NVIDIA DGX B300 Service Manual

NVIDIA Corporation

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Contents

The *NVIDIA DGX B300 Service Manual* is also available as a PDF.

Chapter 1. Introduction

This topic contains instructions for replacing the NVIDIA DGX™ B300 system components. Make sure to familiarize yourself with the NVIDIA Terms and Conditions documents before attempting to perform any modification or repair to the DGX B300 system. These Terms and Conditions for the DGX B300 system can be found through the NVIDIA DGX Systems Support page.

Contact NVIDIA Enterprise Support to obtain an RMA number for any system or component that needs to be returned for repair or replacement. When replacing a component, use only the replacement supplied to you by NVIDIA.

1.1. Customer-replaceable Components

List of customer-replaceable components in the DGX B300 system.

Be sure to familiarize yourself with the NVIDIA Terms & Conditions documents before attempting to perform any modification or repair to the DGX B300 system. These Terms & Conditions for the DGX B300 system can be found through the NVIDIA DGX Systems Support page.

Customer Replaceable Units

Contact NVIDIA Enterprise Support to obtain an RMA number for any system or component that needs to be returned for repair or replacement. When replacing a component, use only the replacement supplied to you by NVIDIA.

You can obtain the following components for replacement in your data center.

- Bezel
- Ear cover
- Locking power cords (if applicable)
- Power supply
- Fan module
- Rackmount kit
- DIMMs
- E1.S data drive
- BlueField-3 I/O bay
- M.2 boot (OS) storage drive
- Assembly with 2 M.2 drives

- Motherboard battery
- DC-SCM module

Contact NVIDIA Enterprise Support for replacement instructions and guidance for specific components if those instructions are not included in this document.

1.2. Recommended Tools

Here are the tools that are required for the procedures outlined in the presentation. Each procedure will indicate which tool is needed for the different actions.

Important

Hearing protection is mandatory when working with or in the vicinity of this equipment

- Laptop
- USB key with tools and drivers
- USB key imaged with the DGX Server OS ISO
- Screwdrivers
  - Phillips #1
  - Phillips #2
  - Torx T15
  - Torx T10
- KVM Crash Cart
- Electro Static Discharge strap and/or mat
- Masking tape or label maker
- Tie wraps or VELCRO® Brand for cable management
- Box cutter
- Black Permanent Marker or Labels/labeler for cable identification
- Packing materials

1.3. DGX B300 Exploded Views

These exploded view diagrams depict the system components and their installations within the system. The front of the system provides access to the fans, drives, bezel, front cage, and power distribution board. The back of the system allows access to the GPU tray, motherboard tray, and power supplies.

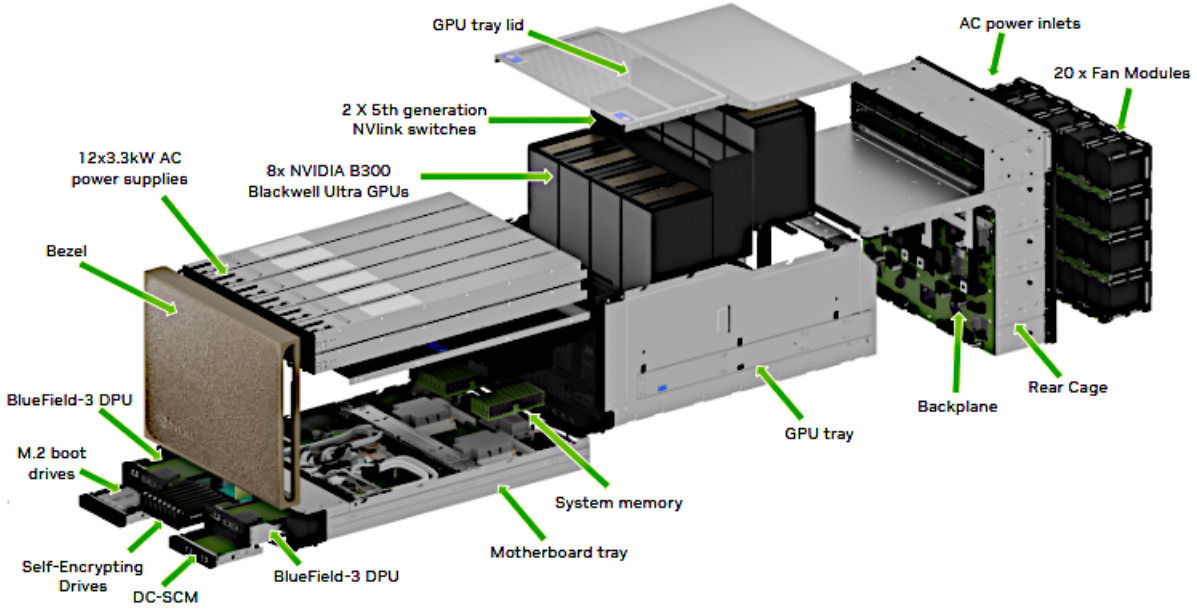

Fig. 1: Exploded View of DGX B300 with AC Power Components

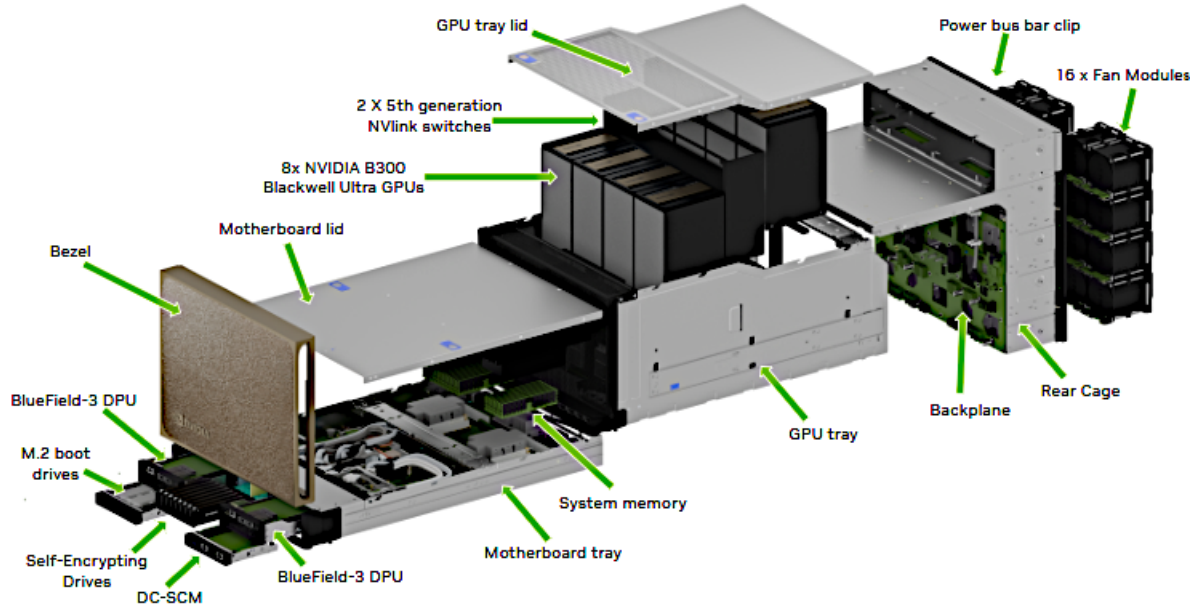

Fig. 2: Exploded View of DGX B300 with DC Power Components

1.4. Customer Support

Contact NVIDIA Enterprise Support for assistance in reporting, troubleshooting, or diagnosing problems with your DGX B300 system. Also contact NVIDIA Enterprise Support for assistance in installing or moving the DGX B300 system.

For details on how to obtain support, visit the NVIDIA Enterprise Support web site.

1.5. Running the Pre-flight Test

Instructions for running the DGX stress test.

NVIDIA recommends running the pre-flight stress test before putting a system into a production environment or after servicing. You can specify running the test on the GPUs, CPU, memory, and storage, and also specify the duration of the tests.

To run the tests, use NVSM.

Syntax:

```
sudo nvsm stress-test [--usage] [--force] [--no-prompt] [<test>...] [DURATION]
```

For help on running the test, issue the following.

```
sudo nvsm stress-test --usage
```

Recommended Command

The following command runs the test on all supported components (GPU, CPU, memory, and storage), and takes approximately 20 minutes.

```
sudo nvsm stress-test --force
```

Chapter 2. Removing and Attaching the Bezel

2.1. Bezel Removal

1. Grab the bezel on both sides by the side handles.

2. Pull the bezel horizontally away from the system to release it from the magnets that keep it in place.

2.2. Bezel Installation

1. Align the pins on the bezel to the notches on the system fascia.

2. Attach the bezel to the system, ensuring that the pins fit in the notches and that the magnetic latch holds the bezel securely in place.


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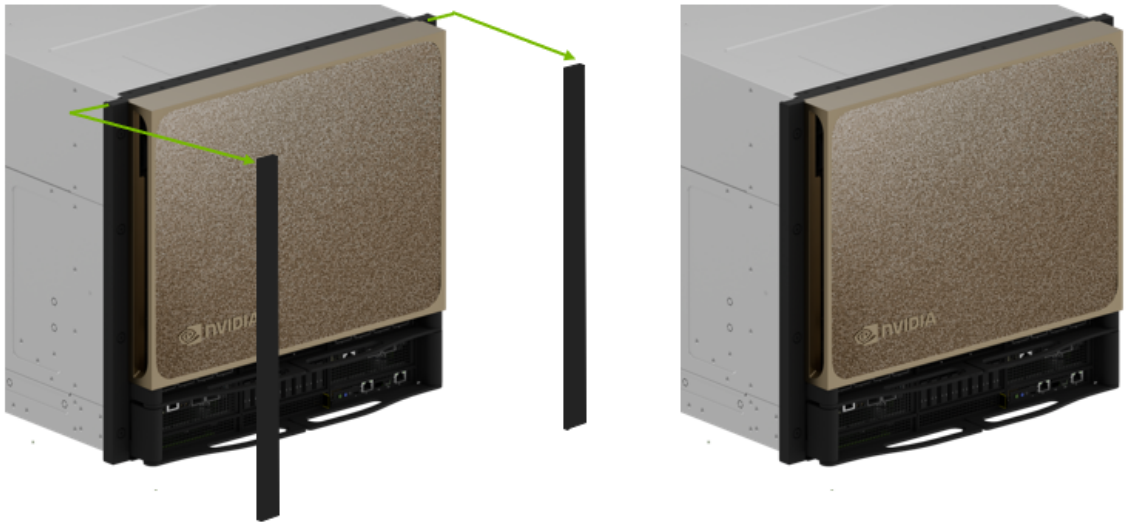
Chapter 3. Removing and Attaching the Ear Covers

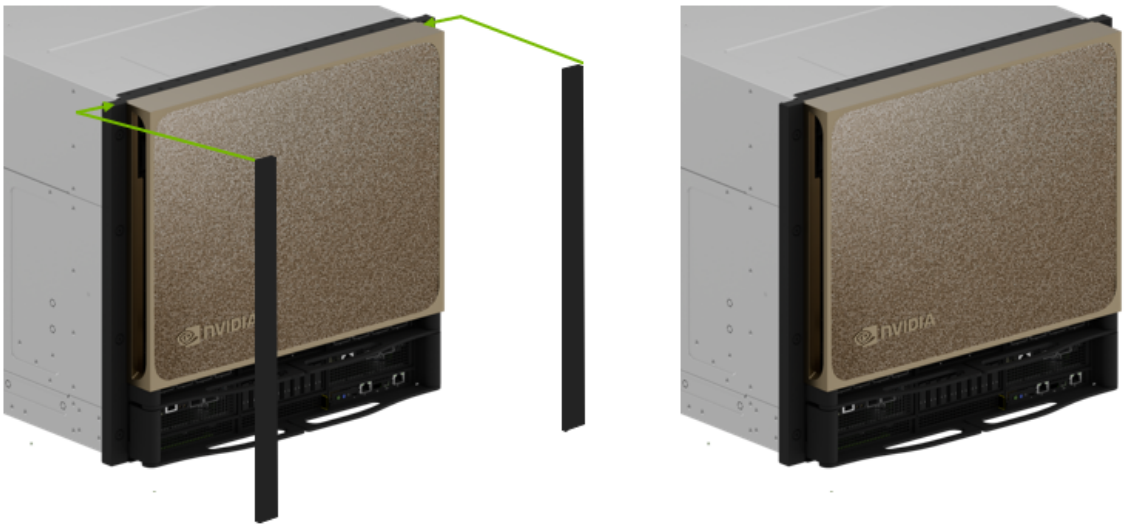
3.1. Ear Cover Removal

1. Remove the two magnetic ear cover panels from both sides of the system.



3.2. Ear Cover Installation

1. Place the two magnetic ear covers onto the system, one on each side.



Chapter 4. Power Supply Replacement

4.1. Power Supply Replacement Overview

This is a high-level overview of the procedure to replace a power supply on the NVIDIA DGX™ B300 system.

1. Identify the broken power supply by the amber color LED or the power supply number.
2. Request a replacement from NVIDIA Enterprise Support.
3. Remove the locking power cord from the power supply.
4. Replace the power supply.
5. Install the locking power cord.
6. Confirm that both LEDs light up green on the power supply.
7. Ensure the BMC reports no power supply failures.
8. If requested, send the failed unit to NVIDIA Enterprise Support using the packaging provided.

4.2. Identifying the Failed Power Supply

You can identify a failed power supply using any of the following methods:

- Run the `sudo nvsm show health` command to identify the failed power supply.
- Access the BMC Web User Interface and select **Sensors** from the left-side navigation bar.
- From the console, run the `ipmitool sdr | grep -i psu` command.

  Note which power supply has no temperature reading or an irregular output reading (close to or equal to zero).

Contact NVIDIA Enterprise Support to request a replacement. The team might ask for this or similar information to confirm that the power supply needs to be replaced.

The `nvsm` command output and the BMC web user interface identify each power supply as PSUx, where *x* is 1 to 12. The following diagram shows the physical location of each PSU.

Viewing the Power Supply LEDs

- Access the rear of the system and view the status LEDs while the system is powered on.

LED Color	Description	Status
Green	AC input OK	Blinking 4Hz
	DC output OK	Solid
	No AC input	Off
Amber	Bootloading	Blinking 4Hz
	Fault	Solid
	Healthy	Off

Running the show psus Command

- Run the following command to display information about the PSUs:

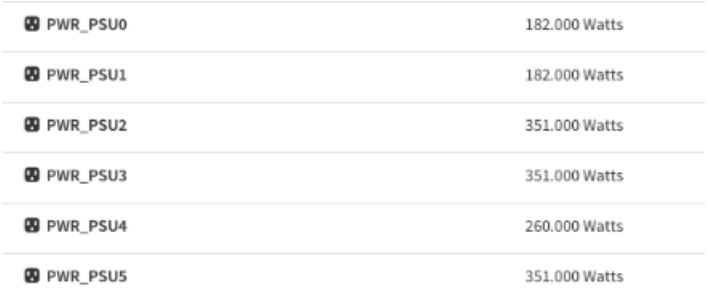
```
sudo nvsm show psus
```

The output shows information for each PSU. Look for any that does not report `Status_Health=OK`.

Viewing PSUs from the BMC Web User Interface

1. Access the BMC web user interface and select **Sensors** from the left-side navigation bar.
   - Confirm PSU presence:

   - Confirm power output:



   - Confirm the PSU temperature readings:

TEMP_PSU0	26.000 °C
TEMP_PSU1	27.000 °C
TEMP_PSU2	30.000 °C
TEMP_PSU3	29.000 °C
TEMP_PSU4	29.000 °C
TEMP_PSU5	27.000 °C

2. Run the `ipmitool` command to view information about the PSUs:

```
sudo ipmitool sdr | grep -i psu
```

Look for power supplies with no temperature or output reading close to or equal to zero.

Determining the Manufacturer

Important

All PSUs in the system must be from the same manufacturer.

- Run the following `nvsm` command to determine the PSU manufacturer:

```
sudo nvsm show /chassis/localhost/power/PSUx
```

Replace *x* in the preceding command with the PSU identifier.

Example output:

The following output is for PSU0 and shows that the manufacturer is Delta.

```
/chassis/localhost/power/PSU0
Properties:
    FirmwareVersion = 02.02.02.01.02.02
    LastPowerOutputWatts = 0
    Manufacturer = Delta
    MemberId = PSU0
    Model = ECD16020137
    Name = PSU0
    Oem_PSU_Error = Presence detected| Power Supply AC Lost| AC Lost or
↪out-of-range
    PowerSupplyType = AC
    SerialNumber = DTHTCT2233078
    Status_Health = Critical
    Status_State = Present
Targets:
Verbs:
    cd
    show
```

Obtain the replacement PSU (of the same manufacturer) from NVIDIA Enterprise Support.

4.3. Preparing the Power Supply for Replacement

1. After the new power supply arrives, look at the system and identify which power supply needs to be replaced.
2. If the system is on, ensure at least six power supplies are working by confirming the green LEDs are lit solid.

   The system can operate at full capacity with six fully functional power supplies.

   Note

   If insufficient power supplies are present and working, power off the system.

3. Unplug the power cord from the failed power supply, following the instructions described in *Locking Power Cords*.

   Before replacing the power supply, remove the locking power cable.

4.4. Replacing the Power Supply

1. Remove the power supply by pressing the tab to unlock the unit, and then pull on the black handle.

   Caution

   Once the power supply is out of the chassis, replace it with the new power supply in less than 30 seconds to avoid airflow disruptions in the system - especially if it is up and running.

2. Replace the power supply with the new unit making sure the tab locks into place.

3. Confirm that the green LED lights up green on the new power supply.
4. Ensure that the BMC Web UI reports no power supply failures.
5. Run the `sudo nvsm show health` command and confirm that all power supplies are healthy.
6. After the replacement is complete, return the failed power supply to NVIDIA Enterprise Support using the packaging provided.

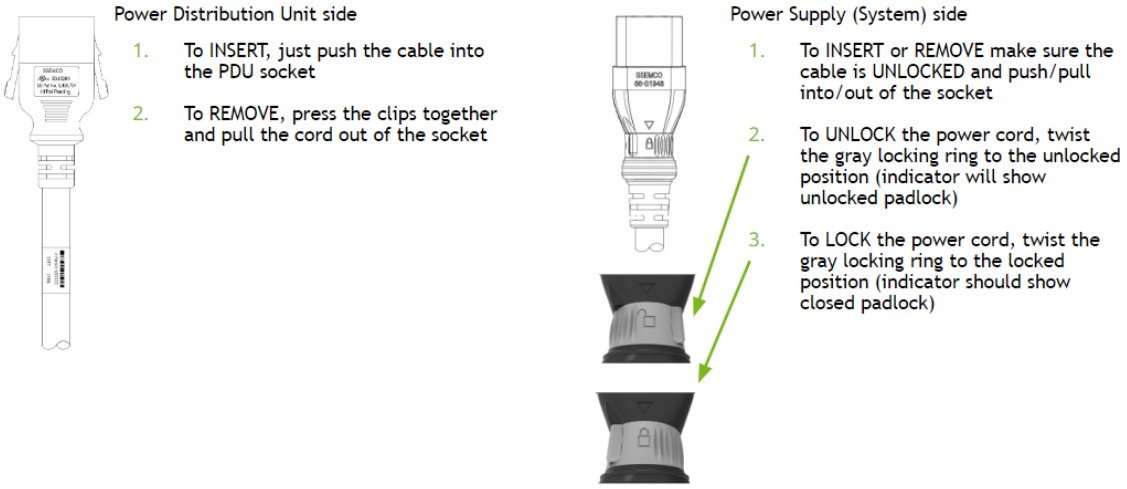
4.5. Locking Power Cords

To use the twisting locking power cords that ship with the system:

- On the power distribution unit (PDU) side
  1. To insert, push the cable into the PDU socket.
  2. To remove, press the clips on both sides simultaneously to pull the cord out of the socket.
- On the power supply side
  1. Ensure the cable is unlocked:
     - To insert, push the cable into the socket.
     - To remove, pull the cable out of the socket.
  2. To unlock the power cord, twist the gray locking ring to the unlocked position.

     The indicator will show an unlocked padlock.
  3. To lock the power cord, twist the gray locking ring to the locked position.

     The indicator will show a closed padlock.



Chapter 5. Front Fan Module Replacement

5.1. Front Fan Module Replacement Overview

This is a high-level overview of the procedure to replace the front fan modules on the NVIDIA DGX™ B300 system.

1. Identify the failed front fan module through BMC or with the fan module LED and submit a service ticket.
2. Get a replacement from NVIDIA Enterprise Support.
3. Remove the failed fan module.
4. Insert new fan module.
5. Confirm that the new fan module works correctly through the BMC or the operating system tools.
6. Return the failed unit to NVIDIA Enterprise Support using the packaging provided.

5.2. Identifying a Failed Fan Module

You can identify a failed fan module using one of the following methods:

- Remove the system bezel and visually inspect the fan module LEDs.
- Run the `sudo nvsm show fans` command and view the command output for any alerts or failures.
- Access the BMC Web User Interface and view the sensor data from the fans. If a fan runs at an abnormal speed, that fan needs to be replaced.

Viewing the Fan Module LEDs

1. Expose the fan modules following the instructions in *Removing and Attaching the Bezel*.

   After you remove the bezel, the system looks like the following figures.
2. Identify the faulty fan module by observing the amber fault LED illuminated in its upper right corner. This confirms the module requires replacement.

Fig. 1: Power Supply

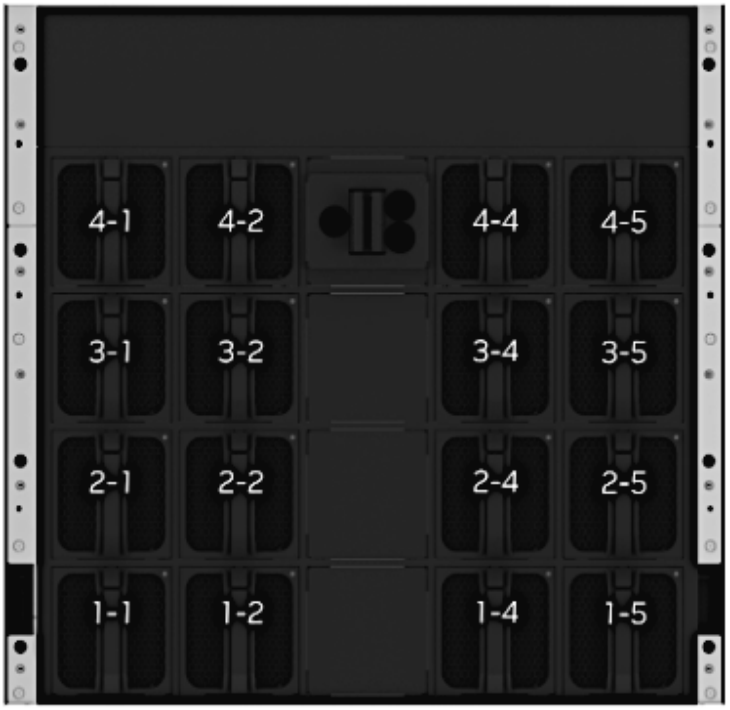


Fig. 2: Busbar

Running the nvsm command

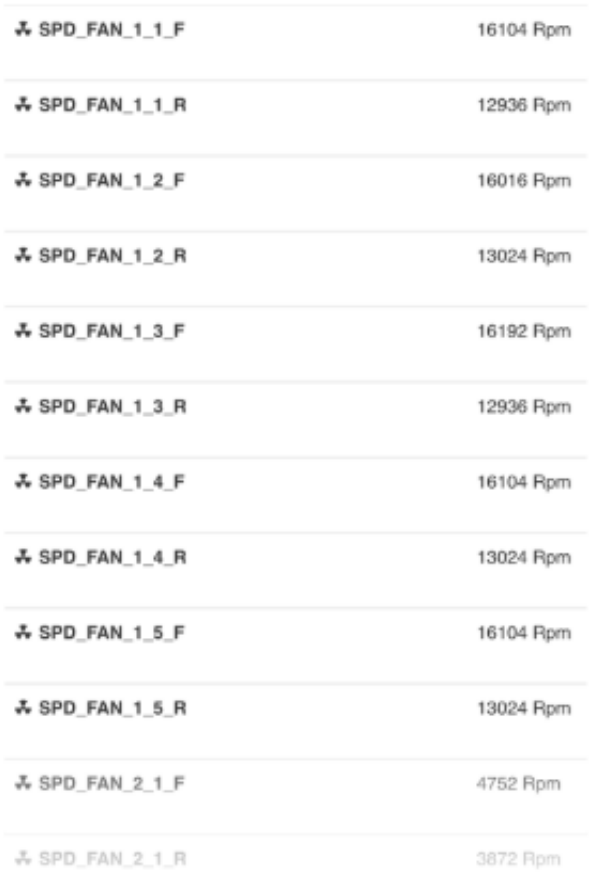
- From the operating system, run:

```
sudo nvsm show fans
```

  View the command output for alerts, failures, or an `unhealthy` status.

Viewing Fan Modules from the BMC Web User Interface

1. Identify the faulty fan module using the BMC dashboard.
2. Log on to the BMC.
3. Select **Sensor** from the left-side navigation menu.
4. Review the **Normal Sensors** section.
5. Look for abnormal fan speeds in the right column.



The fan module has two fans identified by `SPD_FAN_m_n_F` and `SPD_FAN_m_n_R`, where

- `m` is the fan module group.
- `n` is the fan module ID.
- `F` is the front fan.
- `R` is the rear fan.

If either the front or rear fan fails, the entire module must be replaced.

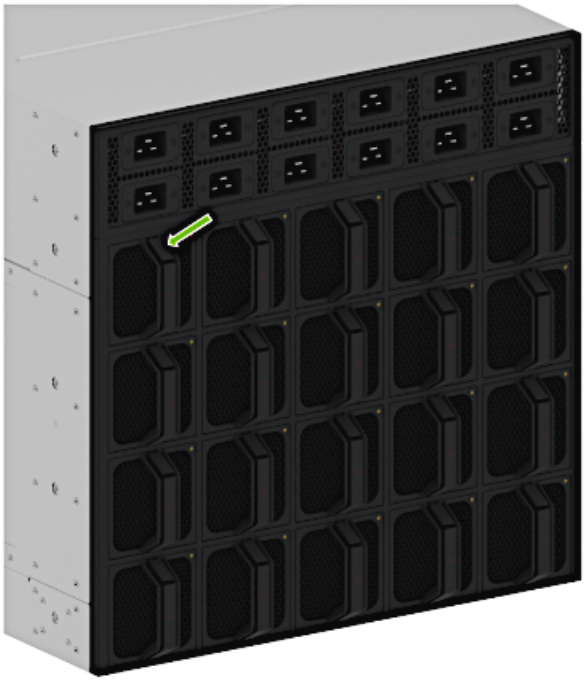
6. Use the `nvsm` command to confirm the fan issue.

```
sudo nvsm show fans
```

View the output and confirm that the status is `unhealthy` for the same fan.

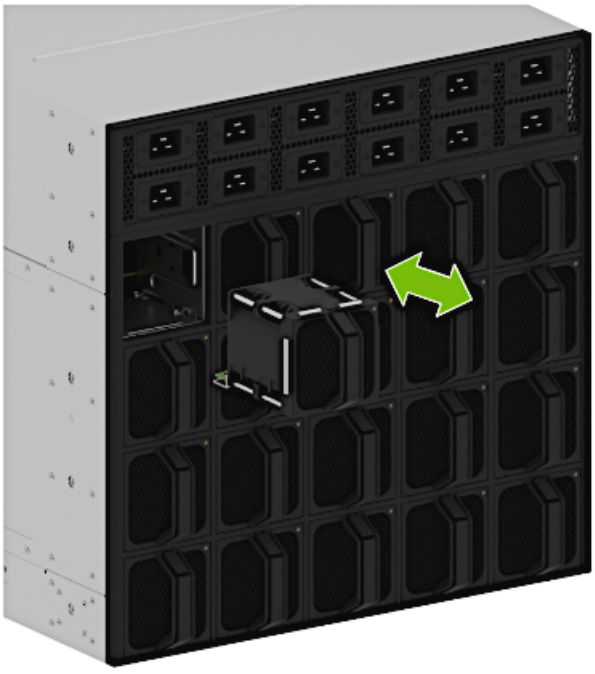
5.3. Replacing and Returning the Front Fan Module

1. Remove the new fan module from its packaging and be ready to install it.
2. Expose the fan modules following the instructions in *Removing and Attaching the Bezel*.
3. To remove the failed fan module, unlock the fan module by pressing the release button and then pull the module out of the chassis.



4. Replace the failed fan module with the new one.

> **Important**
>
> Replace the old fan with the new one within 30 seconds to prevent overheating.



5. Confirm that the fan module is healthy and works correctly by performing the following tasks:
   - Use the BMC Web User Interface.
   - Verify that the amber LED on the fan module is extinguished.
   - Run the `sudo nvsm show fans` command.
6. Install the bezel as described in *Removing and Attaching the Bezel*.

Return the failed fan module to NVIDIA Enterprise Support using the packaging from the new fan module.

Chapter 6. Front Console Board Replacement

6.1. Front Console Board Replacement Overview

This is a high-level overview of the procedure to replace the front console board on the NVIDIA DGX™ B300 system.

1. Unpack the new front console board.
2. Shut down the system.
3. Remove the bezel.
4. Use a Philips #2 screwdriver to loosen the captive screws on the front console board and pull the front console board out of the system.
5. Insert the new front console board.
6. Tighten the screws.
7. Power on the system and confirm the ports work.
8. Install the bezel.
9. Return the failed unit to NVIDIA Enterprise Support.

6.2. Front Console Board Replacement

You can diagnose a front console board malfunction using the following methods:

- No display or connectivity occurs after you plug in a keyboard and monitor to the front of the system.
- The USB ports do not work.
- The front temperature sensor does not provide a temperature reading.

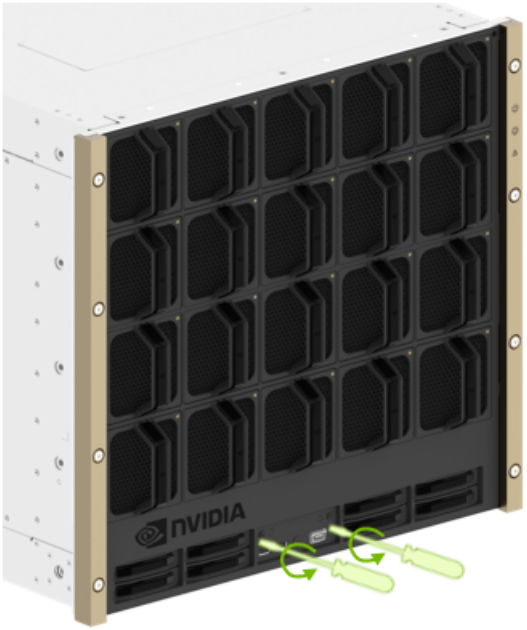
Contact NVIDIA Enterprise Services to request a replacement.

When the new board arrives, unpack it and keep the packaging to send back the old board.

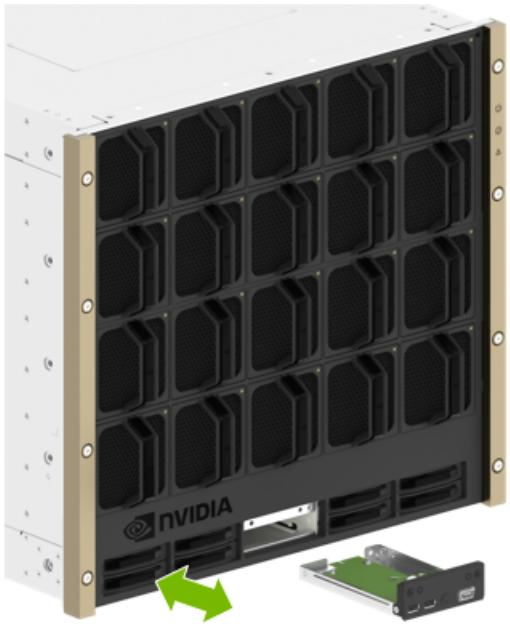
Caution

Static Sensitive Devices: Be sure to observe the best practices for electrostatic discharge (ESD) protection. This includes ensuring personnel and equipment are connected to a common ground, such as by wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

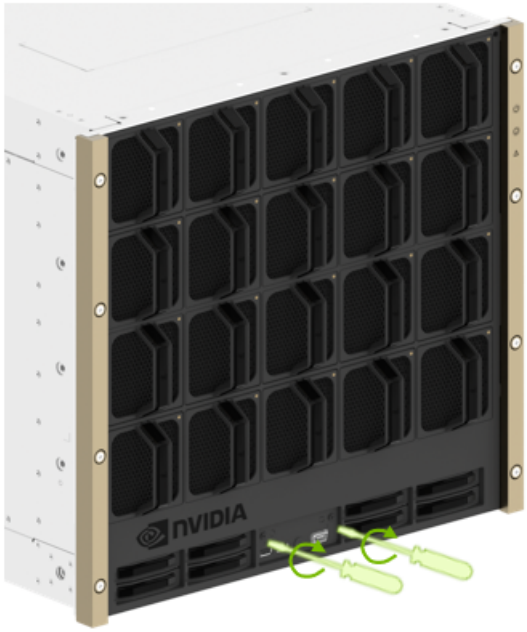
1. Power down the system.
2. Remove the bezel. For more information, refer to *Removing and Attaching the Bezel*.
3. Replace the front console board.
    1. Using a Phillips #2 screwdriver, loosen the two captive screws that secure the front console board:



    2. Replace the front console board:



3. Tighten the screws:



4. Confirm functionality:
    1. Power on the system and confirm that the ports work correctly.
    2. Run `sudo nvsm show health` to verify that the temperature sensor is working properly
    3. Replace the bezel as described in *Removing and Attaching the Bezel*.
5. Send the failed unit to NVIDIA Enterprise Support using the packaging provided.

Chapter 7. Motherboard Tray - Opening and Closing

You will need to completely remove the motherboard tray from the server to service the following components. If this is the case, refer to the section that describes the procedure for removing the motherboard.

- DIMMs (either adding or replacing)
- Trusted Platform Module (TPM)

7.1. Prepare the Motherboard for Service

Before pulling the motherboard out of the system, the system must be shut down and cables must be removed from the system.

Caution

Wear an ESD strap during any procedure that involves touching electronic components.

1. Shut down the system.
2. To avoid misconfigurations, label all the cables before unplugging them.

   Label all network, monitor, and USB cables.

3. Use one of the following methods:

   Option 1: Standard system

   - Unplug all power cords.

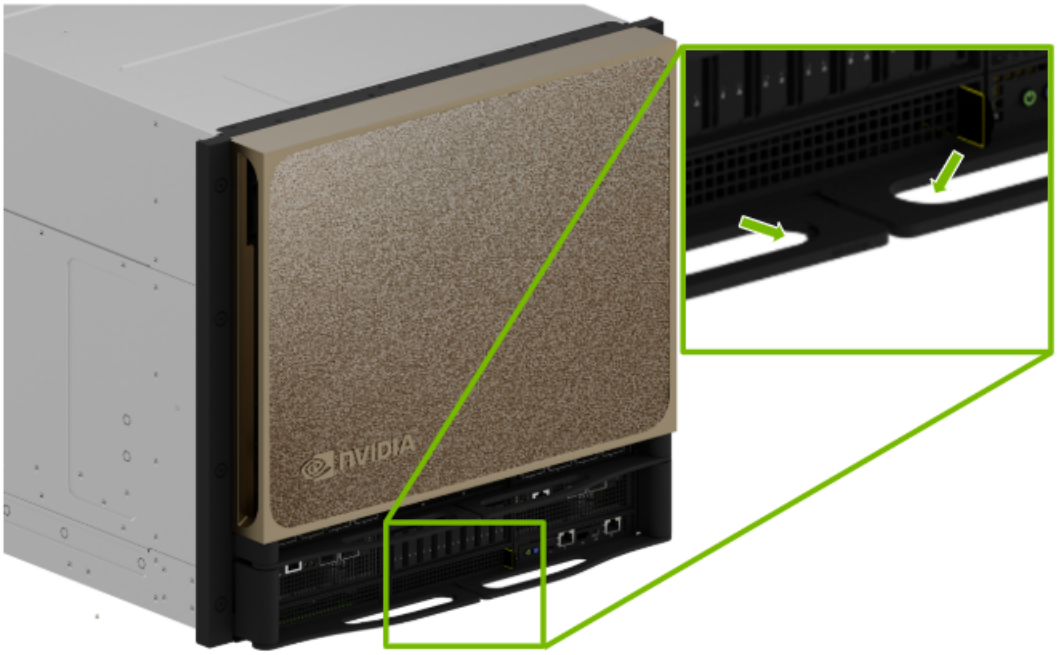
Option 2: Busbar-based system

1. De-energize the busbar.
2. Release the thumbscrews in the ears.
3. Pull the system out a few inches to disengage it from the busbar.

4. Unplug all network, monitor, and USB cables.

7.2. Release the Motherboard

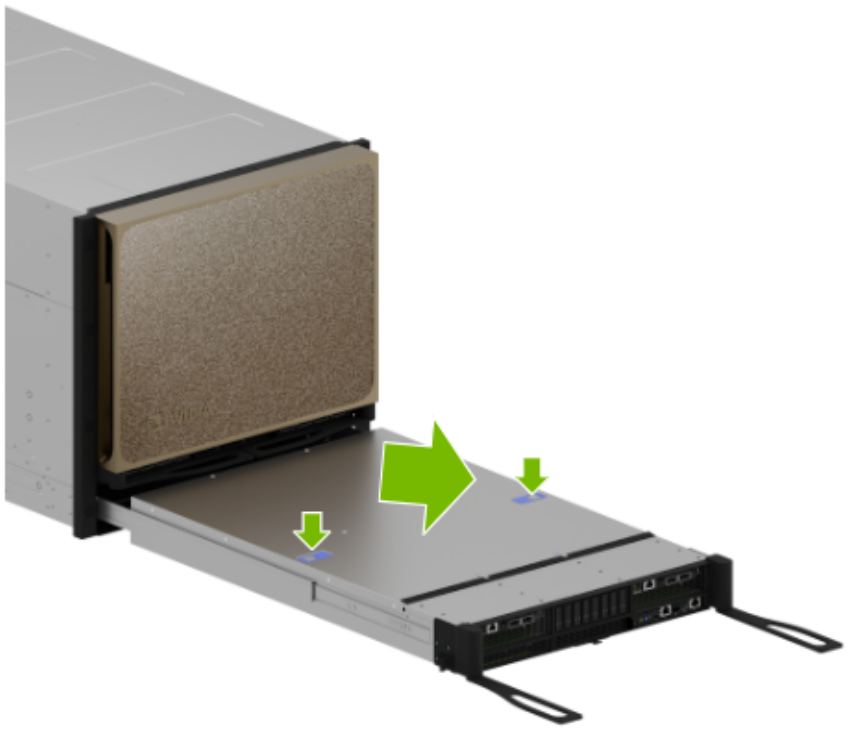
1. Unlock the motherboard by pressing the buttons to release the levers from the motherboard.



2. Pull the ejection levers out to disengage the midplane connectors.

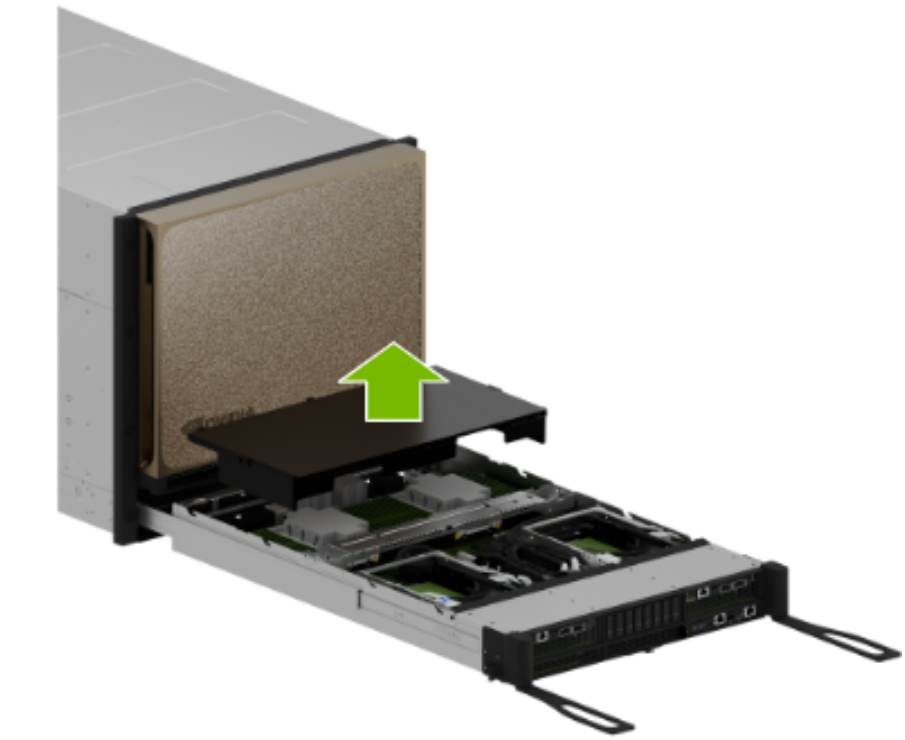
7.3. Pull the Motherboard from the Chassis

1. Pull the motherboard out until the locking mechanism in the lid engages and prevents further movement.
2. Press down on both buttons and slide the lid back.



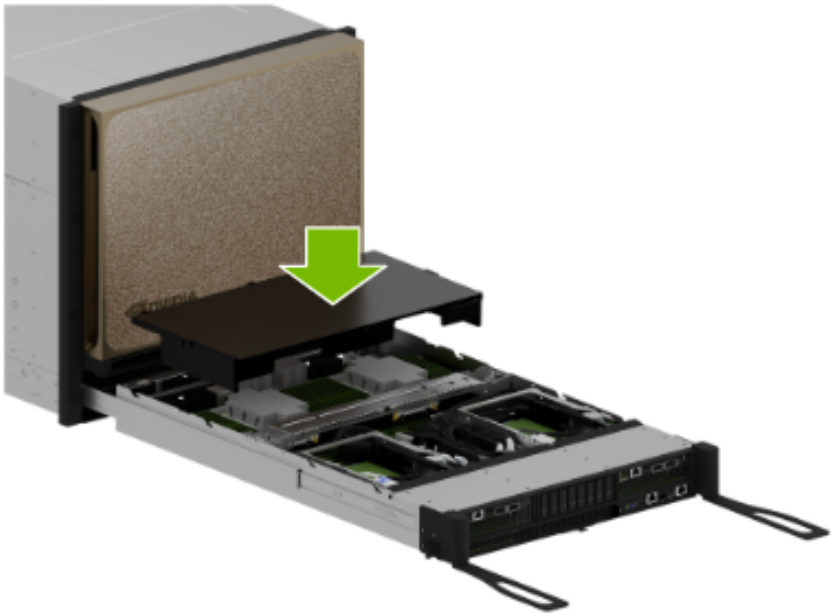
3. Push the lid back and up to remove it.

4. (Optional) Remove the air baffle, if needed.

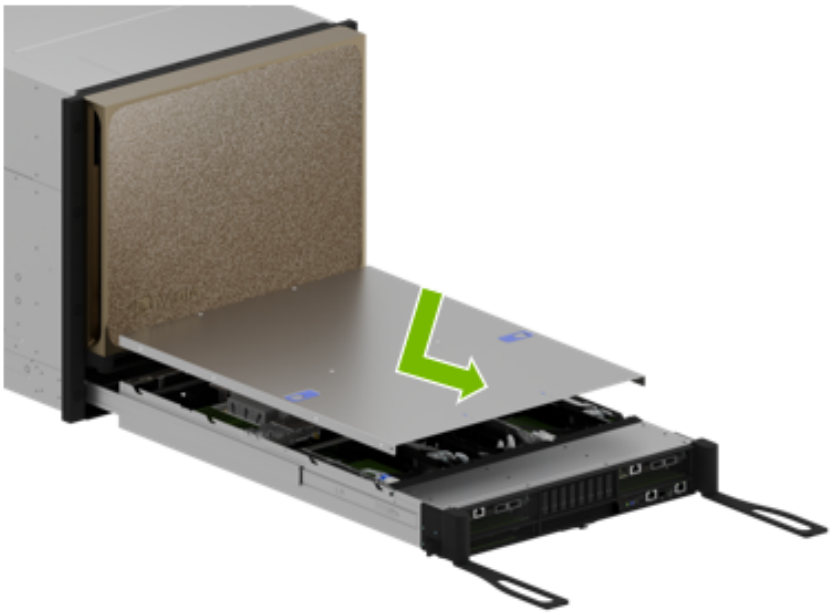


7.4. Install the Motherboard into the Chassis

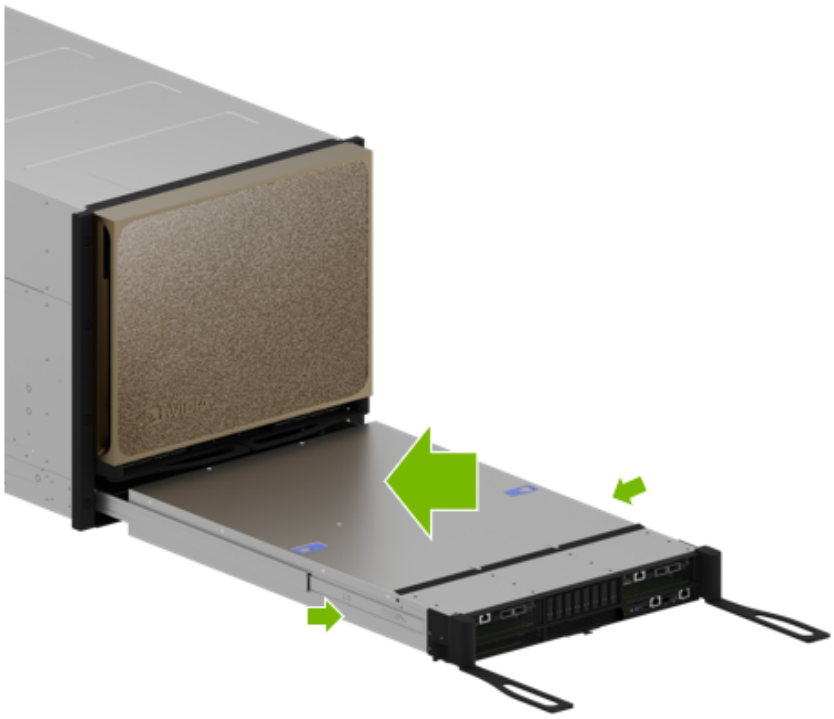
1. If removed, install the air baffle.



2. Place the lid on the motherboard and lock it in place by sliding it forward.



3. Pull back on the blue tabs to release the locking mechanism of the slide rails.

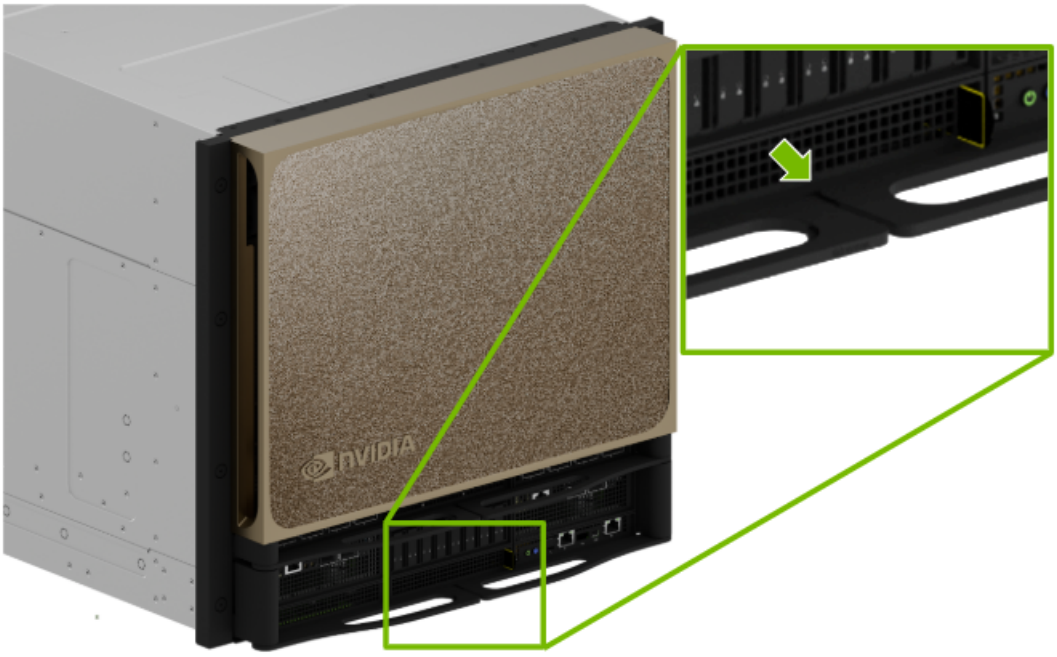


4. Push the motherboard into the system until the levers engage with the chassis.

7.5. Insert the Motherboard

1. Lock the ejection levers to engage the backplane connectors.

2. After the levers are flush against the tray, confirm they lock securely onto the motherboard tray hooks.



7.6. Finalize Motherboard Closing

1. Use the labels on the cables to reconnect them to the correct ports.

2. Use one of the following methods:

   Option 1: Standard system

   - Connect all power cords.

   Option 2: Busbar-based system

   1. Re-energize the busbar.
   2. Push the system back to engage with the busbar.
   3. Tighten the thumbscrews in the ears to secure the system.

3. Power on the system.

Chapter 8. Motherboard Tray - Removal and Installation

You will need to completely remove the motherboard tray from the server to service the following components.

- DIMMs (either adding or replacing)
- Trusted Platform Module (TPM)

8.1. Prepare the Motherboard for Service

Before pulling the motherboard out of the system, the system must be shut down and cables must be removed from the system.

> **Caution**
>
> Wear an ESD strap during any procedure that involves touching electronic components.

1. Shut down the system.
2. To avoid misconfigurations, label all the cables before unplugging them.

   Label all network, monitor, and USB cables.

3. Use one of the following methods:

   Option 1: Standard system

   - Unplug all power cords.

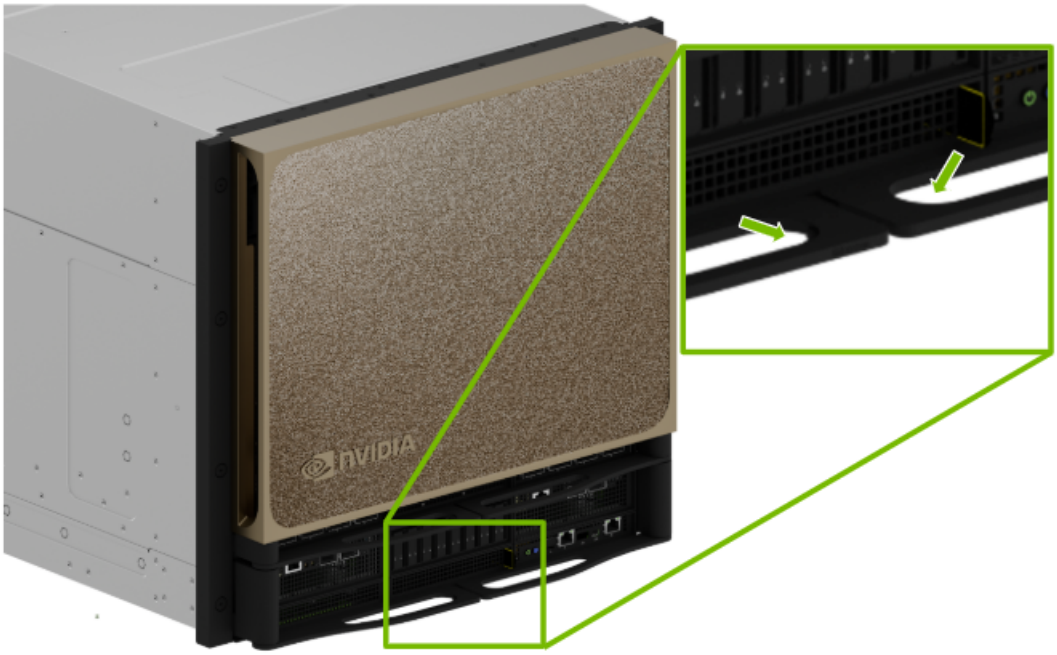
Option 2: Busbar-based system

1. De-energize the busbar.
2. Release the thumbscrews in the ears.
3. Pull the system out a few inches to disengage it from the busbar.

4. Unplug all network, monitor, and USB cables.

8.2. Release the Motherboard

1. Unlock the motherboard by pressing the buttons to release the levers from the motherboard.

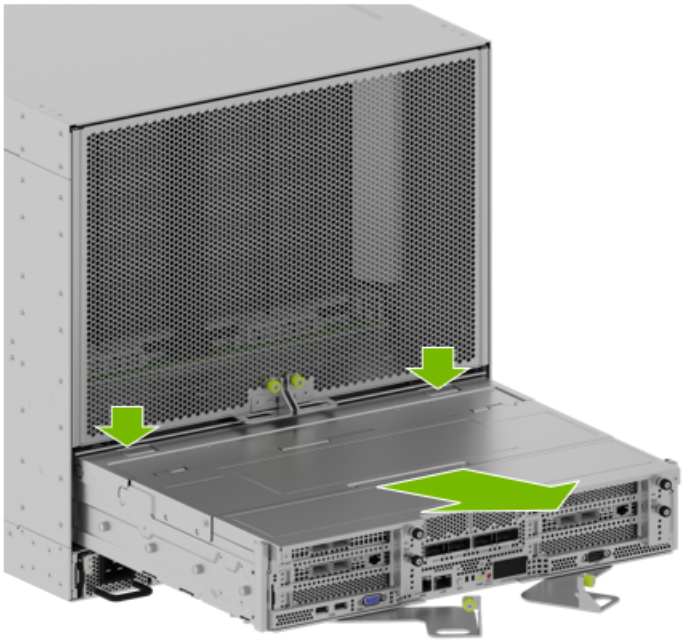


2. Pull the ejection levers out to disengage the midplane connectors.

8.3. Pull the Motherboard from the Chassis

Ensure that you have a solid, flat surface to rest the motherboard tray.

1. Pull the motherboard tray out until the locking mechanism in the lid engages and prevents further movement.
2. Push down on the buttons identified in the following figure to release the motherboard tray:



3. Pull the motherboard tray out of the chassis completely:

- Do not hold the motherboard tray by the ejection handles. The handles can bend or break.
- Be careful with the connectors at the back of the module to prevent damage.

4. Place the motherboard tray on a solid, flat surface.

8.4. Remove the Motherboard Tray Lid

1. Loosen the two screws on the port side of the motherboard tray, as shown in the following figure:

2. Loosen the two screws on the connector side of the motherboard tray, as shown in the following figure:

3. To remove the tray lid, perform the following steps:
    1. Lift on the connector side of the tray lid so that you can push it forward to release it from the tray.
    2. After the triangular markers align, lift the tray lid to remove it.

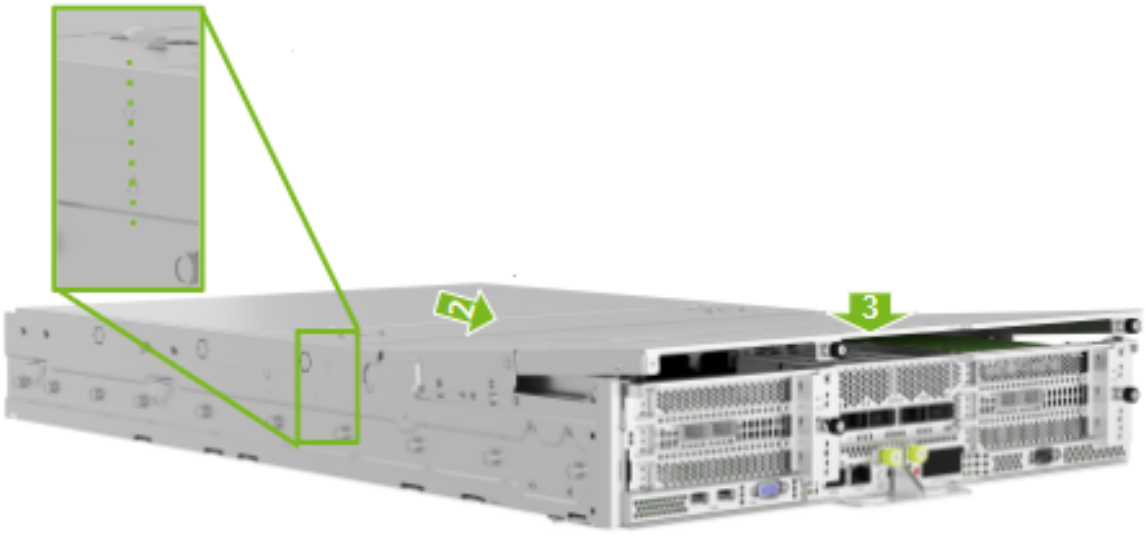
4. (Optional) Depending on the procedure being performed, remove the air baffles from the motherboard.

8.5. Close the Motherboard Tray Lid

Before you perform the following steps, ensure that all components are installed correctly so that they do not interfere with the air baffles or tray lid.

1. Insert the motherboard tray baffles and then place the tray lid over the motherboard tray.

2. To close the tray lid, perform the following steps:
    1. Position the tray lid correctly by aligning the markers, as shown in the following figure.
    2. Push the tray lid toward the I/O section of the tray until the folding section is flush.
    3. Press the folding section down so that the thumbscrews align with the screw holes.



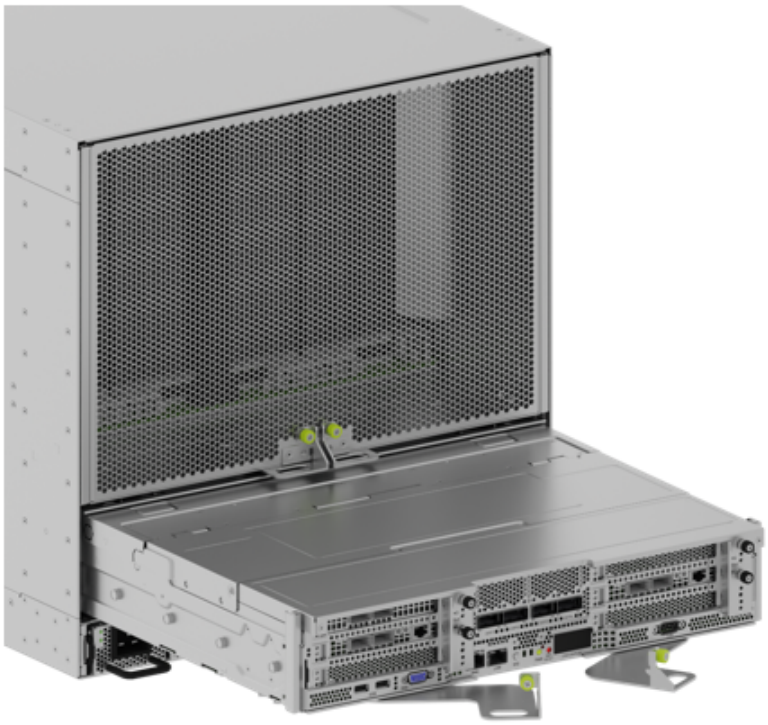
3. Tighten the two lid screws on the port side of the motherboard tray, as shown in the following figure:

4. Tighten the two lid screws on the connector side of the motherboard tray, as shown in the following figure:

8.6. Insert the Motherboard Tray into the Chassis

1. Insert the motherboard tray into the chassis partially. Open the ejection levers before you insert the motherboard tray into the chassis:

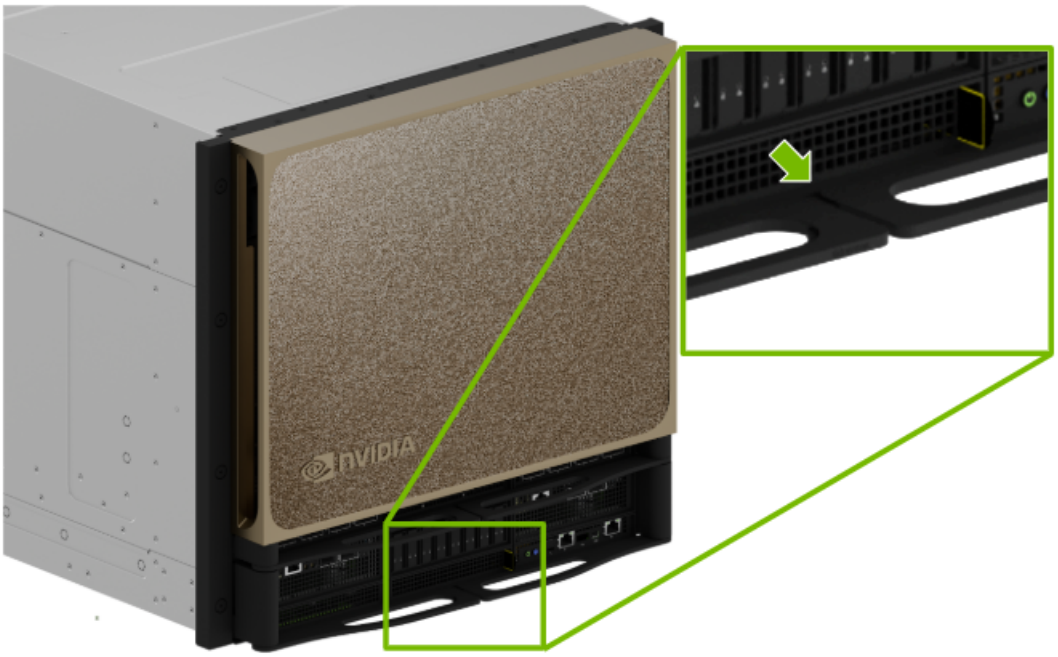
2. Push the motherboard tray into the chassis until the levers on both sides engage with the sides:



8.7. Insert the Motherboard

1. Lock the ejection levers to engage the backplane connectors.

2. After the levers are flush against the tray, confirm they lock securely onto the motherboard tray hooks.



8.8. Finalize Motherboard Closing

1. Use the labels on the cables to reconnect them to the correct ports.

2. Use one of the following methods:

   Option 1: Standard system

   - Connect all power cords.

   Option 2: Busbar-based system

   1. Re-energize the busbar.
   2. Push the system back to engage with the busbar.
   3. Tighten the thumbscrews in the ears to secure the system.

3. Power on the system.

Chapter 9. DIMM Upgrade and Replacement

Caution

Static Sensitive Devices: Ensure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

9.1. DIMM Upgrade Procedure

To upgrade DIMMs,

1. Contact NVIDIA to obtain the complete upgrade kit.
2. Replace all DIMMs following the instructions in the DIMM Replacement section.

9.2. DIMM Replacement Overview

This is a high-level overview of the procedure to replace a dual inline memory module (DIMM) on the NVIDIA DGX™ B300 system.

1. Use the `nvsm health` command to identify the failed DIMM.
2. Get a replacement DIMM from NVIDIA Enterprise Support.
3. Shut down the system.
4. Label all motherboard tray cables and unplug them.
5. Pull out the motherboard tray and place it on a solid flat surface.
6. Remove the motherboard tray lid.
7. Use the reference diagram on the lid of the motherboard tray to identify the failed DIMM.
8. Remove the air baffle.
9. Replace the failed DIMM with the new one.
10. Close the lid on the motherboard tray.
11. Install the air baffle.

12. Insert the motherboard tray into the system.
13. Plug in all cables using the labels as a reference.
14. Power on the system.
15. Verify that all DIMMs are now healthy with the `nvsm health` command.
16. Send the failed unit to NVIDIA Enterprise Support using the packaging provided.

Note

You should observe the following DIMM population guidelines:

- Each memory channel (A, B, C, D, E, F, G, H) should be populated with identical DIMMs for optimal performance in a dual-memory configuration. For example, DIMMs in slots CPU1_B0 and CPU1_B1 within channel B should have the same part number.
- Different memory channels can be populated with DIMMs of different part numbers. For example, DIMMs in slots CPU1_A0 and CPU1_A1 should have the same part number, while DIMMs in slots CPU1_B0 and CPU1_B1 should have the same part number. However, the DIMM manufacturer on channel A can differ from the DIMM manufacturer on channel B.

9.3. Identify the Failed DIMM

1. From the console, run the following `nvsm` command to identify the failed DIMM:

```
sudo nvsm show health
```

2. Determine the DIMM manufacturer.

```
sudo nvsm show memory
```

3. Request a replacement DIMM from NVIDIA Enterprise Support, specifying the manufacturer.

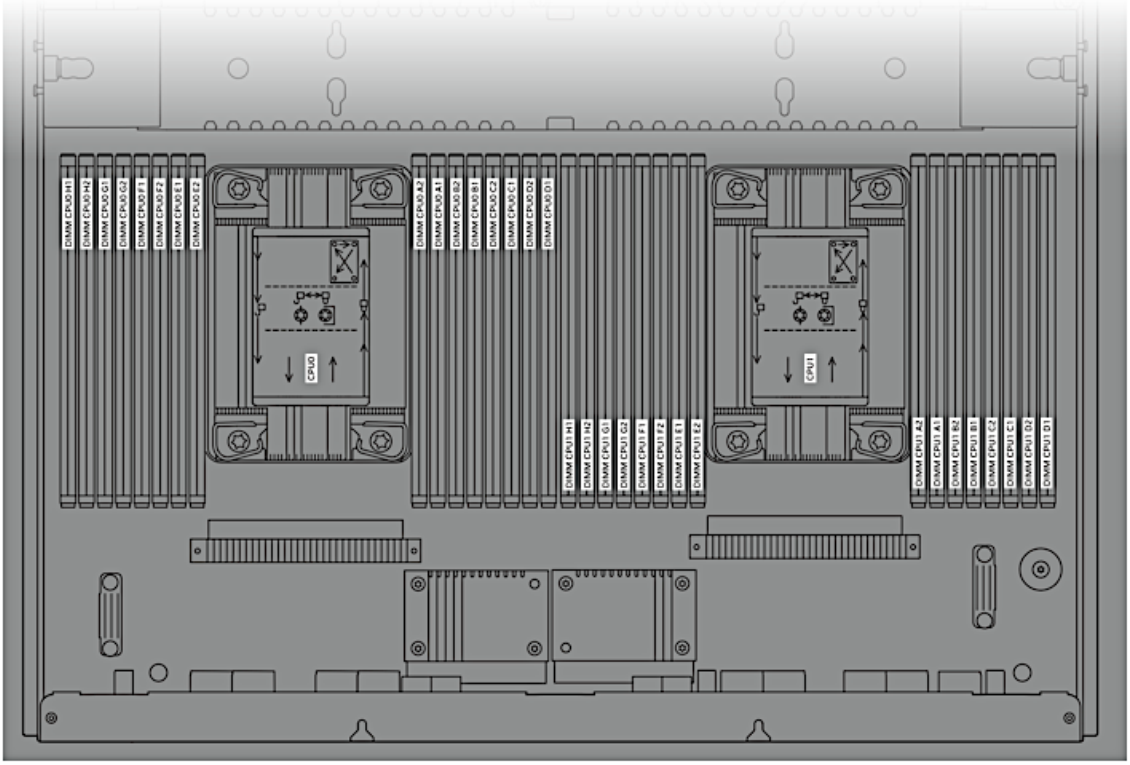
9.4. Replace the DIMM

1. Shut down the system.
2. Remove the motherboard tray. Refer to *Motherboard Tray - Removal and Installation* for more information.
3. Pull the motherboard out of the system and place it on a solid, flat surface.
4. Remove the lid and air baffles to expose the DIMMs.
5. Identify the failed DIMM on the motherboard.

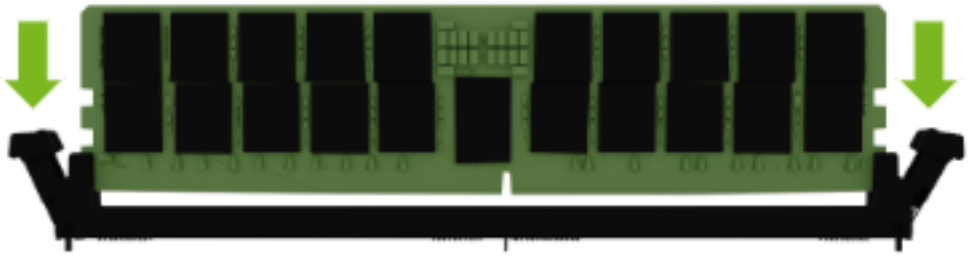
   Use the label on the lid to identify the position of the DIMM to be replaced.

   Note

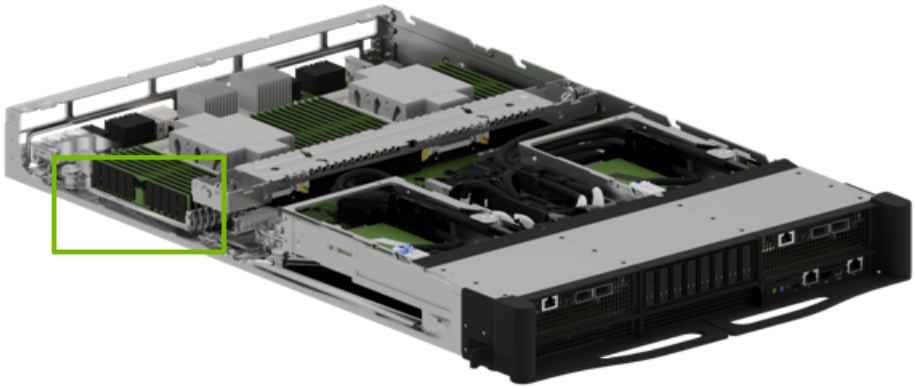
   Each DIMM is identified by its associated CPU number, followed by the DIMM designation, for example, CPU1 D1.



6. To remove the failed DIMM, press down on the ejection levers to eject the DIMM from the socket.



7. To insert the new DIMM, position it in the socket and press down until the levers close and the DIMM clicks into place.



9.5. Finalize the DIMM Replacement

1. Install the air baffles, close the motherboard, and install the tray in the chassis. For more information, refer to *Motherboard Tray - Removal and Installation*.
2. Plug in all cables.
3. Install all power cords.
4. Power on system.
5. Log in and use the `nvsm` command to confirm the system memory is healthy:

   ```
   sudo nvsm show health
   ```

6. Send the failed DIMM to NVIDIA Enterprise Support.

Chapter 10. E1.S NVMe Data Drive Replacement

10.1. E1.S NVMe Data Drive Replacement Overview

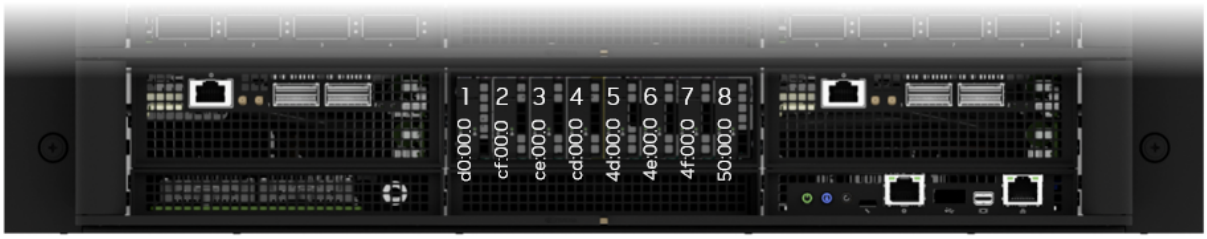
This is a high-level overview of the procedure to replace a cache Non-Volatile Memory Express (NVMe) drive.

1. Identify the failed SSD.
2. Request a replacement SSD from NVIDIA Enterprise Support.
3. Power off the system.
4. Remove the failed SSD identified earlier.
5. Insert the new SSD.
6. Power on the system.
7. Rebuild the RAID volume and mount the filesystem.
8. Return the failed unit to NVIDIA Enterprise Support using the packaging provided.

10.2. Identify the Failed E1.S NVMe SSD

Identifying the Failed NVMe from the Front

If physical access to the system is available, you can identify a failed drive by the illuminated amber LED.



Identifying the Failed NVMe from the Console

- To identify the failed data drive, you can use the `nvsm` command.

```
sudo nvsm show health
```

  View the command output and look for drive alerts to identify the failed drive.

- Alternatively, you can use the BMC Web User Interface to access the **Sensor** screen, the **IPMI event log**, and the **System log** to identify issues with the E1.S drives.

10.3. Identifying the NVMe Manufacturer and Model

- Use the `nvsm` command to display the drive information.

```
sudo nvsm show /systems/localhost/storage/drives/nvmeXn1
```

  Replace *X* in the preceding command with the number that corresponds to the Linux device name of the failed drive.

  Example Output

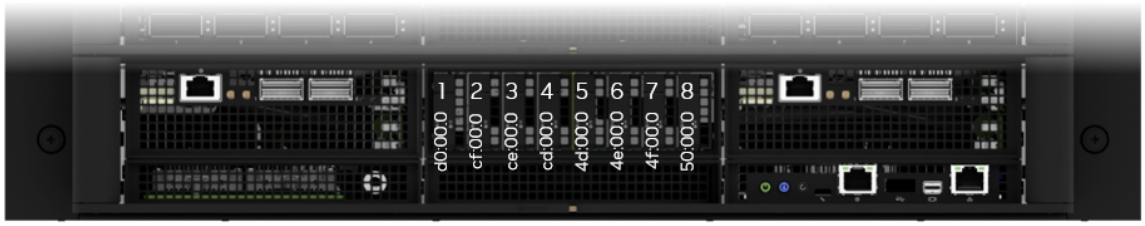
```
/systems/localhost/storage/drives/nvme5n1
Properties:
    PhysicalLocation_Info = SlotU.2_Slot3
    BlockSizeBytes = 512
    SerialNumber = 22L0A01WT2N8
    Model = KCM6DRUL3T84
    Revision = 0107
    Manufacturer = KIOXIA Corporation
    Status_State = Enabled
    Status_Health = OK
    Name = nvme5n1
    MediaType = SSD
    EncryptionStatus = Unlocked
    CapacityBytes = 3840755982336
    Id = nvme5n1
Targets:
Verbs:
    cd
    set
    show
```

  Refer to the `Manufacturer` and `Model` fields in the output. Request a replacement NVMe from NVIDIA Enterprise Support, specifying this information.

10.4. Remove the Failed E1.S NVMe SSD

1. Ensure that you requested and obtained the replacement drive from NVIDIA Enterprise Support.
2. Back up any critical data to a network shared volume or other backup means.
3. Power off the system using the power button.

4. Remove the bezel. Refer to *Removing and Attaching the Bezel* for more information.
5. After the system powers off, use the following figure to identify the drive to replace in the chassis. The figures in the following procedures show replacing drive number 7 at PCI address ae.



6. Remove the NVMe drive.
   1. Press the tab on the top to release the lever.

   2. Pull the drive out by using the lever.

   3. Remove the drive.

10.5. Insert the E1.S NVMe SSD

1. Open the ejector handle on the new drive by pressing the release tab, and insert the drive all the way until the connector on the drive engages with the midplane.

2. Use the handle on the drive to secure it in place.

3. Confirm that the drive is fully seated with the system.

4. Install the bezel after the drive replacement is complete.

10.6. Next Steps

- *E1.S NVMe Cache Drive Post-Installation Tasks*.

Chapter 11. E1.S NVMe Cache Drive Post-Installation Tasks

This section describes the tasks you typically need to perform after replacing a E1.S NVMe drive.

11.1. Re-creating the RAID Arrays

1. Power on the system and log in.
2. Confirm that all installed drives are visible from the OS by using the `nvme` command.

```
sudo nvme list
```

The output can indicate two boot drives and eight cache drives, depending on how many are installed in the system.

Example Output:

```
Node             SN                   Model
 ↪     Namespace Usage                      Format           FW Rev
---------------- -------------------- ----------------------------------
 ↪---- --------- ------------------------- ---------------- --------
/dev/nvme0n1     S4YPNE0N200093       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme1n1     S4YPNE0N200040       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme2n1     S436NA0N106764       SAMSUNG MZ1LB1T9HALS-00007
 ↪     1           44.44  GB /   1.92  TB    512   B +  0 B   EDA7602Q
/dev/nvme3n1     S436NA0N106850       SAMSUNG MZ1LB1T9HALS-00007
 ↪     1           45.18  GB /   1.92  TB    512   B +  0 B   EDA7602Q
/dev/nvme4n1     S4YPNE0N200144       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme5n1     S4YPNE0N200171       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme6n1     S4YPNE0N200481       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme7n1     S4YPNE0N200094       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
/dev/nvme8n1     S4YPNE0N200064       SAMSUNG MZWLJ3T8HBLS-00007
 ↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
```

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```
/dev/nvme9n1     S4YPNE0N200055       SAMSUNG MZWLJ3T8HBLS-00007
↪     1           3.84  TB /   3.84  TB    512   B +  0 B   EPK9CB5Q
```

3. If the cache volume was encrypted previously with an access key, disable the encryption before re-creating the RAID volume.

   ```
   sudo nv-disk-encrypt disable
   ```

   The disk encryption packages must be installed on the system. For more information, refer to the Managing Self-Encrypting Drives topic in the *DGX OS 7 User Guide*.

4. Re-create the cache volume and the `/raid` filesystem.

   ```
   configure_raid_array.py -c -f
   ```

   At the prompt, enter `y` to confirm the rebuild action.

5. (Optional) To encrypt the volume with an access key, refer to the Managing Self-Encrypting Drives topic in the *DGX OS 7 User Guide*.

6. Confirm the volume is healthy.

   ```
   sudo nvsm show volumes
   ```

7. Send the old drive to NVIDIA Enterprise Support using the packaging provided.

Chapter 12. BlueField-3 I/O Bay Replacement

This topic describes how to replace the NVIDIA® BlueField®-3 card in the NVIDIA DGX™ B300 system.

Caution

Static Sensitive Devices: Ensure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

12.1. BlueField-3 I/O Bay Replacement Overview

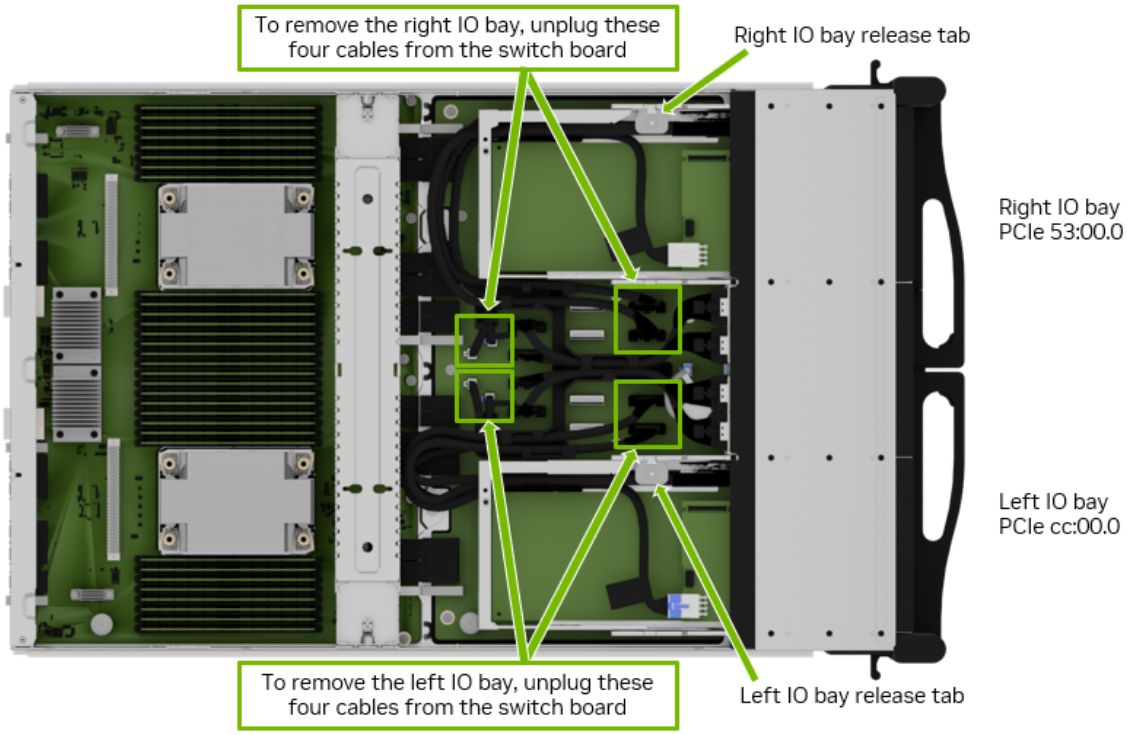
1. Identify the failed BlueField-3 I/O card.
2. Get a replacement BlueField-3 I/O bay from NVIDIA Enterprise Support.
3. Ensure that the system is shut down.
4. Label all cables and unplug them from the motherboard tray.
5. Slide the motherboard tray out until it locks in place.
6. Remove the motherboard lid.
7. Replace the BlueField-3 I/O bay.
8. Install the motherboard lid.
9. Slide the motherboard back into the system.
10. Connect all cables using the labels as a reference.
11. Power on the system.
12. Send the failed unit to NVIDIA Enterprise Support using the packaging provided.

12.2. Prepare the System for Replacement

1. Identify which BlueField-3 I/O card to replace.

   Use the `sudo nvsm show health` command or network tools to determine the failed card.

2. Contact NVIDIA Enterprise Support to request a replacement.
3. When you receive the replacement, power off the system.
4. Pull out the motherboard following the instruction in *Motherboard Tray - Opening and Closing*.
5. Based on the output from the `nvsm` command, identify which card needs to be replaced, the card in right I/O bay or left I/O bay.



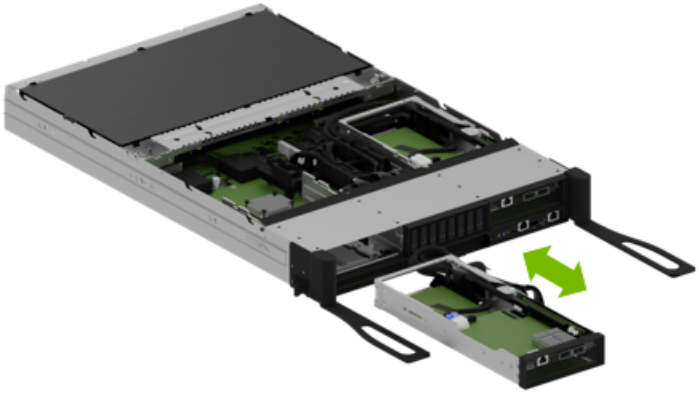
Note

Each cable is labeled to ensure it is connected to the correct position after the procedure.

12.3. Replace the BlueField-3 I/O Bay

1. After the four cables have been unplugged, press the corresponding release tab and push the bay towards the front.

2. Carefully route the cables through the opening as the BlueField-3 I/O bay is moved out of the motherboard tray.
3. Finish pulling the old I/O bay out of the motherboard tray.
4. Route the cables of the new IO bay through the opening before carefully pushing the new IO bay into the slot.

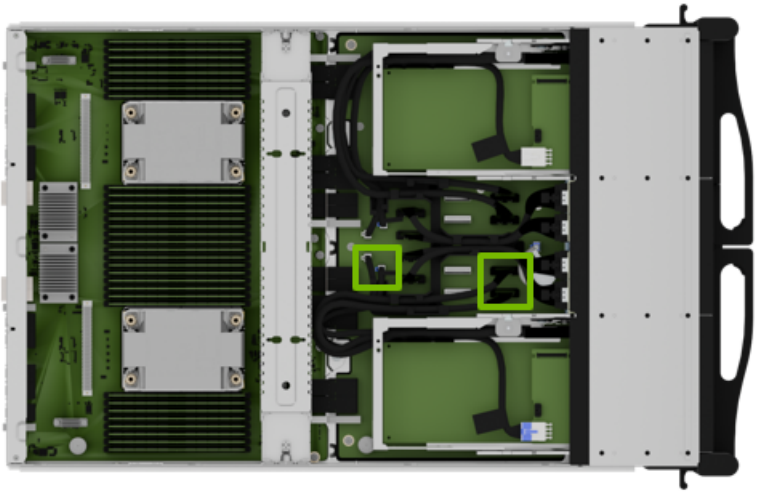


12.4. Reconnect the BlueField-3 I/O Card

1. After inserting the IO bay into the tray, ensure it locks in place, checking the tab has locked.

2. Connect the two power cables and the two PCIe cables to their correct connectors on the switchboard, following the labels on each cable end.

   This example illustrates the cabling for the left I/O bay.



To identify the correct connections, refer to this table that maps BlueField-3 card connectors to their corresponding board connectors.

BlueField-3 I/O Board	Left Slot Installation	Right Slot Installation
Cable Label P2	Board connector J9	Board connector J3
Cable Label P3	Board connector J10	Board connector J4

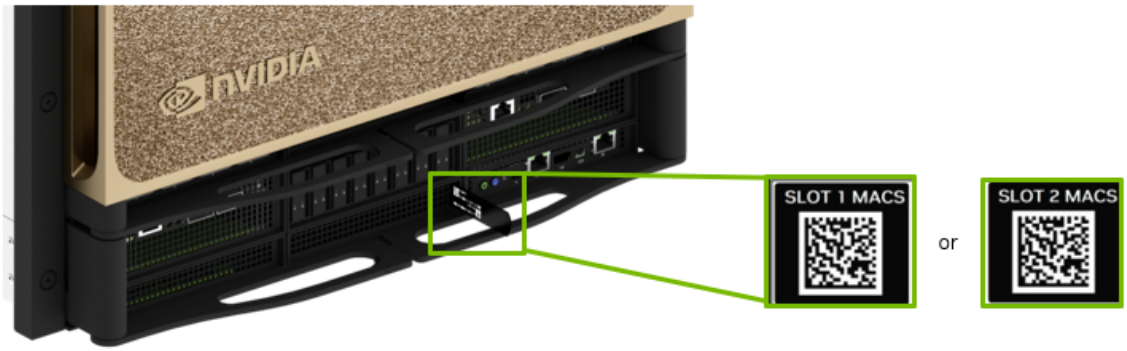
12.5. Power on the System and Confirm the Replacement

1. Insert the motherboard tray following the instructions in *Motherboard Tray - Opening and Closing*.
2. Install the updated MAC address labels on the motherboard tray.
    1. Determine whether the left PCIe or right PCIe label is needed.
    2. Pull out the motherboard tray label, remove the existing label, and apply the new one.
    3. Inform the system administrator of this change so they can update the network systems or switches accordingly.

    Choose one of the following labels to replace the label previously associated with the old BlueField-3 I/O bay.

    Note

    - If the left I/O bay was replaced, attach the Slot 1 label to the left side of the pull tab.
    - If the right I/O bay was replaced, attach the Slot 2 label to the right side of the pull tab.

3. Power on the system and log in.
4. Confirm the new BlueField-3 I/O card is healthy using the OS networking tools or the `nvsm` command.

    ```
    sudo nvsm show health
    ```

5. Use the packaging from the new card to send the failed card to NVIDIA Enterprise Support.

Chapter 13. M.2 NVMe Boot Drive Replacement

This topic describes how to replace the boot drive in the NVIDIA DGX™ B300 system.

Caution

Static Sensitive Devices: Ensure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

13.1. M.2 NVMe Boot Drive Replacement Overview

This is a high-level overview of the procedure to replace a boot drive.

1. Identify the failed M.2 drive.
2. Get a replacement M.2 from NVIDIA Enterprise Support.
3. Power off the system.
4. Unplug all motherboard cables.
5. Pull out the motherboard.
6. Remove the lid.
7. Remove the left BlueField-3 I/O bay.
8. Pull out the M.2 bay.
9. Replace the failed M.2 drive.
10. Install the M.2 bay
11. Install the left BlueField-3 I/O bay.
12. Install the motherboard lid.
13. Slide the motherboard tray into the system.
14. Connect all the cables.
15. Power on the system.

16. Rebuild the RAID volume and mount the filesystem.
17. Send the failed unit to NVIDIA Enterprise Support using the packaging provided.

13.2. Prepare for Replacement

The NVIDIA DGX™ B300 system automatically sets the failed M.2 drive offline when it detects the failure. The boot drives are mirrored, so the `mdadm` command-line utility can identify the drive to replace.

Caution

Wear an ESD strap during any procedure that involves touching electronic components.

1. Identify the failed M.2 drive using the OS tools or the `nvsm` command.

   ```
   sudo nvsm show health
   ```

   The command output indicates the drive name, `nvme0n1` or `nvme1n1`.
2. Confirm the drive name using the `mdadm` command:

   ```
   sudo mdadm -D /dev/md0
   ```

   The command output indicates the drive names and the drive state.
3. Contact NVIDIA Enterprise Support to request a replacement M.2 drive.
4. Back up any critical data to a network shared volume or other backup option.
5. When the new drive arrives, remove the failed drive from the mirrored volume.

   Run the following commands to mark the drive as failed and to remove the drive from the array.

   1. Mark the disk as failed, if it is not already marked as failed:

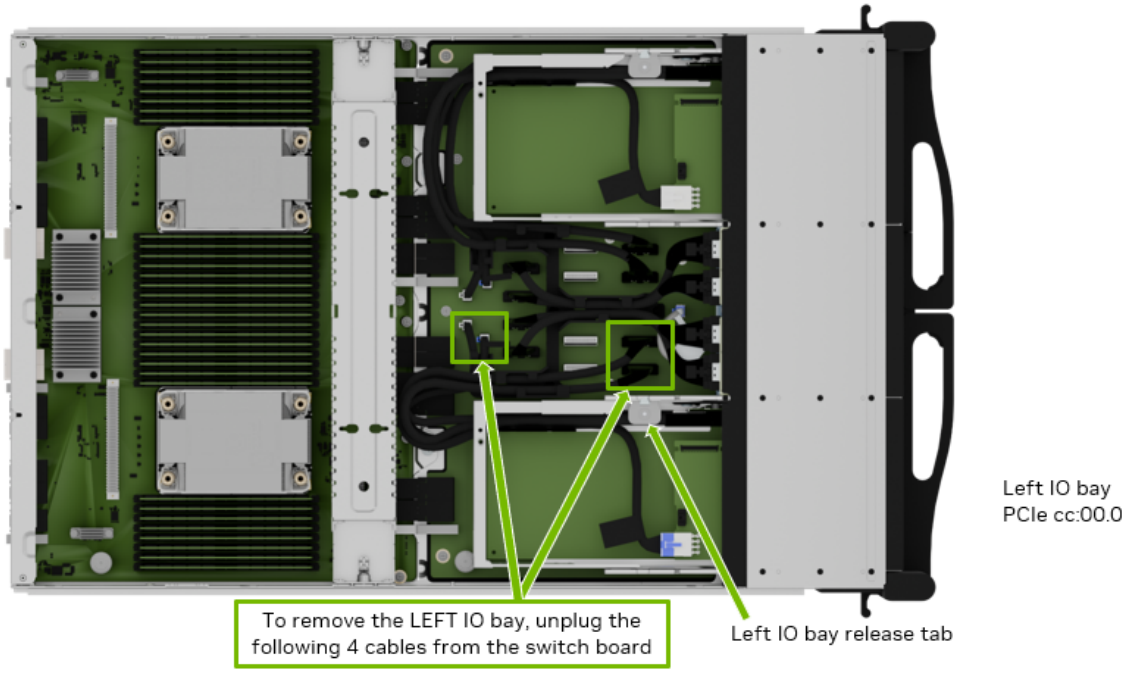
      ```
      sudo mdadm --manage /dev/md0 --fail /dev/nvme[0/1]n1
      ```

   2. Remove the failed disk from the array:

      ```
      sudo mdadm --manage /dev/md0 --remove /dev/nvme[0/1]n1
      ```
6. Power off the system.
7. Remove the left BlueField-3 I/O bay to access the M.2 NVMe boot drives below.

Note

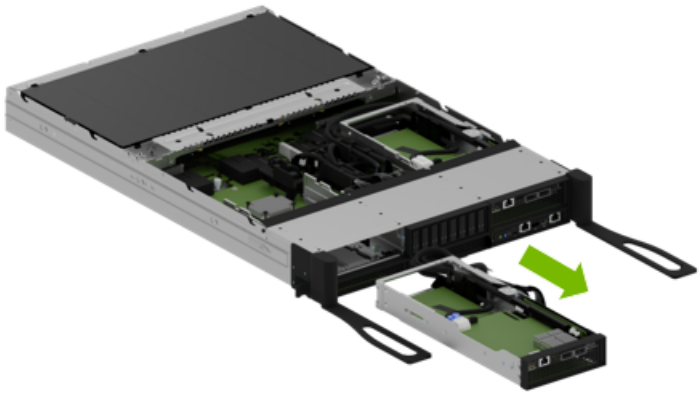
Each cable is labeled to ensure it is connected to the correct position after the procedure.



13.3. Remove the BlueField-3 I/O Bay

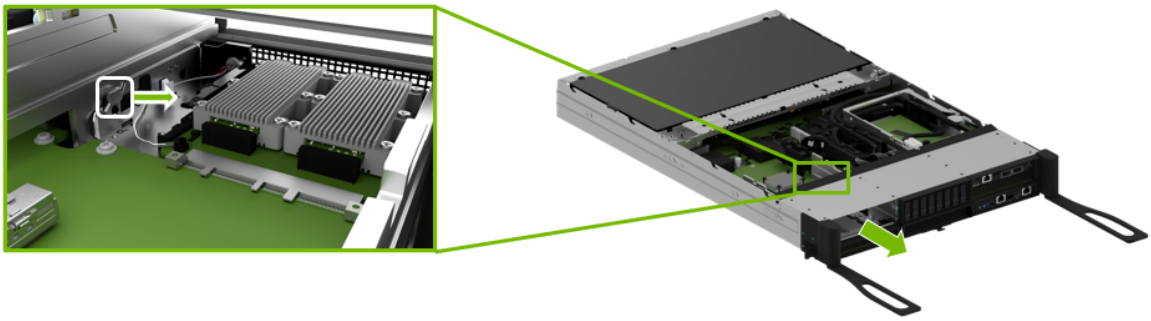
1. After the four cables have been unplugged, press the left release tab and push the bay towards the front.

2. Carefully route the cables through the opening as the I/O bay is moved out of the motherboard tray.
3. Finish pulling the old I/O bay out of the motherboard tray.
4. Ensure the motherboard tray levers remain fully extended, as shown in the illustration, so the M.2 bay can be pulled out.



13.4. Release the M2 Bay

1. Ensure the ejection levers are fully extended to prevent obstruction before removing the M.2 bay from the motherboard.



2. Release the latch on the M.2 bay as shown in the illustration and then pull the bay out the front to eject it.

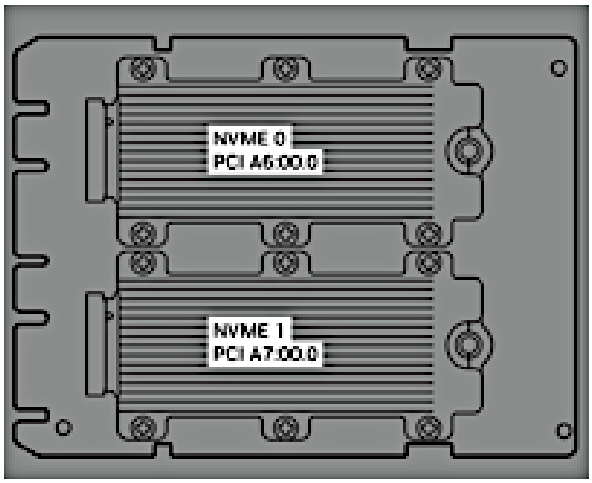
13.5. Remove the M.2 Drive

Before attempting to remove one of the M.2 NVMe drives, perform the following prerequisites:

- Determine the location ID of the faulty M.2 drive.
- Obtain the replacement M.2 drive and save the packaging for returning the faulty drive.

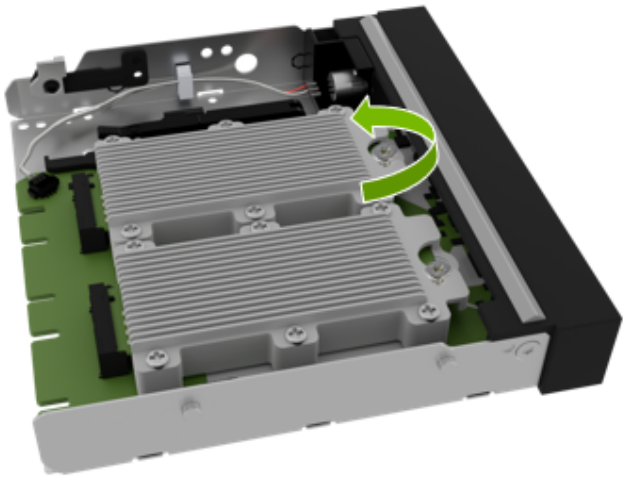
1. Identify the M.2 drive that needs to be replaced.

> **Note**
>
> The PCIe bus number corresponds to a specific drive on the board.

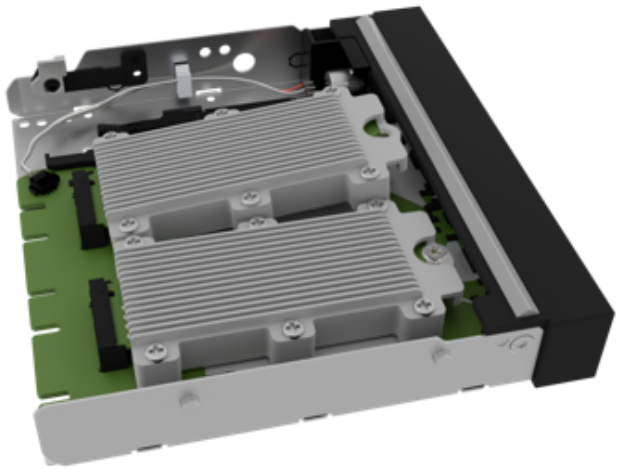


2. Remove the screw on the M.2 drive that needs to be replaced.

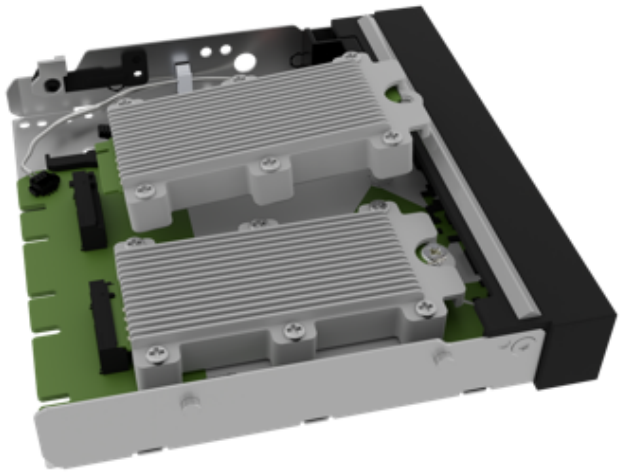
   The screw is not captive and might fall and become lost.



3. Tilt the M.2 drive slightly so it can be ejected.

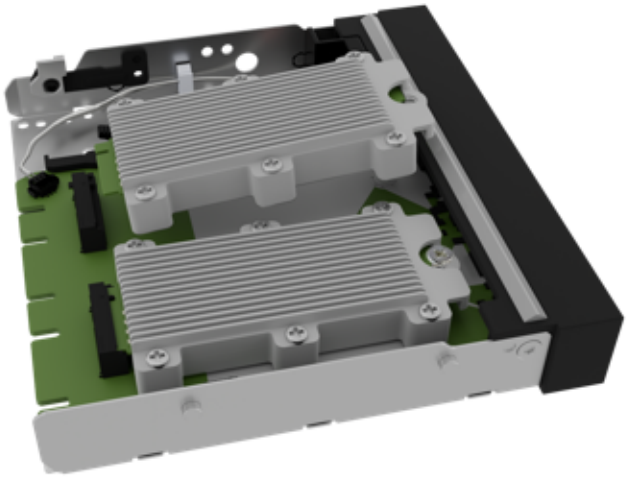


4. Pull the M.2 drive out of the connector and off the bay.

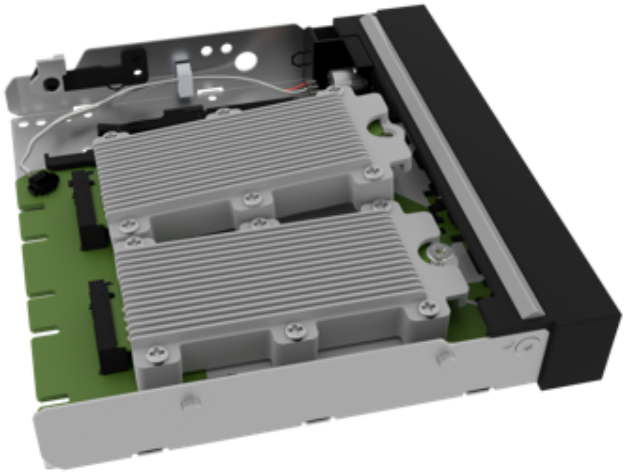


13.6. Install the New M.2 Drive

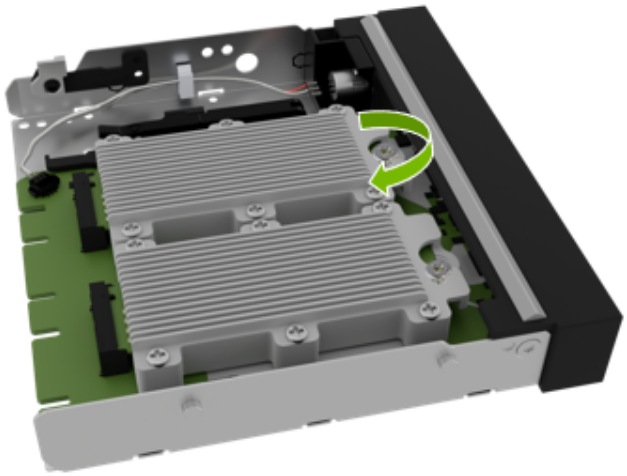
1. Insert the new M.2 drive into the connector.



2. Rest the M.2 drive on the bay.



3. Carefully attach the screw to secure the M.2 drive.



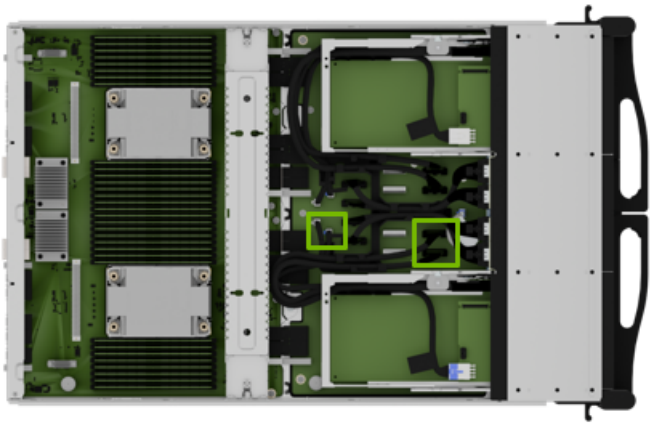
13.7. Insert the M.2 Drive Bay and Reconnect the I/O Bay

1. After the replacement is complete, ensure the ejection levers are completely open. Insert the M.2 drive bay into the corresponding lower slot until it locks in place.

2. Carefully route all the cables through the opening in the motherboard tray slot.

   After inserting the I/O bay into the tray, ensure it locks in place, checking the tab has locked.

3. Connect the two power cables and the two PCIe cables to their correct connectors on the switchboard, following the labels on each cable end.



To identify the correct connections, refer to this table that maps BlueField-3 card connectors to their corresponding board connectors.

BlueField-3 I/O Board	Left Slot Installation	Right Slot Installation
Cable Label P2	Board connector J9	Board connector J3
Cable Label P3	Board connector J10	Board connector J4

13.8. Integrate the New Drive and Complete the Installation

1. Insert the motherboard following the instructions in *Motherboard Tray - Opening and Closing*.
2. Power on the system and log in.
3. Rebuild the RAID1 (mirror) volume on the boot drives.

4. Confirm the system is healthy by running the `nvsm` command.

```
sudo nvsm show health
```

5. Send the failed M.2 drive to NVIDIA Enterprise Support using the packaging provided.

Note

If your organization purchased a media retention policy, you might be able to keep the failed drives for destruction. Check with NVIDIA Enterprise Support on the status of the policy for specifics.

Chapter 14. M.2 Boot Drive Assembly Replacement

When you must replace both M.2 operating system drives, a replacement assembly, which includes both M.2 NVMe drives, should be ordered.

14.1. M.2 Boot Drive Assembly Replacement Overview

This is a high-level overview of the procedure to replace the boot drive riser assembly.

> **Note**
>
> If your organization purchased a media retention policy, you might be able to keep the failed drives for destruction. Check with NVIDIA Enterprise Support on the status of the policy for specifics.

1. Identify the failed M.2 boot drive assembly.
2. Get a replacement from NVIDIA Enterprise Support.
3. Power off the system.
4. Label all cables and unplug them from the motherboard tray.
5. Pull out the motherboard tray.
6. Remove the lid.
7. Remove the left BlueField-3 IO bay.
8. Pull out the M.2 bay.
9. Install the new M.2 bay.
10. Install the left BlueField-3 I/O bay.
11. Install the motherboard lid.
12. Slide the motherboard tray into the system.
13. Connect all the cables using the labels as a reference.
14. Power on the system and reinstall the system.
15. Ship the failed unit to NVIDIA Enterprise Support using the packaging provided.

14.2. Preparing the System for Replacement

This failure is hard to diagnose because the system does not boot as both boot drives are unavailable.

Caution

Wear an ESD strap during any procedure that involves touching electronic components.

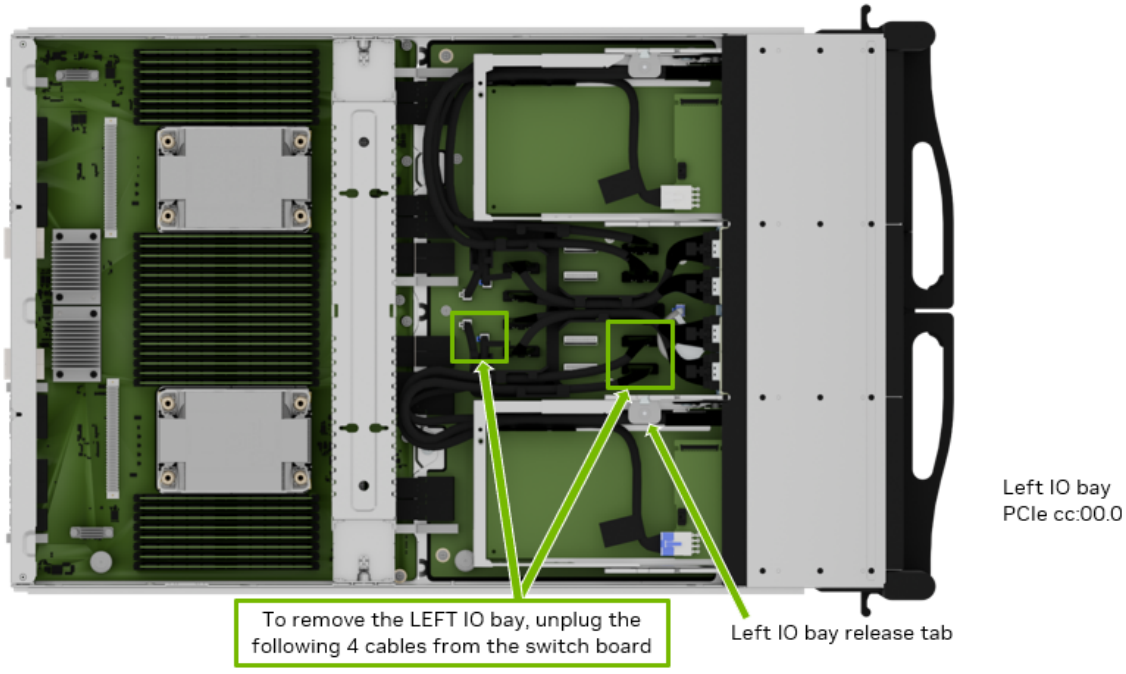
1. Identify the failed M.2 drive assembly using the OS tools or the `nvsm` command.

```
sudo nvsm show health
```

2. Contact NVIDIA Enterprise Support to request a replacement.
3. After the replacement arrives from NVIDIA, power off the system.
4. Pull out the motherboard tray following the instructions in *Motherboard Tray - Opening and Closing*.
5. Remove the left BlueField-3 I/O bay to access the M.2 NVMe boot drives below.

Note

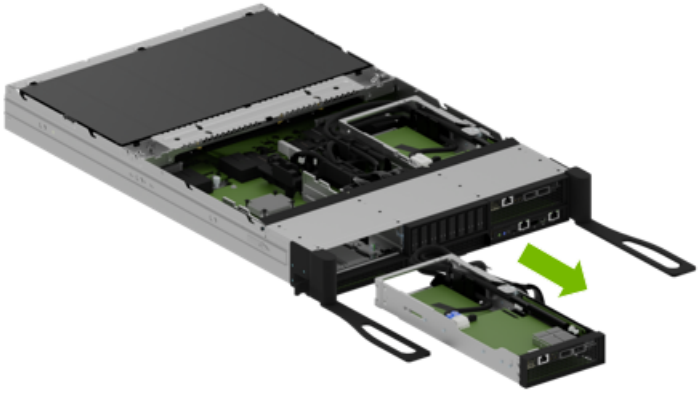
Each cable is labeled to ensure it is connected to the correct position after the procedure.



14.3. Remove the BlueField-3 I/O Bay

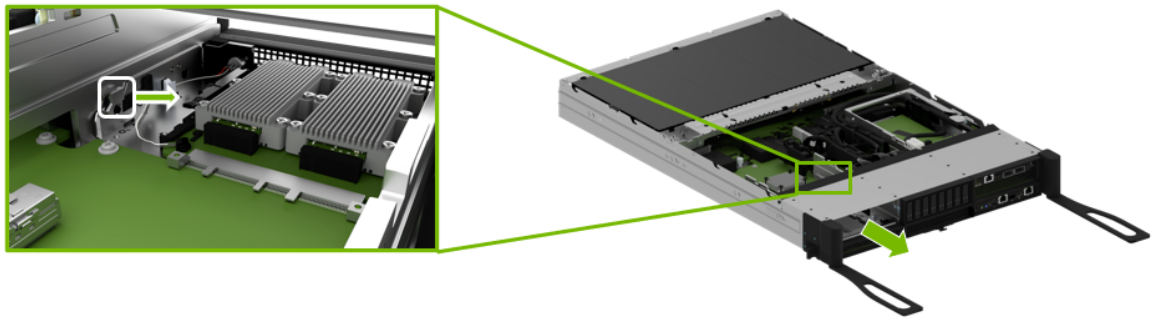
1. After the four cables have been unplugged, press the left release tab and push the bay towards the front.

2. Carefully route the cables through the opening as the I/O bay is moved out of the motherboard tray.
3. Finish pulling the old I/O bay out of the motherboard tray.
4. Ensure the motherboard tray levers remain fully extended, as shown in the illustration, so the M.2 bay can be pulled out.



14.4. Release the M2 Bay

1. Ensure the ejection levers are fully extended to prevent obstruction before removing the M.2 bay from the motherboard.



2. Release the latch on the M.2 bay as shown in the illustration and then pull the bay out the front to eject it.

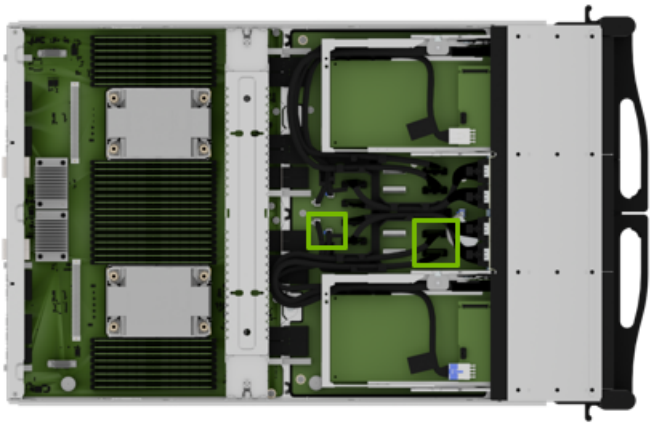
14.5. Insert the M.2 Drive Bay and Reconnect the I/O Bay

1. After the replacement is complete, ensure the ejection levers are completely open. Insert the M.2 drive bay into the corresponding lower slot until it locks in place.

2. Carefully route all the cables through the opening in the motherboard tray slot.

   After inserting the I/O bay into the tray, ensure it locks in place, checking the tab has locked.

3. Connect the two power cables and the two PCIe cables to their correct connectors on the switchboard, following the labels on each cable end.



To identify the correct connections, refer to this table that maps BlueField-3 card connectors to their corresponding board connectors.

BlueField-3 I/O Board	Left Slot Installation	Right Slot Installation
Cable Label P2	Board connector J9	Board connector J3
Cable Label P3	Board connector J10	Board connector J4

14.6. Reinstall the System and Complete the Procedure

1. Insert the motherboard tray following the instructions in *Motherboard Tray - Opening and Closing*.
2. Power on the system and log in.
3. Reinstall the system from a USB drive, using the BMC or booting it from BCM.

   Refer to the instructions in the *DGX OS 7 User Guide*.
4. Confirm the system is healthy by running the `nvsm` command.

   ```
   sudo nvsm show health
   ```
5. Send the failed M.2 drive bay to NVIDIA Enterprise Support using the packaging provided.

Chapter 15. Updating ConnectX-8 and BlueField-3 Firmware

After replacing or installing the ConnectX-8 and BlueField-3 cards, ensure the cards are running the latest firmware.

1. Navigate to the NVIDIA Networking Firmware Downloads page.
   - For ConnectX-8, from the **ConnectX Adapter Cards Firmware** table, click the **InfiniBand/Ethernet** network protocol.
   - For NVIDIA BlueField-3, from the **NVIDIA BlueField DPU Firmware** table, click the **InfiniBand/Ethernet** network protocol.
2. Choose the OPN (ordering part number) and PSID options, as shown in the following table:

Adapter Card	OPN	PSID
ConnectX-8	MCX750500B-0D00 (TBD)	MT_0000000891 (TBD)
BlueField-3	900-9D3B6-00CN-A	MT_0000000883

> **Note**
>
> PSID (Parameter-Set Identification) is a 16-ascii character string embedded in the firmware image, which provides a unique identification for the configuration of the firmware.

3. Download the firmware for both OPN options.
4. Transfer the firmware ZIP file to the DGX system and extract the archive.
5. Update the firmware on the cards that are used for cluster communication:

```
sudo mlxfwmanager -d ed:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d 97:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d dc:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d b9:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d 17:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
```

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```
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d 70:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d 39:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
sudo mlxfwmanager -d 5f:00.0 -i fw-ConnectX8-rel-40_46_3052-900-9X85E-
↪00NX-MC0_Ax-UEFI-14.39.14-FlexBoot-3.8.100.signed.bin
```

6. Update the firmware on the cards that are used for storage communication:

```
sudo mlxfwmanager -d cc:00.0 -i fw-BlueField-3-rel-32.43.2402-900-9D3B6-
↪00CN-A_Ax-NVME-20.4.1-UEFI-21.4.13-UEFI-22.4.14-UEFI-14.33.12-FlexBoot-
↪3.7.300.signed.bin
sudo mlxfwmanager -d 53:00.0 -i fw-BlueField-3-rel-32.43.2402-900-9D3B6-
↪00CN-A_Ax-NVME-20.4.1-UEFI-21.4.13-UEFI-22.4.14-UEFI-14.33.12-FlexBoot-
↪3.7.300.signed.bin
```

7. Perform an AC power cycle on the system for the firmware update to take effect.

   Wait for the operating system to boot.

8. After the system starts, log in and confirm the firmware versions are all the same:

```
$ cat /sys/class/infiniband/mlx5_*/fw_ver
```

For more information on the following topics, refer to

- NVIDIA BlueField-3 DPU NIC Firmware Release Notes
- NVIDIA BlueField-3 DPU Controller User Manual
- BlueField DPUs/SuperNICs and DOCA

Chapter 16. Motherboard Tray Battery Replacement

Caution

Static Sensitive Devices: Be sure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

16.1. Motherboard Tray Battery Replacement Overview

This is a high-level overview of the procedure to replace the motherboard tray battery of the NVIDIA DGX™ B300 system.

1. Confirm the battery is not functional.
2. Purchase a CR2032 battery.
3. Power off the system.
4. Label all motherboard cables and unplug them.
5. Slide out the motherboard tray.
6. Remove the lid.
7. Remove the motherboard air baffle.
8. Remove the motherboard stiffener.
9. Replace the battery.
10. Install the motherboard stiffener.
11. Install the motherboard air baffle.
12. Install the motherboard lid.
13. Slide the motherboard tray into the system.
14. Connect all the cables.
15. Power on the system and update the date in the BIOS and the BMC.

16.2. Identify a Failed Battery

When the battery fails, some of these symptoms might occur:

- `Invalid configuration` will appear on your screen.
- Setup appears on your screen before booting.
- `Press F1 to continue` appears on the console.
- A Clock Error or Clock message appears on your screen.
- The system clock loses time and date.

Contact NVIDIA Enterprise Support to confirm that the battery is the right component to replace.

NVIDIA does not provide the CR2032 battery, which can be found at a convenience store. After you purchase a battery, perform the following procedures.

16.3. Prepare the System for Replacement

Caution

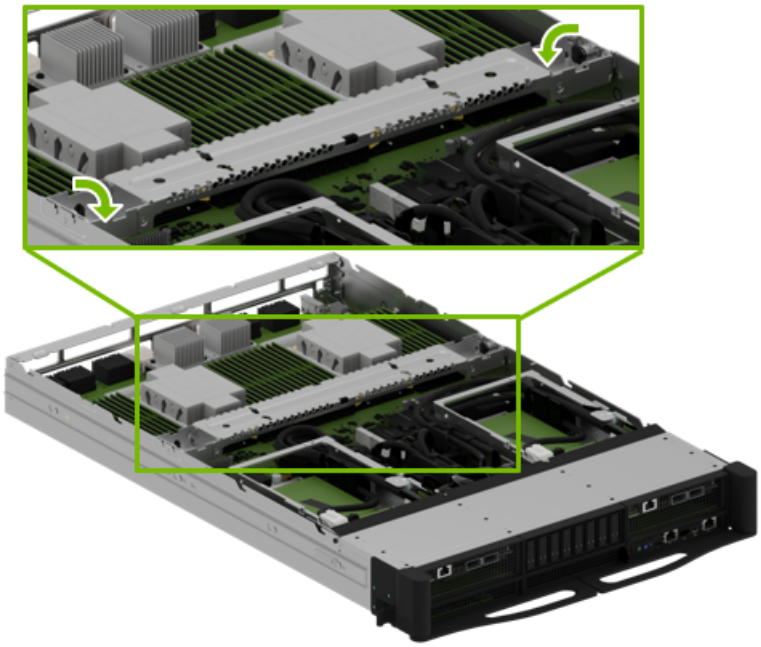
Wear an ESD strap during any procedure that involves touching electronic components.

1. Power off the system.
2. Pull the motherboard from the chassis and remove the lid and the air baffle.

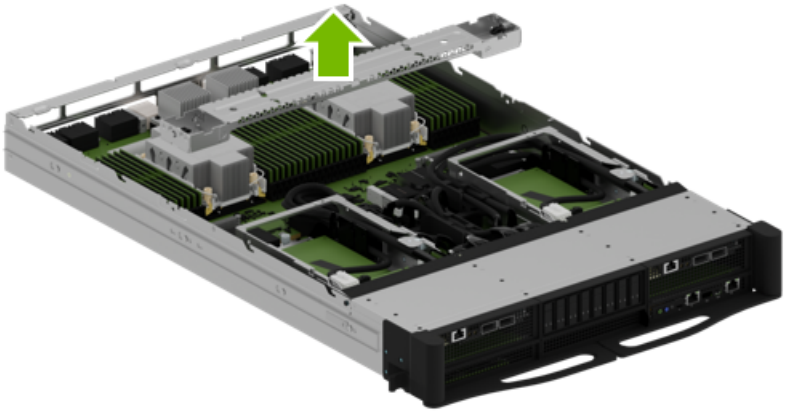
   For more information, refer to *Motherboard Tray - Removal and Installation*.

16.4. Remove the Motherboard Brace

1. Unlock the motherboard brace by turning the locking pins 90˚.

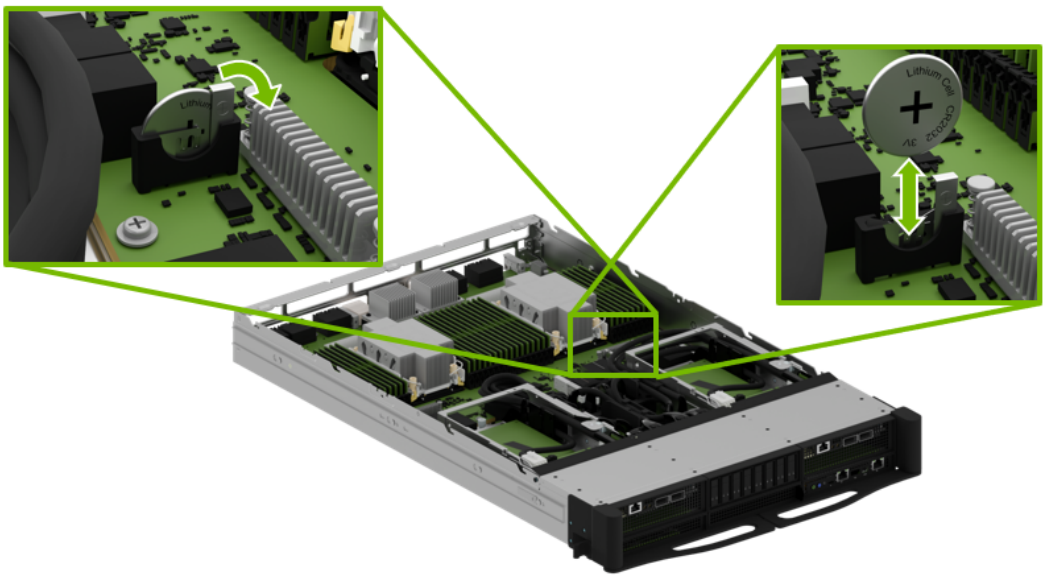


2. Lift the brace off the motherboard.



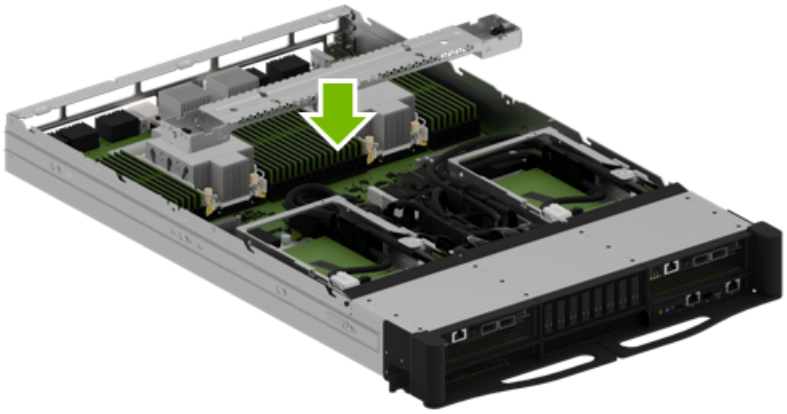
16.5. Replace the Battery

1. Release the old battery by unlatching it from the holder.
2. Replace it with the new battery, ensuring the positive side faces to the right. Make sure the new battery locks into place.

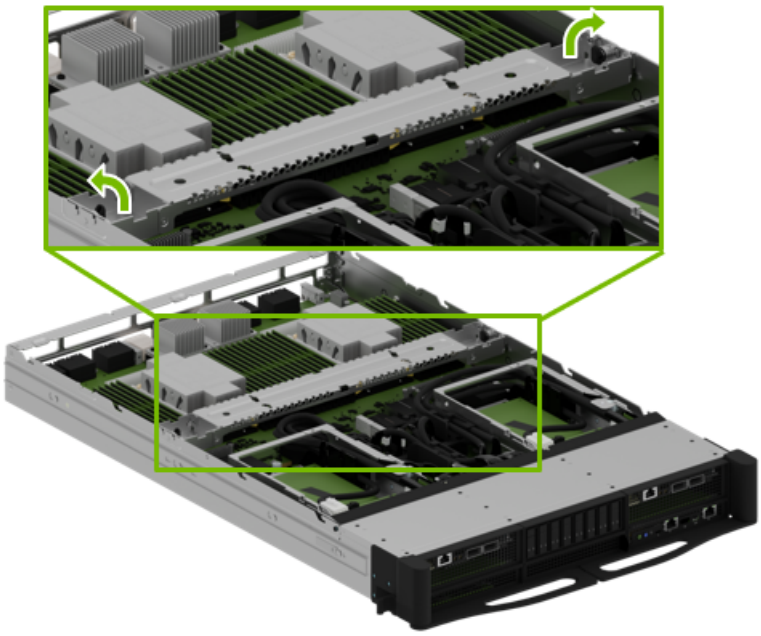


16.6. Install the Motherboard Brace

1. Position the motherboard brace in its slot.



2. Secure the brace by turning the pins on either side 90° until they lock, as shown below:



16.7. Power On the System and Confirm the Replacement

1. Install the air baffle and the lid.

   Refer to *Motherboard Tray - Removal and Installation* for more information.
2. Return the motherboard to its regular position.
3. Connect all the cables and power cords to the motherboard tray.
4. Power on the system.
5. To restore the date on the system, manually set the date using NTP:

   ```
   sudo date [MMDDhhmm[[CC]YY][.ss]]
   ```
6. Set the system's date and time to match the hardware real-time clock:

   ```
   sudo hwclock -w
   ```
7. Reset the BMC:

   ```
   sudo ipmitool mc reset cold
   ```
8. Log in and run `nvsm show health`:

   ```
   sudo nvsm show health
   ```
9. Confirm that the time and date on the system are updated.

Chapter 17. DC-SCM Module Replacement

This topic describes how to replace the DC-SCM module in the NVIDIA DGX™ B300 system.

Caution

Static Sensitive Devices: Ensure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

17.1. DC-SCM Module Replacement Overview

This is a high-level overview of the procedure to replace a DC-SCM module.

1. Confirm the DC-SCM is not functional.
2. Get a replacement DC-SCM from NVIDIA Enterprise Support.
3. Power off the system.
4. Unplug all motherboard cables.
5. Pull out the motherboard.
6. Remove the lid.
7. Remove the right BlueField-3 I/O bay.
8. Pull out the DC-SCM bay.
9. Install the new DC-SCM module.
10. Install the right BlueField-3 I/O bay.
11. Install the motherboard lid.
12. Slide the motherboard tray into the system.
13. Connect all the cables.
14. Power on the system and confirm the DC-SCM is functional.
15. Send the failed unit to NVIDIA Enterprise Support using the packaging provided.

17.2. Prepare for Replacement

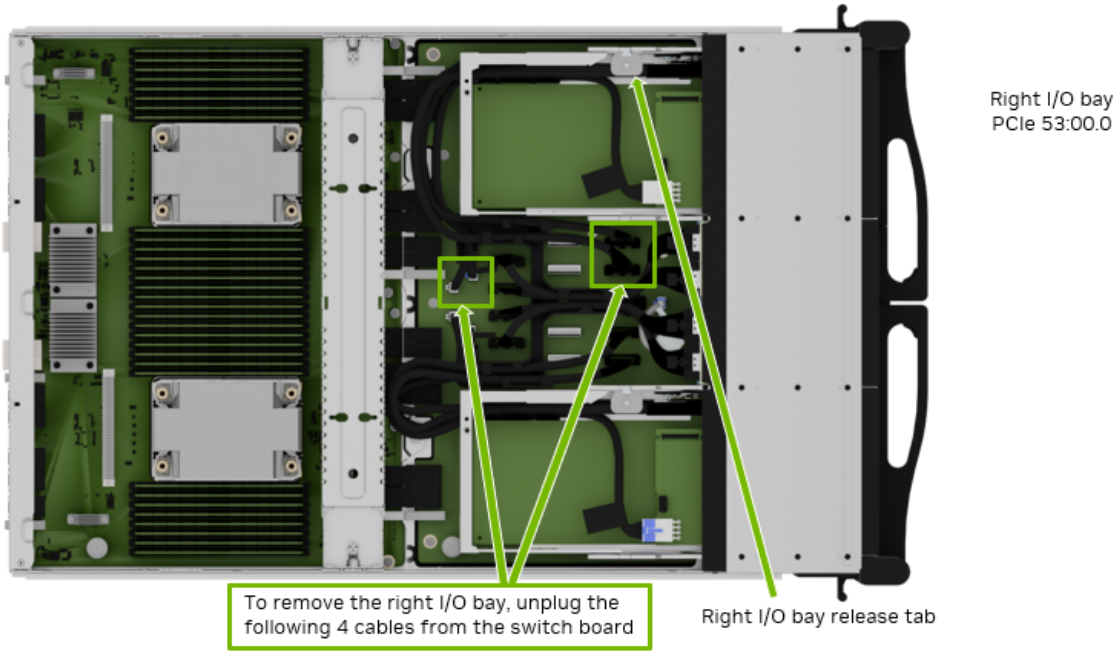
Caution

Wear an ESD strap during any procedure that involves touching electronic components.

1. Contact NVIDIA Enterprise Support to help triage if the DC-SCM module is not functioning.
2. When the new part arrives, power off the system.
3. Follow the instructions to pull out the motherboard and remove the lid in *Motherboard Tray - Removal and Installation*.
4. Remove the right BlueField-3 I/O bay to access the DC-SCM module below.

Note

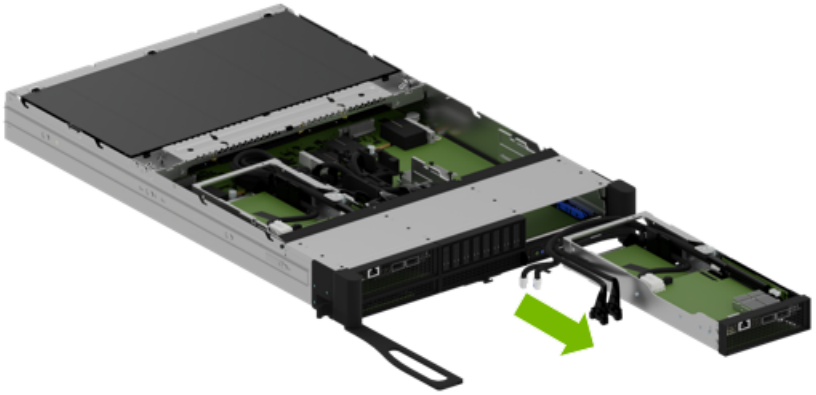
Each cable is labeled to ensure it is connected to the correct position after the procedure.



17.3. Remove the BlueField-3 I/O Bay

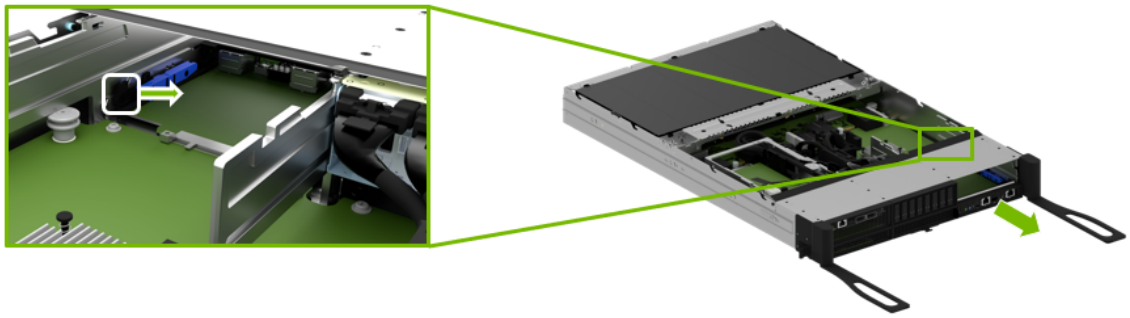
1. After the four cables have been unplugged, press the right release tab and push the bay towards the front.

2. Carefully route the cables through the opening as the I/O bay is moved out of the motherboard tray.
3. Finish pulling the old I/O bay out of the motherboard tray.
4. Ensure the motherboard tray levers remain fully extended, as shown in the illustration, so the DC-SCM module can be pulled out.



17.4. Remove the DC-SCM Module

1. Ensure the ejection levers are fully extended to prevent obstruction before removing the DC-SCM module from the motherboard.



2. Release the latch on the DC-SCM module as shown in the illustration and then pull the bay out the front to eject it.

17.5. Insert the DC-SCM Module into the Tray

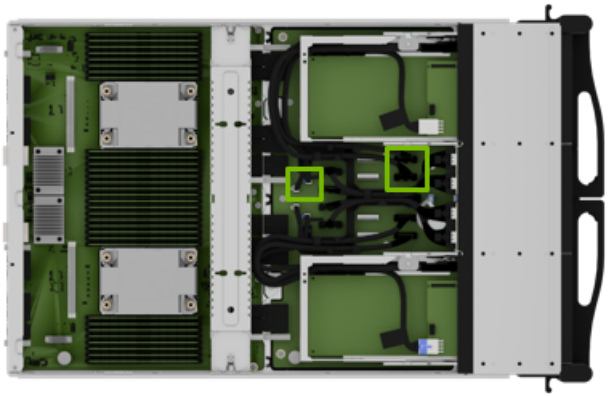
1. To install the new DC-SCM, ensure the ejection levers are fully open. Insert the DC-SCM into the lower slot until it locks into place.

17.6. Reconnect the I/O Bay

1. Route all cables carefully through the opening in the motherboard tray slot.

   After inserting the I/O bay into the tray, ensure it locks in place by checking that the tab is secure.

2. Connect the two power cables and the two PCIe cables to their correct connectors on the switchboard, following the labels on each cable end.



To identify the correct connections, refer to this table that maps BlueField-3 card connectors to their corresponding board connectors.

BlueField-3 I/O Board	Left Slot Installation	Right Slot Installation
Cable Label P2	Board connector J9	Board connector J3
Cable Label P3	Board connector J10	Board connector J4

17.7. Integrate the New DC-SCM and Complete the Installation

1. Insert the motherboard following the instructions in *Motherboard Tray - Removal and Installation*.
2. Power on the system.
3. Update the system firmware to the latest version.
4. Confirm the system is healthy by running the `nvsm` command.

```
sudo nvsm show health
```

5. Send the failed DC-SCM module to NVIDIA Enterprise Support using the packaging provided.

Chapter 18. Trusted Platform Module Replacement

Caution

Static Sensitive Devices: Be sure to observe best practices for electrostatic discharge (ESD) protection. Ensure that personnel and equipment are connected to a common ground, such as wearing a wrist strap connected to the chassis ground and placing components on static-free work surfaces.

18.1. Trusted Platform Module Replacement Overview

This is a high-level overview of the procedure to replace the trusted platform module (TPM) on the NVIDIA DGX™ B300 system.

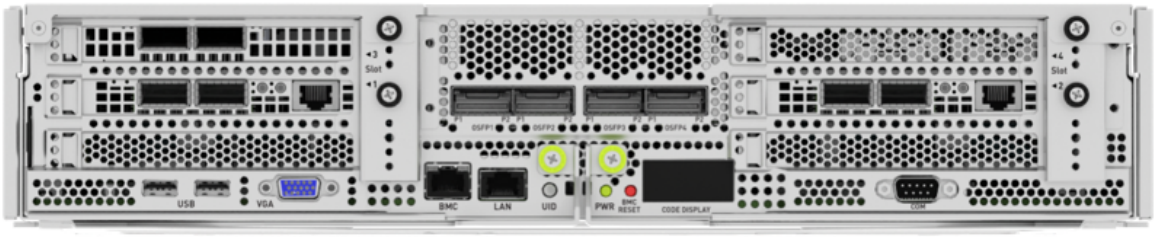
1. If enabled, disable drive encryption.
2. Shut down the system.
3. Label all motherboard tray cables and unplug them.
4. Slide out the motherboard tray.
5. Remove the tray lid and the DIMM air baffle.
6. Lift the OSFP carrier module to access the TPM.
7. Replace the TPM on the motherboard.
8. Install the OSFP carrier module.
9. Install the DIMM air baffle and motherboard tray lid.
10. Slide the motherboard tray into the system.
11. Plug in all cables using the labels as a reference.
12. Power on the system.
13. Confirm the system is healthy by running `nvsm show health`.
14. If the data drives need to be protected, enable encryption.

18.2. Prepare the System for Replacement

1. Obtain a new TPM from NVIDIA.
2. If data drives are encrypted, the tpm2 OS package is installed, and the TPM is enabled in SBIOS, disable encryption:

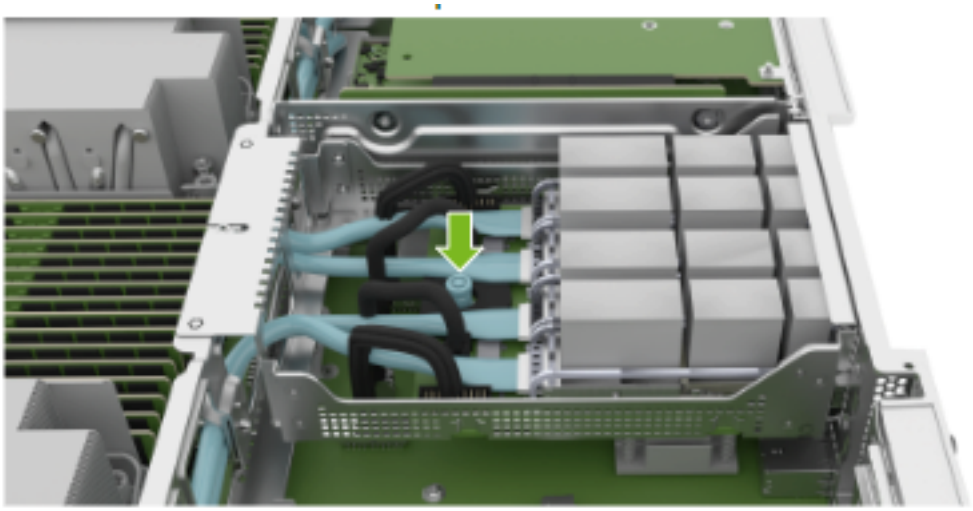
   ```
   sudo nv-disk-encrypt disable
   ```

3. Shut down the system.
4. Label all network, monitor, and USB cables
5. Remove the motherboard tray. Refer to *Motherboard Tray - Removal and Installation* for more information.
6. Remove the DIMM air baffle.



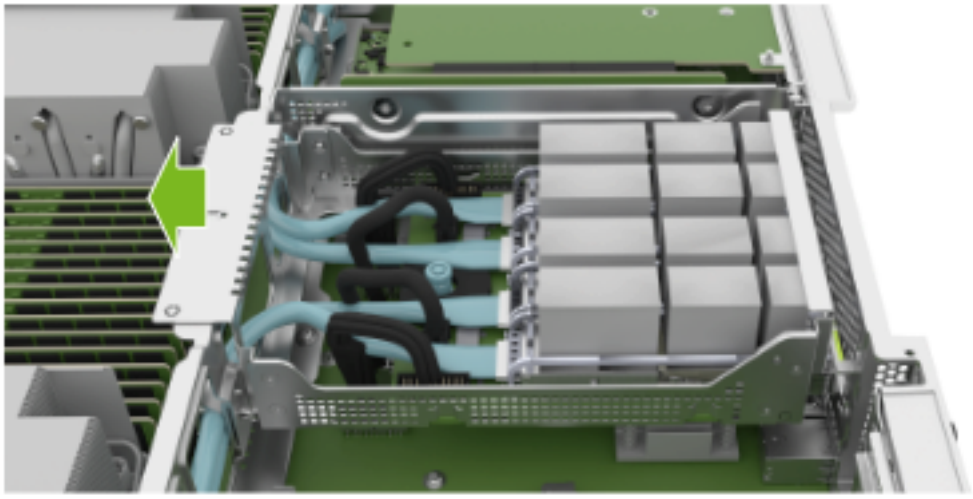
18.3. Replace the TPM Module

1. Locate the OSFP carrier module on the motherboard, as indicated by the green arrow in the following figure:

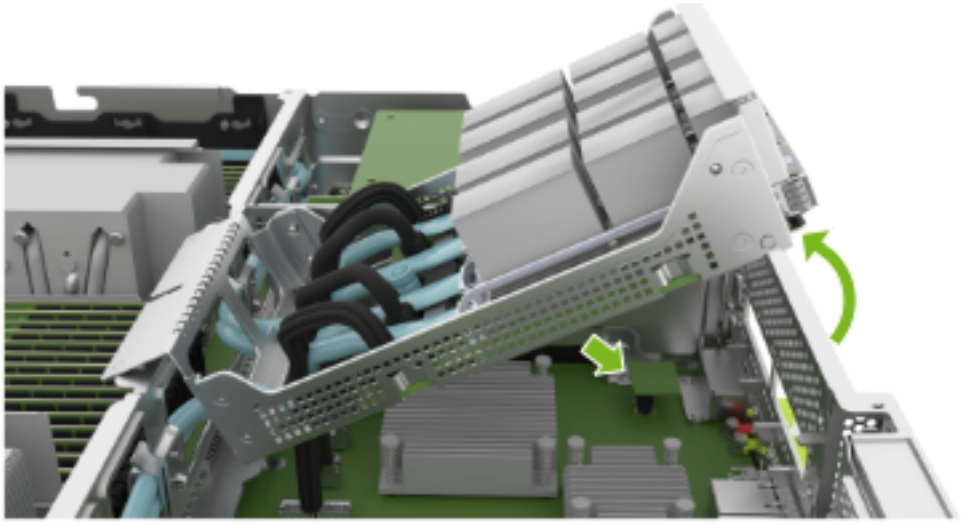


2. Move the OSFP carrier module toward the DIMMs, as shown in the following figure.

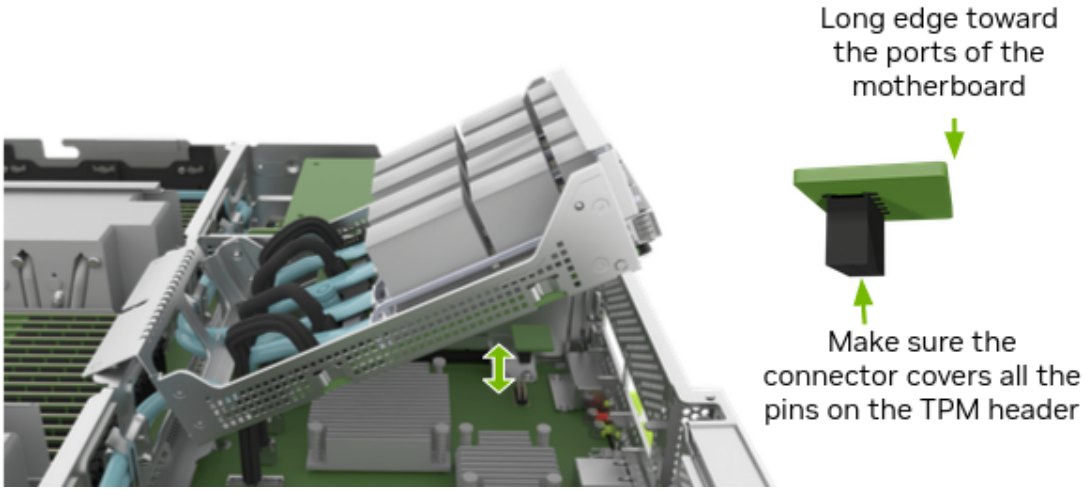
   Ensure the OSFP cages at the rear of the system do not interfere with the tray sheet metal before you tilt the carrier:



3. Rotate the OSFP carrier module to access the TPM, as shown in the following diagram:

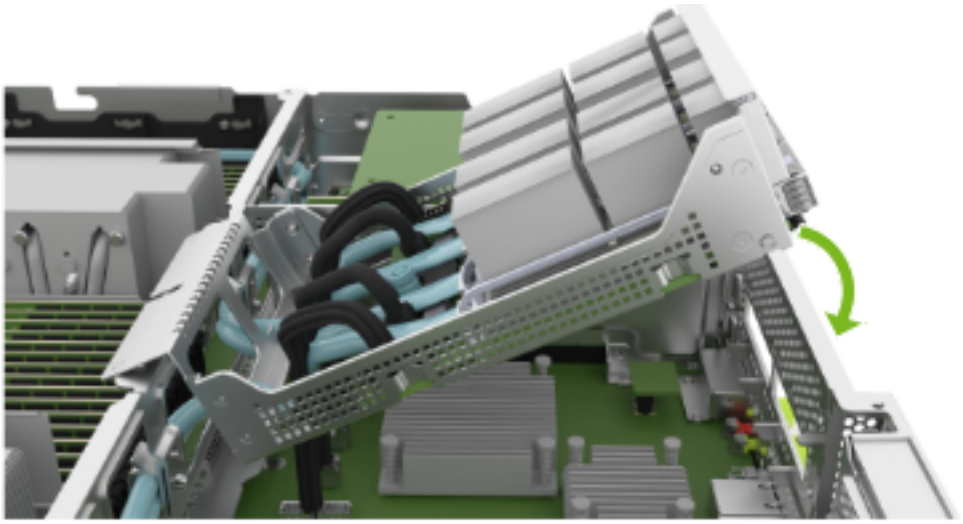


4. Replace the TPM. Ensure that you position the TPM in the same direction as the original.

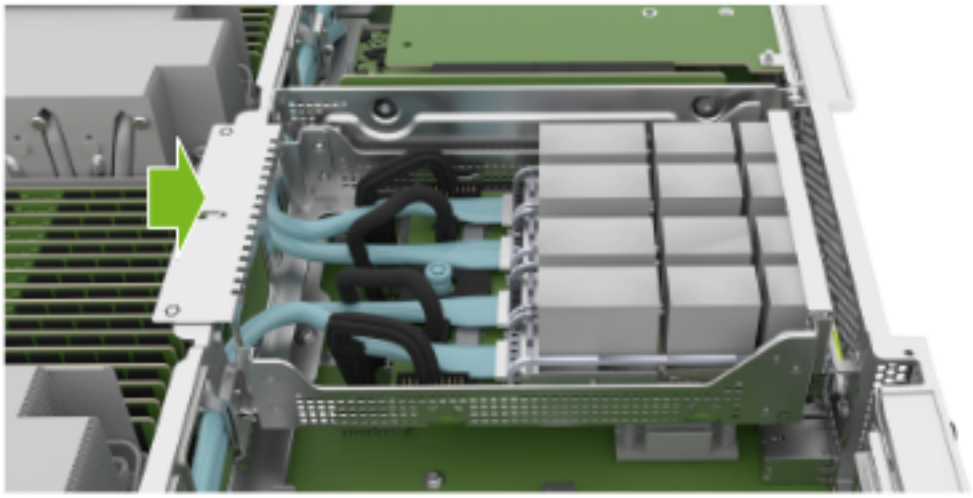


18.4. Install the OSFP Carrier Module

1. Rotate the OSFP carrier module to return it to its original position. While you rotate the module, pull the module toward the DIMMs so that the ports do not interfere with the motherboard tray frame:



2. Move the OSFP carrier toward the outside of the tray so that the OSFP cages go through the openings on the sheet metal:



18.5. Finalize the TPM Replacement

1. Install the air baffles, close the motherboard, and install the tray in the chassis. Refer to *Motherboard Tray - Removal and Installation* for more information.
2. Plug in all cables.
3. Install all power cords.
4. Power on the system.

5. If data drives were encrypted, the tpm2 OS package was installed, and the TPM was enabled in SBIOS before the replacement, enable encryption:

```
sudo nv-disk-encrypt init -g -r -k <your vault password>
```

6. Use the `nvsm` command to confirm the system is healthy:

```
sudo nvsm show health
```

Chapter 19. Rack Mount Kit Replacement

This is a high-level overview of the procedure to replace a rack mount kit on the NVIDIA DGX™ B300 system.

1. Remove the two sets of front screws and washers.
2. Remove the two sets of rear screws and washers.
3. Use the clips to release the front and rear from each side of the kit.
4. Remove the cage nuts from the rack posts.
5. Install on the new rack by using the clips to position the kit at the right height.
6. Use the template to install the cage nuts on the right.
7. Use the four sets of screws and washers to secure the rack mount kit in place.

19.1. Rack Mount Kit Description

The rack mount kit acts as a shelf in the rack; it does not allow the system to be moved once installed. All components are serviceable from the front or rear.

This rack mount kit can extend lengthwise, and the distance between the posts ranges from 29 to 35 in (0.74-0.9 m).

Note

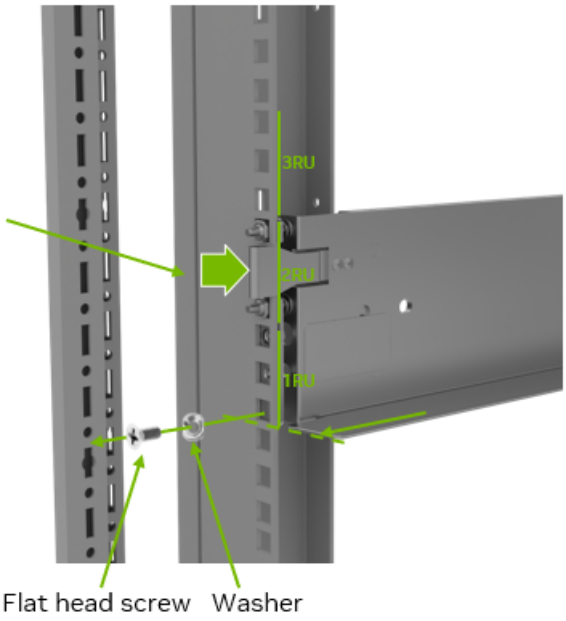
The lip at the bottom will hold the bottom of the system.

- These prongs enter the holes of the rack (square or round).
- Metal plates keep the rack kit in place.
- Secure the rack mount kit to the rack with the provided screws.
- Identify the front of the rackmount by locating the embossed labels, and note the black paint that marks the rear section.

1. On the lower part, a lip labeled 1, when installed in a rack, will hold the system in place like a shelf.
2. On either end, spring-loaded prongs, as labeled 2 on the diagram, fit into the rack's holes (either square or round).
3. Together with the metal clips labeled 3, they hold the rack mount kit in place for ease of installation.
4. Labeled with a number 4 are the holes where the screws that secure the rack kit in place must be installed.
5. Label 5 identifies where that part of the rack mount kit should be installed in the rack.

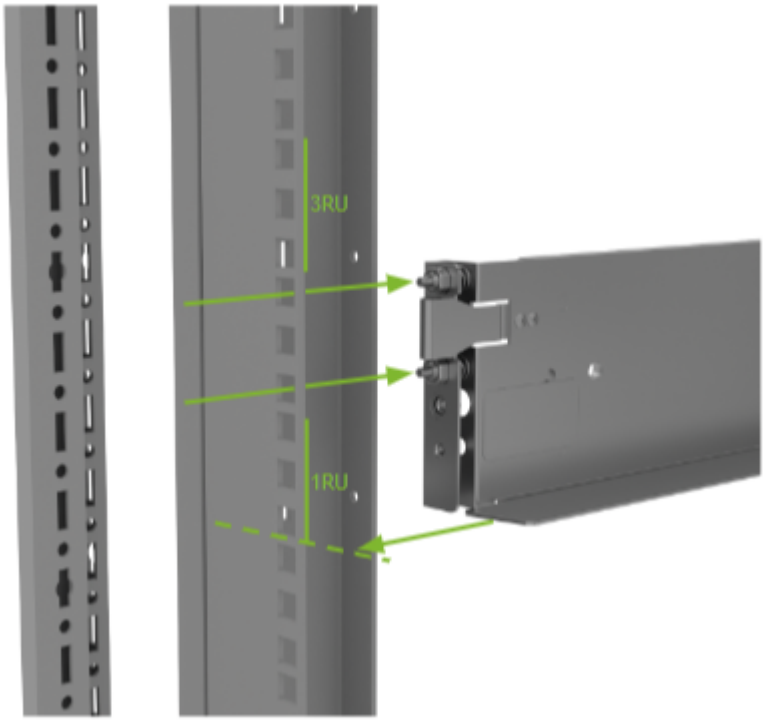
19.2. Remove Rack Mount Kit - Front

1. To remove the rack mount kit, first remove the flat head screw and the washer, and keep them in a safe place.
   - Push on the clip to release the rack mount kit rail from the post, and push it towards the back while holding the rail.



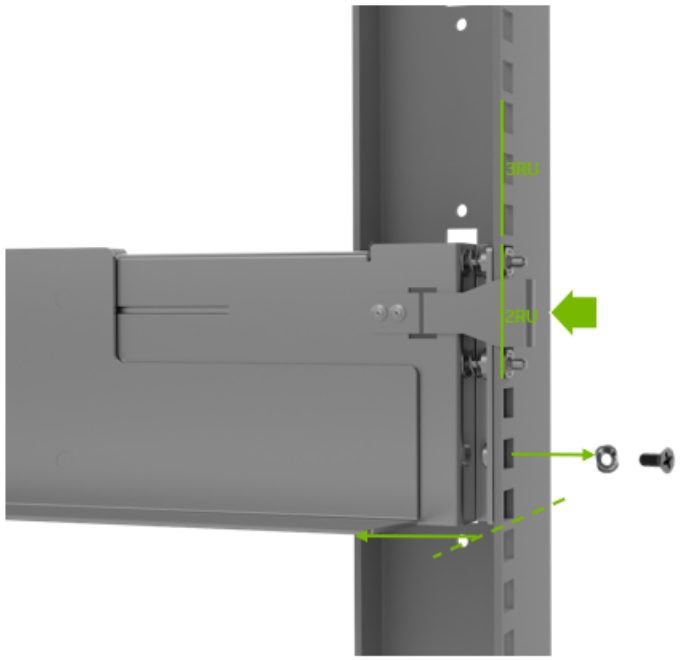
2. Pull on the clip to release the rack mount kit from the post so it can slide back and the prongs can be released from the post.
   1. Remove the rail from the front post and hold it in place while the rear is released.

2. Remove all cage nuts from the rack posts so they can be used during installation.

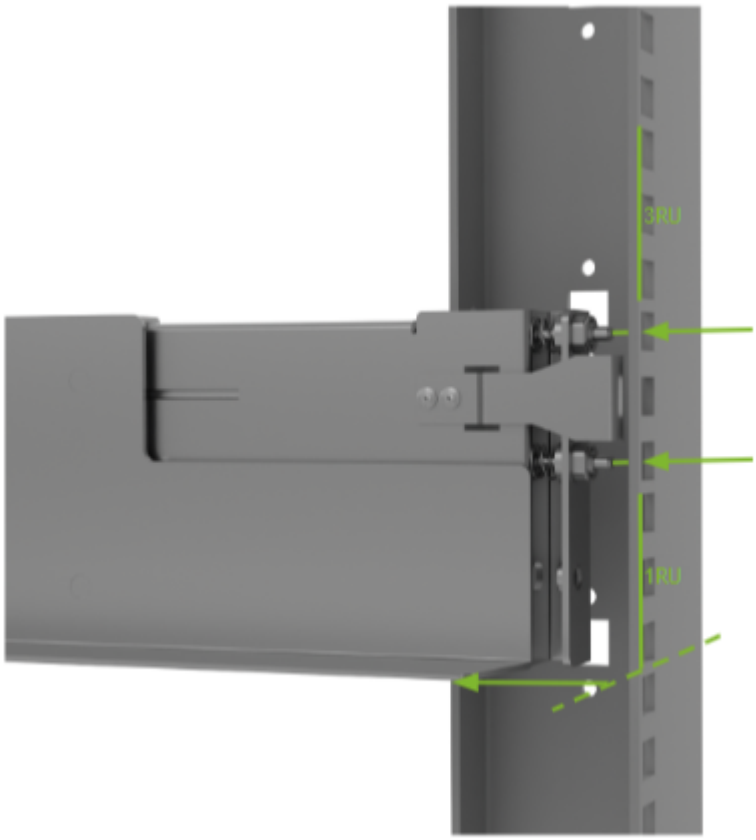


19.3. Remove Rack Mount Kit - Rear

1. To release the rear of the rack mount kit, remove the black screw and washer from the rear of the system.



2. Push the clip to release the rack mount kit rail from the post, then push the rail toward the front while holding the rail.



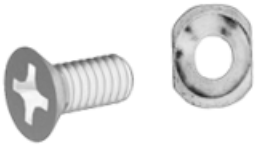
19.4. Confirm Necessary Screws and Washers

These items are in the rack mount kit box with the rack mount kit. All these components should have been removed from the previous installation.

> **Note**
>
> The front screws are different from the screws used for the back of the rack mount kit. If the correct screws are not used in the front, the server will not be flushed when pushed against the rack and it will be difficult to secure the other eight captive screws.

Ensure all cage nuts are removed from the rack as they will be needed to install the rack mount kit at its new location.

Front screws and washers



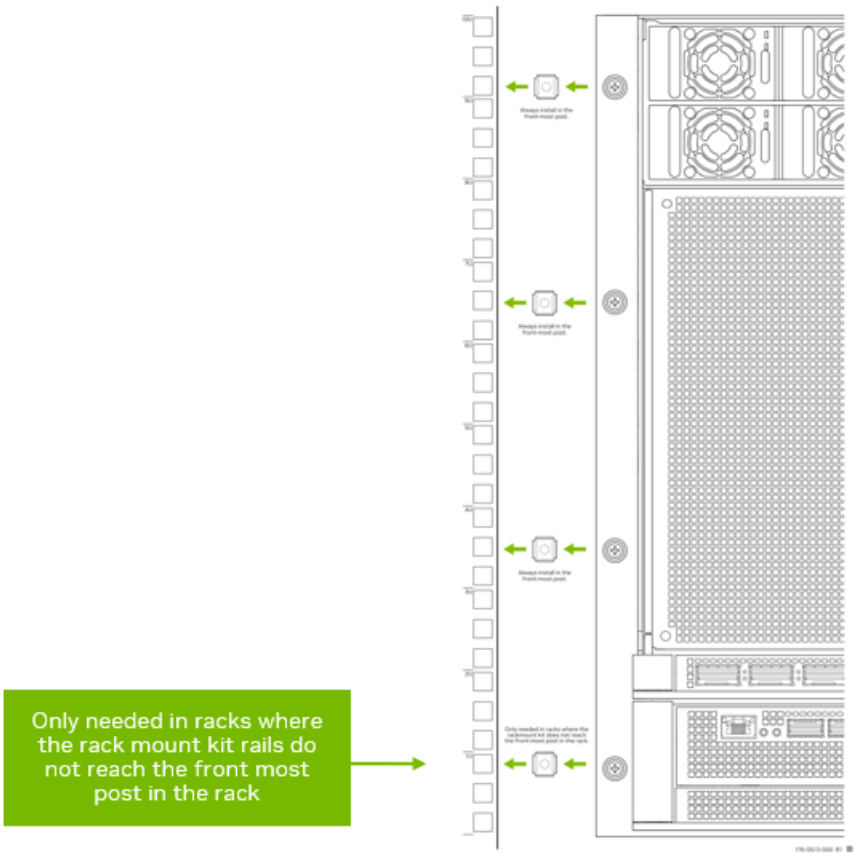
Screw kit bag

Rear screws (black)

19.5. Install Cage Nuts Using Template

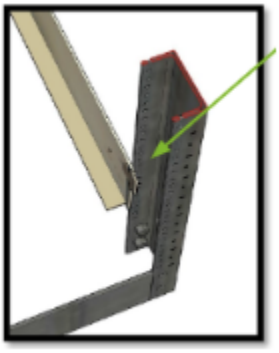
A printed copy of this template is included as part of the rack kit, and it should be used to align the desired location of the system to where the included cage nuts should be installed.

The template is double-sided, so it can be used as a reference on the left and right posts of the rack.



Note

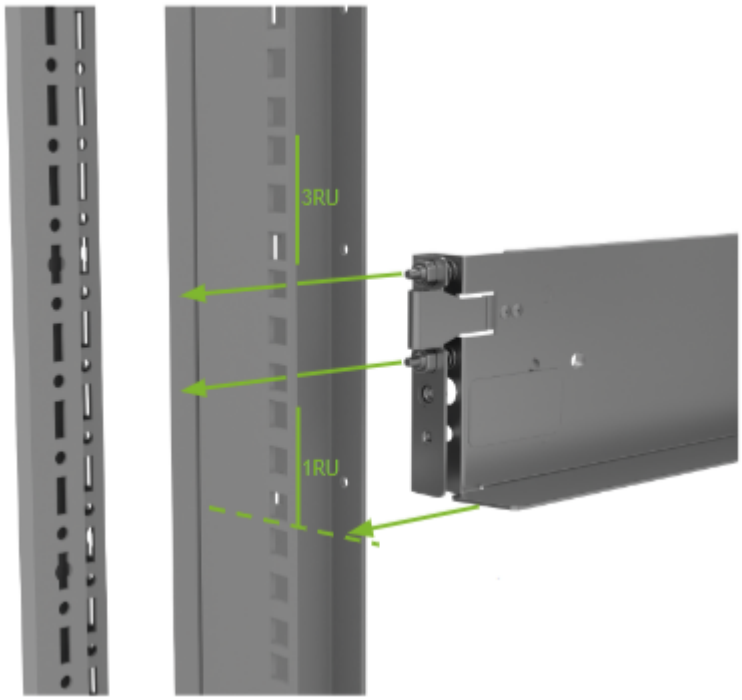
RACKS WITH C-CHANNEL POSTS: They have an obstruction that prevents the rack mount kit from being installed in the frontmost post. Use a third pair of cage nuts so the bottom system screws have something to engage with.



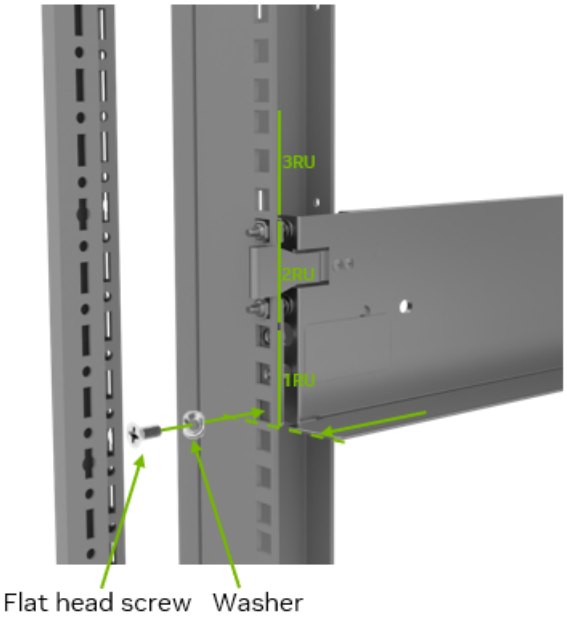
19.6. Install Rack Mount Kit - Front

You can start with either side to install the rack mount kit on the rack. The following instructions describe the installation of the left side.

1. Align the lip to the bottom of the rack unit where the system needs to be installed, as shown in the diagram.
2. Insert the prongs through the front post of the rack and secure the clip to the front post.

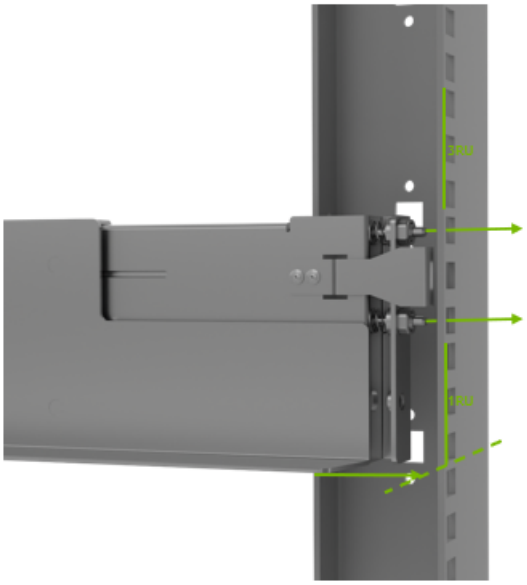


3. Install the flat head screw and the washer to secure the front of the rack mount kit to the rack, as shown in the diagram.

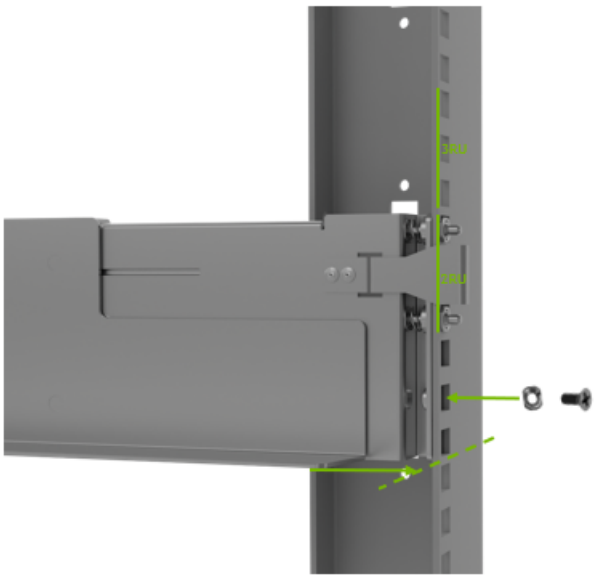


19.7. Install Rack Mount Kit - Rear

1. Align the lip to the bottom of the rack unit where the system needs to be installed, as shown in the diagram.
2. Insert the prongs through the front post of the rack and secure the clip to the front post.



3. Install the black screw and washer to secure the front of the rack mount kit to the rack, as shown in the diagram.



4. Repeat the procedure for the right side of the rack mount kit.

Chapter 20. Safety

This section provides information about how to safely use the NVIDIA DGX™ B300 system.

20.1. Safety Information

To reduce the risk of bodily injury, electrical shock, fire, and equipment damage, read this document and observe all warnings and precautions in this guide before installing or maintaining your server product.

In the event of a conflict between the information in this document and information provided with the product or on the website for a particular product, the product documentation takes precedence.

Your server should be integrated and serviced only by technically qualified persons.

You must adhere to the guidelines in this guide and the assembly instructions in your server manuals to ensure and maintain compliance with existing product certifications and approvals. Use only the described, regulated components specified in this guide. Use of other products I components will void the UL Listing and other regulatory approvals of the product and may result in noncompliance with product regulations in the region(s) in which the product is sold.

20.2. Safety Warnings and Cautions

To avoid personal injury or property damage, before you begin installing the product, read, observe, and adhere to all the following safety instructions and information.

The following safety symbols may be used throughout the documentation and may be marked on the product and the product packaging.

Symbol	Description
CAUTION	Indicates the presence of a hazard that may cause minor personal injury or property damage if the CAUTION is ignored.
WARNING	Indicates the presence of a hazard that may result in serious personal injury if the WARNING is ignored.

Symbol	Description
	Indicates potential hazard if indicated information is ignored.
	Indicates shock hazards that result in serious injury or death if safety instructions are not followed.
	Indicates hot components or surfaces.
	Indicates do not touch fan blades, may result in injury.
	▶ Shock hazard: The product might be equipped with multiple power cords. To remove all hazardous voltages, disconnect all power cords. ▶ High leakage current ground (earth) connection to the Power Supply is essential before connecting the supply.
	Recycle the battery.
	The rail racks are designed to carry only the weight of the server system. Do not use rail- mounted equipment as a workspace. Do not place additional load onto any rail-mounted equipment.

安全警告和注意事項

為了避免人身傷害或財產損失，在開始安裝產品之前，閱讀，觀察，並遵守所有的以下安全提示和信息。以下安全符號會在整個文件中使用，並且在產品和/或產品包裝標記。

Symbol	Meaning
CAUTION	如果危險存在而忽略 CAUTION, 表示可能導致輕微的人身傷害和財產損失。
WARNING	如果危險存在而忽略 Warning, 表示可能會導致嚴重的人身傷害。
	表示如果信息被忽略會有潛在危險。
	表示如果不遵照安全說明會導致嚴重傷害或死亡的觸電危險
	表示零件或表面有熱度。
	表示請勿碰觸風扇葉片，碰觸可能會導致受傷
	觸電危險 - 產品可能配備多根電源線。要除去所有危險電壓，請斷開所有電源線。
	在連接電源之前,請必須先連接高漏電電流地線到電源供應器。
	電池回收.
	導軌架被設計成只能承受伺服器系統的重量。不要使用軌道安裝設備為工作區。不要把額外的負載加到任何軌道安裝設備上。

20.3. Intended Application Uses

This product was evaluated as Information Technology Equipment (ITE), which may be installed in offices, schools, computer rooms, and similar commercial type locations.

The suitability of this product for other product categories and environments (such as medical, industrial, residential, alarm systems, and test equipment), other than an ITE application, may require further evaluation.

20.4. Site Selection

Here is some information about how to select the correct site for the DGX B300 system. Choose a site that is:

- Clean, dry, and free of airborne particles (other than normal room dust).
- Well-ventilated and away from sources of heat including direct sunlight and radiators.
- Away from sources of vibration or physical shock.
- In regions that are susceptible to electrical storms, we recommend you plug your system into a surge suppressor and disconnect telecommunication lines to your modem during an electrical storm.
- Provided with a properly grounded wall outlet.
- Provided with sufficient space to access the power supply cord(s), because they serve as the product's main power disconnect.

20.5. Equipment Handling Practices

To reduce the risk of personal injury or equipment damage, do the following:

- Conform to local occupational health and safety requirements when moving and lifting equipment.
- Use mechanical assistance or other suitable assistance when moving and lifting equipment.

20.6. Electrical Precautions

20.6.1. Power and Electrical Warnings

Caution

The power button, indicated by the stand-by power marking, DOES NOT completely turn off the system AC power; standby power is active whenever the system is plugged in. To remove power from the system, you must unplug the AC power cord from the wall outlet. Make sure all AC power cords are unplugged before you open the chassis, or add or remove any non hot-plug components.

Do not attempt to modify or use an AC power cord if it is not the exact type required. A separate AC cord is required for each system power supply.

Some power supplies in servers use Neutral Pole Fusing. To avoid the risk of shock, use caution when working with power supplies that use Neutral Pole Fusing.

The power supply in this product contains no user-serviceable parts. Do not open the power supply. Hazardous voltage, current, and energy levels are present inside the power supply. Return to the manufacturer for servicing.

When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing it from the server.

To avoid the risk of electric shock, turn off the server and disconnect the power cords, telecommunications systems, networks, and modems attached to the server before opening it.

Caution

To avoid electrical shock or fire, check the power cord(s) that will be used with the product as follows:

- Do not attempt to modify or use the AC power cord(s) if they are not the exact type required to fit into the grounded electrical outlets.
- The power cord(s) must meet the following criteria:
  - The power cord must have an electrical rating that is greater than that of the electrical current rating marked on the product.

20.6.2. Power Cord Warnings

The power supply cord(s) must be plugged into socket-outlet(s) that is /are provided with a suitable earth ground.

20.7. System Access Warnings

The following information explains system access warnings for the DGX B300 system.

To avoid personal injury or property damage, the following safety instructions apply whenever accessing the inside of the product:

- Turn off all peripheral devices connected to this product.
- Turn off the system by pressing the power button to off.
- Disconnect the AC power by unplugging all AC power cords from the system or the wall outlet.
- Disconnect all cables and telecommunication lines that are connected to the system.
- Retain all screws or other fasteners when removing access cover(s). Upon completion of accessing inside the product, refasten access cover with original screws or fasteners.
- Do not access the inside of the power supply. There are no serviceable parts in the power supply.
- Return to the manufacturer for servicing.
- Power down the server and disconnect all power cords before adding or replacing any non hot-plug component.
- When replacing a hot-plug power supply, unplug the power cord to the power supply being replaced before removing the power supply from the server.

Caution

To avoid injury, do not contact moving fan blades. Your system is supplied with a guard over the fan; do not operate the system without the fan guard in place.

Caution

If the server has been running, any installed processor(s) and heat sink(s) may be hot. Unless you are adding or removing a hot-plug component, allow the system to cool before opening the covers. To avoid the possibility of coming into contact with hot component(s) during a hot-plug installation, be careful when removing or installing the hot-plug component(s).

20.8. Rack Mount Warnings

The following installation guidelines are required by UL to maintain safety compliance when installing your system into a rack.

The equipment rack must be anchored to an unmovable support to prevent it from tipping when a server or piece of equipment is extended from it. The equipment rack must be installed according to the rack manufacturer's instructions.

Install equipment in the rack from the bottom up with the heaviest equipment at the bottom of the rack.

Extend only one piece of equipment from the rack at a time.

You are responsible for installing a main power disconnect for the entire rack unit. This main disconnect must be readily accessible, and it must be labeled as controlling power to the entire unit, not just to the server(s).

To avoid the risk of potential electric shock, a proper safety ground must be implemented for the rack and each piece of equipment installed in it.

Elevated Operating Ambient- If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

Reduced Air Flow -Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

Mechanical Loading- Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

Circuit Overloading- Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

Reliable Earthing- Reliable earthing of rack-mounted equipment should be maintained.

Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, the use of power strips).

20.9. Electrostatic Discharge

Caution

ESD can damage drives, boards, and other parts. We recommend that you perform all procedures at an ESD workstation. If one is not available, provide some ESD protection by wearing an antistatic

wrist strap attached to chassis ground (any unpainted metal surface) on your server when handling parts.

Always handle boards carefully. They can be extremely sensitive to ESD. Hold boards only by their edges. After removing a board from its protective wrapper or from the server, place the board component side up on a grounded, static-free surface. Use a conductive foam pad if available but not the board wrapper. Do not slide the board over any surface.

20.10. Other Hazards

20.10.1. CALIFORNIA DEPARTMENT OF TOXIC SUBSTANCES CONTROL

Perchlorate Material - Lithium Coin/Button Cell battery. Please dispose of properly.

Special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

20.10.2. NICKEL

NVIDIA Bezel. The bezel's decorative metal foam contains some nickel. The metal foam is not intended for direct and prolonged skin contact. Please use the handles to remove, attach or carry the bezel. While nickel exposure is unlikely to be a problem, you should be aware of the possibility in case you are susceptible to nickel-related reactions.

20.10.3. Battery Replacement

Caution

There is the danger of an explosion if the battery is incorrectly replaced. When replacing the battery, use only the battery recommended by the equipment manufacturer.

Dispose of batteries according to local ordinances and regulations. Do not attempt to recharge the battery.

Do not attempt to disassemble, puncture, or otherwise damage a battery.

更換電池警告：

警告

更換不正確之電池型式會有爆炸的風險。 請依製造商說明書處理用過之電池。

20.10.4. Cooling and Airflow

Caution

Carefully route cables as directed to minimize airflow blockage and cooling problems. For proper cooling and airflow, operate the system only with the chassis covers installed.

Operating the system without the covers in place can damage system parts. To install the covers:

- Check first to make sure you have not left loose tools or parts inside the system.
- Check that cables, add-in cards, and other components are properly installed.
- Attach the covers to the chassis according to the product instructions.

The equipment is intended for installation only in a Server Room/Computer Room where both conditions apply:

- Access can only be gained by SERVICE PERSONS or by USERS who have been instructed about the reasons for the restrictions applied to the location and about any precautions that shall be taken.
- Access is through the use of a TOOL or lock and key, or other means of security, and is controlled by the authority responsible for the location.

Chapter 21. Compliance

The NVIDIA DGX™ B300 Server is compliant with the regulations listed in this section.

21.1. United States

Federal Communications Commission (FCC)

FCC Marking (Class A)

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including any interference that may cause undesired operation of the device.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

California Department of Toxic Substances Control

Perchlorate Material - Lithium Coin/Button Cell battery. Please dispose it properly.

special handling may apply. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

21.2. United States/Canada

TÜV Rheinland of North America is accredited as a Nationally Recognized Testing Laboratory (NRTL), by OSHA (The Occupational Safety and Health Administration) in the United States, and as a Product Certification Body by SCC (Standards Council of Canada) in Canada. Refer to https://www.tuv.com/usa/en/ctuvus-certification.html

cTUVus Mark

21.3. Canada

Innovation, Science and Economic Development Canada (ISED)

CAN ICES(A)/NMB(A)

The Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulation.

Cet appareil numerique de la class A respecte toutes les exigences du Reglement sur le materiel brouilleur du Canada.

21.4. CE

European Conformity; Conformité Européenne (CE)

This is a Class A product. In a domestic environment, this product may cause radio frequency interference in which case the user may be required to take adequate measures.

This device bears the CE mark in accordance with Directive 2014/53/EU. This device complies with the following Directives:

- EMC Directive A, I.T.E Equipment.
- Low Voltage Directive for electrical safety.
- RoHS Directive for hazardous substances.
- Energy-related Products Directive (ErP).

For the full text of EU declaration of conformity, refer to http://www.nvidia.com/support.

A copy of the Declaration of Conformity to the essential requirements may be obtained directly from NVIDIA GmbH (Bavaria Towers – Blue Tower, Einsteinstrasse 172, D-81677 Munich, Germany).

21.5. Australia and New Zealand

Australian Communications and Media Authority

This product meets the applicable EMC requirements for Class A, I.T.E equipment.

21.6. Brazil

INMETRO

21.7. Japan

Voluntary Control Council for Interference (VCCI)

この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。 VCCI－A

This is a Class A product.

In a domestic environment, this product may cause radio interference, in which case the user may be required to take corrective actions. VCCI-A.

2008年、日本における製品含有表示方法、JISC0950が公示されました。製造事業者は、2006年7月1日以降に販売される電気・電子機器の特定化学物質の含有に付きまして情報提供を義務付けられました。製品の部材表示に付きましては、以下をご覧ください。

A Japanese regulatory requirement, defined by specification JIS C 0950, 2008, mandates that manufacturers provide Material Content Declarations for certain categories of electronic products offered for sale after July 1, 2006.

To view the JIS C 0950 material declaration for this product, visit www.nvidia.com.

Japan RoHS Material Content Declaration

日本工業規格 JIS C 0950:2008 により、2006 年 7 月 1 日以降に販売される特定分野の電気および電子機器について、製造者による含有物質の表示が義務付けられます。

機器名称: P4387B Server

主な分類	特定化学物質記号					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
PCB ボード	0	0	0	0	0	0
パッシブ電子部品	除外項目	0	0	0	0	0
アクティブ電子部品	除外項目	0	0	0	0	0
プロセッサー	0	0	0	0	0	0
メモリ	0	0	0	0	0	0
機械部品及びファン	除外項目	0	0	0	0	0
ケーブル/コネクター	除外項目	0	0	0	0	0
はんだ付け材料	0	0	0	0	0	0
フラックス、クリームはんだ、ラベル、その他消耗品	0	0	0	0	0	0

注:

1.「0」は、特定化学物質の含有率が日本工業規格 JIS C 0950:2008 に記載されている含有率基準値より低いことを示します。

2.「除外項目」は、特定化学物質が含有マークの除外項目に該当するため、特定化学物質について、日本工業規格 JIS C 0950:2008 に基づく含有マークの表示が不要であることを示します。

3.「0.1wt%超」または「0.01wt%超」は、特定化学物質の含有率が日本工業規格 JIS C 0950:2008 に記載されている含有率基準値を超えていることを示します。

A Japanese regulatory requirement, defined by specification JIS C 0950: 2008, mandates that manufacturers provide Material Content Declarations for certain categories of electronic products offered for sale after July 1, 2006.

Product Model Number: P4387B Server

Major Classification	Symbols of Specified Chemical Substance					
	Pb	Hg	Cd	Cr(VI)	PBB	PBDE
PCB	0	0	0	0	0	0
Passive components	Exempt	0	0	0	0	0
Active components	Exempt	0	0	0	0	0
Processor	0	0	0	0	0	0
Memory	0	0	0	0	0	0
Mechanical parts and Fan	Exempt	0	0	0	0	0
Cables/Connectors	Exempt	0	0	0	0	0
Soldering material	0	0	0	0	0	0
Flux, Solder Paste, label and other consumable materials	0	0	0	0	0	0

Notes:

1. "0" indicates that the level of the specified chemical substance is less than the threshold level specified in the standard, JIS C 0950: 2008.

2. "Exempt" indicates that the specified chemical substance is exempt from marking and it is not required to display the marking for that specified chemical substance per the standard, JIS C 0950: 2008.

3. "Exceeding 0.1wt%" or "Exceeding 0.01wt%" is entered in the table if the level of the specified chemical substance exceeds the threshold level specified in the standard, JIS C 0950: 2008.

21.8. South Korea

Korea Certification (KC)

R-R-WT1-P4387C

R-R-WT1-P4387D

이 기기는 업무용 환경에서 사용할 목적으로 적합성평가를 받은 기기로서 가정용 환경에서 사용하는 경우 전파간섭의 우려가 있습니다

21.9. China

China Compulsory Certificate

No certification is needed for China. The NVIDIA DGX B300 is a server with rated current over than 6A.

China RoHS Material Content Declaration

产品中有害物质的名称及含量
根据中国《电器电子产品有害物质限制使用管理办法》

部件名称	有害物质									
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)	邻苯二甲酸二正丁酯（DBP）	邻苯二甲酸二异丁酯（DIBP）	邻苯二甲酸丁基苄酯（BBP）	邻苯二甲酸二（2-乙基）己酯（DEHP）
印刷电路板	o	o	o	o	o	o	o	o	o	o
被动电子零件	x	o	o	o	o	o	o	o	o	o
主动电子零件	x	o	o	o	o	o	o	o	o	o
处理器	o	o	o	o	o	o	o	o	o	o
存储设备	o	o	o	o	o	o	o	o	o	o
机械部件以及风扇	x	o	o	o	o	o	o	o	o	o
线材/连接器	x	o	o	o	o	o	o	o	o	o
焊接材料	o	o	o	o	o	o	o	o	o	o
助焊剂，锡膏，标签及其他耗材	o	o	o	o	o	o	o	o	o	o

本表格依据SJ/T 11364-2024 的规定编制

O: 表示该有害物质在该部件所有均质材料中的含量均在GB/T 26572 标准规定的限量要求以下。
X: 表示该有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 标准规定的限量要求。

此表中所有名称中含 "X" 的部件均符合欧盟 RoHS 立法。

注：环保使用期限的参考标识取决于产品正常工作的温度和湿度等条件

21.10. Taiwan

Bureau of Standards, Metrology & Inspection (BSMI)

R33088
RoHS

警告：為避免電磁干擾，本產品不應安裝或使用於住宅環境。

報驗義務人：

香港商輝達香港控股有限公司台灣分公司·・統一編號：80022300

臺北市內湖區基湖路8號.

Taiwan RoHS Material Content Declaration

Taiwan RoHS Material Content Declaration

限用物質含有情況標示聲明書 Declaration of the presence condition of the Restricted Substances Marking						
設備名稱：DGX 伺服器 Equipment Name: DGX server						
單元 Parts	限用物質及其化學符號 Restricted substances and its chemical symbols					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr^{+6})	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
PCB 板 PCB	o	o	o	o	o	o
被動電子零件 Passive components	-	o	o	o	o	o
主動電子零件 Active components	-	o	o	o	o	o
處理器 Processor	o	o	o	o	o	o
內存 Memory	o	o	o	o	o	o
結構件以及風扇 Mechanical parts and Fan	-	o	o	o	o	o
線材/連接器 Cables/Connectors	-	o	o	o	o	o
焊接金屬 Soldering material	o	o	o	o	o	o
助焊劑，錫膏，標籤及耗材 Flux, Solder Paste, label and other consumable materials	o	o	o	o	o	o

備考 1：O：系指該限用物質未超出百分比含量基準值
Note 1：O：indicates that the percentage content of the restricted substance does not exceed the percentage of reference value of presence.
備考 2：-：系指該項限用物質為排外項目。
Note 2：-：indicates that the restricted substance corresponds to the exemption.

此表中所有名稱中含 "-" 的部件均符合歐盟 RoHS 立法。
All parts named in this table with an "-" are in compliance with the European Union's RoHS Legislation.

注：環保使用期限的參考標識取決與產品正常工作的溫度和濕度等條件
Note: The referenced Environmental Protection Use Period Marking was determined according to normal operating use conditions of the product such as temperature and humidity.

21.11. Russia/Kazakhstan/Belarus

Customs Union Technical Regulations (CU TR)

EAC

This device complies with the technical regulations of the Customs Union (CU TR)

ТЕХНИЧЕСКИЙ РЕГЛАМЕНТ ТАМОЖЕННОГО СОЮЗА О безопасности низковольтного оборудования (ТР ТС 004/2011)

ТЕХНИЧЕСКИЙ РЕГЛАМЕНТ ТАМОЖЕННОГО СОЮЗА Электромагнитная совместимость технических средств (ТР ТС 020/2011)

Технический регламент Евразийского экономического союза “Об ограничении применения опасных веществ в изделиях электротехники и радиоэлектроники” (ТР ЕАЭС 037/2016)

Federal Agency of Communication (FAC)

This device complies with the rules set forth by the Federal Agency of Communications and the Ministry of Communications and Mass Media.

A Federal Security Service notification has been filed.

21.12. Israel

SII

ודא שלמות ותקינות כבל החשמל והתקע אין להכניס או להוציא את התקע מרשת החשמל בידיים רטובות . אין לפתוח את המכשיר , במקרה של בעיה כלשהו יש לפנות למעבדת השירות הקרובה. יש להרחיק את המכשיר מנוזלים . במקרה של ריח מוזר, רעשים שמקורם במכשיר , יש לנתקו מיידית מרשת החשמל ולפנות למעבדת שירות המכשיר מיועד לשימוש בתוך המבנה , ולא לשימוש חיצוני ולא לשימוש בסביבה לחה. אין לחתוך, לשבור, ולעקם את הכבל החשמל. אין להניח חפצים על הכבל החשמל או להניח לו להתחמם יתר על המידה , שכן עלול לגרום לנזק ,דליקה או התחשמלות . יש להקפיד לחזק את התקן הניתוק במצב תפעולי מוכן לשימוש. אזהרה: אין להחליף את כבל הזינה בתחליפים לא מקוריים, חיבור לקוי עלול לגרום להתחשמלות המשתמש. בשימוש על כבל מאריך יש לוודא תקינות מוליך הארקה שבכבל .

21.13. India

Bureau of India Standards (BIS)

Authenticity may be verified by visiting the Bureau of Indian Standards website at http://www.bis.gov.in.

India RoHS Compliance Statement

This product, as well as its related consumables and spares, complies with the reduction in hazardous substances provisions of the “India E-waste (Management and Handling) Rule 2016”.

It does not contain lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers in concentrations exceeding 0.1 weight % and 0.01 weight % for cadmium, except for where allowed pursuant to the exemptions set in Schedule 2 of the Rule.

21.14. South Africa

South African Bureau of Standards (SABS)

This device complies with the following SABS Standards:

SANS 2332: 2017/CISPR 32:2015 SANS 2335:2018/ CISPR 35:2016

National Regulator of Compulsory Specification (NRCS)

This device complies with following standard under VC 8055:

SANS IEC 60950-1

21.15. Great Britain (England, Wales, and Scotland)

UK Conformity Assessed

This device complies with the following Regulations:

- SI 2016/1091: Electromagnetic Compatibility (EMC)
- SI 2016/1101: The Low Voltage Electrical Equipment (Safety)
- SI 2012/3032: The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (As Amended)

A copy of the Declaration of Conformity to the essential requirements may be obtained directly from NVIDIA Ltd. (100 Brook Drive, 3rd Floor Green Park, Reading RG2 6UJ, United Kingdom)

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