

Hardware replacement tips

How to replace the hardware components of the DE Series storage arrays

Lenovo

Determining what hardware to replace

The System Manager Hardware page shows a graphical view of the storage array component locations and slot numbers. Use this page to determine which components need to be replaced.

The screenshot displays the 'Hardware' section of the System Manager interface. On the left, a sidebar contains navigation links: Home, Storage, Hardware (selected), Settings, and Support. The main content area is titled 'HARDWARE' with a 'Learn More >' link. Below this, there are two tabs: 'Drives' and 'Controllers & Components', with the latter highlighted by a red box. A red arrow points from a callout box to this tab. The callout box contains the text: 'Click here to view the rear components of the storage array.' Below the tabs, there is a 'Legend' section with a dropdown arrow and a 'Show status icon details' checkbox. The main display area shows a 'Controller Shelf 99' with a row of 24 slots, numbered 0 to 23. Each slot contains a small icon representing the component status.

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Placing the controller offline

Before replacing a controller, a controller battery, or the optional HIC in a controller, use System Manager to place the failed controller offline.

Note: Users should back up the storage array's configuration before placing the failed controller offline to prevent possible data loss. Refer to the *Hardware Installation and Maintenance Guide* of the storage array for the procedures.
Before physically removing the controller from the enclosure, make sure the cache active LED is off. A solid or flashing green light indicates cache activity.

Click each number in turn
to see the procedure.

Step

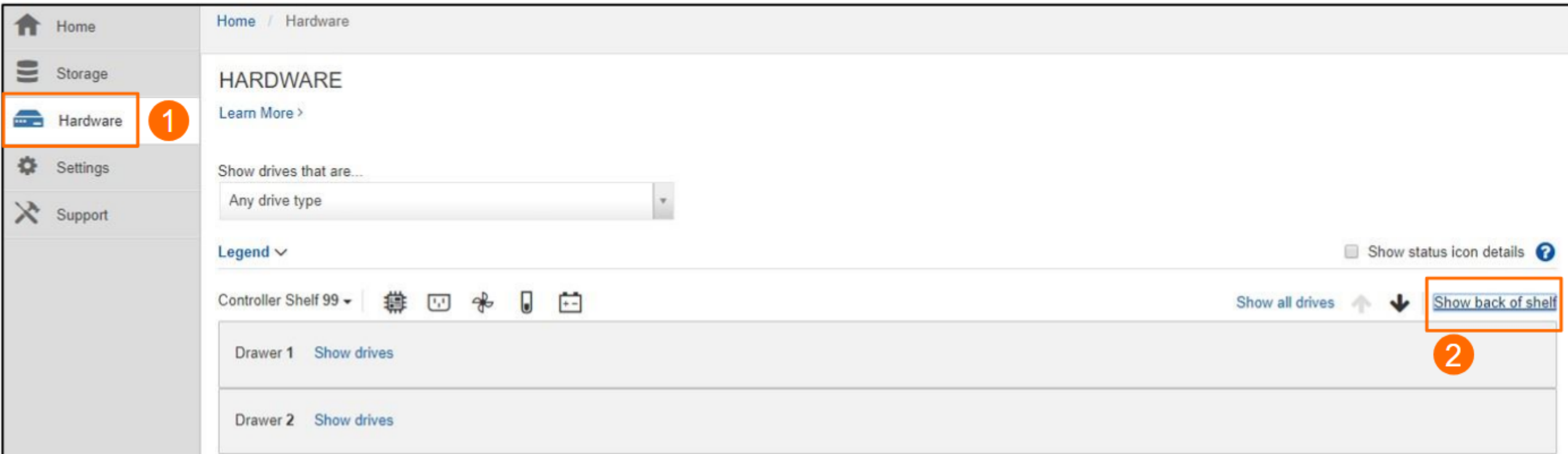


Cache active LED



Placing the controller offline

In System Manager, go to the **Hardware page**, and then click **Show back of shelf**.



Step

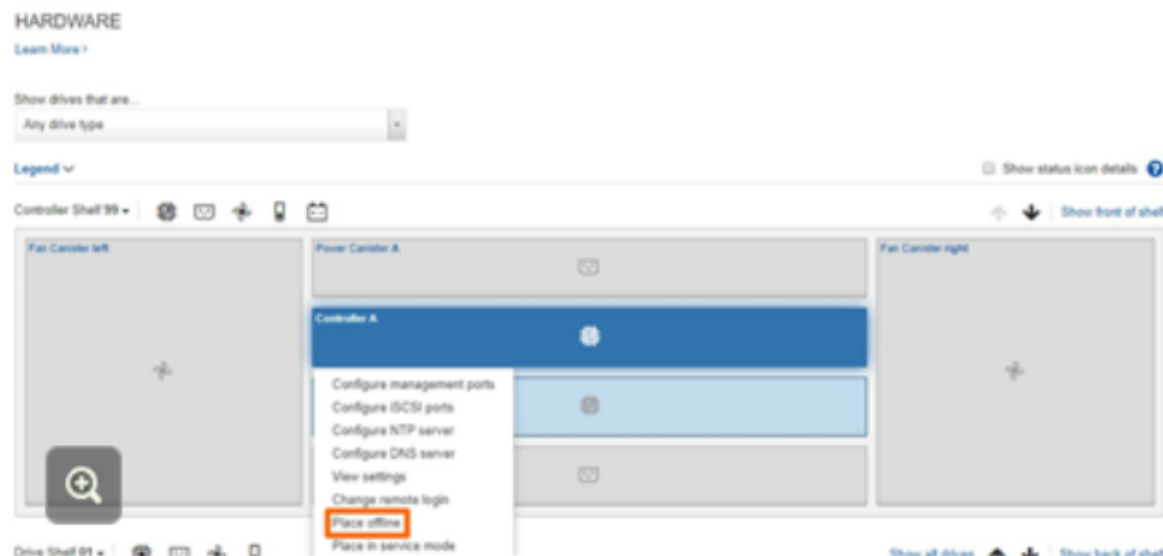


Placing the controller offline

Click the controller that needs to be replaced, and then click **Place offline**.

Note: If you are accessing System Manager using the controller you are attempting to take offline, a **System Manager Unavailable** message will be displayed. Select **Connect to an alternate network connection** to access TSM using the other controller.

Click to enlarge
the image

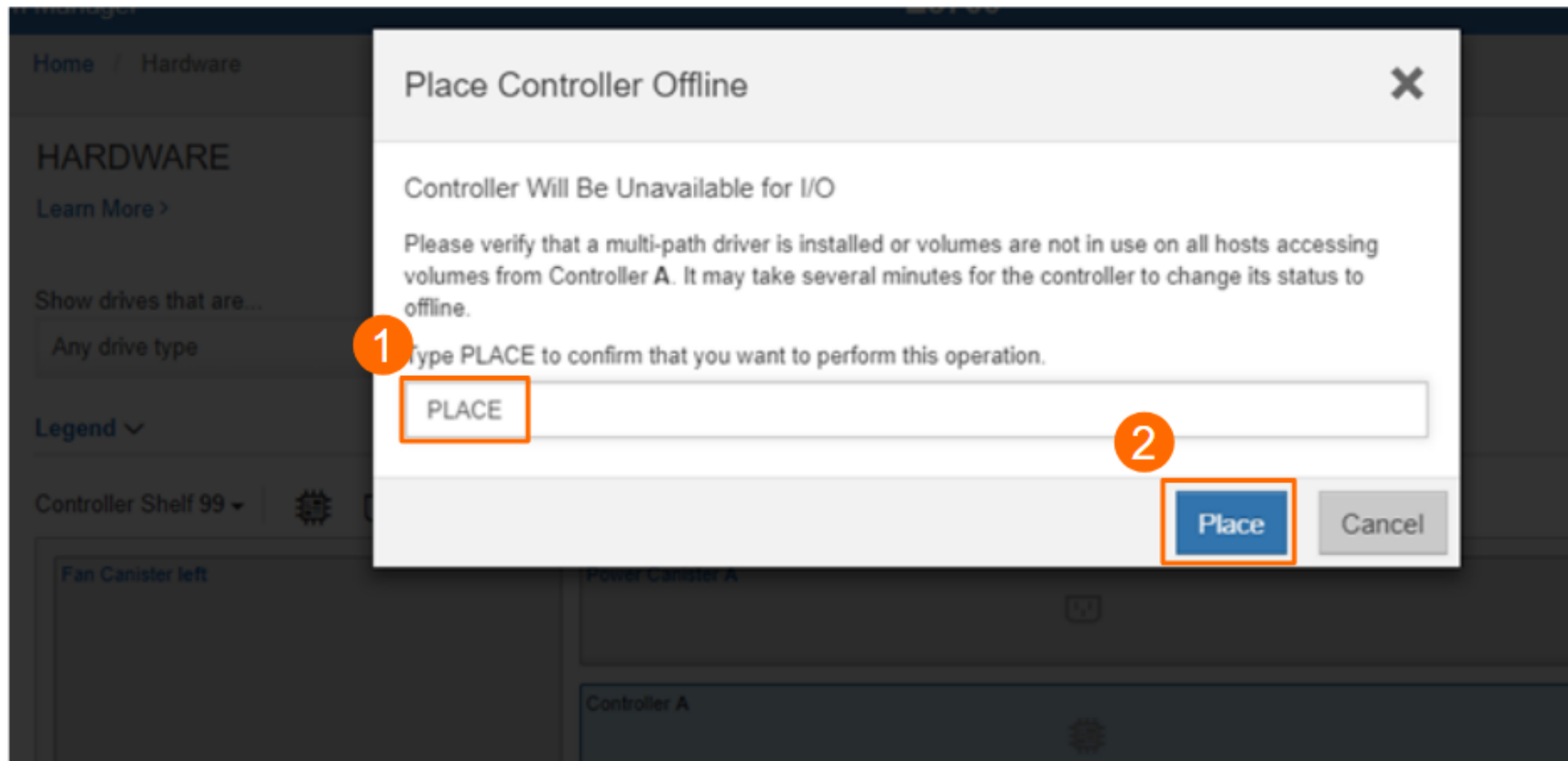


Step



Placing the controller offline

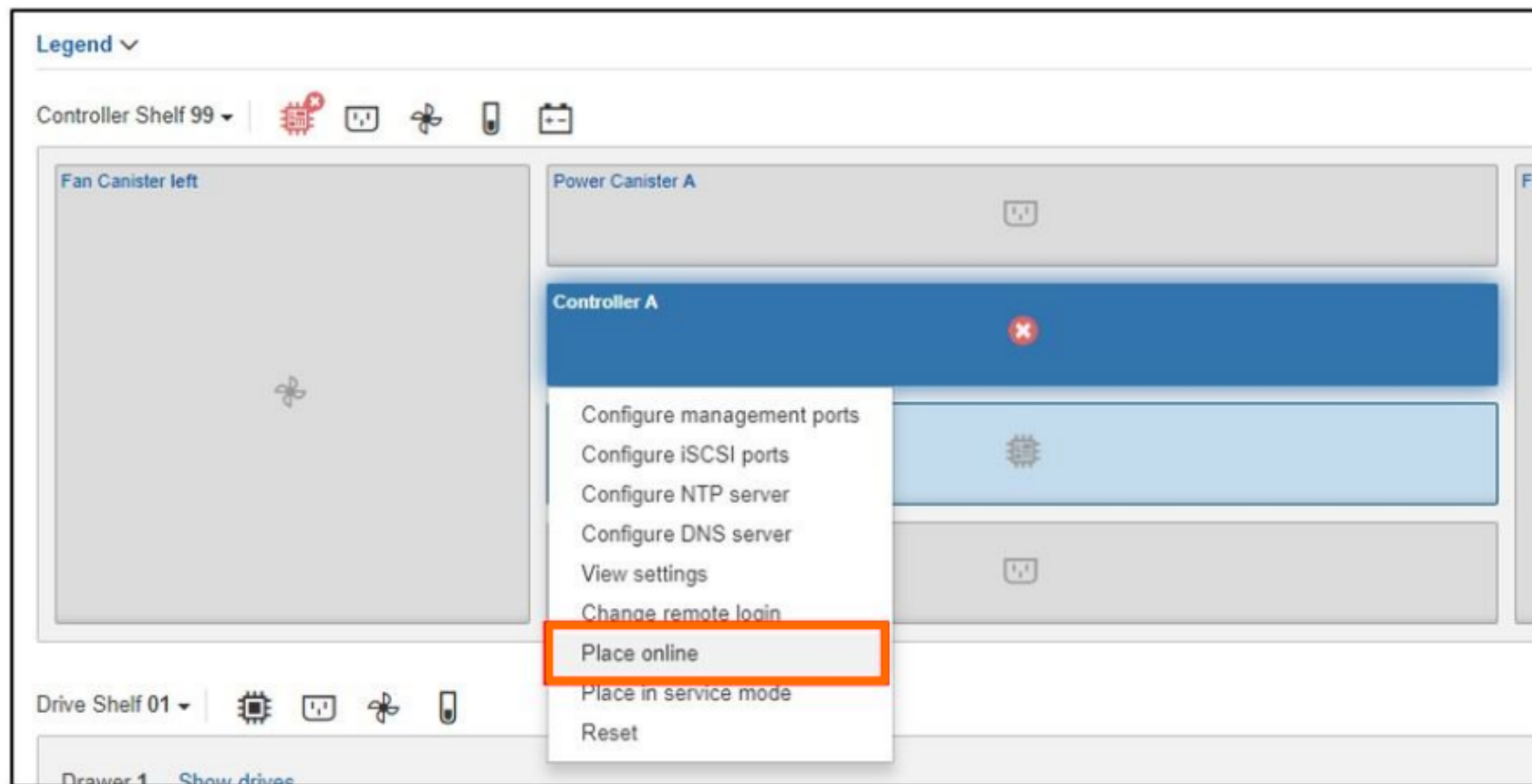
A confirmation window will be displayed. Type **PLACE**, and then click **Place**.



Step **1** — **2** — **3** — **4** 

Placing the controller offline

After the replacement, go to the hardware page, click the replaced controller, and then click **Place online**. The replaced controller will be automatically updated with the firmware and settings of the active controller.



Step



Replacing an IOM or a drive drawer in an expansion enclosure

From August 2022, the DE Series expansion enclosure supports a new IOM and a new drive drawer. The new IOM and drive drawer use a different chipset, but their functions and features are the same as the old IOM and drive drawer.

Replacing an IOM or drawer might cause hardware compatibility problems.



Click each number in turn to see the procedure

Step



Replacing an IOM or a drive drawer in an expansion enclosure

Limitations

To replace an IOM or drawer in an expansion enclosure, check the following limitations:

- To support the new IOM and drawer, the ThinkSystem System Manager SAN OS on the host DE storage array controller must be updated to version 11.70.2 or above. If it is not, the storage array will not be able to recognize the new IOM and drawer.
- The new and old IOM and drawer have different FRU part numbers.
- The new IOM (Lenovo FRU: 02JH734) and old IOM (Lenovo FRU: 01PG580) are not compatible. You cannot install a new IOM with an old IOM in the same expansion enclosure.
- The new drawer (Lenovo FRU: 02JH830) and old drawer (Lenovo FRU: 01PG575) are not compatible. You cannot install a new drawer with old drawers in the same expansion enclosure.

Note: Mixing new and old IOMs or drawers in a DE600S will cause a system error, and an error message will be displayed on the ThinkSystem System Manager homepage.

Step



Replacing an IOM or a drive drawer in an expansion enclosure

High-level IOM replacement procedures:

- Access TSM to check the current IOM part number in the Storage Array Profile.
- If you cannot access TSM, ask the users to check the physical label to get the Lenovo FRU number information.
- Use the part number to determine if the IOM is an old or new model, and then use the corresponding FRU part for the replacement.

Step



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Step



Replacing an IOM or a drive drawer in an expansion enclosure

In the Storage Array Profile, You can only find the original manufacturer version part number. Refer to the following table to convert the original manufacturer part number to the corresponding Lenovo FRU number.

Component	Lenovo FRU number	Original manufacturer part number
IOM	Old: 01PG580	Old: 111-02850
	New: 02JH734	New: 111-04850 or 111-05055

Step



Replacing an IOM or a drive drawer in an expansion enclosure

How to find IOM FRU part numbers?

There are three ways to find an IOM FRU part number:

1. Go to TSM Support Center → Storage Array Profile. In the Storage Array Profile, check the part number in the IOM card section. Click [HERE](#) to see an example.
2. Go to TSM Support Center → Diagnostic → Collect Support data. After collecting the support data, check the Storage-Array.txt in the support data package. The IOM part number will be in the IOM Canisters section. Click [HERE](#) to see an example.
3. Check the physical label on the IOM.
 - Old IOM part number label location: Click [HERE](#) to see an example
 - New IOM part number label location: Click [HERE](#) to see an example

Step



Replacing IOM card in an expansion enclosure



Storage Array Profile

111-02850

Results: 1 of 2

IOM card status:	Optimal
Firmware Version:	0281
Configuration settings version:	Not Applicable
Maximum data rate:	12 Gbps
Current data rate:	12 Gbps
Location:	A
Card communication:	OK
Trunking supported:	No
Product ID:	DE600S
Part number:	111-02850+C3
Serial number:	031815000721
Date of manufacture:	Not Available

IOM card status:	Optimal
Firmware Version:	0281
Configuration settings version:	Not Applicable
Maximum data rate:	12 Gbps
Current data rate:	12 Gbps
Location:	B
Card communication:	OK
Trunking supported:	No
Product ID:	DE600S
Part number:	111-02850+C3
Serial number:	031816000487
Date of manufacture:	Not Available

In this example, the IOM part number is 111-02850, which refers to an old IOM.

Step

IOM Canisters Detected: 2

IOM card status:	Optimal
Firmware Version:	0281
Configuration settings version:	Not Applicable
Maximum data rate:	12 Gbps
Current data rate:	12 Gbps
Location:	A
Card communication:	OK
Trunking supported:	No
Product ID:	DE600S
Part number:	111-02850+C3
Serial number:	031815000721
Date of manufacture:	Not Available

IOM card status:	Optimal
Firmware Version:	0281
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Maximum data rate:	12 Gbps
Current data rate:	12 Gbps
Location:	B
Card communication:	OK
Trunking supported:	No
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Part number:	111-02850+C3
Serial number:	031816000487
Date of manufacture:	Not Available

In this example, the IOM part number is 111-02850, which refers to an old IOM. The +C3 can be ignored.

Replacing an IOM or a drive drawer in an expansion enclosure



The old IOM (Lenovo FRU number: 01PG580)

The old IOM has an IOM12 label in the corner.



The old IOM FRU number is 01PG580.

Step



Replacing an IOM or a drive drawer in an expansion enclosure



The new IOM (Lenovo FRU number: 02JH734)

The new IOM has an IOM12B label in the corner.

The new IOM has a blue stripe, but the old IOM does not.

- You will only find the original Net App version FRU number in the Storage Array Profile
- 111-2
 - If
 - If
- 111-4
 - do



The new IOM FRU number is 02JH734.



Replacing the enclosure

A Lenovo Repair identification tag (RID tag) is included in the enclosure FRU package.

After replacing the enclosure, the support personnel should follow the instructions on the RID tag, and install the RID tag with the original machine type and serial number on the replaced enclosure for future entitlement check use.

LENOVO REPAIR IDENTIFICATION TAG



INSTRUCTIONS

1. Verify that the serial number of the failing Customer Replaceable Unit (CRU) / Field Replaceable Unit (FRU) matches the serial number reported to Lenovo dispatch.
2. Copy the machine type and serial number from the failing CRU/FRU identification label to the RID tag for the replacement CRU/FRU. This number must agree with the machine type and serial number provided to Lenovo dispatch. If a prior Repair Identification (RID) tag is present on the failing CRU/FRU, do not try to remove and reuse the RID tag on the replacement CRU/FRU. Transfer the machine type and serial number from the failing CRU/FRU RID tag to the RID tag for the replacement CRU/FRU.

DO NOT USE A FELT TIP PEN OR A PENCIL TO COMPLETE THE RID TAG.

3. Install the RID tag over the machine type and serial number label on the replacement CRU/FRU.

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3. Install the RID tag over the machine type and serial number label on the replacement CRU/FRU.

Summary

This course enabled you to:

- Describe the features and specifications of the ThinkSystem DE Series storage arrays
- Describe the DE Series storage arrays configuration
- Describe the management software of the storage arrays
- Describe the process for changing host port protocols
- Describe the process used to enable the premium feature key
- Describe the problem determination steps and explain how to troubleshoot issues with the storage arrays
- Describe the hardware replacement tips