

Replacing a Failed Controller Battery in the E2712 Controller-Drive Tray or the E2724 Controller-Drive Tray

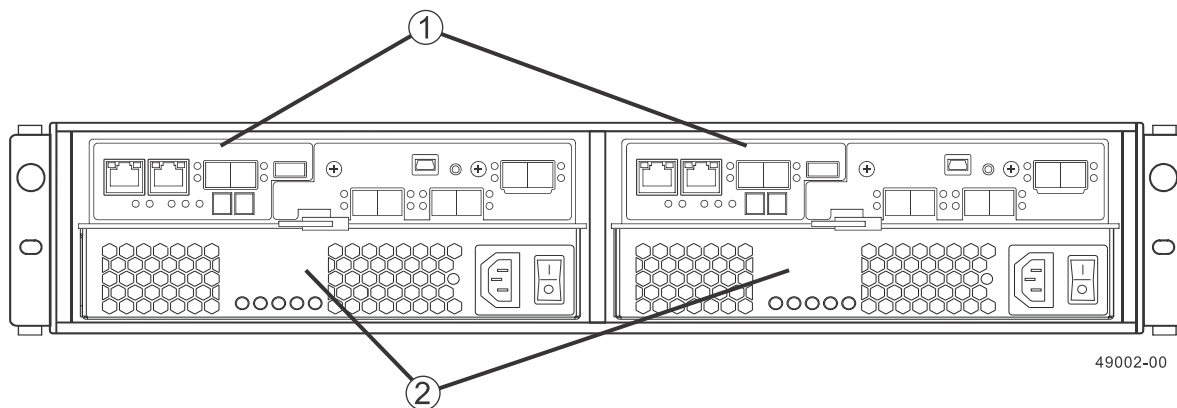
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You can determine whether you have a failed controller battery in two ways:

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

Read through all of the steps in this procedure before you begin replacing the controller battery.

Figure 1. E2712 Controller-Drive Tray or E2724 Controller-Drive Tray - Back View



1. Controller Canister
2. Power-Fan Canister

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.

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

This procedure describes how to perform the following tasks:

[Removing a Controller Canister](#)

[Replacing a Battery in the E2712 Controller Canister or the E2724 Controller Canister](#)

[Reinstalling the Controller Canister](#)

[Bringing the Controller Online](#)

Removing a Controller Canister

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

1. Gather support data about your storage array by using one of these methods:

Before you begin, gather antistatic protection and a replacement battery.

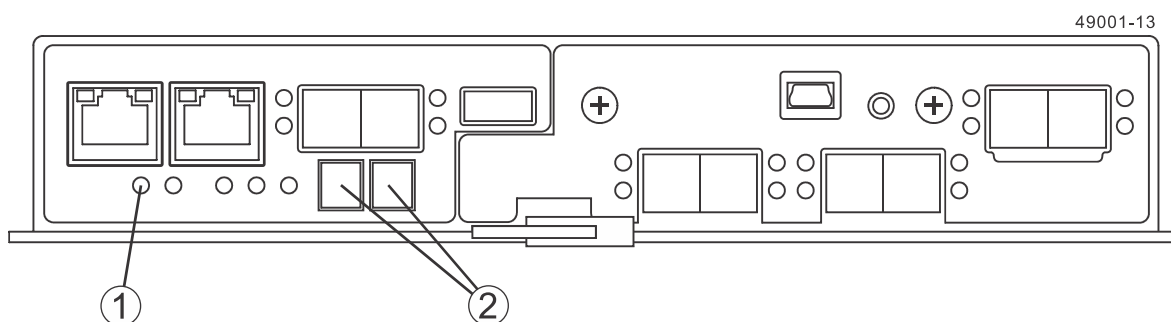
- Use the storage management software to collect and save a support bundle of your storage array. From the Array Management Window toolbar, click **Monitor > Health > Collect Support Data Manually**. Then name and specify a location on your system where you want to store the support bundle.
- Use the 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 for Version 11.10*.

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

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 controller-drive tray.
 - 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 2. Battery Service Action Required LED



1. Battery Service Action Required LED (Amber)
2. Seven Segment Display

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

6. 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.
7. Record the information from the seven-segment display on the controller-drive tray.

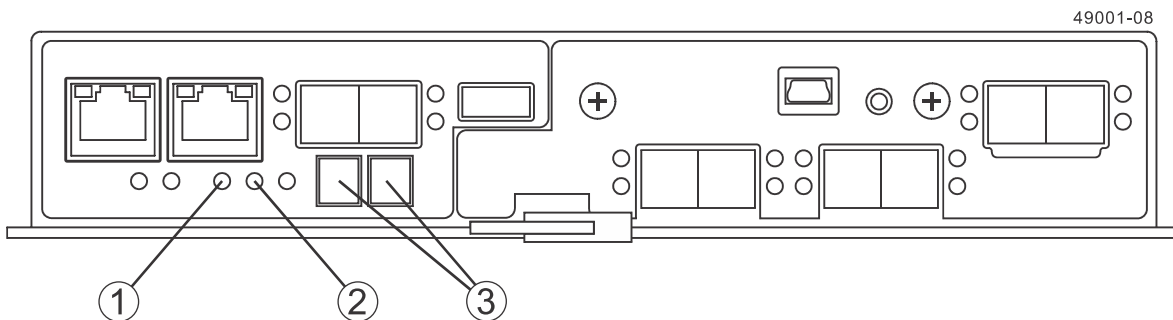
The display flashes a sequence of codes. To find information about the displayed diagnostic codes, refer to the *E2700 Controller-Drive Tray Installation Guide*.

8. 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 that 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";
```

If necessary, wait for the Controller Service Action Allowed LED to come on. This indication might take several minutes for a large configuration. See Controller LEDs.

Figure 3. Controller LEDs

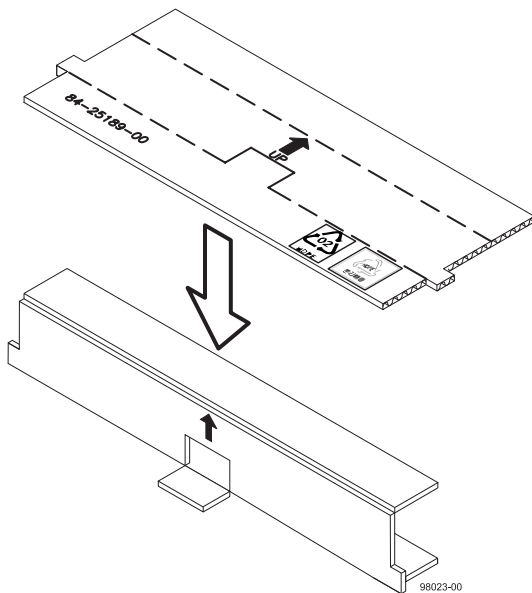


1. Controller Service Action Allowed LED (Blue)
 2. Controller Service Action Required LED (Amber)
 3. Seven-Segment Display
9. Disconnect all interface cables (drive connections, host connections, and Ethernet connections) from the controller canister that has the failed battery.

If the storage array is running while you perform the controller battery replacement, do not disturb the second controller canister.

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 4. Controller Air Blocker

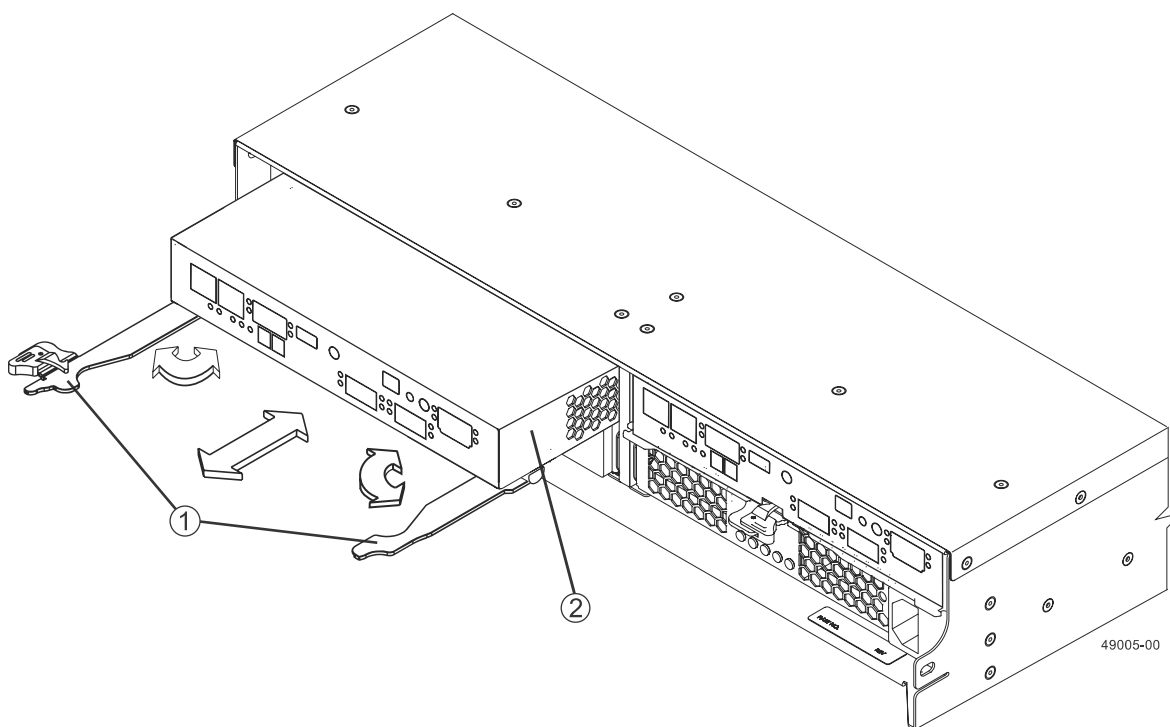


11. Remove the controller canister that has the failed controller battery.

- a. Unlock the release levers, and pull the release lever 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 5. Removing and Replacing a Controller Canister



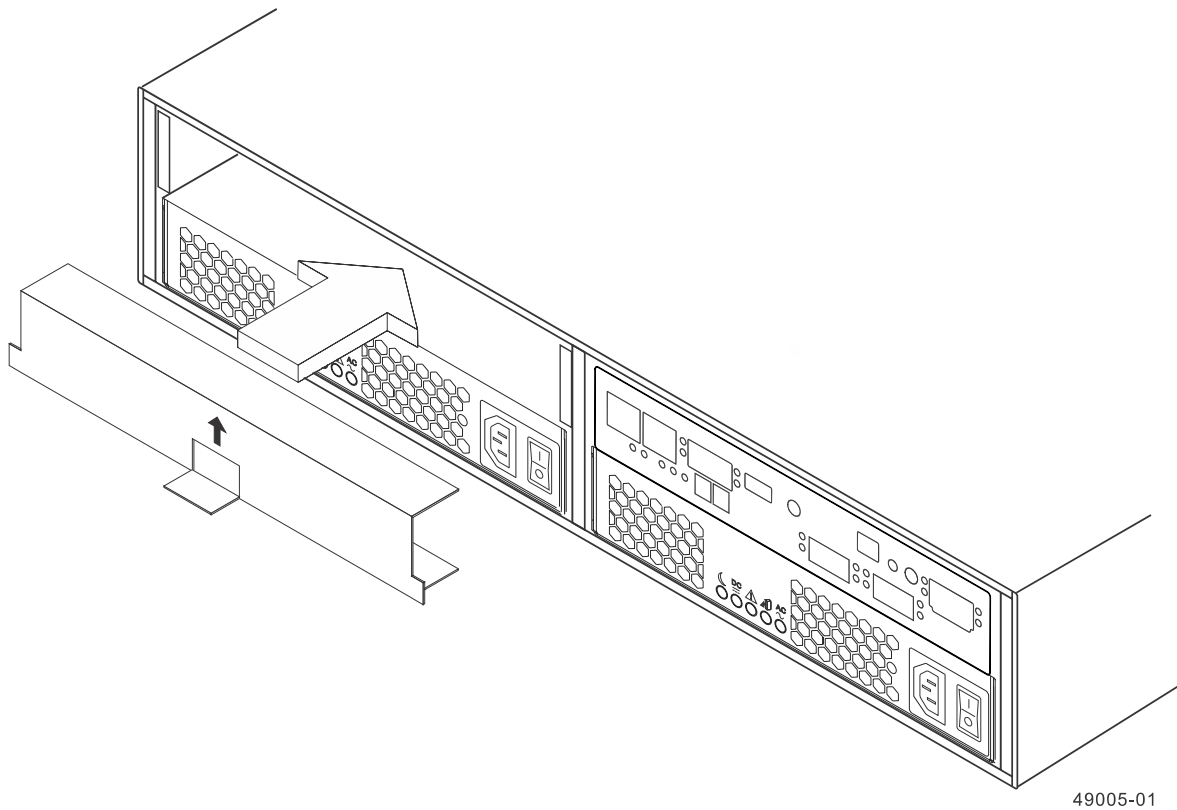
1. Release Levers
2. Controller Canister

12. Invert the controller canister, and set it 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 does not overheat.

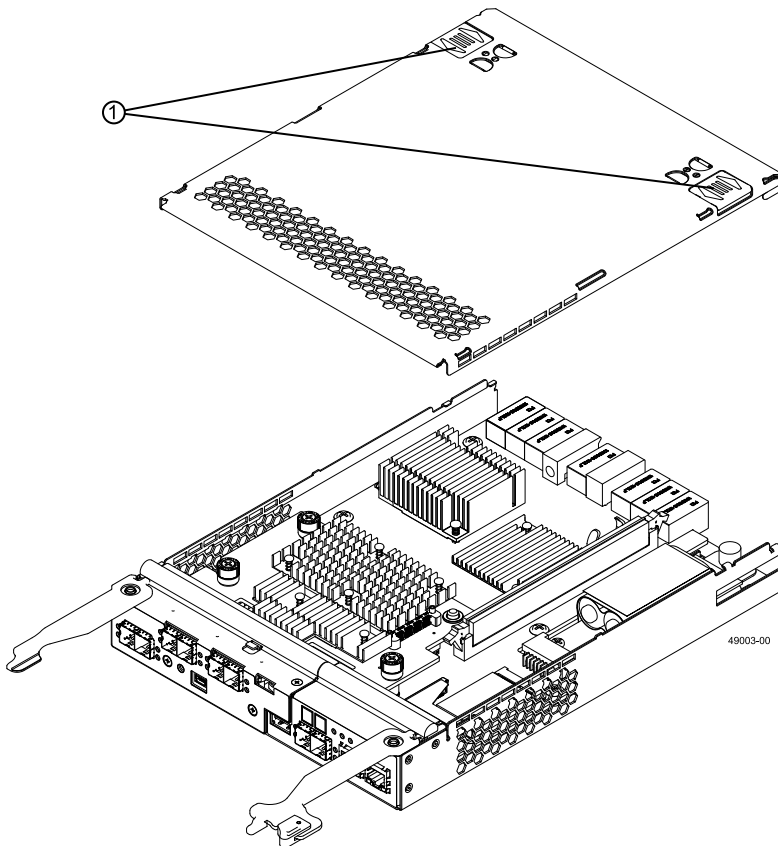
13. Insert the controller air blocker into the open controller slot to make sure that correct airflow is maintained.

Figure 6. 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 controller canister.

Figure 7. Controller Top Cover Latch Buttons



1. Top Cover Latch Buttons

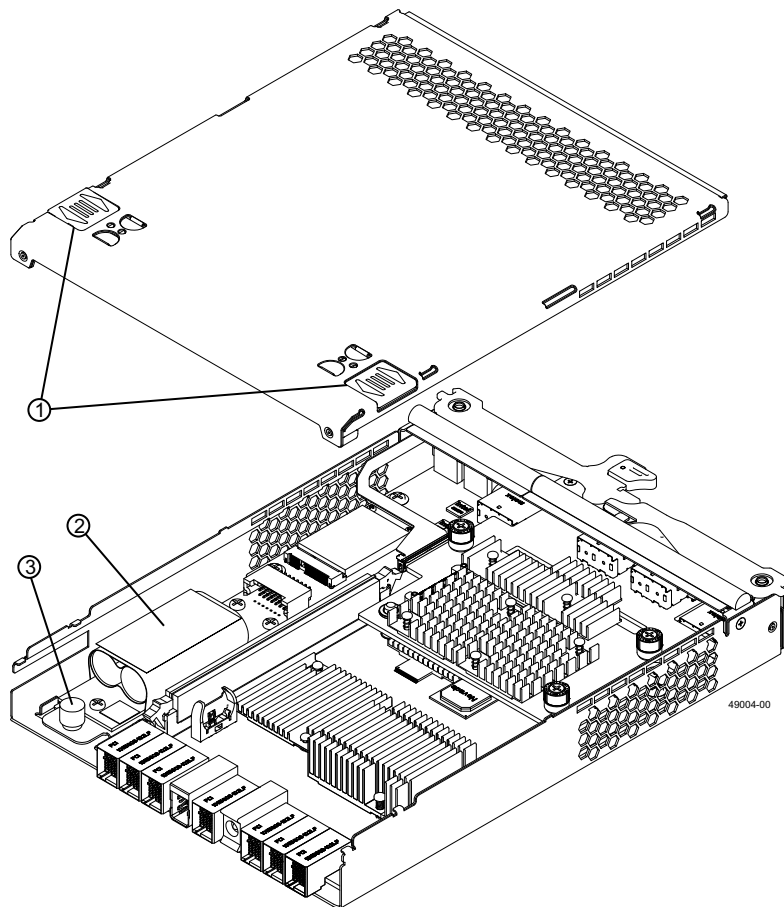
15. Remove the top cover from the controller canister.

Replacing a Battery in the E2712 Controller Canister or the E2724 Controller Canister

The E2700 controller canister is used in the E2712 controller-drive tray, the E2724 controller-drive tray, and the E2760 controller-drive tray.

1. Unscrew the battery thumbscrew to remove the failed controller battery out of the controller canister.

Figure 8. Battery and Locking Handle in the Controller



1. Top Cover Latch Buttons
 2. Battery Circuit Board
 3. Battery Thumbscrew
2. Remove the failed controller battery by sliding it towards the rear of the controller canister.
 3. Insert the new battery into the controller canister by sliding the new controller battery towards the front of the controller canister.
 4. Move the locking handle up to secure the new battery circuit board to the controller canister.

NOTE To make sure that the new controller battery is seated correctly, you might need to slide it out and insert it again.

Reinstalling the Controller Canister

1. Reinstall the top cover on the controller canister by sliding it forward until the top cover latch buttons click.
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.
3. Reconnect all of the cables that were disconnected when you removed the controller canister.

4. Turn off the Power switch on each of the power-fan canisters.

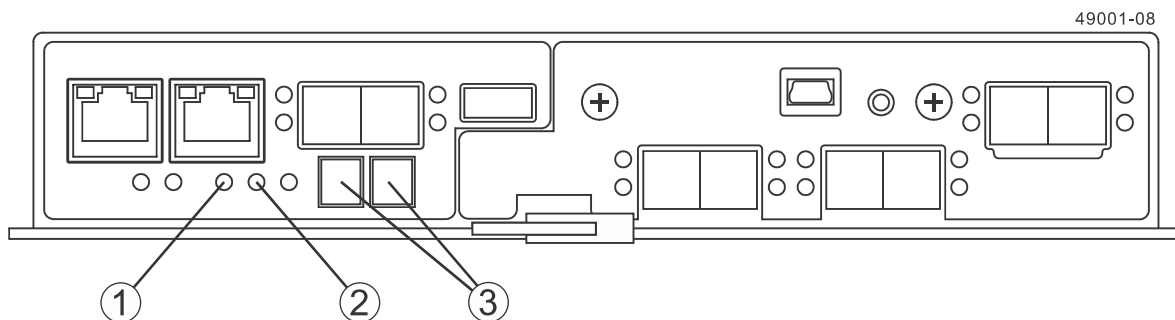
Bringing the Controller Online

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.

Figure 9. Controller LEDs



1. Controller Service Action Allowed LED (Blue)
2. Controller Service Action Required LED (Amber)
3. Seven-Segment Display

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. After this time, you can discover the controller canister with the new battery by using the storage management software.

3. 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 *Command Line Interface and Script Commands for Version 11.10*.
- Gathering support data can temporarily impact performance on your storage array.

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