Replacing a Controller Battery in the ST2500 M2 Array Module

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Revision History

Version and Date	Description of Changes
51348-00, Rev. A May 2011	Initial release of the document.

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Replacing a Controller Battery in the ST2500 M2 Array Module

You can determine whether you have a failed controller battery in two ways:

- The Recovery Guru directs you to replace a failed controller battery.
- You locate the failed controller battery by checking the Battery Service Action Required LED.

Before you start to replace a controller battery in the array module, gather antistatic protection and a replacement controller battery.

ATTENTION **Possible hardware damage** – If you perform this procedure with the power turned on, the equipment might overheat if the controller slot is left open for more than three minutes. To prevent the possibility of overheating, you must insert the controller air blocker into the controller slot when servicing the controller.

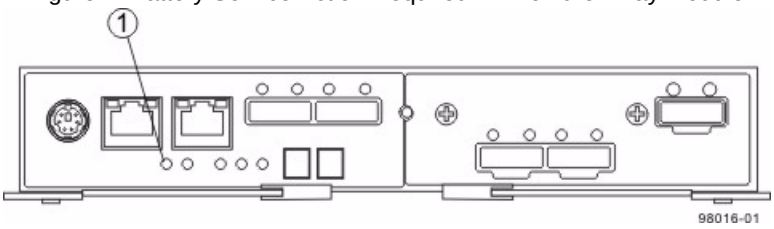
ATTENTION **Possible hardware damage** – To prevent electrostatic discharge damage to the module, use proper antistatic protection when handling module components.

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 controller battery?
   - **Yes** – Go to step 3.
   - **No** – Run the Recovery Guru to identify the failed component, and go to step 3.
3. Put on antistatic protection.
4. Unpack the new controller battery.
   a. Set the new controller battery on a flat, static-free surface near the array module.
   b. Save all the packing materials in case you need to return the controller battery.

5 Locate the failed battery by checking the Battery Service Action Required LEDs.

If a battery fault is detected, the amber Battery Service Action Required LED is on.

Figure 1 Battery Service Action Required LED on the Array Module



1 Battery Service Action Required LED (Amber)

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

6 Label each copper cable or fiber-optic cable that is attached to the controller CRU with the failed battery so that you can reconnect each cable correctly after the controller CRU is reinstalled.

7 Record the information from the seven-segment display on the rear of the array module.

The display flashes a sequence of codes. To find information about the displayed diagnostic codes, refer to the *ST2500 M2 Array Module Installation* electronic document topics or the PDF located on the SANtricity® ES Storage Manager Installation DVD.

8 Take the desired controller offline, and, if necessary, wait for the Controller Service Action Allowed LED to come on.

9 Disconnect all interface cables from the controller CRU that has the failed battery.

If fiber-optic cables are present, you can use the two release levers to partially remove the controller CRU. Opening these release levers makes it easier to press down the fiber-optic cable release tab. If the storage array is running while you perform the replacement, do not disturb the second controller CRU.

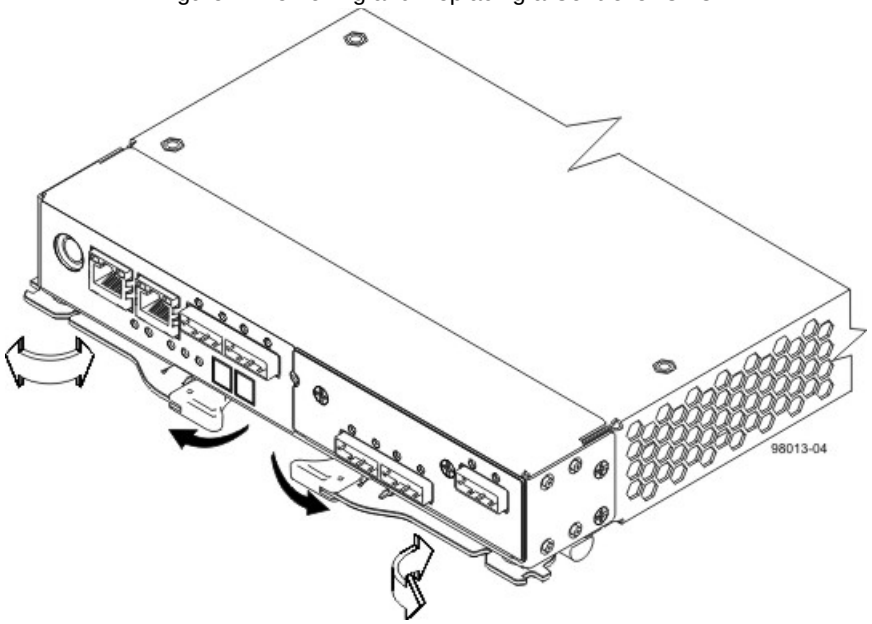
NOTE If Small Form-factor Pluggable (SFP) transceivers are present, you do not need to remove them from the controller CRU that has the failed battery when replacing the battery.

10 Remove the controller CRU that has the failed battery.

a Unlock and pull the release levers to release the controller CRU.

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

Figure 2 Removing and Replacing a Controller CRU



11 Set the controller CRU on a flat, static-free surface, with the release levers up.

ATTENTION **Possible equipment damage** – The controller slot cannot remain open for more than three minutes because of the possibility of overheating the equipment. The controller air blocker fills the controller slot so that the equipment will not overheat.

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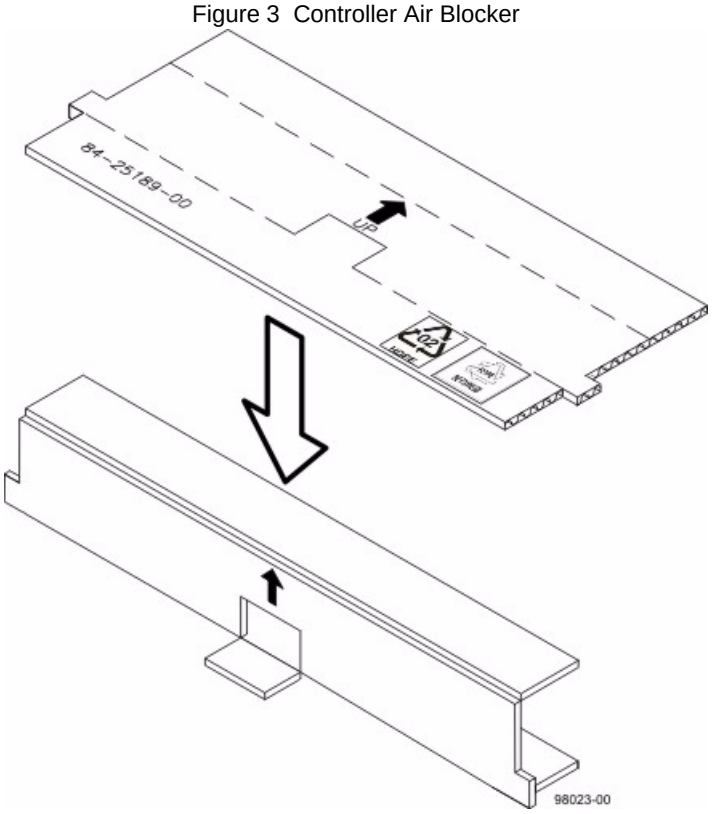
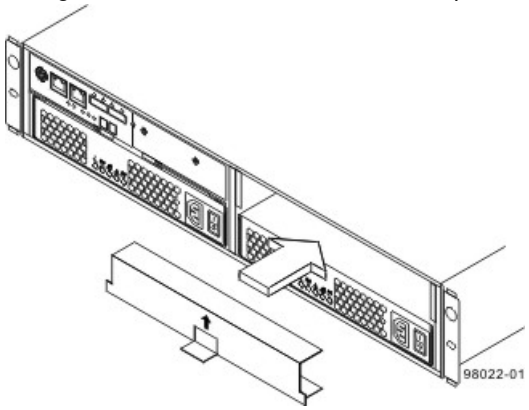
12 Prepare the controller air blocker by removing it from its packaging and folding it inward at right angles so it is ready to insert into the open controller slot.

Figure 3 Controller Air Blocker



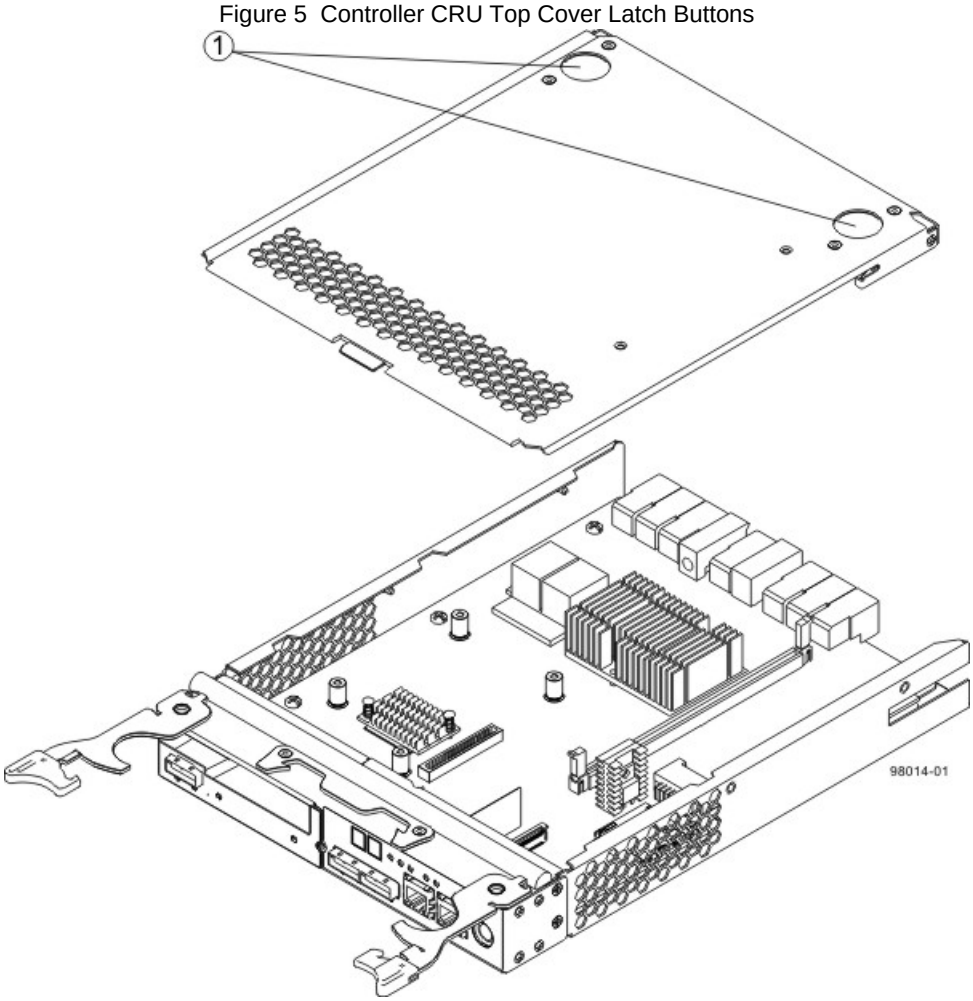
13 Insert the controller air blocker into the open controller slot to make sure that correct airflow is maintained.

Figure 4 Inserting the Controller Air Blocker into the Open Controller Slot



14 Press down on both of the top cover latch buttons, and slide the top cover to the rear of the new controller CRU.

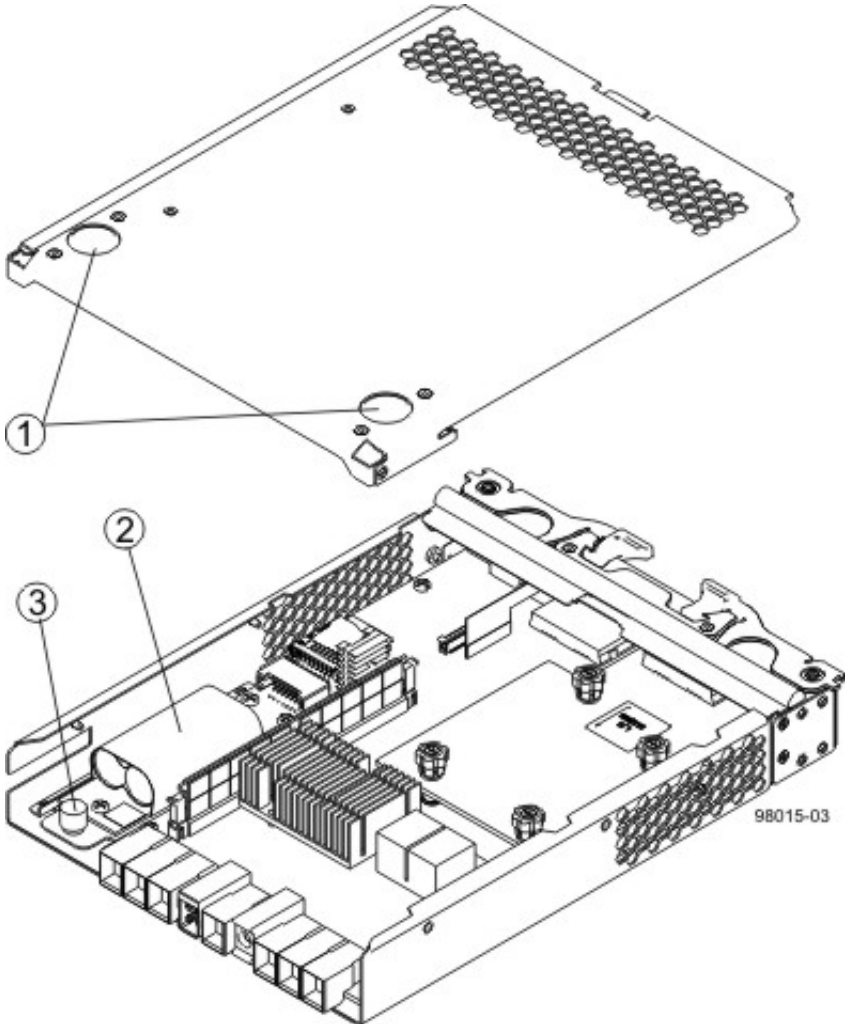
Figure 5 Controller CRU Top Cover Latch Buttons



1 Top Cover Latch Buttons

15 Unscrew the thumbscrew that secures the failed battery to the controller CRU.

Figure 6 Battery and Thumbscrew in the Controller



1 Top Cover Latch Buttons
2 Battery Circuit Board
3 Thumbscrew

16 Remove the failed battery by sliding it towards the rear of the controller CRU.

17 Insert the new battery into the controller CRU by sliding the new battery towards the front of the controller CRU.

NOTE To ensure that the new battery is seated correctly, you might need to back it out of the connector to make sure that it is correctly aligned with the thumbscrew.

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18 Tighten the thumbscrew that secures the new battery to the controller CRU.

19 Reinstall the top cover on the CRU by sliding it forward until the top cover latch buttons click.

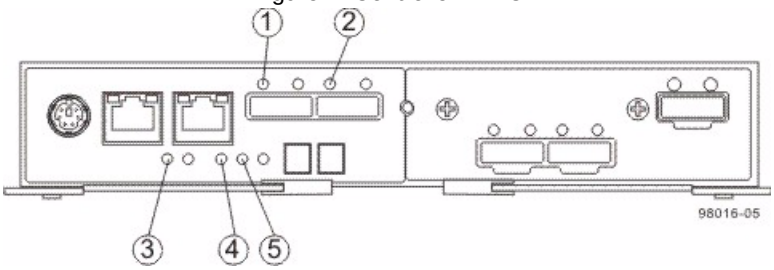
20 Remove the controller air blocker.

21 Slide the controller CRU all the way into the array module. Rotate the release levers towards the center of the controller CRU to lock that component into place.

22 Reconnect all cables that were disconnected when you removed the controller CRU.

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

Figure 7 Controller LEDs



1 Host Link 1 Service Action Required LED
2 Host Link 2 Service Action Required LED
3 Battery Service Action Required LED
4 Controller Service Action Allowed LED
5 Controller Service Action Required LED

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

24 On both controller CRUs, look at the Link Service Action Required LEDs and the Controller Service Action Required LEDs. Based on the LED status, perform one of these actions:

- **For each controller, the Host Link Service Action Required LEDs are on *and* the Controller Service Action Required LED is off** – Go to step 26.
- **On one controller, the Host Link Service Action Required LEDs are off, *or* the Controller Service Action Required LED is on** – Check that the controller CRUhas been installed correctly. Reinstall the controller CRU if necessary. Go to step 25.

25 Did this action correct the problem?

- **Yes** – Go to step 26.
- **No** – If the problem is not resolved, contact your Customer and Technical Support representative.

26 Complete any remaining Recovery Guru procedures, if necessary.

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

28 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 Customer and Technical Support representative.
- **No** – Go to step 29.

29 Remove the antistatic protection.

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

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