



# **Complete the restoration and replacement process - AFF A700 and FAS9000**

## **ONTAP Systems**

Martin Houser, Doug Thompson, Thripura Naidu Parangsam  
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# Complete the restoration and replacement process - AFF A700 and FAS9000

## Step 1: Verify and set the HA state of the chassis

You must verify the HA state of the chassis, and, if necessary, update the state to match your system configuration.

### Steps

1. In Maintenance mode, from either controller module, display the HA state of the local controller module and chassis: `ha-config show`

The HA state should be the same for all components.

2. If the displayed system state for the chassis does not match your system configuration:
  - a. Set the HA state for the chassis: `ha-config modify chassis HA-state`

The value for `HA-state` can be one of the following:

- `ha`
- `mcc`
- `mcc-2n`
- `non-ha`

- b. Confirm that the setting has changed: `ha-config show`
3. If you have not already done so, recable the rest of your system.
  4. Exit Maintenance mode: `halt`

The LOADER prompt appears.

## Step 2: Running system-level diagnostics

After installing a new chassis, you should run interconnect diagnostics.

Your system must be at the LOADER prompt to start System Level Diagnostics.

All commands in the diagnostic procedures are issued from the node where the component is being replaced.

### Steps

1. If the node to be serviced is not at the LOADER prompt, perform the following steps:
  - a. Select the Maintenance mode option from the displayed menu.
  - b. After the node boots to Maintenance mode, halt the node: `halt`

After you issue the command, you should wait until the system stops at the LOADER prompt.



During the boot process, you can safely respond `y` to prompts:

2. Repeat the previous step on the second node if you are in an HA configuration.



Both controllers must be in Maintenance mode to run the interconnect test.

3. At the LOADER prompt, access the special drivers specifically designed for system-level diagnostics to function properly: `boot_diags`

During the boot process, you can safely respond `y` to the prompts until the Maintenance mode prompt (`*>`) appears.

4. Enable the interconnect diagnostics tests from the Maintenance mode prompt: `sldiag device modify -dev interconnect -sel enable`

The interconnect tests are disabled by default and must be enabled to run separately.


5. Run the interconnect diagnostics test from the Maintenance mode prompt: `sldiag device run -dev interconnect`

You only need to run the interconnect test from one controller.

6. Verify that no hardware problems resulted from the replacement of the chassis: `sldiag device status -dev interconnect -long -state failed`

System-level diagnostics returns you to the prompt if there are no test failures, or lists the full status of failures resulting from testing the component.

7. Proceed based on the result of the preceding step.

If the system-level diagnostics tests...	Then...
Were completed without any failures	<p>a. Clear the status logs: <code>sldiag device clearstatus</code></p> <p>b. Verify that the log was cleared: <code>sldiag device status</code></p> <p>The following default response is displayed:</p> <div data-bbox="670 384 1489 485" style="border: 1px solid #ccc; padding: 10px; margin: 10px 0;"> <pre>SLDIAG: No log messages are present.</pre> </div> <p>c. Exit Maintenance mode on both controllers: <code>halt</code></p> <p>The system displays the LOADER prompt.</p> <div data-bbox="699 667 756 726" style="display: inline-block; text-align: center; vertical-align: middle;">  </div> <div data-bbox="818 663 1330 730" style="display: inline-block; vertical-align: middle;"> <p>You must exit Maintenance mode on both controllers before proceeding any further.</p> </div> <p>d. Enter the following command on both controllers at the LOADER prompt: <code>bye</code></p> <p>e. Return the node to normal operation:</p>
With two nodes in the cluster	<p>Issue these commands: <code>node::&gt; cluster ha modify -configured true</code></p> <p><code>node::&gt; storage failover modify -node node0 -enabled true</code></p>
With more than two nodes in the cluster	<p>Issue this command: <code>node::&gt; storage failover modify -node node0 -enabled true</code></p>
In a two-node MetroCluster configuration	<p>Proceed to the next step.</p> <p>The MetroCluster switchback procedure is done in the next task in the replacement process.</p>
In a stand-alone configuration	<p>You have no further steps in this particular task.</p> <p>You have completed system-level diagnostics.</p>

If the system-level diagnostics tests...	Then...
Resulted in some test failures	<p>Determine the cause of the problem.</p> <ol style="list-style-type: none"> <li>Exit Maintenance mode: <code>halt</code></li> <li>Perform a clean shutdown, and then disconnect the power supplies.</li> <li>Verify that you have observed all of the considerations identified for running system-level diagnostics, that cables are securely connected, and that hardware components are properly installed in the storage system.</li> <li>Reconnect the power supplies, and then power on the storage system.</li> <li>Rerun the system-level diagnostics test.</li> </ol>

## Step 3: Switch back aggregates in a two-node MetroCluster configuration

After you have completed the FRU replacement in a two-node MetroCluster configuration, you can perform the MetroCluster switchback operation. This returns the configuration to its normal operating state, with the sync-source storage virtual machines (SVMs) on the formerly impaired site now active and serving data from the local disk pools.

This task only applies to two-node MetroCluster configurations.

### Steps

1. Verify that all nodes are in the `enabled` state: `metrocluster node show`

```
cluster_B::> metrocluster node show
```

DR Group	Cluster	Node	Configuration State	DR Mirroring Mode
1	cluster_A	controller_A_1	configured	enabled
completed	cluster_B	controller_B_1	configured	enabled
switchback recovery				waiting for

2 entries were displayed.

2. Verify that resynchronization is complete on all SVMs: `metrocluster vserver show`
3. Verify that any automatic LIF migrations being performed by the healing operations were completed successfully: `metrocluster check lif show`
4. Perform the switchback by using the `metrocluster switchback` command from any node in the surviving cluster.
5. Verify that the switchback operation has completed: `metrocluster show`

The switchback operation is still running when a cluster is in the `waiting-for-switchback` state:

```
cluster_B::> metrocluster show
Cluster              Configuration State      Mode
-----
Local: cluster_B configured          switchover
Remote: cluster_A configured          waiting-for-switchback
```

The switchback operation is complete when the clusters are in the `normal` state.:

```
cluster_B::> metrocluster show
Cluster              Configuration State      Mode
-----
Local: cluster_B configured          normal
Remote: cluster_A configured          normal
```

If a switchback is taking a long time to finish, you can check on the status of in-progress baselines by using the `metrocluster config-replication resync-status show` command.

6. Reestablish any SnapMirror or SnapVault configurations.

## Step 4: Return the failed part to NetApp

After you replace the part, you can return the failed part to NetApp, as described in the RMA instructions shipped with the kit. Contact technical support at [NetApp Support](#), 888-463-8277 (North America), 00-800-44-638277 (Europe), or +800-800-80-800 (Asia/Pacific) if you need the RMA number or additional help with the replacement procedure.

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