

Data ONTAP[™] Release 5.0

Welcome

Table of contents

Welcome to Data ONTAP Release 5.0	1
Features in Release 5.0.....	1
Multivolume	1
New multivolume access commands.....	2
Multiple RAID groups.....	2
Support for the Exabyte 8900 tape drive	3
New Network Appliance custom MIB	3
Using single-volume objects	3
Finding multivolume objects.....	3
How to use the documentation package	3
Creating a system boot diskette.....	5
Creating a system boot diskette from a UNIX host.....	5
Using a file downloaded from NOW	5
Using a file from the CD-ROM	6
Creating a system boot diskette from a Windows host	8
Using a file downloaded from NOW	8
Using a file from the CD-ROM	10
Documentation roadmap	12
Documentation changes	14

Changes to the hardware guide for the NetApp	
F600 Series	14
Changes to filer labels.....	14
Corrections to tables	14
ATM card slot assignments.....	15
Changes to the hardware guide for the NetApp	
F500 Series	15
Changes to the Hardware Guide for the NetApp	
F200 and F300 Series	16
Changes to the Field Service Guide for the NetApp	
F600 Series	16
Changes to the Hardware Guide for the NetApp	
StorageShelf 2	17

Welcome to Data ONTAP Release 5.0

This booklet describes how to use the documentation package.

Data ONTAP Release 5.0 runs only on Network Appliance® filer models in the NetApp™ F200, F300, F500, F600, and later series. When the term *filer* is used in this document, the information applies to these models.

Features in Release 5.0

Release 5.0 features multiple volumes, multiple RAID groups per volume, and support for the Exabyte 8900 tape drive.

Multivolume

Multivolume enables you to create more than one active file system, or *volume*, on a filer. This feature enables volumes to move between filers, and makes administration of large-capacity filers easier. It enables you to increase capacity without substantially compromising on data availability.

- segmented data restores in less time
- parallel disk scrub, reconstruct, backup, and restore
- increased granularity of quotas and snapshots
- easier administration of multiple work groups
- more expeditious data migration
- simpler movement of disks and volumes among filers

Multivolume also enables you to easily consolidate multiple filers into a single filer.

New multivolume access commands

Multivolume involves significant changes to the Data ONTAP user interface as follows:

- Release 5.0 enables you to have more than one volume on a filer. A volume is an independent file system with its own RAID groups.
- The `disk` and `vol` commands replace the `raid` command.
- A new virtual root syntax is used to access volumes; you specify volumes with the prefix `/vol/`.
- RAID group management has changed as follows:
 - A volume can have more than one RAID group.
 - A new RAID group is created whenever the preceding RAID group is full.
 - Disks can be added only to the last RAID group in a volume; earlier RAID groups cannot be expanded.

For detailed information about these topics, read the *disk(1)* and *vol(1)* man pages and Chapters 2 and 3 of the *System Administrator's Guide*.

Multiple RAID groups

Release 5.0 also supports multiple RAID groups per file system.

Multiple RAID groups can provide higher reliability in that they provide the following advantages over single RAID-group operation:

- faster RAID reconstruction speeds
- global spares

Support for the Exabyte 8900 tape drive

Release 5.0 supports the Exabyte 8900 “Mammoth” tape drive on the F630 filer.

New Network Appliance custom MIB

The Network Appliance custom MIB has been updated to version 1.1.0. It contains new objects that help you manage multivolume features.

Using single-volume objects

If you are using a single-volume filer, you do not need to make changes to use the new MIB and can use single-volume objects even though they are deprecated.

Finding multivolume objects

The descriptions of the deprecated single-volume objects contain the names of the corresponding new multivolume objects. For multivolume objects, use the new objects rather than the deprecated ones.

How to use the documentation package

To install a new filer, follow the instructions in the booklet *Quick Start Guide*.

If you are upgrading from a UNIX client, follow the instructions in the booklet *Upgrading From a UNIX Client*.

If you are upgrading from a Windows client, follow the instructions in the booklet *Upgrading From Windows*.

If you need to downgrade from Release 5.0, 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)		

Creating a system boot diskette

A system boot diskette is supplied in the documentation package. You need to create a system boot diskette only if you do not have the diskette that came with your software and are upgrading from a version of Data ONTAP earlier than 4.0.

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

Creating a system boot diskette from a UNIX host

You can create a system boot diskette from files on the Data ONTAP Release 5.0 CD-ROM or from files downloaded from NOW (Netapp On the Web) at:

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

Using a file downloaded from NOW

To create a system boot diskette from a file downloaded from NOW, you download the file and extract it.

Downloading the boot image. Download the boot image by following these steps:

1. Log onto NOW. NOW login information is on the protocol license sheet sent with the filer.
2. Click on Software Library.
3. Click on Ontap 5.
4. Click on the latest release of Data ONTAP.
5. Click on Accept to accept the license conditions.
6. 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.
7. Click the Save button to save the file to your hard drive.

Extracting and copying the file. Extract and copy the file by following these steps:

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 image 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 5.0” 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 a file from the CD-ROM

From a UNIX host, to create a system boot diskette from a file on the Data ONTAP Release 5.0 CD-ROM, follow these steps:

1. Mount a write-enabled, 1.44MB, formatted diskette onto your UNIX.
2. Mount the Data ONTAP Release 5.0 CD-ROM and do one of the following steps, depending on your filer model:
 - If your filer is a FAServer or an F200 or F300 series model, go to the *ONTAP/ReleaseNo/X86* directory.

where *ReleaseNo* stands for the release number on the front of your CD-ROM.

- If your filer is an F500 or F600 series model, go to the *ONTAP/ReleaseNo/ALPHA* directory.

where *ReleaseNo* stands for the release number on the front of your CD-ROM.

3. Copy the file 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 5.0” 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 files.

Creating a system boot diskette from a Windows host

You can create a system boot diskette from a file on the Data ONTAP Release 5.0 CD-ROM or from a file downloaded from NOW (Netapp On the Web) at:

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

Using a file downloaded from NOW

To create a system boot diskette from a file downloaded from NOW, you download the file and extract it.

Downloading the file. Download the file by following these steps:

1. NOW login information is on the protocol license sheet sent with the filer. Log onto NOW.
2. Click Software Library.
3. Click Ontap 5.
4. Click the latest release of Data ONTAP.
5. Click Accept to accept the license conditions.
6. To download and save the file, click the software you want under the type of host you are using and the model of your filer.
7. Click the Save button to save the file to your hard disk.

Downloading the RaWrite utility and writing the diskette. To download the RaWrite utility and writing the diskette, follow these steps:

1. Log in to the NOW site.
2. Click Tools & Utilities, then click 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 disk.

3. Open the Rawrite folder you downloaded and double-click *Rawrite.exe*. RaWrite 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 system boot diskette.
6. RaWrite displays the following message:

```
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 system boot diskette is ready for
booting on a NetApp filer.

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

Write "System Boot for Release 5.0" 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 a file from the CD-ROM

From a Windows host, to create a system boot diskette from a file on the Data ONTAP Release 5.0 CD-ROM, follow these steps:

1. Insert a write-enabled, 1.44 MB formatted diskette into your Windows host's diskette drive.
2. Insert the Data ONTAP Release 5.0 CD-ROM into your CD-ROM drive.
3. Open the Utils folder.
4. Open the Rawrite folder.
5. Double-click *Rawrite.exe*. RaWrite starts and asks for an image source.
6. Do one of the following steps, depending on your filer model:

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

`x:\ontap\ReleaseNo\x86\boot`

substituting your CD-ROM drive letter for *x* and the release number on the front of your CD-ROM for *ReleaseNo*.

- If your filer is an F500 or F600 series model, enter the following command:

`x:\ontap\ReleaseNo\alpha\boot`

substituting your CD-ROM drive letter for *x* and the release number on the front of your CD-ROM for *ReleaseNo*.

7. RaWrite asks for a target diskette drive. Enter the drive letter for the formatted diskette that will be the system boot diskette.
8. RaWrite displays the following message:

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 RaWrite finishes, your system boot diskette is ready for booting on a NetApp filer.

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

Write “System Boot for Release 5.0” 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 *Welcome* booklet 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 5.0, but the information they contain applies unless specified otherwise in this *Welcome* booklet. Table 2 describes documentation for Release 5.0.

Table 2. Documents for filers running Data ONTAP Release 5.0

Document	Contents
<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.
<i>Hardware Guides for: the NetApp F200 and F300 Series the NetApp F500 Series the NetApp F600 Series</i>	Detailed procedures for installing the filers and for adding or replacing SCSI devices. The guides also contain information about interpreting LEDs and LCD messages.
<i>NetApp Fibre Channel StorageShelf Hardware Guide</i>	How to install, setup, and manage the NetApp Fibre Channel StorageShelf.
<i>Quick Reference Guide</i>	Man page synopses that describe filer commands.
<i>Quick Start Guide</i>	Procedures for installing a new filer.
<i>Read Me First</i>	Late-breaking information that could not be included in other documentation.
<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> .

Document	Contents
<i>System Administrator's Guide for Release 5.0</i>	Detailed information about features in Release 5.0 and administering the filer.
<i>Upgrade for UNIX</i>	Instructions for upgrading a filer from a UNIX client.
<i>Upgrade for Windows</i>	Instructions for upgrading a filer from a Windows client.
<i>Welcome</i>	This booklet.

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

This section contains 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.” It should include the following additional items:

Manufacturer	Model
Breece Hill Technologies	Q2.15
Digital, Quantum, or Sun	DLT 2700
Digital or Sun	DLT 4700

Table 3-2, “Supported external tape drives,” on page 3-2 should include the following additional items:

Manufacturer	Model
Digital or Sun	DLT2000
Digital or Sun	DLT4000
Digital or Sun	DLT7000
Exabyte	8900

The following entry should be removed from Table 3-2:

Manufacturer	Model
Breece Hill Technologies	Q2.15

ATM card slot assignments

The ATM card works 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

Table 3-1, “Supported external tape stackers,” on page 3-2 should be titled “Supported external tape libraries.” It should include the following items:

Manufacturer	Model
Breece Hill Technologies	Q2.15
Digital, Quantum, or Sun	DLT 2700
Digital or Sun	DLT 4700

Table 3-2, “Supported external tape drives,” on page 3-2 should include the following additional items:

Manufacturer	Model
Digital or Sun	DLT2000

Digital or Sun	DLT4000
Digital or Sun	DLT7000 (for the NetApp 520)

The following entry should be removed from Table 3-2:

Manufacturer	Model
Breece Hill Technologies	Q2.15

Changes to the Hardware Guide for the NetApp F200 and F300 Series

Table 3-1, “Supported external tape stackers,” on page 3-2, should include the following item:

Manufacturer	Model
Digital or Sun	DLT 4700

Table 3-2, “Supported external tape drives,” on page 3-2 should include the following additional items:

Manufacturer	Model
Digital or Sun	DLT2000
Digital or Sun	DLT4000
Digital, Quantum, or Sun	DLT 7000 (F200 Series only)

Changes to the Field Service Guide for the NetApp F600 Series

The labels for the serial connectors on the NetApp F630 system, as shown 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

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.

Network Appliance, Inc.
2770 San Tomas Expressway
Santa Clara, CA 95051
Telephone: (408) 367-3000 Fax: (408) 367-3151
Technical support: (888) 4-NETAPP
Technical Support Email: support@netapp.com
Web: <http://www.netapp.com>

210-01816 Rev. A0