



Stage 2 Relocate and retire node1

AFF and FAS Controller Upgrade

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Table of Contents

- Stage 2. Relocate and retire node1 1
 - Relocate non-root aggregates and NAS data LIFs owned by node 1 to node 2 1
 - Relocate failed or vetoed aggregates 3
 - Retire node1 4
 - Prepare for netboot 4

Stage 2. Relocate and retire node1

During Stage 2, you relocate the node1 aggregates and LIFs to node2, record node1 information, and then retire node1. This process is largely automated; the operation pauses to allow you to check its status. You must manually resume the operation.

Steps

1. [Relocate non-root aggregates and NAS data LIFs owned by node1 to node2](#)
2. [Relocate failed or vetoed aggregates](#)
3. [Retire node1](#)
4. [Prepare for netboot](#)

Relocate non-root aggregates and NAS data LIFs owned by node 1 to node 2

Before you can replace node1 with node3, you must move the non-root aggregates and NAS data LIFs from node1 to node2 before eventually moving node1's resources to node3.

Before you begin

The operation should already be paused when you begin the task; you must manually resume the operation.

About this task

Remote LIFs handle traffic to SAN LUNs during the upgrade procedure. Moving SAN LIFs is not necessary for cluster or service health during the upgrade. You must verify that the LIFs are healthy and located on appropriate ports after you bring node3 online.



The home owner for the aggregates and LIFs are not modified; only the current -owner is modified.

Steps

1. Resume the aggregate relocation and NAS data LIF move operations:

```
system controller replace resume
```

All the non-root aggregates and NAS data LIFs are migrated from node1 to node2.

The operation pauses to allow you to verify whether all node1 non-root aggregates and non-SAN data LIFs have been migrated to node2.

2. Check the status of the aggregate relocation and NAS data LIF move operations:

```
system controller replace show-details
```

3. With the operation still paused, verify that all the non-root aggregates are online for their state on node2:

```
storage aggregate show -node <node2> -state online -root false
```

The following example shows that the non-root aggregates on node2 are online:

```
cluster::> storage aggregate show -node node2 state online -root false

Aggregate   Size      Available  Used%   State   #Vols  Nodes  RAID Status
-----
-----
aggr_1      744.9GB   744.8GB    0%      online   5   node2
raid_dp,normal
aggr_2      825.0GB   825.0GB    0%      online   1   node2
raid_dp,normal
2 entries were displayed.
```

If the aggregates have gone offline or become foreign on node2, bring them online by using the following command on node2, once for each aggregate:

```
storage aggregate online -aggregate <aggr_name>
```

4. Verify that all the volumes are online on node2 by using the following command on node2 and examining its output:

```
volume show -node <node2> -state offline
```

If any volumes are offline on node2, bring them online by using the following command on node2, once for each volume:

```
volume online -vserver <vserver-name> -volume <volume-name>
```

The <vserver-name> to use with this command is found in the output of the previous `volume show` command.

5. If the ports currently hosting data LIFs will not exist on the new hardware, remove them from the broadcast domain:

```
network port broadcast-domain remove-ports
```

6. If any LIFs are down, set the administrative status of the LIFs to `up` by entering the following command, once for each LIF:

```
network interface modify -vserver <vserver_name> -lif <LIF_name>-home-node <nodename> -status-admin up
```

7. If you have interface groups or VLANs configured, complete the following substeps:

- a. If you have not already saved them, record the VLAN and interface group information so you can recreate the VLANs and interface groups on node3 after node3 is booted up.
- b. Remove the VLANs from the interface groups:

```
network port vlan delete -node <nodename> -port <ifgrp> -vlan-id <VLAN_ID>
```



Follow the corrective action to resolve any errors that are suggested by the vlan delete command.

- c. Enter the following command and examine its output to see if there are any interface groups configured on the node:

```
network port ifgrp show -node <nodename> -ifgrp <ifgrp_name> -instance
```

The system displays interface group information for the node as shown in the following example:

```
cluster::> network port ifgrp show -node nodel -ifgrp a0a -instance
                Node: nodel
Interface Group Name: a0a
Distribution Function: ip
                Create Policy: multimode_lacp
                MAC Address: 02:a0:98:17:dc:d4
Port Participation: partial
                Network Ports: e2c, e2d
                Up Ports: e2c
                Down Ports: e2d
```

- d. If any interface groups are configured on the node, record the names of those groups and the ports assigned to them, and then delete the ports by entering the following command, once for each port:

```
network port ifgrp remove-port -node <nodename> -ifgrp <ifgrp_name> -port <netport>
```

Relocate failed or vetoed aggregates

If any aggregates fail to relocate or are vetoed, you must take manually relocate the aggregates, or override either the vetoes or destination checks, if necessary.

About this task

The relocation operation will have paused due to the error.

Steps

1. Check the EMS logs to determine why the aggregate failed to relocate or was vetoed.
2. Relocate any failed or vetoed aggregates:

```
storage aggregate relocation start -node <nodel> -destination <node2>
aggregate-list * -ndocontroller-upgrade true
```

3. When prompted, enter `y`.
4. You can force relocation by using one of the following methods:

| Option | Description |
|-------------------------------|--|
| Overriding veto checks | Enter the following: <pre>storage aggregate relocation start -override -vetoes * -ndocontroller-upgrade true</pre> |
| Overriding destination checks | Enter the following: <pre>storage aggregate relocation start -overridedestination-checks * -ndo -controllerupgrade true</pre> |

Retire node1

To retire node1, you resume the automated operation to disable the HA pair with node2 and shut node1 down properly. You must later remove node1 from the rack or chassis.

Steps

1. Resume the operation:

```
system controller replace resume
```

2. Verify that node1 has been halted:

```
system controller replace show-details
```

After you finish

You can decommission node1 after the upgrade is completed. See [Decommission the old system](#).

Prepare for netboot

After you physically rack node3 and node4 later in the procedure, you might need to netboot them. The term "netboot" means 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.

Before you begin

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

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.

However, you do not need to netboot the controllers if the same version of ONTAP 9 is installed on them that is

installed on the original controllers. If so, you can skip this section and proceed to [Stage 3 Installing and booting node3](#)

Steps

1. Access 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.

| For... | Then... |
|----------------------------|--|
| FAS/AFF8000 series systems | <p>Extract the contents of the <code><ontap_version>_image.tgz</code> file to the target directory:</p> <pre>tar -zxvf <ontap_version>_image.tgz</pre> <p>Note: If you are extracting the contents on Windows, use 7-Zip or WinRAR to extract the netboot image.</p> <p>Your directory listing should contain a netboot folder with a kernel file: netboot/kernel</p> |
| All other systems | <p>Your directory listing should contain the following file: <code><ontap_version>_image.tgz</code></p> <p>Note: You do not need to extract the contents of the <code><ontap_version>_image.tgz</code> file.</p> |

You will use the information in the directories in [Stage 3](#).

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