



Replacing an ESM/IOM CRU in the ST2501 M2 Drive Module

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Revision History

Version and Date	Description of Changes
51345-00, Rev. A May 2011	Initial release of the document.

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Replacing an ESM/IOM CRU in a ST2501 M2 Drive Module

In this procedure, you will replace a failed Environmental Services Monitor (ESM/IOM) CRU with a new ESM/IOM CRU.

Before you start to replace the ESM/IOM CRU in the drive module, gather antistatic protection and a replacement ESM/IOM CRU.

ATTENTION Possible equipment damage – You must replace the ESM/IOM CRU within three minutes after removing the failed ESM/IOM CRU to prevent the possibility of overheating the equipment.

ATTENTION Possible extended outage – You must replace the ESM/IOM with the power turned on to ensure auto-code synchronization of the native controller firmware to the new ESM/IOM CRU, and to prevent the possibility of an extended outage.

You can determine whether you have a failed ESM/IOM CRU in two ways:

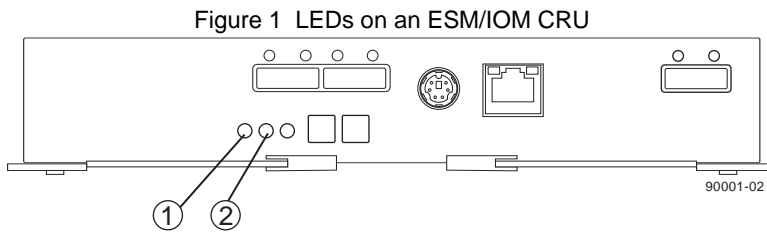
- The Recovery Guru directs you to replace a failed ESM/IOM CRU.
- You locate the failed ESM/IOM CRU by checking the ESM/IOM Service Action Required LED.

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

- 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 ESM/IOM CRU?
 - **Yes** – Go to step [3](#).
 - **No** – Run the Recovery Guru to identify the failed component.
- 3** Put on antistatic protection.
- 4** Unpack the new ESM/IOM CRU.
 - a** Set the new ESM/IOM CRU on a dry, level surface near the drive module.
 - b** Save all the packing materials in case you need to return the ESM/IOM CRU.

- 5 Locate the failed ESM/IOM CRU by checking the ESM/IOM Service Action Required LEDs (Figure 1).

If a fault is detected, the amber ESM/IOM Service Action Required LED is on. If you can safely remove the ESM/IOM CRU, the blue ESM/IOM Service Action Allowed LED is on.

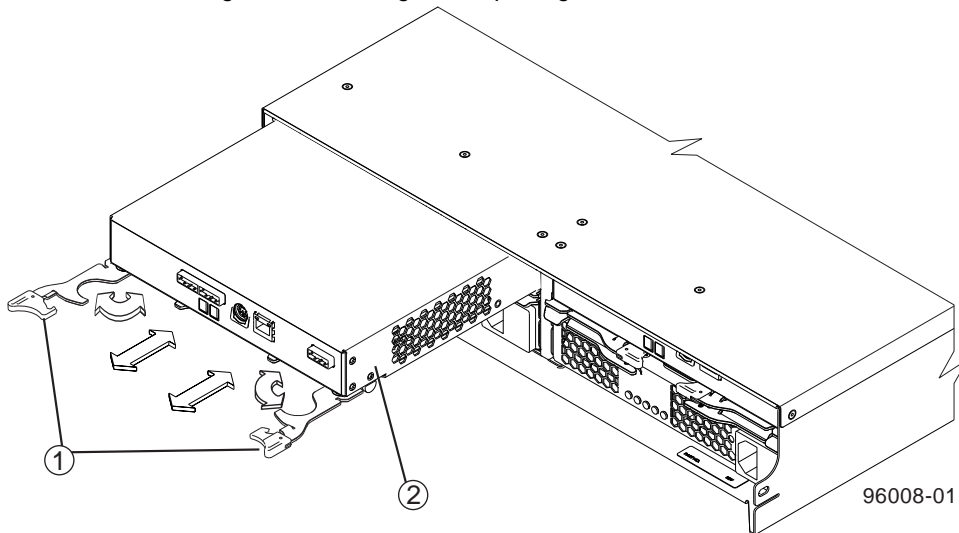


- 1 ESM/IOM Service Action Allowed LED (Blue)
- 2 ESM/IOM Service Action Required LED (Amber)

ATTENTION Possible damage to fiber-optic cables – Fiber-optic cables are fragile. Bending, twisting, folding, or pinching fiber-optic cables can cause damage to the cables, degraded performance, or loss of data. To prevent damage, do not twist, fold, pinch, or step on the cables. Do not bend the cables in less than a 5-cm (2-in.) radius.

- 6 Label each interface cable that is attached to the ESM/IOM CRU so that you can reconnect the cables correctly to the new ESM/IOM CRU.
- 7 Disconnect all of the controller interface cables, and, if applicable, disconnect all of the interface cables to other ESM/IOM CRUs from the failed ESM/IOM CRU.
- 8 Remove the failed ESM/IOM CRU from the drive module:
 - a Rotate the ESM/IOM latches to disengage the ESM/IOM CRU.
 - b Use the ESM/IOM latches as handles to pull the ESM/IOM CRU out of the drive module.

Figure 2 Removing and Replacing an ESM/IOM CRU

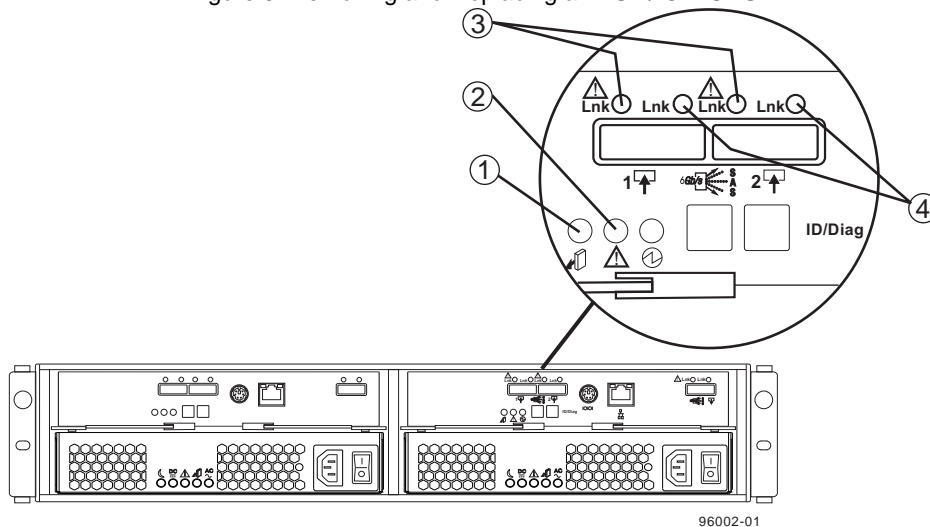


- 1 ESM/IOM Latches

2 ESM/IOM Canister

- 9 Slide the replacement ESM/IOM CRU all the way into the drive module. Rotate the ESM/IOM latches to lock the ESM/IOM CRU into place.
- 10 Reconnect all of the controller interface cables, as well as reconnect the cables from the other ESM/IOM CRUs to the replacement ESM/IOM CRU.
- 11 Look at the LEDs on the ESM/IOM CRU and the drives to make sure that the new ESM/IOM CRU is rebooting correctly. The symbols next to the LEDs identify their purpose.

Figure 3 Removing and Replacing an ESM/IOM CRU



- 1 ESM/IOM Service Action Allowed LED (Blue)
- 2 ESM/IOM Service Action Required LED (Amber)
- 3 ESM/IOM Link Service Action Required LEDs (Amber)
- 4 ESM/IOM Link LEDs (Green)

All four LEDs come on and go off intermittently for approximately 60 seconds (possibly longer). After this time, you are able to discover the new ESM/IOM CRU by using the storage management software.

- 12 Look at the ESM/IOM Link LEDs and the ESM/IOM Service Action Required LED on both ESM/IOM CRUs. Based on the LED status, perform one of these actions:
 - **On both ESM/IOM CRUs, the ESM/IOM Link LEDs are on *and* the ESM/IOM Service Action Required LEDs are off** – Go to step 14.
 - **On both ESM/IOM CRUs, either of the ESM/IOM Link LEDs is off *or* either of the ESM/IOM Service Action Required LEDs is on** – Check that the ESM/IOM CRU is installed correctly. Reinstall the ESM/IOM CRU if necessary. Go to step 13.
- 13 Did this action correct the problem?
 - **Yes** – Go to step 14.
 - **No** – If the problem has not been resolved, click the **Recovery Guru** toolbar button in the Array Management Window to see if any further issues are reported. After you attempt to correct any problems listed, contact a Customer and Technical Support representative.

- 14** Remove the antistatic protection.
- 15** Check the status of all the trays in the storage array.
- 16** Does any component have a Needs Attention status?
 - **Yes** – Go to step [17](#).
 - **No** – Click the **Recovery Guru** toolbar button in the Array Management Window, and complete the recovery procedure. If the problem has not been resolved, contact a Customer and Technical Support representative.
- 17** Create, save, and print a new storage array profile.

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