

Introduction to Active Storage mRAID16 Storage Systems

Active Storage systems are innovative mid-range and high-end offerings that are ready to meet your current and future storage requirements. They are designed to provide medium and large-scale enterprises with improved storage performance, efficiency, data security, scalability, and manageability.

mRAID16 NAS Quick Configuration Guide for Linux

Before You Start

a Overview

This document helps you quickly configure the mRAID16.

b Where to get help

You can obtain this document from <http://active-storage.com/documents/>. You can also submit a request on our website for support and download valuable information.

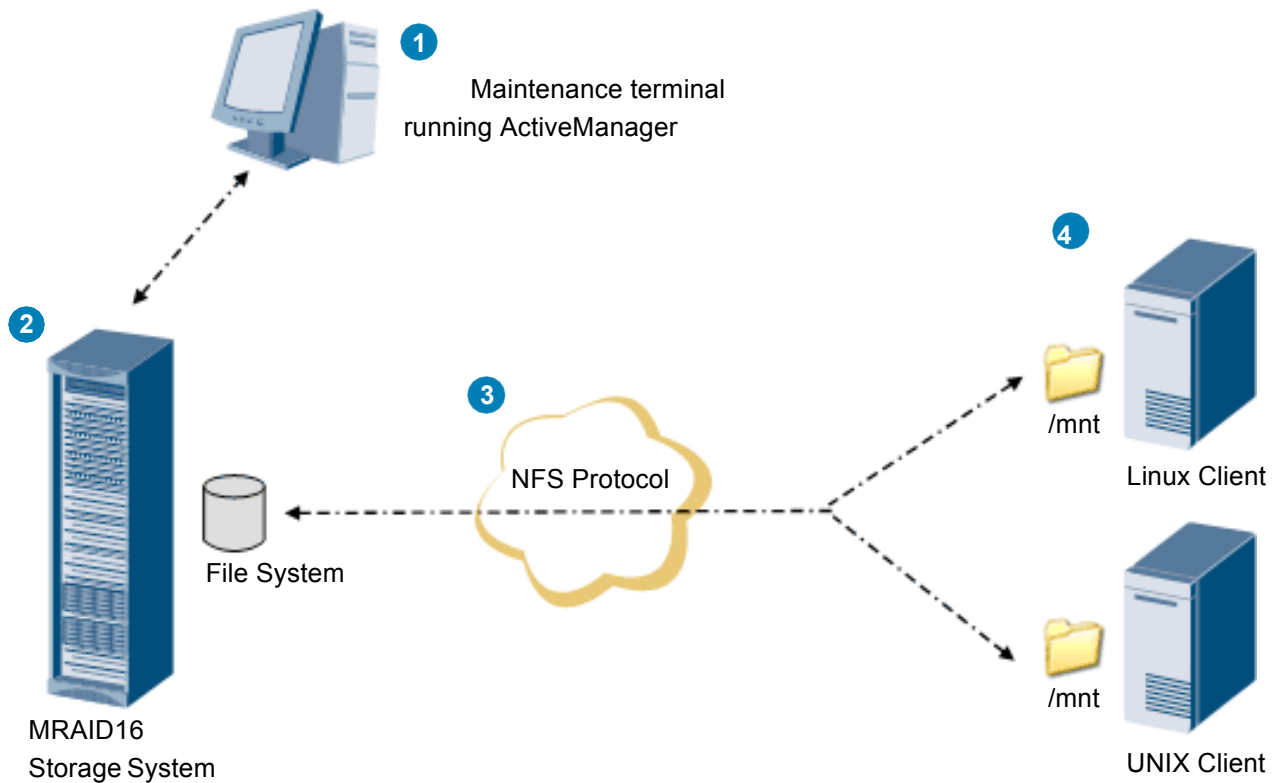
c Feedback

Your feedback is important to us. If you have any comments about this document, please submit them to us on the Active Storage website.



1 Introduction

1a Basic Application Scenario



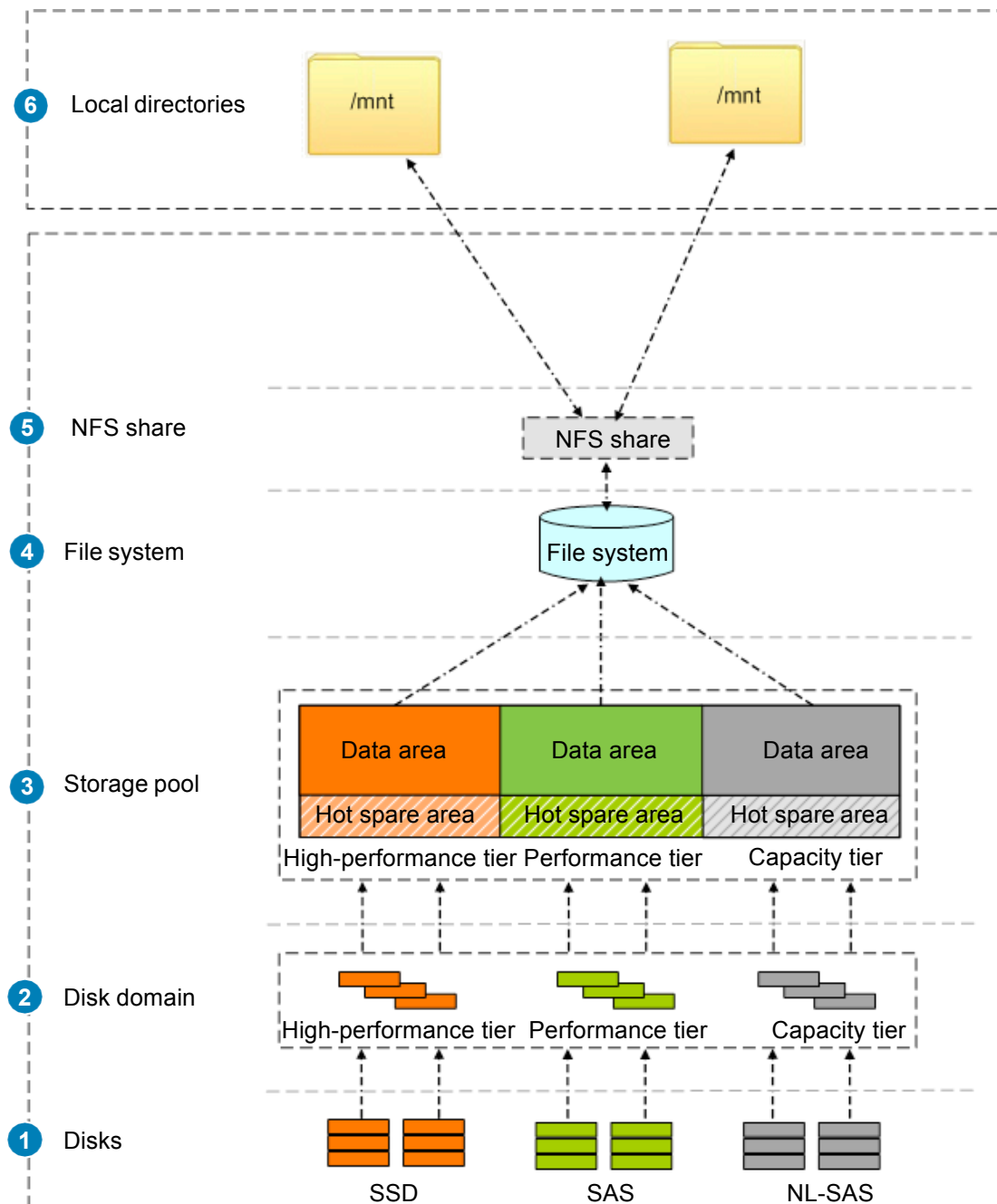
1 Users can manage and maintain the storage system from a maintenance terminal running the ActiveManager program developed by Active Storage. The maintenance terminal connects to the management network port of the storage system.

2 File system of storage system provides file-level data storage services featuring high performance and enhanced security.

3 NFS is a file system sharing protocol developed by SUN and intended for operating systems such as Linux and UNIX. Through NFS, files can be transferred and shared between clients that are running Linux (including SUSE and Red Hat) or UNIX (including Solaris, AIX, and HP-UX).

4 By using NFS, an MRAID16 storage system functions as a server and allows clients to access a shared file system. The clients mount the directory where the shared file system resides to their local directories, and then users can access the files on the remote server like they are accessing local files.

1b Storage system



- 1** The storage system automatically identifies all disks.
- 2** Disk domains are comprised of different types of disks. Services of different disk domains are isolated from each other.
- 3** Storage pools are created in disk domains and comprised of RAID groups formed by disks of different performance. Storage pools provide logical storage space.
- 4** A file system can be created in a storage pool to provide storage space for an NFS share.
- 5** After creating an NFS share, you can set different access permissions for clients.
- 6** A Linux- or UNIX-based client can access an NFS share provided by a storage system. A shared file system appears as a directory. The NFS share is mounted to the **mnt** directory.

2 Data Preparation and Operation instructions

2a Data Preparation

The NFS is a value-added feature that requires a license. For details, please contact Active Storage. Before operations, follow instructions in the following table to prepare data and enter actual values in the **Value** column.

CAUTION

/192.168.128.101:8088—A1


This document uses example values to describe the configuration.

Replace example values with actual values during actual configuration.

Example

Value

The figure in the right shows the mappings of example values and actual values in the following table.





Preparation Item	Source	Example	Value
Maintenance terminal: Logging in to the ActiveManager			
Management network port IP addresses	Network administrator	Default value: 192.168.128.101	A1
User name and password for logging in to the ActiveManager  NOTE You are advised to change the default password immediately after you have logged in to the storage system for the first time and periodically change your password in the future. This reduces the password leakage risks.	System administrator	Default user name: admin Default password: Admin@storage	A2
Maintenance terminal: Creating a disk domain			
Disk domain name	User-defined	DiskDomain000	B1
Disk encryption type	Service provider	Non-Encrypting Disk	B2
Number of disks forming disk domains High-performance tier uses SSDs. Performance tier uses SAS disks. Capacity tier uses NL-SAS disks.	Service provider	Performance tier (SAS): 8 Hot Spare Policy: High Capacity tier (NL-SAS) : 16 Hot Spare Policy: High	B3 Multi-choice <input type="checkbox"/> High-performance tier SSDs: Hot Spare Policy: <input type="checkbox"/> Performance tier SAS disks: Hot Spare Policy: <input type="checkbox"/> Capacity tier NL-SAS disks: Hot Spare Policy:
Maintenance terminal: Creating a storage pool			
Storage pool name	User-defined	StoragePool000	C1

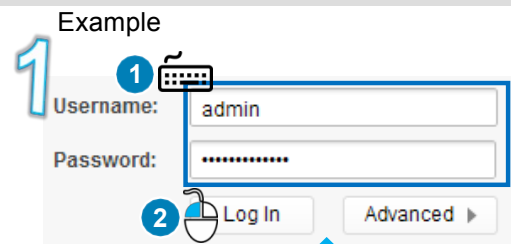
Preparation Item	Source	Example	Value
Usage	Service provider	File Storage Services	C2
Storage pool owning to Disk domain	Service provider	DiskDomain000	C3
Storage tier and capacity	Service provider	Performance tier RAID Policy: RAID 5(4D+1P) Capacity: 1 TB Capacity tier RAID Policy: RAID 6(4D+2P) Capacity: 1 TB Total Storage Pool Capacity: 2 TB	C4 Multi-choice <input type="checkbox"/> High-performance tier RAID Policy: Capacity: <input type="checkbox"/> Performance tier RAID Policy: Capacity: <input type="checkbox"/> Capacity tier RAID Policy: Capacity:
Maintenance Terminal: Creating a File System			
File system name	User-defined	FileSystem000	D1
Thin Provisioning After thin provisioning is enabled, the storage system will dynamically allocate storage resources on demand.	Service provider	Enable	D2
Capacity	Service provider	200 GB	D3
Snapshot Space Ratio	Service provider	20	D4
Template	Service provider	User Defined	D5
File System Block Size	Service provider	64 KB	D6
Quantity	Service provider	1	D7
Owning storage pool	Service provider	StoragePool000	D8
Maintenance Terminal: Creating an NFS Share			
File system	Service provider	FileSystem000	E1
Maintenance Terminal: Setting NFS Parameters			
NFS service mRAID16 storage systems support both NFSv3 and v4.	Service provider	Enable the NFS service. NFSv3: enable NFSv4: enable	F1
Character Encoding	Service provider	UTF-8	F2
Maintenance Terminal: Adding a Storage System to an LDAP Domain			
Primary IP address IP address of the LDAP domain server	Network administrator	10.146.80.88	G1
Port number Port of the LDAP protocol. By default, the port number is 389. If the Secure Sockets Layer (SSL) is enabled, the port number is 636 by default.	Service provider	636	G2

Preparation Item	Source	Example	Value
Protocol Encryption protocol type, including Lightweight Directory Access Protocol (LDAP) or Lightweight Directory Access Protocol SSL (LDAPS). Security risks arise if the protocol is set to LDAP. You are advised to select the LDAPS protocol.	Service provider	LDAPS	G3
Base distinguished name (DN) Top directory of the LDAP directory tree.	Service provider	dc=company,dc=com	G4
Maintenance Terminal: Adding a Storage System to a NIS Domain			
Domain name	Service provider	nd.domain	H1
Primary IP address	Service provider	10.188.15.44	H2
Maintenance Terminal: Adding a Client That Can Be Accessed by an NFS Share			
Name or IP address	Service provider	192.168.100.100	I1
Permission	Service provider	Read-write	I2
Maintenance Terminal: Creating a Logic Port			
Name	Service provider	logicalip	J1
IP Address Type	Service provider	IPv4 Address	J2
IPv4 Address	Service provider	192.168.100.101	J3
Subnet Mask	Service provider	255.255.255.0	J4
Primary Port	Service provider	CTE0.L1.IOM1.P3	J5
IP Address Floating	Service provider	Enable	J6
Failback Mode	Service provider	Automatic	J7
Active Now	Service provider	Enable	J8

2b Operation instructions

Before operations, learn about the meaning of icons involved in the configuration, as shown in the following table.

Icon	Meaning
	Double-click
	Click
	Right-click
	Input or Set
1 2	Step
1 2	Substep



Step1:
 Substep1: Enter the user name and password.
 Substep2: Click **Log In**.

NOTE

The screenshots in this manual may differ from the actual pages. The actual environment prevails.

3 Allocating Storage Space

3a Logging in to the ActiveManager



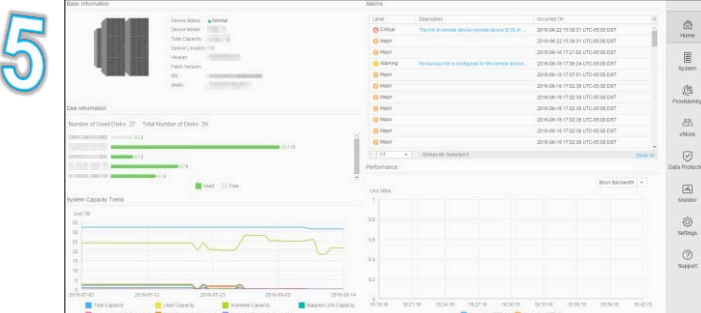
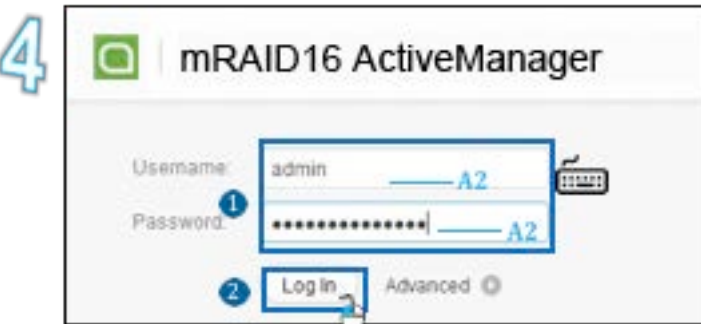
1. Enter **https://XXX.XXX.XXX.XXX:8088**, where XXX.XXX.XXX.XXX indicates the IP address of the management network port. 192.168.128.101 is used as an example.
2. Click **Enter**.

3 **The site's security certificate is not trusted!**

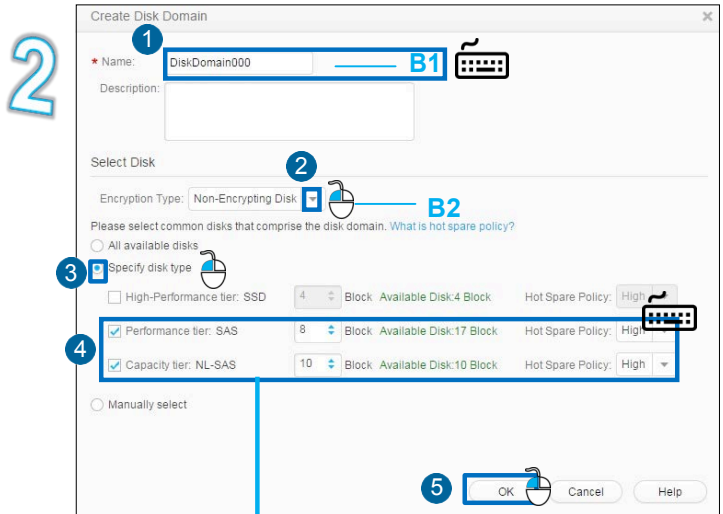
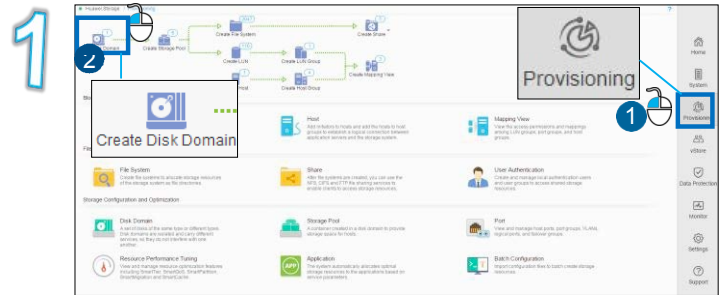
You attempted to reach 192.168.128.101, but the server presented a certificate issued by an entity that is not trusted by your computer's operating system. This may mean that the server has generated its own security credentials, which Google Chrome cannot rely on for identity information, or an attacker may be trying to intercept your communications. You should not proceed, especially if you have never seen this warning before for this site.

NOTE

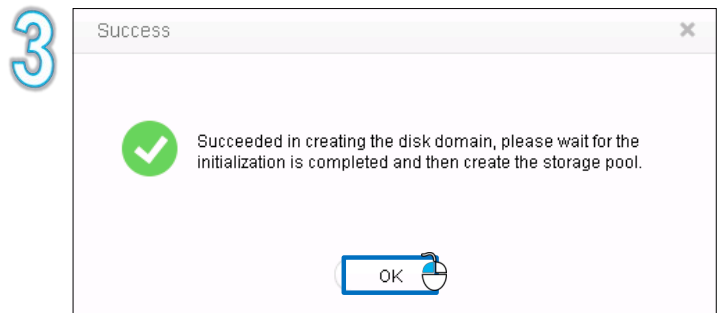
The security certificate prompt message varies with operating systems and browser versions of maintenance terminals. Ignore the message and continue accessing storage devices.



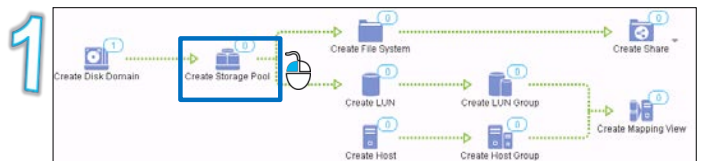
3b Creating a disk domain



For the actual disk numbers, see B3 in your data preparation table. The figure above takes performance tier and capacity tier creations as an example.



3c Creating a storage pool



2

To create storage tiers, see the actual value from C4 in your data preparation table. The figure above takes performance tier and capacity tier creations as an example.

NOTE
Keep the default values for RAID Policy.

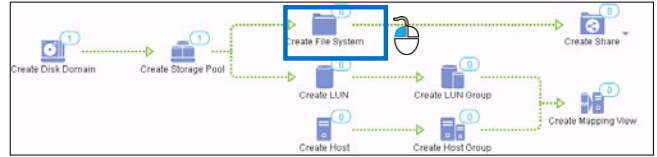
3

Operation	State	Cause And Suggestion
Create storage pool ...	✔ Succeeded	

3d

Creating a filesystem

1

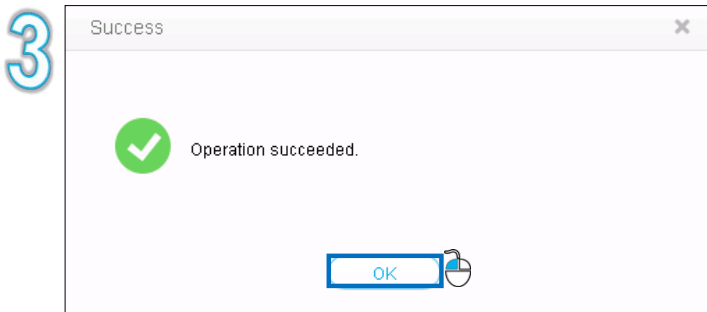
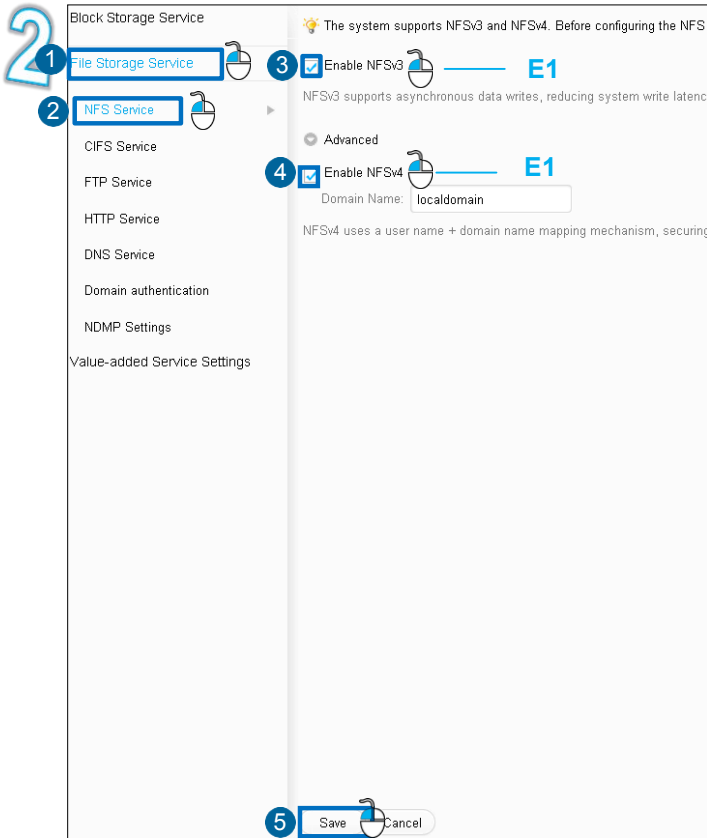
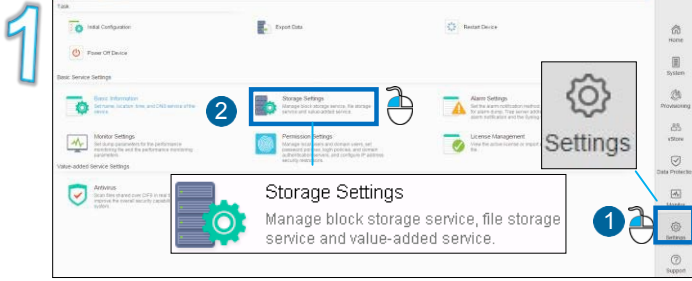


2

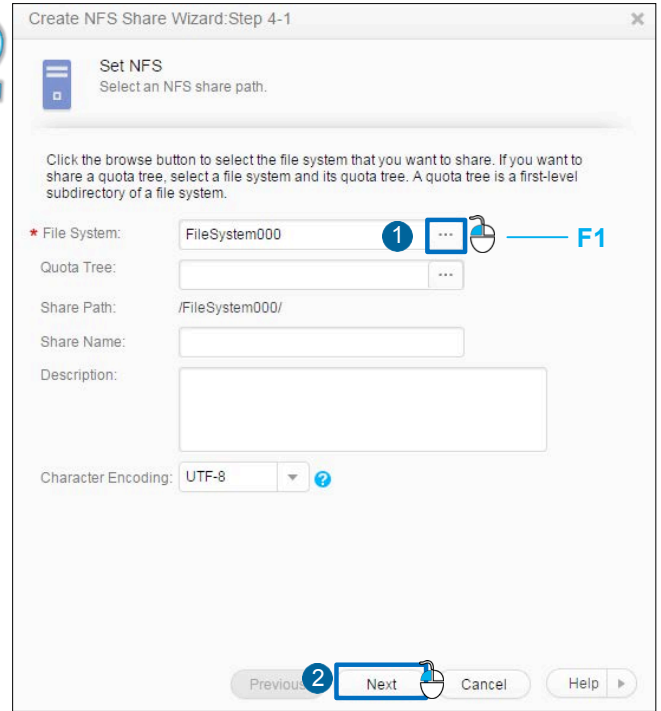
3

Operation	State	Cause And Suggestion
Create File System ...	✔ Succeeded	

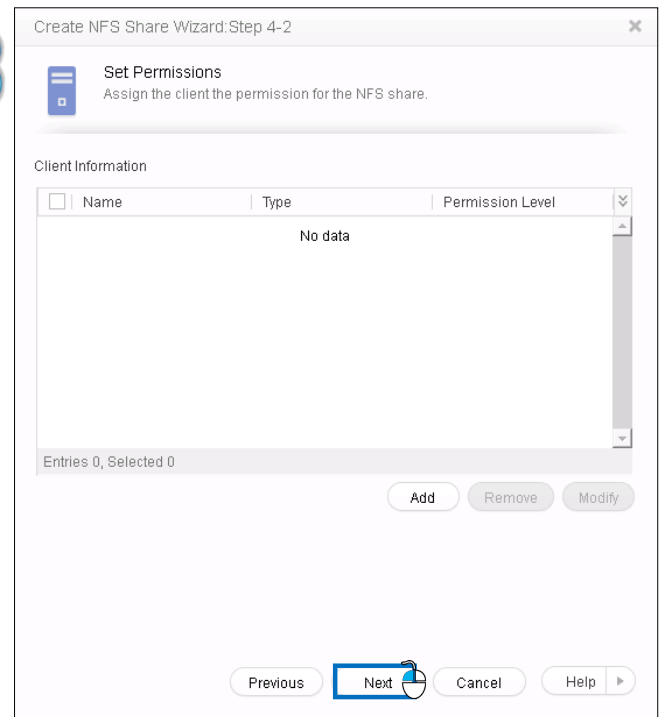
3f Setting NFS parameters



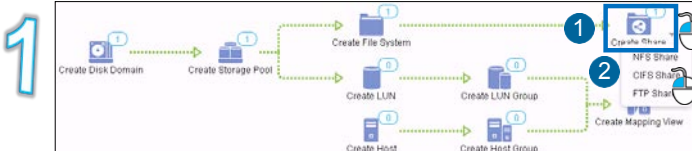
2



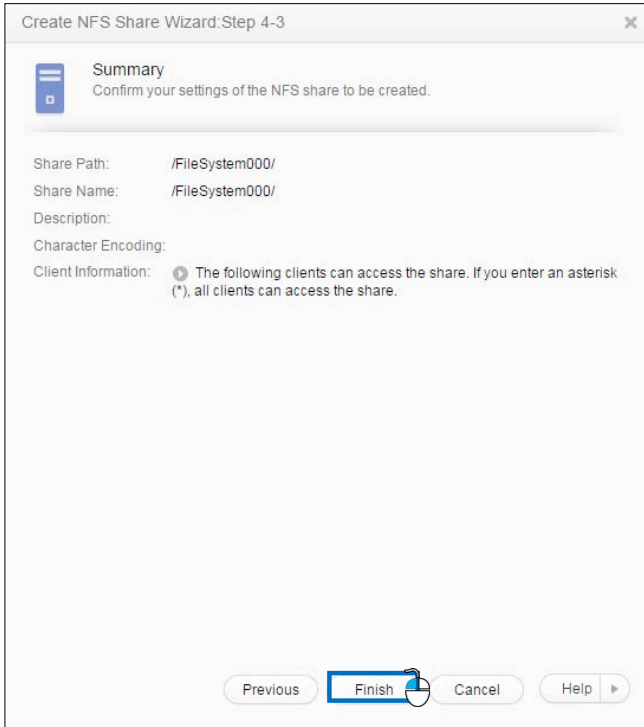
3



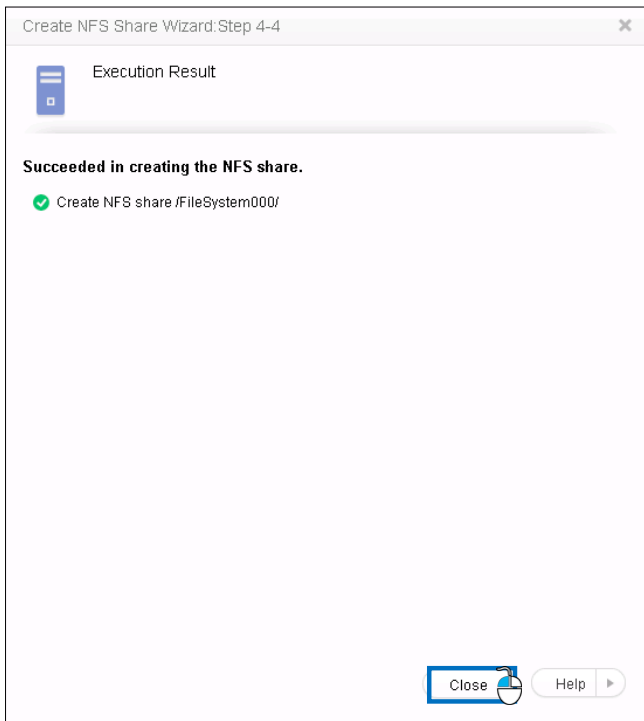
4 Creating an NFS Share



4



5

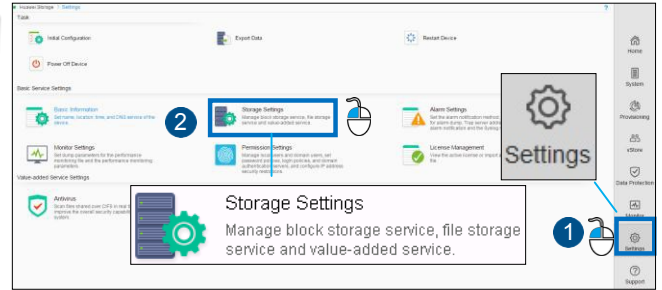


If the NFS is applied to LDAP environment
 → 5a Adding a Storage System to an LDAP Domain
 If the NFS is applied to NIS environment
 → 5b Adding a Storage System to a NIS Domain

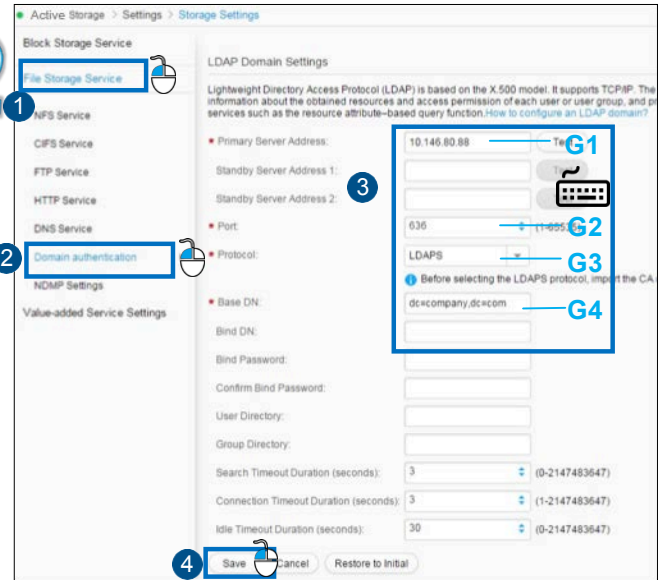
5 (Optional) Adding a Storage System to a Domain

5a Adding a storage system to an LDAP domain

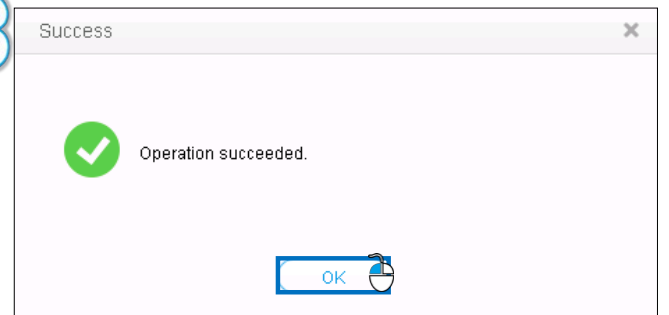
1



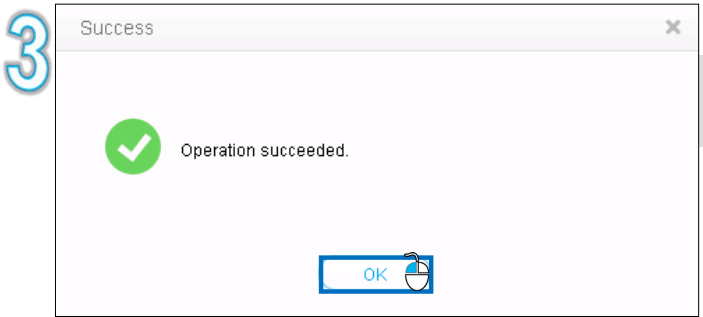
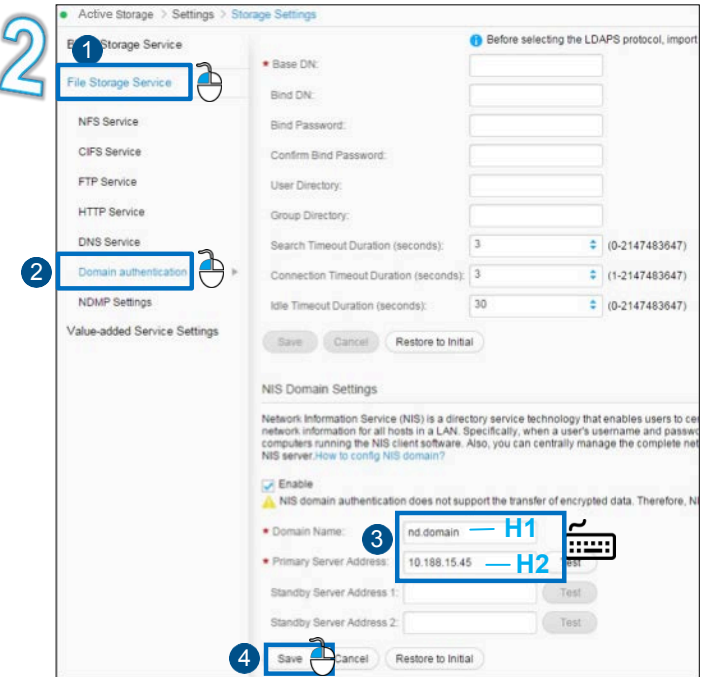
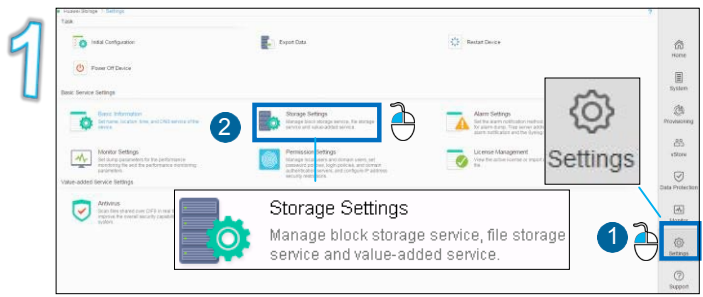
2



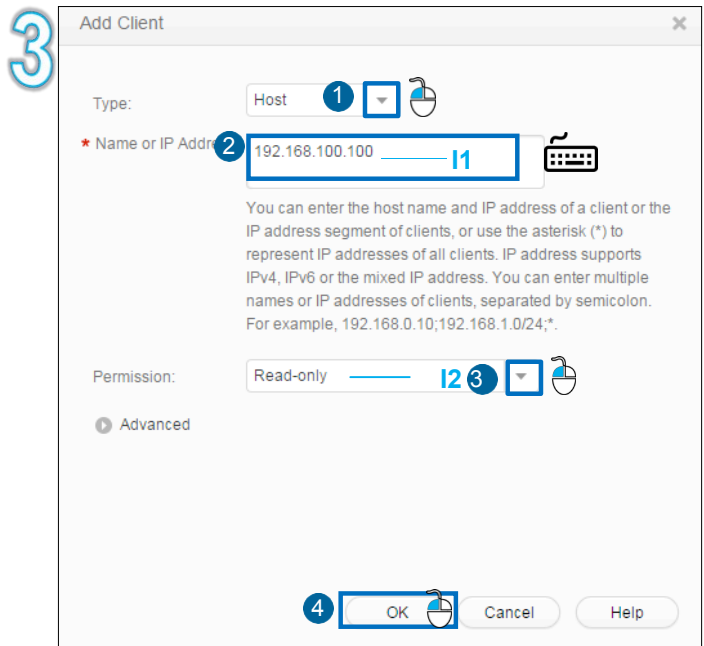
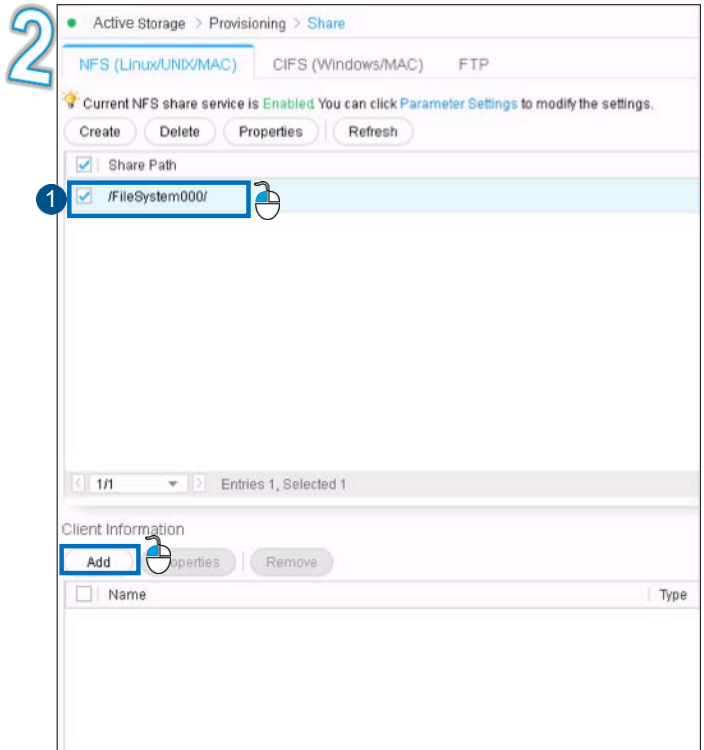
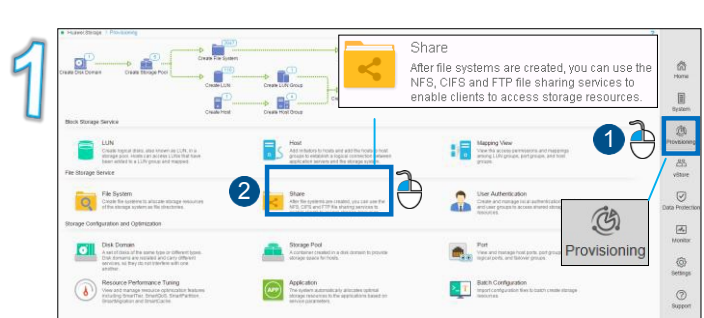
3

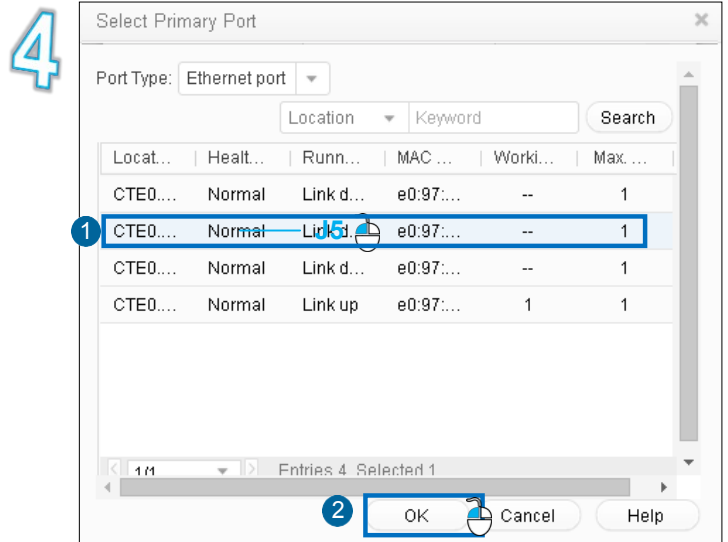
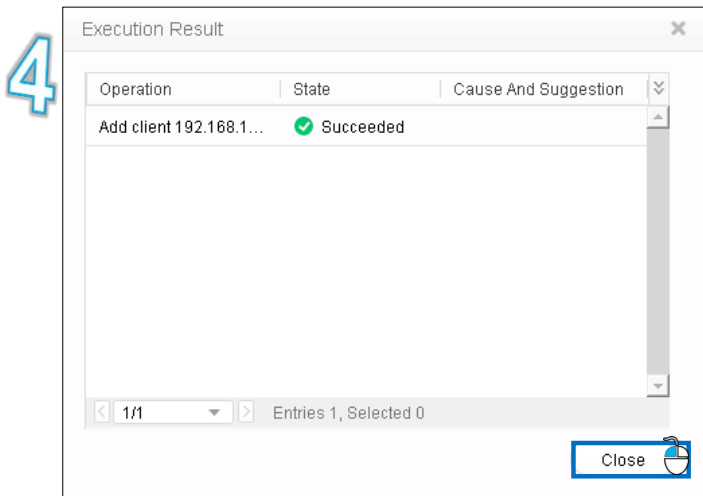


5b Adding a storage system to a NIS domain

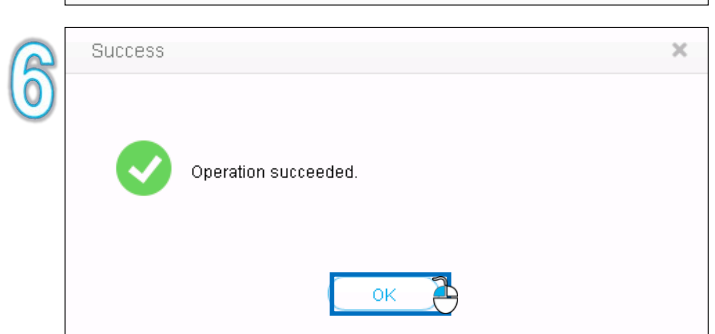
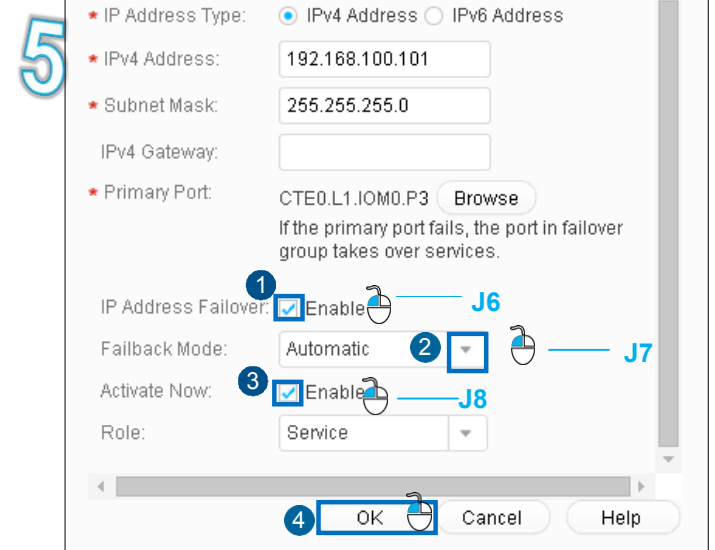
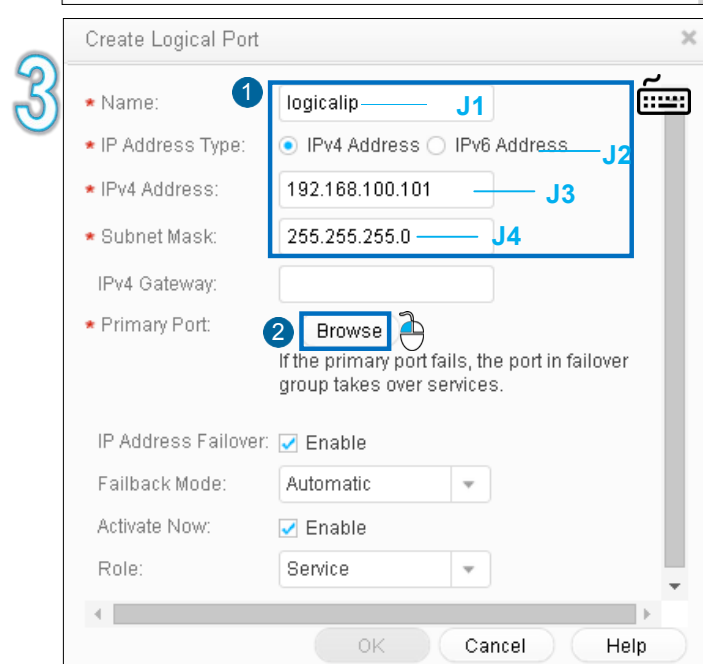
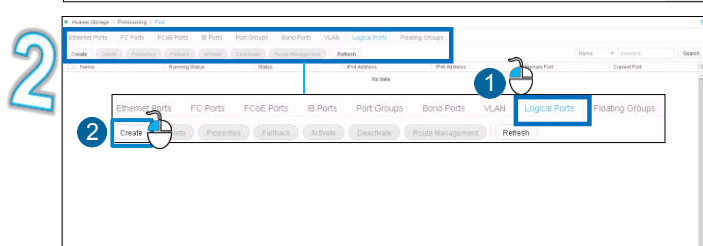
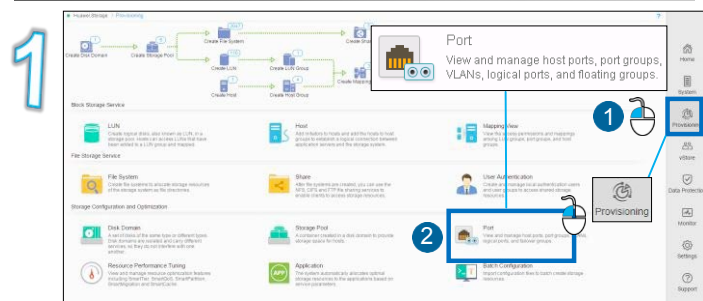


6 Adding a Client That Can Be Accessed by an NFS Share





7 Creating a Logical Port



8 Accessing an NFS Share

8a SUSE & Red Hat

Operation Instruction	SUSE & Red Hat
Log in to the application server.	Enter user name root and the password.
View the NFS share.	Run showmount -e 192.168.100.101 .
Mount the file system shared by NFS.	Run mount -t nfs -o vers=3,proto=tcp,rsize=1048576,wsiz=1048576,hard,intr,timeo=10 192.168.100.101:/FileSystem000 /mnt
Check whether the file system mounted successfully.	Run mount . If the following information is displayed, the file system is mounted successfully: 192.168.100.101:/FileSystem000 on /mnt type nfs (rw,addr=192.168.100.101)

8b AIX

Operation Instruction	AIX
Log in to the application server.	Enter user name root and the password.
View the NFS share.	Run showmount -e 192.168.100.101 .
Mount the file system shared by NFS.	Run mount -o vers=3, 192.168.100.101:/FileSystem000 /mnt .
Check whether the file system mounted successfully.	Run mount . If the following information is displayed, the file system is mounted successfully: 192.168.100.101:/FileSystem000 on /mnt type nfs (rw,addr=192.168.100.101)

9 How to Contact Active Storage

- **Active Storage customer service center**

Address: 9233 Eton Ave. Chatsworth, CA 91311 USA

Tel: +1 (818) 709-1133

Email: info@activestorage.com

Website: <http://activestorage.com>

- **Active Storage technical support personnel**

Obtain contact information from Active Storage offices at <http://support.active-storage.com/hc/en-us>.