

Read Me First | Release 4.3

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Welcome to Data ONTAP™ Release 4.3

This *Read Me First* is for Data ONTAP Release 4.3.

Release 4.3 runs on all Network Appliance filer models in the NetApp™ F200, F300, F500, and F600 series. It also runs on older models, which are the FAServer 400, 450, 1300, and 1400. When the term “filer” is used in this document, the information applies to these models.

How to use the Read Me First

To install a new filer, follow the instructions in “Installing a new filer” on page 3.

To upgrade to Release 4.3, first perform any necessary actions described in “Steps to take before upgrading” on page 7, then follow instructions in “Upgrading a filer to Data ONTAP Release 4.3” on page 7. The upgrade procedure varies according to the source of your files and your client as follows:

- If you are using files downloaded from NOW, download the files according to the instructions in “Downloading files from NOW” on page 8, then follow the instructions for the client you are using.
- If you are upgrading from a UNIX client, follow the instructions in “Upgrading from a UNIX client” on page 10.
- If you are upgrading from a Windows client, follow the instructions in “Upgrading from a Windows client” on page 16.

To create a boot diskette, follow the instructions in “Creating a boot diskette” on page 22.

To see the NetApp product documentation roadmap, go to page 27.

To see a list of documentation changes, go to page 28.

To see descriptions of new features in Release 4.3, go to page 30.

To install and use the Gigabit Ethernet network card, follow the instructions in “Installing and using the Gigabit Ethernet network card” on page 34.

If you need to downgrade from Release 4.3 to a release earlier than 4.0, contact Technical Support as shown in Table 1.

Table 1. Contacting Network Appliance Technical Support

Telephone	FAX	email
For U.S. customers: 888 463-8277	(408) 367-3151	support@netapp.com
For international customers: +1 408 367-3000 (ask for Technical Support)		

Installing a new filer

If you purchased a new filer, follow these steps to install and configure it:

1. Read the license and warranty information that comes with your filer.
2. Follow the steps in “Setup steps for all file-sharing protocols” below.
3. For each protocol that you have a licence for, follow the steps in the appropriate section on preparing the filer for using that protocol. The sections are:
 - Preparing the filer and clients for using CIFS on page 4
 - Preparing the filer for using HTTP on page 5
 - Preparing the filer and clients for using NFS on page 5
4. Store in a safe place the diskettes and CD-ROM that ship with your filer.

Your filer will then be ready to deliver to network clients the file services that you have enabled. For more information about software features, refer to “Features in Release 4.3” on page 30 of this document and to the *System Administrator’s Guide*.

Setup steps for all file-sharing protocols

Follow these steps regardless of the file-sharing protocols you are going to use:

1. Make a copy of the configuration record in appendix B of the *System Administrator’s Guide*, fill it out and store a copy of it in a safe place along with your license key and password information.
2. Follow the instructions in the hardware guide to install the filer, console, and disks, then connect the filer to the networks and power on the filer.
3. On the console, answer the questions asked by the setup program.

4. Verify that the filer's network interfaces are up by entering the ping command from a computer on a connected network.

Preparing the filer and clients for using CIFS

Follow these steps to prepare the filer for CIFS clients:

1. If you are using NIS for authentication, you do not need to do anything special for authentication. If you are using a domain controller or */etc/passwd*, you must configure the filer for user authentication. The steps depend on whether the filer uses a domain controller or */etc/passwd* for user authentication. The table below outlines the steps. Refer to "Preparing the filer for delivering CIFS service" in Chapter 2, "Getting Started," of the *System Administrator's Guide* for more detailed information about each step.

Using a domain controller	Using /etc/passwd
a. On a client that has access to the filer's root directory, edit the filer's <i>/etc/passwd</i> and <i>/etc/group</i> to include each user and group. These files do not contain encrypted passwords. b. Create user accounts on the domain controller.	a. Create a UNIX-style <i>/etc/passwd</i> file for the filer that contains entries for all CIFS users. Each entry must include an encrypted password. To create the file, edit the <i>/etc/passwd</i> file on a UNIX computer (for example, the NIS master if your site uses NIS). b. On a client that has CIFS access to the filer's root directory, copy the <i>/etc/passwd</i> file created in step a to the filer. c. Edit the <i>/etc/group</i> file on the filer to include each user and group.

2. For each share on the filer, use the `cifs access` command to assign access rights for groups or users.

Your filer can now serve CIFS clients. For additional information about administering CIFS on the filer, consult Chapter 7, "CIFS administration," in the *System Administrator's Guide*.

Preparing the filer for using HTTP

Follow these steps to prepare the filer for HTTP clients:

1. Enter the options `httpd.enable` on command.
2. Use the options `httpd.rootdir` command to specify the HTTP root directory.
3. Copy `/etc/httpd.mimetypes.sample` to `/etc/httpd.mimetypes`. Edit `/etc/httpd.mimetypes` if necessary.

If necessary, edit `/etc/httpd.translations` to specify how the filer translates URLs for incoming HTTP requests.

Your filer can now serve HTTP clients. For additional information about administering HTTP on the filer, consult Chapter 8, “HTTP administration,” in the *System Administrator’s Guide*.

Preparing the filer and clients for using NFS

Follow these steps to prepare the filer for NFS clients:

1. Add the filer’s host name and IP address to the `/etc/hosts` file of the administration host.
2. Edit configuration files on the filer:
 - a. Mount the filer’s root file system on the administration host.
 - b. From the administration host, edit the filer’s configuration files in the `/etc` directory as needed. For additional information about administering NFS, consult Chapter 6, “NFS administration,” in the *System Administrator’s Guide*.
 - c. Enter the `reboot` command to restart the filer.
3. Mount directories on clients. (The actual file names in these steps might be different depending on the clients’ operating systems.)
 - a. Add the filer’s name and IP address to each client’s `/etc/hosts` file.

- b. Edit each client's */etc/fstab* to include directories on the filer.
These directories are now ready to be mounted on the clients.

Your filer can now serve CIFS clients. For additional information about administering NFS on the filer, consult Chapter 6, “NFS administration,” in the *System Administrator's Guide*.

Upgrading a filer to Data ONTAP Release 4.3

To upgrade the filer's software, you need:

- If your filer is a release of Data ONTAP earlier than 4.0 or is not running at all, a Data ONTAP 4.3 System Boot diskette. You do not need a boot diskette if you are upgrading from Data ONTAP release 4.0 or later.

To create a System Boot diskette on a UNIX or Windows workstation, follow the instructions in “Creating a boot diskette from a UNIX host” on page 22 or “Creating a boot diskette from a Windows host” on page 24 using files from either of two sources:

- NOW. The URL for NOW is:

`http://now.netapp.com`

- The Data ONTAP Release 4.3 CD-ROM. This CD-ROM can be read by most systems.

- System files, available from two sources:

- The Data ONTAP Release 4.3 CD-ROM
- NOW

Steps to take before upgrading

You might need to perform one or more of the following actions before installing Release 4.3 on your filer:

- If you have been running CIFS on the filer and were using a domain controller for authentication, create a domain account for the filer, as described in “CIFS preliminaries” in Chapter 2, “Getting started,” of the *System Administrator's Guide* for Release 4.3.



NOTE: If you were using a domain controller for authentication and do not create a domain account for the filer, the CIFS upgrade will fail.

- This step applies only if you are upgrading from Release 4.0.1c. If you have clients using NFS over TCP, have them unmount the filer.

Starting with Release 4.0.3 (and continuing in Release 4.3), NFS over TCP is disabled by default. In Release 4.0.1c, NFS over TCP was enabled.

- Save the core file from a preceding crash (if any).

When you boot Release 4.3 and the filer executes `savecore`, it will not recognize a core file if the core file was written by a release earlier than 4.0.3. If you are upgrading from a release earlier than 4.0.3 and your filer contains a core file that has not been saved, *before* you boot Release 4.3, take steps to save it.

There are several circumstances under which a core file might not have been saved. For example, you might have edited `/etc/rc` to remove the call to `savecore` at boot time, or `savecore` might have been unable to write the core files, in which case it would have written a message to that effect.

- Before you start the update, shut down the filer with the `halt` command. If the filer is not shut down cleanly, data will be left in the NVRAM. Release 4.3 cannot use an NVRAM log from a release earlier than 4.1.

Downloading files from NOW

You can download boot files, system files, and the Windows RaWrite disk image utility from NOW.

To download boot and system files, follow these steps:

1. Log onto NOW. NOW login information is on the protocol license sheet sent with the filer.
2. Click on Software Library, then click on Ontap 4.3, and click on Accept to accept the license conditions.
3. Click on the software you want under the type of host you are using and the model of your filer to download and save the file.

Click the Save button to save the file to your hard drive.

Upgrade quick summary

The following is an outline of the upgrade procedure. For a detailed step-by-step version, read “Upgrading from a UNIX client” on page 10 or “Upgrading from a Windows client” on page 16 as appropriate.

1. If your filer is a release of Data ONTAP earlier than 4.0 or is not running at all, boot the filer from the 4.3 boot diskette.
2. If you have not done so, at the filer’s console, enter the license code for each file protocol.
3. If you use a PC running CIFS for upgrade, and have not yet run `cifs setup`:
 - a. Reboot the filer.
 - b. Run `cifs setup`.
4. Extract system files to the filer’s root directory.
5. Use the filer’s `download` command to make the new software bootable from the hard disk.
6. Reboot the filer from its hard disk.
7. If you have a license for CIFS and have not yet done so, run `cifs setup`.
8. If you have not yet done so, create `/etc/serialnum`.
9. If you plan to use SNMP with the filer, install the NetApp MIB Version 1.0.1 if you have not yet done so.

Upgrading from a UNIX client

Follow the instructions in this section only if you use a UNIX workstation to extract the System Files. If you are using a Windows PC, go to “Upgrading from a Windows client” on page 16.

To carry out the installation, you need access to both the filer’s system console and to a client system. Unless you are downloading the system files from NOW, the client system must be a workstation equipped with a CD-ROM drive and have write permission to the filer’s root directory. In this section, the client system is shown with the name *adminhost*, and is shown running SunOs 4.1.x. If you use a client running another operating system, the syntax of UNIX commands might differ.

Follow these steps to upgrade your filer using a UNIX client:

1. If your filer is a release of Data ONTAP earlier than 4.0 or is not running at all, boot the filer from the Release 4.3 System Boot Diskette. If it is running 4.0 or later, go to step 2.
 - a. Insert the Release 4.3 System Boot diskette in the filer’s diskette drive.



NOTE: The Release 4.3 diskette is specific to the model of filer that you are updating. You should have received a diskette appropriate to the model you are updating. If you have different models, be sure to check the diskette labels to make sure you’re using the correct diskette for the filer.

- b. At the system console, enter the reboot command.
 - c. When the filer displays a list of options, select option 1, “Normal boot.”
2. Enter licenses for the protocols that you have purchased.

If the licenses have already been entered (for an earlier Data ONTAP release), you do not need to do so again; skip to step 3.

At the system console, use the `license` command to enter your licenses as shown in the following example:

```
toaster> license nfs=XXXXXXX cifs=YYYYYYY http=ZZZZZZZ
```

In the command you type, use the license keys included in your upgrade kit instead of the ones used in the example. An `=` sign is required between the type of license and the license code; don't insert a blank before or after the `=` sign.

The filer acknowledges each license:

```
nfs site license enabled.  
      nfs enabled.  
cifs site license enabled.  
      Run cifs setup after rebooting to enable cifs.  
http site license enabled.  
      Use "options httpd.enable"to enable http.
```

3. Read and install the system files.

At the client system:

a. Mount the filer's root file system to the client's `/mnt` directory:

```
adminhost# mount toaster:/ /mnt
```

where `/mnt` is the directory on the client where you want to mount the filer's root file system.

b. Change directory to `/mnt`.

```
adminhost# cd /mnt
```

- c. If you are using the Data ONTAP Release 4.3 CD-ROM, read in the System Files by following these steps:

Insert the CD-ROM labeled “Data ONTAP Release 4.3 CD-ROM” into your CD-ROM drive according to the procedure for your workstation, then follow one of these steps, depending on the model of your filer:

- If your filer is a FAServer or an F200 or F300 series model,

```
adminhost# tar xvf  
/CD-ROM_MNT_PT/ONTAP?4_3/X86/SYSFILES.TAR
```

substituting the name of your CD-ROM mount point for /CD-ROM_MNT_PT.

- If your filer is an F500 or F600 series model, extract the files and specify the input file, output file and block size with the following command:

```
adminhost# tar xvf  
/CD-ROM_MNT_PT/ONTAP?4_3/ALPHA/SYSFILES.TAR
```

substituting the name of your CD-ROM mount point for /CD-ROM_MNT_PT.

The `tar` command reports the names of the files it has copied; they are *tar_image.Z* and *install_netapp*.

Skip step d and go to step e.

- d. If you are using files downloaded from NOW, enter:

```
adminhost# tar xvf SYSFILES.TAR
```

substituting for *SYSFILES.TAR* the name you gave the systems file.

The `tar` command reports the names of the files it has copied; they are *tar_image.Z* and *install_netapp*.

- e. If you used files downloaded from NOW, remove the tar file by entering the following command:

```
adminhost# rm SYSFILES.TAR
```

substituting the name you gave the systems file for *SYSFILES.TAR*.

- f. Run the script `install_netapp` with an argument that tells the script where to install the files; this is the mount point for the filer's root directory. You can keep or delete the tar files.

- If you want to delete the tar files, use the following command:

```
adminhost# ./install_netapp /mnt
```

- If you want to keep the tar files, use the following command:

```
adminhost# ./install_netapp -k /mnt
```

The install script reports its steps as it goes:

```
install_netapp: uncompress tar_image.Z
install_netapp: cd "/mnt"; tar xvf "/mnt/tar_image"
```

The script invokes `tar`, which reports the files it extracts, like this:

```
x etc/boot/netapp-x86 symbolic link to netapp_4.3-x86
x etc/boot/0-x86, 1804 bytes, 4 tape blocks
```

The last few messages are similar to the following:

```
x etc/firmware/pca200em.bin, 41288 bytes, 81 tape
blocks
x etc/syslog.conf.sample, 542 bytes, 2 tape blocks
x etc/httpd.mimetypes.sample, 3163 bytes, 7 tape
blocks
install_netapp: cd "/"; rm -rf tar_image
install_netapp
```

4. Unmount the filer's root directory.
 - a. From the client system, unmount the filer's root file system (/) by entering the following commands:

```
adminhost# cd /  
adminhost# umount /mnt
```

where /mnt is the directory on the client where you mounted the filer's root file system.

- b. At the filer, if you were using the boot diskette, eject it by pressing the eject button at the side of the diskette drive.



NOTE: It is essential to remove the boot diskette before you issue the reboot command, or the filer will once again boot from the diskette rather than from its hard drive.

5. Set the filer's boot blocks.

At the system console, enter `download` to copy the executables to the boot blocks of the filer's hard disks:

```
toaster> download  
toaster>
```

The `download` command doesn't provide an acknowledgment; when copying has finished, the filer prompt appears again.

6. Unless you followed step 1 on page 7, if you have been running CIFS on the filer and were using a domain controller for authentication, create a domain account for the filer, as described in "CIFS preliminaries" in Chapter 2, "Getting started," of the *System Administrator's Guide* for Release 4.3.

7. Reboot from the filer's disk.

At the system console, reboot the filer:

```
toaster> reboot
```

The copyright notice followed by "NetApp Release 4.3" appears.

8. Set up CIFS.

Follow this step only if you have a license for CIFS but have not previously enabled CIFS access to the filer.

From the filer console, run the setup program for CIFS by entering the following command:

```
toaster> cifs setup
```

The `cifs setup` program prompts you for information necessary to enable CIFS access to the filer. For more information about the `cifs setup` program, refer to the *System Administrator's Guide*.

9. Record the filer's serial number. This step is relevant only if the file `/etc/serialnum` does not exist on your filer.

Create `/etc/serialnum`, and put the filer's serial number in it. The file makes it easier for Network Appliance Technical Support to assist you after receiving an autosupport e-mail from your filer.

10. If you plan on using SNMP with the filer, install the NetApp MIB Version 1.0.1 if you haven't yet done so.

Copy the MIB file from the diskette provided to a UNIX system as follows:

```
adminhost# tar xvf /dev/fd0  
adminhost# uncompress netapp.mib.Z
```

Replace `/dev/fd0` with the device name of your diskette drive if it is not `/dev/fd0`.

The MIB file is now saved in a file named `netapp.mib` on `adminhost`.

11. Store the disks.

In a safe place, store the System Boot diskette (if you were using it) and the Data ONTAP Release 4.3 CD-ROM.

12. Enable HTTP according to the instructions in the *System Administrator's Guide* if your filer is licensed to run HTTP.

Your filer is now available and running Data ONTAP Release 4.3.

Upgrading from a Windows client

Follow the steps in this section only if you are using a Windows PC for administrating the filer. If you are using a UNIX workstation, go to “Upgrading from a UNIX client” on page 10.

To carry out the installation, you must log in as Administrator. You need both access to the filer’s system console and to a client system. The client system must be an IBM-compatible PC equipped with a CD-ROM drive, running Windows 95, Windows NT 3.51, or Windows NT 4.0. Windows for Workgroups cannot be used to do the installing because the installation uses long file names, not supported in Windows for Workgroups. In this section, the examples show a client system running Windows NT 4.0.

Follow these steps to upgrade your filer using a Windows client:

- 1.** If your filer is a release of Data ONTAP earlier than 4.0 or is not running at all, boot the filer from the Release 4.3 System Boot Diskette.
 - a.** Insert the Release 4.3 System Boot diskette in the filer’s diskette drive.



NOTE: The Release 4.3 disks are specific to the model of filer that you are updating. You should have received disks appropriate to the model you are updating. If you have different models, be sure to check the diskette labels to make sure that you are using the correct diskette for the filer.

- b. At the system console, enter the `reboot` command.
 - c. When the filer displays a list of options, select option 1, “Normal boot,” to boot the system from the Release 4.3 files on the diskette.
2. Enter licenses for the protocols that you have purchased.

If you have already entered the licenses (for Release 4.0), you do not need to do so again; skip to step 3.

At the system console, use the `license` command to enter your licenses as shown in the following example:

```
toaster> license nfs=XXXXXXX cifs=YYYYYYY http=ZZZZZZZ
```

In the command you type, use the license keys included in your upgrade kit instead of the ones used in the example. An = sign is required between the type of license and the license code; do not insert a blank before or after the = sign.

The filer acknowledges each license:

```
nfs site license enabled.  
      nfs enabled.  
cifs site license enabled.  
      Run cifs setup after rebooting to enable cifs.  
http site license enabled.  
      Use "options httpd.enable" to enable http.
```

3. Unless you followed step 1 on page 7, if you have been running CIFS on the filer and were using a domain controller for authentication, create a domain account for the filer, as described in “CIFS preliminaries” in Chapter 2, “Getting started,” of the *System Administrator’s Guide* for Release 4.3.

4. Reboot the filer so you can set up CIFS.

Steps 3 and 4 apply only if you have not previously enabled CIFS access to the filer. Otherwise, skip to step 5.

- a. At the system console, enter the reboot command.
- b. When the filer displays a list of options, select option 1, “Normal boot,” to boot the system from the Release 4.3 files on the diskette.

5. Set up CIFS.

Follow this step only if you have not previously run `cifs setup`. Otherwise, skip to step 5.

From the system console, run the setup program for CIFS by entering the following command:

```
toaster> cifs setup
```

The `cifs setup` program prompts you for information necessary to enable CIFS access to the filer. For more information about the `cifs setup` program, refer to Chapter 2 of the *System Administrator's Guide*.

6. Read in and install the system files.

- a. At the client system, map the filer's root directory to a drive on the client:

Right-click My Computer and select Map Network Drive.

In the dialog box, select a drive letter. For example:

N:

Write the name of the filer and the name assigned to the hidden share of its root directory, C\$. For example:

\\toaster\c\$

Leave unchanged the “Connect As” field.

If you are using the Data ONTAP Release 4.3 CD-ROM, perform step b.

If you are using a file downloaded from NOW, skip step b and perform step c.

- b. If you are using the CD-ROM, insert the Data ONTAP Release 4.3 CD-ROM into your CD-ROM drive, then run `setup.exe` to extract files and write them to the filer as follows:
 - If your filer is a FASserver or an F200 or F300 series model, on the Data ONTAP Release 4.3 CD-ROM, go to the `ONTAP\4_3\X86` folder, then double-click on `Setup.exe`.
 - If your filer is an F500 or F600 series model, on the Data ONTAP Release 4.3 CD-ROM, go to the `ONTAP\4_3\ALPHA` folder, then double-click on `Setup.exe`.

Skip step c and go to Step d.

- c. If you are using a file downloaded from NOW, double-click on the program name of the file you downloaded.
- d. The `setup.exe` program displays the WinZip dialog box. Make sure that you have followed the steps described in the dialog box, then press OK.
- e. In the WinZip dialog box, insert the drive letter. For example, if you chose drive N in step a, replace `<DRIVE>:\ETC` with the following:

N:\ETC

Leave the other options as they are. Make sure that both “Overwrite Files Without Prompting” and “When Done Unzipping Run” are checked.

- f. Press the Unzip button.

In the dialog box's lower panel, confirming messages are displayed as files are uncompressed.

7. Eject disks as follows:

- a. If you were using the Data ONTAP Release 4.3 CD-ROM on the client system, eject it from the CD-ROM drive.
- b. At the filer, if you were using the boot diskette, eject it by pressing the eject button at the side of the diskette drive.



NOTE: It is essential to remove the boot diskette before you issue the reboot command, or the filer will once again boot from the diskette rather than from its hard drive.

8. Set the filer's boot blocks.

At the system console, enter `download` to copy the executables to the boot blocks of the filer's hard disks:

```
toaster> download  
toaster>
```

The `download` command does not provide an acknowledgment; when copying has finished, the filer prompt appears again.

9. Reboot from the filer's hard disk.

At the system console, reboot the filer:

```
toaster> reboot
```

The copyright notice followed by "NetApp Release 4.3" appears.

10. Record the filer's serial number. This step is applicable only if the file `/etc/serialnum` does not exist on your filer.

Create `/etc/serialnum`, and put the filer's serial number in it. The file makes it easier for Network Appliance Technical Support to assist you after receiving an autosupport e-mail from your filer.

11. If you will use SNMP with the filer, install the NetApp MIB Version 1.0.1 if you have not yet done so.

Copy the MIB file from the diskette provided (the diskette is in UNIX format) to a UNIX system as follows:

```
adminhost# tar xvf /dev/fd0  
adminhost# uncompress netapp.mib.Z
```

Replace /dev/fd0 with the device name of your diskette drive if it is not /dev/fd0.

The MIB file is now saved in a file named *netapp.mib* on *adminhost*.

12. Store the diskettes.

In a safe place, store the System Boot diskette (if you are using it) and System Files (PC format) diskette.

13. Enable HTTP according to the *System Administrator's Guide* if your filer is licensed to run HTTP.

Your filer is now available and running Data ONTAP Release 4.3.

Creating a boot diskette

You need to create a boot diskette only if you have lost the diskette that came with your software and are upgrading from a version of Data ONTAP earlier than 4.0.

You can create a boot diskette from a UNIX or Windows host.

Creating a boot diskette from a UNIX host

You can create a boot diskette from files on the Data ONTAP Release 4.3 CD-ROM or from files downloaded from NOW.

Using files downloaded from NOW

You create a boot diskette as follows:

1. Mount a write-enabled, 1.44MB, appropriately formatted diskette onto your UNIX host according to the procedure for doing so described in the documentation for your host.
2. Using the `dd` command, specify the input file, output file, and block size with the following command:

```
adminhost# dd if=boot_file of=/dev/fd0 bs=512
```

For **boot_file**, substitute the name you gave the boot file when you downloaded it.

Replace `/dev/fd0` with the device name of your diskette drive if it is not `/dev/fd0`.

3. Remove, write-protect, and label the diskette.

Write “System Boot for Release 4.3” and the filer model (for example, “NetApp F330”) on the diskette label.S



NOTE: It is important to record the filer model on the diskette label, especially if you have different models on site. Filers in different NetApp filer series use different boot images.

Using files from the CD-ROM

From a UNIX host, create a Release 4.3 System Boot diskette using the Data ONTAP Release 4.3 CD-ROM as follows:

1. Mount a write-enabled, 1.44MB, appropriately formatted diskette onto your UNIX host according to the procedure for doing so described in the documentation for your host.
2. Mount the Data ONTAP Release 4.3 CD-ROM and do one of the following depending on your filer model:
 - If your filer is a FAServer or an F200 or F300 series model, go to the ONTAP/4_3/X86 directory.
 - If your filer is an F500 or F600 series model, go to the ONTAP/4_3/ALPHA directory.
3. Copy the boot image to the diskette.

Using the `dd` command, specify the input file, output file, and block size with the following command:

```
adminhost# dd if=BOOT of=/dev/fd0 bs=512
```

Replace `/dev/fd0` with the device name of your diskette drive if it is not `/dev/fd0`.

4. Remove, write-protect, and label the diskette.

Write “System Boot for Release 4.3” and the filer model (for example, “NetApp F330”) on the diskette label.



NOTE: It is important to record the filer model on the diskette label, especially if you have different models on site. Filers in different NetApp filer series use different boot images.

Creating a boot diskette from a Windows host

You can create a boot diskette from files on the Data ONTAP Release 4.3 CD-ROM from files downloaded from NOW.

Using files downloaded from NOW

You download the RaWrite application, download the boot image, then use RaWrite and a write-enabled high-density diskette to create the boot diskette as follows:

1. Log into the NOW site.
2. Click on Tools & Utilities, then on RAWRITE to download the RaWrite utility.

You might see a dialog box that asks something like:

```
You have started to download a file of the type
application
Click "More Info" to learn how to extend Navigator's
capabilities.
```

Click the Save button to save the file to your hard drive.

3. Open the Rawrite folder you downloaded and double-click on Rawrite.exe. RaWrite, the program that creates the boot diskette, starts and asks for an image source file.
4. Enter the name you used for the boot image file that you downloaded.
5. RaWrite asks for a target diskette drive. Enter the drive letter for the formatted diskette that will be the boot diskette.

6. RaWrite displays messages like the following:

```
RaWrite 2.0 - Write disk file to raw floppy diskette
Number of sectors per track for this disk is 18
Writing image to drive A:. Press ^C to abort.
Track: 79 Head: 1
Done.
```

When it finishes, your boot diskette is ready for booting on a NetApp filer.

7. Remove, write-protect, and label the diskette.

Write “System Boot for Release 4.3” and the filer model (for example, “NetApp F330”) on the diskette label.



NOTE: It is important to record the filer model on the diskette label, especially if you have different models on site. Filers in different NetApp filer series use different boot images.

Using files from the Data ONTAP Release 4.3 CD-ROM

Follow these steps:

1. Insert a write-enabled, formatted, 1.44MB diskette into your Windows host’s diskette drive.
2. Insert the Data ONTAP Release 4.3 CD-ROM into your CD-ROM drive and open the Utils folder, then open the Rawrite folder.
3. Double-click on Rawrite.exe. RaWrite, the program that creates the boot diskette, starts and asks for an image source.

4. Do one of the following depending on your filer model:

- If your filer is a FAServer or an F200 or F300 series model, enter:

e:\ontap\4_3\x86\boot

substituting your CD-ROM drive letter for e

- If your filer is an F500 or F600 series model, enter

e:\ontap\4_3\alpha\boot

substituting your CD-ROM drive letter for e

5. RaWrite asks for a target diskette drive. Enter the drive letter for the formatted diskette that will be the boot diskette.

6. RaWrite displays messages like the following:

```
RaWrite 2.0 - Write disk file to raw floppy diskette
Number of sectors per track for this disk is 18
Writing image to drive A:. Press ^C to abort.
Track: 79 Head: 1
Done.
```

When it finishes, your boot diskette is ready for booting on a NetApp filer.

7. Remove, write-protect, and label the diskette.

Write “System Boot for Release 4.3” and the filer model (for example, “NetApp F330”) on the diskette label.



NOTE: It is important to record the filer model on the diskette label, especially if you have different models on site. Filers in different NetApp filer series use different boot images.

Documentation roadmap

Use this *Read Me First* along with other documents that ship with your filer. The contents of each document are described in the following table. Some documents have not been revised for Release 4.3, but the information they contain applies unless specified otherwise in this *Read Me First*. Table 2 describes documentation for Release 4.3.

Table 2. Documents for filers running Data ONTAP Release 4.3

Document	Contents
<i>Hardware Guide for: the FAServers, the NetApp F200 and F300 Series, the NetApp F500 Series, the NetApp F600 Series</i>	Detailed procedures for installing the filer and for adding or replacing SCSI devices. The guide also contains information about interpreting LEDs and LCD messages.
<i>Supplemental Hardware Information About the NetApp F210</i>	Hardware information about the NetApp F210 to be used in conjunction with the <i>Hardware Guide for the NetApp F200 and F300 Series</i> .
<i>System Administrator's Guide for Release 4.3</i>	Detailed information about features in Release 4.3 and administering the filer.
<i>Quick Reference Guide</i>	Man page synopses that describe filer commands.
<i>Hardware Guide for the Digital Disk Shelves</i>	Hardware information about the Digital disk shelves.
<i>Hardware Guide for the NetApp StorageShelf 2</i>	Hardware information about the NetApp StorageShelf 2.

Documentation changes

This section contains changes to NetApp documentation. The information in this section supersedes the information in any other NetApp documentation.

Changes to the Hardware Guide for the NetApp F600 Series

Changes to filer labels

The labels for the serial connectors on the NetApp F630 system as shown on page 1-8 have changed as follows:

Old	New
COM1	Console
COM2	Diagnostic

Corrections to tables

Table 3-1, “Supported external tape stackers,” on page 3-2 should be titled “Supported external tape libraries,” and should include the following item which currently appears in Table 3-2, “Supported external tape drives” on page 3-2:

Manufacturer	Model
Breece Hill Technologies	Q2.15

ATM card slot assignments

The ATM card will work in any of slots 1 through 8 and slot 10. The first ATM card should go into slot 10 unless you have a Gigabit Ethernet card in that slot.

Changes to the Hardware Guide for the NetApp F500 Series

Corrections to tables

Table 3-1, “Supported external tape stackers,” on page 3-2 should be titled “Supported external tape libraries,” and should include the following item which currently appears in Table 3-2, “Supported external tape drives” on page 3-2:

Manufacturer	Model
Breece Hill Technologies	Q2.15

Changes to the Field Service Guide for the NetApp F600 Series

Changes to filer labels

The labels for the serial connectors on the NetApp F630 system, mentioned on pages 3-5 and 3-6, have changed as follows:

Old	New
COM1	Console
COM2	Diagnostic

Changes to the Hardware Guide for the NetApp StorageShelf 2

The following changes supplement information in the *Hardware Guide for the NetApp StorageShelf 2*:

If you have a NetApp F630 filer and are attaching NetApp StorageShelf 2 disk shelves to it, use the information for the NetApp F540 in Table 2-1, “EMU IDs for the NetApp F500 series,” in the *Hardware Guide for the NetApp StorageShelf 2*.

Whenever you boot a filer to which you have connected one or more NetApp StorageShelf 2 disk shelves, you must have at least one disk drive in each StorageShelf 2 disk shelf. You can remove the disk drives after the boot.

Features in Release 4.3

Release 4.3 builds on features in Release 4.2 and provides many new features.

New features in release 4.3

Release 4.3 provides many new features that facilitate using the filer in a CIFS environment. The following sections briefly describe these new features and provide references for more detailed information. All references are to the *System Administrator's Guide*.

CIFS Oplocks

An oplock (opportunistic lock) enables a client machine to lock a file or portions of a file on a filer. This improves performance by reducing network traffic. For additional information, see “Using CIFS oplocks” in Chapter 7, “CIFS Administration.”

CIFS symbolic links

CIFS clients can now follow symbolic links on the filer. A symbolic link is a file or directory that points to another file or directory so that both files or directories appear to have the same contents. Symbolic links are created only by NFS clients. For additional information, see “Managing symbolic links for CIFS access” in Chapter 3, “Sharing files between NFS and CIFS users.”

Netlogon

A NetApp filer now behaves like an NT server and can be truly part of a domain (a group of machines that use the same machine for authentication) rather than just a workgroup (a group of machines that can see each others resources).

Netlogon support means that the filer now participates in the NT Domain security model fully - communication between the filer and an NT Domain Controller now takes place more securely and more economically than is possible with Windows 95-style servers. Only the Netlogon method of authentication provides the information needed for NTFS-style directory ACLs.

In addition, NetApp supports ChangeNotify, which means that folder listings are updated automatically, whether the changes are made by you, a CIFS client, or an NFS client.

NetBIOS scope ids

The NetBIOS scope ID provides a naming service for the NetBIOS over TCP/IP (NBT) module. For additional information, see “Using NetBIOS Scope Ids” in Chapter 7, “CIFS Administration.”

(PC) NFS version 2

NetApp now supports (PC) NFS version 2 except for printer support. With (PC) NFS version 2, clients can use for authentication GIDs and group names through the `/etc/group` file or the corresponding group.byname NIS map. You can also set a umask for clients.

Web/NFS

WebNFS enables the filer respond to requests for file transfers over the Web using NFS rather than HTTP made through a browser that has WebNFS client support. You do not need an HTTP license to respond to WebNFS requests.

Password-protected web pages (HTTP)

You can restrict access to a specified directory tree to specified users or groups. A directory tree contains web pages.

Export by Subnets

You can export a mount point to machines in a subnet rather than only to machines individually. You can include netgroups in the exported paths (unless the path is exported as `rw` or `root`).

Gigabit Ethernet

The filer now supports Gigabit Ethernet cards.

ATM support for the NetApp F630

You can now connect the filer using ATM.

Features in Release 4.2

The following were new features in Release 4.2. The following sections briefly describe these features and provide references for more detailed information.

Support for mixed disk shelf configurations

A “mixed disk shelf configuration” is one that includes these two types of disk shelves:

StorageShelf 1	This disk shelf (also known as “Digital Disk Shelf”) supports 4-GB disks. Installation and configuration information about the StorageShelf 1 disk shelf is included in the <i>Hardware Guide for the Digital Disk Shelves</i> .
StorageShelf 2	This disk shelf supports 9-GB disks. Installation and configuration information about the StorageShelf 2 disk shelf is included in the <i>Hardware Guide for the NetApp StorageShelf 2</i> .

In a mixed disk shelf configuration, you *must* connect the StorageShelf 2 disk shelf (or pair of disk shelves in differential SCSI configurations) to the *first* SCSI connector (that is, the SCSI connector that is designated the connector for the *first* disk shelf in single-ended SCSI configurations or the first disk shelf pair in differential SCSI configurations).

The following table identifies the SCSI connector, on each filer, to which you *must* connect the first StorageShelf 2 disk shelf.

Filers	SCSI connector for first StorageShelf 2 disk shelf
NetApp F210, F230	9a
NetApp F220, F330	9a (on wide SCSI cards)
NetApp F520, F540, F630	8a



NOTE: When adding a disk to a disk shelf, you should be aware of file system size limitations for your filer model. Information about maximum file system sizes is available in the Configuration Guides available on the NetApp On the Web (NOW) web site at this URL:

<http://now.netapp.com/knowledge/>

Support for upgrade of the NetApp F220 and F330 to 9-GB drives

Beginning with Release 4.2, you can connect StorageShelf 2 disk shelves to F220 and F330 systems.

DLT 7000 tape drive support

Release 4.2 added support for the DLT 7000 high-capacity tape drive on the NetApp F520 and F630. The DLT 7000 tape drive can be installed in a Breece Hill Q2.15 tape library (described below), or as a separate internal or external device.

Breece Hill Q2.15 Tape Library support

The Breece Hill Q2.15 is an automated tape handling system that holds up to 10 tape cartridges in one removable magazine and up to two DLT 4000 or 7000 tape drives inside in the library.

Installing and using the Gigabit Ethernet network card

This section provides information about the Gigabit Ethernet network card. Included in this section is an overview of the card, information about connecting the card to the network, a description of the LEDs on the card, and information about identifying the card when using the filer command interface. You might also need the following information:

- For information about the expansion slot in which the card should be installed, refer to the NOW site.
- For instructions on how to install the Gigabit Ethernet card in the filer, refer to the Installation Guide for Expansion Cards or the field service guide for your filer model.

Overview

The Gigabit Ethernet network card is installed in NetApp F500 and F600 series filers. You can install one card in the designated expansion slot in the F500 and F600 series filers. Refer to the *4.3 Configuration Guide* on NetApp on the Web (NOW) at <http://now.netapp.com>, for expansion slot assignments for the Gigabit Ethernet network card in the F500 and F600 series filers.

The Gigabit Ethernet card supports full-duplex, point-to-point connections to the Alteon Network's AceSwitch™ 110 Gigabit Ethernet server switch.

Slots for the Gigabit Ethernet card

You can place a Gigabit Ethernet card in the filer in the slots as shown below according to the filer model:

Filer model	Slot
F520	2 or 3
F540	3
F630	10

Connecting the Gigabit Ethernet card to the network

NetApp F500 and F600 series filers are attached to an Ethernet network using the duplex SC connector on the front of the card. The connector labeled “T” is the transmit port and the connector labeled “R” is the receive port. Use 62.5/125 micron multimode or 50/125 micron multimode fiber optic cable to connect the card to the network. When routing the cable, adhere to the following maximum segment lengths:

- 300 meters for 62.5/125 micron multimode fiber optic cable
- 550 meters for 50/125 micron multimode fiber optic cable

To attach the filer to the network, remove the termination from the connector, then push the duplex fiber-optic cable connector into the duplex SC connector on the card until it clicks and locks in place.

Status LEDs

The Gigabit Ethernet card provides status LEDs on its front panel. Table 3 describes the LEDs.

Table 3. LEDs on the Gigabit Ethernet card

LED	Function
LINK (green)	The LED lights to indicate the link is good. The LED is off if the link fails or a link is not detected.
DATA (yellow)	The LED flashes to indicate the unit is transmitting/receiving network traffic. The LED is off if the card is not transmitting/receiving traffic.

Identifying the Gigabit Ethernet card in the filer command interface

When using the command interface to configure and get status for the network interfaces in a filer, the Gigabit Ethernet card is specified as “1000fx.” In addition, the interface is named according to the expansion slot it occupies. For example, in a NetApp F540 in which the card is installed in expansion slot 3, the interface name is e3.

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