



Stage 5. Install the AFF A900 or FAS9500 NVRAM and controller modules on node2

Upgrade controllers

NetApp
December 01, 2022

Table of Contents

- Stage 5. Install the AFF A900 or FAS9500 NVRAM and controller modules on node2 1
- Install the AFF A900 or FAS9500 NVRAM and controller modules on node2 1
- Netboot node2 2

Stage 5. Install the AFF A900 or FAS9500 NVRAM and controller modules on node2

Install the AFF A900 or FAS9500 NVRAM and controller modules on node2

Install the AFF A900 or FAS9500 NVRAM and controller modules that you received for the upgrade on node2. Node2 is controller B located on the right side of the chassis when looking at the controllers from the rear of the system.

You must note the following when performing the installation:

- Move all blank filler modules in slots 6-1 and 6-2 from the old NVRAM module to the new NVRAM module.
- Do NOT move the coredump device from the AFF A700 NVRAM module to the AFF A900 NVRAM module.
- Move all flash cache modules installed in the FAS9000 NVRAM module to the FAS9500 NVRAM module.

Before you begin

If you are not already grounded, correctly ground yourself.

Install the AFF A900 or FAS9500 NVRAM module

Use the following procedure to install the AFF A900 or FAS9500 NVRAM module in slot 6 of node2.

Steps

1. Align the NVRAM module with the edges of the chassis opening in slot 6.
2. Gently slide the NVRAM module into the slot until the lettered and numbered I/O cam latch begins to engage with the I/O cam pin, and then push the I/O cam latch all the way up to lock the NVRAM module in place.

Install the AFF A900 or FAS9500 controller module in node2

Use the following procedure to install the AFF A900 or FAS9500 controller module in node2.

Steps

1. Align the end of the controller module with bay B in the chassis, and then gently push the controller module halfway into the system.



The bay label is located on the chassis directly above the controller module.



Do not completely insert the controller module in the chassis until you are instructed to do so later in the procedure.

2. Cable the management and console ports to the node2 controller module.



Because the chassis is already powered ON, node2 starts booting as soon as it is fully seated. To avoid node2 booting, it is recommended that you connect the console and management cables to the node2 controller module before completely inserting the controller module into the slot.

3. Firmly push the controller module into the chassis until it meets the midplane and is fully seated.

The locking latch rises when the controller module is fully seated.



To avoid damaging the connectors, do not use excessive force when sliding the controller module into the chassis.

4. Connect the serial console as soon as the module is seated and be ready to interrupt AUTOBOOT of node1.
5. After you interrupt AUTOBOOT, node2 stops at the LOADER prompt. If you do not interrupt AUTOBOOT on time and node2 starts booting, wait for the prompt and press **Ctrl-C** to go into the boot menu. After the node stops at the boot menu, use option 8 to reboot the node and interrupt the AUTOBOOT during reboot.

Netboot node2

After swapping the corresponding AFF A900 or FAS9500 node2 controller module and NVRAM, module you might need to netboot them. The term netboot means that you are booting from an ONTAP image stored on a remote server. When preparing for netboot, you must put a copy of the ONTAP 9 boot image onto a web server that the system can access.

It is not possible to check the version of ONTAP installed on the boot media of an AFF A900 or a FAS9500 controller module unless it is installed in a chassis and powered ON. The ONTAP version on the AFF A900 or the FAS9500 boot media must be the same as the ONTAP version running on the AFF A700 or the FAS9000 system that you are upgrading and both the primary and backup boot images must match. You can configure the images by performing a netboot followed by the `wipeconfig` command from the boot menu. If the controller module was previously used in another cluster, the `wipeconfig` command clears any residual configuration on the boot media.



You can also use the USB boot option to perform the netboot. See the [NetApp KB Article: How to use the boot_recovery LOADER command for installing ONTAP for initial setup of a system.](#)

Before you begin

- Verify that you can access a HTTP server with the system.
- Download the necessary system files for your system and the correct version of ONTAP from the *NetApp Support Site*. Refer to [References](#) to link to the *NetApp Support Site*.

About this task

You must netboot the new controllers if they do not have the same version of ONTAP 9 installed on them that is installed on the original controllers. After you install each new controller, you boot the system from the ONTAP 9 image stored on the web server. You can then download the correct files to the boot media device for subsequent system boots.

Steps

1. Refer to [References](#) to link to the *NetApp Support Site* to download the files used for performing the netboot of the system.
2. Download the appropriate ONTAP software from the software download section of the NetApp Support Site and store the `<ontap_version>_image.tgz` file on a web-accessible directory.
3. Change to the web-accessible directory and verify that the files you need are available.
4. Your directory listing should contain `<ontap_version>_image.tgz`.
5. Configure the netboot connection by choosing one of the following actions.



You must use the management port and IP as the netboot connection. Do not use a data LIF IP or a data outage might occur while the upgrade is being performed.

If Dynamic Host Configuration Protocol (DHCP) is...	Then...
Running	Configure the connection automatically by using the following command at the boot environment prompt: <pre>ifconfig e0M -auto</pre>
Not running	Manually configure the connection by using the following command at the boot environment prompt: <pre>ifconfig e0M -addr=filer_addr -mask=netmask -gw=gateway -dns=dns_addr -domain=dns_domain</pre> <p><i>filer_addr</i> is the IP address of the storage system. <i>netmask</i> is the network mask of the storage system. <i>gateway</i> is the gateway for the storage system. <i>dns_addr</i> is the IP address of a name server on your network. This parameter is optional. <i>dns_domain</i> is the Domain Name Service (DNS) domain name. This parameter is optional.</p> <div data-bbox="673 1228 734 1287" data-label="Image"> </div> <p>Other parameters might be necessary for your interface. Enter <code>help ifconfig</code> at the firmware prompt for details.</p>

6. Perform netboot on node2:

```
netboot http://<web_server_ip/path_to_web_accessible_directory>/netboot/kernel
```



Do not interrupt the boot.

7. Wait for the node2 now running on the AFF A900 or FAS9500 controller module to boot and display the boot menu options as shown in the following output:

Please choose one of the following:

- (1) Normal Boot.
 - (2) Boot without /etc/rc.
 - (3) Change password.
 - (4) Clean configuration and initialize all disks.
 - (5) Maintenance mode boot.
 - (6) Update flash from backup config.
 - (7) Install new software first.
 - (8) Reboot node.
 - (9) Configure Advanced Drive Partitioning.
 - (10) Set Onboard Key Manager recovery secrets.
 - (11) Configure node for external key management.
- Selection (1-11)?

8. From the boot menu, select option (7) Install new software first.

This menu option downloads and installs the new ONTAP image to the boot device.



Disregard the following message: This procedure is not supported for Non-Disruptive Upgrade on an HA pair. This note applies to nondisruptive ONTAP software upgrades, and not controller upgrades.

Always use netboot to update the new node to the desired image. If you use another method to install the image on the new controller, the wrong image might install. This issue applies to all ONTAP releases.

9. If you are prompted to continue the procedure, enter `y`, and when prompted for the package, enter the URL:

```
http://<web_server_ip/path_to_web-  
accessible_directory>/<ontap_version>_image.tgz
```

The `<path_to_the_web-accessible_directory>` should lead to where you downloaded the `<ontap_version>_image.tgz` in [Step 2](#).

10. Complete the following substeps to reboot the controller module:

- a. Enter `n` to skip the backup recovery when you see the following prompt:

```
Do you want to restore the backup configuration now? {y|n}
```

- b. Enter `y` to reboot when you see the following prompt:

```
The node must be rebooted to start using the newly installed  
software. Do you want to reboot now? {y|n}
```

The controller module reboots but stops at the boot menu because the boot device was reformatted, and the configuration data must be restored.

11. At the prompt, run the `wipeconfig` command to clear any previous configuration on the boot media.
 - a. When you see the message below, answer `yes`:

```
This will delete critical system configuration, including cluster
membership.
Warning: do not run this option on a HA node that has been taken
over.
Are you sure you want to continue?:
```

- b. The node reboots to finish the `wipeconfig` and then stops at the boot menu.
12. Select maintenance mode 5 from the boot menu and enter `y` when you are prompted to continue with the boot.
13. Verify that the controller and chassis are configured as `ha`:

```
ha-config show
```

The following example shows the output of the `ha-config show` command:

```
Chassis HA configuration: ha
Controller HA configuration: ha
```

14. If the controller and chassis are not configured as `ha`, use the following commands to correct the configuration:

```
ha-config modify controller ha
```

```
ha-config modify chassis ha
```

15. Halt node2:

```
halt
```

Node2 should stop at the `LOADER>` prompt.

16. On node2, check the system date, time, and time zone:

```
date
```

17. On node2, check the date by using the following command at the boot environment prompt:

```
show date
```

18. If necessary, set the date on node2:

```
set date mm/dd/yyyy
```



Set the corresponding UTC date on node2.

19. On node2, check the time by using the following command at the boot environment prompt:

```
show time
```

20. If necessary, set the time on node2:

```
set time hh:mm:ss
```



Set the corresponding UTC time on node2.

21. If necessary, set the partner system ID on node2:



This is the system ID of the node1 that you are upgrading to an AFF A900.

```
setenv partner-sysid node1_sysid
```

a. Save the settings:

```
saveenv
```

22. On node2, at the LOADER prompt, verify the `partner-sysid` for node1:

```
printenv partner-sysid
```

For node2, the `partner-sysid` must be that of node1.

Copyright information

Copyright © 2022 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.