

Alibaba Cloud

Apsara File Storage NAS Quick Start

Document Version: 20211125

Legal disclaimer

Alibaba Cloud reminds you to carefully read and fully understand the terms and conditions of this legal disclaimer before you read or use this document. If you have read or used this document, it shall be deemed as your total acceptance of this legal disclaimer.

1. You shall download and obtain this document from the Alibaba Cloud website or other Alibaba Cloud-authorized channels, and use this document for your own legal business activities only. The content of this document is considered confidential information of Alibaba Cloud. You shall strictly abide by the confidentiality obligations. No part of this document shall be disclosed or provided to any third party for use without the prior written consent of Alibaba Cloud.
2. No part of this document shall be excerpted, translated, reproduced, transmitted, or disseminated by any organization, company or individual in any form or by any means without the prior written consent of Alibaba Cloud.
3. The content of this document may be changed because of product version upgrade, adjustment, or other reasons. Alibaba Cloud reserves the right to modify the content of this document without notice and an updated version of this document will be released through Alibaba Cloud-authorized channels from time to time. You should pay attention to the version changes of this document as they occur and download and obtain the most up-to-date version of this document from Alibaba Cloud-authorized channels.
4. This document serves only as a reference guide for your use of Alibaba Cloud products and services. Alibaba Cloud provides this document based on the "status quo", "being defective", and "existing functions" of its products and services. Alibaba Cloud makes every effort to provide relevant operational guidance based on existing technologies. However, Alibaba Cloud hereby makes a clear statement that it in no way guarantees the accuracy, integrity, applicability, and reliability of the content of this document, either explicitly or implicitly. Alibaba Cloud shall not take legal responsibility for any errors or lost profits incurred by any organization, company, or individual arising from download, use, or trust in this document. Alibaba Cloud shall not, under any circumstances, take responsibility for any indirect, consequential, punitive, contingent, special, or punitive damages, including lost profits arising from the use or trust in this document (even if Alibaba Cloud has been notified of the possibility of such a loss).
5. By law, all the contents in Alibaba Cloud documents, including but not limited to pictures, architecture design, page layout, and text description, are intellectual property of Alibaba Cloud and/or its affiliates. This intellectual property includes, but is not limited to, trademark rights, patent rights, copyrights, and trade secrets. No part of this document shall be used, modified, reproduced, publicly transmitted, changed, disseminated, distributed, or published without the prior written consent of Alibaba Cloud and/or its affiliates. The names owned by Alibaba Cloud shall not be used, published, or reproduced for marketing, advertising, promotion, or other purposes without the prior written consent of Alibaba Cloud. The names owned by Alibaba Cloud include, but are not limited to, "Alibaba Cloud", "Aliyun", "HiChina", and other brands of Alibaba Cloud and/or its affiliates, which appear separately or in combination, as well as the auxiliary signs and patterns of the preceding brands, or anything similar to the company names, trade names, trademarks, product or service names, domain names, patterns, logos, marks, signs, or special descriptions that third parties identify as Alibaba Cloud and/or its affiliates.
6. Please directly contact Alibaba Cloud for any errors of this document.

Document conventions

Style	Description	Example
 Danger	A danger notice indicates a situation that will cause major system changes, faults, physical injuries, and other adverse results.	 Danger: Resetting will result in the loss of user configuration data.
 Warning	A warning notice indicates a situation that may cause major system changes, faults, physical injuries, and other adverse results.	 Warning: Restarting will cause business interruption. About 10 minutes are required to restart an instance.
 Notice	A caution notice indicates warning information, supplementary instructions, and other content that the user must understand.	 Notice: If the weight is set to 0, the server no longer receives new requests.
 Note	A note indicates supplemental instructions, best practices, tips, and other content.	 Note: You can use Ctrl + A to select all files.
>	Closing angle brackets are used to indicate a multi-level menu cascade.	Click Settings > Network > Set network type .
Bold	Bold formatting is used for buttons, menus, page names, and other UI elements.	Click OK .
<code>Courier font</code>	Courier font is used for commands	Run the <code>cd /d C:/window</code> command to enter the Windows system folder.
<i>Italic</i>	Italic formatting is used for parameters and variables.	<code>bae log list --instanceid</code> <i>Instance_ID</i>
[] or [a b]	This format is used for an optional value, where only one item can be selected.	<code>ipconfig [-all -t]</code>
{ } or {a b}	This format is used for a required value, where only one item can be selected.	<code>switch {active stand}</code>

Table of Contents

1. Get started with Apsara File Storage NAS	05
2. Mount a file system on a Linux ECS instance	06
3. Mount a file system on a Windows ECS instance	08

1. Get started with Apsara File Storage NAS

This topic describes how to use Apsara File Storage NAS.

You can perform the following operations:

1. [Create a General-purpose NAS file system in the NAS console.](#)

Create a file system based on your business requirements.

2. [Create a mount target.](#)

Create a mount target for the file system that you want to mount on compute instances.

3. [Mount a NAS file system.](#)

Mount a file system on compute instances to allow the compute instances to access the file system. These compute instances include Elastic Compute Service (ECS), Elastic Container Instance (ECI), and Elastic High Performance Computing (E-HPC) instances.

4. Migrate data.

This allows applications to read data from and write data to the file system. For more information, see [Migrate data from OSS to NAS](#).

5. Read and write data.

Enable multiple compute instances to read data from and write data to the file system.

2. Mount a file system on a Linux ECS instance

Before you can access an Apsara File Storage NAS file system, you must create a NAS file system and mount the file system on an Elastic Compute Service (ECS) instance. This topic describes how to create a Network File System (NFS) file system in the NAS console. This topic also describes how to mount the NFS file system on an ECS instance of CentOS 8.2 in a virtual private cloud (VPC). After you mount the file system on the instance, you can upload data to or download data from the file system.

Prerequisites

- NAS is activated.

The first time you visit the [product page of Apsara File Storage NAS](#), follow the instructions to activate the service.

- An ECS instance is created in the China (Hangzhou) region. The operating system of the instance is CentOS 8.2. For more information, see [Create an instance](#).

Step 1: Create an NFS file system and create a mount target for the file system

- Log on to the [NAS console](#).
- In the **File System Selection Guide** section of the Overview page, click **Create a General Purpose NAS File System**.
- On the **buy page of General-purpose NAS file systems**, set the parameters. The following table describes the parameters. For the parameters that are missing from the following table, select values based on your business requirements or use the default values.

Parameter	Description
Region	Select China (Hangzhou) .
Zone	Select Hangzhou Zone B . Select the zone where the ECS instance resides.
Protocol	Select NFS .
Network Type	Select VPC .
VPC	Select the VPC where the ECS instance resides.
VSwitch ID	Select a vSwitch that resides in the VPC.

- Click **Buy Now** and follow the on-screen instructions to complete the payment.
- Go to the NAS console. In the left-side navigation pane, choose **File System > File System List** and click the name of the file system that you created.
- On the details page of the file system, click **Mount Targets**.
- On the **Mount Target** tab, copy the mount command for later use.

Step 2: Mount the file system

1. Connect to the ECS instance. For more information, see [Connection methods](#).
2. Run the following command to install an NFS client:

```
sudo yum install nfs-utils
```

3. Run the following code to set the number of concurrent NFS requests to 128 :

```
if (lsmod | grep sunrpc); then
(modinfo sunrpc | grep tcp_max_slot_table_entries) && sysctl -w sunrpc.tcp_max_slot_table_entries=1
28
(modinfo sunrpc | grep tcp_slot_table_entries) && sysctl -w sunrpc.tcp_slot_table_entries=128
fi
(modinfo sunrpc | grep tcp_max_slot_table_entries) && echo "options sunrpc tcp_max_slot_table_entri
es=128" >> /etc/modprobe.d/alinas.conf
(modinfo sunrpc | grep tcp_slot_table_entries) && echo "options sunrpc tcp_slot_table_entries=128" >
> /etc/modprobe.d/alinas.conf
```

4. Run the mount command that you copied in [Step 1](#).
5. Run the `mount -l` command to view the mount result.

The command output in the following figure indicates a successful mount.

```
debugfs on /sys/kernel/debug type debugfs (rw,relatime)
mqueue on /dev/mqueue type mqueue (rw,relatime)
hugetlbfs on /dev/hugepages type hugetlbfs (rw,relatime)
sunrpc on /var/lib/nfs/rpc pipefs type rpc pipefs (rw,relatime)
0          can-hangzhou.nas.aliyuncs.com: on /mnt/type nfs4 (rw,relatime,vers=4.0,rsz=1048576,wsz=1048576,namlen=255,hard,noreport,proto=tcp,timeo=600,retrans=2,sec=sys,clientaddr=10.10.10.17,local_lock=none,addr=10.10.10.17, netdev)
tmpfs on /run/user/0 type tmpfs (rw,nosuid,nodev,relatime,size=800916k,mode=700)
[root@iZbp19j62it618xdl876Z ~]#
```

After the file system is mounted, you can run the `df -h` command to view the capacity of the file system.

If the file system fails to be mounted, troubleshoot the issue. For more information, see [Troubleshoot and fix mount issues](#).

Step 3: Upload and download data

After you mount the file system on the ECS instance, you can use the file system in the same manner in which you use a local directory. The following figure shows an example.

```
[root@i3a56c6wi.q421.dap0f16q2 ~]# mkdir /mnt/dir1
[root@i3a56c6wi.q421.dap0f16q2 ~]# mkdir /mnt/dir2
[root@i3a56c6wi.q421.dap0f16q2 ~]# touch /mnt/file1
[root@i3a56c6wi.q421.dap0f16q2 ~]# echo 'some file content' > /mnt/file2
[root@i3a56c6wi.q421.dap0f16q2 ~]# ls /mnt
```

3. Mount a file system on a Windows ECS instance

Before you can access the data in Apsara File Storage NAS, you must create a NAS file system and mount the file system on an Elastic Compute Service (ECS) instance. This topic describes how to create a Server Message Block (SMB) file system in the NAS console. This topic also describes how to mount the SMB file system on an ECS instance. In this example, the ECS instance is deployed on Windows Server 2019 in a virtual private cloud (VPC). After you mount the file system on the ECS instance, you can upload data to or download data from the file system.

Prerequisites

- NAS is activated.

The first time you visit the [product page of Apsara File Storage NAS](#), follow the instructions to activate the service.

- An ECS instance is created in the China (Hangzhou) region. The operating system of the instance is Windows Server 2019. For more information, see [Create an instance](#).

Step 1: Create an SMB file system and create a mount target for the file system

- Log on to the [NAS console](#).
- In the **File System Selection Guide** section of the Overview page, click **Create a General Purpose NAS File System**.
- On the **buy page of General-purpose NAS file systems**, set the required parameters. The following table describes the parameters. For the parameters that are missing from the following table, select values based on your business requirements or use the default values.

Parameter	Description
Region	Select China (Hangzhou) .
Zone	Select Hangzhou Zone B . Select the zone where the ECS instance resides.
Protocol	Select SMB .
Network Type	Select VPC .
VPC	Select the VPC where the ECS instance resides.
VSwitch ID	Select a vSwitch that resides in the VPC.

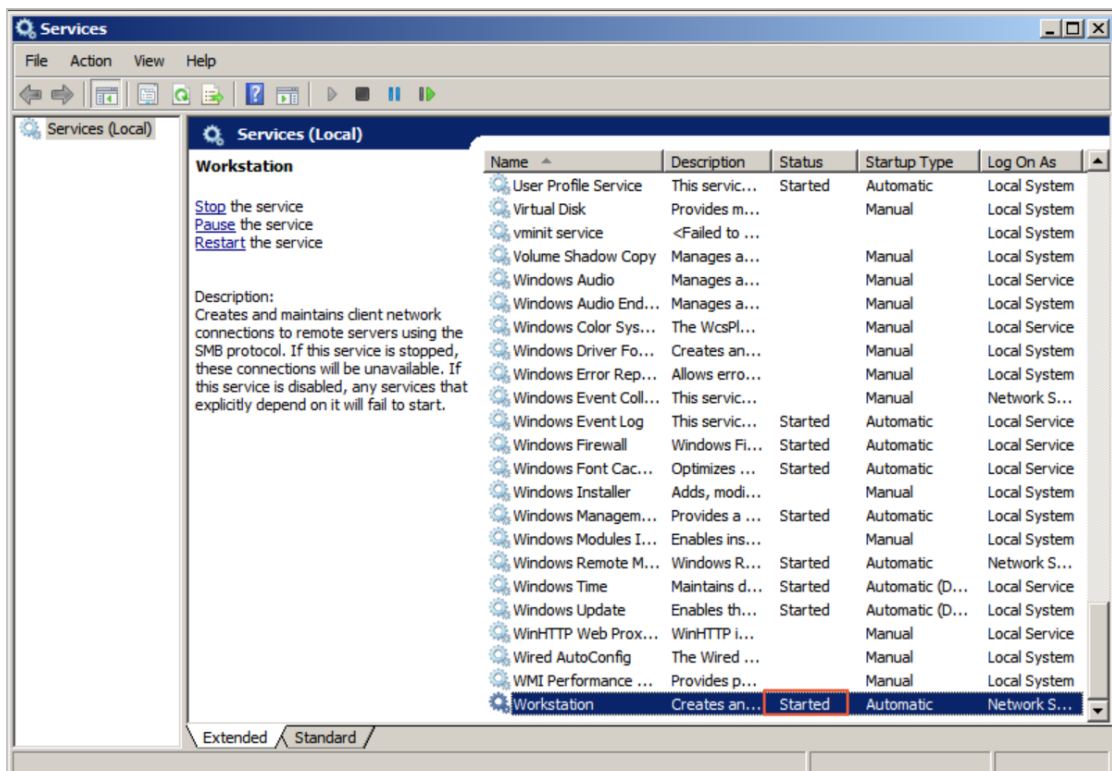
- Click **Buy Now** and follow the on-screen instructions to complete the payment.
- Go to the NAS console. In the left-side navigation pane, choose **File System > File System List** and click the name of the file system that you created.
- On the details page of the file system, click **Mount Targets**.
- On the **Mount Target** tab, copy the mount command for later use.

Step 2: Mount the file system

1. Connect to the ECS instance. For more information, see [Connection methods](#).
2. Open the command-line interface and run the following command to grant the client anonymous access permissions:

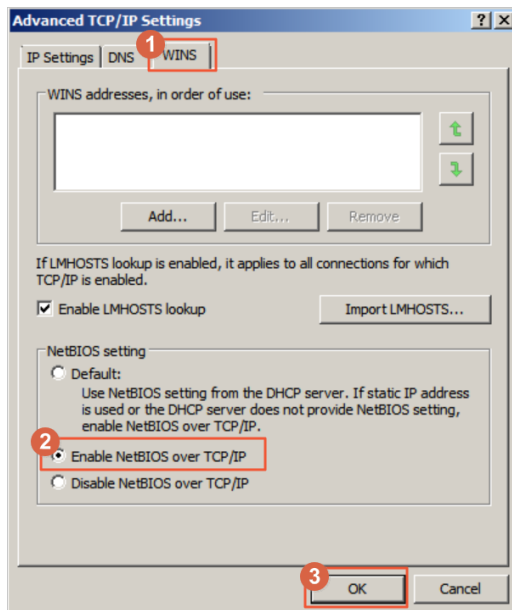
```
REG ADD HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\services\LanmanWorkstation\Parameters /f /v AllowInsecureGuestAuth /t REG_DWORD /d 1
```

3. Enable the Workstation service.
 - i. Press **Win+R**. In the **Run** dialog box, enter **services.msc** and click **OK**.
 - ii. Make sure that the Workstation service is in the **Started** state and the start up type is **Automatic**.

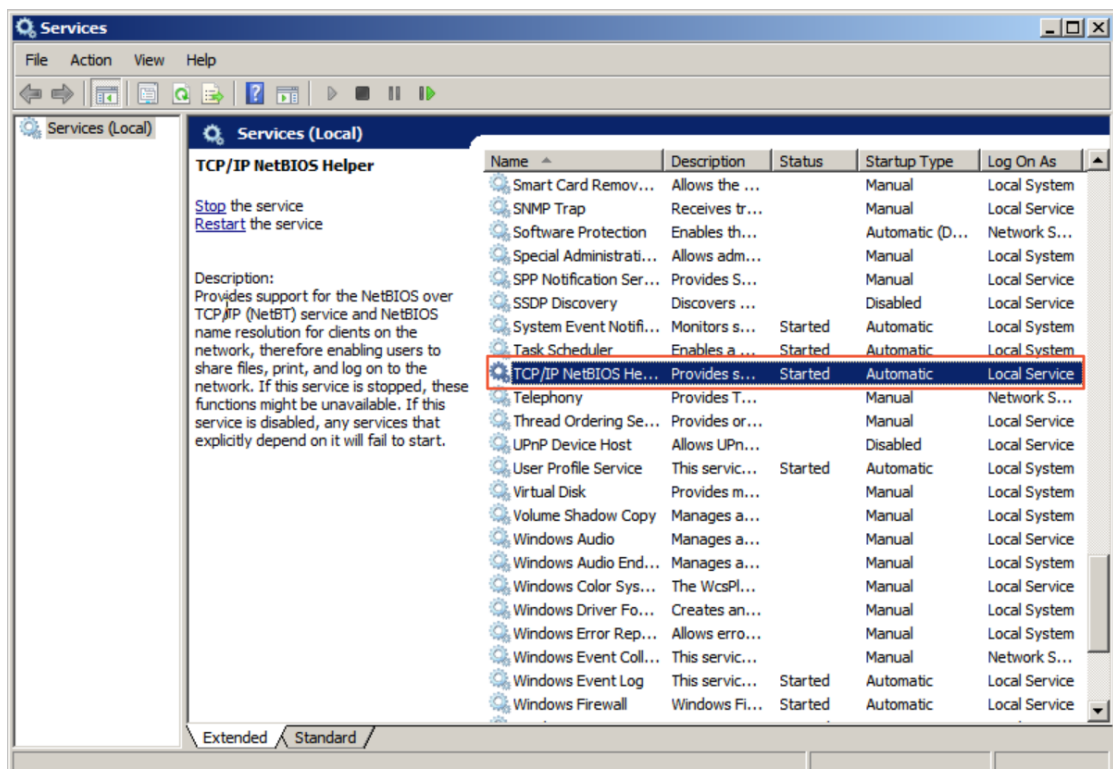


4. Enable the TCP/IP NetBIOS Helper service.
 - i. Open **Control Panel**, choose **Network and Internet > Network and Sharing Center**, and then click the network that is connected to your host.
 - ii. In the Status dialog box, click **Properties**. In the Properties dialog box, double-click **Internet Protocol Version 4 (TCP/IPv4)**.
 - iii. In the **Internet Protocol Version 4 (TCP/IPv4) Properties** dialog box, click **Advanced**.

- iv. In the **Advanced TCP/IP Settings** dialog box, click the **WINS** tab, select **Enable NetBIOS over TCP/IP**, and then click **OK**.



- v. Press **Win+R**. In the **Run** dialog box, enter **services.msc** and click **OK**.
- vi. Make sure that the **TCP/IP NetBIOS Helper** service is in the **Started** state and the startup type is **Automatic**.



5. Open the command-line interface and run the mount command that you copied in **Step 1**.
6. After the mount command is executed, run the **net use** command to verify the mount results.
- If the result that is similar to the following information appears, the mount is successful.

```
C:\Users\Administrator>net use
New connections will be remembered.
```

Status	Local	Remote	Network
OK	D:	\\63.32.161.100\myshare	Microsoft Windows Network

```
The command completed successfully.
```

If the file system fails to be mounted, troubleshoot the issue. For more information, see [Troubleshoot and fix mount issues](#).

Step 3: Upload data to or download data from the file system

After you mount the file system on the ECS instance, you can use the file system in the same manner in which you use a local directory. The following figure shows an example.

```
C:\Users\Administrator>z:
Z:\>dir
Volume in drive Z is Myshare
Volume Serial Number is D038-9B7F

Directory of Z:\

12/23/2020  09:57 AM  <DIR>          .
12/23/2020  09:57 AM  <DIR>          ..
               0 File(s)                0 bytes
               2 Dir(s)  11,258,999,068,426,240 bytes free

Z:\>mkdir dir1
Z:\>mkdir dir2
Z:\>echo 'some file content' > file2
Z:\>dir
Volume in drive Z is Myshare
Volume Serial Number is D038-9B7F

Directory of Z:\

12/23/2020  09:59 AM  <DIR>          .
12/23/2020  09:59 AM  <DIR>          ..
12/23/2020  09:58 AM  <DIR>          dir1
12/23/2020  09:58 AM  <DIR>          dir2
12/23/2020  09:59 AM                22 file2
               1 File(s)                22 bytes
               4 Dir(s)  11,258,999,068,422,144 bytes free
```