Hardware replacement tips

Replacing parts of SD665 V3, SD665-N V3, and DW612S enclosure

Lenovo

Screw types

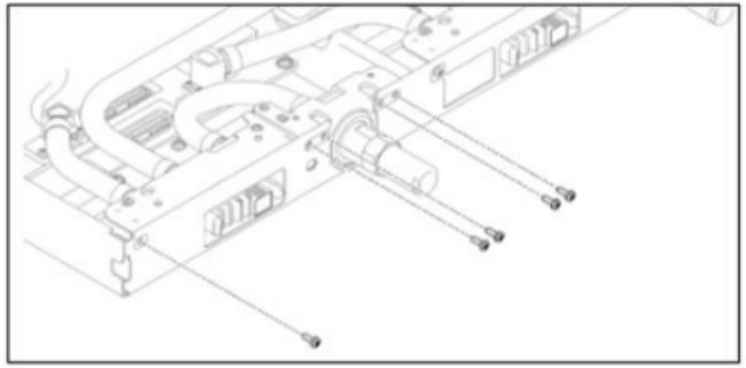
Prepare the following screwdrivers for SD665 V3 and SD665-N V3 part replacement:

- Torx T10 screwdriver
- Torx T20 screwdriver
- Phillips #1 screwdriver
- Phillips #2 screwdriver
- 6 mm hex head screwdriver

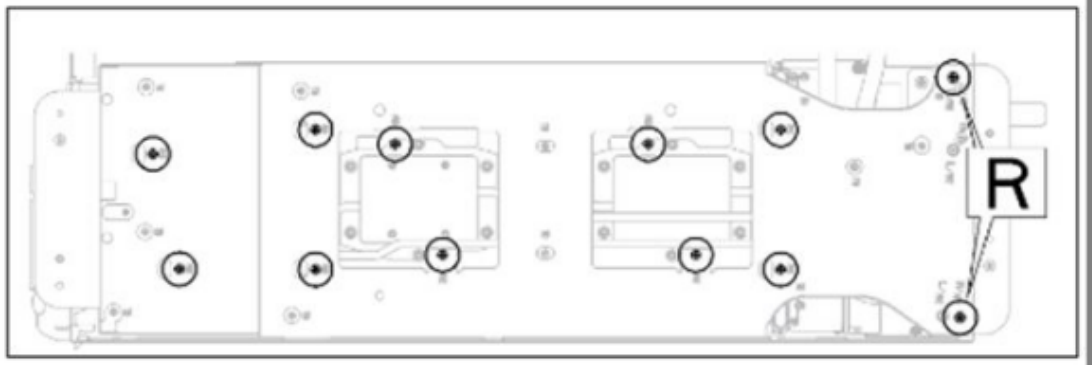
Follow the instructions in the User Guide to select the proper screwdriver to replace parts.

(Click HERE to see some examples)

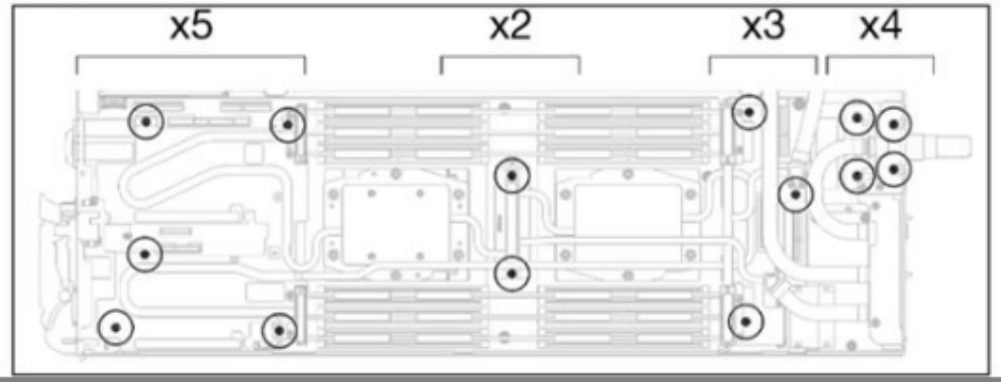
- Five Torx T10 screws for the rear of the quick connect



- 12 Philips #2 screws for the water loop carrier



- 14 Torx T10 screws for the water loop



Checking the processor PSB fuse policy

Servicers must use OneCLI commands to check the platform secure boot (PSB) fuse policy status of the system when working through the following procedures:

- Replacing one or more processors
- Replacing a processor board and RoT module at the same time

To understand how to use OneCLI commands to check the PSB fuse policy or to enable the PSB fuse policy, refer to the GLOSSE article.

Torque screwdriver

The replacement of some SD665 V3 and SD665-N V3 parts – for example, a water loop or processor – requires a torque screwdriver (part number: 03GY000) set to the proper setting. Refer to the User Guide for complete torque setting information for SD665 V3 and SD665-N V3 parts replacement guide.

Install processor cold plate screws (12x Torx T20 screws per node). Follow the screw sequence specified on the processor cold plate label and tighten the screws with a torque screwdriver set to the proper torque. Fully tighten each screw; then, proceed to the next screw.

> **NOTE**
>
> For reference, the torque required for the screws to be fully tightened/removed is 1.12-1.46 newton-meters, 10-13 inch-pounds

SD665-N V3 GPU cold plate screws replacement guideline

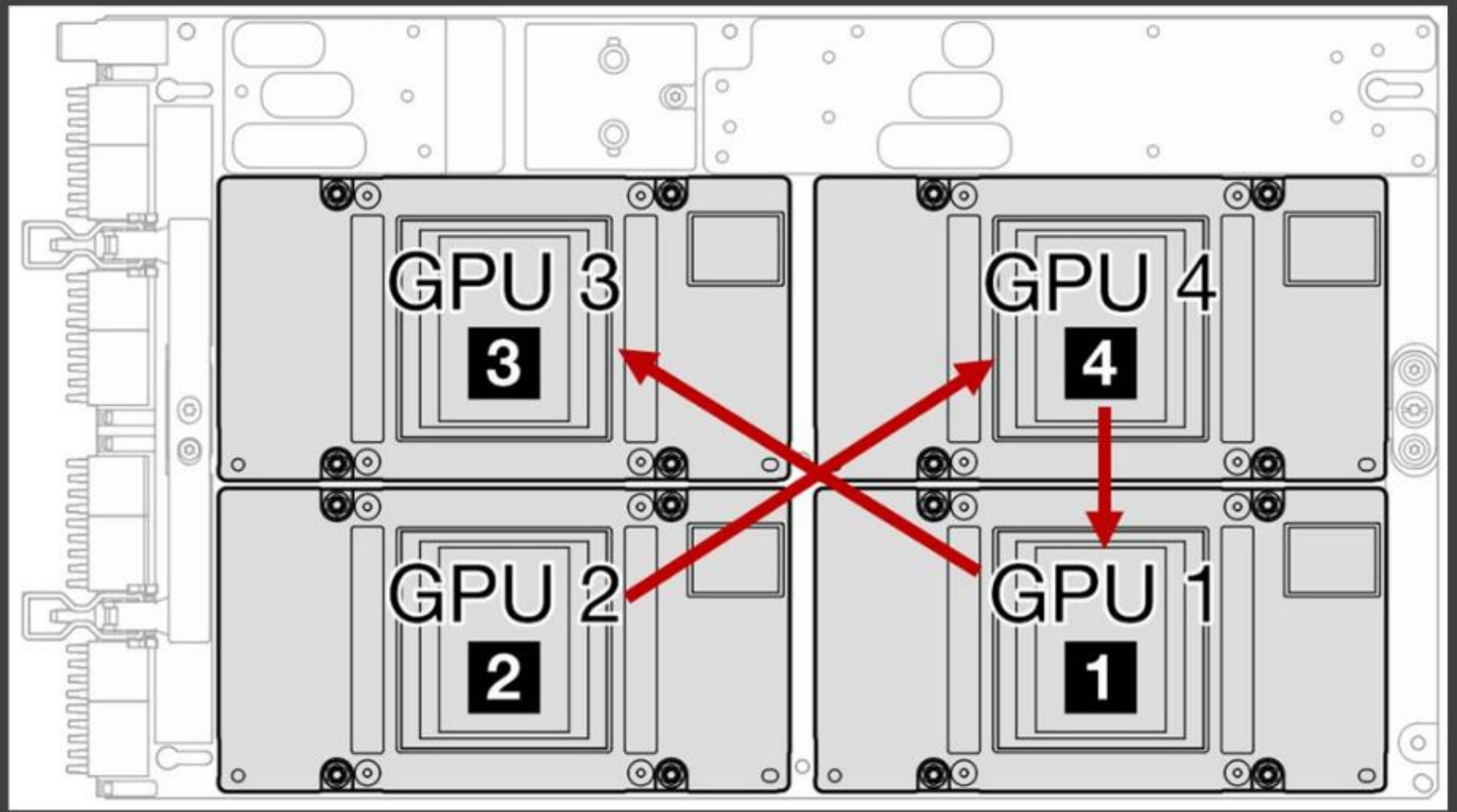
When installing the SD665-N V3 GPU cold plate, please note the following: Use a T10 screwdriver head and a torque wrench set proper torque.

- Installation sequence:
  - Install GPU cold plate screws by following the GPU sequence: GPU 2 → GPU 4 → GPU 1 → GPU 3 (see picture 1)
  - Install sequence cold plate screws on GPU (see picture 2)

- Installation steps:
  - Install step 1: Set the torque screwdriver to 1.5 +/- 0.5 lb-In (0.1 +/- 0.06 N-m); then, fasten the GPU cold plate screws.
  - Install step 2: Set the torque screwdriver to 4 +/- 0.5 lb-In (0.45 +/- 0.06 N-m); then, fasten the GPU cold plate screws until all screws are fully tightened.

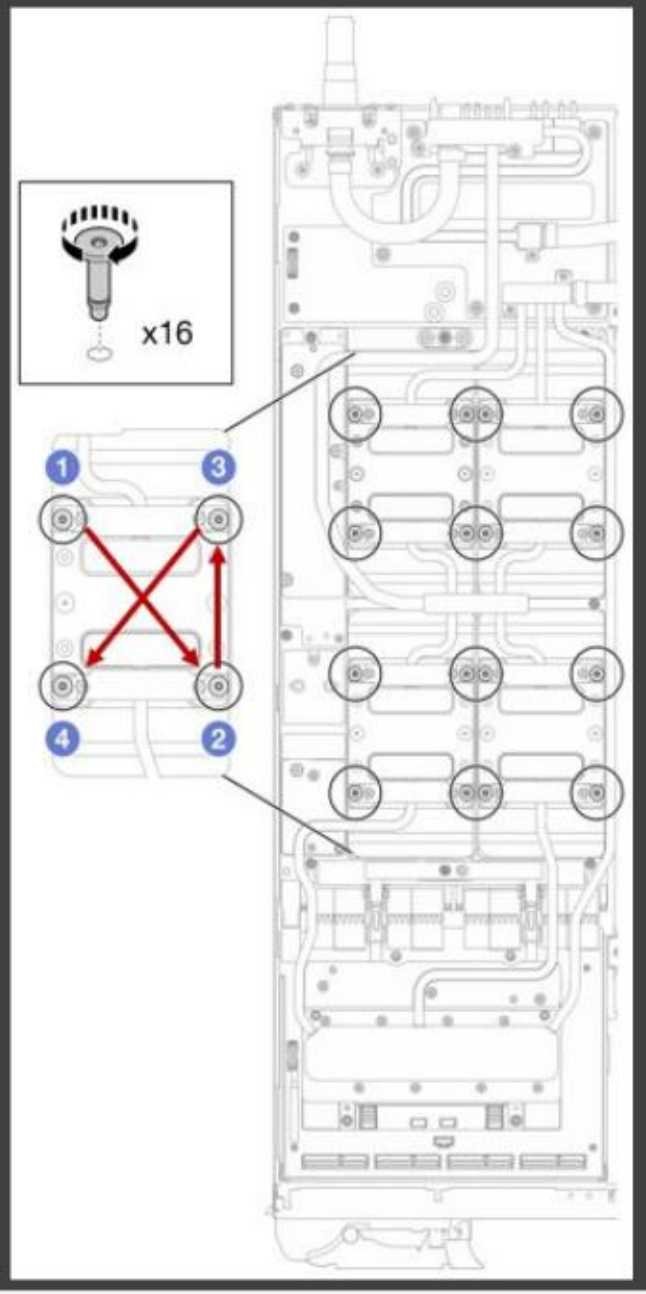
Picture 1

Front side



Rear side

Picture 2

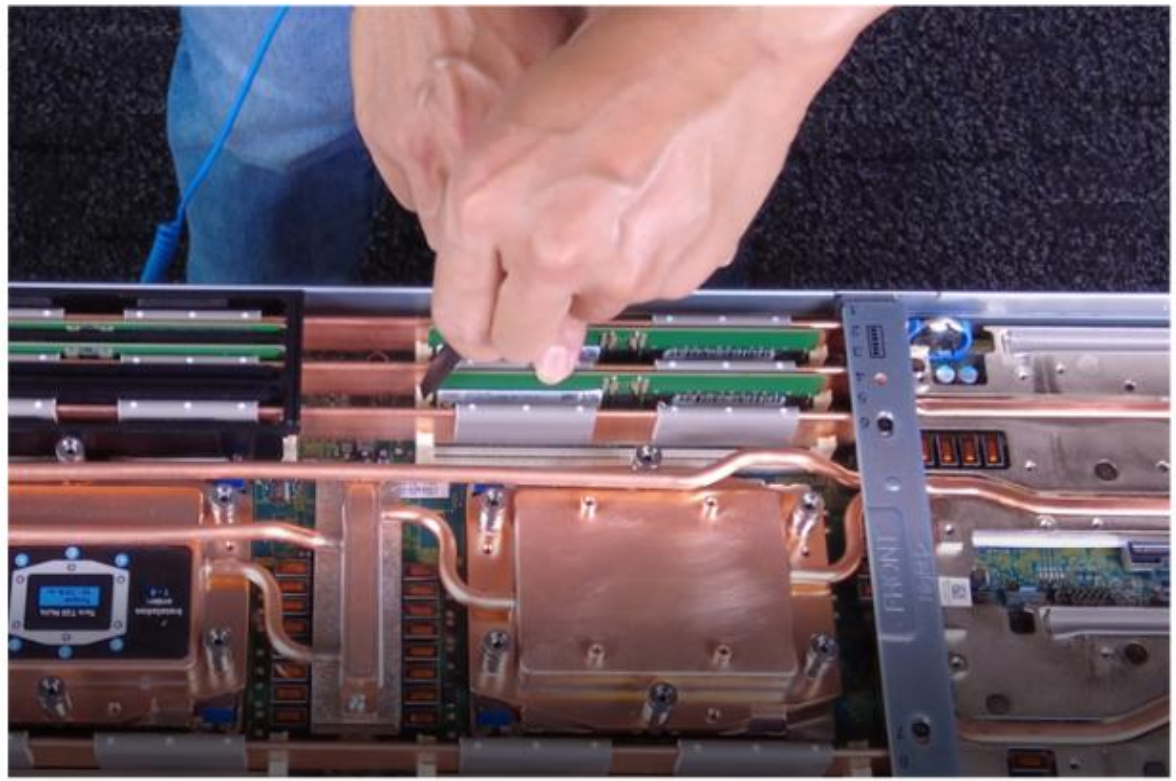


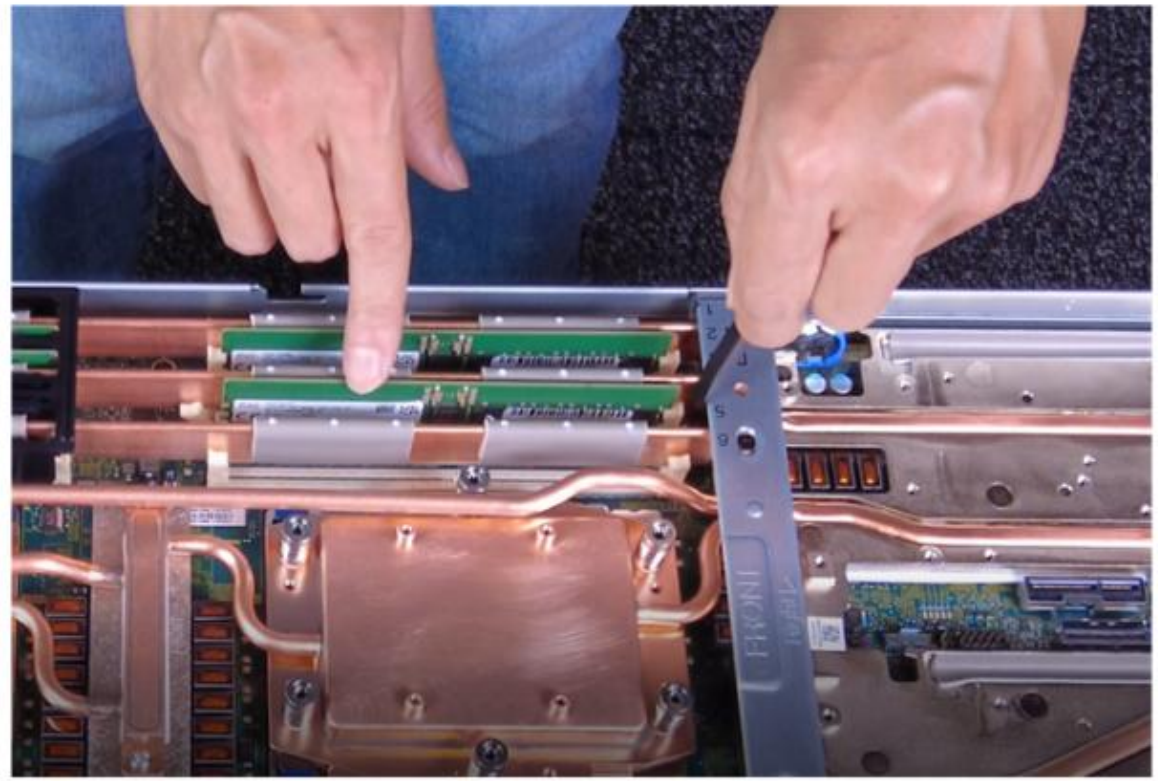
Rear side

Front side

DIMM tool

Due to space limitations inside the SD665 V3 and SD665-N V3, a DIMM tool is recommended when opening the retaining clips to remove or install a DIMM. The DIMM tool is fitted in the CPU node.





Gap pads

Many SD665 V3 and SD665-N V3 parts – for example, water loops or PCIe adapter interface plates – are covered with gap pads for thermal enhancement purposes.

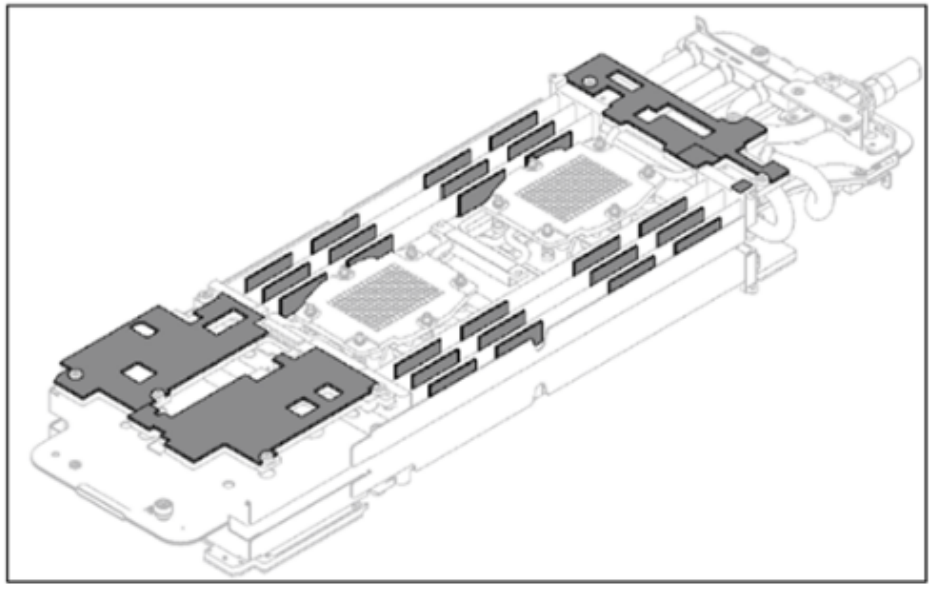
When replacing these parts, check the gap pads and replace any that are damaged or missing.

Click HERE to see an example of the location of water loop gap pads.

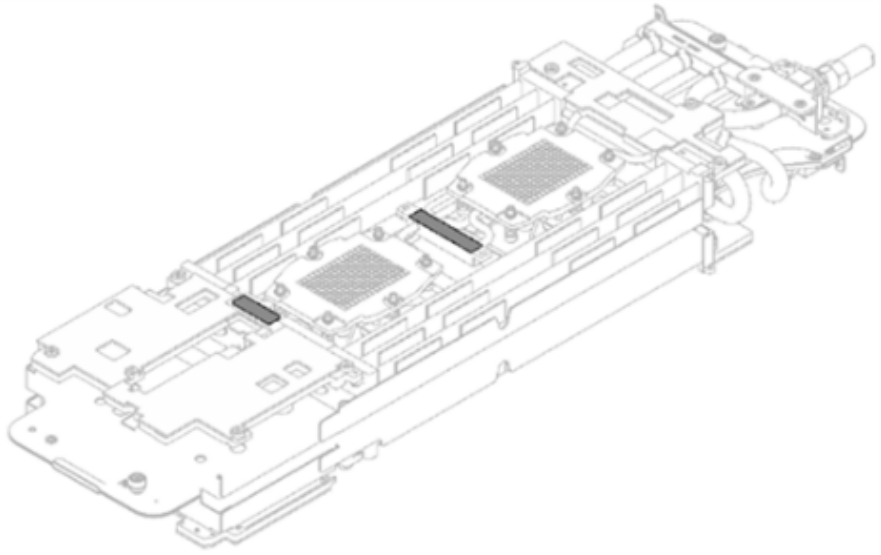
For complete gap pad location information, refer to the Gap pad/Putty pad identification and location section in the User Guide.

Water loop gap pads

- Water loop gap pads (bottom side)



- Water loop gap pads (top side)



Putty pads

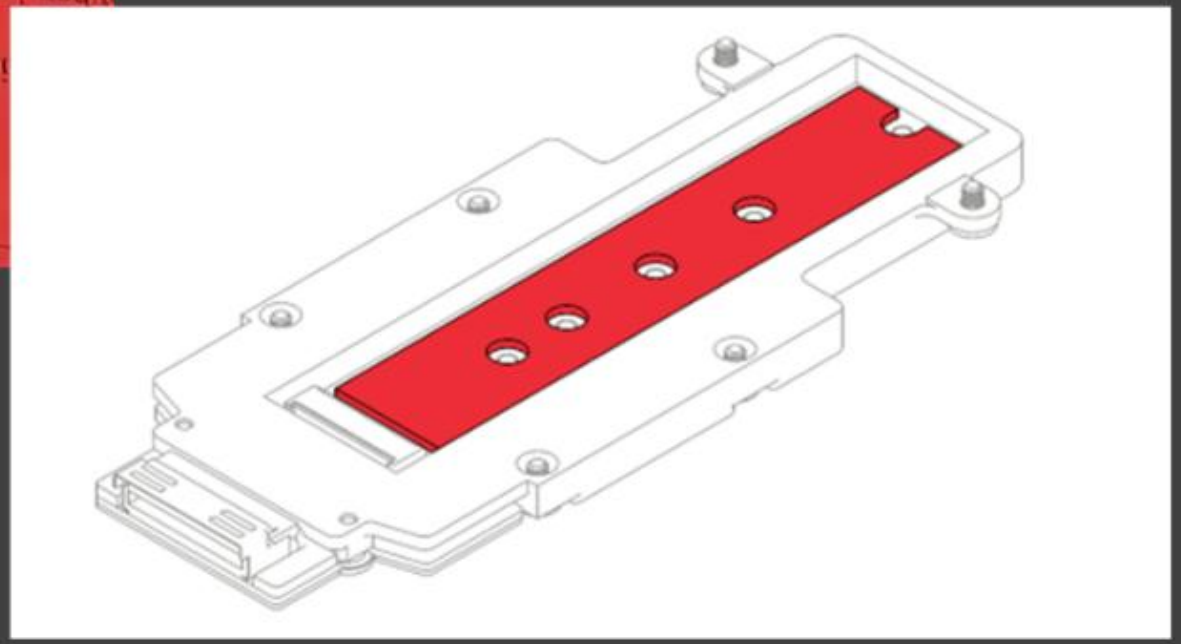
Many SD665 V3 and SD665-N V3 parts – for example, water loops or M.2 adapters – are covered with putty pads for thermal enhancement purposes.

Putty pads are very fragile and can be easily damaged, so when replacing a part with putty pads, you must also replace the putty pads.

Click HERE to see an example of M.2 backplane putty pad location.

For complete putty pad location information, refer to the Gap pad/Putty pad identification and location section in the User Guide.

M.2 backplane putty pad



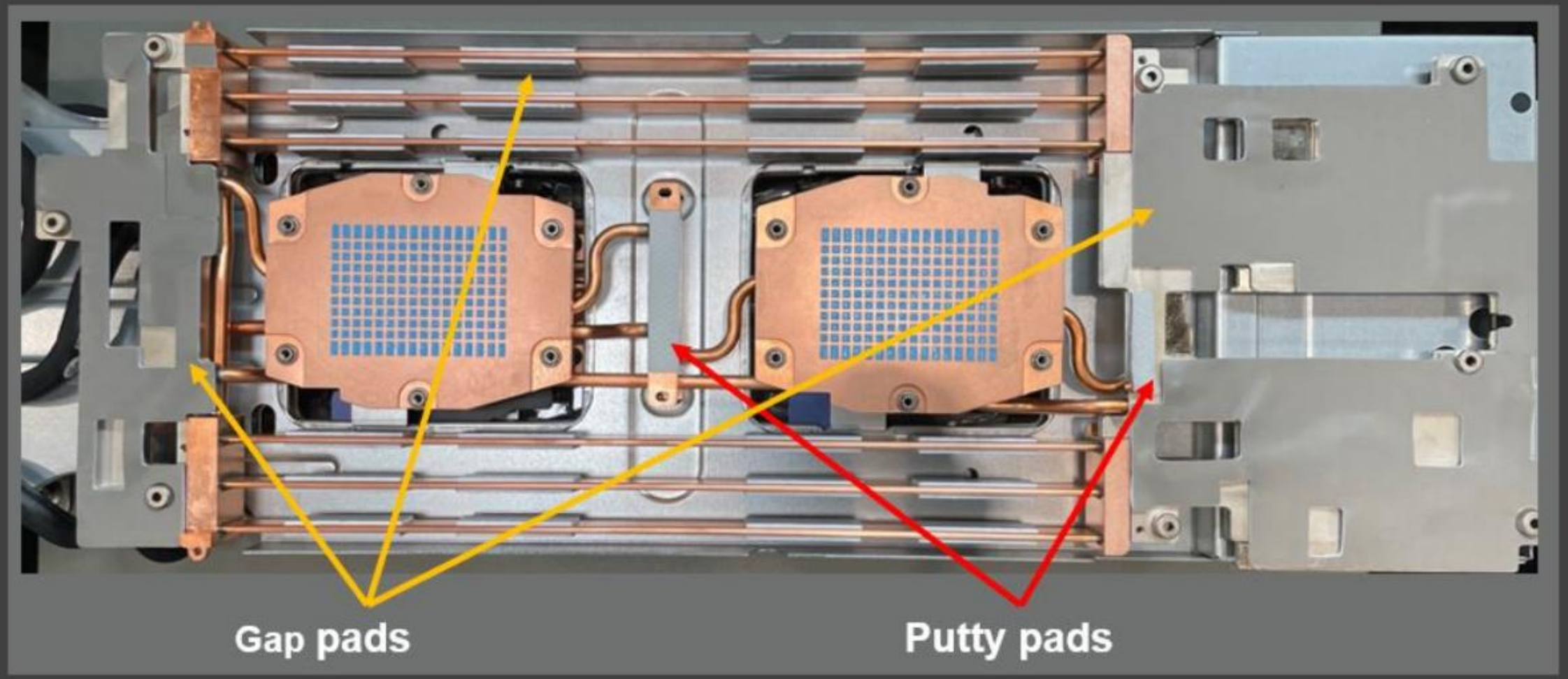
Gap pad and putty pad replacement guidelines

Many SD665 V3 and SD665-N V3 parts are covered with gap pads or putty pads for thermal enhancement purposes. When replacing these parts, check the gap pads and replace any that are damaged or missing.
Putty pads are fragile and can be easily damaged. Servicers should replace all putty pads when replacing server components.

When servicing the SD665 V3 or SD665-N V3 and replacing parts that require the removal of the water loop (for example, a processor or power distribution board), servicers should order **the water loop service kit**. The water loop service kit includes two water loop shipping brackets and a consumption pad kit. To replace other components (for example, an M.2 drive assembly, SSD drive, or PCIe adapter), servicers should order the **putty pad kit**.

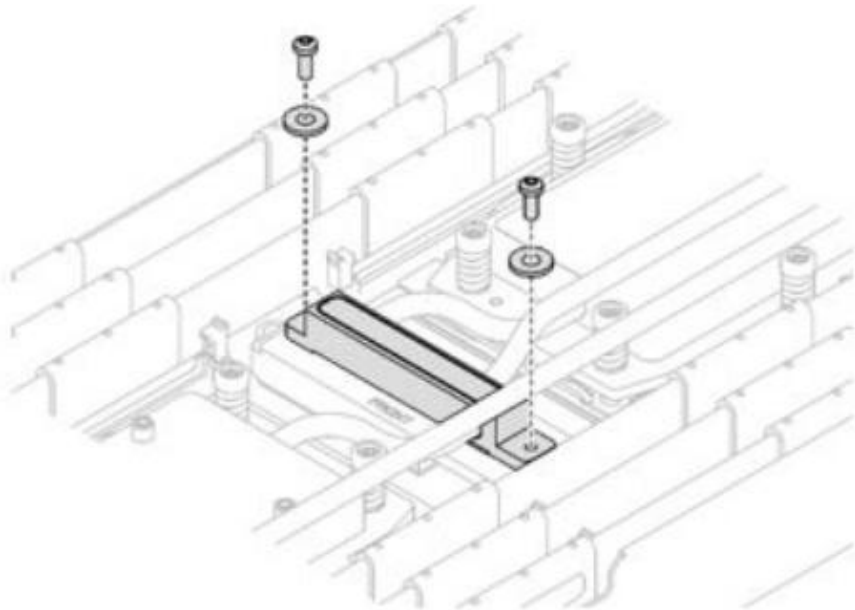
For complete gap pad location information, refer to the Gap pad/Putty pad identification and location section in the Hardware Maintenance Guide. (Click HERE to see examples of putty pads in the node.)

Note: For more detailed information about gap pad and putty pad identification and location, refer to Lenovo pubs document


Gap pads
Putty pads

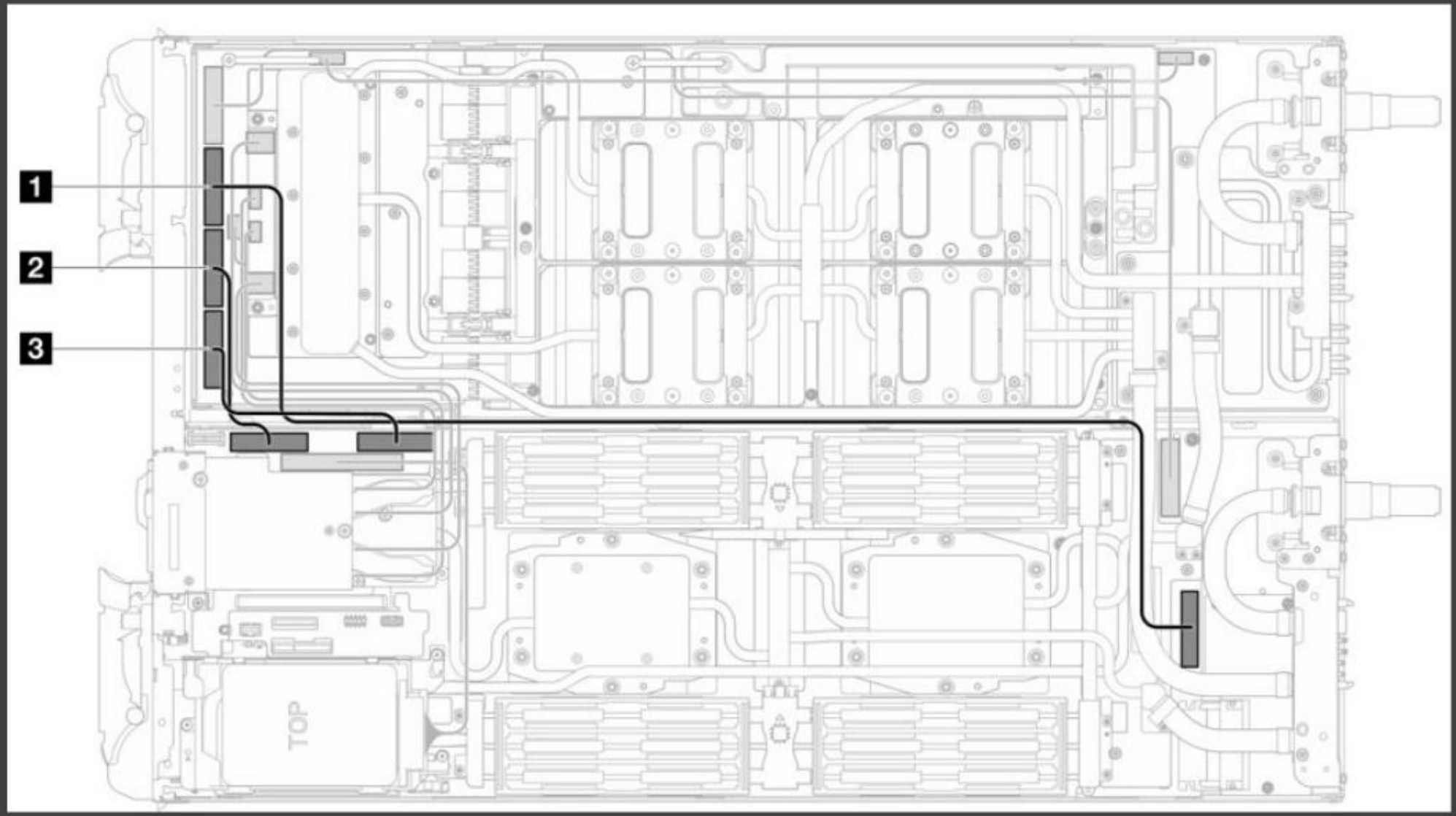
Additional hardware replacement tips

- The two VR cold plate screws are installed with washers. When servicing the water loop, make sure to keep the washers at hand for future installation.



- Due to space limitations, make sure to follow the installation sequence when connecting MCIO cables in the two-processor configuration. (Click HERE to see an illustration.)

Installation sequence: MCIO 4 cable (3) → MCIO 2 cable (1) → MCIO 3 cable (2)



SMM2 replacement tips

After replacing an SMM2 in a DW612S enclosure, use IPMI commands to reconfigure the SMM2 chassis ID to match the corresponding PSU configuration in the enclosure. Otherwise, SMM2 will not be able to recognize the PSUs in the enclosure and will report PSU mismatch error messages.

Work through the SMM2 OEM IPMI commands listed on the following pages to understand how to reconfigure the chassis type.

Click each step in turn to see the procedure

Step 1 2 3 4 5 6

Lenovo

SMM2 replacement tips

By default, the SMM2 IPMI function is disabled. Use the following command to enable an SMM2 IPMI interface through XCC2:

```
ipmitool -I lanplus -H <XCC2 IP address> -U <XCC2 username> -P <XCC2
password> raw 0x3A 0xF1 0x04
```

Note: For more information about using IPMI commands in XCC, refer to the following ThinkSystem documentation: Managing the XClarity Controller with IPMI.

SMM2 replacement tips

Use the following IPMI command to check the current enclosure chassis type:

```
ipmitool -I lanplus -H <SMM2 IP address> -U <SMM2 username> -P <SMM2 password>
raw 0x32 0xC8 0x01
```

There are six DW612S enclosure chassis types:

Type	Descriptions	Chassis type value
Type 1	Six air-cooled PSUs only	0X01
Type 2	Six air-cooled PSUs, can be upgraded to nine PSUs	0X02
Type 3	Nine air-cooled PSUs	0X03
Type 4	Two DWC PSU modules only	0X04
Type 5	Two DWC PSU modules, can be upgraded to three DWC PSU modules	0X05
Type 6	Three DWC PSU modules	0X06

SMM2 replacement tips

Use the following command to reconfigure the enclosure type:

```
ipmitool -I lanplus -H <SMM2 IP address> -U <SMM2 USERID> -P <SMM2
password> raw 0x32 0xC8 0x00 <chassis type value>
```

For example, to configure the SMM2 to DW612S enclosure type 3 (chassis type value is 0x03), use the following command:

```
ipmitool -I lanplus -H <SMM2 IP address> -U <SMM2 USERID> -P <SMM2
password> raw 0x32 0xC8 0x00 0x03
```


SMM2 replacement tips

Use the following command to check the enclosure type again:

```
ipmitool -I lanplus -H [SMM2_IP] -U [USERID] -P [PASSWD] raw 0x32
0xC8 0x01
```

The return value should be `0x03`, which indicates that the enclosure is type 3.

SMM2 replacement tips

Use the following command to restart SMM2 and make the SMM2 chassis type configuration take effect:

```
ipmitool -I lanplus -H <SMM2 IP address> -U <SMM2 username>
-P <SMM2 password> mc reset cold
```

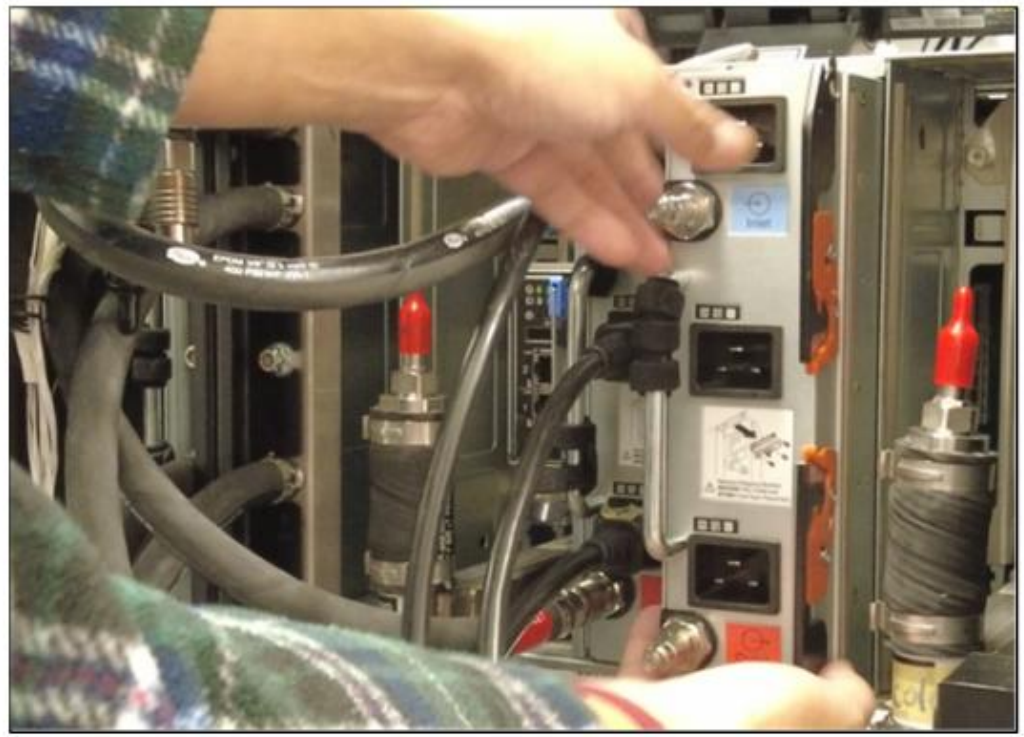
SMM2 replacement tips

After SMM2 restarts, use the following command to disable the SMM2 IPMI interface through the XCC2 CLI:

```
ipmitool -I lanplus -H <SMM2 IP> -U <SMM2 username> -P <SMM2
password> raw 0x3A 0xF1 0x01
```

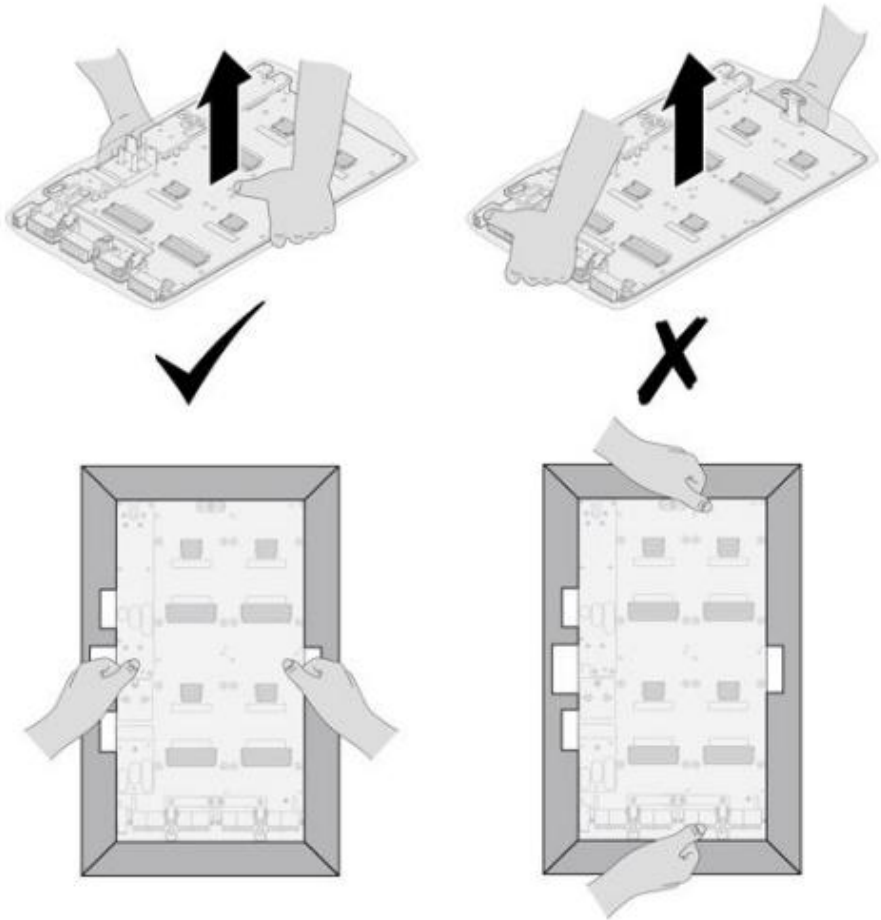

DWC PSU replacement

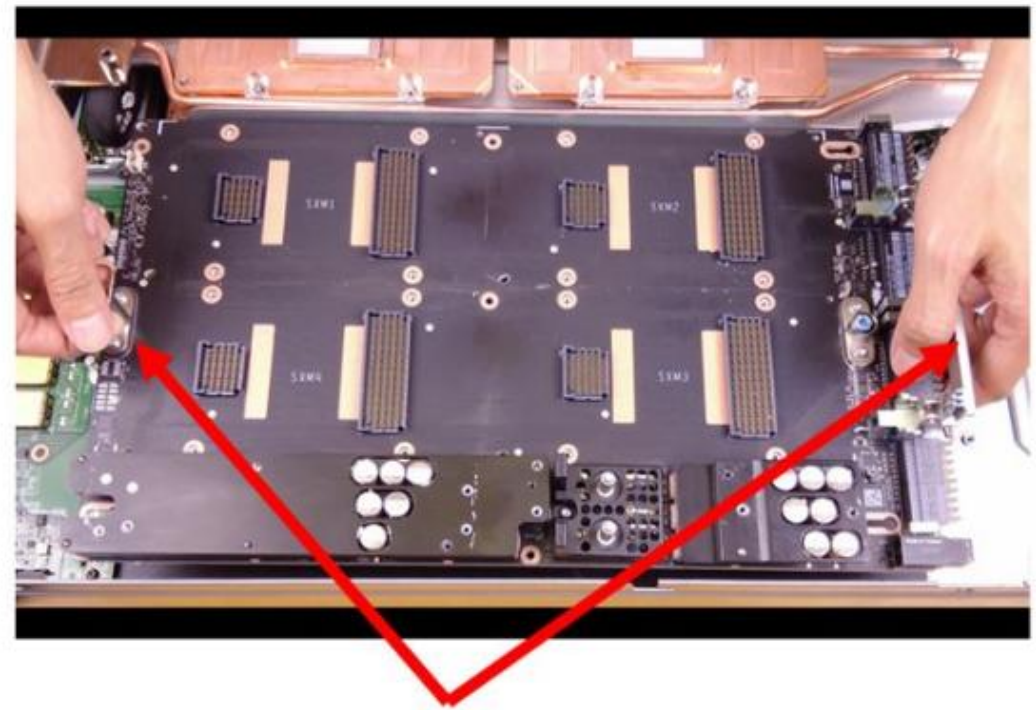
A DWC PSU module contains three DWC PSUs. If one DWC PSU fails, the servicer must replace the entire DWC PSU module, which means the enclosure will lose three PSUs during the replacement procedure. To ensure you do not impact the performance of the nodes in the enclosure, it is strongly advised that you reduce the power loading of each node installed in the enclosure before you remove the DWC PSU module. Do this by putting the nodes into the idle or power off state.



GPU board replacement tips

While the GPU board is still in the ESD bag, hold the long sides of the board. GPU board connectors can easily be damaged if you hold the short sides of the board. After the GPU board has been removed from the ESD bag, hold it by the GPU board handles.





NVIDIA GPU problem determination

The problem determination steps for NVIDIA SXM5 GPUs and the GPU board are the same as those used with the previous generation of GPUs. Use the XCC2 dashboard, IPMI commands, and the nvidia-smi utility to check GPU or GPU board health status.
If necessary, collect XCC service data, or use the `nvidia-bug-report.sh` command to collect a GPU bug report for problem escalation.
Refer to the following article for complete instructions on how to monitor NVIDIA GPU status and collect NVIDIA GPU logs: https://pubs.lenovo.com/sd665-n-v3/gpu_problems

Note: Make sure to update the GPU driver, which includes the nvidia-smi utility and `nvidia-bug-report.sh` command required for GPU problem determination. The latest drivers can be found on the Drivers and Software download website for the ThinkSystem SD665-N V3.

Summary

This course enabled you to:

- Describe the features and specifications of the ThinkSystem SD665 V3, SD665-N V3, and DW612S enclosure
- Identify the ThinkSystem SD665 V3, SD665-N V3, and DW612S and their components
- Describe the new SMM2 features and functions
- Describe the specific problem determination steps and hardware replacement tips, and explain how to troubleshoot issues with the SD665 V3, SD665-N V3, and DW612S enclosure