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

AFF and FAS Controller Upgrade

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

You must 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.

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: `ifconfig e0M -auto`
Not running	Manually configure the connection by using the following command at the boot environment prompt: `ifconfig e0M -addr=<filer_addr> -mask=<netmask> -gw=<gateway> - dns=<dns_addr> domain=<dns_domain>` `<filer_addr>` is the IP address of the storage system. `<netmask>` is the network mask of the storage system. `<gateway>` is the gateway for the storage system. `<dns_addr>` is the IP address of a name server on your network. This parameter is optional. `<dns_domain>` is the Domain Name Service (DNS) domain name. This parameter is optional. Other parameters might be necessary for your interface. Enter `help ifconfig` at the firmware prompt for details.

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.