Upgrading or Replacing a Host Interface Card in the 6580/6780 Controller Module

May 2011

51358-00, Rev. A

Revision History

Version and Date	Description of Changes
51358-00, Rev. A, May 2011	Initial release of the document.

LSI Corporate Headquarters   **Email**   **Website**
Milpitas, CA   globalsupport@lsi.com   www.lsi.com
800-372-2447

Upgrading or Replacing a Host Interface Card in the 6580/6780

The following types of host interface cards (HICs) are supported:

- 4-Gb/s and 8-Gb/s Fibre Channel

- 1-Gb/s and 10-Gb/s iSCSI

IMPORTANT If you are upgrading from 4-Gb/s host interface cards to 8-Gb/s host interface cards, you must upgrade the controller firmware to controller firmware version 7.50 before you perform this procedure.

IMPORTANT If you mix host interface cards, such as 4 Gb/s and 8 Gb/s, both controllers in a storage array must have the exact same configuration.

If you are changing your current configuration, you might need to replace these items in addition to the host interface card:

- Small Form-factor Pluggable (SFP) transceivers – The 4-Gb/s Fibre Channel host interface card uses one type of SFP transceiver and both the 8-Gb/s host interface card and the 10-Gb/s iSCSI host interface cards use a different type of SFP transceiver.

- Host adapters

- Cables – iSCSI uses copper cable, and Fibre Channel supports copper cable and fiber-optic cable

- Faceplate with the correct overlay

Before you start this procedure, gather antistatic protection and the host interface card that you want to install.

ATTENTION **Possible hardware damage** – To prevent electrostatic discharge damage to the module, use proper antistatic protection when handling module components.

Removing the Host Interface Card from the 6580/6780 Controller Module

To install a host interface card or replace a failed host interface card, you must first remove the controller CRU.

1 If possible, use the storage management software to create, save, and print a new storage array profile.

2 Did the Recovery Guru direct you to replace a failed host interface card?

- **Yes** – Go to step 3.

- **No** – Run the Recovery Guru to identify the failed host interface card, and go to step 3.

3 Put on antistatic protection.

ATTENTION Potential degraded performance – To prevent degraded performance, do not twist, fold, pinch, or step on fiber-optic cables. Do not bend the fiber-optic cables tighter than a 5-cm (2-in.) radius.

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4 Label each cable that is attached to the controller CRU so that you can reconnect the cables correctly after the controller CRU is reinstalled.

5 Record the information from the seven-segment display on the rear of the controller module.

6 Take both controllers offline, and, if necessary, wait for the Controller Service Action Allowed LEDs to come on.

7 Turn off the Power switch on both controller CRUs. Both controllers must be powered down.

8 Unplug the power cord from the controller CRU, and set the power cord aside.

9 Disconnect all of these cables from the controller CRU:

- Host interface cables

- Drive interface cables

- Ethernet cables

10 Remove the SFP transceivers from the controller CRU.

11 Remove the controller CRU.

    a Unlock and rotate the release handles out to release the controller CRU.

    b Using the release handles and your hands, pull the controller CRU out of the controller module.

Figure 1   Removing and Reinstalling a Controller CRU
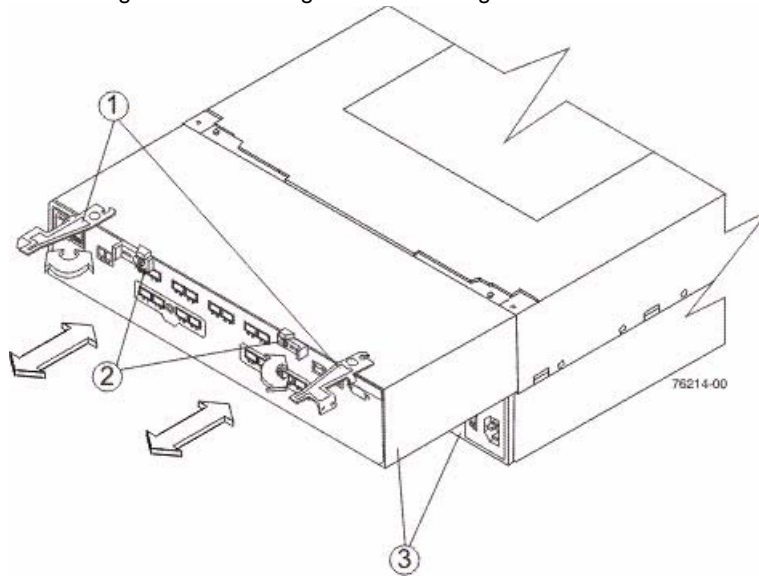
  1 Release Handles
  2 Locking Mechanisms
  3 Controller CRUs

12 Set the controller CRU on a flat, static-free surface with the release handles down and the host interface ports up.

13 Loosen the three thumbscrews that secure the top cover to the controller CRU (Figure 2).

Figure 2 Controller Top Cover, Internal Parts, and Faceplate
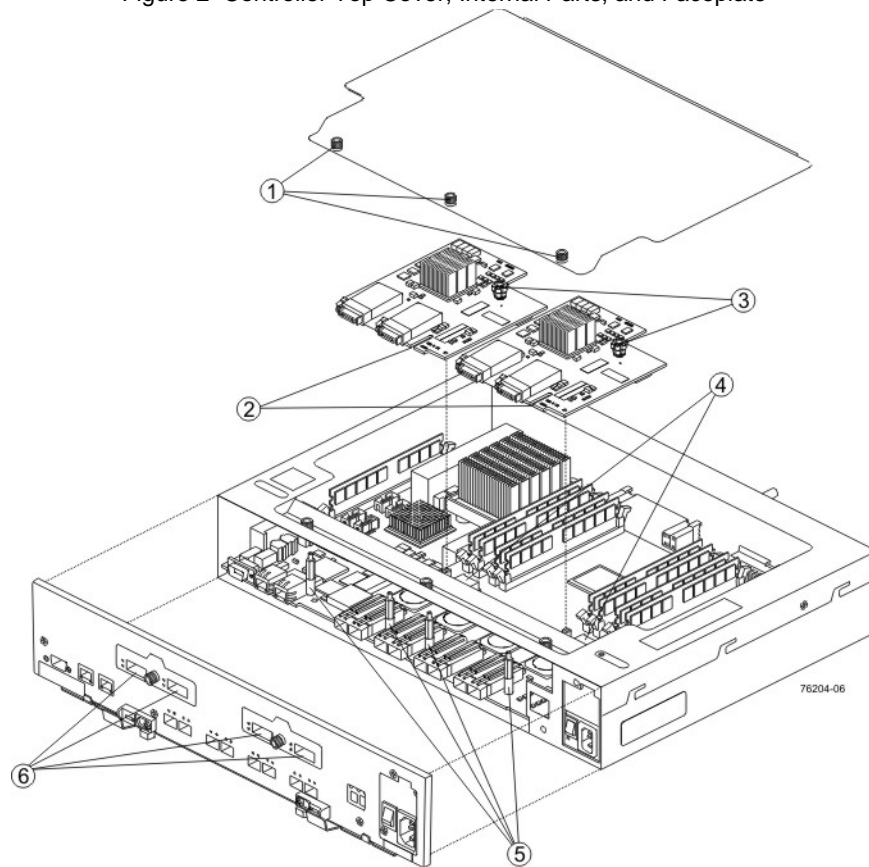
1 Top Cover Thumbscrews
2 Two Host Interface Cards with Alignment Slots
3 Host Interface Card Thumbscrews
4 Controller Card Sockets for Connecting the Host Interface Cards
5 Host Interface Card Alignment Pins
6 Host Interface Ports on the Faceplate

14 Remove the top cover.

15 Remove the faceplate by loosening the thumbscrew that secures it to the controller module.

ATTENTION	**Possible equipment damage** – When you remove the host interface card, be careful not to disconnect the seven-segment display from the sheet metal cover. If you need to remove the sheet metal cover, you must first remove the seven-segment display ribbon cable from the motherboard connector. To disconnect the seven-segment display from the motherboard connector, you must lift the center piece of the motherboard connector, and remove the ribbon cable.

16 Locate the host interface card that you want to replace.

17 Loosen the thumbscrew on the host interface card that secures it to the controller card.

18 Gently lift the host interface card to disengage the pins from the connector on the controller card, and remove the host interface card from the controller CRU.

NOTE The connector is located on the corner of the host interface card next to the thumbscrew. Note how the card fits against the two guide posts. These guide posts help to make sure that the connecting hardware is aligned.

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19 Place the host interface card that you removed on a flat, static-free surface.

Installing the Host Interface Card in the 6580/6780 Controller Module

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IMPORTANT Make sure you have the correct host interface cards, Small Form-factor Pluggable (SFP) transceivers, and host bus adapters. If you are replacing one host interface card with a different type of host interface card, you might not be able to reuse the SFP transceivers. Use only the correct SFP transceiver for the interface type and speed of your host interface card.

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1 Install the new host interface card.

   a Align the new host interface card with the guide posts.

   b Gently push down on the host interface card to seat the pins into the connector on the controller card.

2 Tighten the thumbscrew on the host interface card to make sure that it is securely fastened to the controller card.

IMPORTANT Make sure that the seven-segment display ribbon cable is still connected to the motherboard connector. If the ribbon cable is not connected, you must lift the center piece of the motherboard connector, and insert the ribbon cable into the motherboard connector.

**3** Replace the faceplate, and tighten the thumbscrew that secures it to the controller module.

NOTE Make sure that the faceplate has the correct overlay, so that the information on the front of the faceplate corresponds with the host interface card.

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4 Install the top cover on the controller CRU, and tighten all of the thumbscrews.

5 Slide the controller CRU all of the way into the module. Rotate the release handles in to lock the controller CRU into place.

6 Install the SFP transceivers into the controller CRU.

7 Reconnect all of these cables to the appropriate ports on the controller CRU.

- Ethernet cables

- Host interface cables

- Drive interface cables

8 Plug in the power cord to the controller CRU.

9 Turn on the Power switch on both controller CRUs.

10 Look at the LEDs on the controller CRU to make sure that the controller is rebooting correctly.

Figure 3   Controller Service Action LEDs
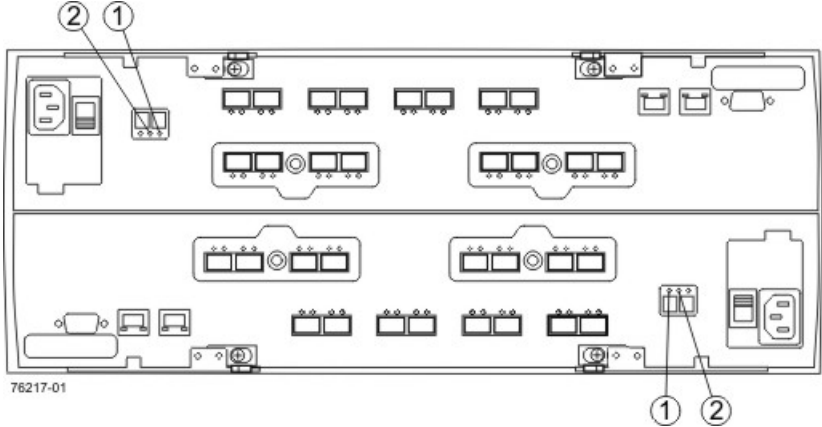
1 Controller Service Action Allowed LED (Blue)
2 Controller Service Action Required LED (Amber)

The LEDs come on and go off intermittently for approximately 60 seconds (possibly longer). After this time, you are able to discover the controller through the storage management software.

IMPORTANT   Depending on your version of host interface card, you might receive an error message about a failed host I/O card. If this problem occurs, follow the instructions in the Recovery Guru.

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11 Look at the Controller Service Action Required LED on the controller CRU, and look at all of the controller module's Service Action Required LEDs. Based on the LED status, perform one of these actions:

- **All of the Service Action Required LEDs are off,** *and* **the Array Management Window indicates an Optimal status** – Go to step 13.

- **Any of the controller module's Service Action Required LEDs is on** – Check that the controller CRU is installed correctly. Reinstall the controller CRU if necessary. Go to step 12.

> **NOTE** If your storage array does not have an Optimal status, click the **Recovery Guru** toolbar button in the Array Management Window to determine if any other actions are required.

12 Did this action correct the problem?

- **Yes** – Go to step 13.

- **No** – If the problem is not resolved, contact your Sun Customer Care Center.

13 Using the LEDs and the storage management software, check the status of all of the modules in the storage array.

14 Does any component have a Needs Attention status?

- **Yes** – Click the **Recovery Guru** toolbar button in the Array Management Window, and complete the recovery procedure. If the problem is not resolved, contact your Sun Customer Care Center.

- **No** – Go to step 15.

15 Remove the antistatic protection.

16 Create, save, and print a new storage array profile.

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51358-00A