
Replacing a DIMM in a 62xx system

You replace a DIMM in the controller module when your system registers an increasing number of correctable error correction codes (ECC); failure to do so causes a system panic.

Before you begin

All other components in the system must be functioning properly; if not, you must contact technical support.

You must replace the failed component with a replacement FRU component you received from your provider.

About this task

- You can use this procedure with all versions of Data ONTAP supported by your system.
- The term *system* refers to FAS, V-Series, and SA (FlexCache) systems within this platform family. The procedures apply to all platforms, unless otherwise indicated, except that Cluster-Mode procedures do not apply to SA systems.

Steps

1. [Shutting down the target controller](#) on page 1
2. [Opening the system](#) on page 3
3. [Removing the DIMMs](#) on page 3
4. [Installing the DIMMs](#) on page 5
5. [Reinstalling the controller module and booting the system](#) on page 6
6. [Running diagnostics on the DIMM](#) on page 6
7. [Completing the replacement process](#) on page 9

Shutting down the target controller

You shut down or take over the target controller using different procedures, depending on whether it is part of an HA pair or a stand-alone system.

Choices

- [Shutting down a node in an HA pair](#) on page 1
- [Shutting down a stand-alone controller](#) on page 2

Shutting down a node in an HA pair

To shut down the node, you must determine the status of the node and, if necessary, take over the node so that the partner continues to serve data from the node's storage.

About this task

As part of this procedure, you leave the power supplies or turn them off depending on your configuration:

- If you have two controller modules in the same chassis, you must leave the power supplies turned on to provide power to the partner node.
- If you have one controller module in the chassis, but is part of an HA pair, you should turn off the power supplies in the target node chassis.

Steps

1. Check the status of the target node (the node you want to perform maintenance on) by entering the following command at the system console of either node:

For...	Issue the command...
7-Mode	<code>cf status</code>
Cluster-Mode	<code>storage failover show</code>

2. Take one of the following actions, depending on the result of the `cf status` or `storage failover show` command:

If...	Then...
Neither node is in takeover mode	Go to the next step in this procedure.
The partner node took over the target node	The target node is in a state where you can begin removing it from the system chassis.
The target node took over the partner node	<ol style="list-style-type: none">a. Correct the problem that caused the takeover.b. Enter the <code>cf giveback</code> command (7-Mode) or <code>storage failover giveback target_node_name</code> command (Cluster-Mode) from the target node console.c. Go back to the beginning of this procedure.

3. Take over the target node by entering one of the following commands from the partner node's console and wait for the takeover to complete:

For...	Issue the command...
7-Mode	<code>cf takeover</code>
Cluster-Mode	<ul style="list-style-type: none">• In Data ONTAP 8.1.0 or earlier: <code>storage failover takeover -fromnode partner_node_name</code>• In Data ONTAP 8.1.1 or later: <code>storage failover takeover -ofnode target_node_name</code>

4. Turn off or leave on the power supplies, depending on how many controller modules are in the target chassis:

If your system has...	Then...
Two controller modules in the chassis	Leave the power supplies turned on to provide power to the partner node.
One controller module in the chassis	Turn off the power supplies and unplug them from the power sources.

Shutting down a stand-alone controller

For a stand-alone controller, you must perform a clean shutdown to ensure that all data has been written to disk. You must also disconnect the power supplies.

Steps

1. Enter the following commands from the system console:

If your system is configured in...	Then issue this command...
7-Mode	<code>halt</code>
Cluster-Mode	<code>halt local</code>

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

2. If you are not already grounded, properly ground yourself.
3. Turn off the power supplies, unplug both power cords from the power source, and then remove the power cords.

Opening the system

To access components inside the controller module, you must open the system.

Steps

1. If you are not already grounded, properly ground yourself.
2. Unplug the system cables and SFPs from the controller module, as needed, and keep track of where the cables were connected.

Leave the cables in the cable management tray, so that when you reinstall the cable management tray, the cables are organized.
3. Grasp the cable management tray by the side, gently push one side of the tray so that the arm slides across and off the retaining pin, slide the other arm off the retaining pin on the other side of the controller module, and then lift it off the back of the controller module and set it aside.
4. Loosen the thumbscrew on the cam handle.
5. Pull the cam handle downward and slide the controller module out of the system until it catches.
6. Push in the release latch on the left side of the controller module and slide the controller module out of the system and set it on a stable, antistatic surface.

Make sure that you support the bottom of the controller module with your free hand.

Removing the DIMMs

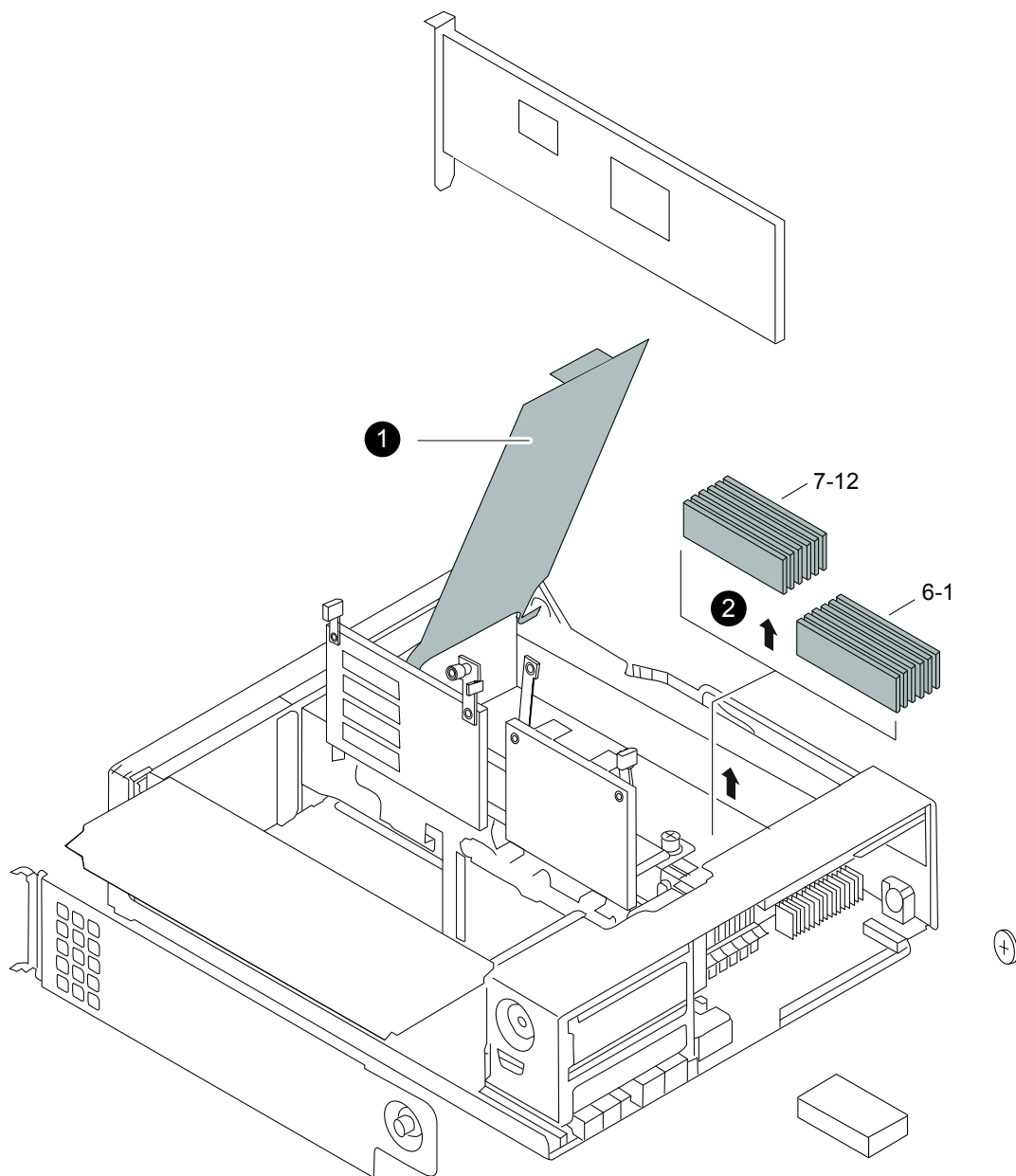
To remove a DIMM, you must perform a specific sequence of steps.

Steps

1. If you are not already grounded, properly ground yourself.
2. Open the CPU air duct.
3. Locate the DIMMs.

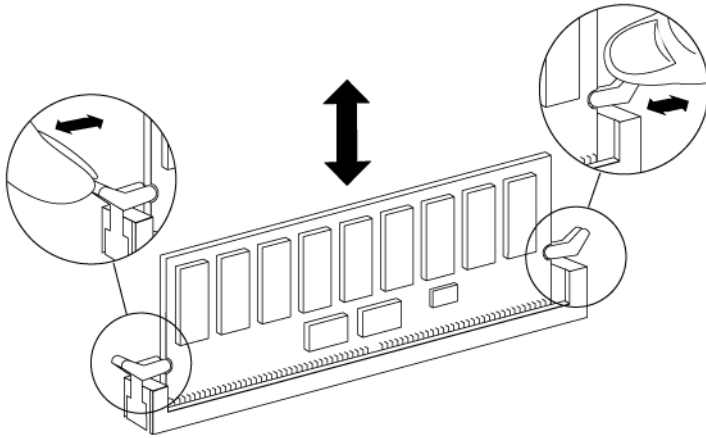
Note: Each system memory DIMM has an LED located on the board next to each DIMM slot. The LED is illuminated if the DIMM needs to be replaced.

The number of DIMMs varies, depending on your model. This illustration shows a system fully populated with DIMMs:



1	CPU air duct.
2	<p>DIMMs</p> <p>The DIMMs are arranged in two banks, with bank 1 farthest away from the controller module cam handle containing DIMMs 1 through 6 and bank 2 containing DIMMs 7 through 12. DIMM identification numbers are slikscreened onto the motherboard</p>

4. Note the orientation of the DIMM in the socket so that you can insert the replacement DIMM in the proper orientation.
5. Slowly press down simultaneously on the two DIMM ejector tabs to eject the DIMM from its slot, and then lift it out of the slot.



Attention: Carefully hold the DIMM by the edges to avoid pressure on the components on the DIMM circuit board.

6. Repeat these steps to remove additional DIMMs as needed.

Installing the DIMMs

To install one or more DIMMs, you must perform a specific sequence of steps.

Steps

1. If you are not already grounded, properly ground yourself.
2. Locate the slot where you are installing the new DIMM.

Note: The 6250 uses 4 GB and 8 GB DIMMs. Slots 1, 3, 5, 7, 9, and 11 use 4 GB DIMMs, while slots 2, 4, 6, 8, 10, and 12 use 8 GB DIMMs.

Check the DIMM label to make sure that you install the correct size DIMM in the correct slot.

3. Remove the replacement DIMM from the antistatic shipping bag, hold the DIMM by the corners, and align it over the slot.
The notch among the pins on the DIMM should line up with the tab in the socket.
4. Insert the DIMM straight into the slot.

The DIMM fits tightly in the slot, but should go in easily. If not, realign the DIMM with the slot and reinsert it.

Attention: Visually inspect the DIMM to verify that it is evenly aligned and fully inserted into the slot.

5. Push carefully, but firmly, on the top edge of the DIMM until the latches snap into place over the notches at the ends of the DIMM.
6. Repeat the preceding steps to install additional DIMMs as needed.

Note: The DIMM fault LED remains lit until you reboot the system.

7. Close the CPU air duct.

Reinstalling the controller module and booting the system

After you replace a component within the controller module, you must reinstall the controller module in the system chassis and boot it to a state where you can run diagnostic tests on the replaced component.

About this task

Note: For HA pairs with two controller modules in the same chassis, the sequence in which you reinstall the controller module is especially important because it attempts to reboot as soon as you completely seat it in the chassis.

Steps

1. Reinstall the cable management arms and recable the controller module, as needed.

When recabling, remember to reinstall the media converters (SFPs) if you are using fiber cables.

2. Reinstall the controller module:

If your system is in...	Then perform these steps...
An HA pair in which both controller modules are in the same chassis	<div><div>a. Be prepared to interrupt the boot process. The controller module begins to boot as soon as it is fully seated in the chassis.</div><div>b. With the cam handle in the open position, insert the controller module into the chassis, firmly pushing until the controller module meets the midplane, and then close the cam handle so that the latch clicks into the locked position and the controller module is fully seated. Attention: Do not use excessive force when sliding the controller module into the chassis; you might damage the connectors.</div><div>c. As the system begins to boot, press Ctrl-C to interrupt the boot process when you see the message <code>Press Ctrl-C for Boot Menu</code>.</div></div>
A stand-alone configuration or an HA pair in which both controller modules are in separate chassis	<div><div>a. With the cam handle in the open position, insert the controller module motherboard tray into the chassis, firmly pushing until the controller module meets the midplane, and then close the cam handle so that the latch clicks into the locked position and the controller module is fully seated. Attention: Do not use excessive force when sliding the controller module into the chassis; you might damage the connectors.</div><div>b. Reconnect the power cables to the power supplies and to the power sources, turn on the power to start the boot process, and then press Ctrl-C to interrupt the boot process when you see the message <code>Press Ctrl-C for Boot Menu</code>.</div></div>

The boot process is halted at either the Boot menu or the LOADER prompt.

Related information

[System-Level Diagnostics Guide](#)

Running diagnostics on the DIMM

After installing a new DIMM, you should run diagnostics.

Steps

1. Complete the applicable step, depending on where the node halted during the boot process:

If the node halted at the...	Then...
LOADER prompt	Continue with the procedure.
Boot menu	<ol style="list-style-type: none"> Select the Maintenance mode option from the displayed menu. Enter the following command at the prompt: halt After you issue the command, wait until the system stops at the LOADER prompt. Continue with the procedure.

- On the target node, enter the following command at the LOADER prompt:

boot_diags

Important: During the `boot_diags` process, you must enter **y** to the following question before the system will boot to Maintenance mode: WARNING: System id mismatch. This usually occurs when replacing CF or NVRAM cards! Override system ID? {y|n} [n] **y**

Note: You must enter this command from the LOADER prompt for system-level diagnostics to function properly. The `boot_diags` command starts special drivers designed specifically for system-level diagnostics.

The Maintenance mode prompt (*>) appears.

- Clear the status logs by entering the following command:

sldiag device clearstatus

- Verify that the log is cleared by entering the following command:

sldiag device status

The following default response is displayed:

SLDIAG: No log messages are present.

- Check the status of the system memory by entering the following command at the prompt, depending on which DIMM was replaced:

If the DIMM that was replaced was the...	Then issue this command...
NVMEM DIMM	sldiag device run -dev nvmem
System DIMM	sldiag device run -dev mem

- View the status of the test by entering the following command:

sldiag device status

Your storage system provides the following output while the tests are still running:

There are still test(s) being processed.

After all the tests are complete, the following response appears by default:

*> <SLDIAG: _ALL_TESTS_COMPLETED>

- Verify that no hardware problems resulted from the addition or replacement of hardware components on your system by entering the following command:

sldiag device status [-dev devtype] [-name device] -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.

- 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 by entering the following command:</p> <pre>sldiag device clearstatus</pre> <p>b. Verify that the log is cleared by entering the following command:</p> <pre>sldiag device status</pre> <p>The following default response is displayed:</p> <pre>SLDIAG: No log messages are present.</pre> <p>c. Exit Maintenance mode by entering the following command:</p> <pre>halt</pre> <p>d. Enter the following command at the LOADER prompt to reboot the storage system:</p> <pre>boot_ontap</pre> <p>e. If your system is in an HA pair, enter the <code>cf giveback</code> command (7-Mode) or <code>storage failover giveback</code> command (Cluster-Mode) from the partner node console.</p> <p>You have completed system-level diagnostics.</p>
Resulted in some test failures	<p>Determine the cause of the problem:</p> <p>a. Exit Maintenance mode by entering the following command:</p> <pre>halt</pre> <p>After you issue the command, wait until the system stops at the LOADER prompt.</p> <p>b. Turn off or leave on the power supplies, depending on how many controller modules are in the target chassis:</p> <ul style="list-style-type: none"> If you have two controller modules in the chassis, leave the power supplies turned on to provide power to the partner node. If you have one controller module in the chassis, turn off the power supplies and unplug them from the power sources. <p>c. Check the controller module and verify that you have observed all the considerations identified for running system-level diagnostics, that cables are securely connected, and that hardware components are properly installed in the storage system.</p> <p>d. Boot the target node, interrupting the boot by pressing Ctrl-C:</p> <ul style="list-style-type: none"> If you have two controller modules in the chassis, fully seat the controller module in the chassis. The controller module boots up when fully seated. If you have one controller module in the chassis, connect the power supplies and turn them on. <p>e. Rerun the system-level diagnostic tests.</p>

Related information

[System-Level Diagnostics Guide](#)

Completing the replacement process

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 support.netapp.com, 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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