



Replacing an ESM

StorNext QD6000/QD7000 Expansion Unit



StorNext QD6000/QD7000 Expansion Unit, Replacing an ESM, 6-68481-01 Rev A, July 2016, Product of USA.

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About this guide

NOTE: The Lancaster firmware is used on the E5600, Titan RAID controller, only. Refer to the [NetApp to Quantum Naming Decoder](#) section for additional information.

This section provides the following information:

- [Intended audience](#)
- [Prerequisites](#)
- [NetApp to Quantum Naming Decoder](#)

Intended audience

This guide is intended for storage customers and technicians.

Prerequisites

Prerequisites for installing and using this product include knowledge of:

- Servers and computer networks
- Network administration
- Storage system installation and configuration
- Storage area network (SAN) management and direct attach storage (DAS)
- Fibre Channel (FC) and Ethernet protocols

NetApp to Quantum Naming Decoder

Use [Table 1](#) to correlate the NetApp product nomenclature to the equivalent Quantum-storage naming conventions.

Table 1 Product Nomenclature

E-Series NetApp Product	Quantum-Storage	Description
Controller-Drive Tray	Base System	Quantum uses Base System when referring to a drive tray with the RAID controllers.
Drive Tray	Expansion Unit	Quantum uses Expansion Unit when referring to a drive tray with the environmental services modules (ESMs).
E5600 (Code Name: Titan)	RAID controller	Four 16Gb/s FC SFP+ host ports
E5500 (Code Name: Soyuz)	RAID controller	Four 16Gb/s FC SFP+ host ports
E5400 (Code Name: Pikes Peak)	RAID controller	Four 8Gb/s FC SFP+ host ports
DE6600 (Code Name: Wembley)	4U 60-drive enclosure	60 3.5 inch disk drives
E5560 or E5660 (DE6600 4U drive enclosure with E5500 or E5600 RAID controllers)	Quantum StorNext QD7000	
E5460 (DE6600 4U drive enclosure with E5400 RAID controllers)	Quantum StorNext QD6000	
E5424 (DE5600 24-drive 2U drive enclosure (Code Name: Camden) with E5400 RAID controllers)	Quantum StorNext QS2400	
E5412 (DE1600 12-drive 2U drive enclosure (Code Name: Ebbets) with E5400 RAID controllers)	Quantum StorNext QS1200	



This procedure is for systems running SANtricity® 10.83 and later.

NetApp® E-Series Storage Systems: Replacing an ESM Canister in the DE6600 Drive Tray

To download SANtricity ES Storage Manager and related product documentation, go to the NetApp Support Site at support.netapp.com.

Before you replace the environmental services module (ESM) canister in the DE6600 drive tray, gather antistatic protection and a replacement ESM canister.

ATTENTION Possible equipment damage – If you perform this procedure with the power turned on, you must complete it within 15 minutes to prevent the possibility of overheating the equipment.

You can determine whether you have a failed ESM canister in two ways:

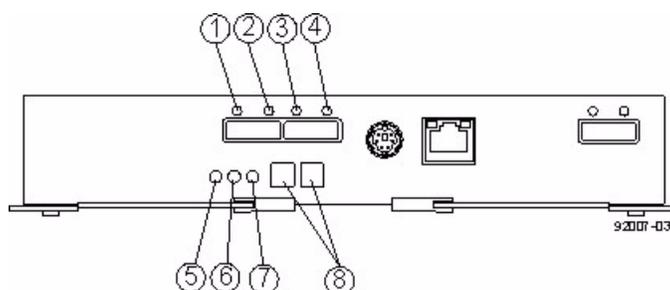
- The Recovery Guru directs you to replace a failed ESM canister.
- You locate the failed ESM canister by checking the ESM Service Action Required LED.

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

1. 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**. 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*. Running this command can temporarily impact performance on your storage array.
2. Did the Recovery Guru direct you to replace a failed ESM canister?
 - **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 canister.
 - a. Set the new ESM canister on a flat, static-free surface near the drive tray.
 - b. Save all packing materials in case you need to return the ESM canister.

5. Check the ESM Service Action Required LED to locate the failed ESM canister (Figure 1).

Figure 1 LEDs on the ESM Canister



1. ESM Link Fault LED (Port 1A Bypass) (Green)
2. ESM Link LED (Port 1A Data Rate) (Green)
3. ESM Link LED (Port 1B Data Rate) (Green)
4. ESM Link Fault LED (Port 1B Bypass) (Green)
5. ESM Service Action Allowed LED (Blue)
6. ESM Service Action Required LED (Amber)
7. ESM Power LED (Green)
8. Seven-Segment Tray ID

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

6. On the failed ESM canister, label all of the attached cables with information so that you can connect the cables correctly on the replacement ESM canister.

ATTENTION Possible loss of hardware – To avoid taking the wrong ESM canister offline, contact your Technical Support representative before performing step 7.

7. If the Recovery Guru has directed you to replace the ESM canister and the blue ESM Service Action Allowed LED is not on, type this command on the command line, and press **Enter**:

```
SMcli <ctrl_IP1> -c "Set tray [trayID] esm [top|bottom] service Allowed Indicator=on;"
```

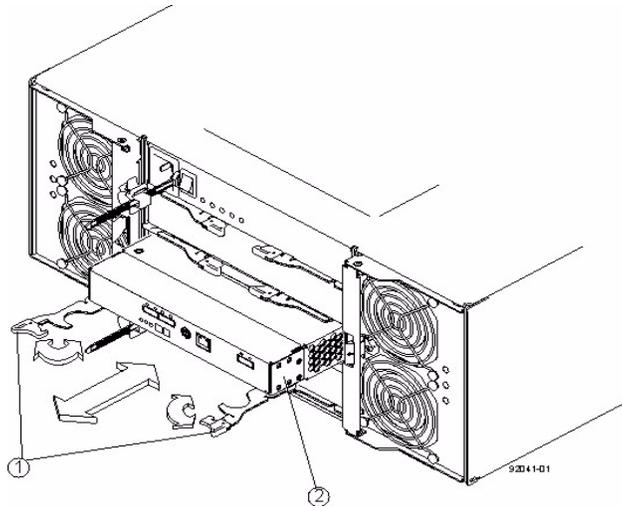
In this command:

- `<ctrl_IP1>` is the identifier of the controller to which the drive tray is assigned.
- `[trayID]` is the identifier of the drive tray that contains the ESM canister you want to replace. Drive tray ID values are 0 to 99. Be sure to type the square brackets around the identifier.
- `[top|bottom]` is the identifier of the ESM canister you want to replace. Valid values are `top` or `bottom`. Be sure to type the square brackets around the value.

8. Remove all cables attached to the ESM canister.

9. Remove the ESM canister from the drive tray (Figure 2) by pressing the orange tab toward the black tab, moving the levers to the outside, and then pulling the ESM canister toward you.

Figure 2 Removing an ESM Canister



While removing the ESM canister, you might notice an increase in fan speed. The fan speed returns to normal after you have replaced the ESM canister.

10. Slide the replacement ESM canister all the way into the drive tray until the tab on the ESM canister latches.
11. Reconnect all the cables to the replacement ESM canister.
12. Check the ESM Power LED and the ESM Service Action Required LED on the new ESM canister (Figure 1 on page 2).
13. Based on the LED status, perform one of these actions:
 - **The ESM Power LED is on and the ESM Service Action Required LED is off** – Go to step 15.
 - **The ESM Power LED is off or the ESM Service Action Required LED is on** – Check that the ESM canister is installed correctly. Reinstall the ESM canister. Go to step 14.
14. Did this action correct the problem?
 - **Yes** – Go to step 15.
 - **No** – If the problem has not been resolved, contact your Technical Support representative.
15. Check the status of all of the trays in the storage array.
16. 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 has not been resolved, contact your Technical Support representative.
 - **No** – Go to step 17.

17. Remove the antistatic protection.

18. 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 >> 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*. Running this command can temporarily impact performance on your storage array.