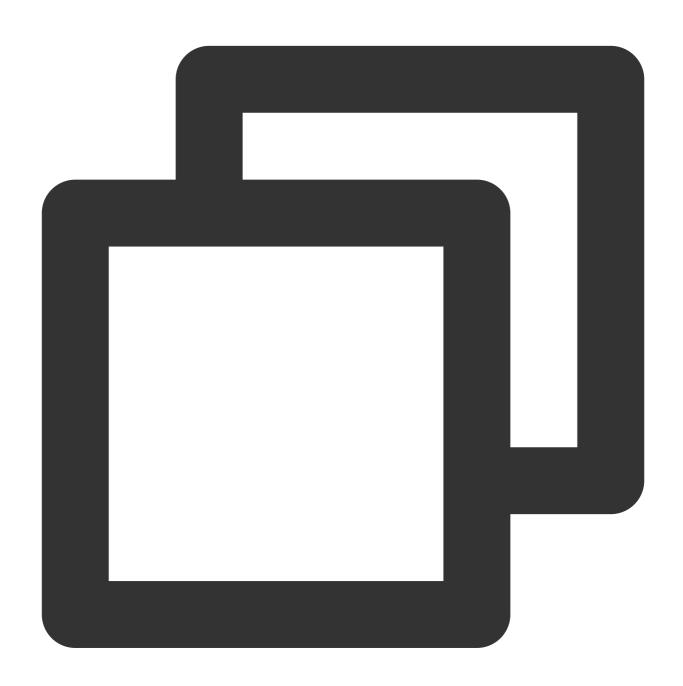
Destination mount directory: This refers to the target directory to be mounted to on the current server. It needs to be created in advance.

Note:



Note that there is a space between <mount target IP>:/<FSID> and <destination mount directory> .

Below is an example of mounting to a CFS subdirectory:



// You can go to the CFS console > File System > Mount Target Info to obtain the fo // Some old versions of Linux kernels need to be mounted using vers=4. If an except sudo mount -t nfs -o vers=3,nolock,proto=tcp,noresvport 10.0.24.4:/z3r6k95r /localf

4. View the mount target information



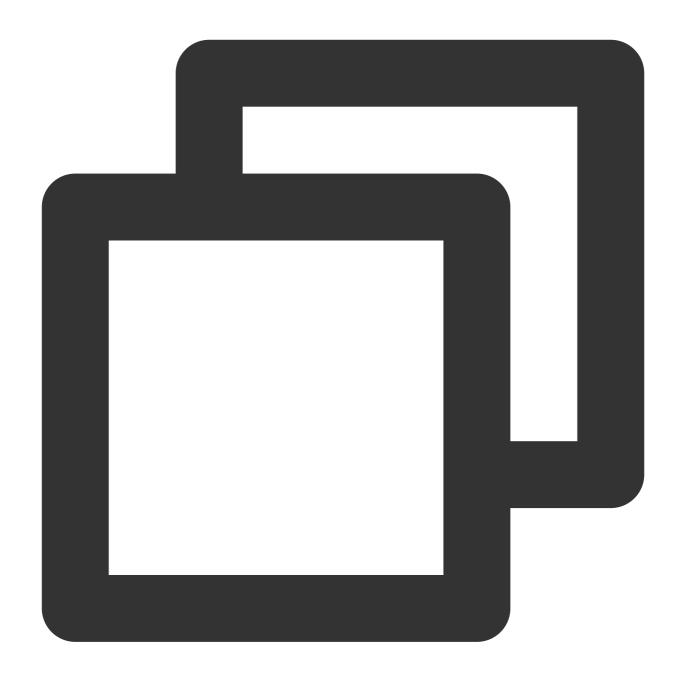
After the mount is completed, run the following command to view the mounted file system:



mount -1

You can also run the following command to view the capacity information about the file system. (After you run the df command, note that it is possible that an existing mount target is not displayed. In this case, you can check the output of mount -1 to ensure that all mount target information is listed.)





df -h

Note:

To avoid misoperations, do not repeatedly mount a mounted CFS file system or file system directory unless it is necessary.

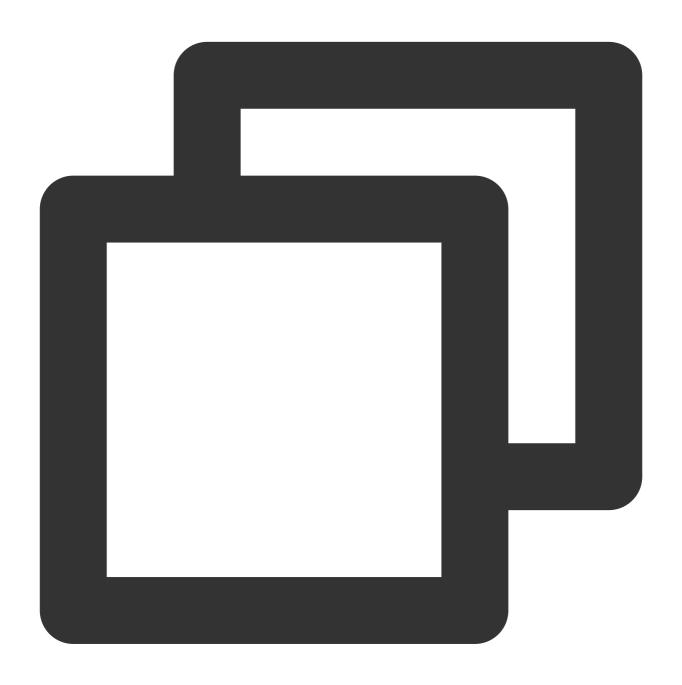
Mounting a CIFS/SMB file system

1. Launch a CIFS client



Before mounting, please make sure that <code>cifs-utils</code> has already been installed in the system. The installation method is as follows:

CentOS:



sudo yum install cifs-utils. $x86_64$ -y

2. Create a destination mount directory

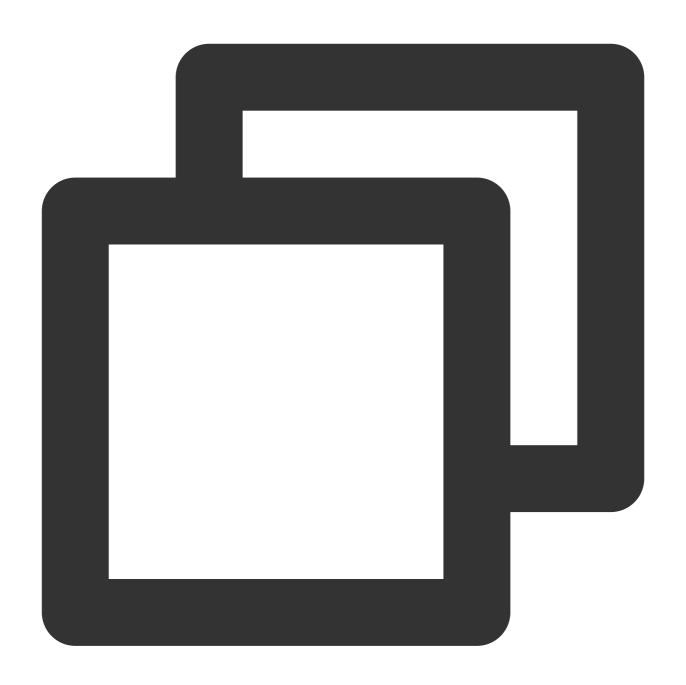
Create a destination mount directory with the following command:



mkdir <destination mount directory>

Example:





mkdir /local/
mkdir /local/test

3. Mount the file system

Mount CIFS with the following command:





```
// Parameter description:
// vers: supports 2.1 and 3.0. Defaults to 1.0.
// uid: owner of the file when the mount is completed. If not specified, uid=0 is u
// gid: user group that owns the file when the mount is completed. If not specified
// The uid and gid parameters are for apps that need to check the file owner during
// noperm: The client does not perform permission verification. If a permission is
// actimeo: file attribute (metadata timestamps) cached by the client
// nocase: By default, using version 1.0 on mount is case-sensitive. However, Windo
// An example is as follows:
mount -t cifs -o guest, vers=1.0, uid=1000, gid=100, noperm, actimeo=1, nocase //<mount t</pre>
```



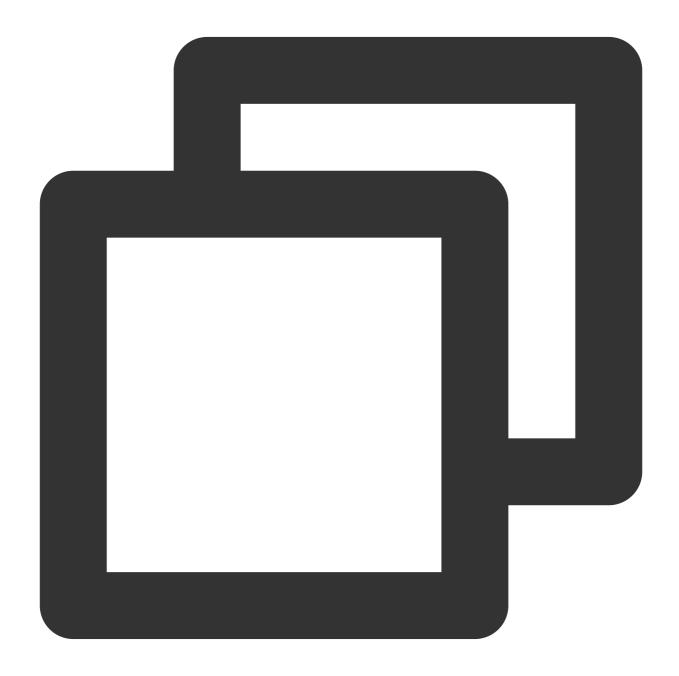
Mount target IP: It is automatically generated when the file system is created.

By default, FSID of the file system is used for the mount.

Destination mount directory: This refers to the target directory to be mounted to on the current server. It needs to be created in advance.

Note:

Note that there is a space between $\mbox{\em <FSID>/}$ and $\mbox{\em <destination mount directory>}$. Example:

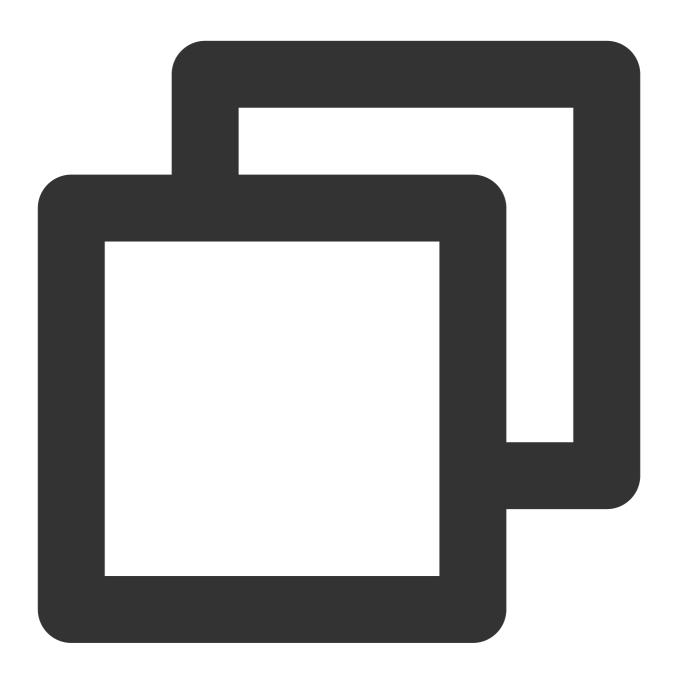


mount -t cifs -o guest //10.66.168.75/vj3i1135 /local/test



4. View the mount target information

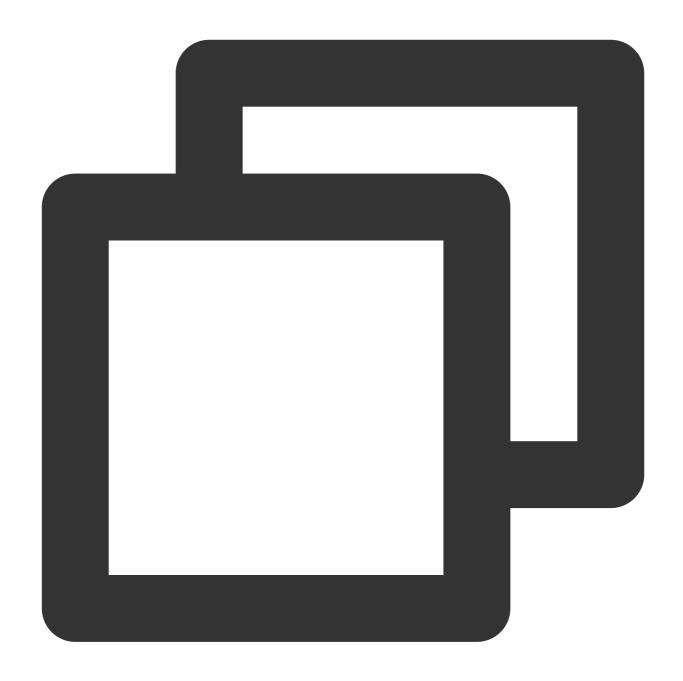
After the mount is completed, run the following command to view the mounted file system:



mount -1

You can also run the following command to view the capacity information about the file system. (After you run the df command, note that it is possible that an existing mount target is not displayed. In this case, you can check the output of mount -1 to ensure that all mount target information is listed.)





df -h

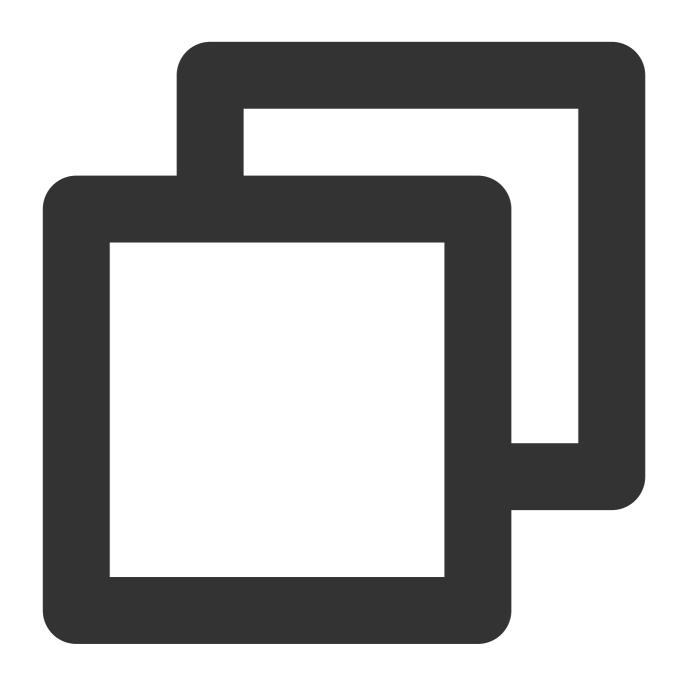
Note

To avoid misoperations, do not repeatedly mount a mounted CFS file system or file system directory unless it is necessary.

Step 4. Unmount a Shared Directory



If you need to unmount a shared directory, you can run the following command, where "directory name" is the root directory or the full path of the file system:



umount <directory name>

Example:





umount /local/test

Note:

After you run the df command, note that it is possible that an existing mount target is not displayed. In this case, you can check the output of mount -1 to ensure that all mount target information is listed. In addition, you are advised to unmount the file system before restarting/shutting down the client to avoid exceptions.

Step 5. Terminate Resources



Note:

Resources cannot be recovered from a deleted file system. Therefore, you are advised to back up all resources before deleting the file system.

You can terminate a file system in the console. Specifically, go to the CFS console, locate the file system to be terminated, and click **Delete** > **Confirm**.



Using CFS File Systems on Windows Clients

Last updated: 2024-01-22 21:58:08

Overview

This document describes how to use CFS file systems on Windows clients. The example below shows how to do so on Windows Server 2012 R2. The operations are the same on other Windows editions such as Windows Server 2008 and Windows Server 2016.

Step 1. Create a File System and Mount Target

For detailed directions, see Creating File Systems and Mount Targets.

Step 2. Connect to an Instance

1. Log in to a Windows instance using the standard method.

For other login methods, see Logging in to Windows instance.

2. Verify the network communication.

Before mounting, you need to check the network connectivity between the client and the file system (the Telnet service needs to be enabled on Windows clients). You can use the telnet command for verification, such as telnet 192.168.1.1 445. The specific protocols and ports as follows:

File System Protocol	Open Port for Client	Check Network Connectivity
NFS 3.0	111, 892, and 2049	telnet 111, 892, or 2049
NFS 4.0	2049	telnet 2049
CIFS/SMB	445	telnet 445

Step 3. Mount a File System

Note:

We recommend you use SMB to mount CFS.

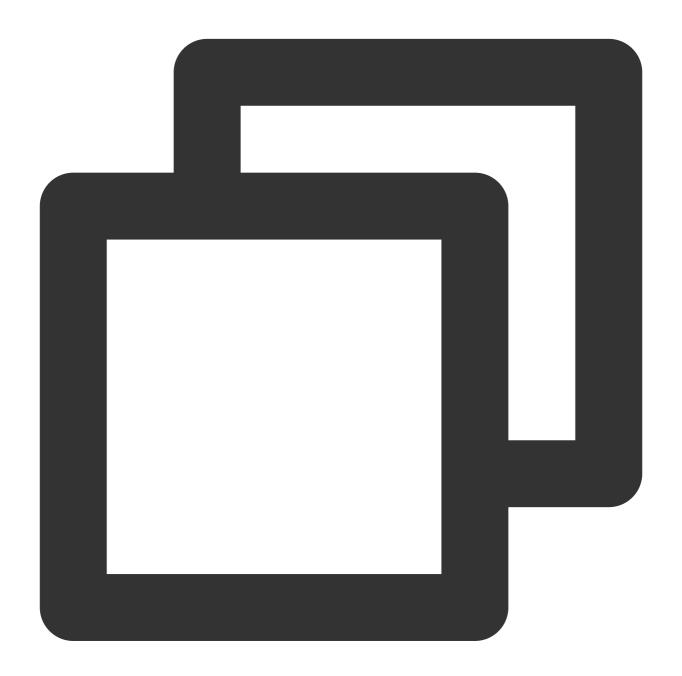
Mounting a CIFS/SMB file system



A CIFS/SMB file system can be mounted via a command line or graphical interface.

Mounting a file system via command line

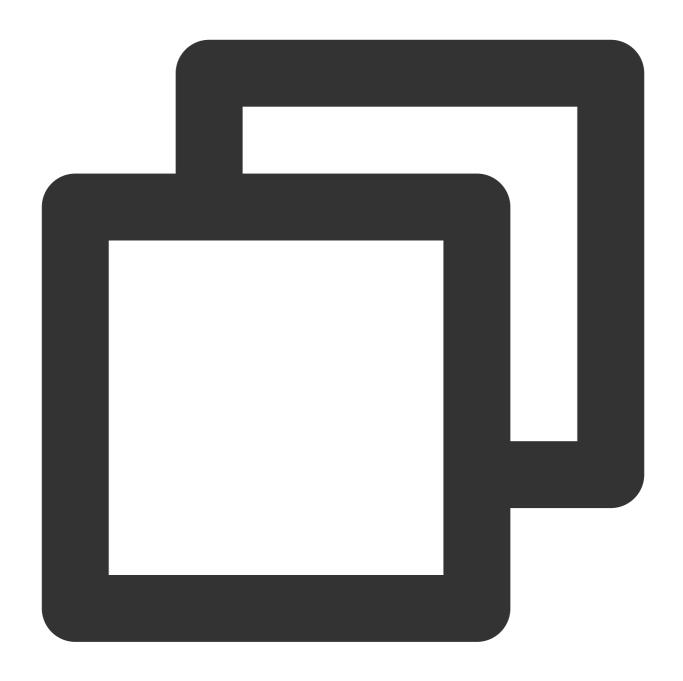
Use FSID to mount the file system. The mount command is as follows:



net use <shared directory name>: \\\\<mount target IP>\\FSID

Sample:





net use X: \\\10.10.11.12\\fjie120

Note:

You can go to the CFS console, click the file system ID, and choose the **Mount Target Info** tab to obtain the mount command.

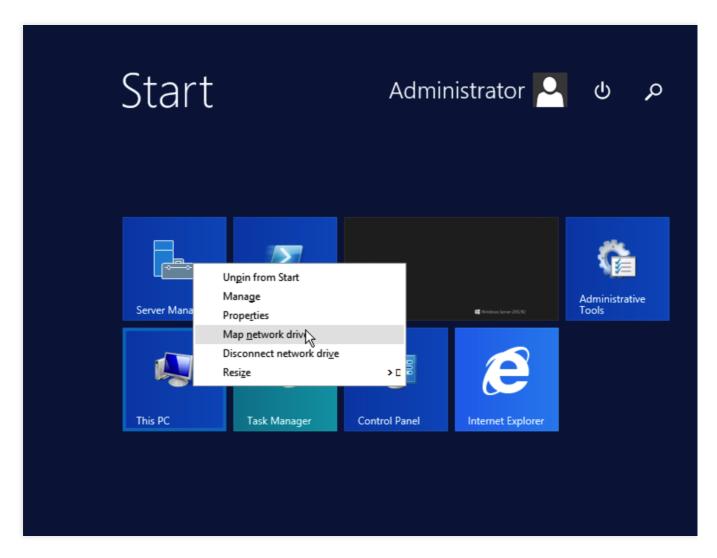
Mounting a file system via a graphical interface

1. Click



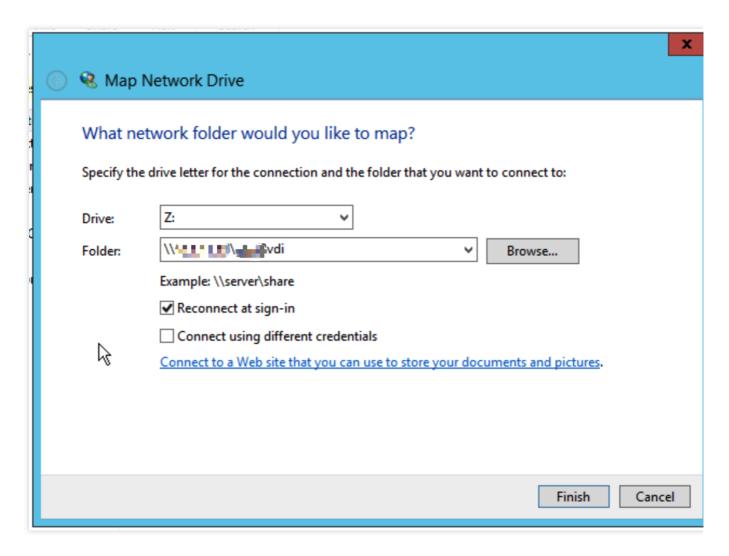


2. Right-Click **This PC** and select **Map network drive**.



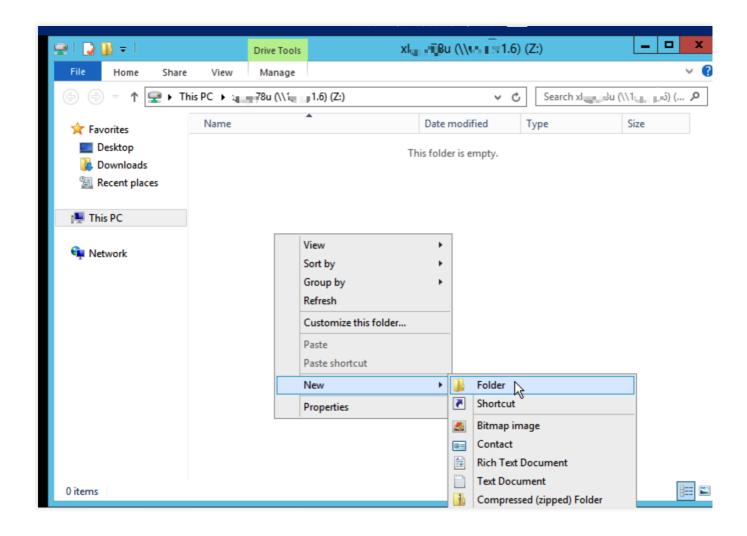
3. In the pop-up window, set the drive letter for **Drive** and folder (i.e., the mount directory you see in the CIFS/SMB file system) and click **Finish**.





4. You will be redirected to the file system that has been mounted. You can right-click to create a file and verify read/write correctness.





Mounting an NFS file system

1. Enable the NFS service

Note:

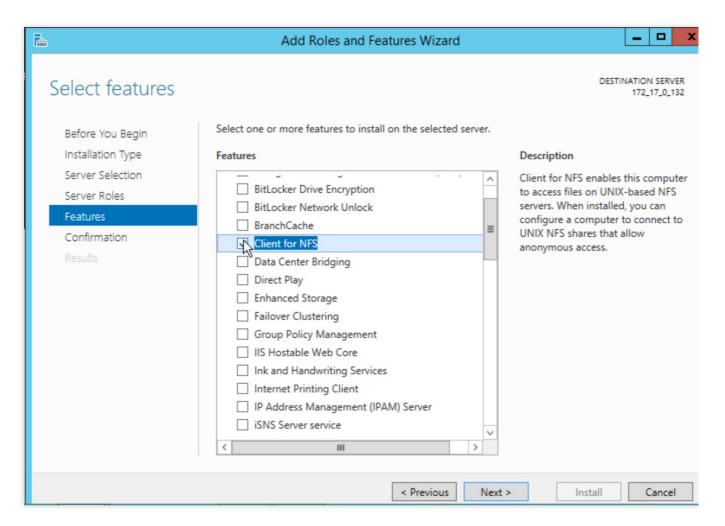
Before mounting, please make sure that the NFS service has been enabled.

1. Click

and select Control Panel > Programs > Turn Windows Features on or off.

- 2. In the **Add Roles and Features Wizard** window that pops up, keep the default configuration and click **Next** 5 consecutive times.
- 3. On the Features page, select Client for NFS and click Next.

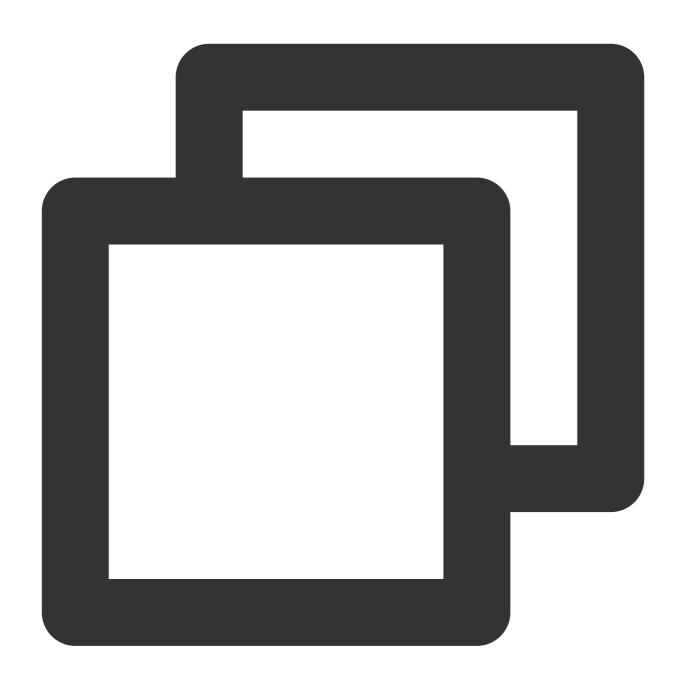




- 4. Click Install.
- 5. Restart the CVM instance.

2. Verify whether the NFS service is enabled

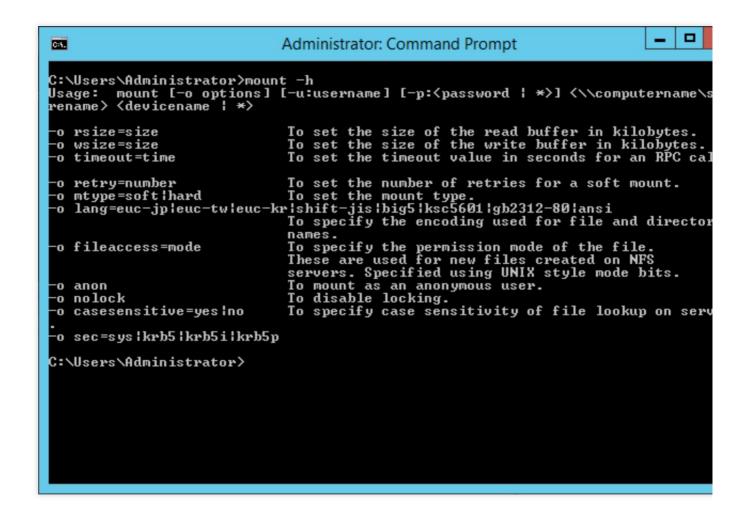
1. Open the command line tool and run the following command:



mount -h

If NFS-related information is returned, the NFS client is running properly.





3. Add an anonymous user and user group

1. Right-Click



2. In the Run window, enter the regedit command and click OK to open the Registry Editor window.

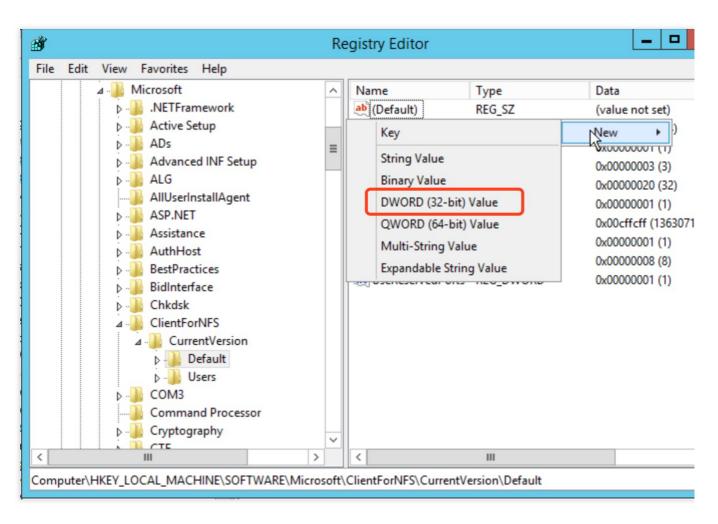




3. Find the

HKEY_LOCAL_MACHINE\\SOFTWARE\\Microsoft\\ClientForNFS\\CurrentVersion\\Default path
in the registry and select it.

- 4. Right-Click in the blank space on the right and select **New** > **DWORD** (32-bit) Value or **QWORD** (64-bit) Value (subject to the number of bits of your operating system).
- 5. In the new record that appears in the list, set its name to **AnonymousUid** and use the default data value of 0.
- 6. Repeat **step 4** to add another record, set its name to **AnonymousUid**, and use the default data value of 0.



7. Close the Registry Editor and then run the commands below on the command line tool in sequence to restart the NFS client service so that the modified Registry can take effect. You can also restart the Windows OS for the modified Registry to take effect.



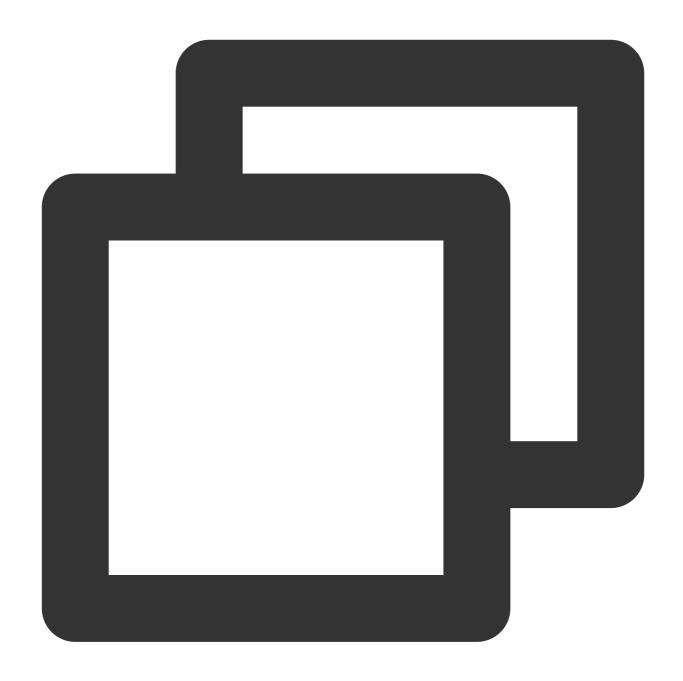


net stop nfsclnt



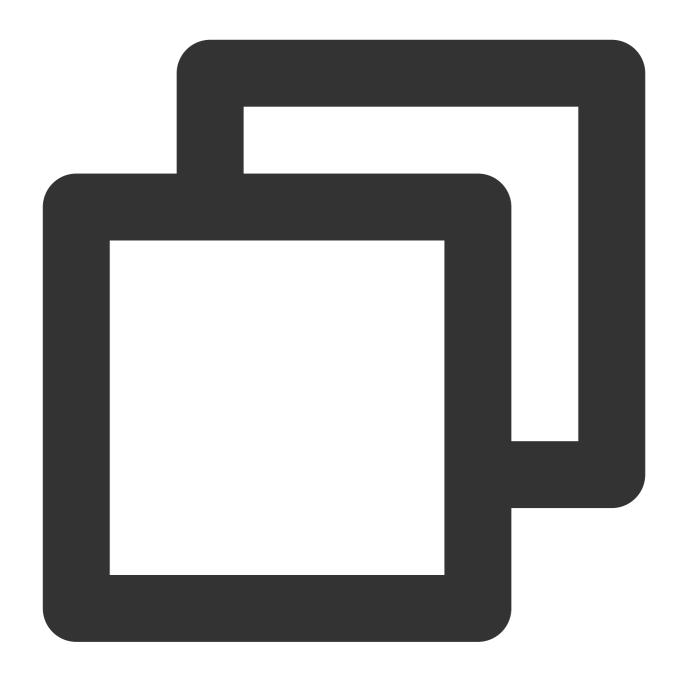


net stop nfsrdr



net start nfsrdr





net start nfsclnt

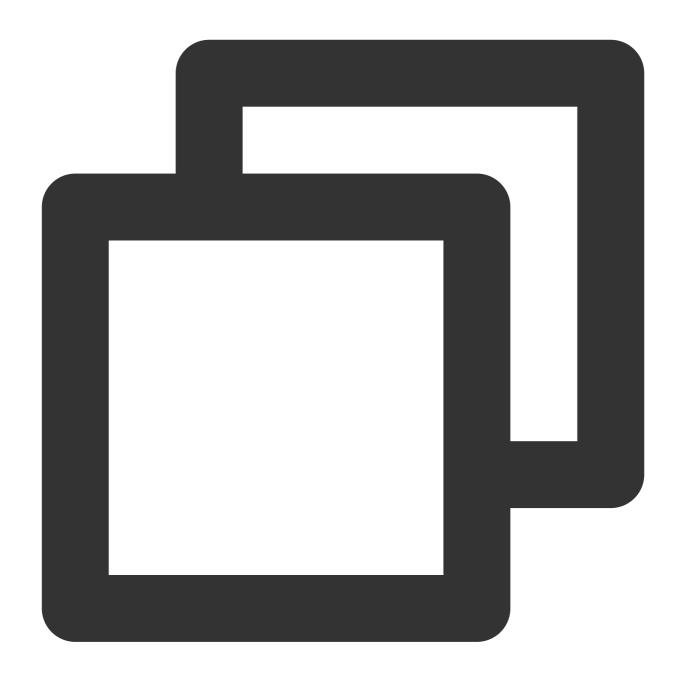
4. Mount an NFS file system

A file system can be mounted via a command line or graphical interface.

Mounting a file system via command line

Enter the following command on the command line tool to mount the file system. The default subdirectory is FSID.





mount <mount target IP>:/<FSID> <shared directory name>:

Sample:





mount 10.10.0.12:/z3r6k95r X:

Note:

You can go to the CFS console, click the file system ID, and choose the **Mount Target Info** tab to obtain the mount command.

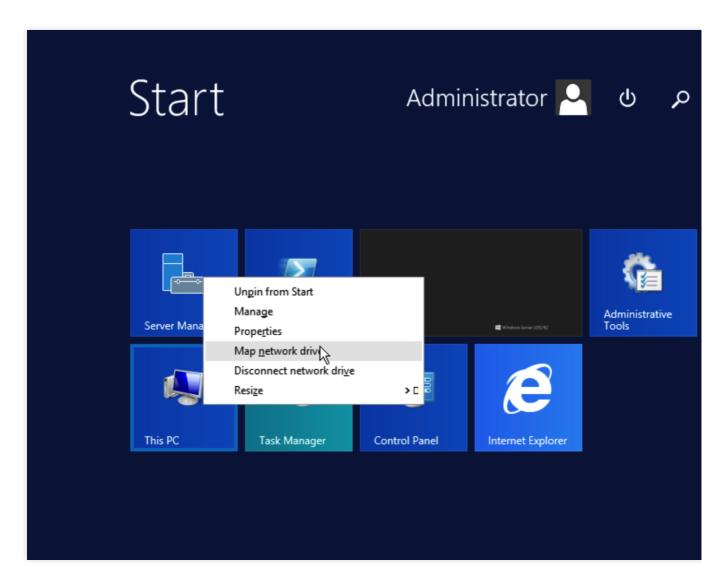
Mounting a file system via a graphical interface

1. Click



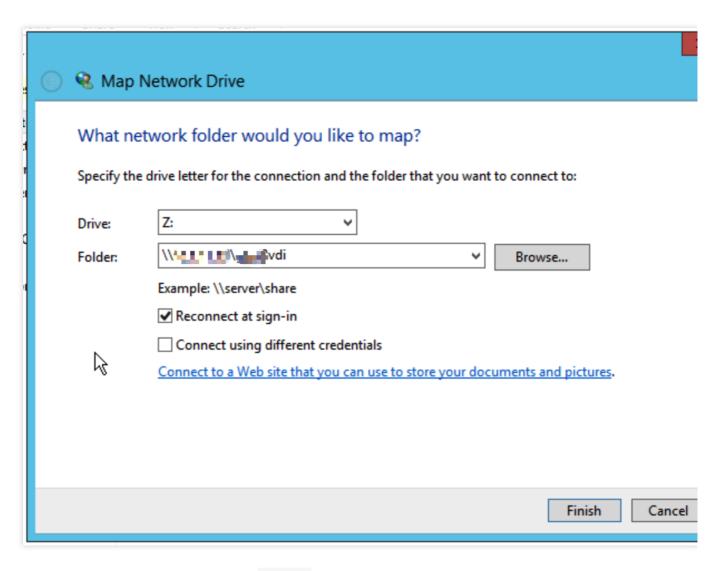


2. Right-Click **This PC** and select **Map network drive**.



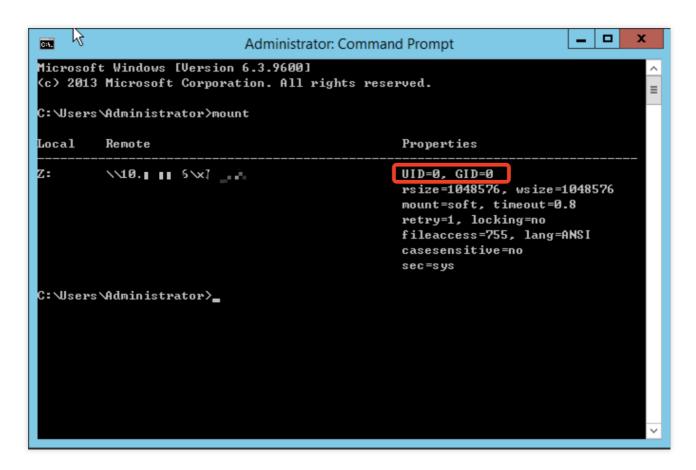
3. In the pop-up window, set the drive letter for **Drive** and folder (i.e., the mount directory you see in the NFS file system) and click **Finish**.





4. Open the command line tool and enter the mount command to check whether the above file system is mounted with root permissions in the following way.





Check whether the UID and GID values are 0. If so, the file system has been mounted with root permissions and can be used. If the UID and GID are -2 or other values, data may not be written properly, and you should repeat the previous steps to ensure that the file system is mounted with root permissions.

If the Windows command-line tool displays "Locking=yes", to avoid read/write exception (NFS v3 does not support locking), you can modify the Registry by performing the following steps:

- 1. Find the following registry path: HKEY_LOCAL_MACHINE > SOFTWARE > Microsoft > ClientForNFS > CurrentVersion > User > Default > Mount.
- 2. Move the mouse to the right pane and right-click there. Click **New** and choose **DWORD** (32-bit) Value from the drop-down menu. Then, change the name to **Locking** and set the value to 0.
- 3. You will be redirected to the file system that has been mounted. You can right-click to create a file and verify read/write correctness.

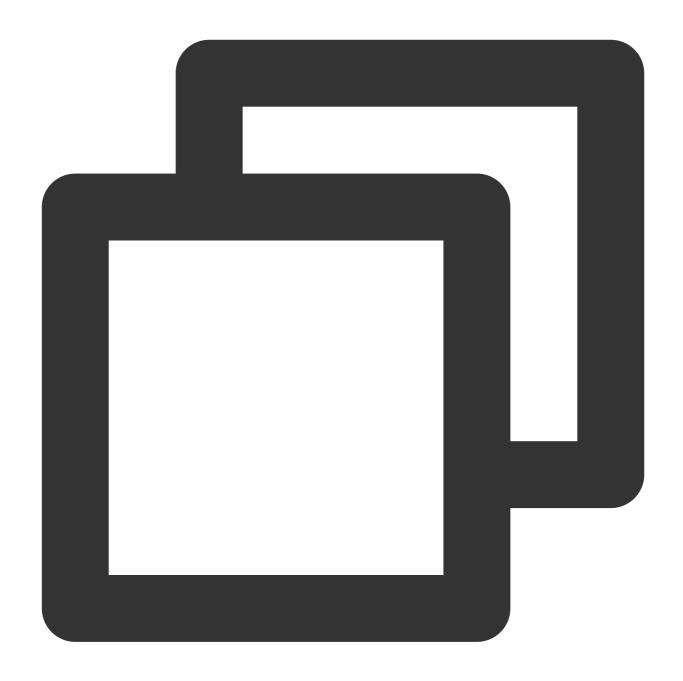
Step 4. Unmount the File System

Unmounting a shared directory via command

If you need to unmount a shared directory, please open the Windows Command Prompt and run the following command, where "directory name" is the root directory or the full path of the file system.

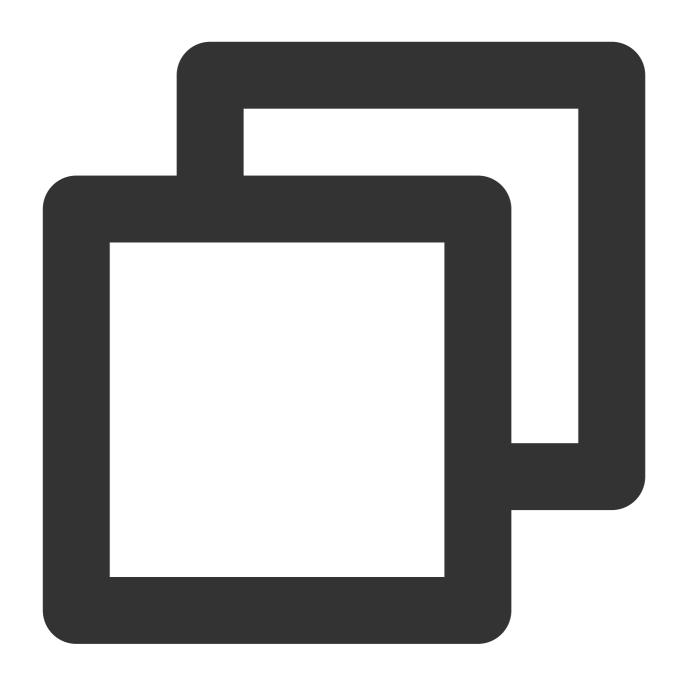
Sample for NFS:





umount X:

Sample for SMB:

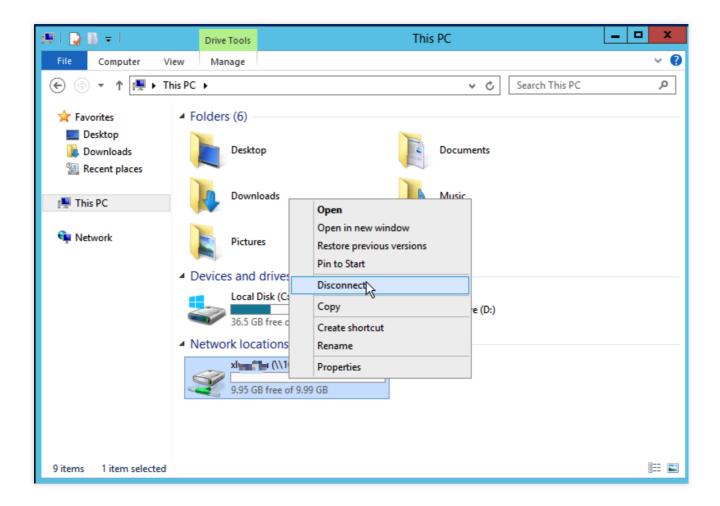


net use x: /del

Unmounting a shared directory via a graphical interface

To disconnect a mounted file system, simply right-click the disk and click **Disconnect** in the menu that appears.





Step 5. Terminate a Resource

Note:

Resources cannot be recovered from a deleted file system. Therefore, you are advised to back up all resources before deleting the file system.

You can terminate a file system in the console. Specifically, go to the CFS console, locate the file system to be terminated, and click **Delete > Confirm**.



Using CFS Turbo on Linux Clients

Last updated: 2024-01-22 21:58:08

Overview

This document describes how to use CFS Turbo on Linux clients. The standard login method, i.e., login via WebShell, is used in the example below.

For other login methods, see Logging In to Linux Instance.

Prerequisites

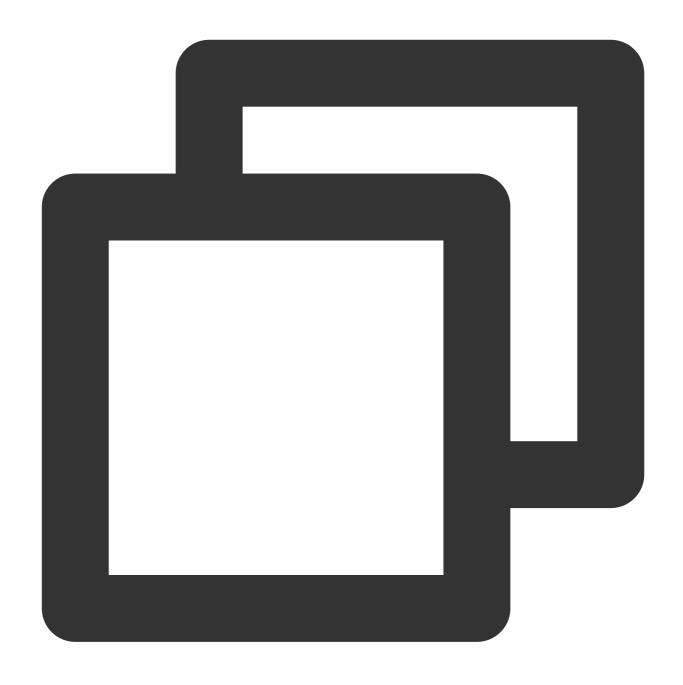
You have created a file system and mount targets.

You have created an instance in a VPC of CCN.

There is a compute instance that can communicate with the storage system and, in the VPC where CFS Turbo is located in CCN, port 988 of all IP addresses is opened bidirectionally.

Directions

- 1. Log in to the CVM console.
- 2. Find the CVM instance you purchased in the instance list and click **Log In** on the right.
- 3. In the Log in to Linux Instance pop-up window, select Standard login method and click Log In Now.
- 4. On the WebShell login page, enter the username and password and click **OK**.
- 5. Run the following command to download the client, and install it:



wget https://cfsturbo-client-1251013638.cos.ap-guangzhou.myqcloud.com/tools/cfs_tur

If the information similar to the following is returned, installation is successful.



```
[root@VM-0-8-centos ~]# sudo ./cfs_turbo_client_setup
==Tencent Cloud CFS-Turbo Client Setup Tool==
 Version: 0.1
==Linux System Basic Info==
  Current OS: centos 7 (Core)
  Current kernel version: 3.10.0-1160
Info: Download successfully
Info: Try to download: kmod-cfsturbo-client.x86_64.rpm
Info: Download successfully
Info: Verify successfully
Info: Try to download: cfsturbo-client.x86_64.rpm
Info: Download successfully
Info: Verify successfully
Info: Try to download: cfsturbo-client-debuginfo.x86_64.rpm
Info: Download successfully
Info: Verify successfully
Info: Try to install kmod-cfsturbo-client.x86_64.rpm, log: /tmp/cfs-turbo-install-20210616
Info: Install kmod-cfsturbo-client.x86_64.rpm successfully
Info: Try to install cfsturbo-client.x86_64.rpm, log: /tmp/cfs-turbo-install-20210610-1153
Info: Install cfsturbo-client.x86_64.rpm successfully
Info: Try to install cfsturbo-client-debuginfo.x86_64.rpm, log: /tmp/cfs-turbo-install-202
Info: Install cfsturbo-client-debuginfo.x86_64.rpm successfully
```

If the information similar to the following is returned, the kernel version is not supported. In this case, please submit a

ticket.

```
[root@VM-0-8-centos ~]# sudo ./cfs_turbo_client_setup
==Tencent Cloud CFS-Turbo Client Setup Tool==
    Version: 0.1
==Linux System Basic Info==
    Current OS: centos 7 (Core)
    Current kernel version: 5.12.9-1
Error: wget failed: 8, fail to get https://cfsturbo-client-1251013638.cos.ap-guangzhou.myqcloud.com/2.12.4/centos/5.
Error: Unsupported kernel version: 5.12.9-1
```

Compatibility

OS Type	OS Version
	7.9
	7.8
	7.7
CentOS	7.6
Centos	7.5
	7.4
	7.3
	7.2
Ubuntu	20.04
	18.04



	16.04
TencentOS Server	3.1 (TK4)
	2.4 (TK4)

Note:

The client version is not only related to the OS version, but more importantly, has a mapping with the kernel. Currently, CFS Turbo supports the kernels of the default cloud public images in the compatibility list. If there is a need for a special kernel, please submit a ticket.

- 6. Log in to the CFS console and go to the File System page.
- 7. Click the ID/name of the target Turbo file system and then select the **Mount Target Info** tab.
- 8. Click
- to copy the command you need.

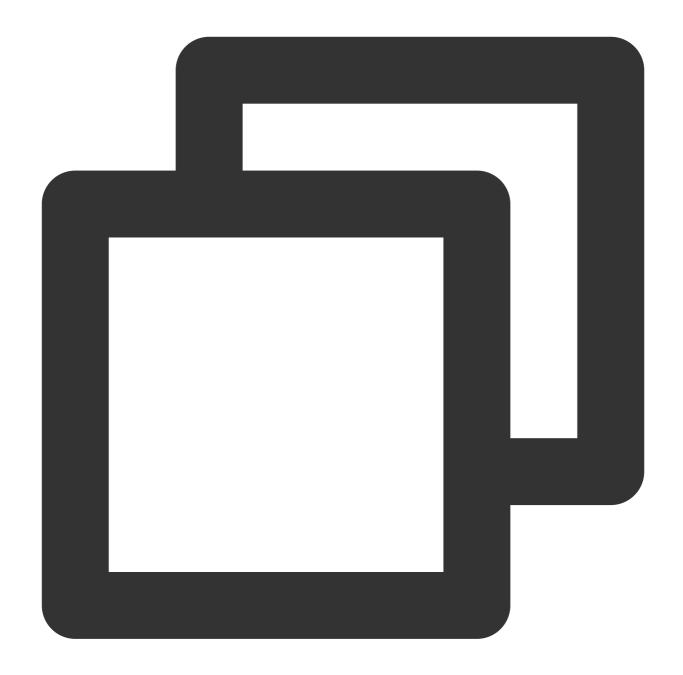


9. Switch to the CVM instance to run the mount command copied.

The mount commands are described as follows. You can select one to fit your business needs.

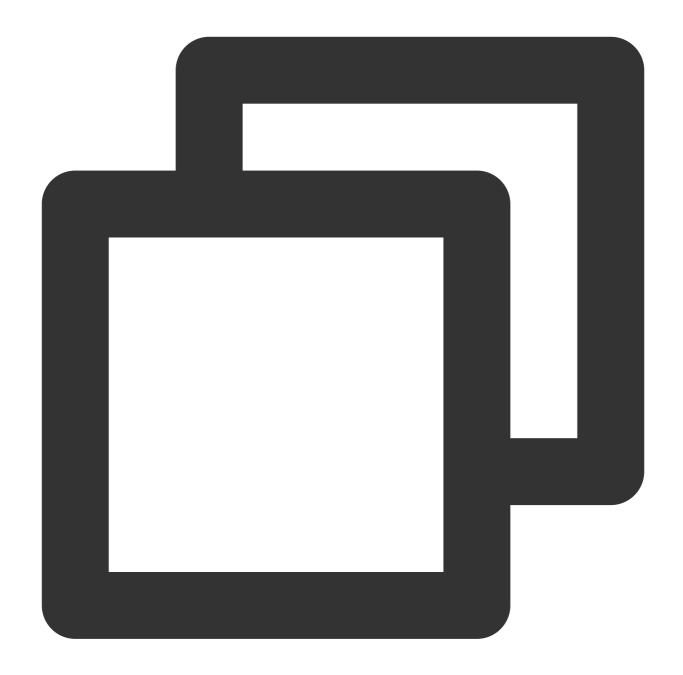
If you want to support extended attributes and all operations to be executed synchronously by default (data will not be lost due to instance reboots, but the performance will be affected), copy and run the following command: Example:





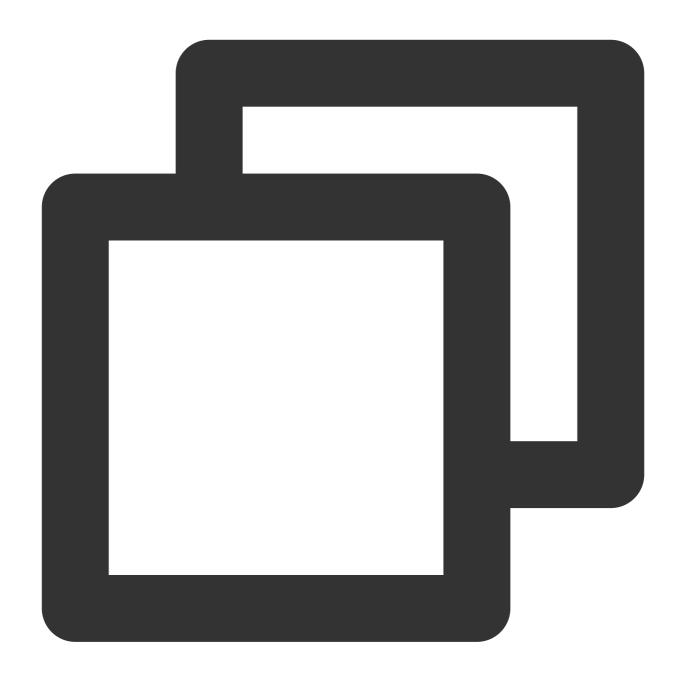
If you want to support extended attributes but don't need operations to be executed synchronously (some data cached in memory may be lost due to instance reboots, but the performance is good), copy and run the following command: Example:





If you do not want to support extended attributes or the operations to be executed synchronously (some data cached in memory may be lost due to instance reboots, but the performance is good), copy and run the following command: Example:





sudo mount.lustre XXXXXXXXXXXXXXXXXXX

Note:

If you want to mount the file system read-only, add the $-\circ$ ro option when mounting.

You can mount a subdirectory of the file system by modifying the corresponding path in the mount command.

The unmount method is the same as that for a file system that uses the NFS protocol: Run umount

/path/to/unmount .



Using the CFS Client Assistant to Mount File Systems

Last updated: 2024-06-12 18:01:30

Overview

This document provides detailed instructions on how to use the CFS client assistant to install NFS/CIFS/Turbo clients and mount the file system.

Prerequisites

Succeeded in creating file systems and mounting targets.

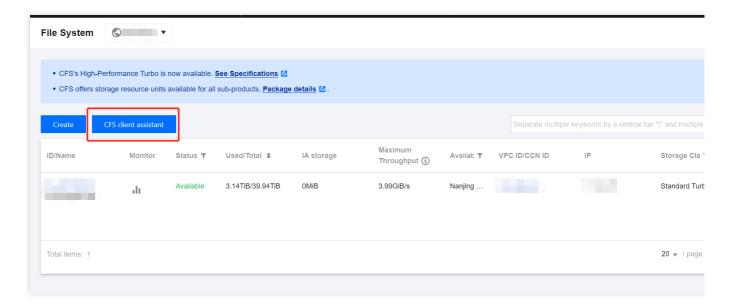
Currently, the CFS Client Assistant supports only Linux systems. Please ensure that you have created a Linux system CVM in the same VPC as that of the file system. If you do not have a CVM, you may see Customizing Linux CVM Configurations for purchase and configuration.

To install the Turbo client and mount the Turbo file system, please ensure that your operating system type and kernel version meet the compatibility requirements and that the relevant ports are open. For more details, see Using CFS Turbo on Linux Clients.

Directions

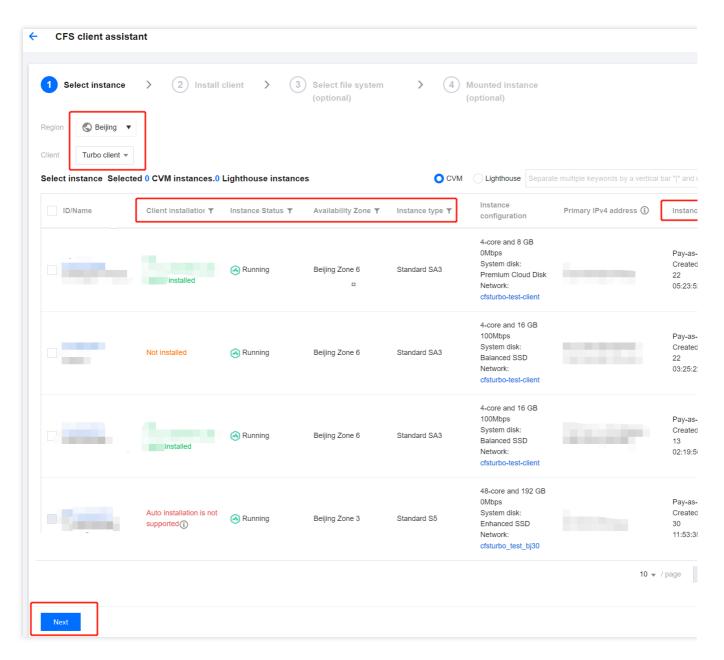
- 1. Log in to the CFS Console > File System.
- 2. At the top of the CFS list, click CFS client assistant.





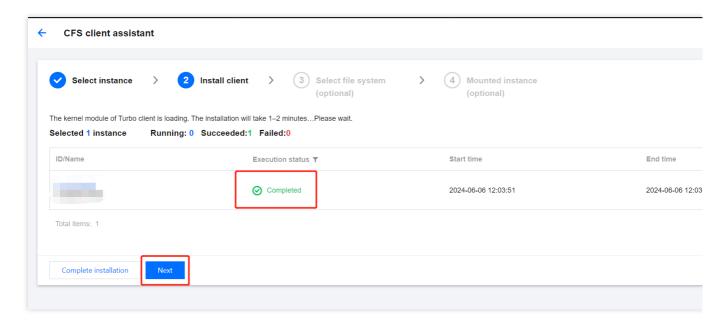
3. You can filter by region, client type, and client installation status, and batch select instances. After you confirm the accuracy, click **Next**. Here, the client installation status explanation is as follows:

Client Installation Status	Description
Not Supported	Configuration via CFS client assistant on Windows systems is currently not supported.
Not Installed	If the client for the selected region and file protocol is not installed, click Next to initiate automatic installation.
Installed	If the client for the selected region and file protocol is already installed, for instance, Ifs 2.12.4_20240521_46238c4, clicking Next will not affect the existing configuration.
Auto Installation Not Supported	To use the CFS client assistant, TAT must be installed. For more details, see Installing TAT Agent.



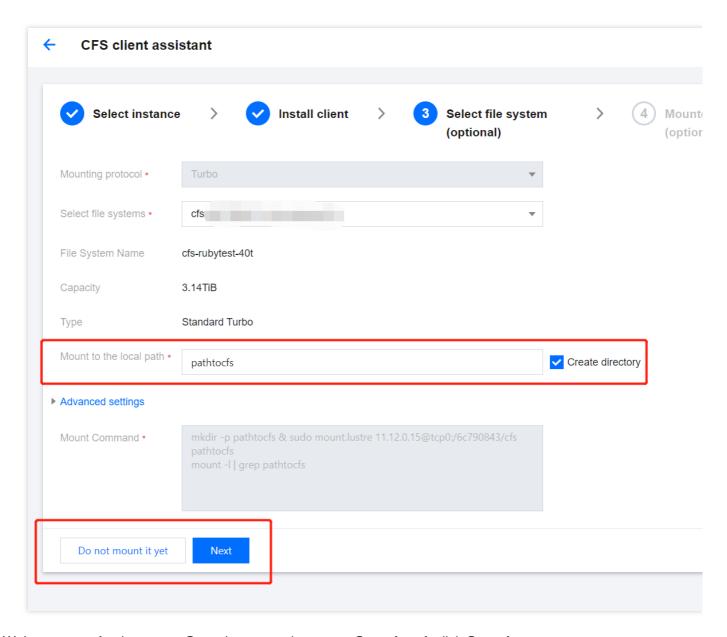
4. Upon entering the client installation steps, instances without the client will be automatically installed. Once they are successfully installed, the status will display **Completed**. If installation fails, please check if the instance type conflicts with the selected client type, such as the Turbo client requiring operating system and kernel version to meet compatibility requirements. If you currently do not need to mount a file system, click **Complete Installation** to return to the file system list page.





5. To mount a file system, click **Next** and select the file system you want to mount. You can customize the local path to mount and add a command line to create directories by checking the option. If you have other requirements, you can configure the CFS file system directory and other mount options through advanced settings. After configuration, click **Next**.





6. Wait a moment for the mount. Once the status changes to **Completed**, click **Complete**.



