

Upgrading from a FAS250 to a FAS270 or FAS270c

About these instructions

These instructions are for NetApp® trained personnel to upgrade from a FAS250 to a FAS270 or FAS270c.

These instructions describe the following procedures:

- ◆ [“Upgrading to a single-node FAS270”](#) on page 2
- ◆ [“Upgrading to a FAS270c”](#) on page 9
- ◆ [“Adding storage”](#) on page 16
- ◆ [“Decommissioning the FAS250”](#) on page 18

Required software, firmware, and manuals

The following list specifies the software, firmware, and manuals you need to complete the upgrade:

- ◆ Data ONTAP™ 6.5 software or later

Caution

Data ONTAP is designed for specific filer families. You must install the same version level of Data ONTAP for your filer family.

- ◆ Filer firmware CFE 1.1 (common firmware environment) or later for the FAS250 and FAS270
- ◆ FAS250-to-FAS270 upgrade kit
- ◆ *FAS270 Series Hardware and Service Guide*
- ◆ *FAS250 Series Hardware and Service Guide*
- ◆ *Software Setup Guide*

Upgrading to a single-node FAS270

About upgrading the FAS250

Upgrading the FAS250 is a four-step process:

- ◆ [“Preparing the FAS250”](#) on page 2
- ◆ [“Preparing for the netboot process”](#) on page 4
- ◆ [“Converting the hardware”](#) on page 6
- ◆ [“Completing the upgrade”](#) on page 7

Assumptions about the upgrade

These procedures assume the following:

- ◆ You have access to an HTTP server for the netboot process.
- ◆ You backed up your FAS250 system before beginning the conversion procedure.

Preparing the FAS250

To prepare the FAS250 for upgrade to a FAS270, complete the following steps, using the illustrations for reference.

Step	Action
1	Check the Media Kit in the FAS270 packaging for the version level of Data ONTAP to be installed on the FAS270. Compare it to the version level of Data ONTAP that is installed on the FAS250.

Step	Action	
2	If Data ONTAP on the FAS250 is...	Then...
	The same as or a later version than the FAS270	Go to “Preparing for the netboot process” on page 4.
	An earlier version than the FAS270	1. Download Data ONTAP to a client or Web server from http://now.netapp.com/NOW/main/\software.shtml. 2. Extract and install the files by entering one of the following commands from the console: software install software_file or software install url <i>software_file</i> is the name of the file on the CPU module. <i>url</i> is the location of the software in a Web server. Note In a Windows® environment, you must unzip the files and run setup.exe. 3. Download the image by entering the following command: download 4. Reboot the system.

Preparing for the netboot process

The FAS270 node is shipped without an image on its CompactFlash™ card. After installing the new FAS270 node, you must perform a netboot process on Data ONTAP so that you can download the correct files to the CompactFlash card for subsequent system boots.

The two main methods of performing the netboot process are as follows:

- ◆ Through a HTTP server with DHCP running
- ◆ Through a TFTP server, manually setting `ifconfig`

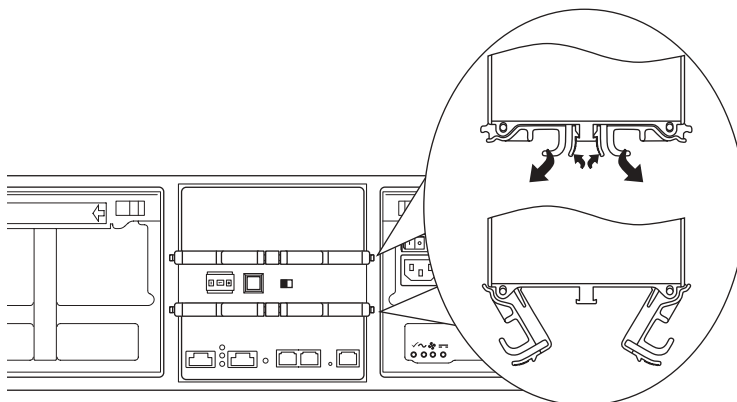
To copy the Data ONTAP boot image to a local HTTP server for the netboot process, complete the following steps.

Step	Action	
1	Copy the netapp-mips file from the /etc/boot directory on the FAS250 and copy it to a Web server that can access the FAS250.	
	Note _____ You can also copy this file from http://now/netapp.com/NOW/main/software.shtml to your local Web server. _____	
2	Halt the system by entering the following command:	
	halt	
	Note _____ The system begins beeping two minutes after Data ONTAP stops. _____	
3	If DHCP is...	Then...
	Running	Configure the connection automatically by entering the following command at the CFE prompt: ifconfig e0a -auto
	Not running	Manually configure the connection by entering the following command at the CFE prompt: ifconfig e0a -addr=filer_addr -mask=netmask -gw=gateway -dns=dns_addr -domain=dns_domain

Step	Action
4	Test the netboot by entering the appropriate command from the node console: Use netboot through the HTTP server: <pre>netboot http://webserver.com/file_path/netboot_file_name</pre> Use netboot through the TFTP server—manual: <pre>netboot tftp://webserver.com/file_path/netboot_file_name</pre> <i>webserver.com</i> is the name of the Web server where you copied the netboot file. <i>file_path</i> is the path to the netboot file. <i>netboot_file_name</i> is the name of the netboot file See Help netboot for more information.

Converting the hardware

To convert the FAS250 hardware, complete the following steps, using the illustration for reference.



Step	Action
1	Halt the system, turn off the power to the FAS250, and remove all cabling from the system. Make sure that you are properly grounded.
2	Remove the FAS250 node and replace it with the new FAS270 node.
3	Connect the system to the network through port A on the on-board Ethernet adapter, and then recable the console and reconnect the system to the power source.
4	Set the Terminate switch on the node to On.
5	Go to “Completing the upgrade” on page 7.

Completing the upgrade

To complete the upgrade to the FAS270, complete the following steps.

Step	Action
1	Turn on the system and press any key to boot to the CFE prompt. Perform the netboot process on the system, as described in “Preparing for the netboot process” on page 4, Step 3 and Step 4 .
2	Press Ctrl-C during boot and select 5 from the displayed menu to enter Maintenance Mode. Answer the displayed questions.
3	Check ownership by entering the following command: disk show Result: The disks are all unassigned.
4	Assign disk ownership to the FAS270 by entering the following command: disk assign all
5	Check ownership by entering the following command: disk show Result: The new FAS270 should own all the disks.
6	Halt the system.
7	Exit Maintenance Mode, and then perform a netboot on the system the system through a normal boot, as described in “Preparing for the netboot process” on page 4, Step 3 and Step 4 .
8	Download the installed image to the CompactFlash card by entering the following command: download
9	Verify that the Data ONTAP image transferred to the CompactFlash card by entering the following command: version -b
10	Reboot the system to verify that the CompactFlash card is the default boot device for Data ONTAP by entering the following command: reboot

Step	Action	
11	Modify the RAID groups and volumes, as needed, as described in the <i>Storage Management Guide</i> .	
12	If you are...	Then...
	Upgrading to a cluster	Go to “ Upgrading to a FAS270c ” on page 9.
	Adding storage to the system	Go to “ Adding storage ” on page 16.
	Upgrading to a single CPU FAS270 with no additional storage	Go to “ Decommissioning the FAS250 ” on page 18.

Upgrading to a FAS270c

About upgrading to a FAS270c

Preparing the FAS270 for upgrade to a cluster is a two-step process:

- ◆ “[Preparing Node A](#)” on page 11
- ◆ “[Configuring for clustering](#)” on page 13

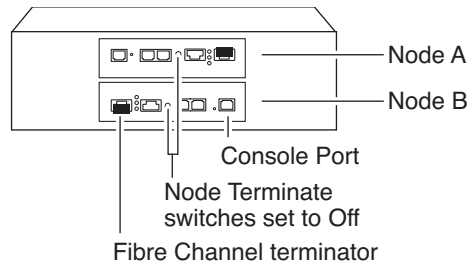
Assumptions for upgrading to a FAS270c

This procedure assumes the following:

- ◆ You completed the upgrade from a FAS250 to a single CPU FAS270, as described in “[Upgrading to a single-node FAS270](#)” on page 2.
- ◆ You have four spare disks; one for the first node, Node B, two for root volumes on Node A (the second node), and one spare for Node A.
- ◆ Node B owns the current file system.
- ◆ A second console is attached to Node A.
- ◆ You scheduled system down time to upgrade an active system.

What the system looks like

The following illustration shows the arrangement of the individual nodes in a FAS270c.



Disk reservation and ownership worksheet

Use the following worksheet to identify disk ownership in your system. You should note the location of root and data volumes and the location of unused or unassigned disks. Node A is not initially installed in the system. It is installed in [“Preparing Node A”](#) on page 11.

You must have four spares available:

- ◆ One spare for Node B
- ◆ Two spares for root volumes on Node A
- ◆ One spare for Node A

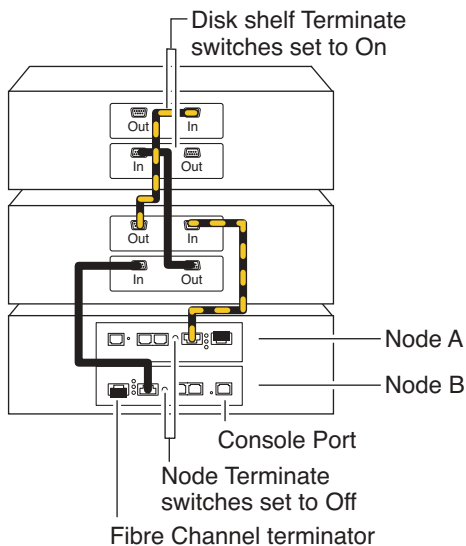
If all disks are full on Node B or there are not enough spare disks on the system, you must add a disk shelf or disk shelves to the system, as described in [“Adding storage”](#) on page 16.

Disk Assignments - Disk Shelf #1	Node B	Node A	Disk Assignments - Disk Shelf #2	Node B	Node A
Disk 0—0b.16	_____	_____	Disk 0—0b.32	_____	_____
Disk 1—0b.17	_____	_____	Disk 1—0b.33	_____	_____
Disk 2—0b.18	_____	_____	Disk 2—0b.34	_____	_____
Disk 3—0b.19	_____	_____	Disk 3—0b.35	_____	_____
Disk 4—0b.20	_____	_____	Disk 4—0b.36	_____	_____
Disk 5—0b.21	_____	_____	Disk 5—0b.37	_____	_____
Disk 6—0b.22	_____	_____	Disk 6—0b.38	_____	_____
Disk 7—0b.23	_____	_____	Disk 7—0b.39	_____	_____
Disk 8—0b.24	_____	_____	Disk 8—0b.40	_____	_____
Disk 9—0b.25	_____	_____	Disk 9—0b.41	_____	_____
Disk 10—0b.26	_____	_____	Disk 10—0b.42	_____	_____
Disk 11—0b.27	_____	_____	Disk 11—0b.43	_____	_____
Disk 12—0b.28	_____	_____	Disk 12—0b.44	_____	_____
Disk 13—0b.29	_____	_____	Disk 13—0b.45	_____	_____

Note _____
You must assign drive bay 0 on disk shelves 2 and 3 to one node and drive bay 1 to the other node. This allows both nodes to have SES access to each shelf.

Preparing Node A

To configure the FAS270 into a clustered system, complete the following steps, using the figure for reference.



Step	Action
1	Complete the disk ownership worksheet, as described in “Disk reservation and ownership worksheet” on page 10. To determine disk ownership, enter the following command: <pre>disk show -v</pre> To determine the list of spares, enter the following command: <pre>vol status -s</pre>

Step	Action	
2	If there are...	Then...
	Four or more spare disks	1. Unassign ownership to at least three of the available spares by entering the following command: disk assign 0b.nn -s unowned -f <i>0b.nn</i> is the disk ID to unassign. 2. Go to Step 3.
	Three or fewer spare disks	Complete Steps 3 through 5, and then add disk shelves, as described in Step 6.
3	Shut down the system and unplug it from the power source. Make sure that you are properly grounded with a grounding strap.	
4	Remove the CPU blank and install Node A. Make sure that you install it inverted from the first module. The module is keyed to prevent improper installation.	
5	Connect Node A to its own console and to the network.	
6	Install any additional disk shelves, as described in “Adding storage” on page 16.	
7	Turn on both nodes. On the console of the new node, press any key to stop the system at the CFE prompt. Perform a netboot on the system, as described in “Preparing for the netboot process” on page 4, Step 3 and Step 4 .	
8	Press Ctrl-C during boot and select 4 from the displayed menu. Result: The node attempts to assign any unassigned disks for its use. You are prompted to zero these disks. Answer Y to the two displayed questions. Caution _____ Make sure that you are on the correct console for the new node. If you are not on the correct console, CFE Option 4 removes data. _____	

Step	Action
9	Complete the initial setup by answering the questions with information for the new node.
10	License products you need to complete the download by entering the following command for each product: license add xxxx xxxx is the license code for the product.
11	Install Data ONTAP on the new node. Make sure that you download the image to the CompactFlash card and reboot the system.
12	Verify the contents of the CompactFlash card by entering the following command: version -b
13	Reboot the node to verify that the CompactFlash card is the default boot device for Data ONTAP by entering the following command: reboot
14	Go to “Configuring for clustering” on page 13.

Configuring for clustering

To configure the system for clustering, complete the following steps.

Step	On Node B...	On Node A...
1	Enable licenses on <i>both nodes</i> by entering the following command on each node’s console: license add xxxx Note _____ Make sure that you license clustering on both nodes.	
2	Reboot the node.	Reboot the node after adding the cluster license.

Step	On Node B...	On Node A...
3	Enable clustering by entering the following command: cf enable	
4	Check node status by entering the following command: cf status	
5	Test takeover by completing the following steps: 1. Initiate takeover by entering the following command: cf takeover Result: Takeover succeeds. If not, run the Cluster Configuration Checker, fix any errors, reboot the node, and repeat the test. 2. Check the status of the takeover by entering the following command: cf status 3. Give back the node by entering the following command: cf giveback 4. Check the status of the cluster to ensure that giveback was successful by entering the following command: cf status	Test takeover by completing the following steps: 1. Initiate takeover by entering the following command: cf takeover Result: Takeover succeeds. 2. Check the status of the takeover by entering the following command: cf status 3. Give back the node by entering the following command: cf giveback 4. Check the status of the cluster to ensure that giveback was successful by entering the following command: cf status
6		Assign any unassigned disks or spares, as needed.

Step	On Node B...	On Node A...
7		Configure RAID groups and volumes, as described in the <i>Storage Management Guide</i> .
8	Complete the setup, as described in the <i>Software Setup Guide</i> .	

Adding storage

Adding storage

To add disk shelves to your system, up to the maximum supported by the system, complete the following steps.

Step	Action	
1	Install the disk shelves in the equipment rack, as described in the <i>DiskShelf14</i> and <i>DiskShelf14mk2 FC Hardware Guide</i> .	
2	If you are installing a...	Then...
	Single node FAS270	1. Connect the blue Fibre Channel port on the node to the disk shelf LRC B Input port. 2. Cable any remaining disk shelves in the loop. 3. If you have two additional disk shelves, complete this step. If you are only adding a single disk shelf, go to the next step in this process. Connect the LRC Channel A Input port on the top disk shelf to the LRC Channel A Output port of the disk shelf below it in the loop. 4. Plug the loopback plug into the Channel A LRC Input port in the disk shelf closest to the node. 5. Set the Terminate switch on the node to Off. 6. Set the Terminate switch on the last disk shelf module B to On. 7. Set the loop speed on the disk shelves to 1 Gb. 8. Connect the disk shelves to the power supply, and then turn them on.

Step	Action	
	FAS270 cluster	1. Connect the blue Fibre Channel port on Node B to the disk shelf LRC B Input port. 2. Connect the blue Fibre Channel port on Node A to the disk shelf LRC A Input port. 3. Cable any remaining disk shelves in loop A and B. 4. Set the Terminate switches on Node B and Node A to Off. 5. Set the Terminate switches on the last disk shelf to On. 6. Set the loop speed on the disk shelves to 1 Gb. 7. Connect the disk shelves to the power supplies, and then turn them on. 8. Go to Step 7 in “Preparing Node A” on page 11 to complete setup.

Decommissioning the FAS250

Decommissioning your FAS250

The following procedure assumes that you are taking the FAS250 completely out of service and returning it to Network Appliance. To complete the decommissioning process, complete the following steps.

Step	Action
1	Decommission the system through the NOW Web site at http://now.netapp.com/ . Search for Decommission this System and follow the instructions.
2	Return the FAS250 node to NetApp, as described in the SRA instructions shipped with the conversion kit. Contact Customer Support if you need the SRA instructions.