

Cloud File Storage

Getting Started



Tencent Cloud

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Getting Started

Creating File Systems and Mount Targets

Last updated: 2023-08-29 11:00:34

Feature Overview

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

Instructions

Step 1. Register a Tencent Cloud account

Click [here](#) to register a Tencent Cloud account. If you already have a Tencent Cloud account, you can skip 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

You can make flexible choices based on actual needs. For file types, see [Storage Classes and Performance Specifications](#).

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.
Regions	Select the region where the CFS file system will reside.
Availability Zones	Select the AZ where the CFS file system will reside.
Protocol	Select a protocol type, NFS or SMB, for the file system. 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.
Networking	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	For Turbo series only, a Cloud Connect Network (CCN) must be specified. You can either select an existing CCN or create a new one. For more information, see Introduction to CCN .
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 the number of IP addresses in the CIDR block, the mask must have 16 to 24 bits, for example, 10.0.0.0/24.
Tag	<ul style="list-style-type: none">• If you already have a tag, you can add it to the new file system here.• If you do not yet have a tag, please first create the necessary tags in the Tag Console, and then bind the tags to the file system. Alternatively, you can add tags to the file system after it has been created.

3. Click **Next**.

4. Click **Create Now** to create a 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 on **Mount Point Information** to view and retrieve the mount commands for both Linux and Windows.

It is recommended to execute the mount operation by copying the commands provided in the console.

Using CFS File Systems on Linux Clients

Last updated: 2023-08-29 10:01:48

Feature Overview

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

Instructions

Step 1. Create a File System and Mount Target

For detailed steps, please refer to the [Create a File System and Mount Target](#) document.

Step 2. Connect to an Instance

This section introduces common methods for logging into Linux cloud servers. Different login methods can be used in different situations. Here, we introduce console login. For more login methods, please see [Logging into Linux Instances](#).

Preparations

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

- In the [Cloud Server](#) list, click **Log In** to connect to the Linux cloud server via VNC.
- Enter the account ID and its password to log in.

Note

This terminal is exclusive, that is, 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

Step 3. Mount the file system

Mount an NFS file system

1. Launch the NFS Client

Before mounting, ensure that either `nfs-utils` or `nfs-common` is installed in your 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 Target Mount Directory

Create a destination mount directory with the following command:

```
mkdir <Target Mount Directory>
```

Example:

```
mkdir /localfolder/  
mkdir /localfolder/test
```

3. Mounting the File System

Mounting with NFS v4.0

Execute the following command to mount with NFS v4.0.

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

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

- By default, the root directory `/` of the file system is mounted. After creating a subdirectory in the file system, you can mount this subdirectory.
- 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

There is a space between `<Mount Target IP>:/` and `<Directory to be Mounted>` .

Example:

- Mount to the root directory of CFS:

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

Mounting with NFS v3.0

Execute the following command to mount with NFS v3.0.

```
// You can go to the CFS console > File System > Mount Target Info to obtain the follow
// Some old versions of Linux kernels need to be mounted using vers=4. If an exceptio
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

There is a space between `<Mount Target IP>:/<FSID>` and `<Directory to be Mounted>` .

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 follow  
// Some old versions of Linux kernels need to be mounted using vers=4. If an exceptio  
sudo mount -t nfs -o vers=3,nolock,proto=tcp,noresvport 10.0.24.4:/z3r6k95r /localfol
```

4. View the Mount Target Information

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

```
mount -l
```

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 -l` 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 the CIFS Client

Before mounting, ensure that `cifs-utils` is already installed in your system. The installation method for CentOS is as follows:

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

2. Create a Target Mount Directory

Create a destination mount directory with the following command:

```
mkdir <Target Mount Directory>
```

Example:

```
mkdir /local/  
mkdir /local/test
```

3. Mounting 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 mounting is completed. If this is not specified, uid=0  
// gid: User group that owns the file when the mounting is completed. If this is not spe  
// The uid and gid parameters are for apps that need to check the file owner during ex  
// noperm: The client does not perform permission verification. If a permission is denie  
// actimeo: file attribute (metadata timestamps) cached by the client  
// nocase: By default, using version 1.0 on mount is case-sensitive. However, Windows  
// An example is as follows:  
mount -t cifs -o guest,vers=1.0,uid=1000,gid=100,noperm,actimeo=1,nocase //<Mou
```

- 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

There is a space between `<FSID>` and `/<directory to be mounted>` .

Example:

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

4. View the Mount Target Information

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

```
mount -l
```

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 -l` 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 -l` to ensure that all mount target information is listed. We strongly recommend that you unmount the file system before restarting or shutting down the client so as to avoid any system exceptions.

Step 5. Terminate a Resource

Note

After the file system is deleted, the resources cannot be recovered. Therefore, you are advised to back up all resources before the deletion.

You can terminate a file system from the Tencent Cloud Console. Navigate to the [File Storage Console](#), select the file system you wish to terminate, click **Delete** and **Confirm** to remove the file system.

Using CFS File Systems on Windows Clients

Last updated: 2023-08-29 11:21:33

Feature Overview

This document provides a detailed guide on how to use the Cloud File Storage (CFS) system on a Windows client. While this guide uses Windows Server 2012 R2 as an example, the procedures are the same for other operating systems, such as Windows Server 2008 and Windows Server 2016.

Instructions

Step 1. Create a File System and Mount Target

For detailed steps, please refer to [Creating a File System and Mount Target](#).

Step 2. Connect to the instance

1. [Log in to the Windows instance using the standard method](#).

For other login methods, please refer to the [Logging In to a Windows Instance](#) document.

2. Verify Network Communication.

Before mounting, it is necessary to confirm the network connectivity between the client and the file system (the Telnet service needs to be enabled on the Windows client). This can be verified using the `telnet` command (for example, `telnet 192.168.1.1 445`). The specific protocols and client-required open port information are as follows:

File System Protocol	Port	Check Network Connectivity
NFS 3.0	111, 892, 2049	telnet 111, 892, and 2049
CIFS/SMB	445	telnet 445

Note

Currently, Windows does not support mounting with NFSv4.

If the network is inaccessible, it is recommended to check whether the CVM security group is unblocked. If communication is still not possible, please [submit a ticket](#) to contact us.

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 point IP>\FSID
```

Example:

```
net use X: \\10.10.11.12\fjie120
```

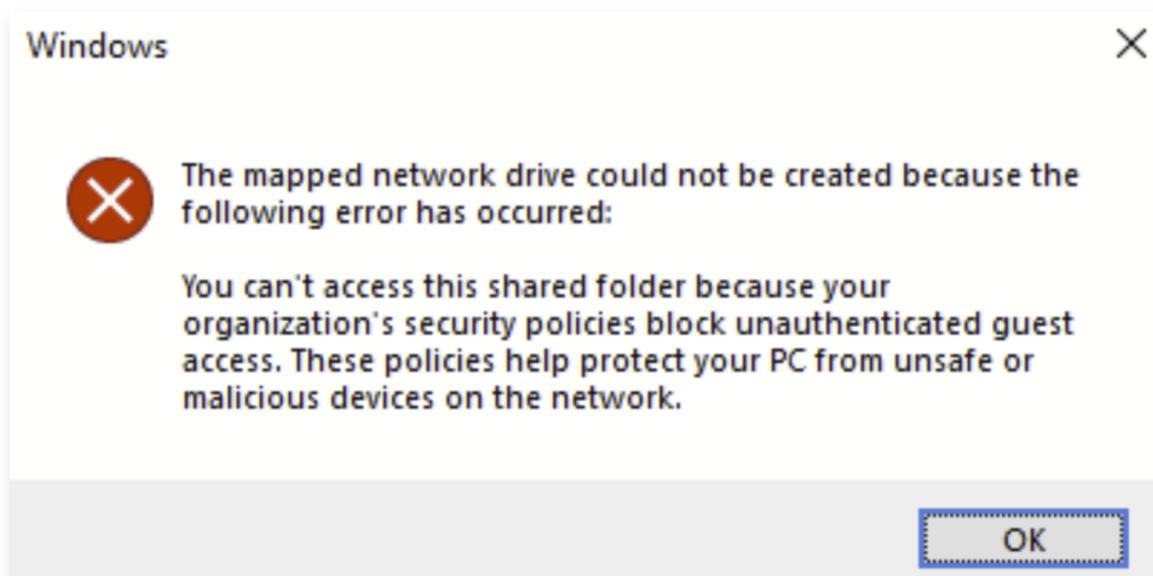
Note

The FSID can be obtained from [File Storage Console](#) > **File System Details** > **Mount Point Information**.

- **Mounting a File System via a Graphical Interface**

1. Click  to access the start menu interface.
2. If you are using Windows 10 or Windows Server 2019 or later versions, you need to modify the registry to allow Guest access to SMB.

If not modified, the following error message will be displayed:



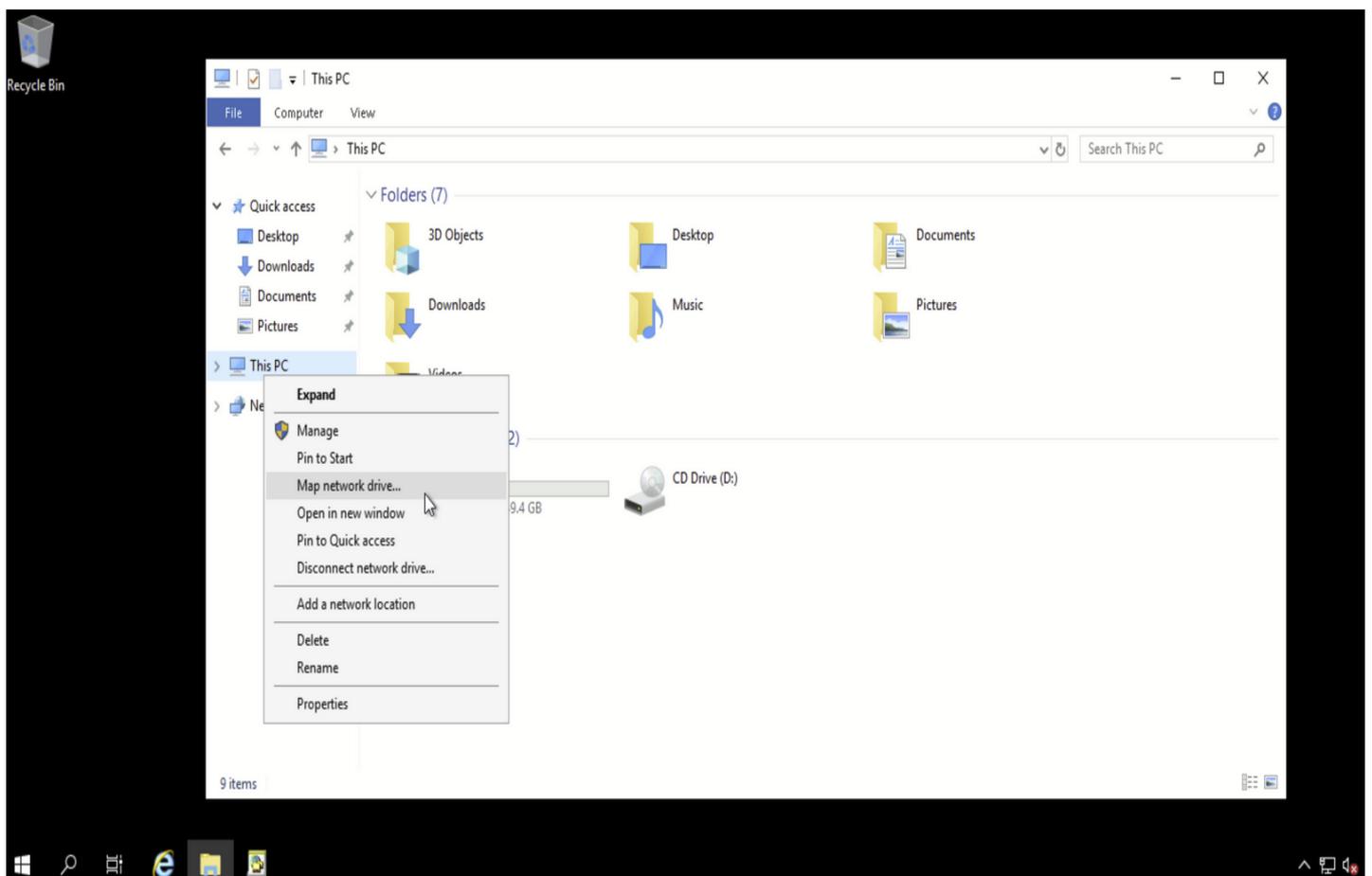
Note:

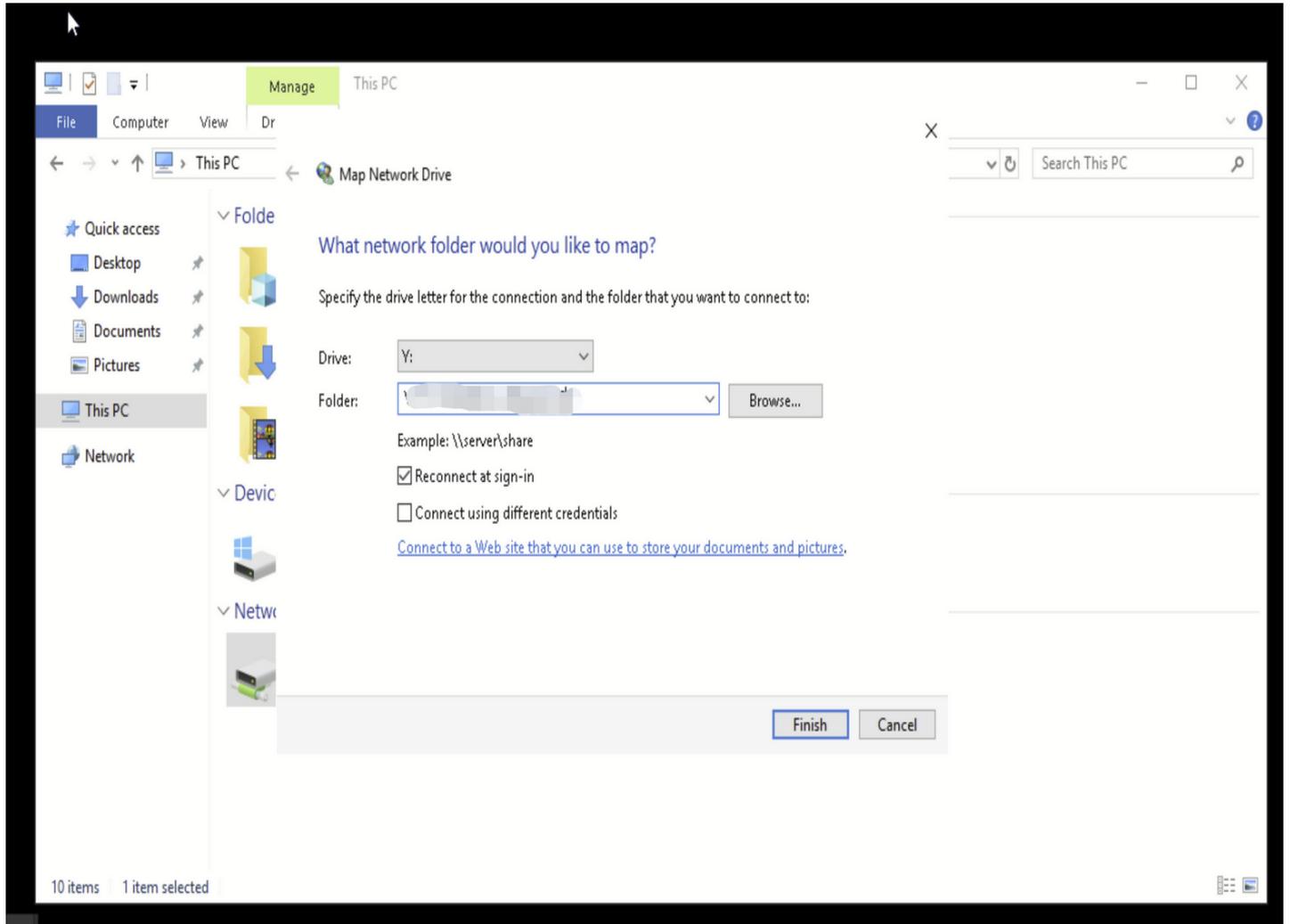
Regarding changes related to this permission, the official Microsoft statement is as follows:

[Guest access in SMB2 and SMB3 disabled by default in Windows](#)

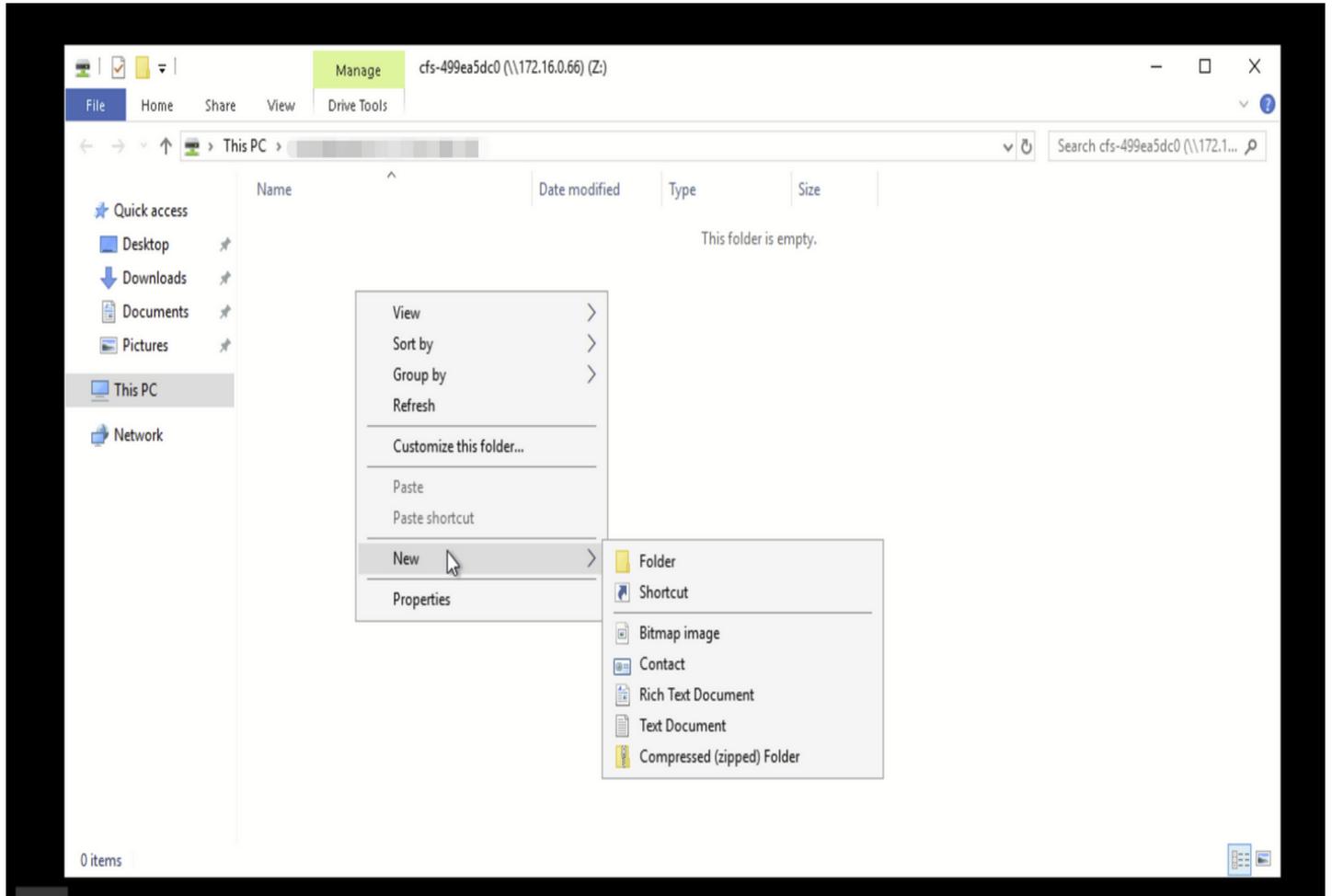
Please run the following command as an administrator through the command line:

```
reg add "HKLM\SYSTEM\CurrentControlSet\Services\LanmanWorkstation\Parameters" /
```

3. Right-click on "This PC" and select **Map Network Drive.****4. In the pop-up window, set the "Drive" letter and folder (i.e., the mount directory visible in the CIFS/SMB file system), then click **Finish**.**



5. 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.



Mount an NFS file system

1. Enable the NFS Service

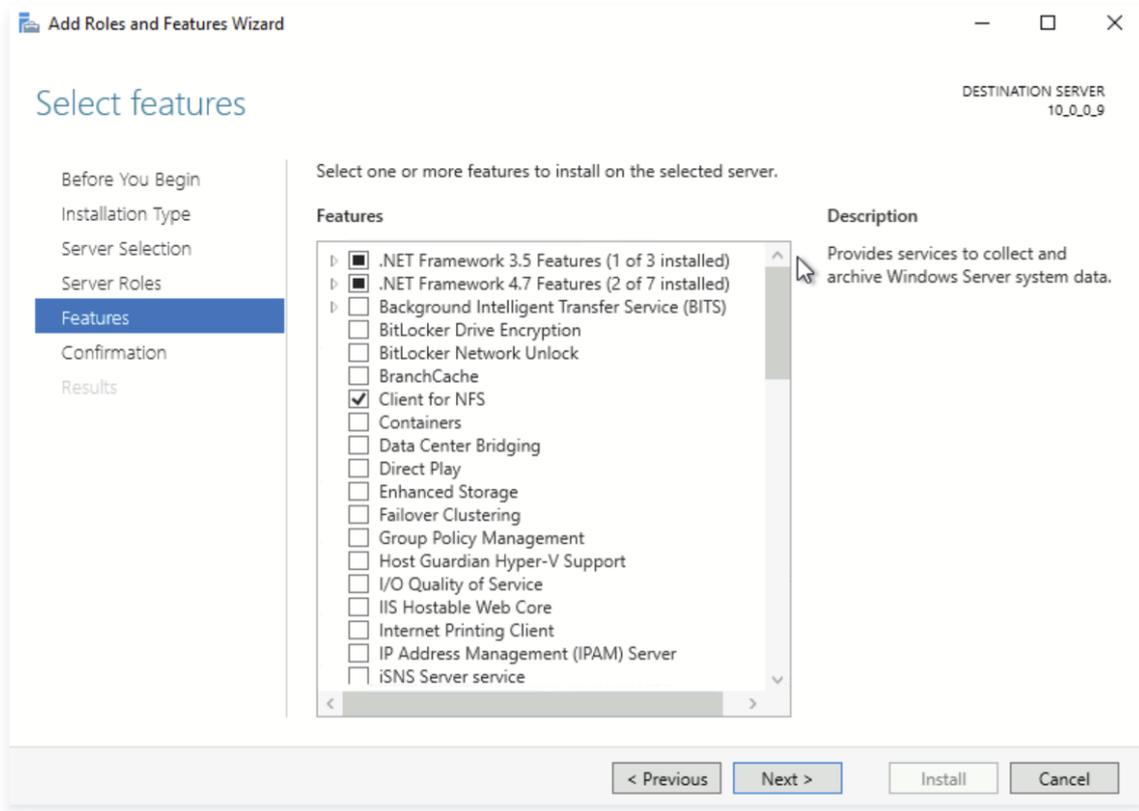
Note

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

1.1 Click  and select **Control Panel > Programs > Turn Windows features on or off**.

1.2 In the opened Add Roles and Features Wizard window, retain the default configurations and click **Next** five consecutive times.

1.3 On the **Features** page, select **NFS Client** and click **Next**.



1.4 Click **Install**.

1.5 Restart the CVM instance.

Note:

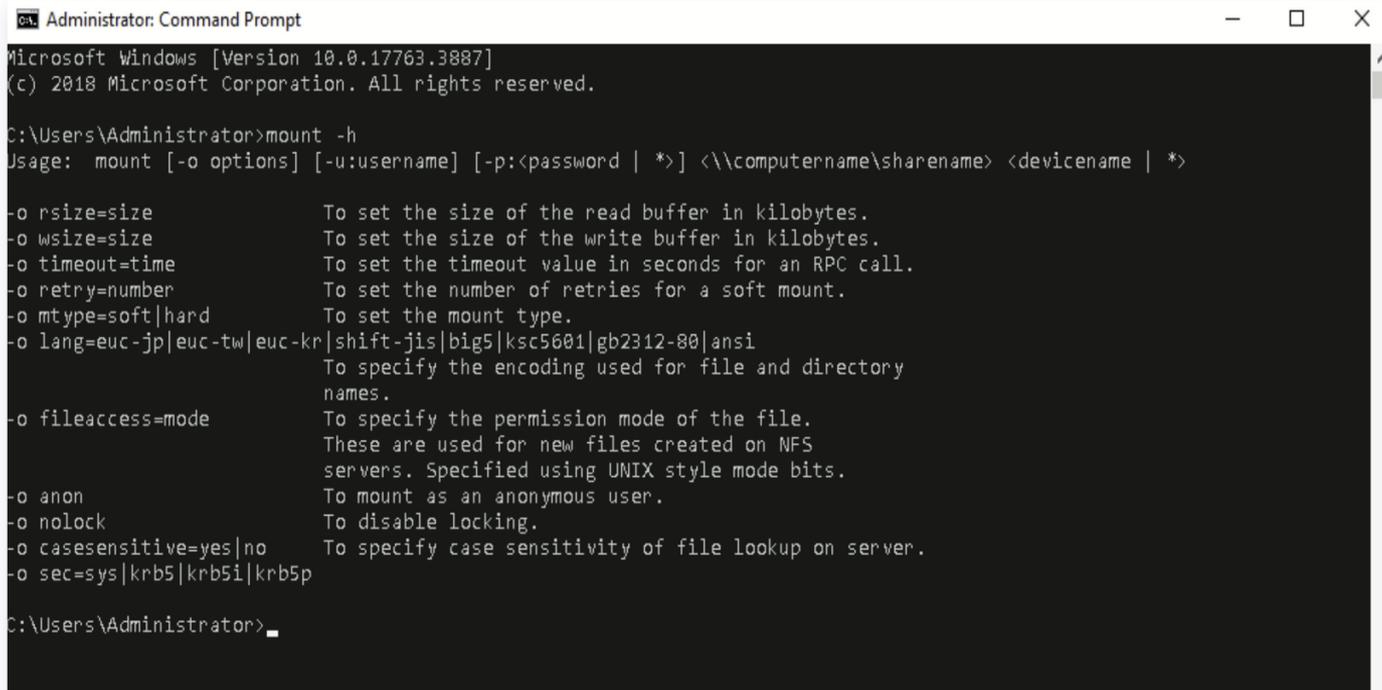
The Home Edition of Windows does not include the NFS client option. Please use the Windows Server operating system or Windows Pro Edition instead.

2. Verify whether the NFS service is enabled

2.1 Open the command line tool and run the following command:

```
mount -h
```

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



```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.17763.3887]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\Administrator>mount -h
Usage: mount [-o options] [-u:username] [-p:<password | *>] <\\computername\sharename> <devicename | *>

-o rsize=size           To set the size of the read buffer in kilobytes.
-o wsize=size           To set the size of the write buffer in kilobytes.
-o timeout=time         To set the timeout value in seconds for an RPC call.
-o retry=number         To set the number of retries for a soft mount.
-o mtype=soft|hard      To set the mount type.
-o lang=euc-jp|euc-tw|euc-kr|shift-jis|big5|ksc5601|gb2312-80|ansi
                        To specify the encoding used for file and directory
                        names.
-o fileaccess=mode      To specify the permission mode of the file.
                        These are used for new files created on NFS
                        servers. Specified using UNIX style mode bits.
-o anon                 To mount as an anonymous user.
-o nolock               To disable locking.
-o casesensitive=yes|no To specify case sensitivity of file lookup on server.
-o sec=sys|krb5|krb5i|krb5p

C:\Users\Administrator>
```

3. Add Anonymous Access User and User Group

3.1 Run the CMD command tool as an administrator and execute the following command to modify the registry, allowing anonymous user/group access and setting the Lock parameter of the mount to 'No' (Windows only supports NFS V3.0, which does not support file lock services).

```
reg add
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ClientForNFS\CurrentVersion\Default" /v AnonymousUid /t REG_QWORD /d 0 /f && reg add
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ClientForNFS\CurrentVersion\Default" /v AnonymousGid /t REG_QWORD /d 0 /f && reg add
"HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\ClientForNFS\CurrentVersion\User\Default\Mount" /v Locking /t REG_DWORD /d 0 /f
```

3.2 Execute the following command to restart the NFS client service and apply the modified registry. Alternatively, you can restart the Windows system to apply the modified registry.

```
net stop nfscnt && net stop nfsrdr && net start nfsrdr && net start nfscnt
```

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**

In the CMD command line tool, enter the following command to mount the file system. The default subdirectory for the system is FSID.

```
mount -o nolock, mtype=hard <Mount Target IP>:/<FSID> <Shared Directory Name>
```

Example:

```
mount -o nolock mtype=hard 10.10.0.12:/z3r6k95r X:
```

Note

The FSID mount command can be obtained from **File Storage Console > File System Details > Mount Target Information**.

Step 4. Unmount the File System

- **Unmounting a Shared Directory via Command**

In certain circumstances, if you need to unmount a shared directory, open the command line terminal and execute the following command. Here, "directory name" refers to the root directory or the complete path of the file system.

Sample for NFS:

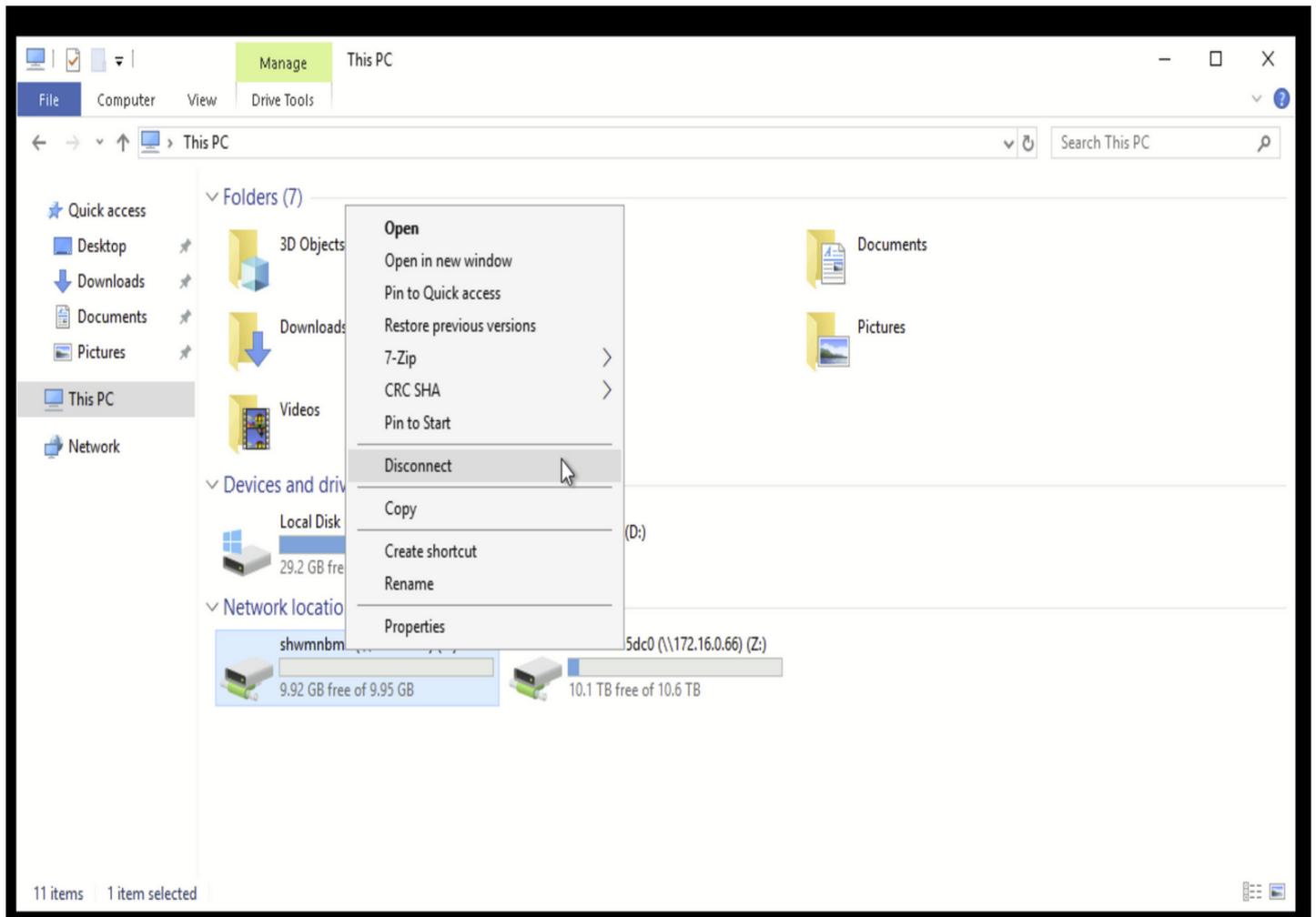
```
umount X:
```

Sample for SMB:

```
net use x: /del
```

- **Unmounting a Shared Directory via a Graphical Interface**

To disconnect a mounted file system, simply right-click on the disk and select **Disconnect** from the pop-up menu to sever the connection to the file system.



Step 5. Terminate a Resource

Note

After the file system is deleted, the resources cannot be recovered. Therefore, you are advised to back up all resources before the deletion.

You can terminate a file system from the Tencent Cloud Console. Navigate to the [File Storage Console](#), select the file system you wish to terminate, click **Delete** and **Confirm** to remove the file system.

Using CFS Turbo on Linux Clients

Last updated: 2023-08-29 10:08:03

Scenario

This document, using the standard login method (WebShell) as an example, provides a detailed guide on how to use the CFS Turbo file system on Linux clients. For more methods of logging into Linux instances, please refer to [Logging into Linux Instances](#).

Preparations

- You have already [created a file system and mount target](#).
- You have [created an instance](#) under a VPC within the 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 are opened bidirectionally.

Instructions

1. Log in to the [CVM console](#).
2. Locate the newly purchased CVM in the instance list and click **Log In** in the operation column on the right.
3. In the **Log into Linux instance** window that appears, select **Standard Login Method**, and click **Log In Now**.
4. On the opened WebShell login page, enter your username and password, then click **Confirm**.
5. Run the following command to download the client, and install it:

```
wget http://mirrors.tencentyun.com/install/cfsturbo-client/tools/cfs_turbo_client_setup
```

- If the information below 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-20210610-115244.log
Info: Install kmod-cfsturbo-client.x86_64.rpm successfully
Info: Try to install cfsturbo-client.x86_64.rpm, log: /tmp/cfs-turbo-install-20210610-115340.log
Info: Install cfsturbo-client.x86_64.rpm successfully
Info: Try to install cfsturbo-client-debuginfo.x86_64.rpm, log: /tmp/cfs-turbo-install-20210610-115342.log
Info: Install cfsturbo-client-debuginfo.x86_64.rpm successfully
```

- If the following message is returned, it indicates that the kernel version is not supported. In this case, you can [submit a ticket to contact us](#).

```
[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/5.12.9-1/cfsturbo.sha256sum
Error: Unsupported kernel version: 5.12.9-1
```

Compatibility List

Operating System Type	Operating System Version
CentOS	7.9
	7.8
	7.7
	7.6
	7.5
	7.4
	7.3
	7.2
Ubuntu	20.04

	18.04
	16.04
TencentOS	3.1(TK4)
	2.4(TK4)

Note

The client version is not only related to the operating system version, but more importantly, it corresponds to the kernel. Currently, Turbo supports the kernel of the default public images in the compatibility list. If you have special kernel requirements, you can [submit a ticket to contact us](#).

6. Log in to the CFS console and go to the **File System** page.
7. Click on the ID/name of the Turbo file system you wish to operate, and select the **Mount Target Information** tab.
8. In the "Mount Command" tab of the mount point information, click  to copy the required command.

← cfs-4bebd82bc (brucestest_dj)

Basic Info **Mount Target Info** Snapshot Chain Quota information Lifecycle Policies

 Currently, Turbo file systems can be mounted only to Linux clients.

Mount Target Info

ID bebd82bc

Status Available

Network Info brucestest (vpc-mkuolnm7) - brucesubnet (subnet-kcst528k)

IPv4 Address 10.206.0.103 

Permission Group default (pgroupbasic) 

Mount Command sudo mount.lustre 10.206.0.103@tcp0:/bebd82bc/cfs /path/to/mount 

 You are advised to mount using the command above for better performance. If you have special requirements on client synchronization or extension attributes, mount with a special command. ▾

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:

```
sudo mount.lustre -o sync,user_xattrXXXXXXXXXXXXXXXXXXXX
```

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

Example:

```
sudo mount.lustre -o user_xattrXXXXXXXXXXXXXXXXXXXX
```

- If you do not need the extended attributes supported or the operations to be executed synchronously (some data cached in memory might be lost due to instance reboots, but the performance is good): copy and run the following command.

Example:

```
sudo mount.lustre XXXXXXXXXXXXXXXXXXXXXXX
```

Note

- If you want to mount the file system read-only, add the `-o 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 .`