

Data ONTAP™ 6.4

Software Setup Guide

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Preface

About this guide	This guide describes how to set up and configure Network Appliance™ filers that run Data ONTAP™ 6.4 software. It covers all NetApp® filer models.								
Audience	This guide is for system administrators who are familiar with operating systems, such as UNIX®, Windows 95™, Windows NT®, and Windows 2000®, that run on the filer’s clients. It assumes that you are familiar with how to set up and configure the filer and how the NFS, CIFS, DAFS, VLD, HTTP, FCP for SCSI, and iSCSI protocols are used for file and block sharing or transfers. This guide doesn’t cover basic system or network administration topics, such as IP addressing, routing, and network topology; it emphasizes the characteristics of the NetApp filer.								
Is this guide right for you?	If you are installing new filers, this is the correct guide for you. If you are unsure, use the following table to decide which guide to read. <table><tr><th>If you are...</th><th>Read...</th></tr><tr><td>Configuring a new NetApp filer</td><td>This guide</td></tr><tr><td>Upgrading an existing filer to the Data ONTAP 6.4 software</td><td>The <i>Data ONTAP 6.4 Upgrade Guide</i></td></tr><tr><td>Converting existing NetApp filers to a cluster</td><td>The <i>Cluster Conversion Guide</i> for the specific filer series hardware</td></tr></table>	If you are...	Read...	Configuring a new NetApp filer	This guide	Upgrading an existing filer to the Data ONTAP 6.4 software	The <i>Data ONTAP 6.4 Upgrade Guide</i>	Converting existing NetApp filers to a cluster	The <i>Cluster Conversion Guide</i> for the specific filer series hardware
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Configuring a new NetApp filer	This guide								
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Converting existing NetApp filers to a cluster	The <i>Cluster Conversion Guide</i> for the specific filer series hardware								
Terminology	When the term “filer” is used, the information applies to all NetApp filer models including the FAS900 and the R100 series of storage appliances. This guide uses the term “type” to mean pressing one or more keys on the keyboard. It uses the term “enter” to mean pressing one or more keys and then pressing the Enter key.								
Command conventions	You can enter filer commands on either the system console or from any client computer that can access the filer through a Telnet session.								

In examples that illustrate commands executed on a UNIX workstation, this guide uses the command syntax of SunOS 4.1.x. The command syntax and output might differ, depending on your version of UNIX.

Keyboard conventions

When describing key combinations, this guide uses the hyphen (-) to separate individual keys. For example, “Ctrl-D” means pressing the “Control” and “D” keys simultaneously. Also, this guide uses the term “Enter” to refer to the key that generates a carriage return, although the key is named “Return” on some keyboards.

Typographic conventions

The following table describes typographic conventions used in this guide.

Convention	Type of information
<i>Italic font</i>	Words or characters that require special attention. Placeholders for information you must supply. For example, if the guide says to enter the <code>arp -d hostname</code> command, you enter the characters “arp -d” followed by the actual name of the host. Book titles in cross-references.
<code>Monospaced font</code>	Command and daemon names. Information displayed on the system console or other computer monitors. The contents of files.
<code>Bold monospaced font</code>	Words or characters you type. What you type is always shown in lowercase letters, unless you must type it in uppercase letters.

Special messages

This guide contains special messages that are described as follows:

Note

A note contains important information that helps you install or operate the system efficiently.

Caution

A caution contains instructions that you must follow to avoid damage to the equipment, a system crash, or loss of data.

About this chapter

This chapter provides an overview of the setup process and things to consider before you begin the process.

Topics in this chapter

This chapter discusses the following topics:

- ◆ [“Before you begin”](#) on page 2
- ◆ [“The setup process”](#) on page 5

Before you begin

Product documentation

Product documentation is shipped with the filer and is available online at <http://now.netapp.com>. Read the Data ONTAP 6.4 Release Notes along with any other information that describes the latest details of this release, such as a Read Me First, or the description of this release at <http://now.netapp.com>. Included with the product documentation that comes with your filer is a list of all licenses that were purchased for the filer.

CD-ROM and diskettes shipped with the filer

The filer was shipped with a CD-ROM and system boot diskettes, for filers that use diskettes instead of CompactFlash™ cards. Because the system software was installed at the factory, you don't need the CD-ROM or system boot diskettes to install or configure a new filer. However, Network Appliance recommends that you store the CD-ROM and system boot diskettes in a safe place so that you can use them to recover from any unlikely software problems in the future.

The following table describes the CD-ROM and system boot diskettes.

Media	Contents
Data ONTAP CD-ROM	The CD-ROM contains the system software and system boot software in two formats so that it can be read by both UNIX and PC workstations. It also includes product documentation. If you need to reinstall the system software for any reason, you need this CD-ROM. For full information about the contents of the CD-ROM, read the file named index.htm on the CD-ROM. Note_____ Call Network Appliance Technical Support for instructions before reinstalling system software on the filer at +1 (888) 4-NETAPP. _____
System boot diskettes	If the filer fails to boot from hard disk, you must boot the filer from the system boot diskettes, unless the filer has a CompactFlash card. See the hardware guide for your filer for details about how to boot from media.

Media	Contents
Custom MIB	Use the custom Management Information Base (MIB) with SNMP to get detailed information about filer operation. For further information, see the <i>Network Management Guide</i> .

Administrator privilege requirements

You must have administrator privileges for the computer that serves as the administration host.

If your filer has an NFS license, you must have the appropriate administrator privileges to access and administer the UNIX host.

If your filer has a CIFS license, you must have the appropriate administrator privileges to access and administer the Windows host and the Windows domain.

Use of DHCP with F800 series and F900 series filers for remote access

Enabling Dynamic Host Configuration Protocol (DHCP) to assign a static IP address to the onboard interface (e0) of an F800 series or F900 series filer during first-time setup enables you to use a Telnet client to access the filer and complete the first-time configuration remotely. Otherwise, you must attach a hard-wired serial console to the filer to complete the configuration.

When you use DHCP to assign an IP address to the onboard interface, the filer

- ◆ Obtains the address from the DHCP server when the filer is turned on
- ◆ Configures the onboard interface with the IP address
- ◆ Becomes accessible to a Telnet client or the Setup Wizard

Caution

The DHCP server must return a static IP address for the interface. If the server returns a dynamic IP address, the filer displays an error message and continues to use the IP address permanently—which can result in an IP address conflict if the DHCP server assigns the IP address dynamically to other clients from time to time.

Installation of filer hardware

For current system configuration information, such as storage capacity, expansion slot assignments, and disk shelf, disk drive, and tape drive support, see the *System Configuration Guide* on the NOW site at <http://now.netapp.com>. You can install the filer hardware using the *Easy Install Guide* or the hardware guide for your filer.

Installation of clustered filers

If you are installing a filer cluster, cable the filers in the cluster according to the instructions in the hardware series cluster guide. Note that clustered filers require that much of the configuration information matches. See “[Verifying configuration for clustered filers](#)” on page 43 for more information.

Information about SnapDrive system requirements and setup for your filer

If you plan to use SnapDrive™ on your Windows 2000 host to manage virtual disks on your filer, see the *SnapDrive™ Installation and Administration Guide* for information about SnapDrive system requirements and setup for your filer.

Information required to configure a new filer

During the setup process, you configure the new filer to run on the network. This requires a lot of information about the filer and your network, including licensed protocols, administration host name, network connections, DNS or NIS services, WINS, and SMTP server names, and so on.

See Appendix A, “[Configuration Worksheet](#),” on page 55 for a complete list of the required information, which you can use as a template to record your values.

Information about setting up LDAP authentication on your filer

For information about how to configure your filer to use LDAP authentication, see the *Network Management Guide*.

Information about setting up Kerberos V5 authentication for NFS on your filer

For information about how to configure your filer to use Kerberos V5 authentication for NFS, see the *File Access Management Guide*.

The setup process

Stages of the setup process

The following table describes the stages of the process for setting up and configuring a new filer for the first time.

Stage	What you do	Details
1	Attach the new filer to the network so that you can use one of the setup methods to set up and configure your filer.	
2	If you...	Then...
	Have a DHCP server on the same segment as your new F800 series or F900 series filer and intend to use the DHCP service to assign an IP address to the onboard interface	1. Locate the label that has the MAC address for the onboard interface on the left side of the back of the filer. 2. Record the MAC address in a copy of the Configuration Worksheet in A. 3. Configure the DHCP server to return a static IP address for the interface based on the MAC address for the onboard interface.
	Are not using DHCP to configure the filer's onboard interface (e0)	Attach a serial console to the filer.
3	Gather the information and record it.	Gather the information described in Chapter 2, " Information Gathering ," on page 7" and record it on a photocopy of the Appendix A, " Configuration Worksheet ," on page 55.
4	Select the setup method to configure the filer; follow the instructions on how to use the method.	Read Chapter 3, " Setup Methods ," on page 19" to decide which setup method to use.

Stage	What you do	Details
5	Verify the setup.	After completing the setup process, go to Chapter 4, “ After Setup Is Complete ,” on page 29.”

Information you need to gather

You need to gather the information described in the following tables to set up and configure your filer. You can use the Configuration Worksheet in Appendix A to record your values.

How setup methods call out information types

When you use a setup method, you are prompted to enter values for information types, depending on the setup method you've chosen. Not all setup methods prompt you for the same information or in the same order. The `setup` command prompts you for all of the values needed to set up your filer, based on what Data ONTAP discovers upon bootup.

The Setup Wizard prompts you for the information types related to basic filer configuration, network services, network addresses, and protocols.

The NetApp QuickSetup pre-fills DHCP fields and prompts you for network information (IP address, network mask, and routing gateway) to begin.

The differences among the setup methods are noted in the following tables. The alternate names used by the Setup Wizard for the term used in the `setup` command appear in parenthesis.

Notation for filer cluster configurations

If you are configuring a filer as part of a cluster, some information types must be unique for each filer in the cluster, and some information types must be identical on both filers. In the tables below, the information type description indicates whether the information type must be unique for each filer or identical on both filers.

MAC address

If you intend to use the DHCP service to assign an IP address to the onboard interface, locate the MAC address and record it.

Information type	Description
MAC address (or Interface MAC Address)	The unique address of the network interface built into the filer's motherboard. You can find the address on a label on the back of F800 series filers or by entering <code>sysconfig -a</code> at the filer prompt and looking for the following output: <pre>slot 0: 10/100 Ethernet Controller IV e0 MAC Address: 00:00:4c:0f:2c:ee</pre>

Required filer information

The following information is required for all installations.

Information type	Description
Host name (Hostname or Filer Name)	The name by which the filer is known on the network. If the filer is licensed for the NFS protocol, the name can be no longer than 32 characters. If the filer is licensed for the CIFS protocol, the name can be no longer than 15 characters. The host name must be unique for each filer in a cluster.
Password (Administrative Password)	A password that the filer requires before granting administrative access at the console, through a Telnet client, or through the Remote Shell protocol.
Time zone (Timezone)	The time zone in which the filer resides. See Appendix B, “Time Zones,” on page 59 for a list of valid time zones. The time zone must be identical on both filers in a cluster.
Filer location (Location)	A description of the physical location of the filer. This information sets the SNMP location information.

Information type	Description
Language	The language used for multiprotocol filers if both the CIFS and NFS protocols are licensed. See Appendix C, “Supported Languages,” on page 65 for a list of supported languages and their abbreviations. The language must be identical on both filers in a cluster.
Administration host (Administrative Host)	A client computer that is allowed to access the filer through a Telnet client or through the Remote Shell protocol.

Virtual network interfaces

If you want to create virtual network interfaces (vifs), you must use the `setup` command. Begin by gathering the following information.

Information type	Description
Virtual network interfaces	For each vif, gather the following information: ◆ Name of each vif ◆ Number of links for each vif ◆ Link names for each link The virtual network interface information must be identical on both filers in a cluster.

Network information

If your network uses standard Ethernet or Gigabit Ethernet (GbE) interfaces, gather the following information for each interface. See the *Network Management Guide* for details about any of the following information types.

Information type	Description
Network Interface name	The name of the Ethernet (or GbE) interface, depending on what port the Ethernet card is installed in. Examples include e0 (for Ethernet single); e1 (for GbE); and e3a, e3b, e3c, e3d (for Ethernet quad-port). Network interface names are automatically assigned by Data ONTAP as it discovers them.
IP address	A unique address for each network interface.
Subnet mask (Network Mask)	The subnet mask for the network to which each network interface is attached. Example: 255.255.255.0
Partner IP address (Interface to Take Over)	If your filer is licensed for cluster takeover, record the interface name or IP address belonging to the takeover partner that this interface should take over during a cluster takeover. Examples: e0 or 10.10.10.2 For vifs, you must specify the interface name rather than the interface IP address.
Media type (Network Type)	The type of interface: ◆ 100tx-fd (100Base-TX, full-duplex) ◆ tp-fd (10Base-T, full-duplex) ◆ 100tx (100Base-TX, half-duplex) ◆ tp (10Base-T, half-duplex) ◆ auto (autonegotiate speed and duplex)
If the interface supports jumbo frames, Maximum Transmission Unit (MTU) size	The default frame size defined for a jumbo frame on the filer is 9,018 bytes, and the maximum supported size is 9,210 bytes. These sizes correspond to MTU sizes of 9,000 and 9,192, respectively.

DAFS protocol

If your filer is licensed for the DAFS protocol, gather the following information.

Information type	Description
VI/IP network device	If your network uses VI/IP network interfaces that you want to configure to work with DAFS, gather the following information: ◆ IP address ◆ Netmask (or subnet mask)
Cluster network devices that use DAFS	Record the names of the cluster partner VI/IP network interfaces you want to configure to work with DAFS. Note_____ This information is required only if you licensed cluster takeover. _____
Filer volumes to export	Record the names of the filer volumes exported through the DAFS service.
Authentication for privileged clients	Record the authentication level for privileged clients. This determines whether the clients communicating with the filer are privileged clients that are trusted to have multiple sets of user credentials. Note_____ The DAFS Database Accelerator client requests AUTH_NONE access to communicate with the filer. _____
Idle timeout for sessions	Record the length of time, in seconds, that a session can be idle before a session ends, or times out.

ATM LANE

If your network supports ATM LANE, gather the following information.

Information type	Description
ATM ForeIP/ SPANS	If your network uses Asynchronous Transfer Mode (ATM) Simple Protocol for ATM Network Signaling (SPANS) interfaces, gather the following information for each interface: ◆ Interface name ◆ Host IP address - OR - Partner IP address ◆ Netmask (or subnet mask) ◆ Media type The ATM ForeIP/SPANS interface information must be identical on both filers in a cluster.
ATM LANE	If your network uses ATM LAN Emulation (LANE) interfaces, gather the following information for each interface: ◆ Interface name ◆ Host IP address - OR - Partner name ◆ Emulated LAN (ELAN) name ◆ LANE Configuration Server (LECS) address ◆ IP address ◆ Netmask (or subnet mask) The ATM LANE interface information must be identical on both filers in a cluster.

Default gateway

If your network uses routers, gather the following information.

Information type	Description
Router (Routing Gateway)	Gather the following information for the primary gateway to use for routing outbound network traffic: ◆ Gateway name ◆ IP address of the router

HTTP protocol

If your filer is licensed for HTTP, gather the following information.

Information type	Description
Location of the http directory	The directory where the Web files and directories are stored. The default directory is /home/http in the filer's root volume.

DNS services

If your network uses DNS services, gather the following information.

Information type	Description
DNS domain	The name of your network's Domain Name Service (DNS). The DNS domain name must be identical on both filers in a cluster.
DNS servers	The IP addresses of your DNS servers.

Information type	Description	
	If...	Then...
	If your site uses DNS	Gather the IP address for one or two DNS servers that the filer should use for host name lookups.
	If your site has a Windows 2000 domain	Gather the IP address of the DNS server that supports your Windows 2000 domain in the Configuration Worksheet. Note————— When you run the <code>cifs setup</code> command (after setup is complete), Data ONTAP creates the Windows 2000 account through kerberos and LDAP.

NIS services

If your network uses NIS services, gather the following information.

Information type	Description
NIS domain name	The name of your NIS domain. The filer can use an NIS Domain to authenticate users and client computers. The NIS domain name must be identical on both filers in a cluster.
NIS servers	The host names of your preferred NIS servers.

Information type	Description	
	If...	Then...
	Your site uses NIS	Record the host names of your NIS servers.
	You want NIS to broadcast to find a server	Enter “*” when you run setup.

CIFS protocol

If your filer is licensed for the CIFS protocol, gather the following information.

Information type	Description
Windows domain	The name of your Windows domain. If your site uses Windows servers, it has one or more Windows domains. Record the name of the Windows domain to which the filer should belong. Note_____ The Windows domain name value does not need to be identical on both filers in a cluster. You can have each filer in a cluster exist in a different domain and/or workgroup from its partner. However, if you have a multiprotocol environment and use UID to SID mapping, the UNIX security information must be compatible between the two domains. _____
WINS servers	The servers that handle Windows Internet Name Service (WINS) name registrations, queries, and releases. If you choose to make the filer visible through WINS, you need to record up to four WINS IP addresses. Note_____ The WINS server value does not need to be identical on both filers in a cluster. You can have each filer in a cluster exist in a different domain and/or workgroup from its partner. _____

Information type	Description
Windows 2000 user (Windows 2000 administrator)	The name of the administrative Windows 2000 domain user who has sufficient privilege to add this filer to the Windows 2000 domain. Note_____ This is only required if you are using a Windows 2000 domain. _____
Windows 2000 user password (Windows 2000 administrator password)	The Windows 2000 domain password to be used for the Windows 2000 user or administrative user. If your domain is a Windows 2000 domain, you must use the password for the user having sufficient privilege to add the filer to the domain. Note_____ Before you enter the password, be sure to create a secure connection (HTTPS); otherwise, the password is sent to the filer unencrypted. _____
Active Directory	The Windows 2000 Active Directory container in which to place filer accounts. This can be either the default of Computers or a previously created organizational unit (OU) specified by you. The path for the OU must be specified in reverse order, separated by commas. Example: if the path is eng\dev\mgmt, the active directory distinguished name is as follows: ou=mgmt, ou=dev, ou=eng Note_____ A user in the Windows 2000 domain can pre-create the account and Data ONTAP updates that account. _____

Remote management controller for autosupport

If your filer has a remote management controller (RMC) for enhanced autosupport, gather the following information.

Information type	Description
MAC address	If you are using DHCP service, record the MAC address for the RMC. Locate the MAC address by entering <code>sysconfig -v</code> at the filer prompt and looking at the output for the RMC in slot 1.
IP address	If you are not using DHCP service, record the IP address for the RMC.
Network mask	If you are not using DHCP service, record the network mask for RMC.
Gateway	If you are not using DHCP service, record the IP address for the RMC gateway.
Media type	The type of interface for the RMC: ◆ 100tx-fd (100Base-TX, full-duplex) ◆ tp-fd (10Base-T, full-duplex) ◆ 100tx (100Base-TX, half-duplex) ◆ tp (10Base-T, half-duplex) ◆ auto (autonegotiate speed, duplex, and flow control)
Mail host	The name or IP address of the preferred mail host. The mail host delivers RMC alerts and local autosupport e-mail.

Methods of setting up a filer

You can set up your filer using the following methods:

- ◆ The `setup` command at a console attached to the filer's serial port or at a Telnet client if you have DHCP enabled
- ◆ The Setup Wizard from a Web browser
- ◆ The NetApp QuickSetup wizard on a Windows client
- ◆ The `cifs setup` command (to configure your filer to be NTFS-only or multiprotocol, after you have successfully completed running `setup`)

Note

There are several restrictions for using the wizards.

How to decide which method to use

Use the following table to decide which setup method to use.

If...	Use...
Your network does NOT support configuration through DHCP OR Your filer uses vifs, ATM LANE, or ATM SPANS interfaces OR You need to begin setup prior to using the wizards or running <code>cifs setup</code> OR You prefer to use the command line to set up your filer	The <code>setup</code> command

If...	Use...
Your network supports configuration through DHCP AND your filer does NOT use vifs, ATM LANE, or ATM SPANS interfaces AND you want to set up the filer through a Web browser AND you use the default Active Directory container for a Windows 2000 setup	The Setup Wizard
Your network supports configuration through DHCP AND your filer does NOT use vifs, ATM LANE, or ATM SPANS interfaces AND you want to set up the filer through a Windows NT4 client OR you want to set up a Windows 2000 client and you use the default Active Directory container AND you want to securely transfer the password for Active Directory Administrator without cleartext over the network	The NetApp QuickSetup wizard
You finished running the <code>setup</code> command to enter some basic filer configuration information, and either of the Windows setup wizards want to configure your filer for NTFS-only or multiprotocol	The <code>cifs setup</code> command

Using the setup command method

To use the `setup` command, complete the following steps.

Step	Action
1	Boot the filer by doing the following: ◆ Turn on the power switches to all disk shelves. ◆ Turn on the filer's power switches. Note_____ After the filer boots, Data ONTAP begins discovering the devices, interfaces, and licences installed in the system. Data ONTAP displays messages on the console and starts prompting you to enter setup information. _____
2	Answer the prompts using the information you gathered earlier.

Step	Action
3	Decide whether to enter a host name. When you specify an administration host, the filer's root file system (/vol/vol0 by default) is accessible to the administration host in the following ways: ◆ By mounting it through the NFS protocol, if the filer is licensed for the NFS protocol Example: To mount netapp:/vol/vol1/MyQtree on a UNIX host, you would enter the following command: <pre>mount filer:/vol/vol1/MyQtree/mnt/netapp /MyQtree</pre> ◆ As a share named C\$, if the filer is licensed for the CIFS protocol. If you enter the name of an administration host, you limit filer administration to that host. However, you can add additional administration hosts after setup by modifying the filer's NFS exports and CIFS shares. If you specify a client as the administration host, enter the following information: ◆ The administration host name ◆ The IP address of the administration host Caution If you do not enter the name of an administration host, the filer and its file systems are available to all hosts on the network. Users from any host can gain access to the filer's root file system and access the configuration files in the /etc directory. This could cause a security breach. However, you might want the flexibility to administer the filer from any UNIX or Windows client on the network. If so, leave the field blank and press Enter. If you specify an administration host and later decide you want to remove it, you can enter the following command at the filer prompt after setup is complete: <pre>options admin.hosts ""</pre>

Step	Action
4	When you see the question: “Would you like to continue setup through the Web interface?” enter n to continue using the <code>setup</code> command.
5	When setup is complete, to transfer the information you’ve entered to the filer, enter the following command, as directed by the prompt on the screen. reboot Note_____ If you do not enter <code>reboot</code>, the information you entered does not take effect. _____
6	If you are configuring a pair of filers in a cluster and have not configured the other filer, set up the other filer in the cluster.

Using the Setup Wizard method

To use the Setup Wizard, complete the following steps.

Step	Action
1	Configure the following information into your DHCP server: ◆ Filer MAC address ◆ Filer IP address with an infinite lease ◆ Any of the following optional information: ❖ Routers ❖ Default route ❖ DNS domain name ❖ DNS servers ❖ NIS domain name ❖ NIS servers ❖ WINS servers ❖ SMTP server Note_____ If you do not configure this information into your DHCP server, the corresponding fields in the Setup Wizard will be empty, and you will need to enter the information manually into the Setup Wizard fields. _____
2	Boot the filer by doing the following: ◆ Turn on the power switches to all disk shelves. ◆ Turn on the filer's power switches Note_____ After the filer boots, Data ONTAP begins discovering the devices, interfaces, and licences installed in the system, prompting you to enter setup information. _____

Step	Action
3	Answer the prompts using the information you gathered earlier. When you see the question: “Would you like to continue setup through the Web interface?” enter y to point a Web browser to the following URL, substituting the filer’s IP address for <i>filer_ip_address</i>: <pre>http://filer_ip_address/api</pre> Example: If the IP address of the onboard Ethernet interface (named e0) is 10.14.26.99, enter the following: <pre>http://10.14.26.99/api</pre> Result: The Setup Wizard presents the first screen.
4	Fill in the blank fields with the information you gathered earlier. Follow the directions in the Wizard to move through the screens.
5	After you verify that the configuration information is correct as shown on the last screen, click Finish.
6	If you are configuring a pair of filers in a cluster and have not configured the other filer, set up the other filer in the cluster now.

Using the NetApp QuickSetup wizard method

The NetApp QuickSetup wizard, version 1.01, has the following system requirements:

- ◆ A NetApp filer with Data ONTAP 6.1 software or later attached to a network with a DHCP server
- ◆ The CIFS license installed on the filer
- ◆ A Windows NT 4.0 or Windows 2000 workstation within the same domain or workgroup as the new filer that has access to any remote subnet that contains the filer

To use the NetApp QuickSetup wizard, complete the following steps.

Step	Action
1	Configure the following information into your DHCP server: ◆ Filer MAC address ◆ Filer IP address with an infinite lease ◆ Any of the following optional information: ❖ Routers ❖ Default route ❖ DNS domain name ❖ DNS servers ❖ NIS domain name ❖ NIS servers ❖ WINS servers ❖ SMTP server Note_____ If you do not configure this information into your DHCP server, the corresponding fields in the QuickSetup wizard are empty, and you must enter the information manually into the QuickSetup wizard fields.
2	Boot the filer by doing the following: ◆ Turn on the power switches to all disk shelves. ◆ Turn on the filer's power switches Note_____ After the filer boots, Data ONTAP begins discovering the devices, interfaces, and licences installed in the system, prompting you to enter setup information.

Step	Action
3	Install the NetApp QuickSetup wizard using one of the two methods: ◆ Insert the Data ONTAP CD-ROM into the administrator's workstation CD-ROM drive and follow the prompts from the wizard. ◆ Download the qsetupx_y.zip file, where x_y represents the latest version number, from http://now.netapp.com. From the NOW page, follow the links to Service & Support home page > Download Software > Tools & Utilities > NetApp QuickSetup.
4	Unzip the qsetupx_y.zip file into a directory and launch qsetup.exe from the directory.
5	Fill in the blank fields with the information you gathered earlier. Follow the directions in the wizard to move through the screens.
6	If you are configuring a pair of filers in a cluster and you have not configured the other filer, set up the other filer in the cluster now.

Using the cifs setup command

To use the `cifs setup` command, complete the following steps.

Step	Action
1	Complete any of the previous setup methods.
2	Enter the <code>cifs setup</code> command and use the information you gathered to answer questions posed by the prompts.

About this chapter This chapter discusses what you do after setup is complete.

Topics in this chapter

This chapter discusses the following topics:

- ◆ “[The verification process](#)” on page 30
- ◆ “[Verifying network connections](#)” on page 33
- ◆ “[Verifying host name resolution](#)” on page 35
- ◆ “[Configuring NFS clients to access the filer](#)” on page 36
- ◆ “[Configuring CIFS clients to access the filer](#)” on page 39
- ◆ “[Starting FCP](#)” on page 41
- ◆ “[Starting iSCSI](#)” on page 42
- ◆ “[Verifying configuration for clustered filers](#)” on page 43
- ◆ “[Determining the current configuration for clustered filers](#)” on page 48
- ◆ “[Verifying the RMC connections and setup](#)” on page 50
- ◆ “[Administering your filer](#)” on page 51

The verification process

Complete process The following table describes the complete process for verifying that your filer is communicating on the network, that it is online and ready to operate. Also included are recommendations for preparing the filer for use. To make the filer ready to use, complete the following steps.

Stage	What you do	For details
1	Verify the filer’s network connection.	See “ Verifying network connections ” on page 33.
2	Verify that the filer is online and has the appropriate volumes and licenses.	After setup, the filer is online, and the following entities exist on the filer: /vol/vol0 (a virtual root path) /vol/vol0/home (a directory) Note /vol is not a directory—it is a special virtual root path under which the filer mounts its volumes. You cannot mount /vol to view all the volumes on the filer; you must mount each filer volume separately. For NFS: /vol/vol0 is exported to the administration host for root access; /vol0/home is exported to the administration host for root access and to all clients for general access. For CIFS: /vol/vol0 is shared as C\$; only the system administrator with the root password has read and write access to the C\$ share. The /vol/vol0/home directory is shared as HOME without access granted to anyone.

Stage	What you do	For details
3	For NFS, configure clients to access the filer.	See “ Verifying host name resolution ” on page 35.
4	For CIFS, configure clients to access the filer.	See “ Configuring CIFS clients to access the filer ” on page 39.
5	For HTTP, configure HTTP service.	If you purchased a license for the HTTP protocol for you filer, turn on HTTP service using the FilerView® interface or the console commands described in the <i>File Access Management Guide</i> .
6	For CIFS, set up password and group files.	If you purchased a license for the CIFS protocol and you are not using a Windows NT or 2000 domain controller to authenticate users, configure password and group files according to the instructions in the <i>Storage Management Guide</i> .
7	Configure CIFS shares.	If you purchased a license for the CIFS protocol, configure CIFS shares so that users can access directories on the filer according to the instructions in the <i>File Access Management Guide</i> .
8	Assign access rights to CIFS users and groups.	If you purchased a license for the CIFS protocol, assign access rights using the instructions in the <i>File Access Management Guide</i> .
9	Install the SecureShare™ program on CIFS clients.	If your filer is licensed for the CIFS protocol, you can install the SecureShare program on Windows client machines according to the instructions on the NOW site and use the feature as described in the <i>File Access Management Guide</i> .

Stage	What you do	For details
10	Configure DAFS.	If your filer is licensed for the DAFS protocol, configure the DAFS settings according to the instructions in the <i>File Access Management Guide</i> .
11	Start FCP.	If your filer is licensed for FCP, follow the procedures in “ Starting FCP ” on page 41.
12	Start iSCSI.	If your filer is licensed for iSCSI, follow the procedures in “ Starting iSCSI ” on page 42.
13	Check the configuration of clustered filers.	If you configured clustered filers, check the cluster configuration information according to “ Verifying configuration for clustered filers ” on page 43.
14	Learn about the Data ONTAP software.	Read the information in “ CD-ROM and diskettes shipped with the filer ” on page 2.
15	Check the RMC connections.	Read the information in “ Verifying the RMC connections and setup ” on page 50.
16	Learn about FilerView.	Read the information in “ Administering your filer ” on page 51.
17	Install electronic documentation.	1. Obtain the documentation in zip file format from either of the following sources: • The software download page on NOW (http://now.netapp.com) • The CD-ROM: <i>drive:\doc\docs.zip</i> 2. Use your browser to open the page at http://filer_name/na_admin 3. Select the Install Documentation link. 4. Follow the prompts to locate and install the documentation zip file.

Verifying network connections

Verifying communication

To verify filer communication, complete the following steps.

Step	Action	
1	If you want to use the ping command to verify the...	Then
	Hostname interface	Complete Steps 2 and 3.
	IP address of the interface	Complete Steps 4 and 5.
2	At a client attached to the network, enter the following command: ping hostname-interface <i>hostname</i> is the host name that you assigned to the filer when you ran <code>setup</code> . <i>interface</i> is one of the interface names that the filer assigned when you ran <code>setup</code> . Example: This command tests the network connections for a filer that has the host name “toaster” with an interface named <code>e0</code> installed. ping toaster-e0	
3	Repeat the test once for each interface that is installed in the filer.	

Step	Action
4	At a client attached to the network, enter the following command: ping hostname-IP_address <i>hostname</i> is the host name that you assigned to the filer when you ran <code>setup</code>. <i>IP_address</i> is the IP address that the filer assigned to that interface during <code>setup</code>. Example: This command tests the network connections for a filer that has the host name “toaster” with an interface named <code>e0</code> installed at 172.25.50.10. ping 172.25.50.10
5	Repeat the test once for each interface that is installed in the filer.

Troubleshooting problems

To troubleshoot a problem when an interfaces does not respond to a `ping` command, complete the following steps.

Step	Action
1	Check to make sure that the interface is securely attached to the network.
2	Check to make sure that the media type is set up correctly if the interface is using a multiport Ethernet card with different port speeds.
3	Check to make sure that the routers function properly with correct routing information if the <code>ping</code> command is issued from a network not directly attached to the interface.

Verifying host name resolution

Automatically generated host names for interfaces require resolution

When you ran `setup`, the filer generated a host name for each interface by appending the number of the interface to the filer host name. You need to make sure that these host names are resolved into IP addresses.

For example, the interface name for the first interface on a filer named “toaster” might be `toaster-e0`; the second interface might be `toaster-e1`.

Host name resolution

To ensure host names are resolved into IP addresses, complete the following step.

Step	Action	
1	If you use...	Then...
	DNS or NIS for name resolution	Add an entry in your DNS or NIS databases for each of the filer interfaces. Example: This shows how the entries might look for a filer with four interfaces: 192.16.3.145 toaster-e0 192.16.3.145 toaster-e1 192.16.3.145 toaster-f0 192.16.3.145 toaster-a5
	/etc/hosts files for name resolution	Add an entry in each host’s /etc/hosts file for each of the filer interfaces.

Configuring NFS clients to access the filer

How to make filer data available

To make filer data available to NFS clients, you need to do the following tasks:

- ◆ export the filer’s file system
- ◆ mount the filer’s file system
- ◆ create a directory on the NFS client to act as a mount point

Exporting NFS clients

You must export the filer’s file systems before NFS clients can mount them. To export the filer’s file systems, complete the following steps.

Step	Action																														
1	Determine valid path names for directories by entering the following command at the filer prompt: <pre>qtree</pre> Example output: <table><tr><th>Volume</th><th>Tree</th><th>Style</th><th>Oplocks</th><th>Status</th></tr><tr><td>-----</td><td>-----</td><td>-----</td><td>-----</td><td>-----</td></tr><tr><td>vol0</td><td>home</td><td>unix</td><td>enabled</td><td>normal</td></tr><tr><td>vol1snap</td><td>qtree1</td><td>unix</td><td>enabled</td><td>normal</td></tr><tr><td>vol2eng</td><td>team1</td><td>mixed</td><td>enabled</td><td>normal</td></tr><tr><td>vol2mkt</td><td>nt</td><td>ntfs</td><td>enabled</td><td>normal</td></tr></table>	Volume	Tree	Style	Oplocks	Status	-----	-----	-----	-----	-----	vol0	home	unix	enabled	normal	vol1snap	qtree1	unix	enabled	normal	vol2eng	team1	mixed	enabled	normal	vol2mkt	nt	ntfs	enabled	normal
Volume	Tree	Style	Oplocks	Status																											
-----	-----	-----	-----	-----																											
vol0	home	unix	enabled	normal																											
vol1snap	qtree1	unix	enabled	normal																											
vol2eng	team1	mixed	enabled	normal																											
vol2mkt	nt	ntfs	enabled	normal																											
2	From the example output, convert the first three entries into valid path names by using the volume entry followed by the qtree entry: <pre>/vol0/home /vol1snap/qtree1 /vol2eng/team1</pre> Note_____ Only “unix” and “mixed styles” can be mounted on NFS clients; therefore, /vol2mkt/nt cannot be mounted. _____																														
3	Use a text editor from an NFS client to open the /etc/exports file.																														

Step	Action
4	Add the filer directories to the <code>/etc/exports</code> file to export them. For information about specifying entries and access restrictions, see the chapter about file access using NFS in the <i>File Access Management Guide</i> to find out how <code>/etc/exports</code> works. Example: <pre>/vol/vol0/home -anon=0 /vol/vol1snap/qtreet1 /vol/vol2eng/team1</pre>
5	Save the file and exit the text editor.

Mounting NFS client file systems

You can mount the filer's file system by using one of the following methods:

- ◆ Add entries for the directories exported from the filer in each client's `/etc/vfstab` file (for Solaris clients) or `/etc/fstab` file (for non-Solaris clients)
- ◆ Use the UNIX `mount` command
- ◆ Use the UNIX automounter tool

To mount the filer's file systems by adding entries to the `/etc/vfstab` file, complete the following steps.

Step	Action
1	Use a text editor from an NFS client to open the <code>/etc/vfstab</code> (or <code>/etc/fstab</code>) file.
2	Add the entries for the directories exported from the filer in each client's <code>/etc/vfstab</code> file (or <code>/etc/fstab</code>) file. Example: <pre>toaster:/vol/vol0/home nfs - yes - rw,bg,hard toaster:/vol/vol1snap/qtreet1 -yes - rw,bg,hard toaster:/vol/vol2eng/team1 - yes - rw,bg,hard</pre> Note_____ The <code>/vol/vol0/home</code> directory is used as a sample filer directory in this procedure. You should use a path that exists on your filer.

Step	Action
3	Save the file and exit the text editor. Result: After you edit the NFS clients' /etc/vfstab file (or /etc/fstab file), the clients mount the file systems automatically when they boot.

Creating a directory on the NFS client

To create a directory on the NFS client, complete the following step.

Step	Action
1	At the NFS client, create a directory to act as a mount point. Example: <code>mkdir /n/toaster/home</code>

Mounting a filer directory on the NFS client

To mount the filer's directory on the NFS client, complete the following steps.

Step	Action
1	To mount the filer's /vol/vol0/home directory to /n/toaster/home, add the following line to the NFS client's /etc/vfstab file (or /etc/fstab file) if the client is on the same network as the filer's e0 Ethernet interface: <pre>toaster-e0:/vol/vol0/home /n/toaster/home nfs rw 0 0</pre> Result: The file system is mounted when the client reboots.
2	To mount the /vol/vol0/home directory without a client reboot, enter the following command at the NFS client: <pre>mount toaster-e1:/vol/vol0/home /n/toaster/home</pre> Result: After the /vol/vol0/home directory on the filer is mounted, the user on the NFS client can create, modify, or remove files in /n/toaster/home.

Configuring CIFS clients to access the filer

How filer data is visible to CIFS clients

After setup is complete, the filer becomes visible to CIFS clients by automatically registering with the master browser on its local network.

If cross-subnet browsing is configured correctly, the filer is now visible to all CIFS clients. For more information about cross-subnet browsing, refer to Microsoft networking documentation.

CIFS client connection methods

The following table describes the various methods by which CIFS clients can connect to the filer, depending on the client operating system. For more information about commands and windows mentioned in the table, see the operating system manual for your computer.

Method	Client operating system	Command or window
Connecting to the filer as a network drive	Windows 95, Windows 98, Windows Me	Map Network Drive window—limited by Workgroup or domain membership
	Windows NT 4.0	Map Network Drive window (from NT Explorer)
	Windows 2000, Windows XP client	Map Network Drive
Clicking the filer icon	Windows 95, Windows 98, Windows Me, Windows NT 4.0	Network Neighborhood
	Windows Me, Windows 2000, Windows XP	My Network Places
Connecting to the filer as a network drive.	Windows NT 3.51, Windows for Workgroups	Connect Network Drive window (from the File Manager)
Mapping a share to a drive letter on the command line.	Operating systems that support the DOS command-line interface and supports the net use command, including Windows 2000 and Windows XP	net use command Example: net use f: \\toaster\home

Accessing the filer

To inform users about how to access the filer, complete the following steps.

Step	Action	
1	Determine the connection methods that are correct for your CIFS clients.	
2	If your CIFS clients can...	Then...
	Use methods 1, 3, and 4 to connect to the filer	Inform your users of the filer's UNC path. The UNC path consists of a computer name and a share name in the following format: <i>\\computer_name\share_name</i> Example: If the filer is named toaster and the directory that contains users' directories is shared with the name "home," the UNC path is \\toaster\home. Result: After you provide users with information about how to access the filer, they can connect to the filer, view directories, and read and write files.
	Use method 2 to connect to the filer	Inform your users of the filer name so that they can locate the filer in Network Neighborhood.

Starting FCP

Starting the FCP service

To start the FCP service, complete the following step.

Step	Action
1	Enter the following command: fcg start

Verifying that the FCP service is running

To verify that the FCP service is running, complete the following step.

Step	Action
1	Enter the following command: fcg status

Starting iSCSI

Starting the iSCSI service

To start the iSCSI service, complete the following step.

Step	Action
1	Enter the following command: <code>iscsi start</code>

Verifying that the iSCSI service is running

To verify that the iSCSI service is running, complete the following step.

Step	Action
1	Enter the following command: <code>iscsi status</code>

Verifying configuration for clustered filers

Values need to match

When you configure your clustered filers, the following configuration information needs to match.

- ◆ Configuration files
- ◆ Licenses
- ◆ Options
- ◆ Parameters
- ◆ Network interfaces

Note

The values for domain controllers and WINS servers no longer need to be identical on both filers in a cluster. You can have each filer in a cluster exist in a different domain and/or workgroup from its partner. However, if you have a multiprotocol environment and use UID to SID mapping, the UNIX security information must be compatible between the two domains. For example, if you have a UID of 119, it must map to the same NT account for both partners.

After you have configured both filers, use the following tables to ensure that both filers have the same values in their configuration.

Configuration file matching

Use the following table to indicate you verified that the contents of the configuration files in the root volume of the filer (not the UNIX administration host) are identical for both filers.

File	Filer 1	Filer 2
/etc/resolv.conf		
/etc/httpd.mimetypes		
/etc/dgateways		
/etc/nsswitch.conf		

License matching

Use the following table to record the codes for each of the licenses for both filers in the cluster to ensure that licenses have identical values in both filers.

Feature	Filer 1 license code	Filer 2 license code
nfs		
cifs		
http		
cluster		
snapmirror		
snaprestore		
snapmanagerexchange		
dafs		
syncmirror		
vfiler		
vld		
sms		
snapvault_client		
snapvault_server		
fcg		
iscsi		

Option matching

Use the following table to compare the output of the `options` command for both filers in the cluster to ensure that the options have identical values in both filers.

Option	Filer 1	Filer 2
<code>cf.timed.enable</code>		
<code>cifs.show_snapshot</code>		

Option	Filer 1	Filer 2
Note_____ The following option is required when the FCP license is enabled and the service is running. _____ <code>cf.takeover.on_panic</code> (ON) Note_____ You do not need to set this option manually on Filer 2; it will automatically be set to the value of Filer 1. _____		
Note_____ The following option is required when the FCP license is enabled and the service is running. _____ <code>coredump.timeout.enable</code> (ON)		
Note_____ The following option is required when the FCP license is enabled and the service is running. _____ <code>coredump.timeout.seconds</code> (60)		
<code>dns.domainname</code>		
<code>dns.enable</code>		
<code>http.admin.enable</code>		
<code>httpd.timeout</code>		
<code>httpd.timewait.enable</code>		
<code>ip.path_mtu_discovery.enable</code>		
<code>nfs.per_client_stats.enable</code>		
<code>nfs.v2.df.2gb.lim</code>		
<code>nfs.v3.enable</code>		

Option	Filer 1	Filer 2
<code>nis.domainname</code>		
<code>nis.enable</code>		
<code>pcnfsd.enable</code>		
<code>raid.reconstruct_speed</code>		
<code>raid.timeout</code>		
<code>snmp.enable</code>		
<code>telnet.enable</code>		
<code>timed.enable</code>		
<code>timed.log</code>		
<code>timed.max_skew</code>		
<code>time.min_skew</code>		
<code>timed.proto</code>		
<code>timed.sched</code>		
<code>timed.servers</code>		
<code>trusted.hosts</code>		
<code>vol.copy.throttle</code>		
<code>wafl.maxdirsize</code>		
<code>wafl.root_only_chown</code>		

Parameter matching Use the following table to compare the parameters for both filers in the cluster to ensure that the parameters have identical values in both filers.

Parameter	Filer 1	Filer 2
ARP table		
date		

Parameter	Filer 1	Filer 2
ndmp		
nfs		
route table		
routed		
timezone		

Network interface matching

The network interfaces must have identical values on both filers in a cluster.

Determining the current configuration for clustered filers

How you check your cluster configuration

There are two ways you can check your cluster configuration prior to placing your cluster online:

- ◆ Running the Cluster Configuration Checker script
- ◆ Manually, through the command line

Checking options with the Cluster Configuration Checker

The Cluster Configuration Checker is a script that runs under UNIX or as a Common Gateway Interface (CGI) script from a UNIX Web server. It detects the following configuration problems:

- ◆ Mismatched licenses
- ◆ Mismatched option settings
- ◆ Incorrectly configured network interfaces
- ◆ Different versions of Data ONTAP on the local and partner filers

You can download this script from the NetApp on the Web (NOW) site at <http://now.netapp.com/NOW/tools>. Look for the Cluster Configuration Checker (cf-config-check.cgi) file.

To run this script from the command line, complete the following steps.

Step	Action
1	Collect the IP addresses and login information for the local and partner filers.
2	Download the script from the NOW site, then unzip the script.
3	Run the script, as described in the online instructions on the script Web page. You can run the script either from the command line or through a Web browser that can access both filers.
4	Examine the script output and correct any errors or differences identified in the output.

Manually checking options and license settings

To check options on the local and partner filers, complete the following steps.

Step	Action
1	View the options set on the local filer by entering the following command at the filer's console: options Result: The current option settings on the filer are listed. You should see output similar to the following: <pre> autosupport.doit DONT autosupport.enable on . . dns.domainname filer1 (might be overwritten in takeover) dns.enable off (might be overwritten in takeover) ftpd.enable off . . </pre>
2	Note the values of these options for the local filer, and repeat Step 1 on the partner filer.
3	Verify that the options that have comments in parentheses are set to the same value for both filers. The comments you see are as follows: ◆ Value might be overwritten in takeover ◆ Same value required in local+partner ◆ Same value in local+partner recommended
4	Correct any mismatched options using the following command: options option_name option_value
5	Check the license settings on both filers using the following command: license
6	Correct mismatched license settings using the following command: license option=code

Verifying the RMC connections and setup

Verifying the RMC connections and setup

To verify the remote management controller connections and setup, complete the following steps.

Step	Action
1	Enter the following command: <pre>rmc setup</pre> Note _____ It might take a few minutes for the new network settings for the RMC to take effect.
2	Enter the following command to verify the connection from the filer to the RMC interface: <pre>ping rmc interface</pre> <i>rmc interface</i> is the IP address of the RMC.
3	To verify that Autosupport is enabled and Autosupport options are valid, enter: <pre>options autosupport</pre> Result: The Autosupport options should be set as follows: <pre>autosupport.enable on autosupport.support.enable on autosupport.mailhost <i>name or IP address of mailhost</i></pre>
4	To test RMC mail delivery, enter the following command: <pre>rmc test email TESTMSG</pre> Result: The RMC should send email within a few minutes. If this fails, you should verify filer connectivity and whether the mailhost is valid.

About the RMC network interface

The RMC network interface is not used for serving data so it will not show up in the output for the `ifconfig` command.

Administering your filer

Methods of administration

You can administer your filer from the command-line prompt or from FilerView.

Administration from the command-line

You’ve already been using the command-line interface by entering commands at the filer prompt. You can set the privilege level that determines what commands are available to you by using the `priv` command. All the commands are documented online as UNIX-style man pages.

Administration from FilerView

FilerView is a Web-based administration tool for Data ONTAP that enables you to perform most administration tasks from any client on your network that has a compatible Web browser. Through FilerView, you can perform tasks that otherwise require you to enter commands at the filer prompt or edit configuration files.

You can use FilerView even if you did not purchase a license for the HTTP protocol.

Accessing FilerView

To access FilerView, complete the following steps.

Step	Action
1	Launch a Web browser, either Netscape Navigator 4.7 or later or Microsoft Internet Explorer 5 or later.
2	Point your browser to the filer home page (<code>http://hostname/na_admin</code>), substituting the filer name for <i>hostname</i>. Example: If your host’s name is toaster, enter the following URL: <code>http://toaster/na_admin</code> Result: When your browser connects to the filer, you see the filer home page.

The initial page contains the choices shown in the following table.

Choice	Description
Install Documentation	Initiates a browser to select zip files to install the HTML and PDF versions of product documentation.
Manual Pages	Links to UNIX-style manual pages for the Data ONTAP console commands.
FilerView	Displays the FilerView program in a separate window.
Filer At-A-Glance	Displays a tool that monitors the performance of the filer.
Initiate a Support Call	Directs the Web browser to a form on the Network Appliance technical support Web site. You can use the form to report problems.

How FilerView works

The FilerView interface consists of two frames: a left frame and a right frame.

Left frame: The left frame contains an expandable list of categories:

- ◆ The Real Time Status category contains choices that launch separate tools that monitor filer performance.
- ◆ The other categories represent management functions.

You can view the real-time displays or the functions in a category by clicking the Real Time Status or a category name. You can select a real-time display or a function by clicking the display or function name.

Note

If the filer has an administration password, FilerView prompts you to enter the password the first time you select a function. After you enter the correct password, FilerView does not prompt you for the password again.

Right frame: The right frame contains a logo initially.

As you select functions from the left frame, the right frame changes to display forms that provide information about the filer configuration and enable you to change the filer's configuration.

You can alter the filer configuration by changing information that is displayed in forms and then saving the information.

The top of the window contains a Help button that you can click to view Help for the form that is currently displayed in the right frame.

Software updates

Network Appliance regularly makes software updates available to customers who purchase software support agreements.

You can find information about the latest software updates at the Network Appliance NOW Web site at <http://now.netapp.com>.

When you register with NOW, you can configure your account to receive e-mail regarding software updates.

Autosupport feature

The Autosupport feature is automatically enabled when you run the setup process on a filer for the first time. Autosupport sends event messages and weekly reports to Network Appliance Technical Support. This can significantly decrease the time it takes to assess and resolve problems that might occur on your system. If you do not want any Autosupport messages to be sent, you can disable Autosupport by entering the command `options autosupport.support.enable off` within 24 hours after you complete the setup process.

Configuration Worksheet

A

How to use this worksheet

Use this worksheet to record the information you need to set up and configure your filer or NearStore system. Gather the information before you begin setting up and configuring your system.

Parameters		Your values
Filer	MAC address for the filer's built-in Ethernet interface	
	Host name	
	Password	
	Time zone	
	Filer location	
	Language used for multiprotocol filers	
Administration host	Host name	
	IP address	
Ethernet	Interface name	
	IP address	
	Subnet mask	
	Partner IP address	
	Are jumbo frames supported?	
	MTU size for jumbo frames	
Virtual interface	Interface name	
	Number of links	
	Link names	

Parameters		Your values
ATM LANE	Interface name	
	Partner name	
	Emulated LAN (ELAN) name	
	LANE Configuration Server (LECS) address	
ATMS SPANS	Interface name	
	Host IP address	
	Subnet mask	
	Partner IP address	
Router	Gateway name	
	IP address	
DNS	Domain name	
	Server address 1	
	Server address 2	
	Server address 3	
NIS	Domain name	
	Server name 1	
	Server name 2	
	Server name 3	
Windows domain		
WINS servers	1	
	2	
	3	
Windows 2000 user		
Windows 2000 user password		
Active Directory (command-line setup only)		

Parameters		Your values
DAFS	VI/IP network device names	
	Cluster network devices that use DAFS	
	Filer volumes to export	
	Authentication for privileged clients	
	Idle timeout for sessions	
Location of HTTP directory		
RMC	MAC address	
	IP address	
	Subnet mask	
	Gateway	
	Mailhost	

About this section

Enter one of the following time zones when the `setup` command prompts for a time zone. If you need to change this after setup is complete, see the *Storage Management Guide* for information about the `timezone` command.

Africa

Africa/Abidjan	Africa/Djibouti	Africa/Maputo
Africa/Accra	Africa/Douala	Africa/Maseru
Africa/Addis_Ababa	Africa/Freetown	Africa/Mbabane
Africa/Algiers	Africa/Gaborone	Africa/Mogadishu
Africa/Asmera	Africa/Harare	Africa/Monrovia
Africa/Bamako	Africa/Johannesburg	Africa/Nairobi
Africa/Bangui	Africa/Kampala	Africa/Ndjamena
Africa/Banjul	Africa/Khartoum	Africa/Niamey
Africa/Bissau	Africa/Kigali	Africa/Nouakchott
Africa/Blantyre	Africa/Kinshasa	Africa/Ouagadougou
Africa/Brazzaville	Africa/Lagos	Africa/Porto-Novo
Africa/Bujumbura	Africa/Libreville	Africa/Sao_Tome
Africa/Cairo	Africa/Lome	Africa/Timbuktu
Africa/Casablanca	Africa/Luanda	Africa/Tripoli
Africa/Conakry	Africa/Lumumbashi	Africa/Tunis
Africa/Dakar	Africa/Lusaka	Africa/Windhoek
Africa/Dar_es_Salaam	Africa/Malabo	

Aliases

GMT=Greenwich, UCT, UTC, Universal, Zulu

CET=MET (Middle European Time)

US/Eastern=Jamaica

US/Mountain=Navajo

America

America/Adak	America/Grenada	America/Noronha
America/Anchorage	America/Guadeloupe	America/Panama
America/Anguilla	America/Guatemala	America/Pangnirtung
America/Antigua	America/Guayaquil	America/Paramaribo
America/Aruba	America/Guyana	America/Phoenix
America/Asuncion	America/Halifax	America/Port_of_Spain

America/Atka	America/Havana	America/Port-au-Prince
America/Barbados	America/Indiana	America/Porto_Acre
America/Belize	America/Indianapolis	America/Puerto_Rico
America/Bogota	America/Inuvik	America/Rainy_River
America/Boise	America/Iqaluit	America/Rankin_Inlet
America/Buenos_Aires	America/Jamaica	America/Regina
America/Caracas	America/Jujuy	America/Rosario
America/Catamarca	America/Juneau	America/Santiago
America/Cayenne	America/Knox_IN	America/Santo_Domingo
America/Cayman	America/La_Paz	America/Sao_Paulo
America/Chicago	America/Lima	America/Scoresbysund
America/Cordoba	America/Los_Angeles	America/Shiprock
America/Costa_Rica	America/Louisville	America/St_Johns
America/Cuiaba	America/Maceio	America/St_Kitts
America/Curacao	America/Managua	America/St_Lucia
America/Dawson	America/Manaus	America/St_Thomas
America/Dawson_Creek	America/Martinique	America/St_Vincent
America/Denver	America/Mazatlan	America/Swift_Current
America/Detroit	America/Mendoza	America/Tegucigalpa
America/Dominica	America/Menominee	America/Thule
America/Edmonton	America/Mexico_City	America/Thunder_Bay
America/El_Salvador	America/Miquelon	America/Tijuana
America/Ensenada	America/Montevideo	America/Tortola
America/Fort_Wayne	America/Montreal	America/Vancouver
America/Fortaleza	America/Montserrat	America/Virgin
America/Glace_Bay	America/Nassau	America/Whitehorse
America/Godthab	America/New_York	America/Winnipeg
America/Goose_Bay	America/Nipigon	America/Yakutat
America/Grand_Turk	America/Nome	America/Yellowknife

Antarctica

Antarctica/Casey	Antarctica/Mawson	Antarctica/Palmer
Antarctica/DumontDUrville	Antarctica/McMurdo	Antarctica/South_Pole

Asia

Asia/Aden	Asia/Irkutsk	Asia/Qatar
Asia/Alma-Ata	Asia/Ishigaki	Asia/Rangoon
Asia/Amman	Asia/Istanbul	Asia/Riyadh
Asia/Anadyr	Asia/Jakarta	Asia/Saigon
Asia/Aqtau	Asia/Jayapura	Asia/Seoul
Asia/Aqtobe	Asia/Jerusalem	Asia/Shanghai
Asia/Ashkhabad	Asia/Kabul	Asia/Singapore
Asia/Baghdad	Asia/Kamchatka	Asia/Taipei

Asia/Bahrain
 Asia/Baku
 Asia/Bangkok
 Asia/Beirut
 Asia/Bishkek
 Asia/Brunei
 Asia/Calcutta
 Asia/Chungking
 Asia/Colombo
 Asia/Dacca
 Asia/Damascus
 Asia/Dubai
 Asia/Dushanbe
 Asia/Gaza
 Asia/Harbin
 Asia/Hong_Kong

Asia/Karachi
 Asia/Kashgar
 Asia/Katmandu
 Asia/Krasnoyarsk
 Asia/Kuala_Lumpur
 Asia/Kuching
 Asia/Kuwait
 Asia/Macao
 Asia/Magadan
 Asia/Manila
 Asia/Muscat
 Asia/Nicosia
 Asia/Novosibirsk
 Asia/Omsk
 Asia/Phnom_Penh
 Asia/Pyongyang

Asia/Tashkent
 Asia/Tbilisi
 Asia/Tehran
 Asia/Tel_Aviv
 Asia/Thimbu
 Asia/Tokyo
 Asia/Ujung_Pandang
 Asia/Ulan_Bator
 Asia/Urumqi
 Asia/Vientiane
 Asia/Vladivostok
 Asia/Yakutsk
 Asia/Yekaterinburg
 Asia/Yerevan

Atlantic

Atlantic/Azores
 Atlantic/Bermuda
 Atlantic/Canary
 Atlantic/Cape_Verde

Atlantic/Faeroe
 Atlantic/Jan_Mayen
 Atlantic/Madeira
 Atlantic/Reykjavik

Atlantic/South_Georgia
 Atlantic/St_Helena
 Atlantic/Stanley

Australia

Australia/ACT
 Australia/Adelaide
 Australia/Brisbane
 Australia/Broken_Hill
 Australia/Canberra
 Australia/Darwin
 Australia/Hobart

Australia/LHI
 Australia/Lindeman
 Australia/Lord_Howe
 Australia/Melbourne
 Australia/NSW
 Australia/North
 Australia/Perth

Australia/Queensland
 Australia/South
 Australia/Sydney
 Australia/Tasmania
 Australia/Victoria
 Australia/West
 Australia/Yancowinna

Brazil

Brazil/Acre
 Brazil/DeNoronha

Brazil/East

Brazil/West

Canada

Canada/Atlantic
 Canada/Central
 Canada/East-Saskatchewan

Canada/Eastern
 Canada/Mountain
 Canada/Newfoundland

Canada/Pacific
 Canada/Saskatchewan
 Canada/Yukon

Chile

Chile/Continental

Chile/EasterIsland

Etc

Etc/GMT	Etc/GMT+11	Etc/GMT-9
Etc/GMT+0	Etc/GMT+12	Etc/GMT-10
Etc/GMT+1	Etc/GMT0	Etc/GMT-11
Etc/GMT+2	Etc/GMT-0	Etc/GMT-12
Etc/GMT+3	Etc/GMT-1	Etc/GMT-13
Etc/GMT+4	Etc/GMT-2	Etc/GMT-14
Etc/GMT+5	Etc/GMT-3	Etc/Greenwich
Etc/GMT+6	Etc/GMT-4	Etc/UCT
Etc/GMT+7	Etc/GMT-5	Etc/Universal
Etc/GMT+8	Etc/GMT-6	Etc/UTC
Etc/GMT+9	Etc/GMT-7	Etc/Zulu
Etc/GMT+10	Etc/GMT-8	

Europe

Europe/Amsterdam	Europe/Kiev	Europe/San_Marino
Europe/Andorra	Europe/Kuybyshev	Europe/Sarajevo
Europe/Athens	Europe/Lisbon	Europe/Simferopol
Europe/Belfast	Europe/Ljubljana	Europe/Skopje
Europe/Belgrade	Europe/London	Europe/Sofia
Europe/Berlin	Europe/Luxembourg	Europe/Stockholm
Europe/Bratislava	Europe/Madrid	Europe/Tallinn
Europe/Brussels	Europe/Malta	Europe/Tirane
Europe/Bucharest	Europe/Minsk	Europe/Vaduz
Europe/Budapest	Europe/Monaco	Europe/Vatican
Europe/Chisinau	Europe/Moscow	Europe/Vienna
Europe/Copenhagen	Europe/Oslo	Europe/Vilnius
Europe/Dublin	Europe/Paris	Europe/Warsaw
Europe/Gibraltar	Europe/Prague	Europe/Zagreb
Europe/Helsinki	Europe/Riga	Europe/Zurich
Europe/Istanbul	Europe/Rome	

GMT

GMT	GMT+9	GMT-5
GMT+1	GMT+10	GMT-6
GMT+2	GMT+11	GMT-7
GMT+3	GMT+12	GMT-8
GMT+4	GMT+13	GMT-9
GMT+5	GMT-1	GMT-10
GMT+6	GMT-2	GMT-11

	GMT+7 GMT+8	GMT-3 GMT-4	GMT-12
Indian (Indian Ocean)	Indian/Antananarivo Indian/Chagos Indian/Christmas Indian/Cocos	Indian/Comoro Indian/Kerguelen Indian/Mahe Indian/Maldives	Indian/Mauritius Indian/Mayotte Indian/Reunion
Mexico	Mexico/BajaNorte	Mexico/BajaSur	Mexico/General
Miscellaneous	Arctic/Longyearbyen CET CST6CDT Cuba EET Egypt Eire EST EST5EDT Factory GB GB-Eire Greenwich Hongkong	HST Iceland Iran Israel Japan Kwajalein Libya MET MST MST7MDT Navajo NZ NZ-CHAT Poland	Portugal PRC PST8PDT ROC ROK Singapore Turkey UCT Universal UTC WET W-SU Zulu
Pacific	Pacific/Apia Pacific/Auckland Pacific/Chatham Pacific/Easter Pacific/Efate Pacific/Enderbury Pacific/Fakaofu Pacific/Fiji Pacific/Funafuti Pacific/Galapagos Pacific/Gambier Pacific/Guadalcanal	Pacific/Johnston Pacific/Kiritimati Pacific/Kosrae Pacific/Kwajalein Pacific/Majuro Pacific/Marquesas Pacific/Midway Pacific/Nauru Pacific/Niue Pacific/Norfolk Pacific/Noumea Pacific/Pago_Pago	Pacific/Ponape Pacific/Port_Moresby Pacific/Rarotonga Pacific/Saipan Pacific/Samoa Pacific/Tahiti Pacific/Tarawa Pacific/Tongatapu Pacific/Truk Pacific/Wake Pacific/Wallis Pacific/Yap

Pacific/Guam
Pacific/Honolulu

Pacific/Palau
Pacific/Pitcairn

System V

SystemV/AST4
SystemV/AST4ADT
SystemV/CST6
SystemV/CST6CDT
SystemV/EST5

SystemV/EST5EDT
SystemV/HST10
SystemV/MST7
SystemV/MST7MDT
SystemV/PST8

SystemV/PST8PDT
SystemV/YST9
SystemV/YST9YDT

Language choices The following table lists the languages supported by Data ONTAP on multiprotocol filers.

You can also view this list by entering `vol lang` at the filer prompt.

Language	Abbreviation	Language	Abbreviation
Danish	da	Korean	ko
Dutch	nl	Norwegian	no
English	en	Portugese	pt
English (U.S.)	en_US	POSIX	C
Finnish	fi	Simplified Chinese	zh
French	fr	Simplified Chinese (GBK)	zh.GBK
German	de	Spanish	es
Hebrew	he	Swedish	sv
Italian	it	Traditional Chinese euc-tw	zh_TW
Japanese euc-j	ja	Traditional Chinese Big 5	zh_TW.BIG5
Japanese PCK(sjis)	ja_JP.PCK		

Choosing the language code To choose the language appropriate to your organization, complete the following step.

Step	Action
1	When prompted during setup, enter the code that corresponds to the appropriate language. Note_____ To use UTF-8 as the NFS character set, append .UTF-8 to the abbreviation. _____ Example: ko.UTF8

