## **Scalable File Service**

## **Troubleshooting**

Issue 02

**Date** 2019-05-30





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## Mounting a File System Times Out

## **Symptom**

When a file system is mounted to servers using the **mount** command, message **timed out** is displayed.

## **Possible Causes**

- Cause 1: The network status is not stable.
- Cause 2: The network connection is abnormal.
- Cause 3: The DNS configuration of the server is incorrect. As a result, the domain name of the file system cannot be resolved, and the mounting fails. This issue will not occur on SFS Turbo file systems.
- Cause 4: The server where the file system is to be mounted runs Ubuntu18 or later.

## **Fault Diagnosis**

After the network fault is excluded, run the **mount** command again.

## Solution

• Cause 1 and Cause 2: The network status is not stable or the network connection is abnormal.

Re-mount the file system after the network issue is addressed.

- If the patch is uninstalled successfully, no further action is required.
- If the problem persists, see the solution for cause 3.
- Cause 3: The DNS configuration of the server is incorrect. As a result, the domain name of the file system cannot be resolved, and the mounting fails.
  - a. Check the DNS configuration of the tenant and run the **cat /etc/ resolv.conf** command.
    - If the DNS has not been configured, configure it. For details about how to configure the DNS, see Configuring DNS.
    - If the DNS has been configured, run the following command to check whether the DNS is correct:

## nslookup File system domain name

If the resolved IP address is in network segment **100**, the DNS configuration is correct. If the IP address is in another network segment, the DNS configuration is incorrect. In this case, go to **b**.

b. Modify the /etc/resolv.conf configuration file, configure the correct tenant DNS, and run vi /etc/resolv.conf to edit the /etc/resolv.conf file. Add the DNS server IP address above the existing nameserver information. For details about DNS server IP addresses, see What Are Private DNS Servers and What Are Their Addresses?

Figure 1-1 Configuring DNS

```
; generated by /sbin/dhclient-script
search openstacklocal
nameserver
nameserver
```

The format is as follows: nameserver 100.125.1.250

- If the configuration succeeds, go to c.
- If the configuration fails, run the **lsattr /etc/resolv.conf** command. If the information shown in **Figure 1-2** is displayed, the file is locked.

Figure 1-2 A locked file

```
[root@cartill list. ......../]# lsattr /etc/resolv.conf
----i-----e- /etc/resolv.conf
```

Run the **chattr -i/etc/resolv.conf** command to unlock the file. Then, re-configure the DNS and go to **c**.

- c. Press Esc, input :wq, and press Enter to save the changes and exit the vi editor.
- d. The default DNS of the ECS applied by the user is inherited from the VPC to which the ECS belongs. Therefore, when the ECS restarts, the ECS changes synchronously. For this reason, changing configurations of the ECS does not settle the issue completely. You need to modify configurations in the VPC. Set a correct tenant DNS for the subnet of the VPC to which the ECS belongs.
- e. (Optional) Restart the server.
- f. Run the **mount** command again.
  - If the problem is solved, no further action is required.
  - If the problem persists, see the solution for cause 4.
- Cause 4: The server where the file system is to be mounted runs Ubuntu18 or later.
  - a. Reconfigure DNS by referring to Configuring DNS.

- b. Check whether the target server running Ubuntu18 or later uses a private image.
  - If yes, go to d.
  - If no, go to c.
- c. Convert the public image serverto a private image server.
  - i. To create a private image based on an existing ECS, see section "Creating an Image" in the *Elastic Cloud Server User Guide*.
  - ii. Use the private image created in **c.i** to create an ECS or change the ECS OS using the private image created in **c.i**. For details, see section "Changing the OS" in the *Elastic Cloud Server User Guide*.
- d. Log in to the server and mount the file system again.

## 2 Mounting a File System Fails

## **Symptom**

When a file system is mounted to servers using the **mount** command, message **access denied** is displayed.

## **Possible Causes**

- Cause 1: The file system has been deleted.
- Cause 2: The server and the mounted file system are not in the same VPC.
- Cause 3: The mount point in the **mount** command is incorrect.
- Cause 4: The IP address used for accessing SFS is a virtual IP address.
- Cause 5: The DNS used for accessing the file system is incorrect.
- Cause 6: A CIFS file system is mounted to Linux servers.
- Cause 7: The subdirectory to be mounted does not exist.

## **Fault Diagnosis**

Take troubleshooting measures based on possible causes.

## Solution

- Cause 1: The file system has been deleted.
  - Log in to the management console and check whether the file system has been deleted.
  - If yes, create a file system or select an existing file system to mount. Ensure that the server and the file system reside in the same VPC.
  - If no, go to Cause 2.
- Cause 2: The server and the mounted file system are not in the same VPC.

  Log in to the management console and check whether the server and the file system belong to the same VPC.
  - If yes, go to Cause 3.
  - If no, select a file system that resides in the same VPC as the server.
- Cause 3: The mount point in the **mount** command is incorrect.

- a. Log in to the management console and check whether the mount point is the same as the one in the **mount** command.
- b. If the mount point in the **mount** command is incorrectly entered, correct it and run the command again.
- Cause 4: The IP address used for accessing SFS is a virtual IP address.

  Log in to the server and run the **ping** command and use the server IP address to access SFS. Check whether the service is reachable. See **Figure 2-1**.
  - If yes, the network problem has been resolved. Check other possible causes.
  - If no, the server virtual IP address is unable to access SFS due to the network problem. Use the private IP address and run the **ping** command to access SFS and check whether the service is reachable.

Figure 2-1 Running the ping command to access SFS

• Cause 5: The DNS used for accessing the file system is incorrect.

Run the following command to check whether the DNS is correct:

nslookup File system domain name

Check whether the resolved IP address is in segment 100.

- If yes, the DNS configuration is correct. Check other possible causes.
- If no, the DNS configuration is incorrect. Reconfigure DNS by referring to Configuring DNS.
- Cause 6: A CIFS file system is mounted to Linux servers.
   CIFS file systems cannot be mounted to Linux servers. Mount the CIFS file system to Windows servers.
- Cause 7: The subdirectory to be mounted does not exist.
  - Mount the file system to the root directory. Then create a subdirectory, unmount the mounted file system, and mount the file system to the created subdirectory.

## 3 File System Performance Is Poor

## **Symptom**

Data is written slowly to the file system, the file system performance cannot meet service requirements, or file transfer is slow.

## **Troubleshooting**

Possible causes are sequenced based on their occurrence probability.

If the fault persists after you have ruled out one cause, move on to the next one in the list.

Figure 3-1 Troubleshooting

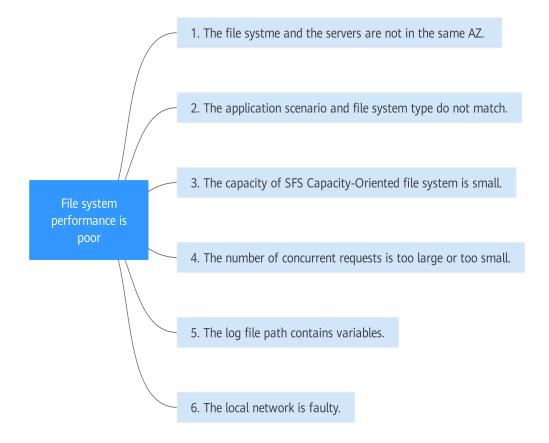


Table 3-1 Troubleshooting

Possible Causes	Solution
The file system and the servers where the file system is mounted are not in the same AZ.	Create a file system in the same AZ as the servers, migrate the data from the original file system to the new file system, and mount the new file system to the servers.
The application scenario does not match the file system type.	Select a correct file system type based on service requirements. For details, see File System Types.
The capacity of the SFS Capacity-Oriented file system is small.	The performance of an SFS Capacity-Oriented is related to its capacity. The ratio of the file system bandwidth to the file system capacity is 20 MB/s to 1 TB. The maximum bandwidth of a file system with 100 TB capacity is 2 GB/s. If a higher bandwidth is required, purchase a file system with larger capacity. To obtain higher performance, submit a service ticket.

Possible Causes	Solution
The number of concurrent requests is too large or too small.	If the number of concurrent requests is too large or too small, the file system performance may deteriorate. Submit a service ticket.
The log file path contains variables.	If it takes a long time to write logs to the file system using Nginx, do as follows:
	<ul> <li>Delete variables from the access_log directive and use a fixed path to store log files.</li> </ul>
	<ul> <li>Set the log file descriptor cache using the open_log_file_cache command, which improves the performance of the log path containing variables.</li> </ul>
The local network is faulty.	Rectify the network fault.

## **Submitting a Service Ticket**

If the problem persists, submit a service ticket.

# 4 Failed to Create an SFS Turbo File System

## **Symptom**

An SFS Turbo file system fails to be created.

## **Fault Diagnosis**

The following fault causes are sequenced based on their occurrence probability. If the fault persists after you have ruled out a cause, check other causes.

Figure 4-1 Fault diagnosis

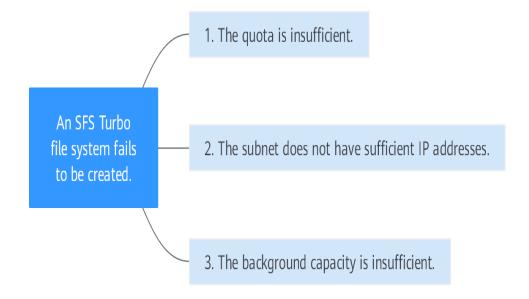


Table 4-1 Fault diagnosis

Possible Cause	Solution
The quota is insufficient.	The number of created file systems has reached the upper limit. Submit a service ticket to increase the quota.
The subnet does not have sufficient IP addresses.	If the subnet IP addresses are insufficient, you can change the subnet or release other IP addresses in the subnet.
The background capacity is insufficient.	Submit a service ticket.

## **Submitting a Service Ticket**

If the problem persists, submit a service ticket.

## 5 A File System Is Automatically Disconnected from the Server

## **Symptom**

A file system is disconnected from the server and needs to be mounted again.

## **Possible Causes**

Automatic mounting is not configured. The server is automatically disconnected from the file system after restart.

## Solution

Configure automatic mounting for the server so that the file system will be automatically mounted to the server after the server restarts. For details, see **Mounting a File System Automatically**.

## **Submitting a Service Ticket**

If the problem persists, submit a service ticket.

## 6 A Server Fails to Access a File System

## **Symptom**

A server fails to access a file system. The system displays a message indicating that the access request is denied. All services on the server are abnormal.

## **Possible Causes**

- Cause 1: The file system is abnormal.
- Cause 2: After a forcible unmount operation on the server, mount fails.

## **Fault Diagnosis**

Take troubleshooting measures based on possible causes.

## Solution

- Cause 1: The file system is abnormal.
  - Log in to the management console. On the **Scalable File System** page, check whether the file system is in the **Available** state.
  - If yes, go to Cause 2.
  - If no, see **The File System Is Abnormal** to restore the file system to the available state, and then access the file system again.
- Cause 2: After a forcible unmount operation on the server, mount fails.
  - a. This problem is caused by an inherent defect of servers. Restart the server to resolve this problem.
  - b. Check whether the file system can be properly mounted and accessed.
    - If yes, no further action is required.
    - If no, contact technical support.

## The File System Is Abnormal

Currently, the file system exceptions include deletion error, expansion error, reduction error, and reduction failure. When the file system is in these statuses, refer to the following handling suggestions.

**Table 7-1** Measures for handling file system abnormalities

Exception	Suggestion
Deletion error	When the file system is in the deletion error status, it can automatically recover to the available state. If the status cannot be restored to available, contact the administrator.
Expansion error	When the file system is in the expansion error status, it can automatically recover to the available state. If the status cannot be restored to available, contact the administrator.
Reduction error	When the file system is in the reduction error status, it takes approximately five minutes for the file system to restore to the available state.
Reduction failure	When the file system is in the reduction failure status, it takes approximately five minutes for the file system to restore to the available state.

# B Data Fails to Be Written into a File System Mounted to ECSs Running Different Types of Operating Systems

A file system can be mounted to a Linux ECS and a Windows ECS. However, data may fail to be written to the file system.

## **Symptom**

If a file system is mounted to a Linux ECS and a Windows ECS, you cannot write data to the files created by the Linux ECS on the Windows ECS.

## **Possible Causes**

A shared NFS file system belongs to the root user and cannot be modified. The write permission is granted to a user only when both the values of UID and GID of the user are **0**. You can check your UID using Windows commands. If the value of UID is, for example, **-2**, you do not have the write permission.

## **Fault Diagnosis**

To address this problem, you need to modify the registry and change both values of UID and GID of the Windows user accessing NFS to **0**.

## Solution

- **Step 1** Choose **Start > Run** and enter **regedit** to open the registry.
- Step 2 Enter the HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\ClientForNFS \CurrentVersion\Default directory. Figure 8-1 shows an example of the directory.

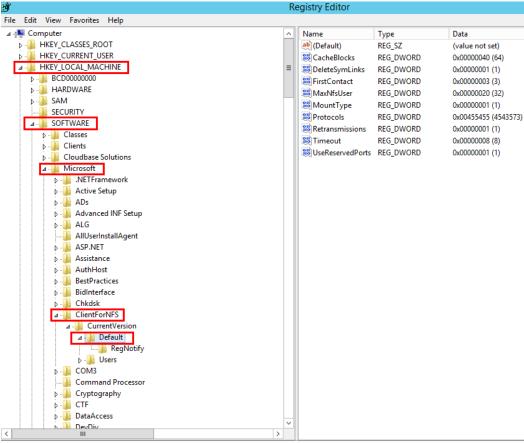
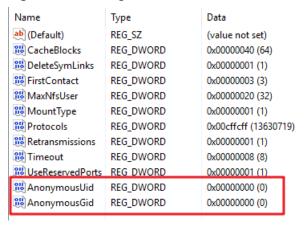


Figure 8-1 Entering the directory

 $Computer \verb|\HKEY_LOCAL_MACHINE| SOFTWARE \verb|\Microsoft| ClientForNFS \verb|\CurrentVersion| Default to the computer of the comput$ 

**Step 3** Right-click the blank area and choose **New > DWORD Value** from the shortcut menu. Set **AnonymousUid** and **AnonymousGid** to **0**. **Figure 8-2** shows a successful operation.

Figure 8-2 Adding values



**Step 4** After modifying the registry, restart the server for the modification to take effect.

----End

## Failed to Mount an NFS File System to a Windows IIS Server

## **Symptom**

When an NFS file system is mounted to a Windows IIS server, an error message is displayed, indicating that the path format is not supported, and the mounting fails.

## **Possible Causes**

The physical path of the IIS Web server is incorrect.

## **Fault Diagnosis**

Take troubleshooting measures based on possible causes.

## Solution

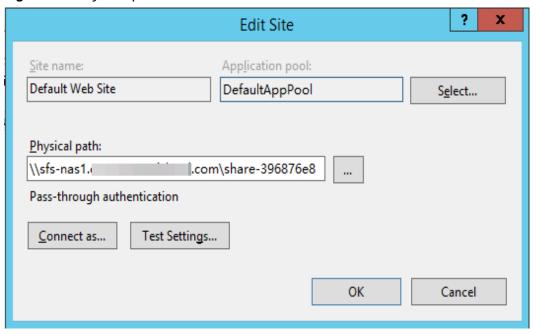
- **Step 1** Log in to the ECS. The following operations use an ECS running Windows Server 2012 R2 as an example.
- **Step 2** Click **Server Manager** in the lower left corner.
- **Step 3** Choose **Tools** > **Internet Information Services (IIS) Manager**, expand **Sites**, and select the target website.
- **Step 4** Click **Basic Settings** to check whether the **Physical path** is correct.
- **Step 5** The correct physical path is that of the mount point with the colon (:) deleted.

Figure 9-1 shows the mount point of a file system. You need to enter the physical path \\sfs-nas1.XXXXXXXXX.com\share-396876e8, as shown in Figure 9-2.

## Figure 9-1 Mount point



Figure 9-2 Physical path



----End

## 10 Writing to a File System Fails

## **Symptom**

Data fails to be written to the file system mounted to ECSs running the same type of operating system.

## **Possible Causes**

The ECS security group configuration is incorrect. The port used to communicate with the file system is not enabled.

## **Fault Diagnosis**

Check whether the port of the target server is enabled and correctly configure the port on the security group console.

## Solution

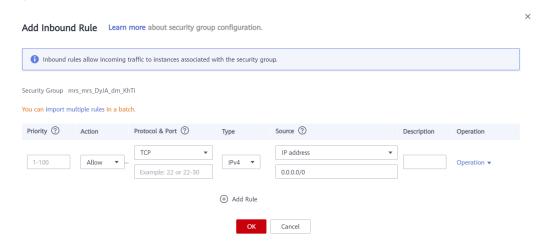
- **Step 1** Log in to the ECS console.
  - 1. Log in to the management console.
  - 2. Click in the upper left corner and select your desired region and project.
  - 3. Under Compute, choose Elastic Cloud Server.
- **Step 2** In the navigation pane on the left, choose **Elastic Cloud Server**. On the page displayed, select the target server. Go to the server details page.
- **Step 3** Click the **Security Groups** tab and select the target security group. Click **Manage Rule** to go to the security group console.
- **Step 4** On the displayed page, click the **Inbound Rules** tab and click **Add Rule**. The **Add Inbound Rule** page is displayed, as shown in **Figure 10-1**. Add rules as follows:

After an SFS Turbo file system is created, the system automatically enables the security group port required by the NFS protocol in the SFS Turbo file system. This ensures that the SFS Turbo file system can be accessed by your server and prevents file system mounting failures. The inbound ports required by the NFS protocol are ports 111, 2049, 2051, 2052, and 20048. If you need to change the enabled ports, choose **Access Control** > **Security Groups** of the VPC console and locate the target security group.

You are advised to use an independent security group for an SFS Turbo instance to isolate it from service nodes.

You need to add inbound and outbound rules for the security group of an SFS Capacity-Oriented file system. For details, see **Adding a Security Group Rule**. In an SFS Capacity-Oriented file system, the inbound ports required by the NFS protocol are ports 111, 2049, 2051, and 2052. The inbound port required by the DNS server is port 53 and that required by the CIFS protocol is port 445.

Figure 10-1 Add Inbound Rule



**Step 5** Click **OK**. Access the file system again for verification.

----End

# Error Message "wrong fs type, bad option" Is Displayed During File System Mounting

## **Symptom**

The message "wrong fs type, bad option" is displayed when you run the **mount** command to mount a file system to an ECS running Linux.

## **Possible Causes**

An NFS client is not installed on the Linux ECS. That is, the **nfs-utils** software package is not installed before you execute the **mount** command.

## **Fault Diagnosis**

Install the required **nfs-utils** software package.

## Solution

**Step 1** Log in to the ECS and check whether the **nfs-utils** package is installed. Run the following command. If no command output is displayed, the package is not installed.

rpm -qa|grep nfs

Figure 11-1 Checking whether the software package has been installed

```
tall or so.
[root@bcd ~]# rpm -qa | grep nts
[root@bcd ~]# yum list | grep nfs
libnfsidmap.i686
                                              0.25-15.el7
libnfsidmap.x86_64
libnfsidmap-devel.i686
libnfsidmap-devel.x86_64
                                              0.25-15.el7
                                                                                   base
                                                                                   base
nfs-utils.x86 64
                                              1:1.3.0-0.33.el7 3
                                                                                   updates
 fs4-acl-tools.x86_64
                                              0.3.3-15.el7
                                                                                   base
 ıfsometer.noarch
```

**Step 2** Run the following command to install the nfs-utils software package: yum -y install nfs-utils

Figure 11-2 Executing the installation command

```
[root@bcd ~]# yum -y install nfs-utils.x86_64
Loaded plugins: fastestmirror
Loading mirror speeds from cached hostfile
Resolving Dependencies
--> Running transaction check
--> Package nfs-utils.x86_64 1:1.3.0-0.33.el7_3 will be installed
--> Processing Dependency: libtirpc >= 0.2.4-0.7 for package: 1:nfs-utils-1.3.0-0.33.el7_3.x86_64
--> Processing Dependency: gssproxy >= 0.3.0-0 for package: 1:nfs-utils-1.3.0-0.33.el7_3.x86_64
```

Figure 11-3 Successful installation

```
Installed:
    nfs-utils.x86_64 1:1.3.0+0.33.el7_3

Dependency Installed:
    qssproxy.x86_64 0:0.4.1-13.el7
    libcollection.x86_64 0:0.6.2-27.el7
    libroclection.x86_64 0:0.25-15.el7
    libpath_utils.x86_64 0:0.2.1-27.el7
    librerto-tevent.x86_64 0:0.2.5-4.el7
    libverto-tevent.x86_64 0:0.2.5-4.el7
    rpcbind.x86_64 0:0.2.0-38.el7

Complete!

| keyutils.x86_64 0:1.5.8-3.el7 | libbasicobjects.x86_64 0:0.1.1-27.el7 | librerio.x86_64 0:0.1.3-27.el7 |
```

- **Step 3** Run the **mount** command again to mount the file system to the ECS. mount -t nfs -o vers=3,timeo=600,noresvport,nolock *Mount point Local path*
- **Step 4** Run the following command to view the mounted file system:

### mount -l

If the command output contains the following information, the file system is mounted successfully.

example.com:/share-xxx on /local\_path type nfs (rw,vers=3,timeo=600,nolock,addr=)

### ----End

## **12** Failed to Access the Shared Folder in Windows

## **Symptom**

When you mount a file system to an ECS running Windows, the system displays a message "You cannot access this shared folder because your organization's security policies block unauthenticated guest access. These policies help to protect you PC from unsafe or malicious devices on the network."

## **Possible Causes**

Guest access to CIFS file systems is blocked or disabled.

## **Fault Diagnosis**

Solution 1: Manually enable guest access.

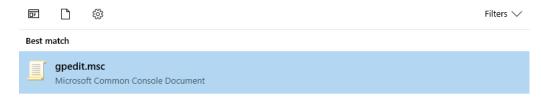
Solution 2: Modify the registry to allow guest access (suitable for versions later than Windows Server 2016).

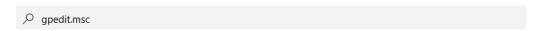
## Solution

Solution 1: Manually enable guest access.

**Step 1** Open **Run** command box, enter **gpedit.msc**, and press **Enter** to start **Local Group Policy Editor**.

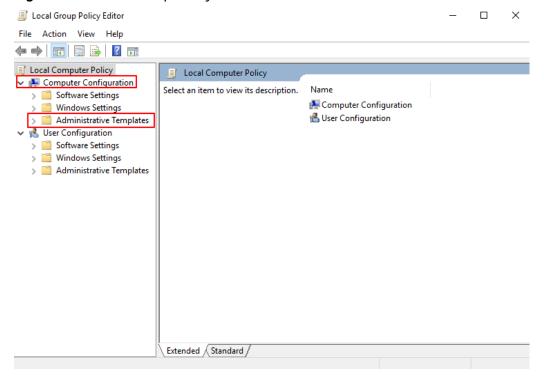
Figure 12-1 Entering gpedit.msc





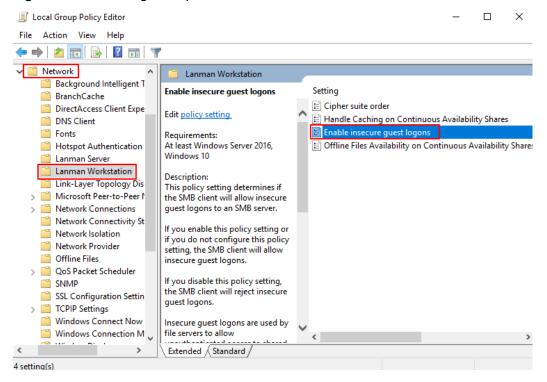
## **Step 2** On the **Local Group Policy Editor** page, choose **Computer Configuration** > **Administrative Templates**.

Figure 12-2 Local Group Policy Editor



**Step 3** Under **Administrative Templates**, choose **Network > Lanman Workstation** and find the option of **Enable insecure guest logons**.

Figure 12-3 Locating the option



Step 4 Double-click Enable insecure guest logons. Select Enabled and click OK.

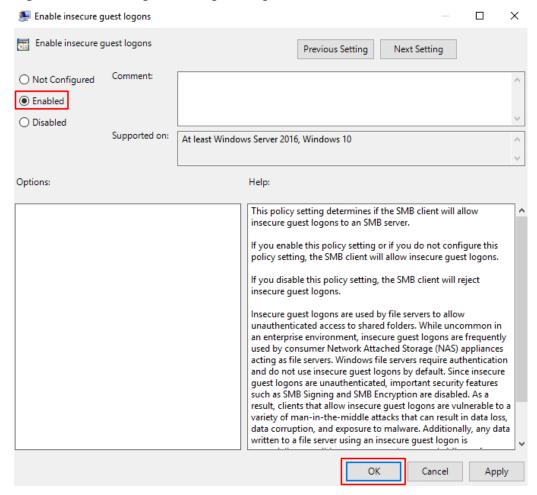


Figure 12-4 Enabling insecure guest logons

**Step 5** After the access is enabled, mount the file system again. If the fault persists, contact technical support.

----End

Solution 2: Modify the registry to allow guest access (suitable for versions later than Windows Server 2016).

- **Step 1** Choose **Start > Run** and enter **regedit** to open the registry.
- **Step 2** Go to the **HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services** \LanmanWorkstation\Parameters directory.

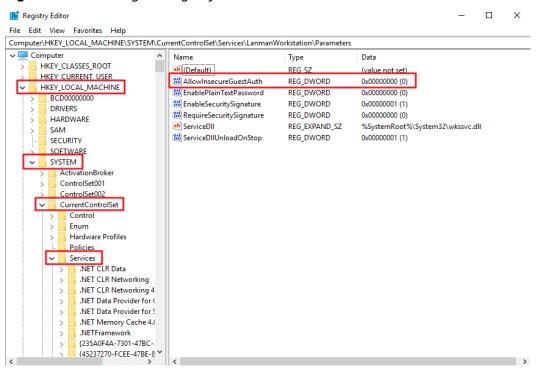
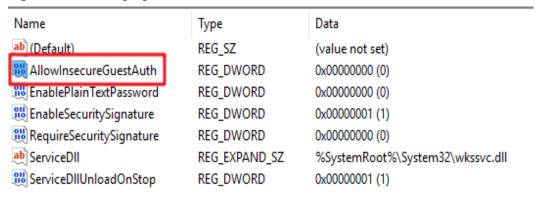
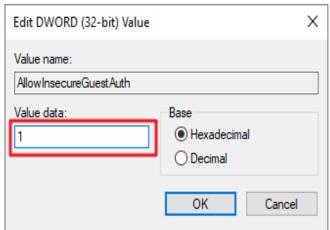


Figure 12-5 Entering the registry

**Step 3** Right-click **AllowInsecureGuestAuth** and choose **Modify** from the shortcut menu. In the pop-up window, change the value to **1**.

Figure 12-6 Changing the value





----End

## 13 Change History

Released On	Description
2019-05-30	This issue is the second official release.  Updated the following content:
	Added the "Failure of Mounting an NFS File System to a Windows IIS Server" section.
	Added section "Data Fails to Be Written to a File."
2019-02-15	This issue is the first official release.