

Replacing the Motherboard Tray

Replacing the motherboard consists of the following tasks:

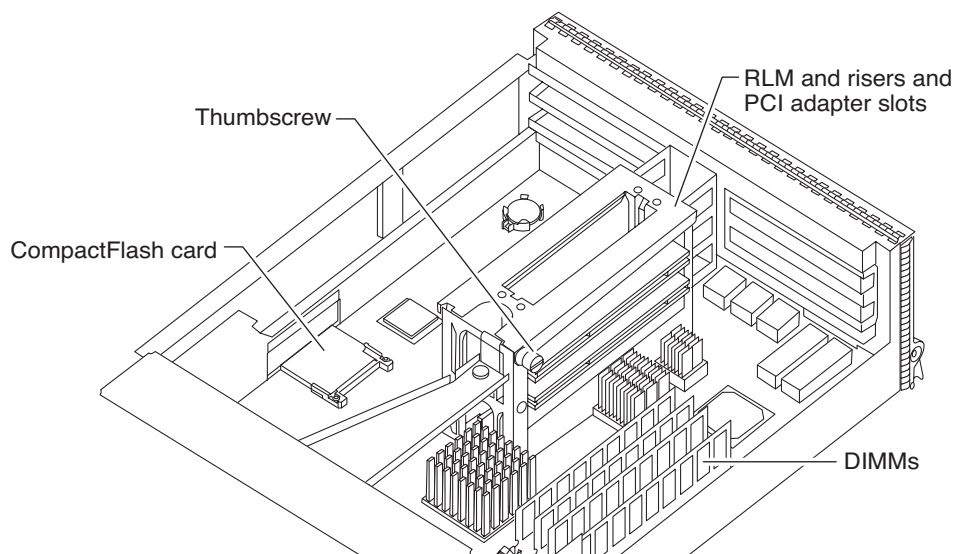
- ◆ “[Removing the Motherboard](#)” on page 1
 - ❖ “[Opening the System](#)” on page 2
 - ❖ “[Removing the FRUs from the Motherboard](#)” on page 3
- ◆ “[Installing the Replacement Motherboard](#)” on page 5
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Removing the Motherboard

Removing the motherboard consists of the following tasks:

- ◆ “[Opening the System](#)” on page 2
- ◆ “[Removing the FRUs from the Motherboard](#)” on page 3

The following figure shows the location of the components that you must remove before you replace the motherboard.



Opening the System

To open the system, complete the following steps:

1. Perform a clean system shutdown by entering the following command from the system console:

`halt`

Caution

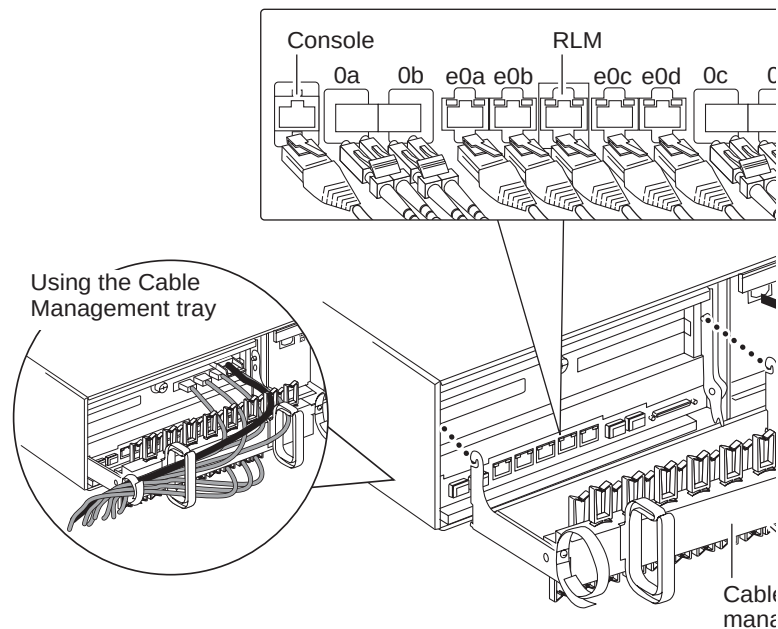
You must perform a clean system shutdown to replace components inside your appliance.

2. Ground yourself to the system chassis using the grounding leash, and then turn off the power to your system.

IF your system uses AC power supplies, unplug the power cords from the power source, and then remove the power cords.

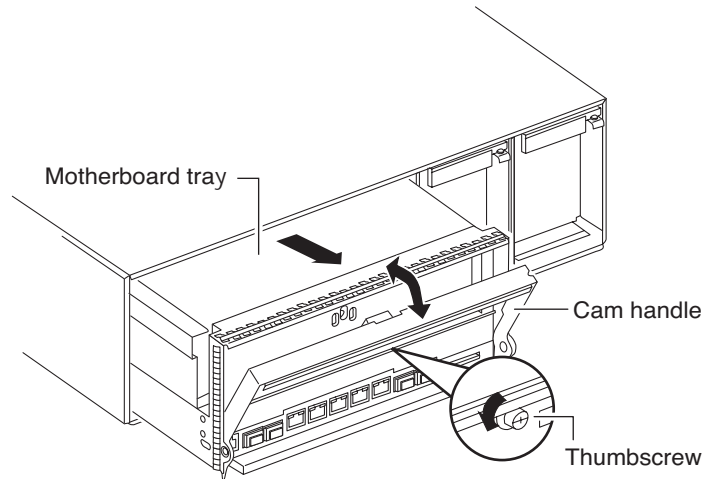
IF your system uses DC power supplies, remove the power at the DC source. Remove the DC wires, if necessary.

3. Remove the cable management tray by completing the following substeps, using the figure for reference:



- a. Unplug all the cables from the back of the motherboard tray.
Do not remove the cables from the cable clips, so that when you reinstall the cable management tray, the cables are already aligned with the correct ports on the system.
 - b. 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, and then lift it off the back of the motherboard tray and set it aside.
4. Loosen the thumbscrew on the cam handle.

5. Using the figure for reference, open the motherboard tray by pulling the cam handle downward and sliding the tray out of the system until it catches. Make sure that you support the bottom of the motherboard tray with your free hand.



6. Release the motherboard tray from the system by gently lifting the retaining latch under the motherboard tray, sliding the motherboard tray all the way out of the system, and then placing the motherboard tray on a stable, grounded surface.

Removing the FRUs from the Motherboard

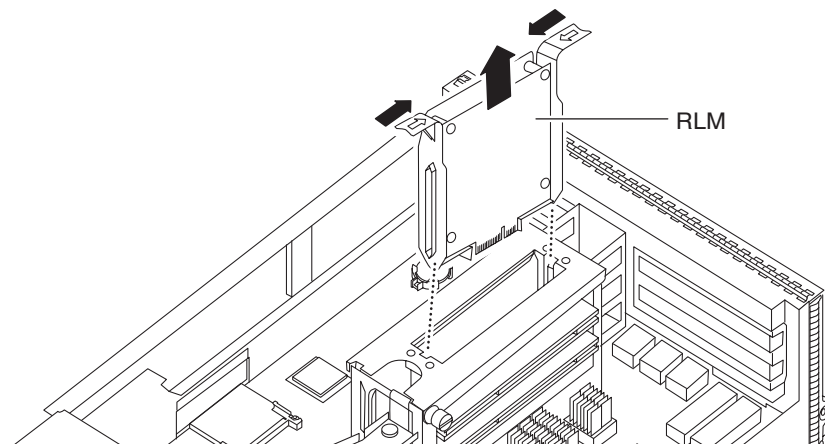
You must complete the following FRU removal tasks:

- ◆ [“Removing the PCI Adapters, Risers, and RLM”](#) on page 3
- ◆ [“Removing the DIMMs”](#) on page 5
- ◆ [“Removing the CompactFlash Card”](#) on page 5

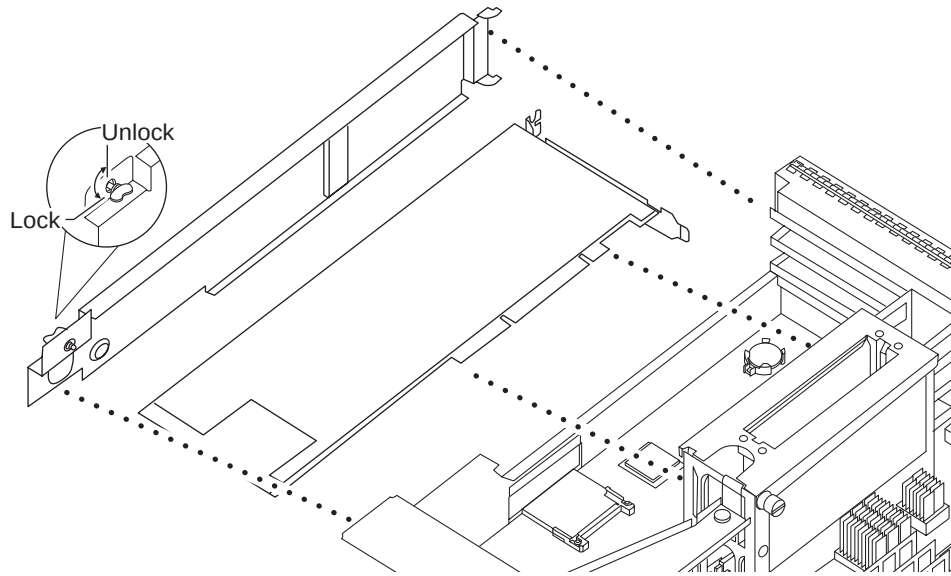
Removing the PCI Adapters, Risers, and RLM

To remove the PCI adapters, risers, and Remote LAN Module (RLM), complete the following steps:

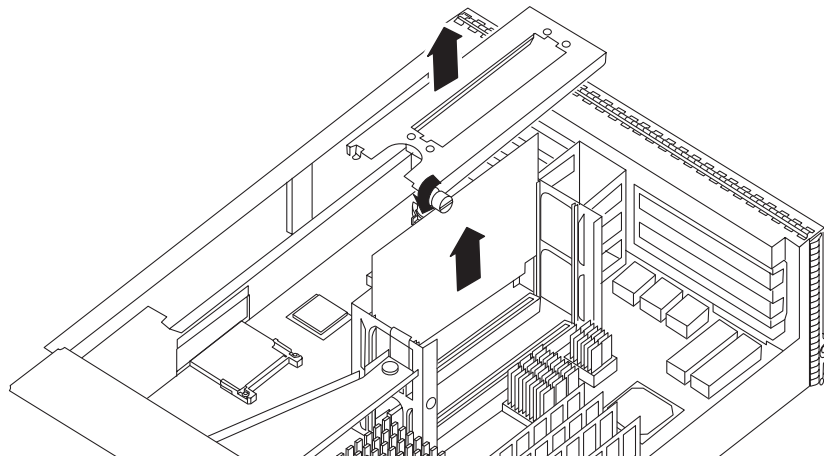
1. Locate the RLM, in the center of the riser housing, pinch the retaining tabs on the RLM and lift it straight out of the housing, and then set it aside on an antistatic mat.



- 2.** Remove the PCI adapters by completing the following substeps, using the figure for reference:



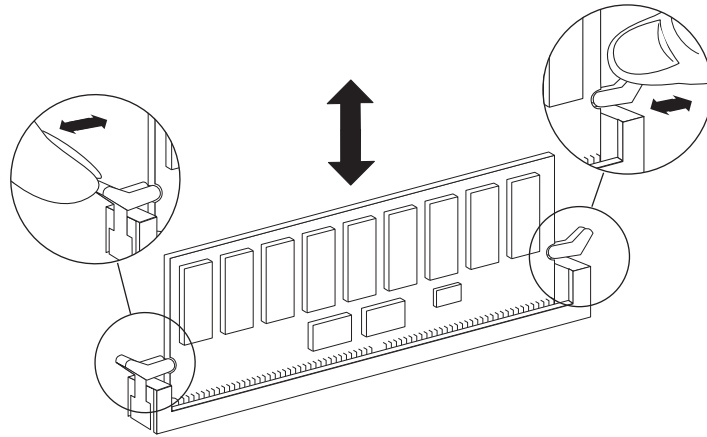
- a.** Turn the motherboard tray on its side, locate the locking wing nut, and then push down and turn the locking wing nut one quarter turn.
 - b.** Swing the side panel away from the motherboard tray.
 - c.** Remove the PCI adapters, if necessary, close and lock the side panel back into the chassis, and then set the motherboard tray aside, on its bottom.
- 3.** Remove the risers by completing the following substeps, using the figure for reference:



- a.** Loosen the riser cap thumbscrew, swing the riser cap upward, and then remove the riser cap.
- b.** Grasp the edges of the first riser and rock it out of the chassis. Repeat the process for the second riser.
- c.** Replace the riser cap and slide the top back onto the riser housing. Note that the end tabs should align properly when sliding the top back onto the housing.
- d.** Secure the top of the riser housing with the thumbscrew.

Removing the DIMMs

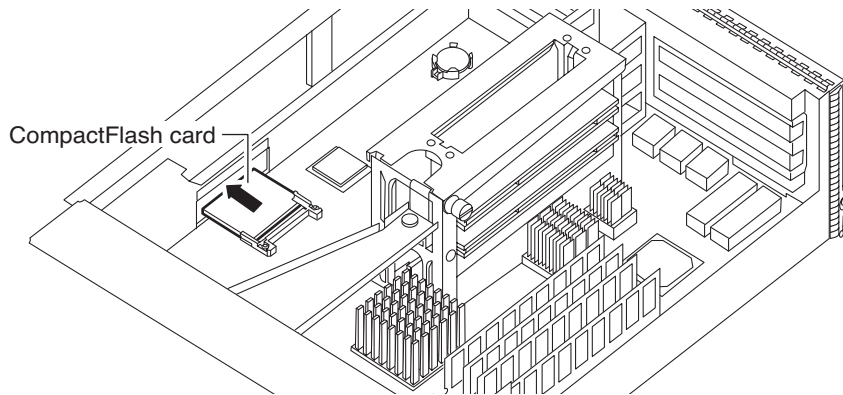
To remove the DIMMs from the motherboard, complete the following steps, using the figure for reference:



1. Locate the DIMM you want to remove, and then push apart the latches on either side of the DIMM to release the DIMM from its slot.
2. Pull the DIMM straight out of the slot and place it in an antistatic bag.

Removing the CompactFlash Card

To remove the CompactFlash™ card, complete the following steps, using the figure for reference:



1. Locate the CompactFlash card, to the side of the riser housing.
2. Grasp the CompactFlash card and gently pull it straight out of the system.
3. Set the CompactFlash card aside on an antistatic mat.

Installing the Replacement Motherboard

You must complete the following tasks when installing the replacement motherboard on your system.

- ◆ [“Reinstalling the FRUs on the Motherboard”](#) on page 6
- ◆ [“Closing the System”](#) on page 7
- ◆ [“Updating the Motherboard Firmware”](#) on page 7

- ◆ [“Testing the System”](#) on page 8
- ◆ [“Completing the Replacement Process”](#) on page 8

Reinstalling the FRUs on the Motherboard

You must complete the following FRU reinstallation tasks:

- ◆ [“Installing the CompactFlash Card”](#) on page 6
- ◆ [“Installing the DIMMs”](#) on page 6
- ◆ [“Installing the Risers, PCI Adapters, and RLM”](#) on page 6

Installing the CompactFlash Card

To install the CompactFlash card into the new motherboard, complete the following steps, using the figure in [“Removing the CompactFlash Card”](#) on page 5 for reference:

1. Turn the motherboard tray on its side, so that you can easily see the slot where you insert the CompactFlash card.
2. Align the CompactFlash card, face up, with the CompactFlash connector inside the chassis.
3. Seat the CompactFlash card by pushing it firmly into the CompactFlash connector. The CompactFlash card should be squarely seated and should not move when you wiggle it. Reseat the CompactFlash card, if necessary.

Installing the DIMMs

To install the DIMMs in the new motherboard, complete the following steps, using the figure in [“Removing the DIMMs”](#) on page 5 for reference:

1. Locate the DIMM slots on the motherboard.
2. Make sure that you are properly grounded, and then, holding the DIMM by the corners, insert the DIMM straight into the slot.
3. 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. The DIMM fits tightly in the slot, but should go in easily. If not, realign the DIMM with the slot and reinsert it. Caution

Caution

Visually inspect the DIMM to verify that it is evenly aligned and fully inserted into the slot. The edge connector on the DIMM must make complete contact with the slot.

4. Repeat Steps 2 and 3 for the remaining DIMMs.

Installing the Risers, PCI Adapters, and RLM

To install the PCI adapters, risers, and RLM, complete the following steps, using the figures in [“Removing the PCI Adapters, Risers, and RLM”](#) on page 3 for reference:

1. Open the riser housing, if necessary.

Note

There are three sockets where the RLM and risers are installed. The middle socket is reserved for the RLM, while the two outside sockets are reserved for the risers.

2. Align the first riser with the guide slots on the inside of the riser housing, and then slide the riser all the way down, so that it is seated on top of the adapter socket.
3. Firmly push down on the corners of the riser, fully seating it in the socket.
4. Examine the riser to make sure that it is seated squarely and completely in the socket. The riser must be seated squarely. If it is not, repeat Steps 2 through 4 to reinstall it.
5. Repeat Steps 2 through 4 for the other riser.
6. Reinstall the riser housing cap.
7. Open the system chassis side panels, if necessary, and reinstall the PCI adapters, and then close and lock the side panels. When locking the side panels, push down on the locking wing nut and turn it a quarter turn.
8. Reinstall the RLM.

Closing the System

To close the system, complete the following steps:

1. Align the end of the tray with the motherboard tray opening in the system.
2. Gently push the motherboard tray back into the system chassis. The cam handle begins to engage when the motherboard tray is properly seated all the way inside the chassis.
3. Firmly push the cam handle to finish seating the motherboard tray in the system, and then lift the cam handle to the closed position.
4. Tighten the thumbscrew on the cam handle.
5. Reinstall the cable management tray and recable the system, as needed.

Updating the Motherboard Firmware

After you recable your system and connect it to the power source, you should update the motherboard firmware by completing the following steps:

1. Boot the system to the CFE prompt and back up your existing firmware by entering the following command:

```
CFE > flash flash0a flash0b
```
2. Autoinitialize the network using DHCP by entering the following command:

```
CFE > ifconfig -auto e0a
```
3. Log into NOW™ and select the most current version of firmware for your system from those listed at <http://now.netapp.com/NOW/download/tools/serviceimage/>. Follow the instructions for downloading and installing the new firmware.
4. Go to [“Testing the System.”](#)

Testing the System

After you update the motherboard firmware, you should run diagnostics on the motherboard and motherboard FRUs. If the system passes the diagnostic tests, you can boot the system and bring it back online.

To run diagnostics on the motherboard, complete the following steps:

1. Turn on the system, if necessary, and press the Delete key during boot.
2. Enter system diagnostics by entering the following command at the prompt:
`boot_diags`
3. Enter the following command to begin the diagnostics tests on the new motherboard:
`run mb`
4. Run all motherboard diagnostics by entering 1 from the menu selection.

Note

You can run specific motherboard tests by entering the number for the test at the menu prompt. See the Diagnostics Guide for more information.

Completing the Replacement Process

Return the failed part to Network Appliance, as described in the SRA instructions shipped with the kit. Contact NetApp® technical support at 408-822-6686 if you need the SRA or additional help with the replacement procedure.