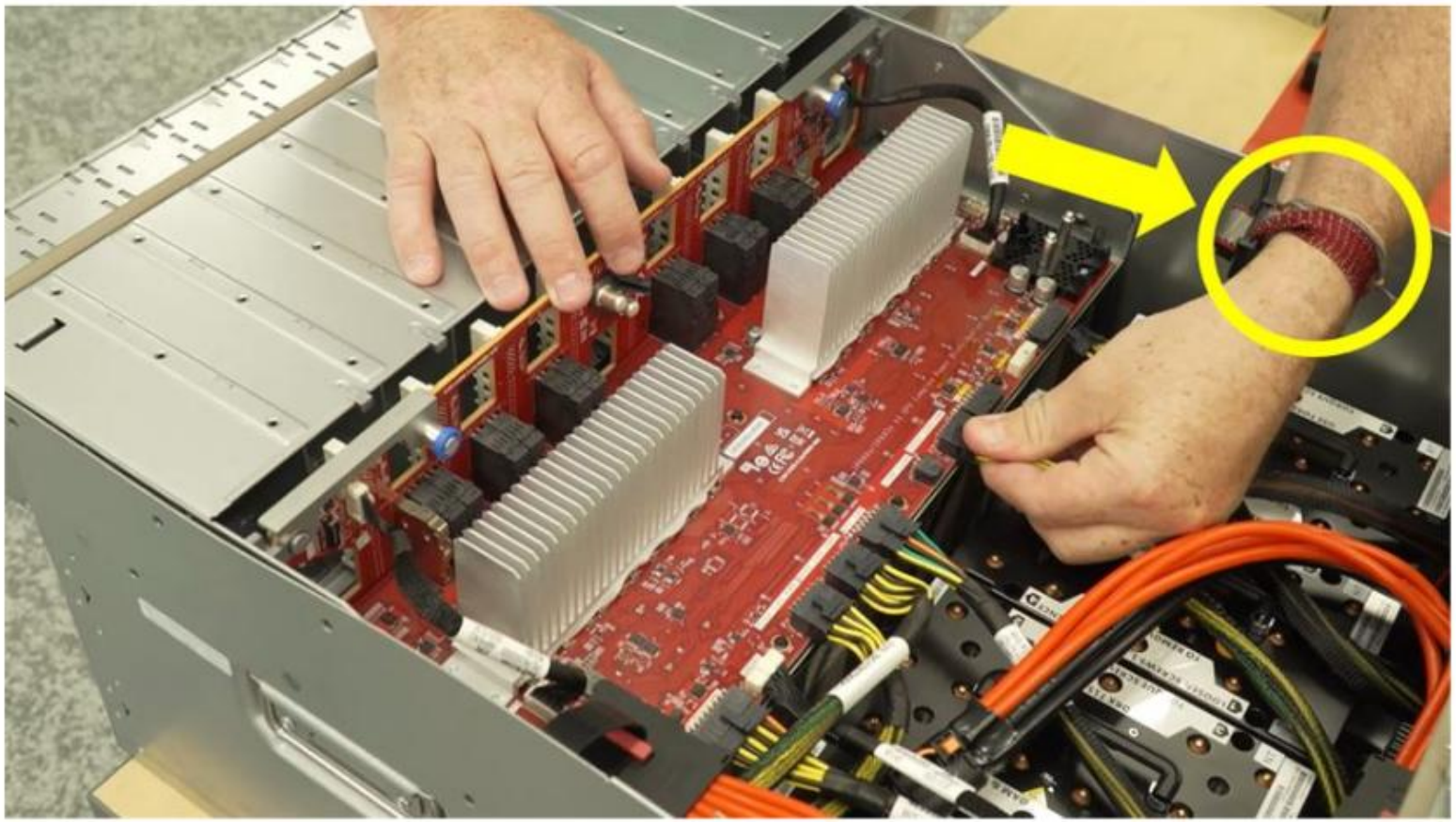
Hardware replacement tips

Part replacement highlights

Lenovo

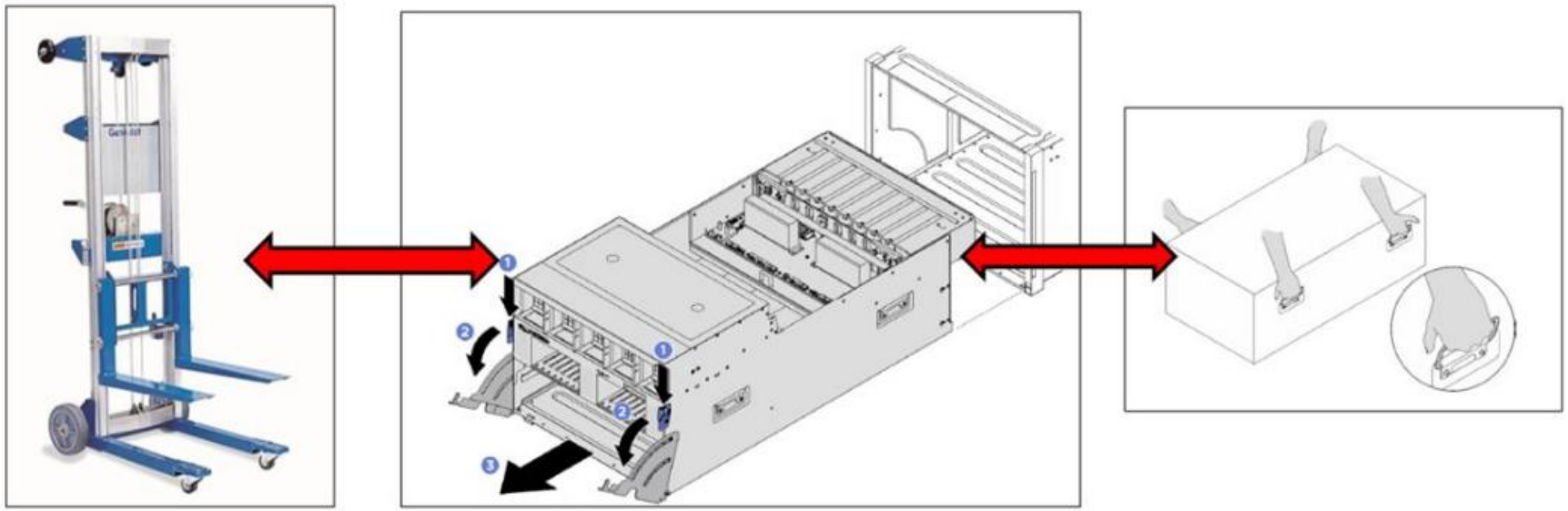
ESD wrist strap

The GPUs, switch board, and system board in the system are extremely sensitive to ESD. Make sure you wear an ESD wrist strap when replacing any components in the system.



Removing a GPU shuttle

To remove a GPU shuttle from the SR680a V3, two people are required to hold the four handles on the sides of the GPU shuttle. Then, the GPU shuttle should be placed on a lift tool. If the customer does not have a lift tool, Lenovo offers the Genie GL-8 lift tool (machine type model: 7D5YCTO1WW) as a configurable option that customers can order.

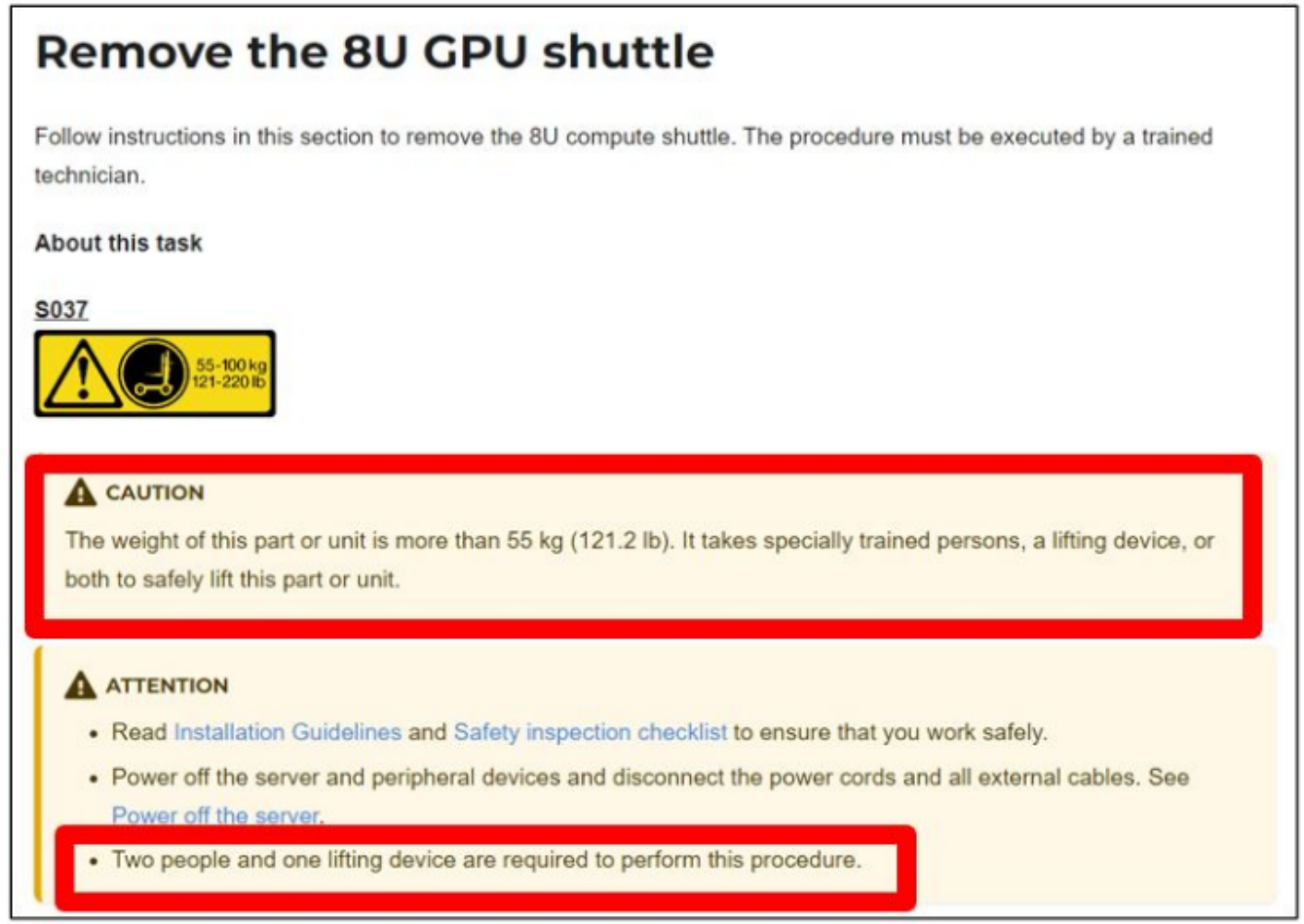


Replacing parts in a GPU shuttle

The following parts in a GPU shuttle can be replaced by a single person as they can be accessed without removing the shuttle from the chassis:

- Front hot-swap drives
- Front hot-swap fans
- Rear hot-swap fans
- Hot-swap PSUs
- Front diagnostic panel
- PCIe switch shuttle

To access other parts in a GPU shuttle – for example, a drive backplane, or a GPU – it is necessary to remove the shuttle from the chassis, so two people and the lift tool are required to replace these parts.



Remove the 8U GPU shuttle

Follow instructions in this section to remove the 8U compute shuttle. The procedure must be executed by a trained technician.

About this task

S037

CAUTION

The weight of this part or unit is more than 55 kg (121.2 lb). It takes specially trained persons, a lifting device, or both to safely lift this part or unit.

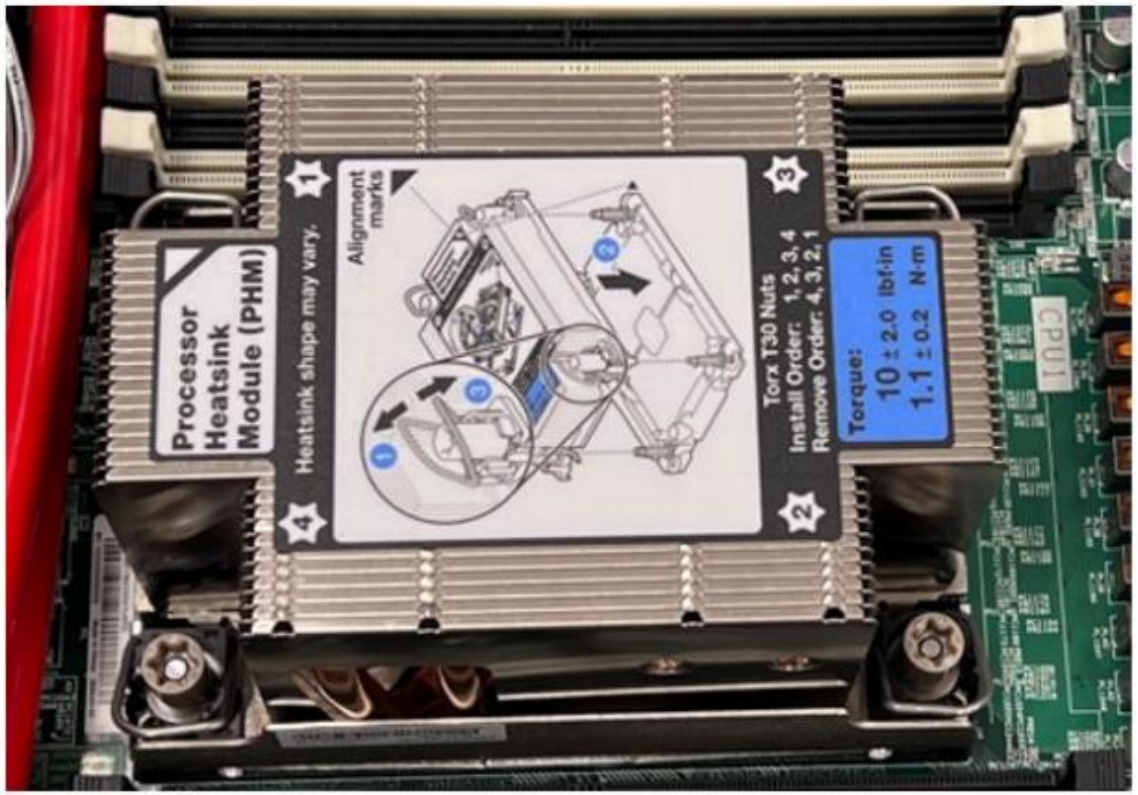
ATTENTION

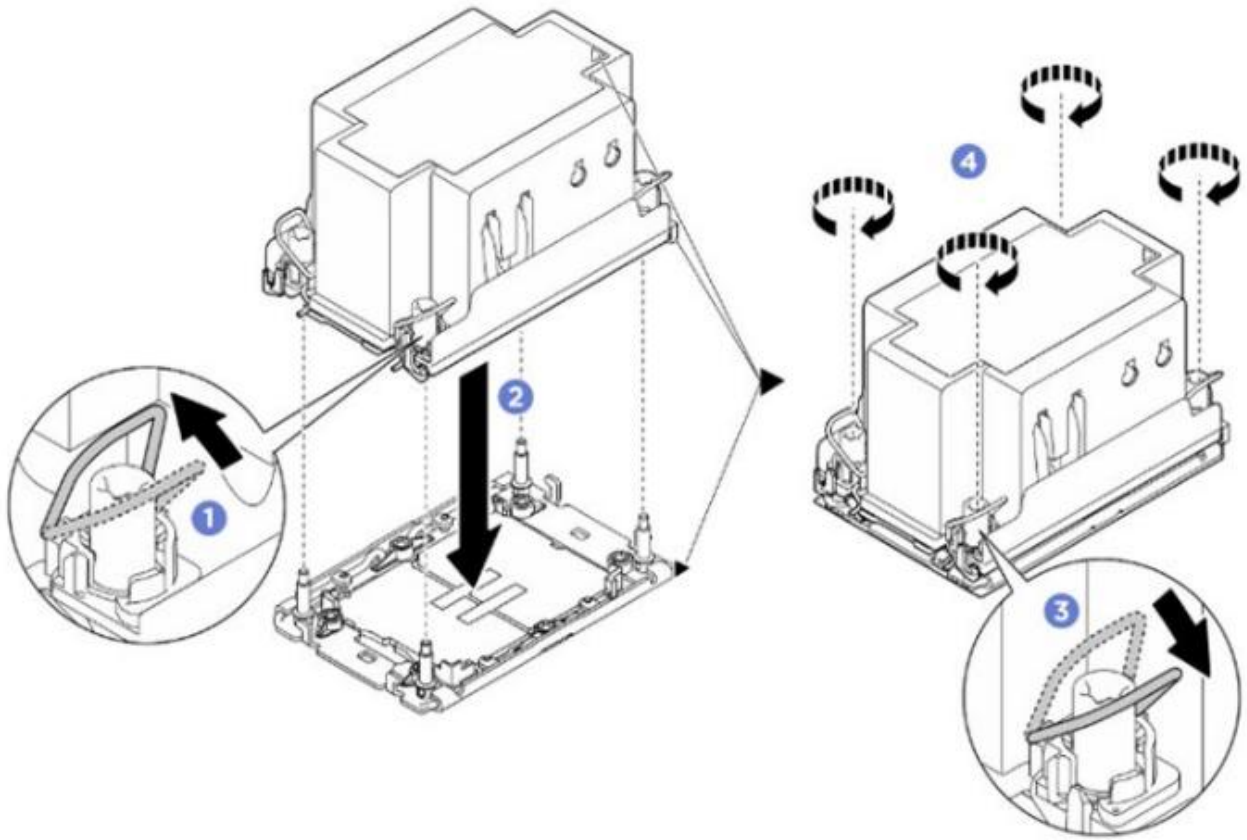
- Read Installation Guidelines and Safety inspection checklist to ensure that you work safely.
- Power off the server and peripheral devices and disconnect the power cords and all external cables. See Power off the server.
- Two people and one lifting device are required to perform this procedure.

Warning statement in the SR680a V3 User Guide

Replacing a processor heat sink

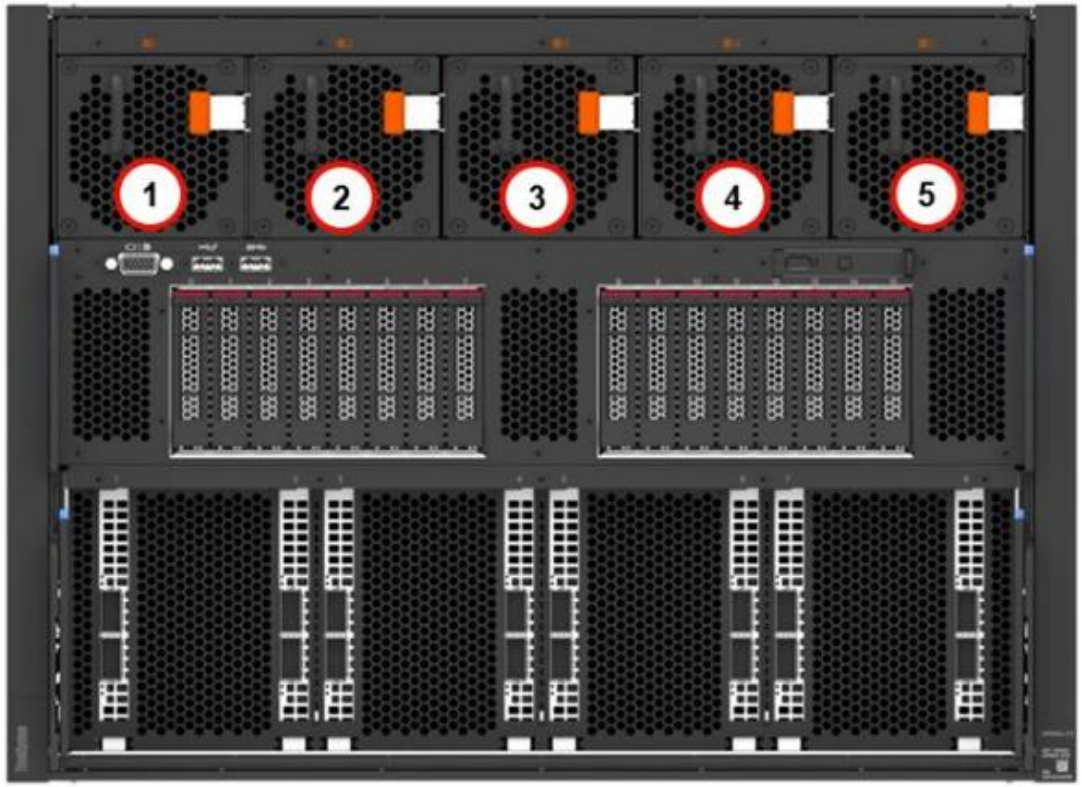
The SR680a V3 processor heat sink replacement procedure requires a Torx T30 torque screwdriver. Follow the removal sequence instructions and torque settings shown on the heat sink label to remove or install a heat sink.



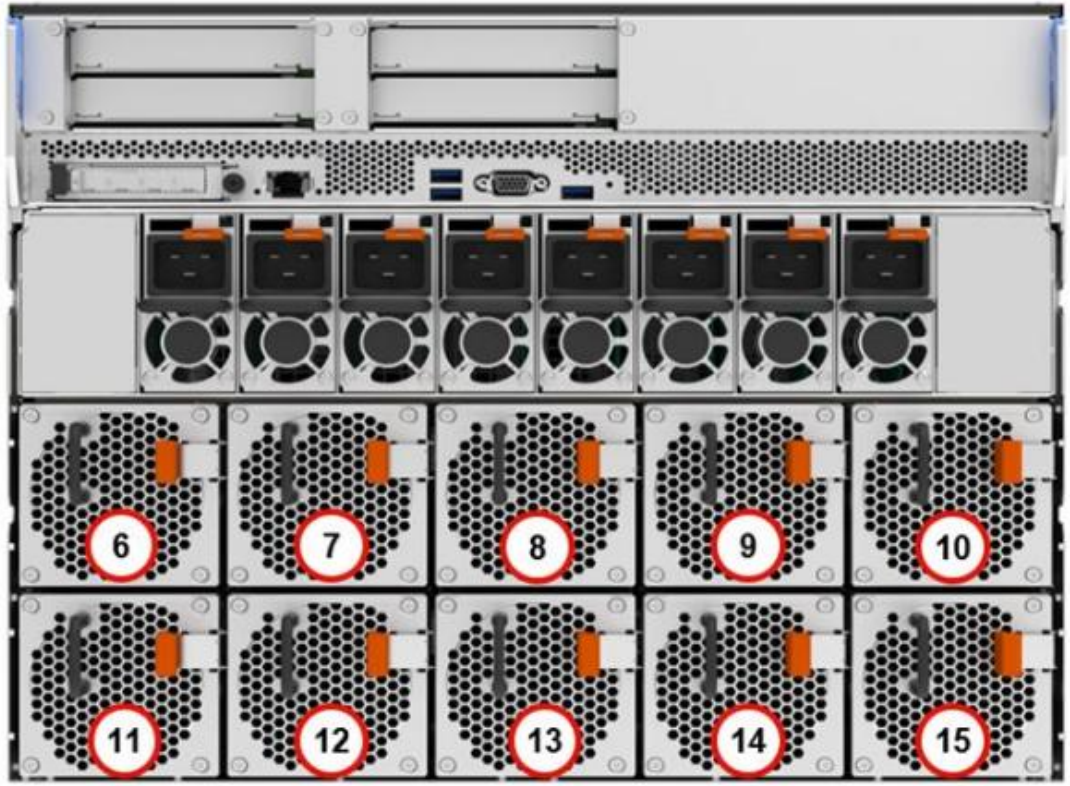


Replacing a fan

SR680a V3 front and rear hot-swap fans do not have status LEDs. Make sure to check the fan error messages in XCC and the label on the fan to cross check which fan needs to be replaced.



Front fan numbering



Rear fan numbering

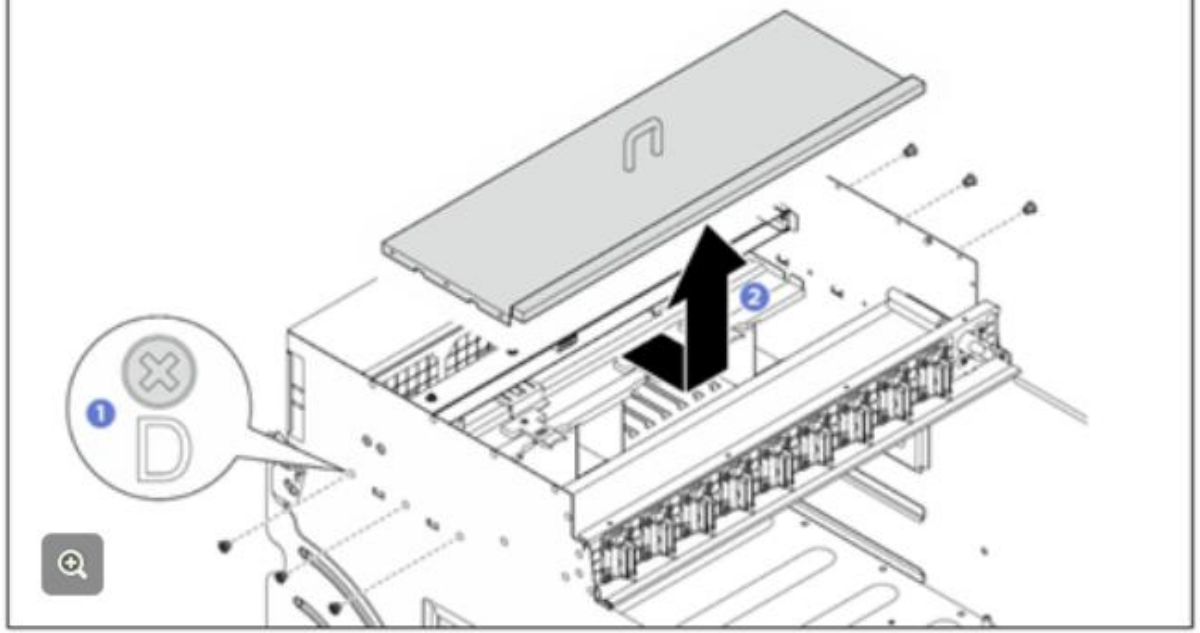
Screws on both sides of the GPU shuttle

At the top front of the GPU shuttle, many parts are secured with screws on both sides of the shuttle. There are markings on the shuttle to indicate which screws should be unfastened and fastened to replace a specific part. Refer to the SR680a V3 User Guide for more information.

a. Unfasten the six screws marked with **D** on both sides of the 8U GPU shuttle.

b. Slide the I/O cover backward, and lift it out of the 8U GPU shuttle.

Figure 1. I/O cover removal



Replacing a system I/O board

After replacing a system I/O board (Integrated RoT module), servicers must update the UEFI and LXPM firmware to the latest supported version before starting the system. If this does not happen, the system will not be able to recognize the correct firmware and will not start normally. As a result, the user will not be able to access the system OS.
Use one of the following methods to update the UEFI and LXPM firmware on the system after replacing the system I/O board:

- OneCLI commands
- A USB boot kit with UEFI firmware and LXPM firmware packages
  - For more information on how to create a USB boot kit, refer to the following GLOSSE article: How to create USB boot kit with OneCLI for RoT replacement in the field

For the complete procedures, refer to the following GLOSSE tip page:
How to do RoT Module FW update on ThinkSystem V3 machines

Updating the VPD

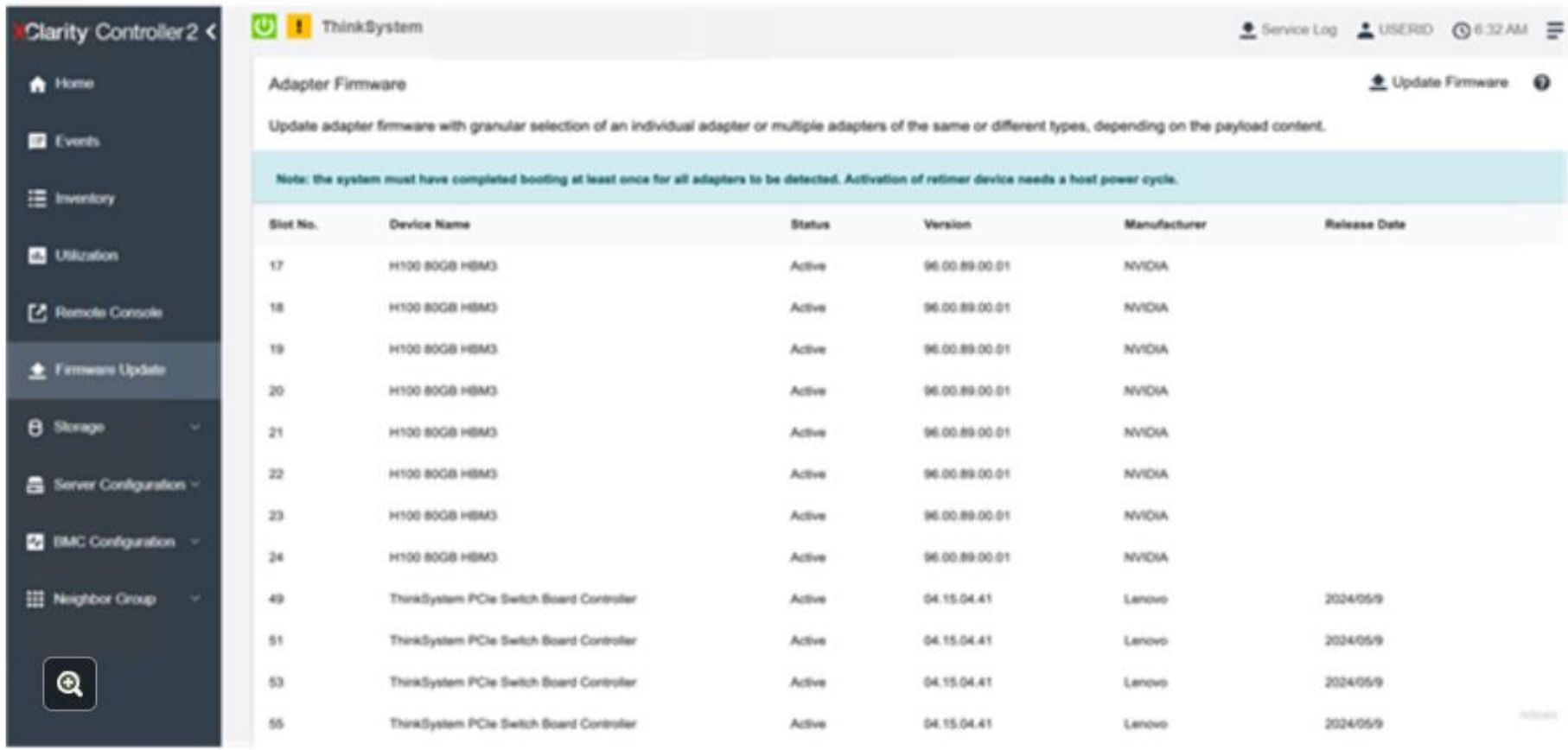
After replacing a processor board, service personnel must update the VPD (machine type and serial number) on the processor board. The SR680a V3 VPD update procedure is the same as that used with other ThinkSystem models (using the `onecli config set` OneCLI command).

Replacing an RoT module or system I/O board does not require an update of the VPD.

For more information, refer to the *LXCE OneCLI common task* section of course ES51757B Introducing ThinkSystem tools, or the *Update the Vital Product Data (VPD)* section of the *ThinkSystem SR680a V3 User Guide* on Lenovo Docs.

Updating the GPU or GPU board firmware

There is a single firmware package for all GPU-related components. (This applies to both NVIDIA and AMD GPUs.) Use XCC / OneCLI to perform the task. You do not need to use any specific AMD or NVIDIA tools to perform a GPU or GPU board firmware update on an SR680a V3.



Replacing parts with a torque screwdriver

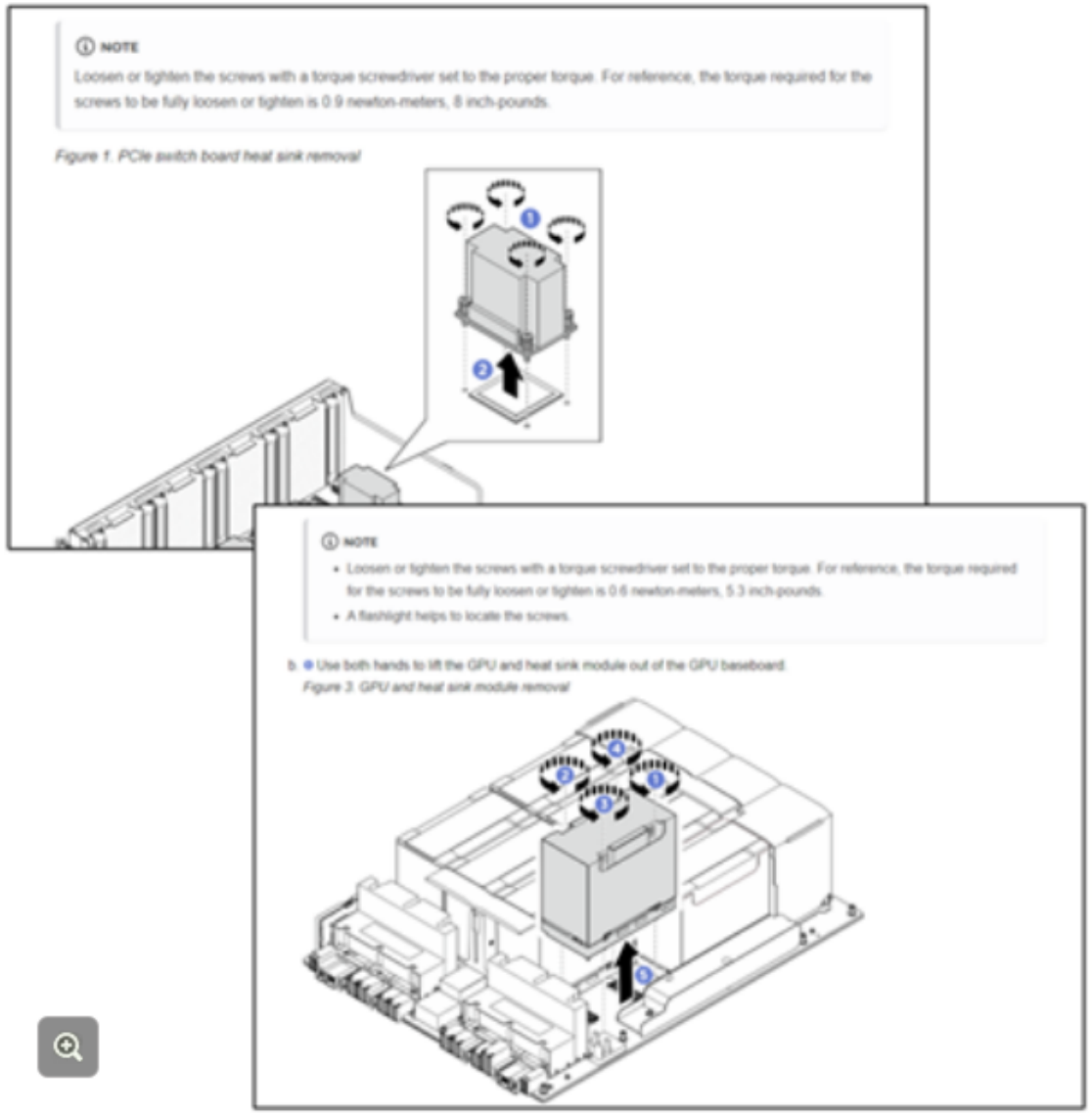
Replacement of the following parts requires a torque screwdriver with adjustable newton-meter settings:

- Processor heat sink
- Switch board heat sink
- GPU
- GPU board

The Lenovo FRU number for a torque screwdriver is 03GY000.

For the newton-meter settings required to replace the above parts, refer to the *Hardware replacement procedures* section of the *SR680a V3 User Guide* on Lenovo Docs.

Note: Replacing a part with the wrong torque setting might damage the part.



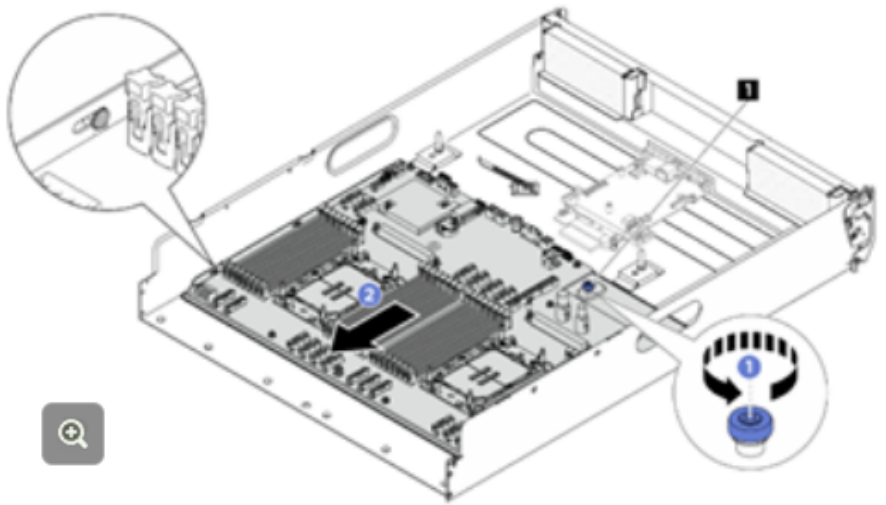
Replacing a processor board or system I/O board

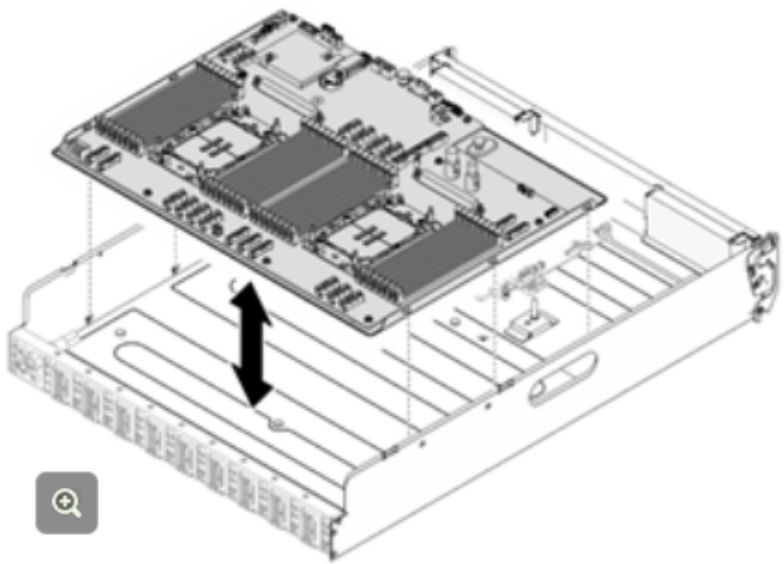
To replace a processor board or system I/O board, servicers must first remove the compute shuttle from the chassis. Then remove the following components:

- processor air baffle
- processors and the heat sinks
- memory modules
- PCIe riser assembly
- System I/O board
- two cable guides

Disconnect all the cables from the system board assembly. As you disconnect the cables, make a list of each cable and record the connectors the cables are connected to, and use the record as a cabling checklist after installing the new system board assembly.

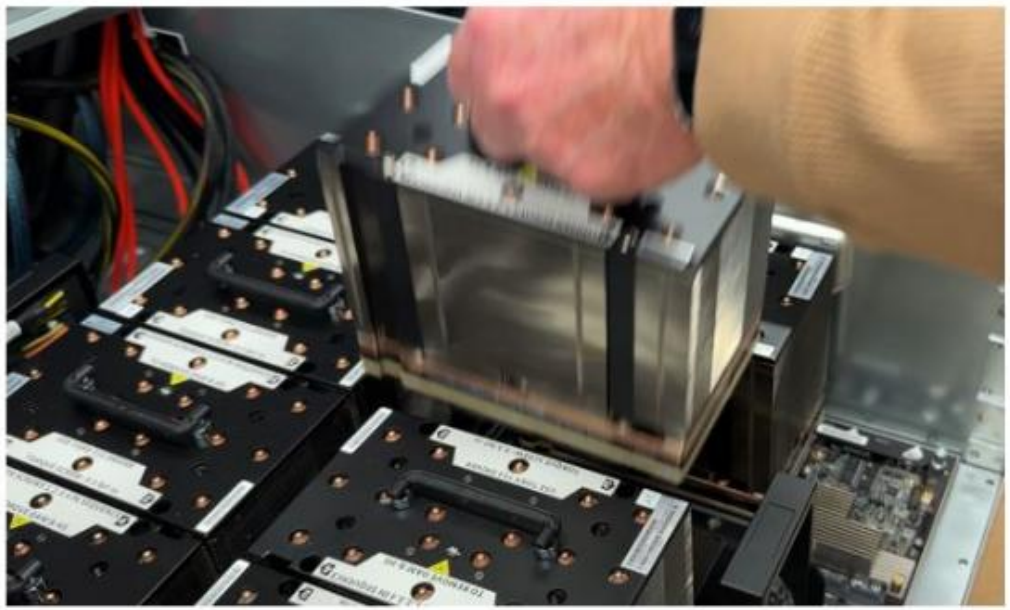
For the complete system board assembly replacement procedures, refer to the *Hardware replacement procedures* section of the *SR680a V3 User Guide* on Lenovo Docs.

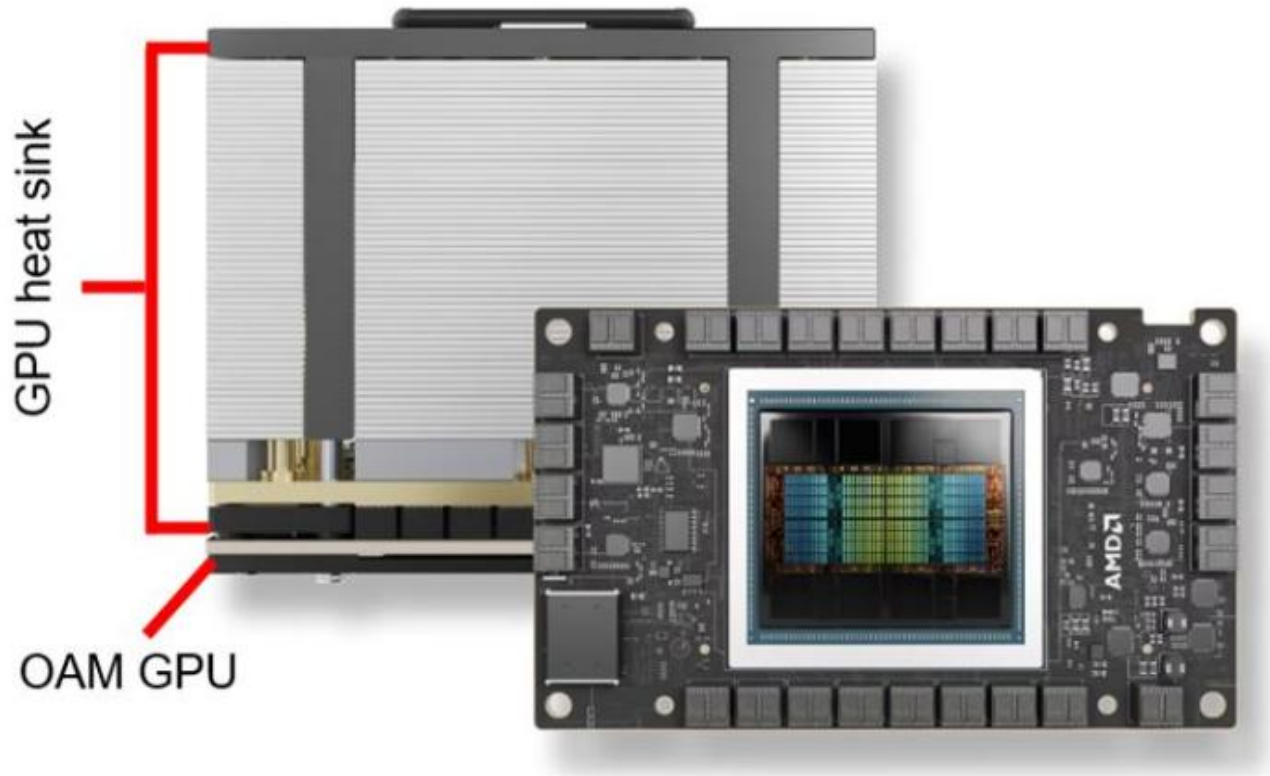




GPU module replacement tips

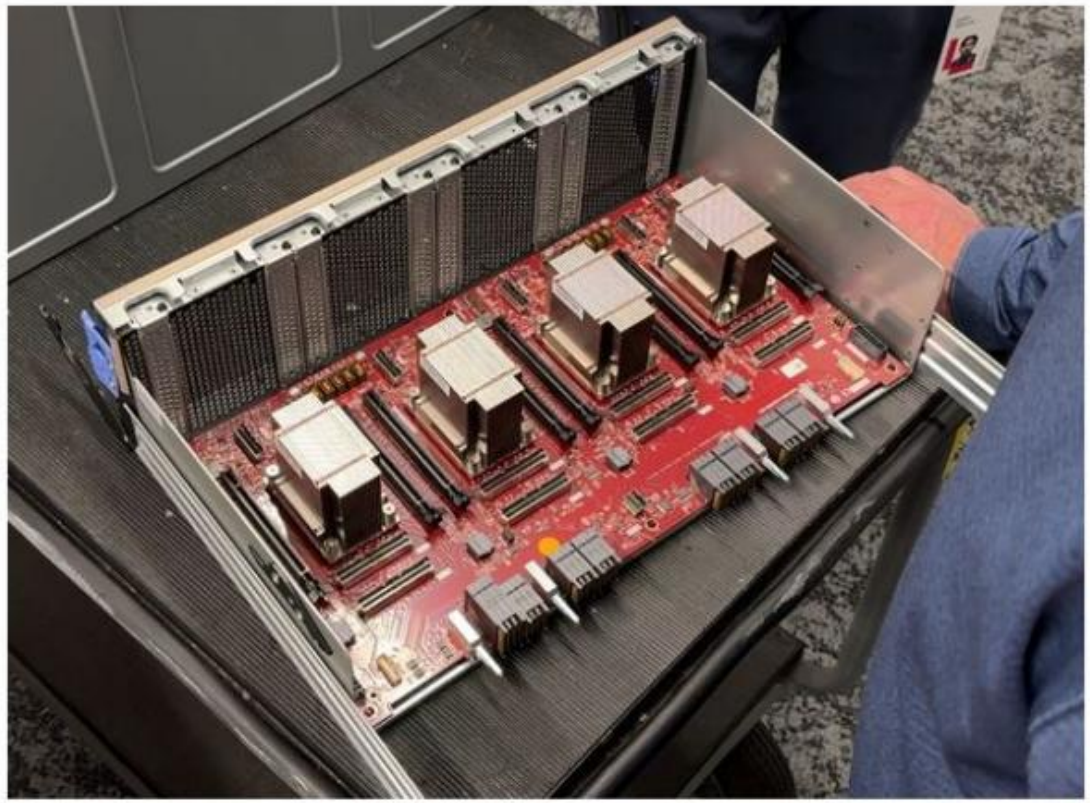
Do not move a potentially failed GPU to another slot to check whether it has failed.
If a single GPU module fails and needs to be replaced, replace the whole GPU module.
Do not separate the GPU from its heat sink. This rule applies to both NVIDIA and AMD GPU modules.

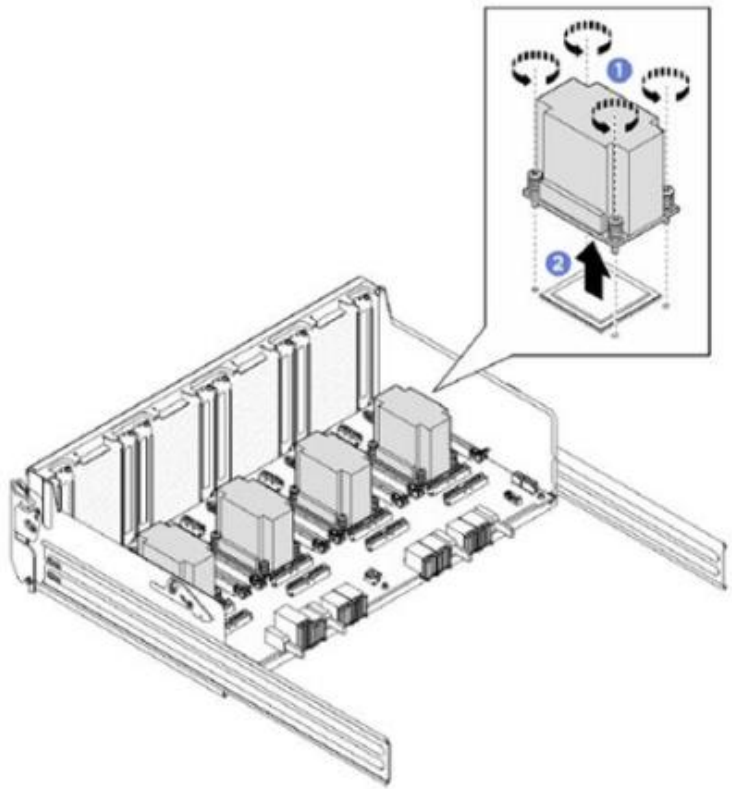




PCIe switch board replacement tips

Before removing the PCIe switch board, the heat sinks on the board must be removed. The heat sinks are screwed into threaded holes in the switch drawer.





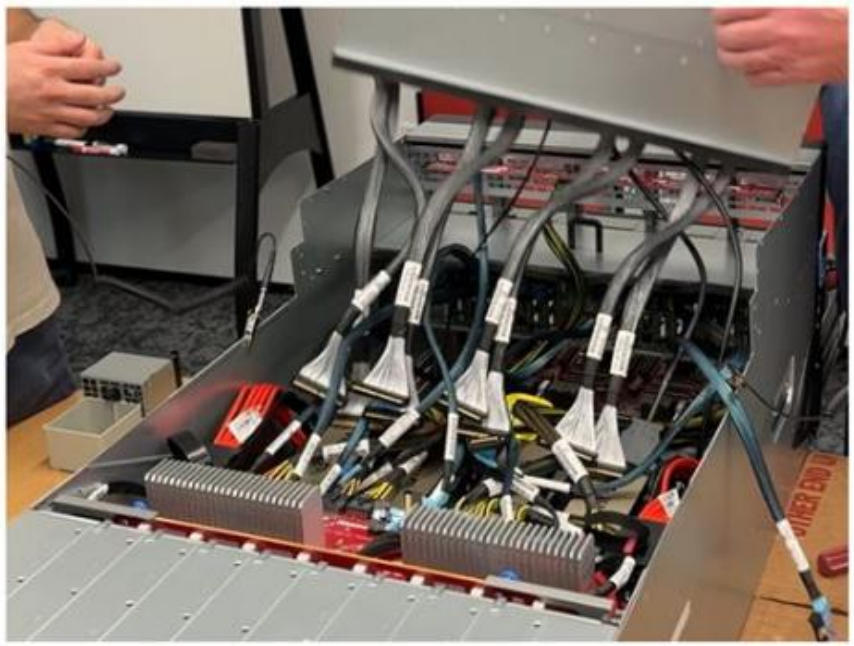
Note: For complete PCIe switch board replacement procedures, refer to the *Hardware replacement procedures* section of the *SR680a V3 User Guide* on Lenovo Docs.

Cable replacement tips

Cable routing on the SR680a V3 is more complex than on other systems. Although there are labels on cables and next to each connector, service engineers might still get confused when replacing cables.

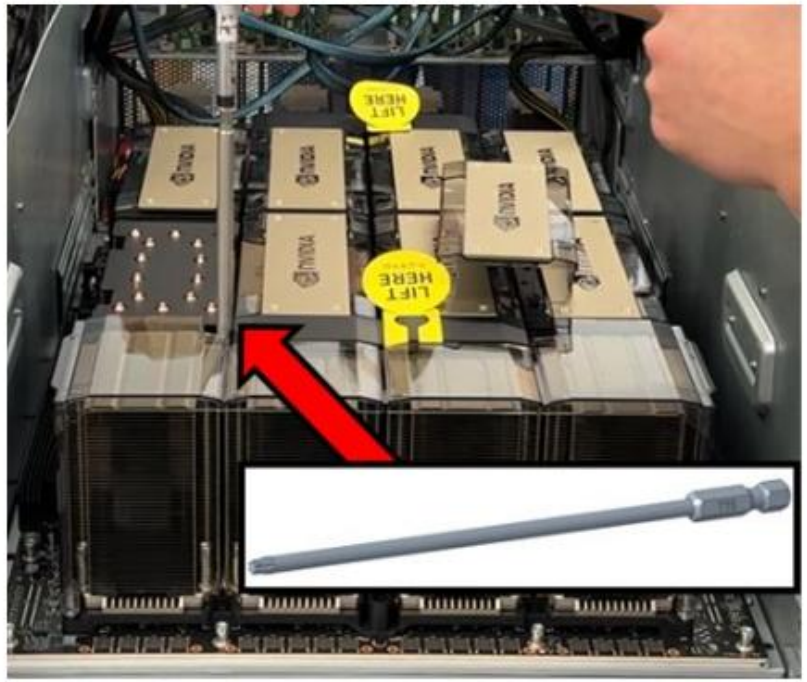
When replacing a system board, GPU board, or switch board in the SR680a V3, it is recommended that you take pictures of the cable routing before disconnecting anything.

For more information about SR680a V3 cable routing, refer to the *Internal cable routing* section of the *SR680a V3 User Guide* on Lenovo Docs.

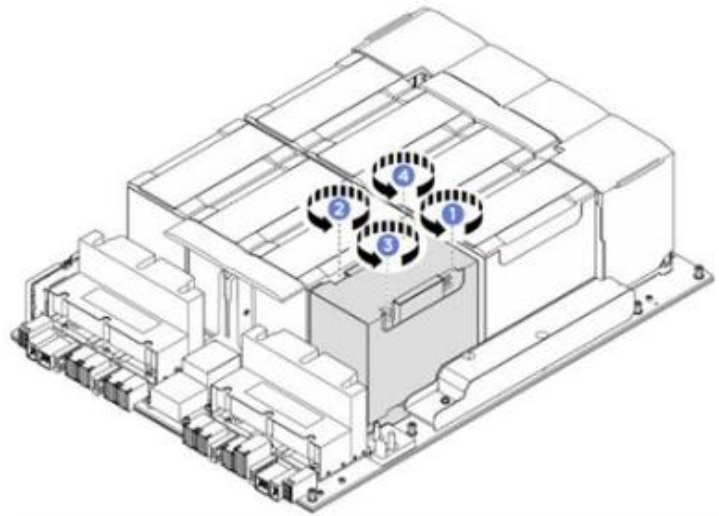


NVIDIA GPU and heat sink module replacement tips

When replacing an NVIDIA GPU and heat sink module, you will need a Torx T15 6-inch extension bit (FRU number: 03NA603) to reach the screws on the module. Make sure to follow the sequence set out in the user guide to unfasten or fasten screws while replacing the GPU. The GPU might be damaged if the wrong screw is unfastened or fastened.



A Torx T15 6-inch extension bit

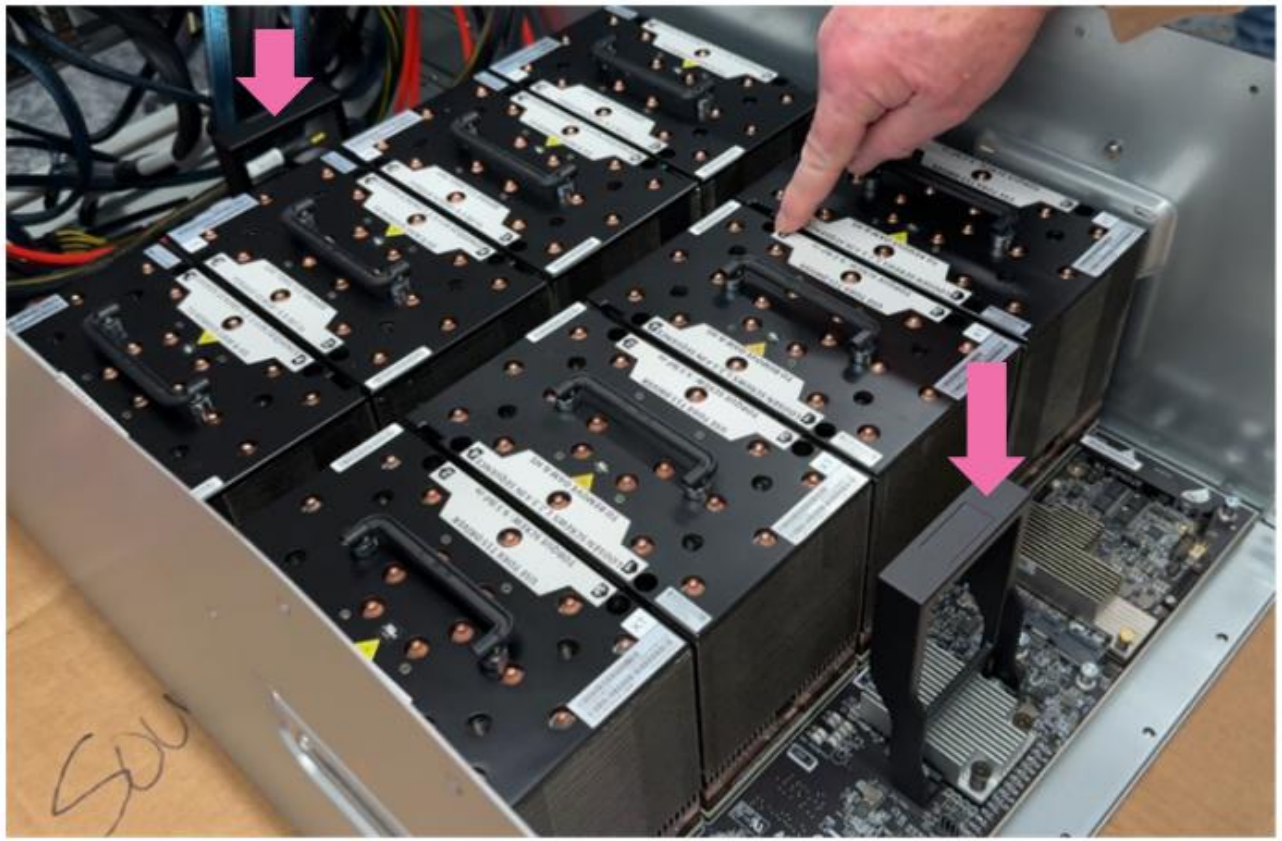


NVIDIA GPU screws removal / installation sequence

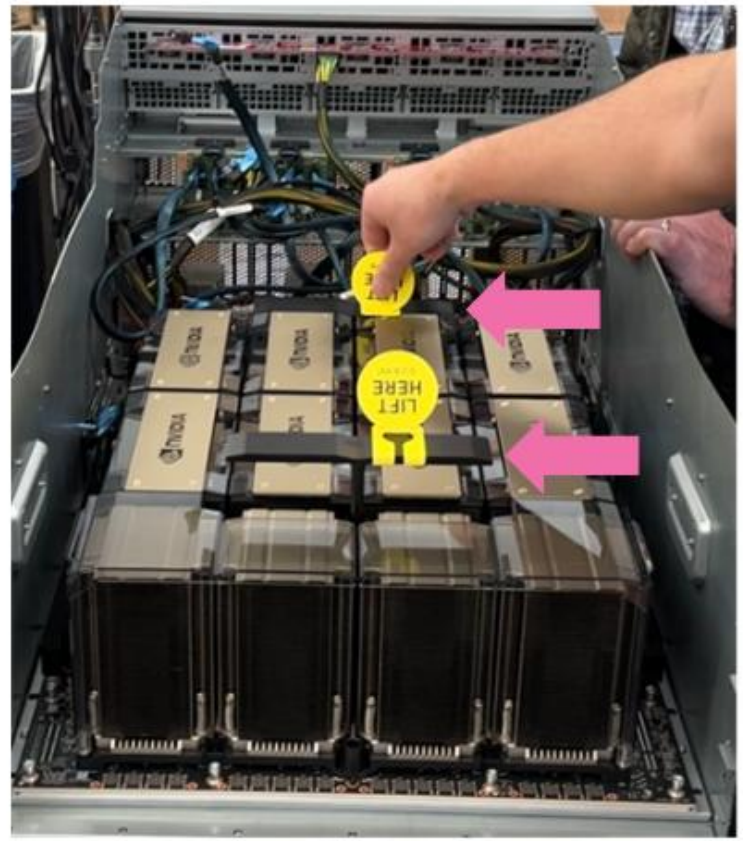
The screws need to be unfastened / fastened (with green color painted)

GPU complex handles

To replace an AMD or NVIDIA GPU complex, unfasten the screws and then hold the handles to replace the GPU complex. Do not hold the edge of the GPU heat sinks or the GPU board.



AMD GPU complex handles



NVIDIA GPU complex handles

Summary

This course enabled you to:

- Describe the ThinkSystem SR680a V3 and its components
- List the SR680a V3 specifications
- Describe the SR680a V3 configurations and block diagrams
- Describe the SR680a V3 management tools
- Describe the problem determination steps and explain how to troubleshoot issues with the SR680a V3