

## Replacing a Failed Controller Battery in the E5512 or the E5524 Controller-Drive Tray

To access this product, go to the NetApp® Support Site at [mysupport.netapp.com](http://mysupport.netapp.com).

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

- The Recovery Guru directs you to replace a failed controller battery.
- The amber Battery Service Action Required LED indicates a failed controller battery.

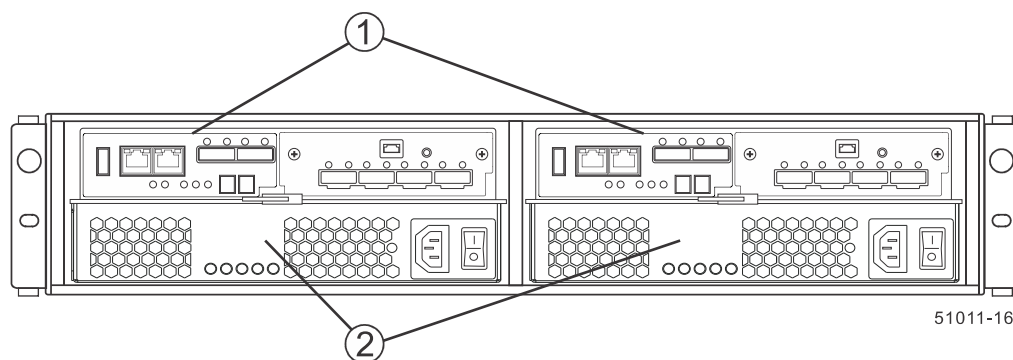
Before you start this procedure, gather antistatic protection, a replacement controller battery, and a controller air blocker.

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**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 empty controller slot when you service the controller.

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**Figure 1. E5512 Controller-Drive Tray or E5524 Controller-Drive Tray - Back View**



1. Controller Canister
2. Power-Fan Canister

## Removing a Controller Canister

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

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1. Gather support data about your storage array by using one of these methods:
  - Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window, select **Monitor > Health > Collect Support Data Manually**. Then name and specify a location on your system where you want to store the support bundle.

- Use the command line interface (CLI) to run the **save storageArray supportData** command to gather comprehensive support data about the storage array. For more information about this command, refer to the *Command Line Interface and Script Commands Programming Guide*.

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**NOTE** Gathering support data can temporarily impact performance on your storage array.

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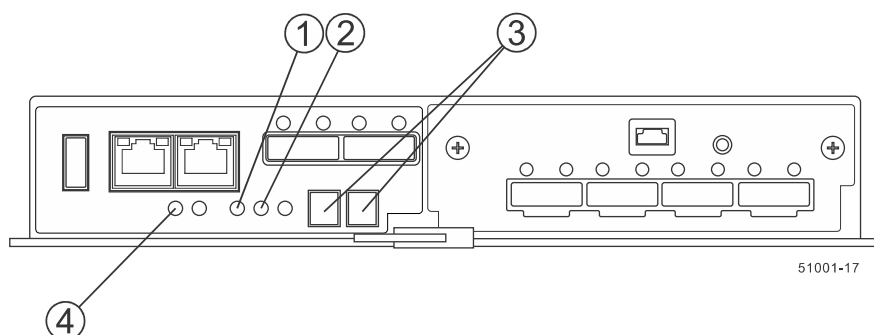
2. Did the Recovery Guru direct you to replace a failed controller battery?
  - **Yes** – Go to step 3.
  - **No** – Run the Recovery Guru to identify the failed component.
3. Locate the failed controller battery by checking the Battery Service Action Required LED. If a fault is detected, the amber Battery Service Action Required LED is on.

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**NOTE** The figures in this document show a SAS configuration with four connectors. Your controller canister might have a different number and type of host interface connectors.

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**Figure 2. E5500 Controller LEDs**



1. Controller Service Action Allowed LED (Blue)
  2. Controller Service Action Required LED (Amber)
  3. Seven-Segment Display
  4. Battery Service Action Required LED (Amber)
  1. Battery Service Action Required LED (Amber)
4. Record the information from the seven-segment display on the controller-drive tray. The display flashes a sequence of codes. To find information about the displayed diagnostic codes, refer to the *E5500 Controller-Drive Tray and Related Drive Trays Installation Guide*.
  5. Use either the GUI (first bullet) or the CLI (second bullet) to take the appropriate controller offline.
    - From the Hardware pane in the Array Management Window, right-click the picture of the controller you want to take offline, and select **Advanced > Place > Offline**.
    - Run the following command.
 

```
smCLI <DNS-network-name-or-IP-address> -c "set controller [(a | b)]
availability=offline";
```
  6. Wait for the blue Controller Service Action Allowed LED to come on. For a large configuration, this indication might take several minutes.
  7. Put on antistatic protection.
  8. Label each cable that is attached to the controller canister with the failed battery so that you can reconnect each cable correctly after the controller canister is reinstalled.

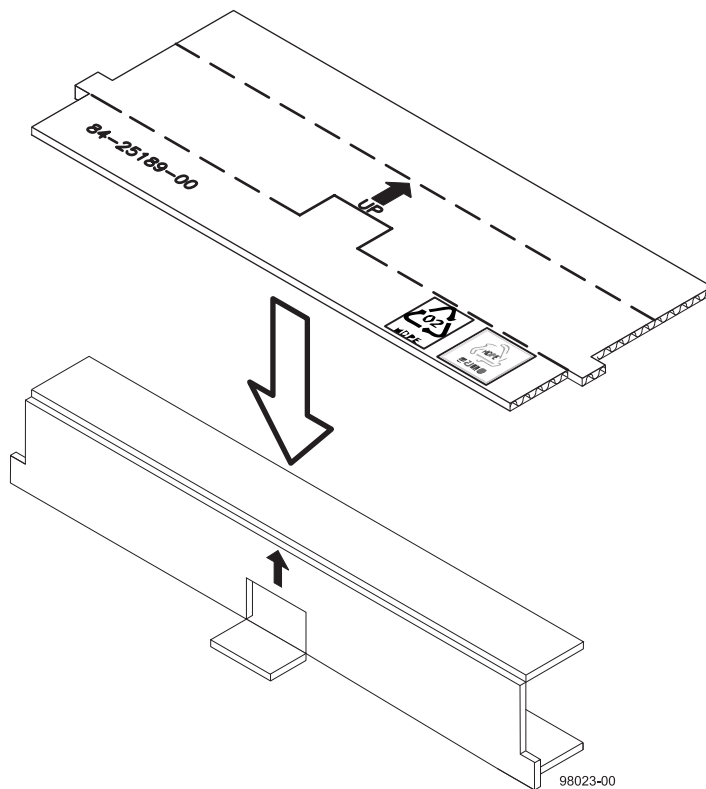
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**ATTENTION Potential degraded performance** – To prevent degraded performance, do not twist, fold, pinch, or step on the cables. Cables have a minimum bend radius. Check the specifications for your cables, and do not bend any cable tighter than the minimum specified radius.

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9. Disconnect all interface cables (drive connections, host connections, and Ethernet connections) from the controller canister that has the failed battery.
10. Prepare the controller air blocker by removing it from the packaging and folding it inward at right angles so it is ready to insert into the open controller slot.

**Figure 3. Controller Air Blocker**



11. Remove the controller canister that has the failed controller battery.

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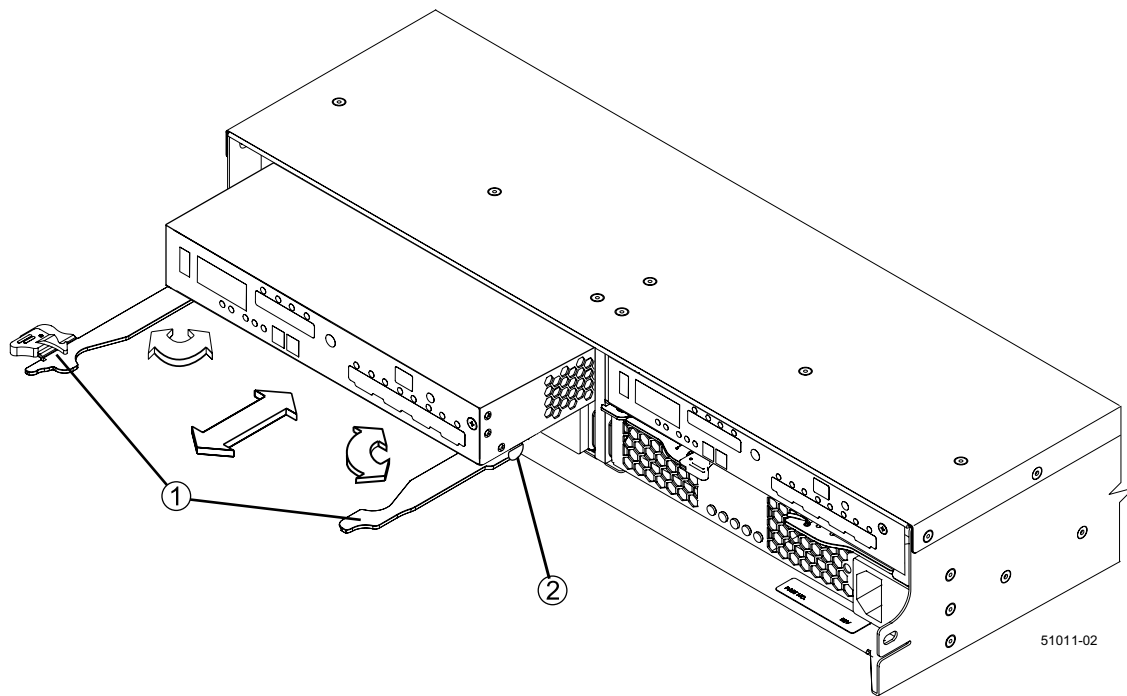
**NOTE** The following figures show the controller in the left-hand position within the controller-drive tray; however, you might be removing the controller and inserting the controller air blocker in the right-hand position. The required actions are similar.

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- a. Unlock the drive release lever, and pull both release levers outward to release the controller canister.

- b. Using the release levers and your hands, pull the controller canister out of the controller-drive tray.

**Figure 4. Removing and Replacing a Controller Canister**



1. Release Lever
2. Controller Canister

12. Invert the controller canister, and set it on a flat, static-free surface, with the release levers up.

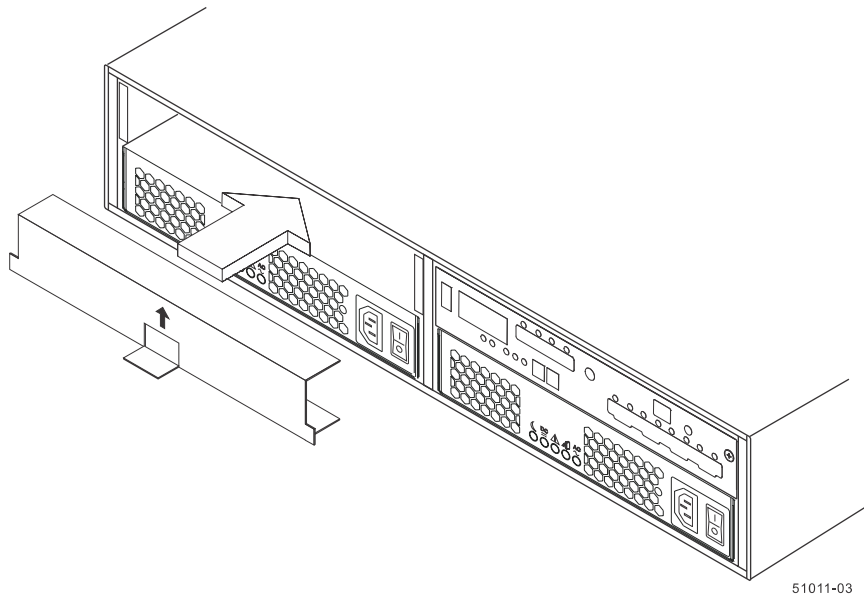
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**ATTENTION Possible equipment damage** – The controller slot cannot remain open for more than three minutes because of the possibility of overheating the equipment. The controller air blocker fills the controller slot so that the equipment does not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

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

**Figure 5. Inserting the Controller Air Blocker into the Open Controller Slot**

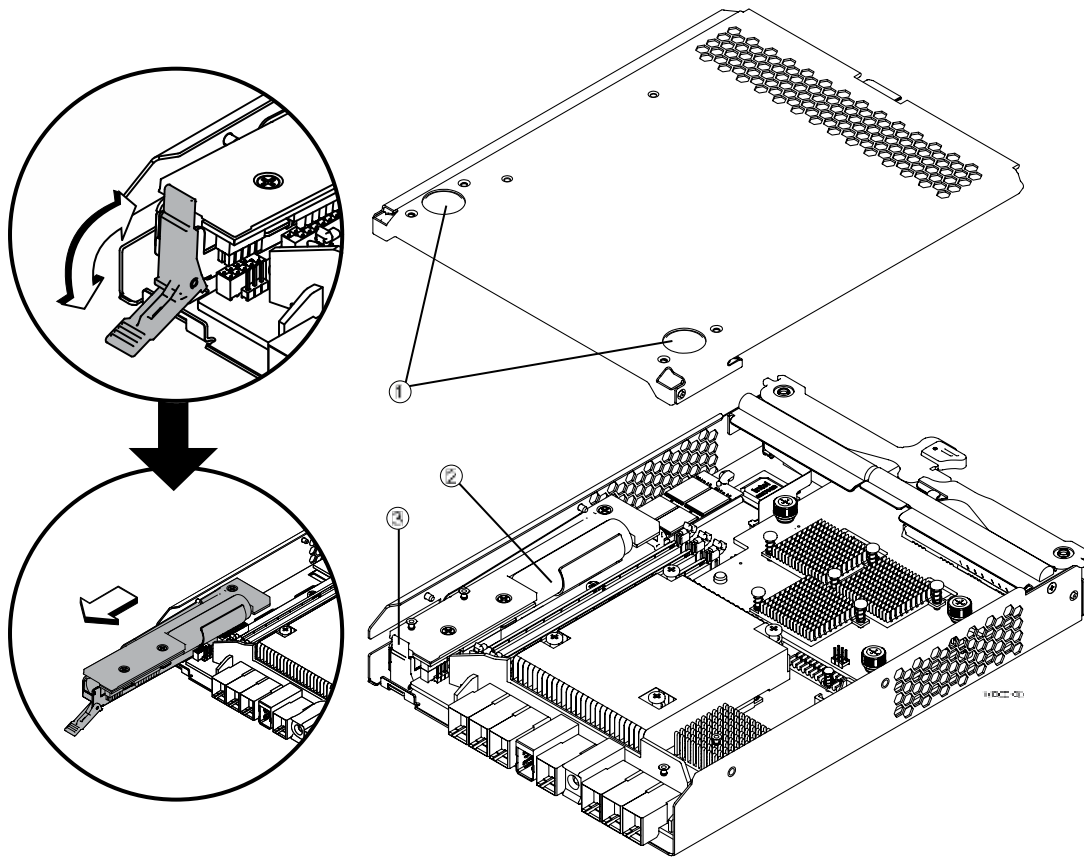


## **Replacing a Controller Battery in the E5512 Controller Canister or the E5524 Controller Canister**

1. Unpack the new controller battery.
  - a. Set the new controller battery on a flat, static-free surface near the controller-drive tray.
  - b. Save all of the packing materials in case you need to return the controller battery.

2. Remove the top cover from the controller canister.

**Figure 6. Battery and Locking Tab in the Controller**



1. Top Cover Latch Buttons
2. Battery Circuit Board
3. Battery Locking Tab

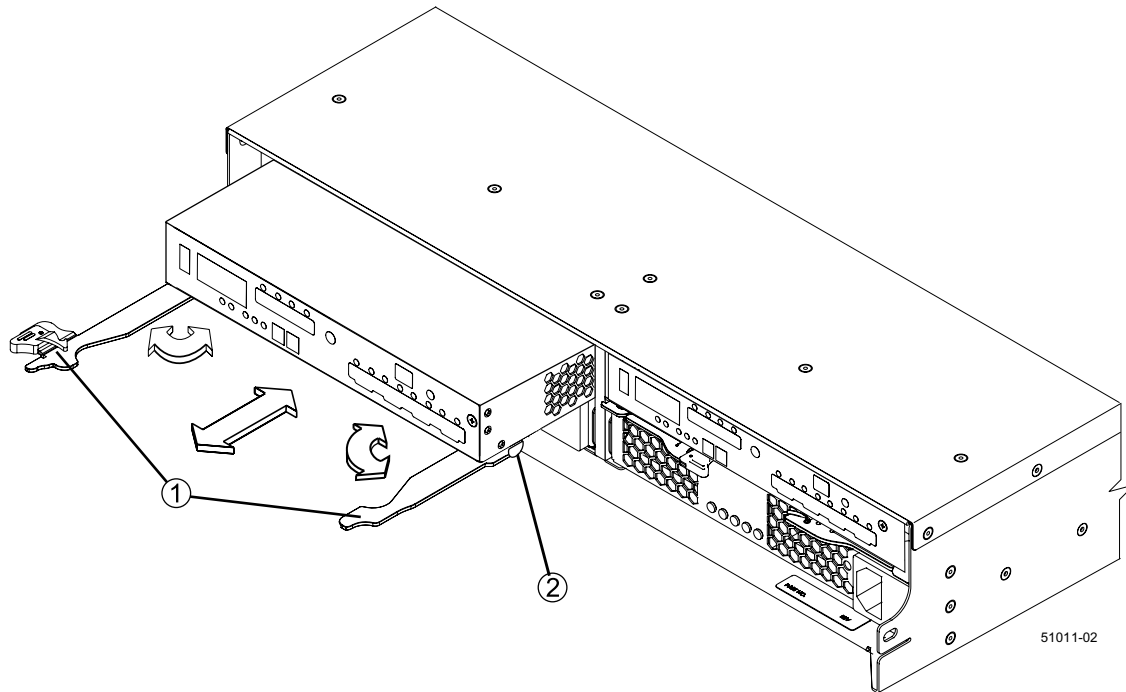
3. Remove the failed battery.
  - a. Move the battery locking handle down to pull the failed controller battery out of the controller canister.
  - b. Remove the failed controller battery by sliding it towards the rear of the controller canister.
4. Install the new battery.
  - a. Insert the new battery at a slight downward angle into the controller canister.
  - b. Slide the battery towards the front of the controller canister making sure that the battery slides under the side guide pins as you continue to slide the battery to correctly seat it against the back surface.

If the battery is not correctly seated, you will not be able to reinstall the top cover on the controller canister as directed later. If you suspect that the new battery is not correctly seated, you might need to slide the new battery out and insert it again.
5. Move the locking handle up to secure the new battery circuit board to the controller canister.
6. Reinstall the top cover on the controller canister by sliding it forward until the top cover latch buttons click.

## Reinstalling the Controller Canister

1. Remove the controller air blocker.
2. Slide the controller canister all the way into the controller-drive tray. Rotate the release levers towards the center of the controller canister to lock it into place.

**Figure 7. Removing and Replacing a Controller Canister**



1. Release Lever
2. Controller Canister

3. Reconnect all of the cables that were disconnected when you removed the controller canister.

## Bringing the Controller Canister Online

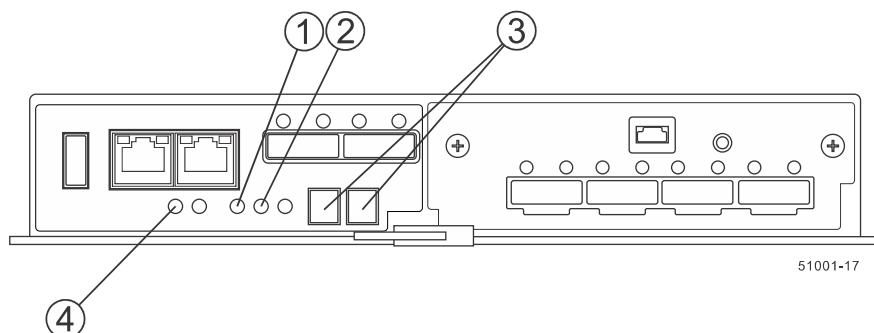
1. Use either the GUI (first bullet) or the CLI (second bullet) to bring the controller online.
  - From the Hardware pane in the Array Management Window, right-click the picture of the controller, and select **Advanced > Place > Online**.
  - Run the following command:

```
smCLI <DNS-network-name-or-IP-address> -c "set controller [(a | b)]  
availability=online";
```

2. Look at the LEDs on the controller canister to make sure that the controller is rebooting correctly.  
The Host Link Service Action Required LEDs will turn green during the reboot. The seven-segment display shows the sequence OS+ Sd+ blank- to indicate that the controller is performing Start-of-day (SOD) processing.

After the controller successfully completes rebooting, the seven-segment display shows the tray ID matching the seven-segment display on the second controller. You can discover the controller canister with the new battery by using the storage management software.

**Figure 8. E5500 Controller LEDs**



1. Controller Service Action Allowed LED (Blue)
  2. Controller Service Action Required LED (Amber)
  3. Seven-Segment Display
  4. Battery Service Action Required LED (Amber)
3. Look at the Controller Service Action Required LEDs, and look at all of the controller-drive tray's Service Action Required LEDs. Based on the LED status, perform one of these actions:
    - **All of the amber Service Action Required LEDs are off and the Array Management Window indicated an optimal status** – Go to step 5.
    - **Any of the controller-drive tray's Service Action Required LEDs are on, or the Controller Service Action Required LED is on** – Check that the controller canister has been installed correctly. Reinstall the controller canister, if necessary. Go to step 4.
  4. Did this action correct the problem?
    - **Yes** – Go to step 5.
    - **No** – If this problem is not resolved, contact your Technical Support Representative.
  5. Using the LEDs and the storage management software, check the status of all of the trays in the storage array.
  6. 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 Technical Support Representative.
    - **No** – Go to step 7.
  7. Remove the antistatic protection.
  8. Gather support data about your updated storage array by using one of these methods:
    - Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window toolbar, select **Monitor > Health > Manually Collect Support Data**. Then name and specify a location on your system where you want to store the support bundle.
    - Use the CLI to run the `save storageArray supportData` command to gather comprehensive support data about the storage array. For more information about this command, refer to the *Command Line Interface and Script Commands Programming Guide*.

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**NOTE** Gathering support data can temporarily impact performance on your storage array.

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