Dell EMC PowerEdge XR11

Installation and Service Manual

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DELL Technologies

Notes, cautions, and warnings

NOTE: A NOTE indicates important information that helps you make better use of your product.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

Contents

1

About this document

This document provides an overview about the system, information about installing and replacing components, diagnostic tools, and guidelines to be followed while installing certain components.

2

PowerEdge XR11 system overview

The PowerEdge XR11 system is a 1U server that supports:

- Rear Accessed configuration or Front Accessed configuration
- One 3rd Generation Intel Xeon Scalable processor with up to 36 cores
- Eight DIMM slots
- Two redundant AC or DC power supply units
- Up to 4 x 2.5-inch SAS/SATA/NVMe SSD drives

NOTE: All instances of SAS, SATA and NVMe drives are referred to as drives in this document, unless specified otherwise.

NOTE: The Rear Accessed and Front Accessed configurations cannot be modified into the other configuration.

CAUTION: Do not install GPUs, network cards, or other PCIe devices on your system that are not validated and tested by Dell. Damage caused by unauthorized and invalidated hardware installation will null and void the system warranty.

NOTE: For more information, see the *Dell EMCPowerEdgeXR11 Technical Specifications* on the product documentation page.

Topics:

Front view of the system

Figure 1. Front view of Rear Accessed configuration

Table 1. Features available on the front view of Rear Accessed configuration

Item	Ports, panels, and slots	Icon	Description
1	Status LED control panel	N/A	Contains the system health, system ID, status LED. • Status LED: Enables you to identify any failed

Table 1. Features available on the front view of Rear Accessed configuration (continued)

Item	Ports, panels, and slots	Icon	Description
			hardware components. There are up to five status LEDs and an overall system health LED (Chassis health and system ID) bar. For more information, see the Status LED indicators section.
2	Drives	N/A	Enables you to install up to 4 x 2.5-inch SAS/SATA/NVMe SSD drives.
3	Power button control panel	N/A	Contains the power button, USB port, iDRAC Direct micro port, and the iDRAC Direct status LED.
4	Information tag	N/A	The Information tag is a slide-out label panel that contains Service Tag, iDRAC MAC address and LOM 1 MAC address.

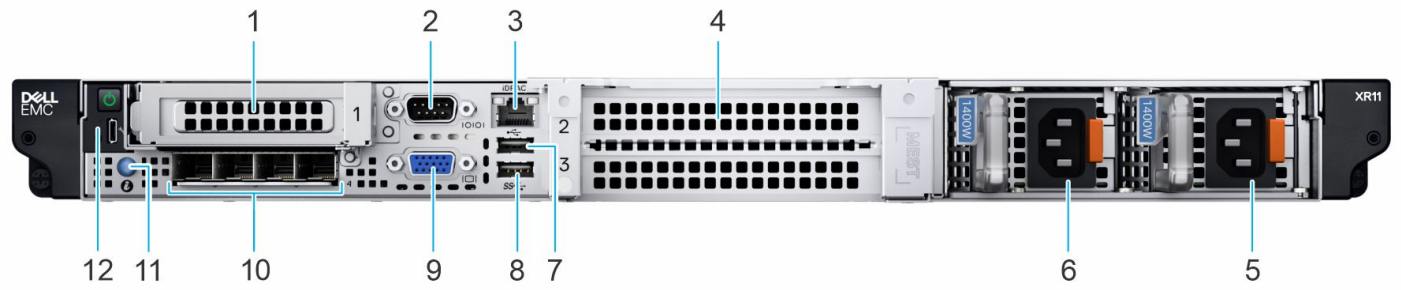

Figure 2. Front view of Front Accessed configuration

Table 2. Features available on the front view of Front Accessed configuration

Item	Ports, panels, or slots	Icon	Description
1	PCIe expansion card riser 1 (slot 1)	N/A	Enables you to connect PCIe expansion card installed on riser 1.
2	Serial port	IOIOI	Enables you to connect a serial device to the system.
3	iDRAC dedicated port	iDRAC	It is an RJ45 port. Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at PowerEdge manuals.
4	PCIe expansion card riser 2 and 3 (slot 2 and 3)	N/A	Enables you to connect PCIe expansion card that is installed on riser 2 and 3.
5	Power supply unit (PSU2)	⚡2	Indicates the PSU2 or redundant PSU.

Table 2. Features available on the front view of Front Accessed configuration (continued)

Item	Ports, panels, or slots	Icon	Description
6	Power supply unit (PSU1)		Indicates the PSU1 or primary PSU.
7	USB 2.0 port		This port is USB 2.0-compliant.
8	USB 3.0 port		This port is USB 3.0-compliant.
9	VGA port		Enables you to connect a display device to the system.
10	4 x 25 GbE LOM ports		Provides network connectivity and can also be shared with iDRAC when iDRAC network settings are set to shared mode.
11	System identification button		Press the system ID button: ● To locate a particular system within a rack. ● To turn the system ID on or off. To reset iDRAC, press and hold the button for more than 16 seconds. **NOTE:** ● To reset iDRAC using system ID, ensure that the system ID button is enabled in the iDRAC setup. ● If the system stops responding during POST, press and hold the system ID button (for more than 5 seconds) to enter the BIOS progress mode.
12	Power button control panel	N/A	Contains the power button, iDRAC Direct micro port, and the iDRAC Direct status LED.

NOTE: For more information, see the *Dell EMCPowerEdgeXR11 Technical Specifications* on the product documentation page.

Rear view of the system

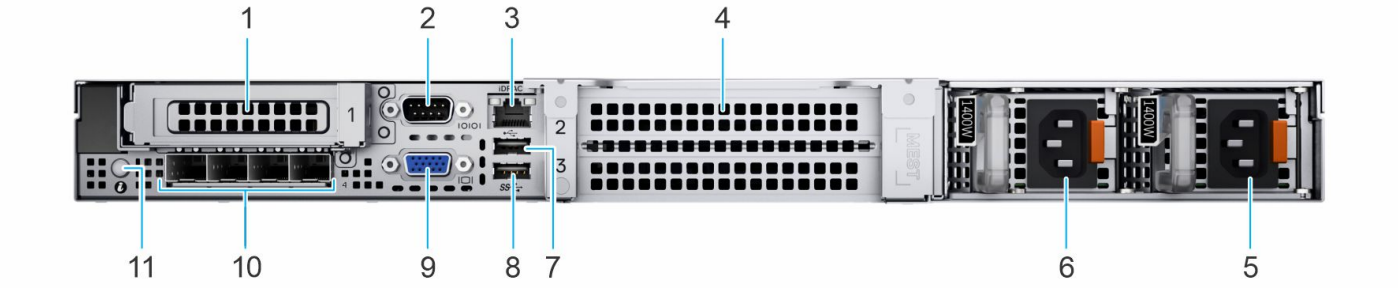

Figure 3. Rear view of Rear Accessed configuration

Table 3. Features available on the rear view of Rear Accessed configuration

Item	Ports, panels, or slots	Icon	Description
1	PCIe expansion card riser 1 (slot 1)	N/A	Enables you to connect PCIe expansion card installed on riser 1 in the system.
2	Serial port		Enables you to connect a serial device to the system.
3	iDRAC dedicated port	iDRAC	Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at PowerEdge manuals.
4	PCIe expansion card riser 2 and 3 (slot 2 and 3)	N/A	Enables you to connect PCIe expansion card installed on riser 2 and 3 in the system.
5	Power supply unit (PSU2)	2	Indicates the PSU2 or redundant PSU.
6	Power supply unit (PSU1)	1	Indicates the PSU1 or primary PSU.
7	USB 2.0 port		This port is USB 2.0-compliant.
8	USB 3.0 port		This port is USB 3.0-compliant.
9	VGA port		Enables you to connect a display device to the system.
10	4 x 25 GbE LOM ports		Provides network connectivity and can also be shared with iDRAC when iDRAC network settings is set to shared mode.
11	System identification button		Press the system ID button: • To locate a particular system within a rack. • To turn the system ID on or off. To reset iDRAC, press and hold the button for more than 16 seconds. **NOTE:**

Table 3. Features available on the rear view of Rear Accessed configuration (continued)

Item	Ports, panels, or slots	Icon	Description
			• To reset iDRAC using system ID, ensure that the system ID button is enabled in the iDRAC setup. • If the system stops responding during POST, press and hold the system ID button (for more than 5 seconds) to enter the BIOS progress mode.

Figure 4. Rear view of Front Accessed configuration

Table 4. Features available on the rear view of Front Accessed configuration

Item	Ports, panels, and slots	Icon	Description
1	Status LED control panel	N/A	Contains the system health, system ID, status LED. • Status LED: Enables you to identify any failed hardware components. There are up to five status LEDs and an overall system health LED (Chassis health and system ID) bar. For more information, see the Status LED indicators section.
2	Drives	N/A	Enables you to install up to 4x 2.5-inch SAS/SATA/NVMe SSD drives.
3	Information tag	N/A	The Information tag is a slide-out label panel that contains Service Tag, iDRAC MAC address and LOM 1 MAC address.

NOTE: For more information, see the *Dell EMCPowerEdgeXR11 Technical Specifications* on the product documentation page.

Status LED control panel

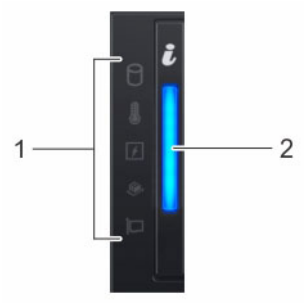

Figure 5. Status LED control panel

Table 5. Status LED control panel

Item	Indicator, button, or connector	Icon	Description
1	Status LED indicators	NA	Indicates the status of the system. For more information, see the Status LED indicators section.
2	System health and system ID indicator	🛈	Indicates system health. For more information, see the System health and system ID indicator codes section.

NOTE: For more information about the indicator codes, see the System diagnostics and indicator codes section.

Power button control panel

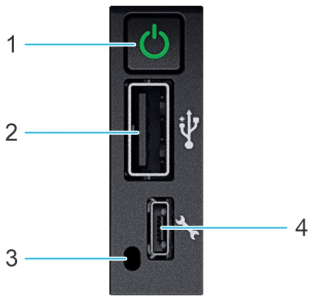

Figure 6. Power button control panel for Front Accessed configuration

Table 6. Power button control panel

Item	Indicator or button	Icon	Description
1	Power button	⏻	Indicates if the system is powered on or off. Press the power button to manually power on or off the system. **NOTE:** Press the power button to gracefully shut down an ACPI-compliant operating system.
2	USB 2.0-compliant port	⇆	The USB port is a 2.0-compliant. This port enables you to connect USB devices to the system. **NOTE:** The USB 2.0 port is not available on Front Accessed configuration.

Table 6. Power button control panel (continued)

Item	Indicator or button	Icon	Description
3	iDRAC Direct LED indicator	N/A	The iDRAC Direct LED indicator lights up to indicate that the iDRAC Direct port is actively connected to a device.
4	iDRAC Direct port (Micro-AB USB)		The iDRAC Direct port (Micro-AB USB) enables you to access the iDRAC direct features. For more information, see the iDRAC Manuals. **NOTE:** You can configure iDRAC Direct by using a USB to micro USB (type AB) cable, which you can connect to your laptop or tablet. Cable length should not exceed 3 feet (0.91 meters). Performance could be affected by cable quality.

NOTE: For more information, see the *Dell EMCPowerEdgeXR11 Technical Specifications* on the product documentation page.

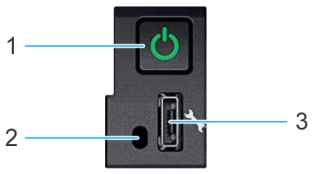

Figure 7. Power button control panel for Rear Accessed configuration

Table 7. Power button control panel

Item	Indicator or button	Icon	Description
1	Power button		Indicates if the system is powered on or off. Press the power button to manually power on or off the system. **NOTE:** Press the power button to gracefully shut down an ACPI-compliant operating system.
2	iDRAC Direct LED indicator	N/A	The iDRAC Direct LED indicator lights up to indicate that the iDRAC Direct port is actively connected to a device.
3	iDRAC Direct port (Micro-AB USB)		The iDRAC Direct port (Micro-AB USB) enables you to access the iDRAC direct features. For more information, see the iDRAC Manuals. **NOTE:** You can configure iDRAC Direct by using a USB to micro USB (type AB) cable, which you can connect to your laptop or tablet. Cable length should not exceed 3 feet (0.91 meters). Performance could be affected by cable quality.

NOTE: For more information, see the *Dell EMCPowerEdgeXR11 Technical Specifications* on the product documentation page.

Inside the system

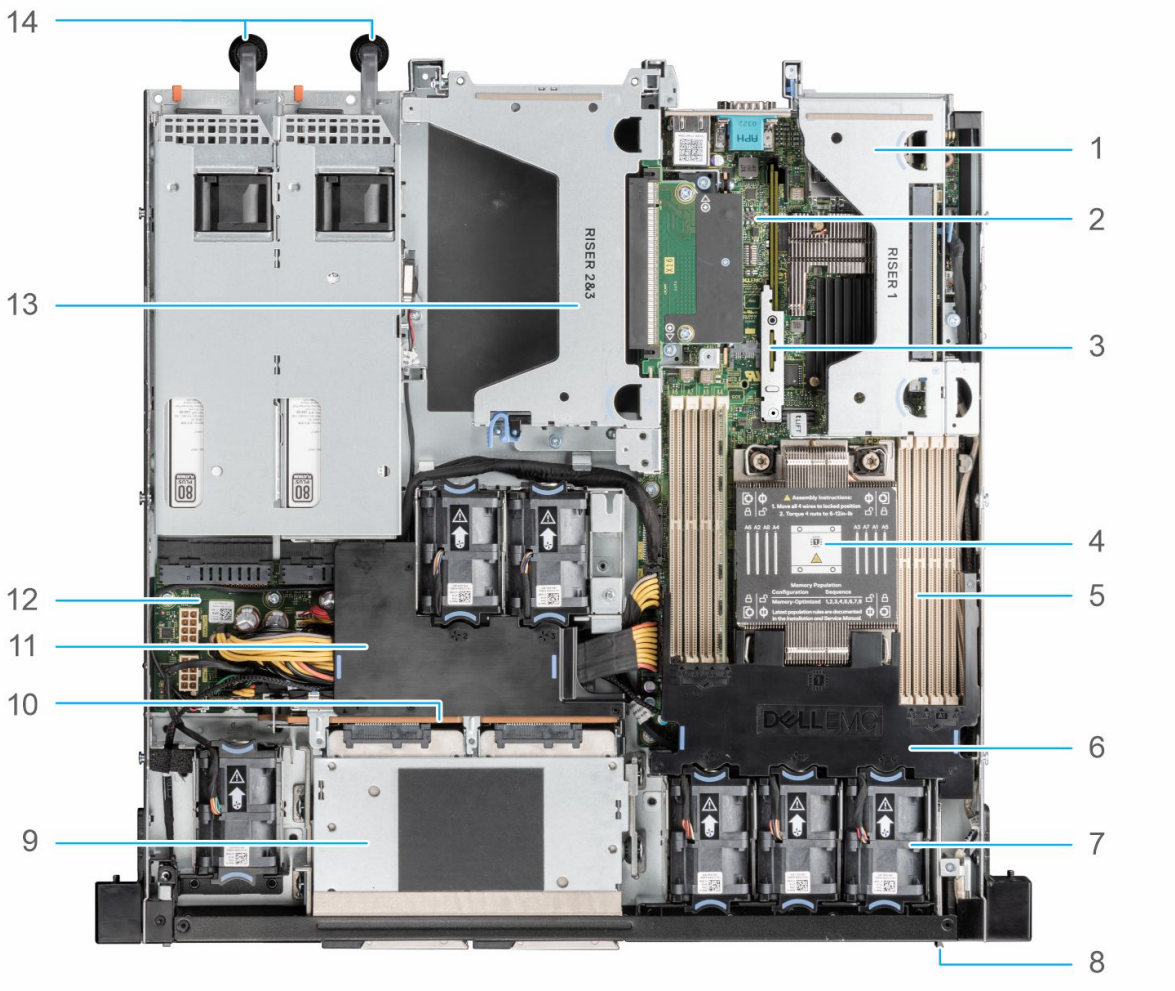

Figure 8. Inside the system - Rear Accessed configuration

1. Riser 1
2. System board
3. BOSS-S1 card (optional)
4. Processor and heat sink module
5. Memory module slots (8)
6. Processor air shroud
7. Cooling fans (6)
8. Information tag
9. Drive cage
10. Backplane
11. PCI air shroud
12. Power Interposer Board (PIB)
13. Riser 2 and 3
14. Power supply units

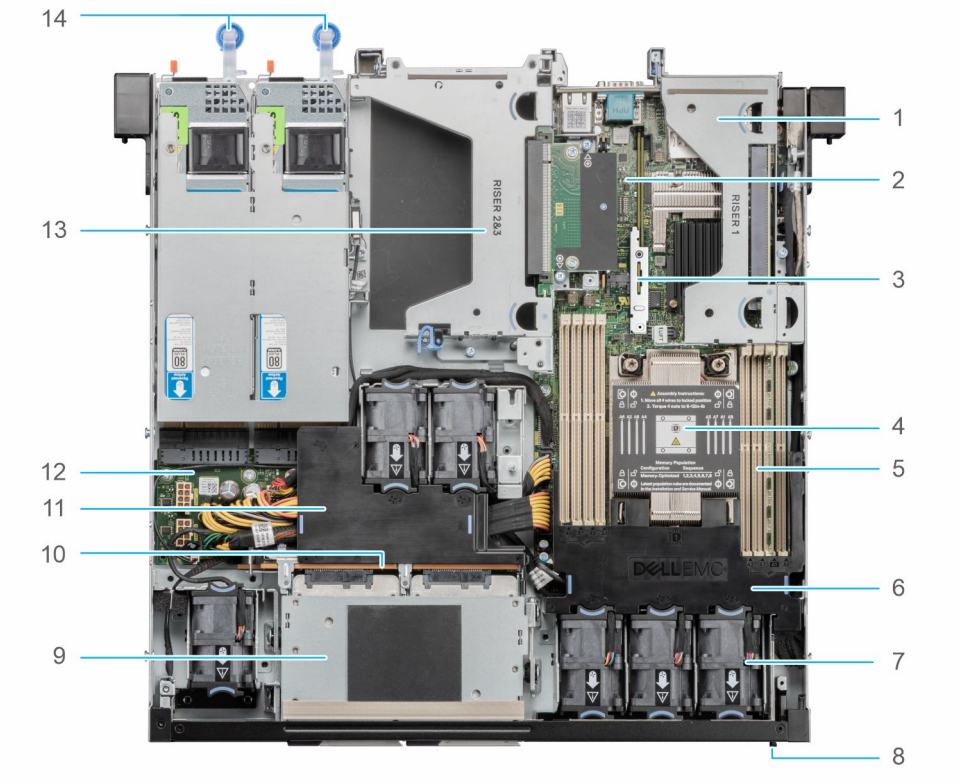

Figure 9. Inside the system - Front Accessed configuration

1. Riser 1
2. System board
3. BOSS-S1 card (optional)
4. Processor and heat sink module
5. Memory module slots (8)
6. Processor air shroud
7. Cooling fans (6)
8. Information tag
9. Drive cage
10. Backplane
11. PCI air shroud
12. Power Interposer Board (PIB)
13. Riser 2 and 3
14. Power supply units

Locating the Express Service Code and Service Tag

The unique Express Service Code and Service Tag are used to identify the system.

The information tag is located on the front of the Rear Accessed configuration and rear of the Front Accessed configuration. The information tag includes system information such as the Service Tag, Express Service Code, Manufacture date, NIC, MAC address, QR code, and so on.

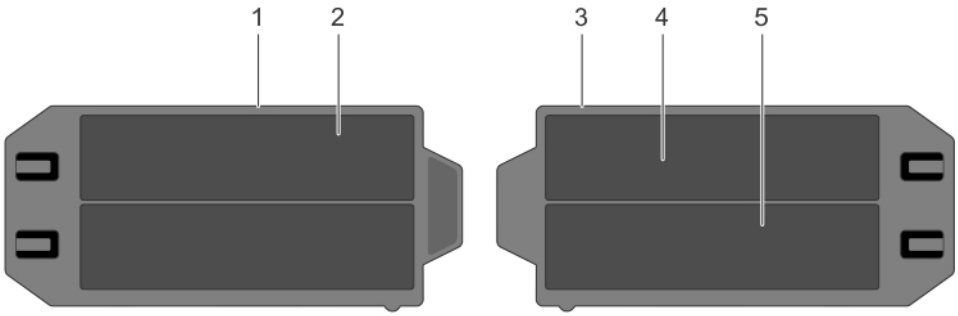

Figure 10. Locating the Service Tag of your system

1. Information tag (front view)
2. Express Service Tag label

3. Information tag (back view)
4. iDRAC MAC address information label
5. Network MAC address information label

The Mini Enterprise Service Tag (MEST) label is located on the rear of the Rear Accessed configuration and on the front of the Front Accessed configurations. The MEST includes the Service Tag (ST), Express Service Code (Exp Svc Code), and Manufacture Date (Mfg. Date). The Exp Svc Code is used by Dell EMC to route support calls to the appropriate personnel.

Alternatively, the Service Tag information is located on a label on the left wall of Rear Accessed configuration and right wall of the Front Accessed configuration.

System information label

The system information label is located on the back of the system cover.

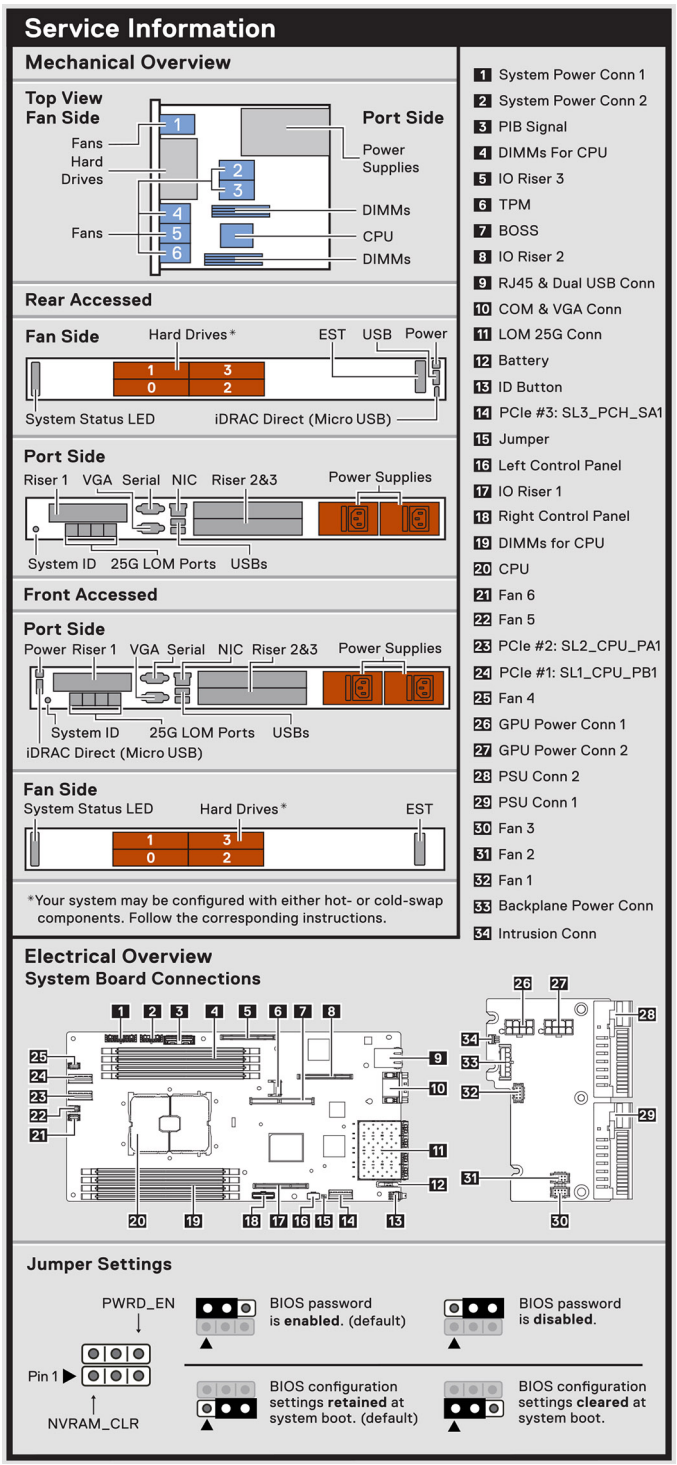

Figure 11. Service information

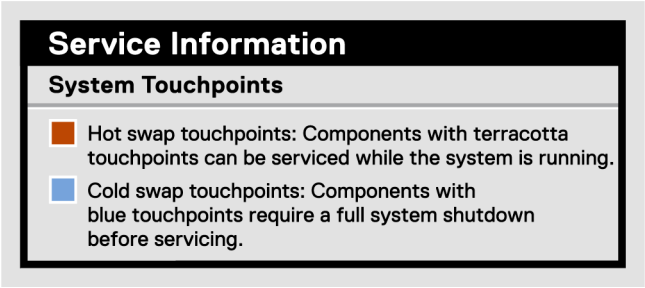

Figure 12. Service information (continued)

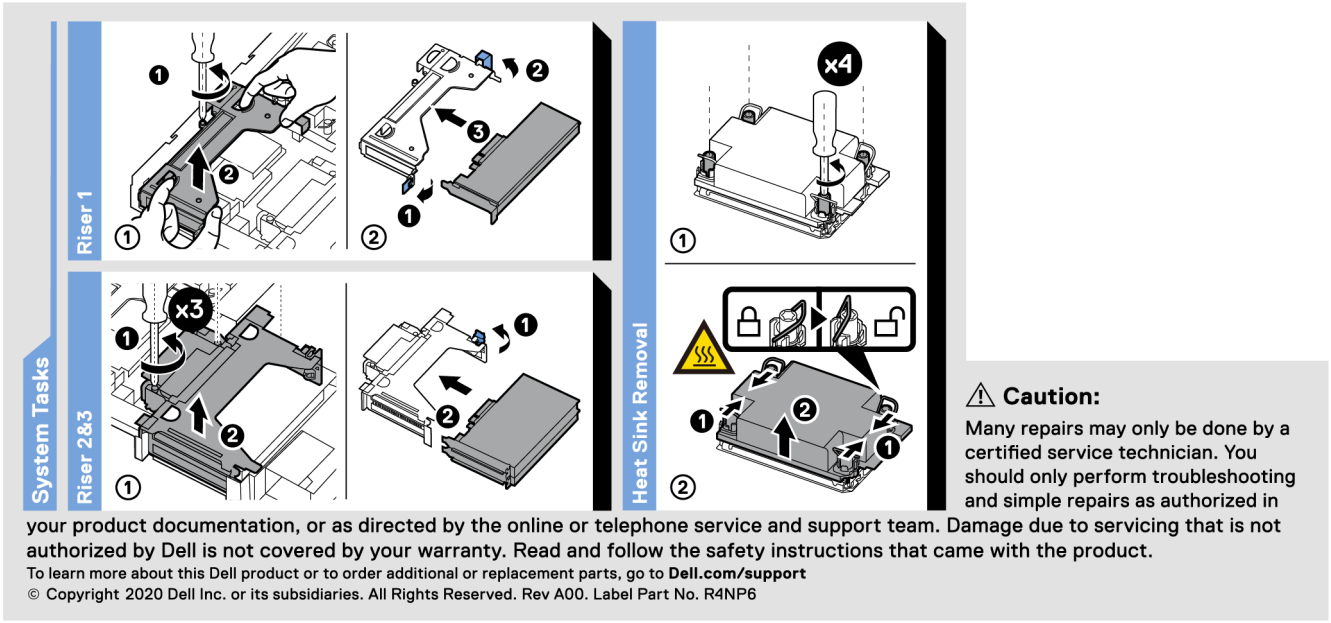

Figure 13. System tasks

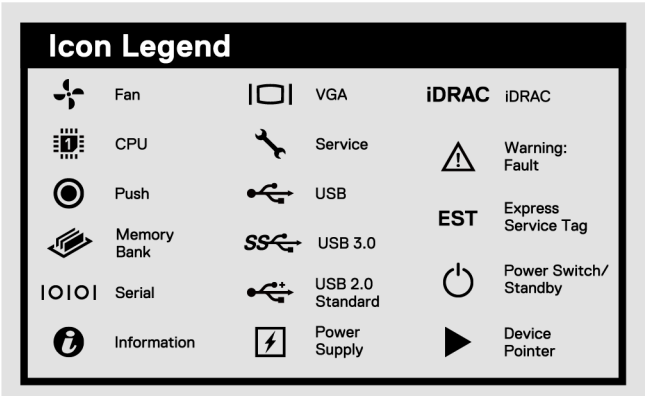

Figure 14. Icon legend

Rail sizing and rack compatibility matrix

For specific information about the rail solutions compatible with your system, see the Dell Enterprise Systems Rail Sizing and Rack Compatibility Matrix.

The document provides the information that is listed below:

- Specific details about rail types and their functionalities.
- Rail adjustability range for various types of rack mounting flanges.

- Rail depth with and without cable management accessories.
- Types of racks that are supported for various types of rack mounting flanges.

3

Initial system setup and configuration

This section describes the tasks for initial setup and configuration of the Dell EMC system. The section also provides general steps to set up the system and the reference guides for detailed information.

Topics:

Setting up the system

Perform the following steps to set up the system:

Steps

1. Unpack the system.
2. Install the system into the rack. For more information, see the rail installation and cable management accessory guides relevant to your rail and cable management solution at PowerEdge manuals.
3. Connect the peripherals to the system and the system to the electrical outlet.
4. Power on the system.

   For more information about setting up the system, see the *Getting Started Guide* that is shipped with your system.

   NOTE: For information about managing the basic settings and features of the system, see the *Dell Technologies PowerEdge XR11 BIOS and UEFI Reference Guide* on the product documentation page.

iDRAC configuration

The Integrated Dell Remote Access Controller (iDRAC) is designed to make you more productive as a system administrator and improve the overall availability of Dell EMC servers. iDRAC alerts you to system issues, helps you to perform remote management, and reduces the need for physical access to the system.

NOTE: To reset iDRAC, see how to reset iDRAC.

Options to set up iDRAC IP address

To enable communication between your system and iDRAC, you must first configure the network settings based on your network infrastructure. The network settings option is set to **DHCP**, by default.

NOTE: For static IP configuration, you must request for the settings at the time of purchase.

You can set up the iDRAC IP address using one of the interfaces in the table below. For information about setting up iDRAC IP address, see the documentation links provided in the table below.

Table 8. Interfaces to set up iDRAC IP address

Interface	Documentation links
iDRAC Settings utility	Integrated Dell Remote Access Controller User's Guide or for system specific Integrated Dell Remote Access Controller User's Guide, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**.

Table 8. Interfaces to set up iDRAC IP address (continued)

Interface	Documentation links
	NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.
OpenManage Deployment Toolkit	PowerEdge Manuals > Open Manage Deployment Toolkit.
iDRAC Direct	Integrated Dell Remote Access Controller User's Guide or for system specific Integrated Dell Remote Access Controller User's Guide, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**. **NOTE:** To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.
Lifecycle Controller	Integrated Dell Remote Access Controller User's Guide or for system specific *Dell Lifecycle Controller User's Guide*, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**. **NOTE:** To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.

NOTE: To access iDRAC, ensure that you connect the ethernet cable to the iDRAC dedicated network port or use the iDRAC Direct port by using the USB cable. You can also access iDRAC through the shared LOM mode, if you have opted for a system that has the shared LOM mode enabled.

Options to log in to iDRAC

To log in to the iDRAC Web User Interface, open a browser and enter the IP address.

You can log in to iDRAC as:

- iDRAC user
- Microsoft Active Directory user
- Lightweight Directory Access Protocol (LDAP) user

If you opted for legacy password, use the iDRAC legacy username and password - `root` and `calvin`. If you opted for Force Change Password, for the initial log in to iDRAC use the username and password - `root` and `calvin`. Then you will be prompted and required to create a password of your choice before proceeding.

NOTE: Ensure that you change the default username and password after setting up the iDRAC IP address.

For more information about logging in to the iDRAC and iDRAC licenses, see the latest *Integrated Dell Remote Access Controller User's Guide* at iDRAC Manuals.

NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.

You can also access iDRAC using command-line protocol - RACADM. For more information, see the Integrated Dell Remote Access Controller RACADM CLI Guide .

You can also access iDRAC using automation tool - Redfish API. For more information, see the Integrated Dell Remote Access Controller User's Guide Redfish API Guide.

Resources to install operating system

If the system is shipped without an operating system, you can install a supported operating system by using one of the resources provided in the table below. For information about how to install the operating system, see the documentation links provided in the table below.

Table 9. Resources to install the operating system

Resource	Documentation links
iDRAC	Integrated Dell Remote Access Controller User's Guide or for system specific Integrated Dell Remote Access Controller User's Guide, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**. **NOTE:** To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.
Lifecycle Controller	*Dell Lifecycle Controller User's Guide* at iDRAC Manuals or for system specific *Dell Lifecycle Controller User's Guide*, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**. Dell recommends using Lifecycle Controller to install the OS, since all required drivers are installed on the system. **NOTE:** To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article at Integrated Dell Remote Access Controller 9 Versions and Release Notes.
OpenManage Deployment Toolkit	OpenManage Manuals > OpenManage Deployment Toolkit
Dell certified VMware ESXi	Virtualization solutions

NOTE: For more information about installation and how-to videos for operating systems supported on PowerEdge systems, see Supported Operating Systems for Dell EMC PowerEdge systems.

Options to download firmware

You can download firmware from the Dell support site. For information about downloading firmware, see the Downloading drivers and firmware section.

You can also choose any one of the following options to download the firmware. For information about how to download the firmware, see the documentation links provided in the table below.

Table 10. Options to download firmware

Option	Documentation link
Using Integrated Dell Remote Access Controller Lifecycle Controller (iDRAC with LC)	idrac manuals
Using Dell Repository Manager (DRM)	OpenManage Manuals > Repository Manager
Using Dell Server Update Utility (SUU)	OpenManage Manuals > Server Update Utility
Using Dell OpenManage Deployment Toolkit (DTK)	OpenManage Manuals > OpenManage Deployment Toolkit
Using iDRAC virtual media	idrac manuals

Options to download and install OS drivers

You can choose any one of the following options to download and install OS drivers. For information about how to download or install OS drivers, see the documentation links provided in the table below.

Table 11. Options to download and install OS drivers

Option	Documentation
Dell EMC support site	Downloading drivers and firmware section.
iDRAC virtual media	Integrated Dell Remote Access Controller User's Guide or for system specific Integrated Dell Remote Access Controller User's Guide, go to PowerEdge Manuals > **Product Support** page of your system > **Documentation**.

Table 11. Options to download and install OS drivers (continued)

Option	Documentation
	NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article KB78115.

Downloading drivers and firmware

It is recommended that you download and install the latest BIOS, drivers, and systems management firmware on the system.

Prerequisites

Ensure that you clear the web browser cache before downloading the drivers and firmware.

Steps

1. Go to Drivers.
2. Enter the Service Tag of the system in the **Enter a Dell Service Tag, Dell EMC Product ID or Model** field, and then press Enter.

   NOTE: If you do not have the Service Tag, click **Browse all products**, and navigate to your product.

3. On the displayed product page, click **Drivers & Downloads**.
   On the **Drivers & Downloads** page, all drivers that are applicable to the system are displayed.
4. Download the drivers to a USB drive, CD, or DVD.

4

Minimum to POST and system management configuration validation

This section describes the minimum to POST system requirement and system management configuration validation of the Dell EMC system.

Topics:

Minimum configuration to POST

The components mentioned below are the minimum configuration to POST:

- System board
- Power button control panel and cable
- Power Interposer Board (PIB) and cables
- Processor and heat sink
- One memory module (DIMM) in socket A1
- One power supply unit

Configuration validation

The new generation of PowerEdge systems have added interconnect flexibility and advanced iDRAC management features to collect precise system configuration information and report configuration errors.

When the system is powered on, information about installed cables, risers, backplanes, power supplies and processor is obtained from the CPLD and backplane memory maps is analyzed. This information forms a unique configuration, which is compared with one of the qualified configurations stored in a table maintained by iDRAC.

One or more sensors are assigned to each of the configuration elements. During POST, any configuration validation error is logged in the System Event Log (SEL)/LifeCycle (LC) log. The reported events are categorized in the configuration validation error table.

Table 12. Configuration validation error

Error	Description	Possible cause and recommendations	Example
Config Error	A configuration element within the closest match contains something that is unexpected and does not match any Dell qualified configuration.	Wrong configuration	Config Error: Backplane Cable PLANAR_SL1 and BP_DST_SA1
		The element reported in HWC8010 errors are assembled incorrectly. Verify element (cable, riser, etc) placement in the system.	Config Error : Backplane Cable PLANAR_SL3 and BP_DST_PA1
Config Missing	iDRAC found a configuration element missing within the closest match detected.	Missing element or cable is reported in HWC8010 error logs. Install the missing element (cable, riser, etc).	Config Missing : Backplane Cable PLANAR_SL3 and BP_DST_SA1

Table 12. Configuration validation error (continued)

Error	Description	Possible cause and recommendations	Example
Comm Error	A configuration element is not responding to iDRAC using the management interface while running an inventory check.	System management sideband communication Unplug AC Power, reseat the element and replace the element if the problem persists.	Comm Error: Backplane 0

Error messages

This section describes the error messages displayed on the screen during POST or captured in the system event log (SEL)/ LifeCycle (LC) log.

Table 13. Error message HWC8010

Error code	HWC8010
Message	The System Configuration Check operation resulted in the following issue involving the indicated component type
Arguments	backplane, processor, cable, or other components
Detailed Description	The issue identified in the message is observed in the System Configuration Check operation.
Recommended Response Action	Do the following and retry the operation: 1. Disconnect the input power. 2. Check for proper cable connection and component placement. If the issue persists, contact the service provider.
Category	System Health (HWC = Hardware Config)
Severity	Critical
Trap/EventID	2329

Table 14. Error message HWC8011

Error code	HWC8011
Message	The System Configuration Check operation resulted in multiple issues involving the indicated component type
Arguments	backplane, processor, cable, or other components
Detailed Description	Multiple issues are observed in the System Configuration Check operation.
Recommended Response Action	Do the following and retry the operation: 1. Disconnect the input power. 2. Check for proper cable connection and component placement. If the issue persists, contact the service provider.
Category	System Health (HWC = Hardware Config)
Severity	Critical

5

Installing and removing system components

Topics:

Safety instructions

NOTE: Whenever you need to lift the system, get others to assist you. To avoid injury, do not attempt to lift the system by yourself.

CAUTION: Ensure that two or more people lift the system horizontally from the box and place it on a flat surface, rack lift, or into the rails.

WARNING: Opening or removing the system cover while the system is powered on may expose you to a risk of electric shock.

WARNING: Do not operate the system without the cover for a duration exceeding five minutes. Operating the system without the system cover can result in component damage.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

NOTE: It is recommended that you always use an antistatic mat and antistatic strap while working on components inside the system.

CAUTION: To ensure proper operation and cooling, all system bays and fans must always be populated with a component or a blank.

NOTE: While replacing the hot swappable PSU, after next server boot; the new PSU automatically updates to the same firmware and configuration of the replaced one. For updating to the latest firmware and changing the configuration, see the *Lifecycle Controller User's Guide* at iDRAC Manuals.

NOTE: While replacing a faulty storage controller or NIC card with the same type of card, after you power on the system; the new card automatically updates to the same firmware and configuration of the faulty one. For more information about the Part replacement configuration, see the *Dell Lifecycle Controller User's Guide* available at iDRAC manuals

NOTE: Only use certified Optical Fiber Transceiver Class I Laser Products.

CAUTION: Do not install GPUs, network cards, or other PCIe devices on your system that are not validated and tested by Dell. Damage caused by unauthorized and invalidated hardware installation will null and void the system warranty.

Before working inside your system

Prerequisites

Follow the safety guidelines listed in the Safety instructions.

Steps

1. Power off the system and all attached peripherals.
2. Disconnect the system from the electrical outlet, and disconnect the peripherals.
3. If applicable, remove the system from the rack.
   For more information, see the *Rail Installation Guide* relevant to your rail solutions at PowerEdge manuals.
4. Remove the system cover.

After working inside your system

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Replace the system cover.
2. If applicable, install the system into the rack.
   For more information, see the *Rail Installation Guide* relevant to your system at PowerEdge manuals.
3. Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.

Recommended tools

You may need any or combination of the following tools to perform the removal and installation procedures:

- Phillips 1 screwdriver
- Phillips 2 screwdriver
- Torx T8 screwdriver
- Torx T30 screwdriver
- 5 mm hex nut screwdriver
- Plastic scribe
- 1/4-inch flat blade screwdriver
- Wrist grounding strap connected to the ground

- ESD mat
- Needle-nose pliers

You need the following tools to assemble the cables for a DC power supply unit:

- AMP 90871-1 hand-crimping tool or equivalent
- Tyco Electronics 58433-3 or equivalent
- Wire-stripper pliers to remove insulation from size 10 AWG solid or stranded, insulated copper wire

NOTE: Use alpha wire part number 3080 or equivalent (65/30 stranding).

Optional front bezel

Removing the front bezel

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

Steps

1. Remove the screws on both sides of the bezel.
2. Holding the bezel by the edges, remove the front bezel.

Figure 15. Removing the front bezel for Rear Accessed configuration

Next steps

Replace the front bezel.

Installing the front bezel

Prerequisites

Follow the safety guidelines listed in the Safety instructions.

Steps

1. Align the bezel screws to the holes of the system left and right rack ears.
2. Tighten the screws until the bezel is firmly seated.

Figure 16. Installing the front bezel for Rear Accessed configuration

Bezel filter

Removing the bezel filter for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the front bezel.

Steps

1. Remove the metal filter bracket using the tab marked LIFT on the inside face of the bezel.

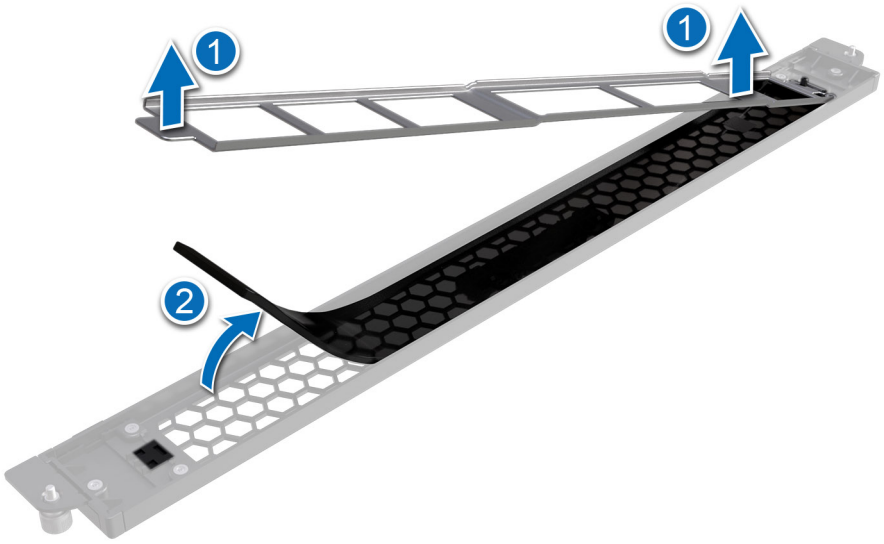

Figure 17. Removing the front bezel filter for Rear Accessed configuration

2. Remove the filter below the metal bracket.

NOTE: To maintain optimal system health, Dell Technologies recommends checking and changing the filter every three months. Filters can be ordered from Dell.

Next steps

Replace the bezel filter.

Installing the bezel filter for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Remove the front bezel.

Steps

1. Place the new filter in the bezel cavity under the filter bracket. Ensure that the filter is smooth and aligned in the allowed slot.
2. Align the filter bracket with painted surface facing the filter and align the bracket to the guides on the bezel.
3. Place the bracket on the bezel for the magnets to secure in place.

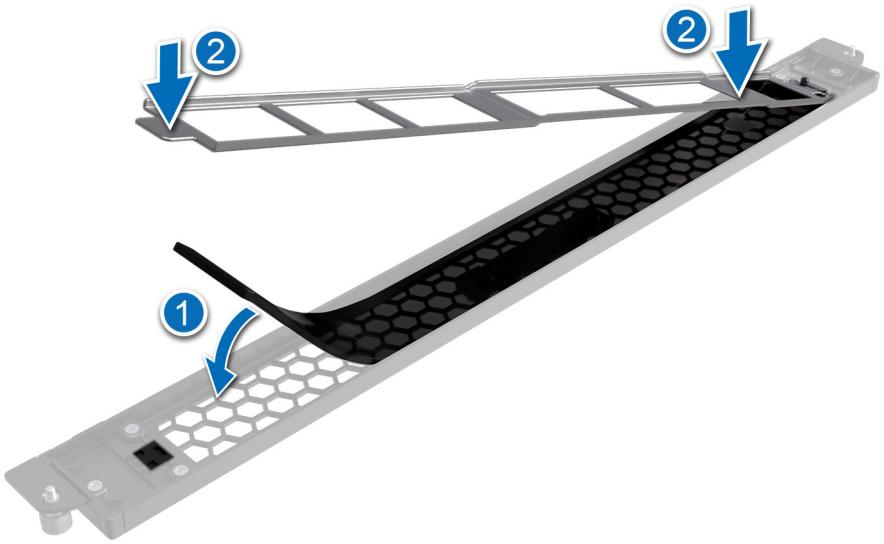

Figure 18. Installing the front bezel filter for Rear Accessed configuration

Next steps

Install the front bezel.

System cover

Removing the system cover

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.

2. Follow the procedure listed in the Before working inside your system.

Steps

1. Using a 1/4-inch flat head or Phillips 2 screwdriver, rotate the lock counterclockwise to the unlock position.
2. Lift the release latch until the system cover slides back.
3. Lift the cover from the system.

Figure 19. Removing the system cover for Rear Accessed configuration

Figure 20. Removing the system cover for Front Accessed configuration

Next steps

Replace the system cover.

Installing the system cover

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.
3. Ensure that all internal cables are connected and routed properly, and no tools or extra parts are left inside the system.

Steps

1. Align the tabs on the system cover with the guide slots on the system.
2. Close the system cover release latch.
3. Using a 1/4-inch flat head or Phillips 2 screwdriver, rotate the lock clockwise to the lock position.

Figure 21. Installing the system cover for Rear Accessed configuration

Figure 22. Installing the system cover for Front Accessed configuration

Next steps

Follow the procedure listed in After working inside your system.

Air shrouds

Removing the air shrouds

The system supports PCI air shroud and processor air shroud.

Prerequisites

CAUTION: Never operate your system with the air shroud removed. The system may get overheated quickly, resulting in shutdown of the system and loss of data.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to remove the air shrouds is the same for Rear Accessed and Front Accessed configurations.

Steps

Holding the air shroud at both the ends, and lift the air shroud out of the system.

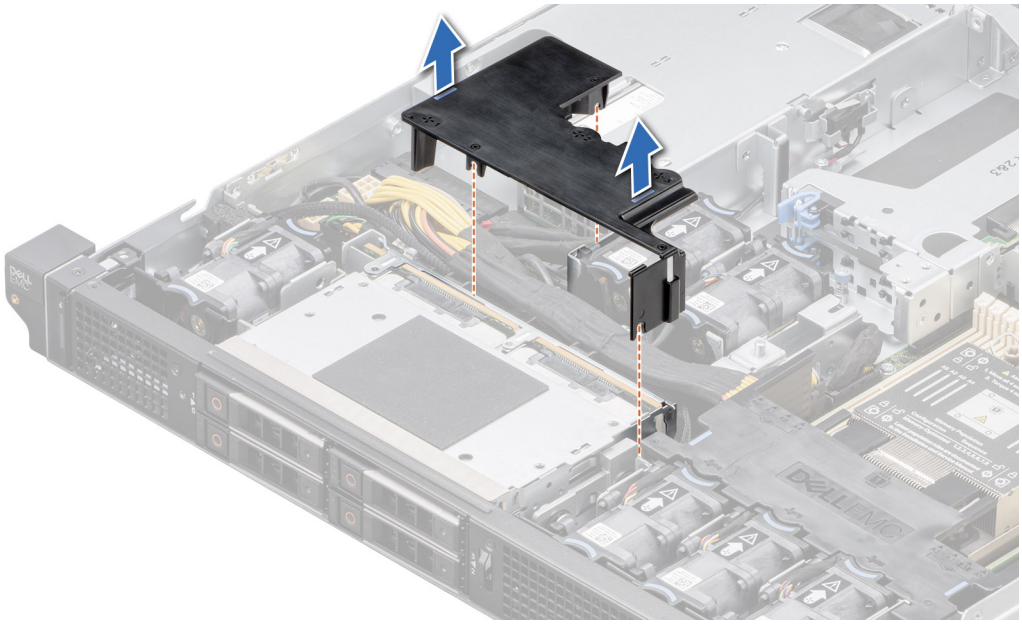

Figure 23. Removing the PCI air shroud

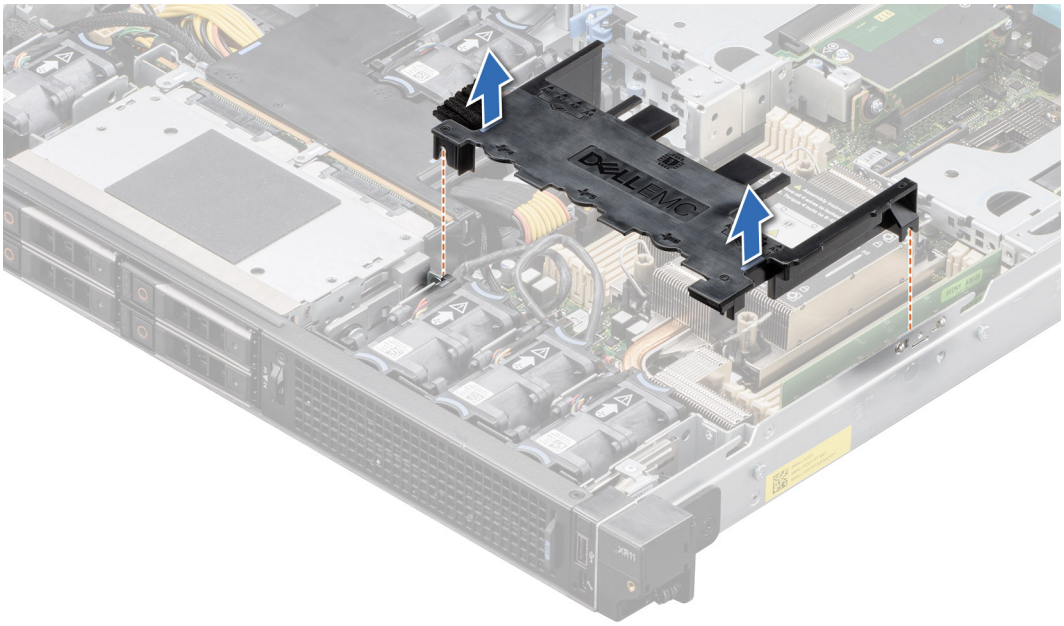

Figure 24. Removing the processor air shroud

Next steps

Replace the air shroud.

Installing the air shrouds

The system supports PCI air shroud and processor air shroud.

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to install the air shrouds is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Align the guide pins on the system with the guides on the PCI air shroud.
2. Lower the PCI air shroud into the system until it is firmly seated.

NOTE: Ensure the air shroud and cables do not interfere with each other.

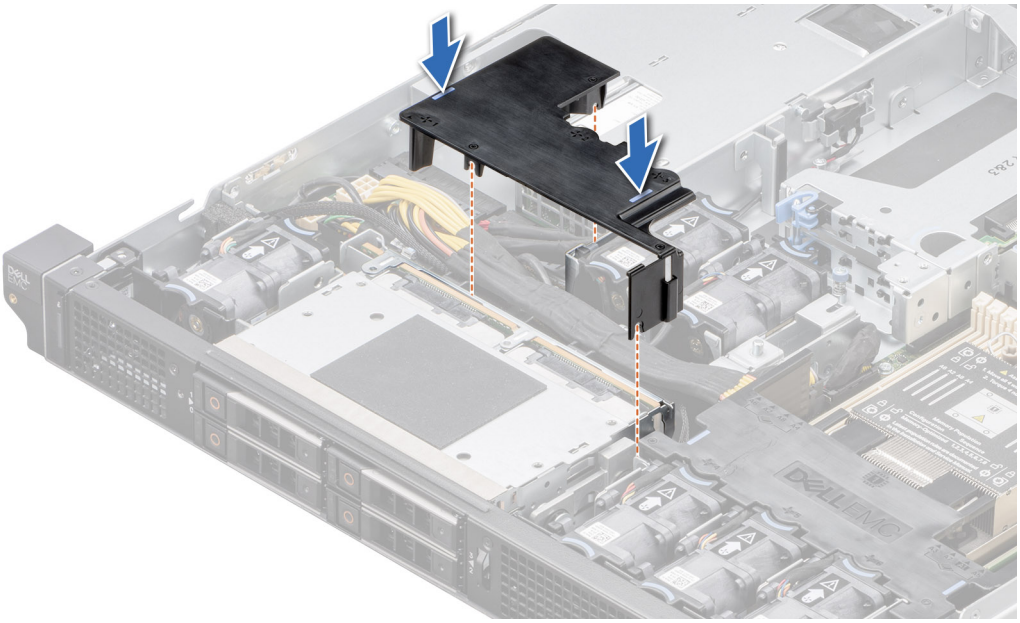

Figure 25. Installing the PCI air shroud

3. Align the guide pins on the system with the guides on the processor air shroud. Make sure the processor air shroud foam is turned outward as shown in the zoom in bubble below.

   NOTE: Ensure the air shroud and cables do not interfere with each other.

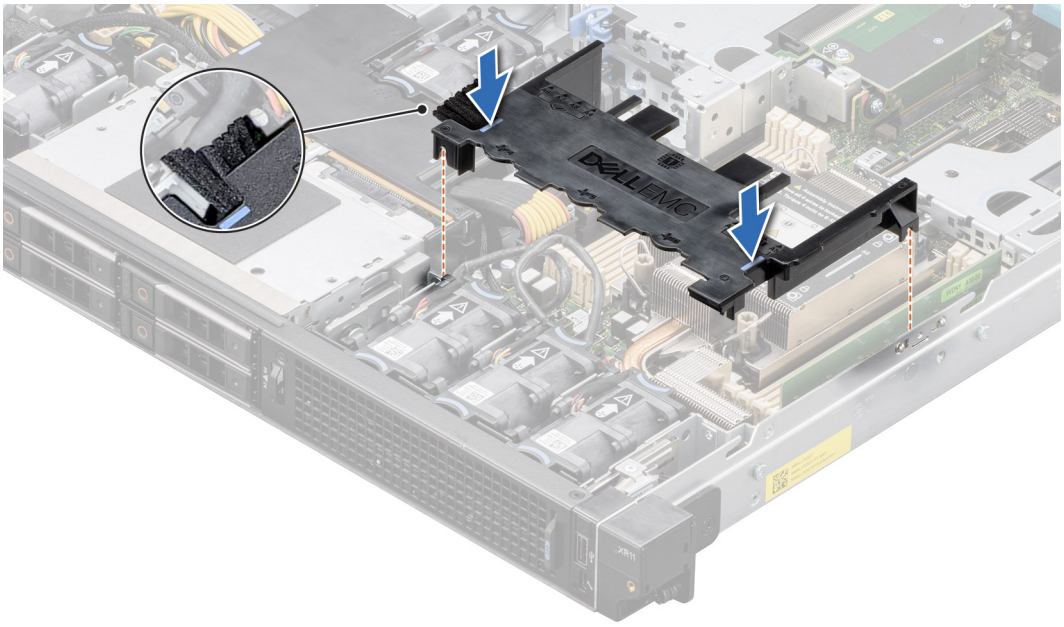

Figure 26. Installing the processor air shroud

Next steps

Follow the procedure listed in After working inside your system.

Cooling fans

Removing the cooling fan

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. If installed, remove the air shrouds.

NOTE: The procedure to remove the cooling fan is the same for Rear Accessed and Front Accessed configurations.

NOTE: Observe the fan cable routing or make a note on the fan cable routing.

Steps

1. Disconnect the cooling fan cable that is connected to the system board connector.
2. Holding the blue tabs, lift the cooling fan out of the fan cage.

   NOTE: To remove the Fan 5 and 6, remove the processor and heat sink module for system with extended heat sink module.

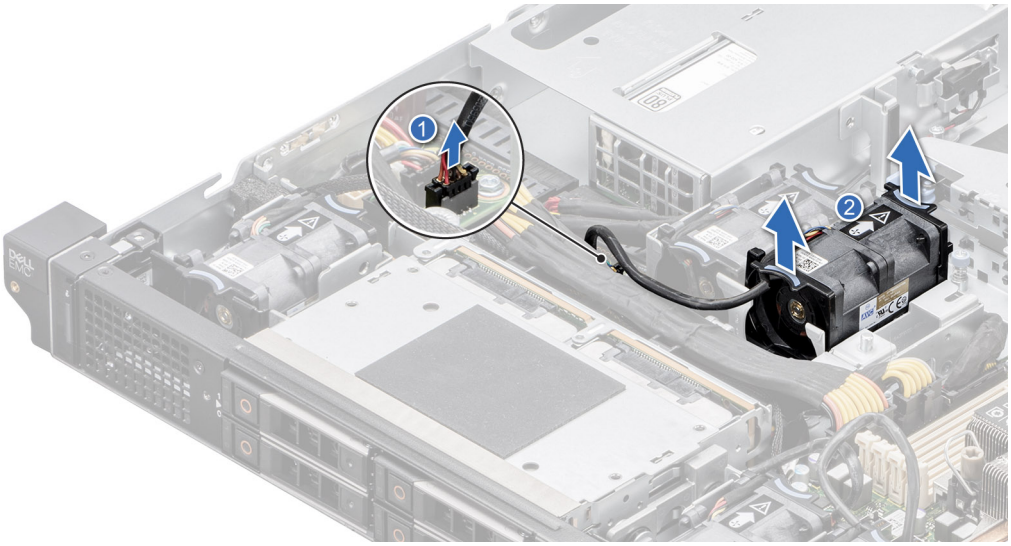

Figure 27. Removing a cooling fan

Next steps

Replace the cooling fan.

Installing the cooling fan

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to install the cooling fan is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Lower the cooling fan into the cage until it is seated firmly.

2. Route the cable properly to prevent the cable from being pinched or crimped.
3. Press the release tabs on the fan cable connector and connect the cable to the system board.

NOTE: Ensure to connect the fan cable to the correct fan connector on the system board. Check the SIL label for correct fan header location.

NOTE: To install Fan 5 and 6, remove the processor and heat sink module. After installing the fans replace the processor and heat sink module for system with extended heat sink module.

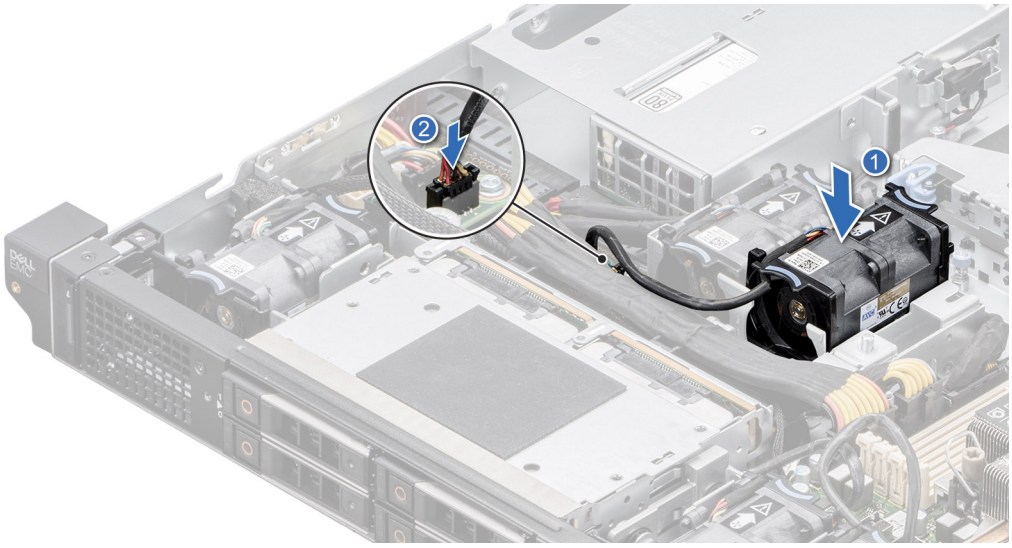

Figure 28. Installing a cooling fan

Next steps

1. If removed, install the air shrouds.
2. Follow the procedure listed in After working inside your system.

Intrusion switch module

This is a service technician replaceable part only.

Removing the intrusion switch module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to remove the intrusion switch module is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Disconnect and remove the intrusion switch cable from the connector on the power interposer board (PIB).

NOTE: Observe the routing of the cable as you remove it from the system.

2. Using the Phillips 1 screwdriver, remove the screw securing the intrusion switch module.
3. Lift the intrusion switch module out of the system.

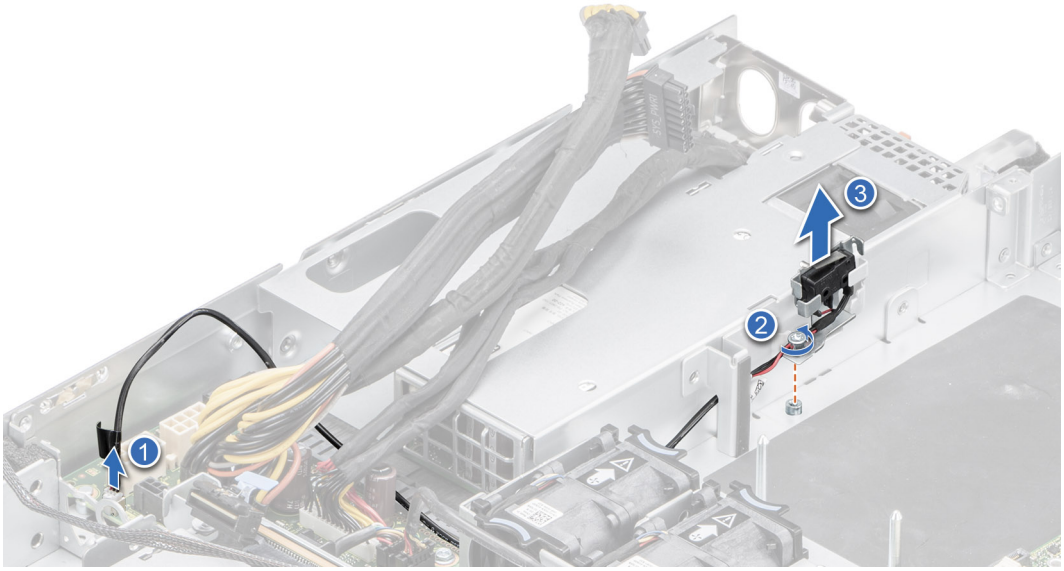

Figure 29. Removing the intrusion switch module

Next steps

Replace the intrusion switch module.

Installing the intrusion switch module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.

NOTE: The procedure to install the intrusion switch module is the same for Rear Accessed and Front Accessed configurations.

NOTE: Ensure that you note the routing of all the cables as you remove them from the system board. Route the intrusion switch cable properly when you replace it to prevent the cable from being pinched or crimped.

Steps

1. Align and insert the intrusion switch module until it is firmly seated in the slot on the system.
2. Using the Phillips 1 screwdriver, tighten the screw securing the intrusion switch module.
3. Connect the intrusion switch cable to the connector on the power interposer board (PIB).

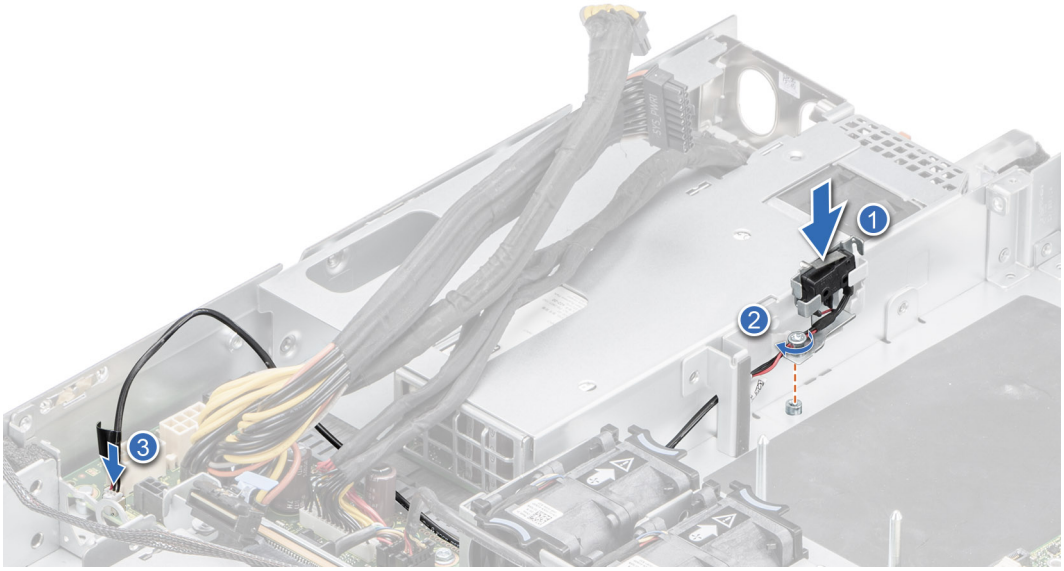

Figure 30. Installing the intrusion switch module

Next steps

1. Reconnect all the cables to the power interposer board (PIB).
2. Follow the procedure listed in After working inside your system.

Drives

Removing a drive blank

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. If installed, remove the front bezel.

CAUTION: To maintain proper system cooling, drive blanks must be installed in all empty drive slots.

NOTE: The procedure to remove the drive blank is the same for Rear Accessed and Front Accessed configurations.

Steps

Press the release button, and slide the drive blank out of the drive slot.

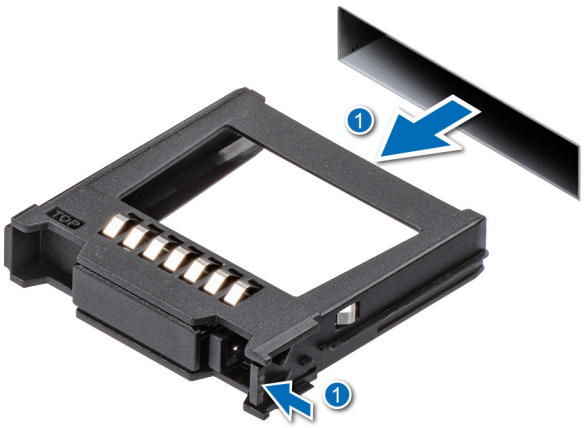

Figure 31. Removing a drive blank

Next steps

Replace the drive or replace the drive blank.

Installing the drive blank

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. If installed, remove the front bezel.

NOTE: The procedure to install the drive blank is the same for Rear Accessed and Front Accessed configurations.

Steps

Insert the drive blank into the drive slot until the release button clicks into place.

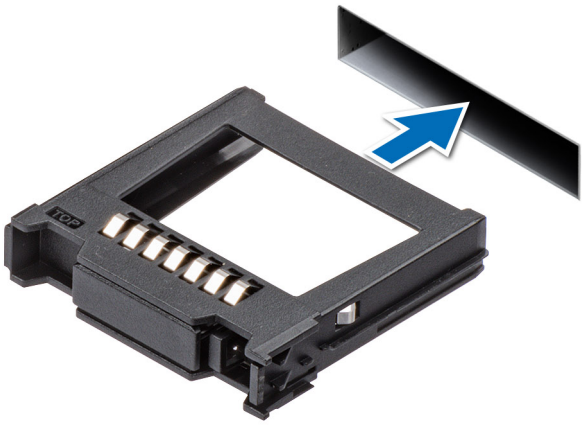

Figure 32. Installing a drive blank

Next steps

If removed, replace the front bezel.

Removing the drive carrier

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. If installed, remove the front bezel.
3. Using the management software, prepare the drive for removal. If the drive is online, the green activity or fault indicator blinks while the drive is powering off. When the drive indicators are off, the drive is ready for removal. For more information, see the Storage controller documentation at storage controller manuals.

CAUTION: Before attempting to remove or install a drive while the system is running, see the documentation for the storage controller card to ensure that the host adapter is configured correctly to support drive removal and insertion.

CAUTION: To prevent data loss, ensure that your operating system supports drive installation. See the documentation supplied with your operating system.

Steps

1. Press the release button to open the drive carrier release handle.
2. Holding the drive carrier release handle, slide the drive carrier out of the drive slot.

Figure 33. Removing a drive carrier

Next steps

Replace the drive carrier or drive blank.

Installing the drive carrier

Prerequisites

CAUTION: Before removing or installing a drive while the system is running, see the documentation for the storage controller card to ensure that the host adapter is configured correctly to support drive removal and insertion.

CAUTION: Combining SAS and SATA drives in the same RAID volume is not supported.

CAUTION: When installing a drive, ensure that the adjacent drives are fully installed. Inserting a drive carrier and attempting to lock its handle next to a partially installed carrier can damage the partially installed carrier's shield spring and make it unusable.

CAUTION: To prevent data loss, ensure that your operating system supports hot-swap drive installation. See the documentation supplied with your operating system.

CAUTION: When a replacement hot swappable drive is installed and the system is powered on, the drive automatically begins to rebuild. Ensure that the replacement drive is blank or contains data that you wish to overwrite. Any data on the replacement drive is immediately lost after the drive is installed.

NOTE: Ensure that the drive carrier's release handle is in the open position before inserting the carrier into the slot.

1. Follow the safety guidelines listed in the Safety instructions.
2. If installed, remove the front bezel.
3. Remove the drive carrier or remove the drive blank when you want to assemble the drives in to the system.

Steps

1. Slide the drive carrier into the drive slot.
2. Close the drive carrier release handle to lock the drive in place.

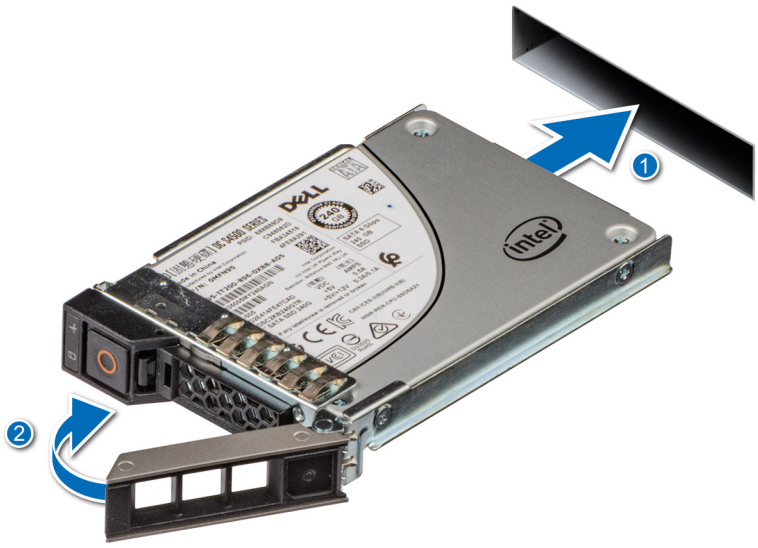

Figure 34. Installing a drive carrier

Next steps

If removed, install the front bezel.

Removing the drive from the drive carrier

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.

Steps

1. Using a Phillips 1 screwdriver, remove the screws from the slide rails on the drive carrier.

   NOTE: If the drive carrier has Torx screw, use Torx 6 (for 2.5-inch drive).

2. Lift the drive out of the drive carrier.

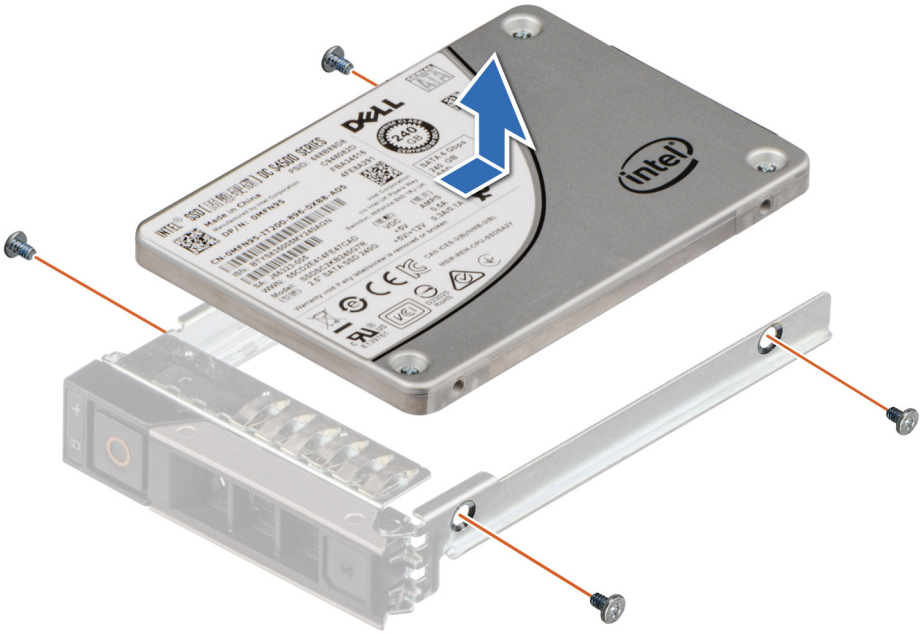

Figure 35. Removing the drive from the drive carrier

Next steps

Replace the drive into the drive carrier.

Installing the drive into the drive carrier

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.

NOTE: When installing a drive into the drive carrier, ensure that the screws are torqued to 4 in-lbs.

Steps

1. Insert the drive into the drive carrier with the drive connector facing towards the rear of the carrier.
2. Align the screw holes on the drive with the screws holes on the drive carrier.
3. Using a Phillips 1 screwdriver, secure the drive to the drive carrier with the screws.

   NOTE: If the drive carrier has Torx screw , use Torx 6 (for 2.5-inch drive).

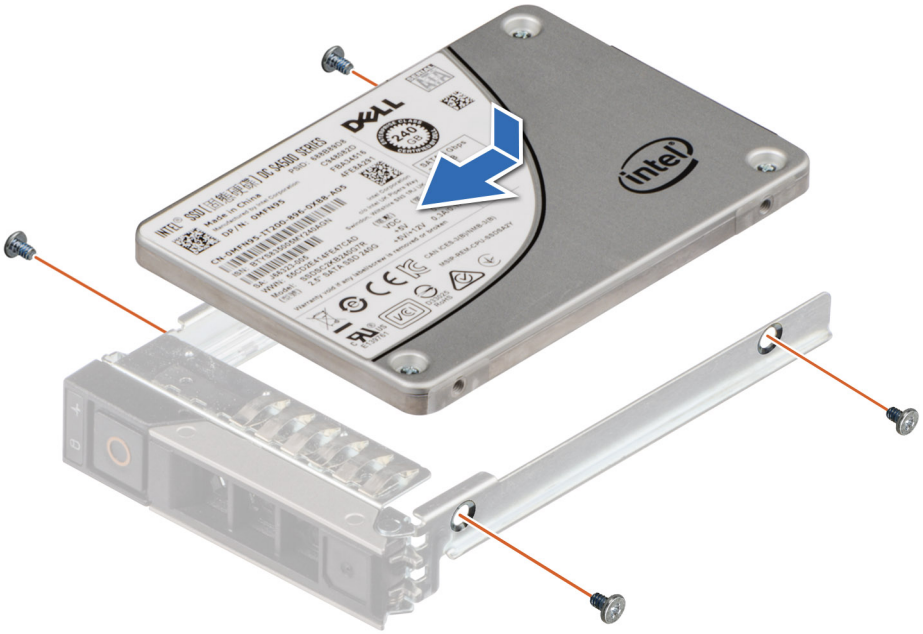

Figure 36. Installing a drive into the drive carrier

Next steps

1. Replace the drive carrier.

Drive backplane

This is a service technician replaceable part only.

Drive backplane

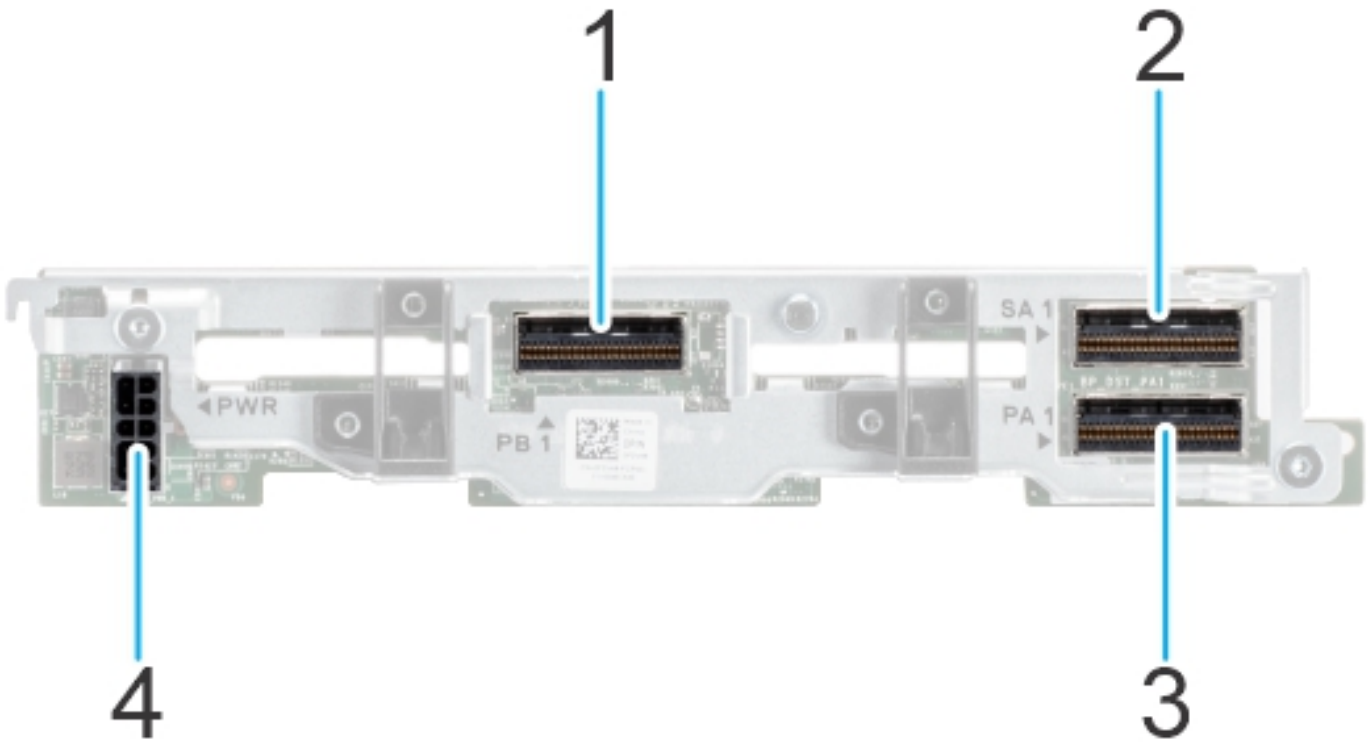

Figure 37. 4 x 2.5-inch universal backplane

1. PB1 (NVMe signal connector)
2. SA1 (SAS/SATA signal connector)
3. PA1 (NVMe signal connector)
4. PWR (backplane power cable connector)

Removing the drive backplane

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove all the drives.
4. Remove the PCI air shroud.
5. Disconnect the drive backplane cables from the connectors on backplane.

NOTE: The procedure to remove the drive backplane is the same for Rear Accessed and Front Accessed configurations.

CAUTION: To prevent damage to the drives and backplane, remove the drives from the system before removing the backplane.

CAUTION: Note the number of each drive and temporarily label them before you remove the drive so that you can reinstall them in the same location.

Steps

1. Holding the drive backplane by the edges lift it upwards to disengage the backplane from the guide pins.
2. Lift the drive backplane out of the system.

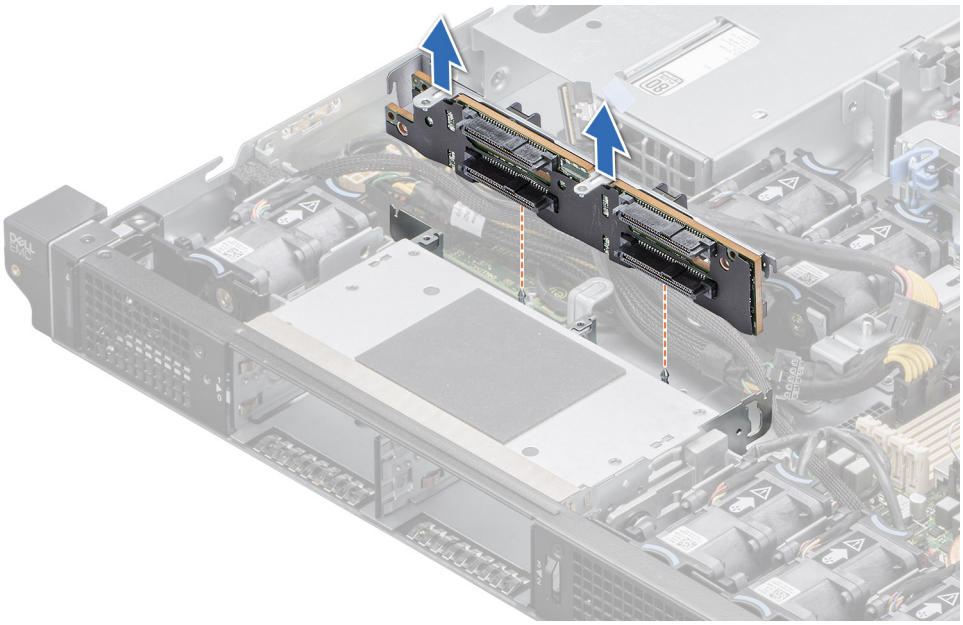

Figure 38. Removing the drive backplane

Next steps

Replace the drive backplane.

Installing the drive backplane

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the PCI air shroud.
4. Disconnect the drive backplane cables from the connectors on the system board.

NOTE: Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

NOTE: The procedure to install the drive backplane is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Align the guide pins on the backplane with the guides on the system.
2. Insert the backplane into the guides and lower the backplane firmly until it is fully seated.
3. Verify that the backplane connector pins are not bent and then connect the cables to the backplane.

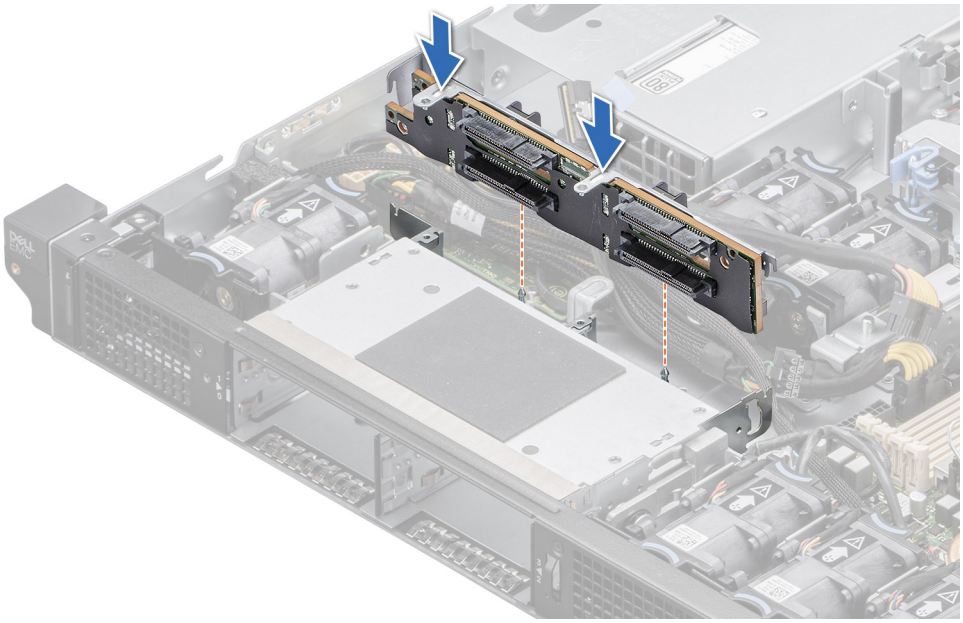

Figure 39. Installing the drive backplane

Next steps

1. Connect the cables to the backplane and then verify that both power and signal cable connections are fully seated to the backplane and system board.
2. Install all the drives.
3. Install the PCI air shroud.
4. Follow the procedure listed in After working inside your system.

Internal storage configuration matrix for XR11

Table 15. Internal storage configuration matrix

Configuration	Chassis orientation	Base configuration description	Backplane description	Storage controller(s)	Controller form factor	BOSS enabled	Riser configuration
1	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch NVMe (only)	H755	Adapter	Y	C0/1: R1B+R2+R3
2	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch NVMe (only)	S150	Direct Attach (SL)	Y	C0/1: R1B+R2+R3
3	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	H345	Adapter	Y	C0/1: R1B+R2+R3
4	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	H755	Adapter	Y	C0/1: R1B+R2+R3
5	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	HBA355i	Adapter	Y	C0/1: R1B+R2+R3
6	Front Accessed	ASSY, CHAS, RAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SATA (only)	Onboard SATA	Onboard SATA	Y	C0/1: R1B+R2+R3 C2: R1A+R2+R3
7	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch NVMe (only)	H755	Adapter	Y	C0/1: R1B+R2+R3

Table 15. Internal storage configuration matrix (continued)

Configuration	Chassis orientation	Base configuration description	Backplane description	Storage controller(s)	Controller form factor	BOSS enabled	Riser configuration
8	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch NVMe (only)	S150	Direct attach (SL)	Y	C0/1: R1B+R2+R3
9	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	H345	Adapter	Y	C0/1: R1B+R2+R3
10	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	H755	Adapter	Y	C0/1: R1B+R2+R3
11	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SAS/SATA	HBA355i	Adapter	Y	C0/1: R1B+R2+R3
12	Rear Accessed	ASSY, CHAS, NAF, 4HD, 3PCI, 1U, XR11	4 x 2.5-inch SATA (only)	Onboard SATA	Onboard SATA	Y	C0/1: R1B+R2+R3

For cable routing information on the different configurations, please refer to the cable routing topic.

Cable routing

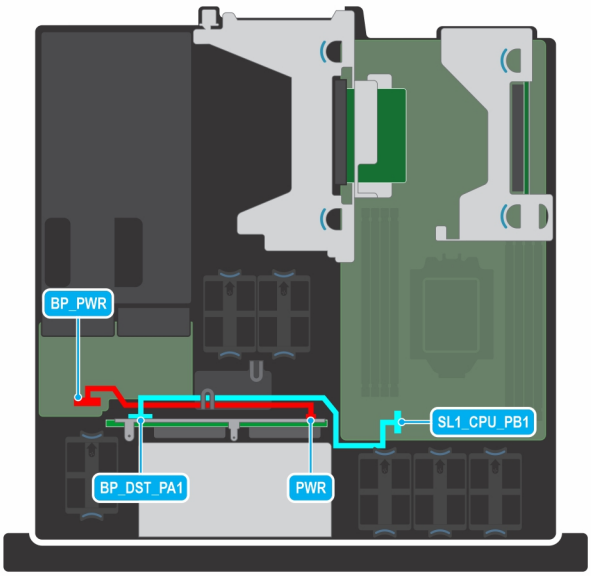

Figure 40. Cable routing - SL1 NVMe cable from system board to 4 x 2.5-inch drive backplane

Table 16. SL1 NVMe cable from system board to 4 x 2.5-inch drive backplane

From	To
BP_PWR (Power connector on PIB)	PWR (Power connector on backplane)
SL1_CPU_PB1 (NVMe signal connector on system board)	BP_DST_PA1 (NVMe signal connector on backplane)

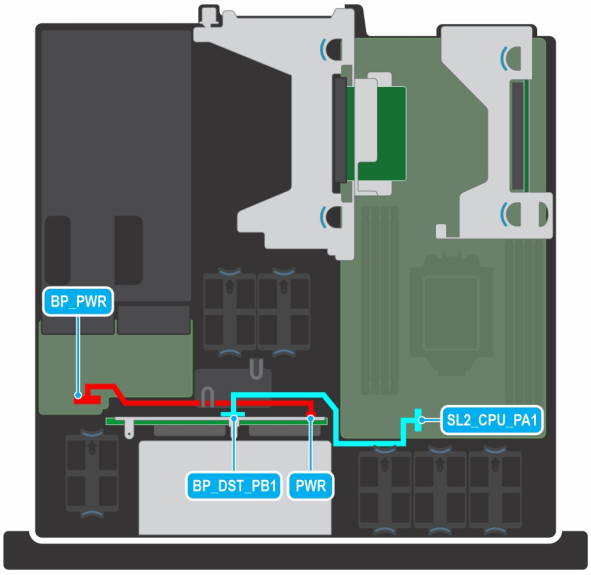

Figure 41. Cable routing - SL2 NVMe cable from system board to 4 x 2.5-inch drive backplane

Table 17. SL2 NVMe cable from system board to 4 x 2.5-inch drive backplane

From	To
BP_PWR (Power connector on PIB)	PWR (Power connector on backplane)
SL2_CPU_PA1 (NVMe signal connector on system board)	BP_DST_PB1 (NVMe signal connector on backplane)

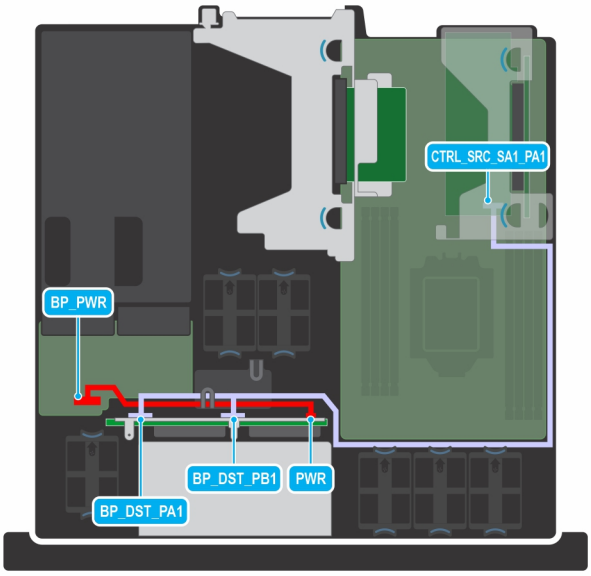

Figure 42. Cable routing- NVMe cable from PERC to 4 x 2.5-inch drive backplane

Table 18. NVMe cable from PERC to 4 x 2.5-inch drive backplane

From	To
BP_PWR (Power connector on PIB)	PWR (Power connector on backplane)

Table 18. NVMe cable from PERC to 4 x 2.5-inch drive backplane (continued)

From	To
CTRL_SRC_SA1_PA1 (NVMe signal connector on PERC adapter)	BP_DST_PA1 (NVMe signal connector on backplane)
	BP_DST_PB1 (NVMe signal connector on backplane)

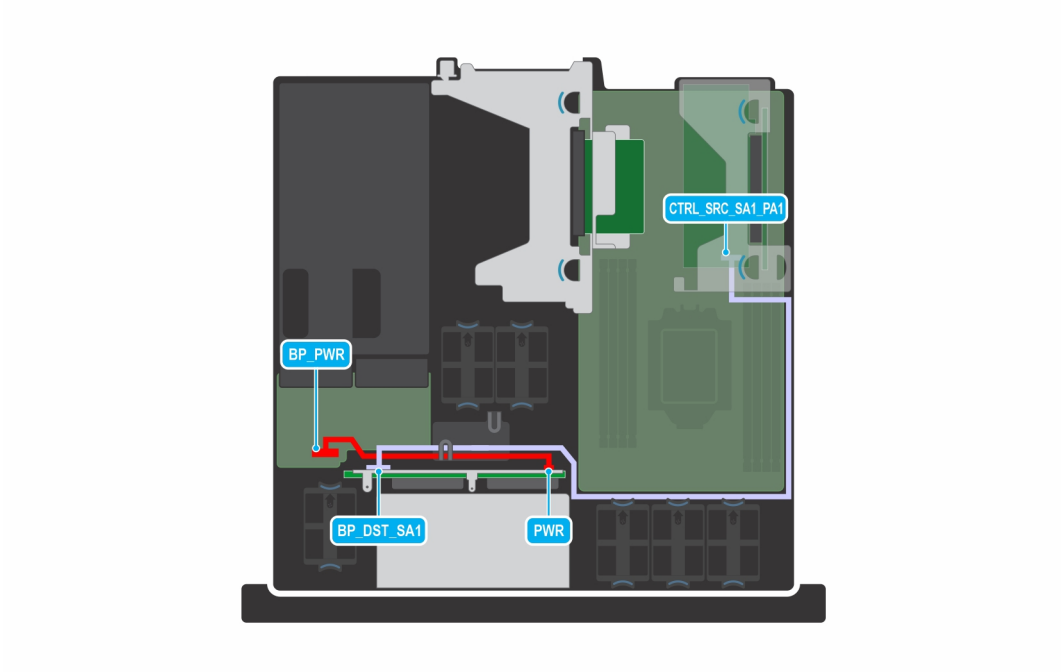

Figure 43. Cable routing- SAS cable from PERC to 4 x 2.5-inch drive backplane

Table 19. SAS cable from PERC to 4 x 2.5-inch drive backplane

From	To
BP_PWR (Power connector on PIB)	PWR (Power connector on backplane)
CTRL_SRC_SA1_PA1 (SAS signal connector on PERC adapter)	BP_DST_SA1 (SAS signal connector on backplane)

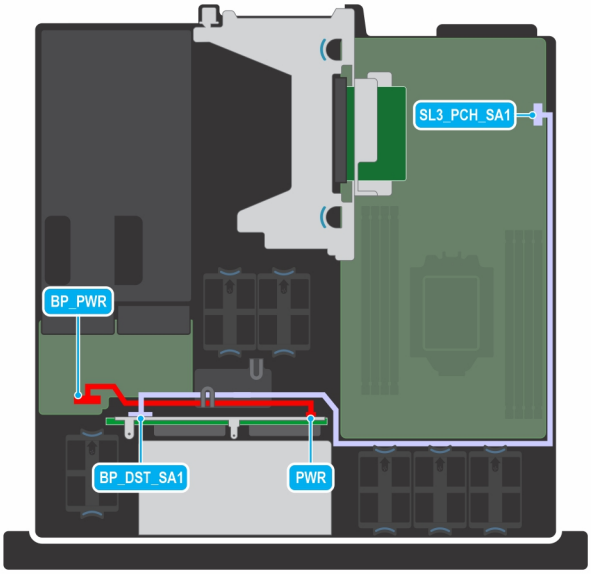

Figure 44. Cable routing- SATA cable from PERC to 4 x 2.5-inch drive backplane

Table 20. SATA cable from PERC to 4 x 2.5-inch drive backplane

From	To
BP_PWR (Power connector on PIB)	PWR (Power connector on backplane)
SL3_PCH_SA1 (SATA signal connector on system board)	BP_DST_SA1 (SATA signal connector on backplane)

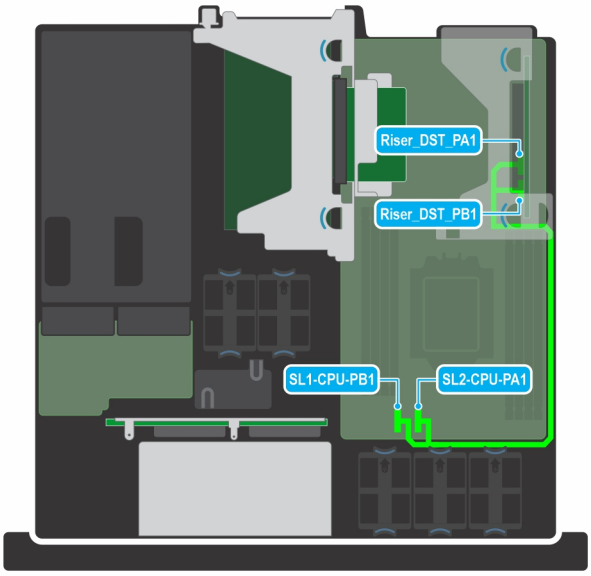

Figure 45. Riser 1A connecting on system board

Table 21. Connector descriptions for Riser 1A connecting on system board

From	To
Riser_DST_PA1 (cable marking RSR_PA1)	SL2-CPU-PA1 (signal connector, cable marking MB_PA1)

Table 21. Connector descriptions for Riser 1A connecting on system board (continued)

From	To
Riser_DST_PB1 (cable marking RSR_PB1)	SL1-CPU-PB1 (signal connector, cable marking MB_PB1)

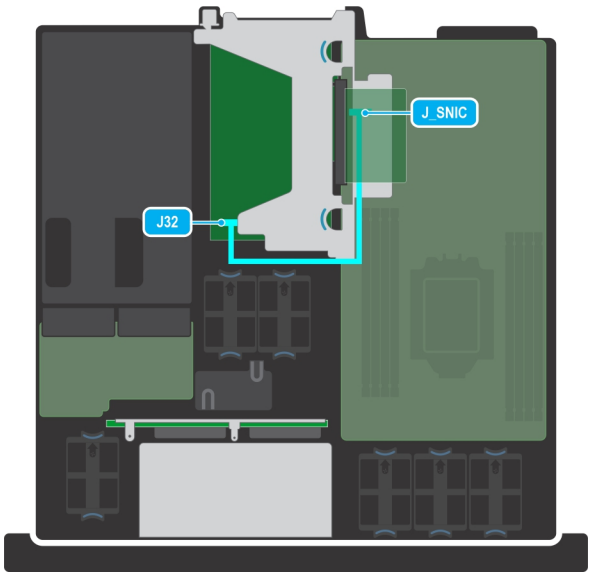

Figure 46. NCSI cable routing

Table 22. Connector descriptions for NCSI network card to the system board

From	To
J32 (NCSI network card connector)	J_SNIC (signal connector on the system board)

System memory

System memory guidelines

The PowerEdge XR11 system supports DDR4 registered DIMMs (RDIMMs), load reduced DIMMs (LRDIMMs) and Intel Optane PMem 200 Series. System memory holds the instructions that are executed by the processor.

Your system contains 8 memory sockets organized into 8 channels to the processor.

Memory channels are organized as follows:

Table 23. Memory channels

Channel A	Channel B	Channel C	Channel D	Channel E	Channel F	Channel G	Channel H
Slots A1	Slots A5	Slots A3	Slots A7	Slots A2	Slots A6	Slots A4	Slots A8

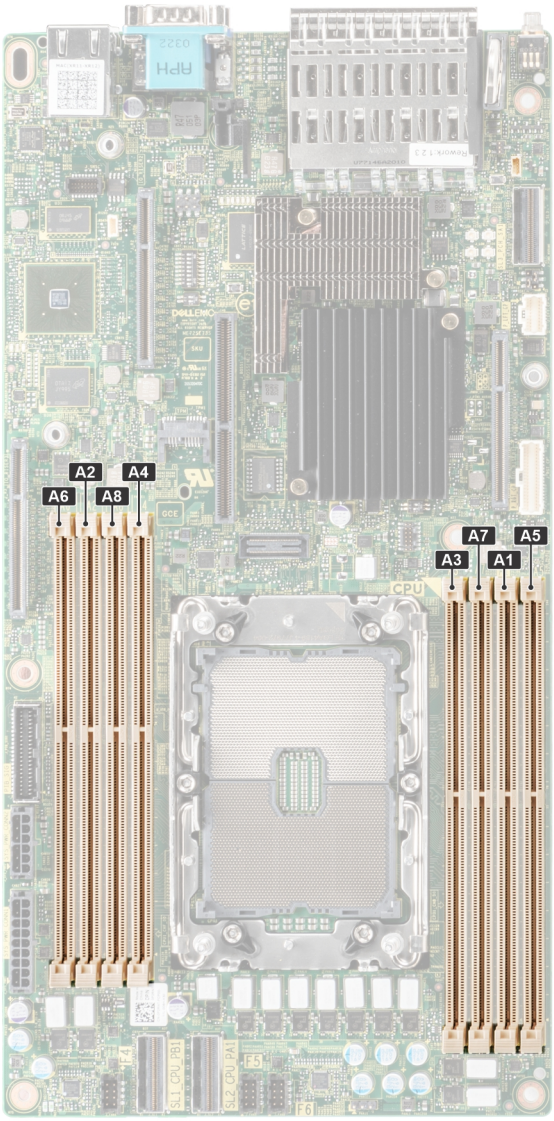

Figure 47. Memory sockets on the system board

The following table shows the memory populations and operating frequencies for the supported configurations:

Table 24. Memory population

DIMM Type	DIMM Ranking	Capacity	DIMM rated voltage and speed	Operating speed for DIMMs per Channel (DPC)
RDIMM	1R	8 GB	DDR4 (1.2V), 3200 MT/s, 2933 MT/s or 2666 MT/s	3200 MT/s
RDIMM	2R	16 GB, 32 GB, 64 GB	DDR4 (1.2V), 3200 MT/s, 2933 MT/s or 2666 MT/s	3200 MT/s
LRDIMM	4R	128 GB, 256 GB	DDR4 (1.2V), 3200 MT/s, 2933 MT/s or 2666 MT/s	3200 MT/s
Intel Optane PMem 200 Series	1R	128 GB, 256 GB	DDR4 (1.2V), 3200 MT/s, 2933 MT/s or 2666 MT/s	3200 MT/s

General memory module installation guidelines

To ensure optimal performance of your system, observe the following general guidelines when configuring your system memory. If your system's memory configurations fail to observe these guidelines, your system might not boot, stop responding during memory configuration, or operate with reduced memory.

The memory bus may operate at speeds of 3200 MT/s, 2933 MT/s , or 2666 MT/s depending on the following factors:

- System profile selected (for example, Performance Optimized, or Custom [can be run at high speed or lower])
- Maximum supported DIMM speed of the processor
- Maximum supported speed of the DIMMs

NOTE: MT/s indicates DIMM speed in MegaTransfers per second.

The system supports Flexible Memory Configuration, enabling the system to be configured and run in any valid chipset architectural configuration. The following are the recommended guidelines for installing memory modules:

- All DIMMs must be DDR4.
- x4 and x8 DRAM based memory modules can be mixed.
- If memory modules with different speeds are installed, they operate at the speed of the slowest installed memory module(s).
- Populate memory module sockets only if a processor is installed.
- In **Optimizer Mode**, the DRAM controllers operate independently in the 64-bit mode and provide optimized memory performance.

Table 25. Memory population rules

Processor	Configuration	Memory population	Memory population information
Single processor	Optimizer (Independent channel) population order	A{1}, A{2}, A{3}, A{4}, A{5}, A{6}, A{7}, A{8}	1, 2, 4, 6, 8 DIMMs are allowed.

- Memory modules of different capacities can be mixed provided other memory population rules are followed.
- Mixing of more than two memory module capacities in a system is not supported.
- Unbalanced or odd memory configuration results in a performance loss and system may not identify the memory modules being installed, so always populate memory channels identically with equal DIMMs for best performance.
- Odd memory configuration with 3, 5 or 7 RDIMMs/LRDIMMs is not supported.
- Supported RDIMM / LRDIMM configurations are 1, 2, 4, 6, 8 DIMMs.
- Mixing RDIMM and LRDIMM is not supported.

Intel Optane PMem 200 Series installation guidelines

The following are the recommended guidelines for installing Intel Optane PMem 200 Series memory modules:

- Each system supports a maximum of one Intel Optane PMem 200 Series memory module per channel.
- Intel Optane PMem 200 Series can be mixed with RDIMM or LRDIMM.
- Mixing of Intel Optane PMem 200 Series operating modes (App Direct, Memory Mode) is not supported.
- Intel Optane PMem 200 Series cannot be mixed with other Intel Optane PMem 200 Series capacities or NVDIMMs.
- VMware ESXi boot takes a longer time when Intel Intel Optane PMem 200 Series are configured in AppDirect mode. This is expected as background ARS is going on the interleaved sets and needs to be completed before the pMem datastore is mounted on ESXi.
- Intel Optane PMem 200 Series in App Direct mode can be populated symmetrically or asymmetrically across sockets.
- In Memory mode symmetry across sockets is required.

For more information about the supported Intel Optane PMem 200 Series configurations, see the *Dell EMC Intel Optane PMem 200 Series User 's Guide* at PowerEdge Manuals.

Table 26. Intel Optane PMem 200 Series Configuration 1–4 x RDIMMs/ LRDIMMs, 4 x Intel Optane PMem 200 Series

Total No of RDIMMs/ LRDIMMs	Total No of Intel Optane PMem 200 Series DIMMs	1 R/LRDIMM capacity (GB)	1 Intel Optane PMem 200 Series capacity (GB)	Total Standard Memory Capacity	Total PM Capacity	Supported Modes
4	4	16	128	64	512	MM or AD

Table 26. Intel Optane PMem 200 Series Configuration 1–4 x RDIMMs/ LRDIMMs, 4 x Intel Optane PMem 200 Series (continued)

Total No of RDIMMs/ LRDIMMs	Total No of Intel Optane PMem 200 Series DIMMs	1 R/LRDIMM capacity (GB)	1 Intel Optane PMem 200 Series capacity (GB)	Total Standard Memory Capacity	Total PM Capacity	Supported Modes
4	4	32	128	128	512	MM or AD
4	4	64	128	256	512	AD
4	4	128	128	512	512	AD
4	4	256	128	1024	512	AD
4	4	16	256	64	1024	MM or AD
4	4	32	256	128	1024	MM or AD
4	4	64	256	256	1024	MM or AD
4	4	128	256	512	1024	AD
4	4	256	256	1024	1024	AD

Table 27. Intel Optane PMem 200 Series Configuration 2–6 x RDIMMs/ LRDIMMs, 1 x Intel Optane PMem 200 Series

Total No of RDIMMs/ LRDIMMs	Total No of Intel Optane PMem 200 Series DIMMs	1 R/LRDIMM capacity (GB)	1 Intel Optane PMem 200 Series capacity (GB)	Total Standard Memory Capacity	Total PM Capacity	Supported Modes
6	1	16	128	96	128	AD
6	1	32	128	192	128	AD
6	1	64	128	384	128	AD
6	1	128	128	768	128	AD
6	1	256	128	1536	128	AD
6	1	16	256	96	256	AD
6	1	32	256	192	256	AD
6	1	64	256	384	256	AD
6	1	128	256	768	256	AD
6	1	256	256	1536	256	AD

Removing a memory module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.

NOTE: The procedure to remove the memory module is the same for Rear Accessed and Front Accessed configurations.

WARNING: The memory modules are hot to touch for some time after the system has been powered off. Allow the memory modules to cool before handling them.

CAUTION: To ensure proper system cooling, memory module blanks must be installed in any memory socket that is not occupied. Remove memory module blanks only if you intend to install memory modules in those sockets.

Steps

1. Locate the appropriate memory module socket.
2. To release the memory module from the socket, simultaneously press the ejectors on both ends of the memory module socket to fully open.

   CAUTION: Handle each memory module only by the card edges, ensuring not to touch the middle of the memory module or metallic contacts.

3. Lift the memory module away from the system.

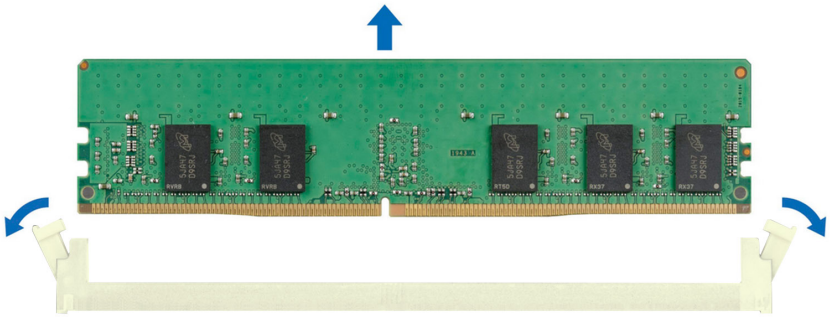

Figure 48. Removing a memory module

Next steps

Replace the memory module.

Installing a memory module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.

NOTE: The procedure to install the memory module is the same for Rear Accessed and Front Accessed configurations.

NOTE: The empty DIMM slots should be installed with memory module blanks and the removal and install procedure for memory module blanks is the same as the removal and install procedure of memory modules.

CAUTION: To ensure proper system cooling, memory module blanks must be installed in any memory socket that is not occupied. Remove memory module blanks only if you intend to install memory modules in those sockets.

Steps

1. Locate the appropriate memory module socket.

   CAUTION: Handle each memory module only by the card edges, ensuring not to touch the middle of the memory module or metallic contacts.

2. If a memory module blank is installed in the socket, remove it.

NOTE: Ensure that the socket ejector latches are fully open, before installing the memory module.

3. Align the edge connector of the memory module with the alignment key of the memory module socket, and insert the memory module in the socket.

CAUTION: To prevent damage to the memory module or the memory module socket during installation, do not bend or flex the memory module; insert both ends of the memory module simultaneously.

NOTE: The memory module socket has an alignment key that enables you to install the memory module in the socket in only one orientation.

CAUTION: Do not apply pressure at the center of the memory module; apply pressure at both ends of the memory module evenly.

4. Press the memory module with your thumbs until the ejectors firmly click into place. When the memory module is properly seated in the socket, the levers on the memory module socket align with the levers on the other sockets that have memory modules that are installed.

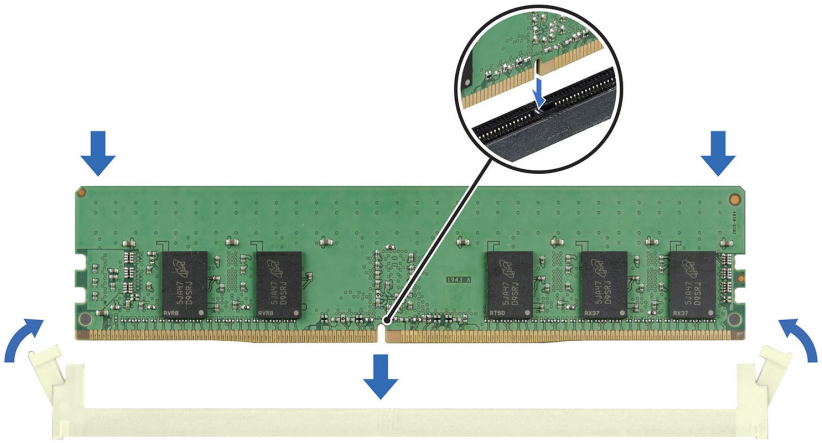

Figure 49. Installing a memory module

Next steps

1. Install the processor air shroud.
2. Follow the procedure listed in After working inside your system.
3. To verify if the memory module has been installed properly, press F2 and navigate to **System Setup Main Menu > System BIOS > Memory Settings**. In the **Memory Settings** screen, the System Memory Size must reflect the updated capacity of the installed memory.
4. If the System Memory Size is incorrect, one or more of the memory modules may not be installed properly. Ensure that the memory modules are firmly seated in their sockets.
5. Run the system memory test in system diagnostics.

Processor and heat sink module

This is a service technician replaceable part only.

Removing the processor and heat sink module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.

NOTE: The procedure to remove the heat sink is the same for Rear Accessed and Front Accessed configurations.

NOTE: The heat sink and processor are hot to touch for some time after the system has been powered down. Allow the heat sink and processor to cool down before handling them.

Steps

1. Ensure all four anti-tilt wires are in the locked position (outward position), and then using a Torx T30 tool, loosen the nuts on the heat sink in the order that is mentioned below:
   a. Loosen the first nut completely.
   b. Loosen the nut diagonally opposite to the nut you loosened first.
   c. Repeat the procedure for the remaining two nut.

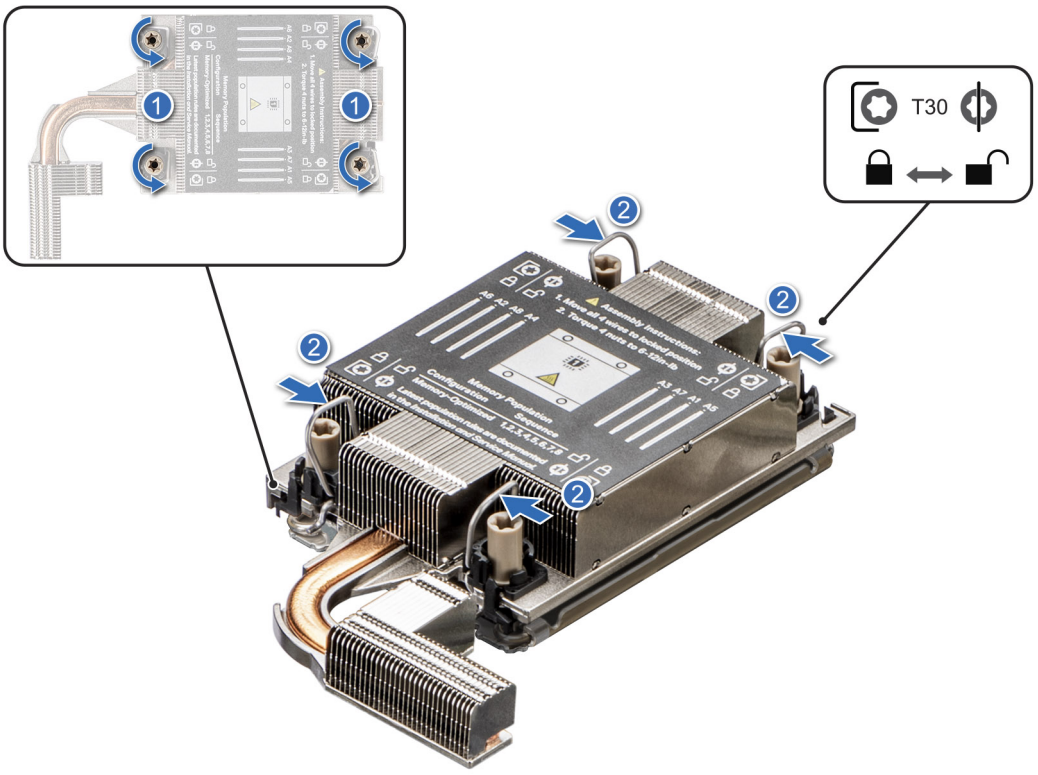

Figure 50. Loosening the nuts and set the anti-tilt wires to the unlocked position

2. Set the anti-tilt wires to the unlocked position (inward position).
3. Lift the processor and heat sink module (PHM) from the system and set the PHM aside with the processor side facing up.

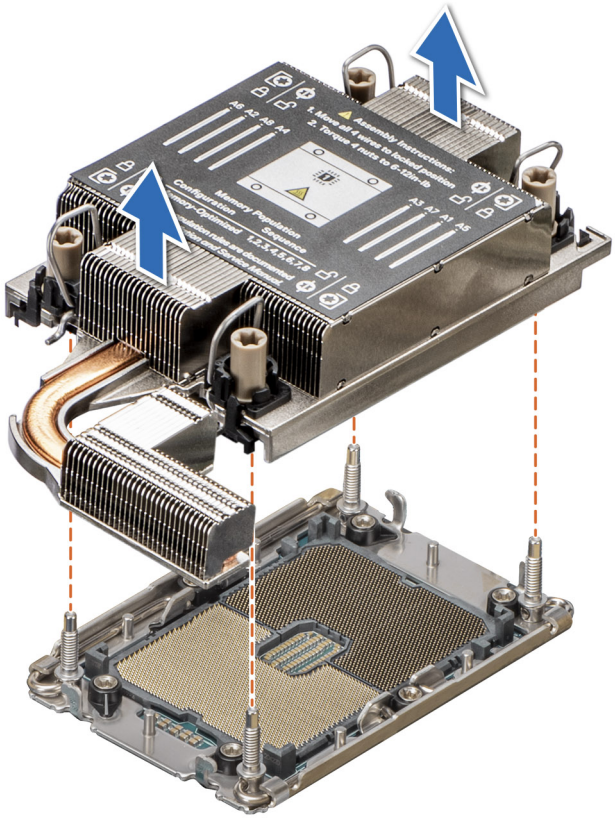

Figure 51. Removing a heat sink

Next steps

If you are removing a faulty heat sink, replace the heat sink, if not, remove the processor.

Removing the processor from the processor heat sink module

Prerequisites

WARNING: Remove the processor from the processor and heat sink module (PHM) only if you are replacing the processor or heat sink.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.
4. Remove the heat sink.

NOTE: The procedure to remove the processor is the same for Rear Accessed and Front Accessed configurations.

CAUTION: You may find the CMOS battery loss or CMOS checksum error that is displayed during the first instance of powering on the system after the processor or system board replacement which is expected. To fix this, simply go to setup option to configure the system settings.

Steps

1. Place the heat sink with the processor side facing up.
2. Using your thumb lift up the Thermal Interface Material (TIM) break lever to release the processor from the TIM and carrier.
3. Holding the processor by the edges, lift the processor away from the carrier.

   NOTE: Ensure to hold the carrier to the heat sink as the TIM break is rotated.

4. Place the processor connector side down on the processor tray. Ensure pin 1 marks are aligned.

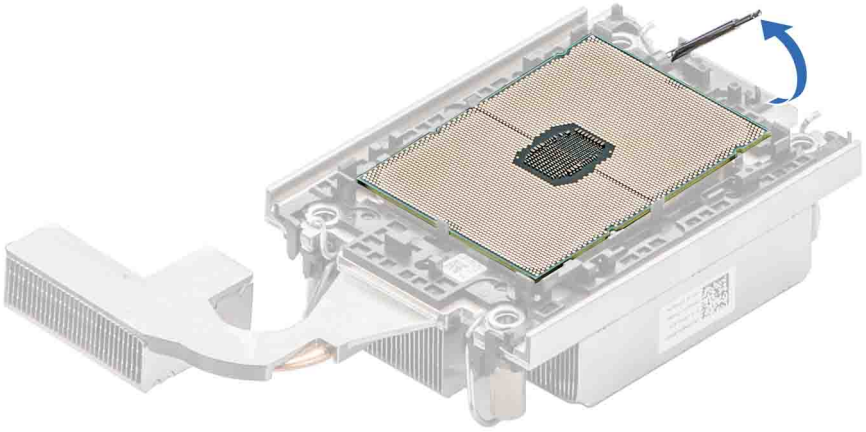

Figure 52. Lift up the TIM break lever

5. Using your thumb and index finger, first hold the carrier release tab at the pin 1 connector, pull out the tip of the carrier release tab, and then lift the carrier partially from the heat sink.
6. Repeat the procedure at the remaining three corners of the carrier.
7. After all the corners are released from the heat sink, lift the carrier from the pin 1 corner of the heat sink.

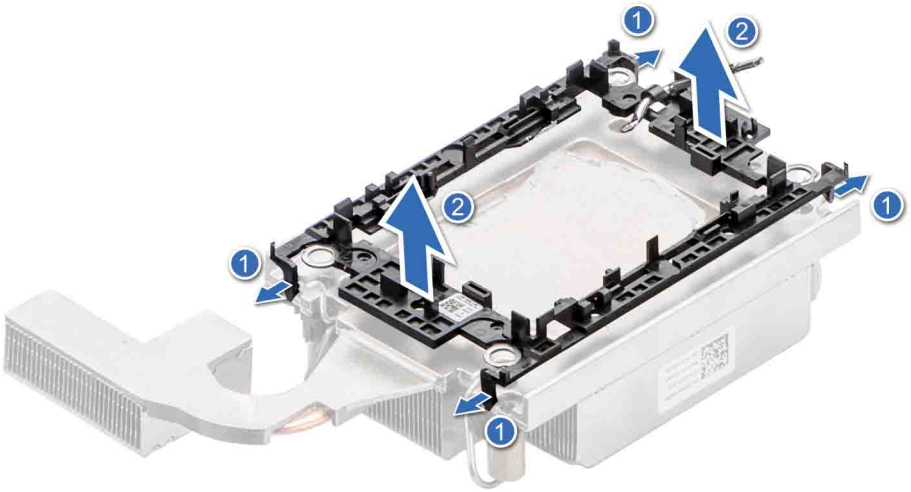

Figure 53. Removing the processor carrier

Next steps

Replace the processor.

Installing the processor into a processor heat sink module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.

NOTE: The procedure to install the processor is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Place the processor in the processor tray.

NOTE: Ensure that the pin 1 indicator on the processor tray is aligned with the pin 1 indicator on the processor.

2. Place the processor carrier on top of the processor that is in the processor tray aligning pin 1 indicator on the processor.

   NOTE: Ensure that the pin 1 indicator on the carrier is aligned with the pin 1 indicator on the processor before placing the carrier on the processor.

   NOTE: Ensure that the processor and the carrier are placed in the tray before you install the heat sink.

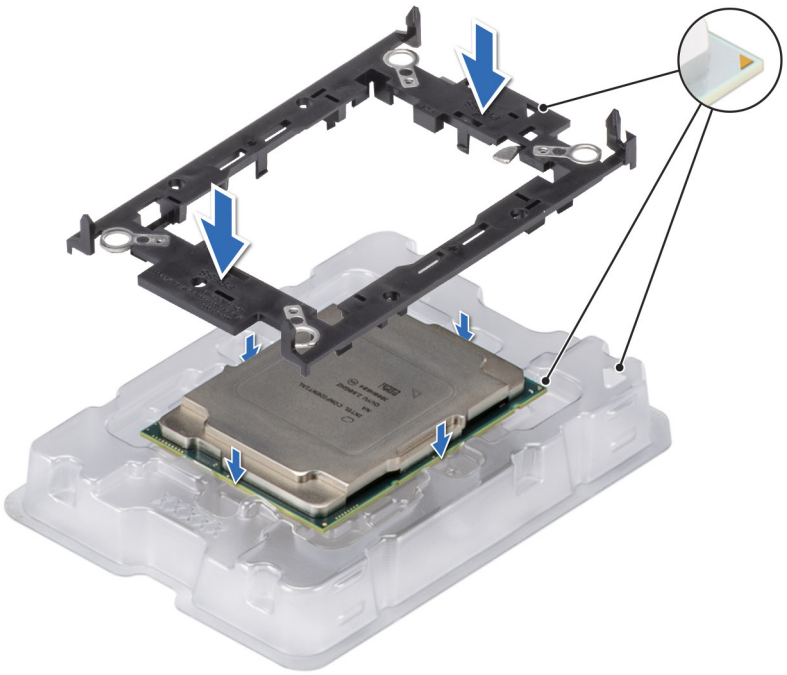

Figure 54. Installing the processor carrier

3. To align the processor tray with the bracket, press down on the bracket with your fingers on all four sides until it clicks into place.

   NOTE: Ensure that the processor is securely latched to the processor carrier.

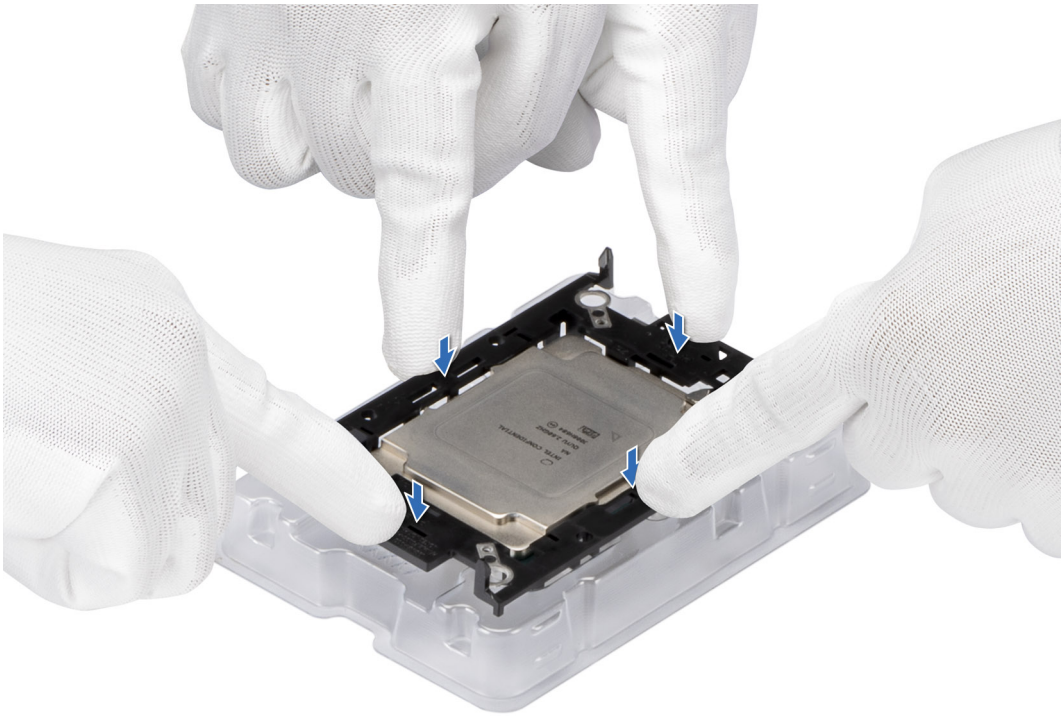

Figure 55. Press the carrier on the four sides

4. If you are using an existing heat sink, remove the thermal grease on the heat sink by using a clean lint-free cloth.
5. Use the thermal grease syringe included with your processor kit to apply the grease in a thin spiral on the bottom of the heat sink.

Figure 56. Applying thermal grease on the heat sink

CAUTION: Applying too much thermal grease can result in excess grease coming in contact with and contaminating the processor socket.

NOTE: The thermal grease syringe is intended for single use only. Dispose of the syringe after you use it.

6. For new heat sink. remove the Thermal Interface Material (TIM) protective film from the base of heat sink.

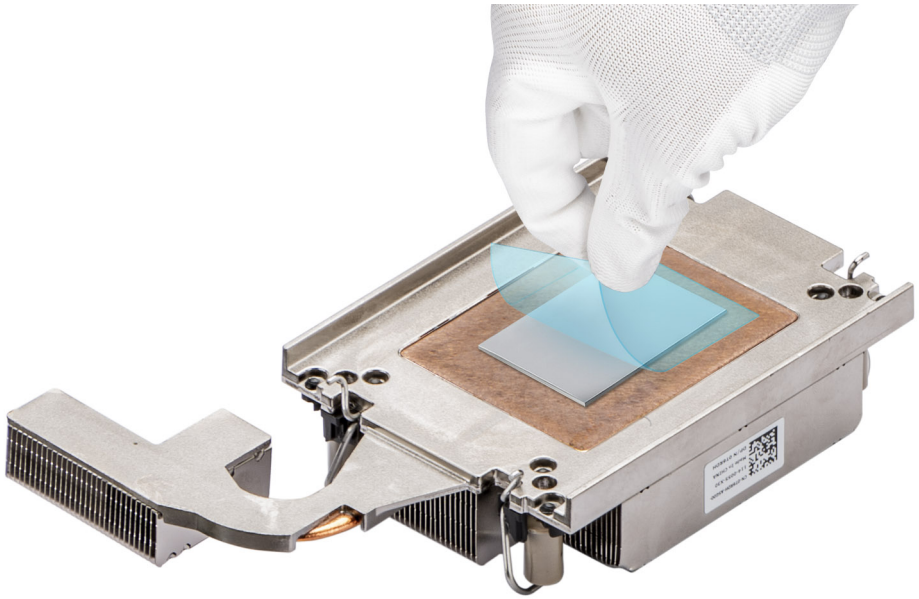

Figure 57. Remove the Thermal Interface Material (TIM) protective film

7. Place the heat sink on the processor and press the heat sink until the carrier locks onto the heat sink at all the four corners.

   CAUTION: To avoid damaging the fins on the heat sink, do not press down on the heat sink fins.

   NOTE: Ensure that the pin 1 indicator on the heat sink is aligned with the pin 1 indicator on the carrier before placing the heat sink onto the processor carrier.

   NOTE: Ensure latching features on processor carrier and heat sink are aligned during assembly.

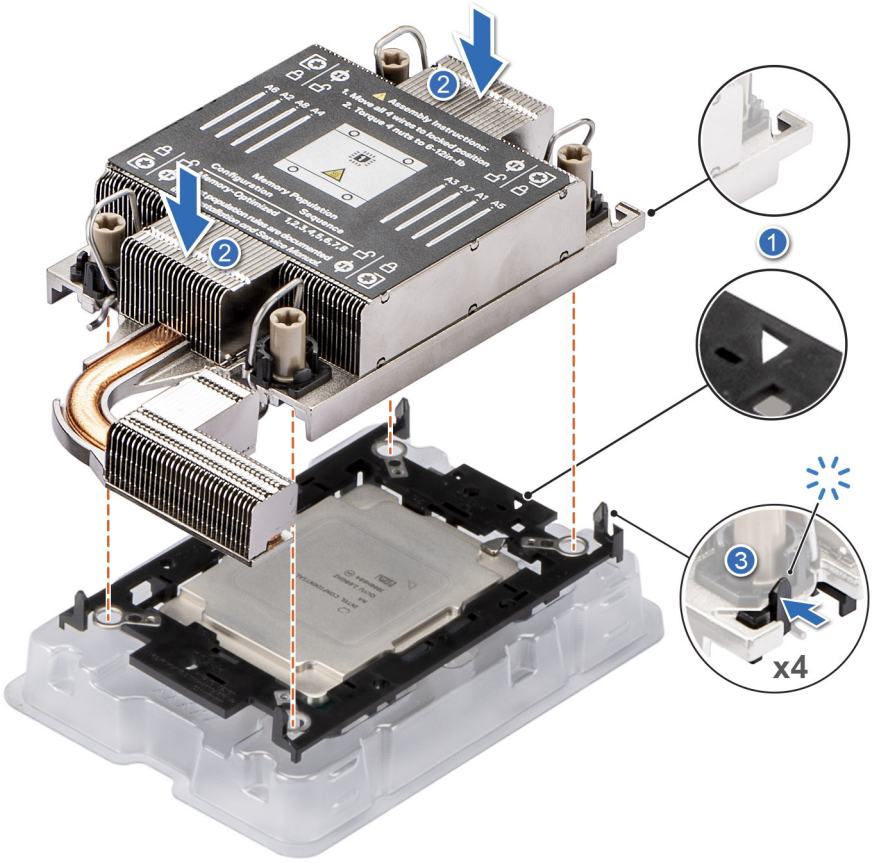

Figure 58. Installing the heat sink onto the processor

Next steps

1. Replace the heat sink.
2. Replace the processor air shroud.
3. Follow the procedure listed in After working inside your system.

Installing the processor and heat sink module

Prerequisites

Never remove the heat sink from a processor unless you intend to replace the processor or system board. The heat sink is necessary to maintain proper thermal conditions.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.

NOTE: The procedure to install the heat sink is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Set the anti-tilt wires to the unlocked position on the heat sink (inward position).
2. Align the pin 1 indicator of the heat sink to the system board, and then place the processor and heat sink on the processor socket.

CAUTION: To avoid damaging the fins on the heat sink, do not press down on the heat sink fins.

NOTE: Ensure that the processor and heat sink is held parallel to the system board to prevent damaging the components.

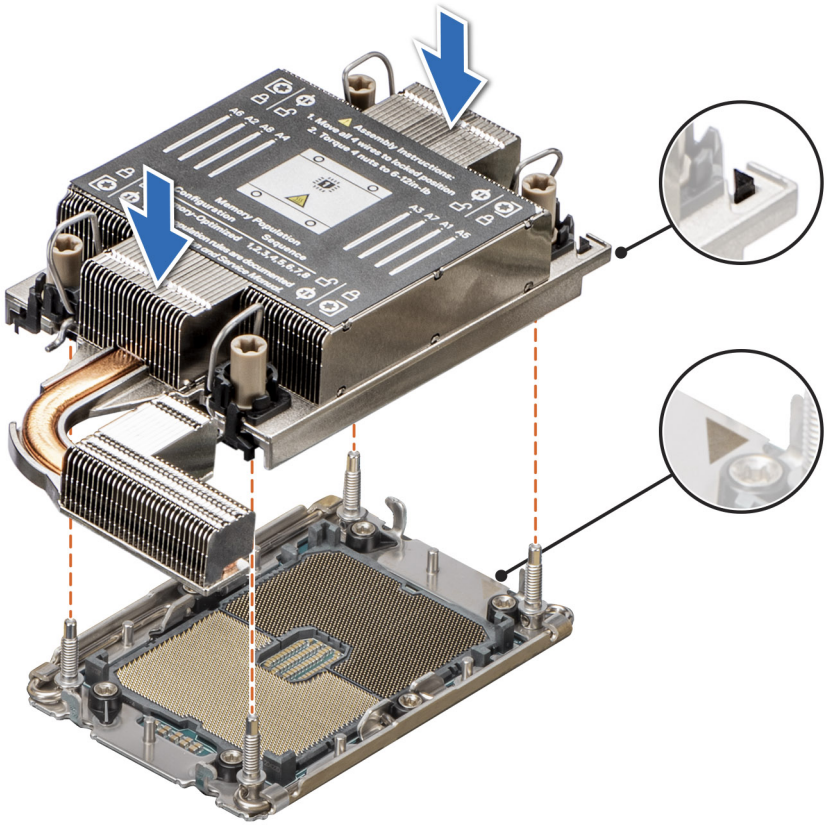

Figure 59. Installing the processor and heat sink (PHM)

3. Set the anti-tilt wires to the locked position (outward position), and then using the Torx T30 tool, tighten the captive nuts (8 in-lbf) on the heat sink in the order below:
   a. Tighten the first nut completely.
   b. Tighten the nut diagonally opposite to the nut you tighten first.
   c. Repeat the procedure for the remaining two nuts.

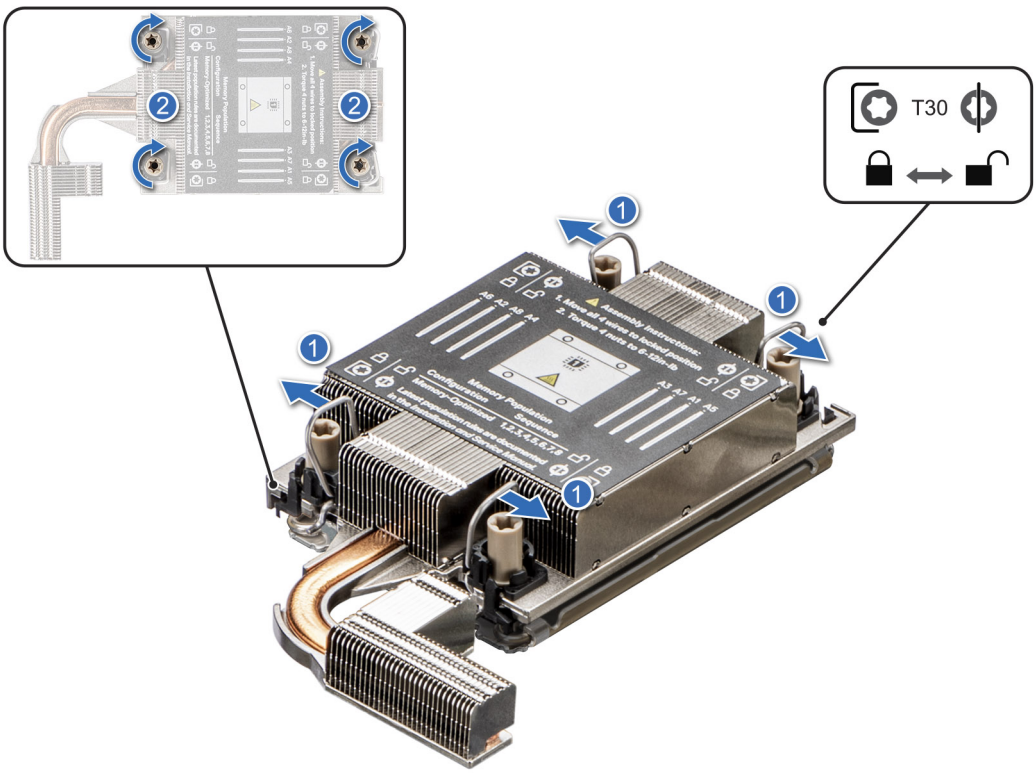

Figure 60. Set the anti-tilt wires to the locked position and tightening the nuts

Next steps

1. Replace the processor air shroud.
2. Follow the procedure listed in After working inside your system.

Expansion cards and expansion card risers

NOTE: Shared management is not only available using LOM, but also available on the PCIe slot 3 for XR11 and PCIe slot 4 for XR12 with the presence of the NCSI card.

NOTE: When an expansion card riser is not supported or missing, the iDRAC and Lifecycle Controller logs an event. This does not prevent your system from booting. However, if a F1/F2 pause occurs with an error message, see *Troubleshooting expansion cards* section in the *Dell EMC PowerEdge Servers Troubleshooting Guide* at PowerEdge manuals.

Expansion card installation guidelines

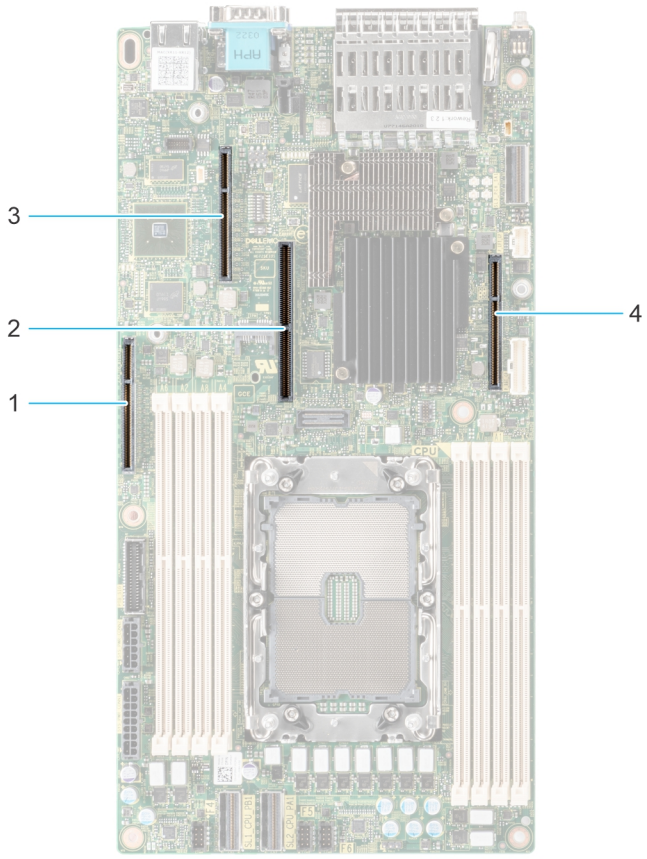

Figure 61. Expansion card slot connectors

1. IO_Riser3 (Riser 3 connector)
2. BOSS S1 card connector
3. IO_Riser2 (Riser 2 connector)
4. IO_Riser1 (Riser 1 connector)

The following table describes the expansion card riser configurations:

Table 28. Expansion card riser configurations

Configurations	Expansion card risers	PCIe Slots	Controlling processor	Height	Length	Slot width
Config0.	R1B+R2+R3 Rear Accessed configuration	1	Processor 1	Low profile	Half length	x8
		2		Full Height	Half length	x16
		3		Full Height	Half length	x16
Config1.	R1B+R2+R3 Front Accessed configuration	1	Processor 1	Low profile	Half length	x8
		2		Full Height	Half length	x16
		3		Full Height	Half length	x16
Config2.	R1A+R2+R3 Front Accessed configuration	1	Processor 1	Low profile	Half length	x16
		2		Full Height	Half length	x16
		3		Full Height	Half length	x16

NOTE: Riser 2 and 3 are combined in one expansion card riser module.

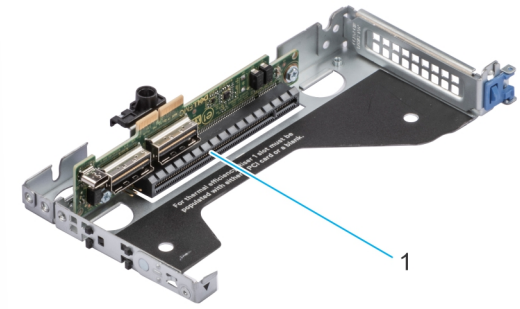

Figure 62. Riser 1A

1. Slot 1, x16, LP-HL (Low Profile - Half Length)

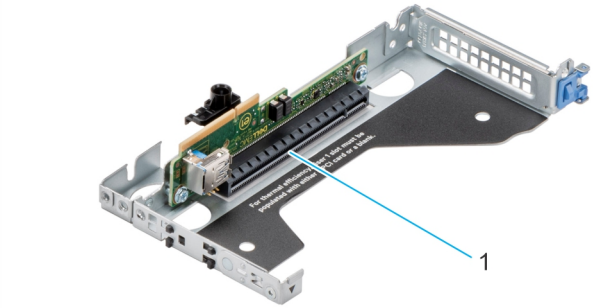

Figure 63. Riser 1B

1. Slot 1, x8, LP-HL (Low Profile - Half Length)

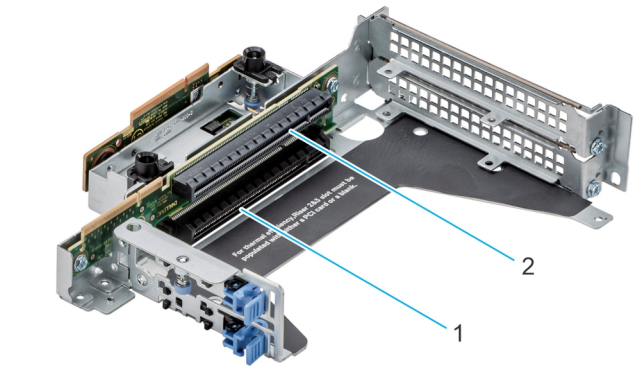

Figure 64. Riser 2 and 3

1. Slot 2, x16, FH-HL (Full Height - Half Length)
2. Slot 3, x16, FH-HL (Full Height - Half Length)

NOTE: The expansion-card slots are not hot-swappable.

The following table provides guidelines for installing expansion cards to ensure proper cooling and mechanical fit. The expansion cards with the highest priority should be installed first using the slot priority indicated. All the other expansion cards should be installed in the card priority and slot priority order.

Table 29. Configuration 0: R1B+R2+R3 for Rear Accessed configuration

Card type	Slot priority	Maximum number of cards
Internal PERC adapter (LP)	1	1

Table 29. Configuration 0: R1B+R2+R3 for Rear Accessed configuration (continued)

Card type	Slot priority	Maximum number of cards
Dell External Adapter (FH)	3, 2	2
GPU (FH)	2, 3	2
Mellanox (NIC: 100Gb) (FH)	2, 3	2
Mellanox (NIC: 25Gb) (FH)	2, 3	2
Mellanox (NIC: 25Gb) (LP)	1	1
Broadcom NIC: 100Gb (FH)	2, 3	2
Broadcom (NIC: 25Gb) (FH)	2, 3	2
Broadcom (NIC: 25Gb) (LP)	1	1
Broadcom (NIC: 10Gb) (FH)	2, 3	2
Broadcom (NIC: 10Gb) (LP)	1	1
Broadcom (NIC: 1Gb) (FH)	2, 3	2
Broadcom (NIC: 1Gb) (LP)	1	1
Intel (NIC:100Gb) (FH)	2, 3	2
Intel (NIC: 25Gb) (FH)	2, 3	2
Intel (NIC: 25Gb) (LP)	1	1
Intel (NIC: 2x10Gb SFP+) (FH)	2	1
Intel (NIC: 4x10Gb SFP+) (FH)	2	1
Intel (NIC: 10Gb) (FH) (all others including V2 of 4 x10 SFP+ and 2 x10 SFP+ cards)	2, 3	2
Intel (NIC: 10Gb) (LP)	1	1
Intel (NIC: 1Gb) (FH)	2, 3	2
Intel (NIC: 1Gb) (LP)	1	1
Intel FPGA Accelerator (FH)	2, 3	1
Dell BOSS S1 card Module	Integrated slot	1
Intel (NIC: 100Gb) (F), 2P, GNSS, R	2, 3	2
Intel (NIC: 100Gb) (FH), 2P, QSF	2, 3	2

Table 30. Configuration 1: R1B+R2+R3 for Front Accessed configuration

Card type	Slot priority	Maximum number of cards
Internal PERC adapter (LP)	1	1
Dell External Adapter (FH)	3, 2	2
GPU (FH)	2, 3	2
Mellanox (NIC: 100Gb) (FH)	2, 3	2
Mellanox (NIC: 25Gb) (FH)	2, 3	2
Mellanox (NIC: 25Gb) (LP)	1	1
Broadcom NIC: 100Gb (FH)	2, 3	2
Broadcom (NIC: 25Gb) (FH)	2, 3	2
Broadcom (NIC: 25Gb) (LP)	1	1

Table 30. Configuration 1: R1B+R2+R3 for Front Accessed configuration (continued)

Card type	Slot priority	Maximum number of cards
Broadcom (NIC: 10Gb) (FH)	2, 3	2
Broadcom (NIC: 10Gb) (LP)	1	1
Broadcom (NIC: 1Gb) (FH)	2, 3	2
Broadcom (NIC: 1Gb) (LP)	1	1
Intel (NIC:100Gb) (FH)	2, 3	2
Intel (NIC: 25Gb) (FH)	2, 3	2
Intel (NIC: 25Gb) (LP)	1	1
Intel (NIC: 2x10Gb SFP+) (FH)	2	1
Intel (NIC: 4x10Gb SFP+) (FH)	2	1
Intel (NIC: 10Gb) (FH) (all others including V2 of 4 x10 SFP+ and 2 x10 SFP+ cards)	2, 3	2
Intel (NIC: 10Gb) (LP)	1	1
Intel (NIC: 1Gb) (FH)	2, 3	2
Intel (NIC: 1Gb) (LP)	1	1
Intel FPGA Accelerator (FH)	2, 3	1
Dell BOSS S1 card Module	Integrated slot	1
Intel (NIC: 100Gb) (F), 2P, GNSS, R	2, 3	2
Intel (NIC: 100Gb) (FH), 2P, QSF	2, 3	2

Table 31. Configuration 2: R1A+R2+R3 for Front Accessed configuration

Card type	Slot priority	Maximum number of cards
Dell External Adapter (FH)	3, 2	2
GPU (FH)	2, 3	2
Mellanox (NIC: 100Gb) (FH)	2, 3	2
Mellanox (NIC: 100Gb) (LP)	1	1
Mellanox (NIC: 25Gb) (FH)	2, 3	2
Broadcom NIC: 100Gb (FH)	2, 3	2
Broadcom (NIC: 25Gb) (FH)	2, 3	2
Broadcom (NIC: 10Gb) (FH)	2, 3	2
Broadcom (NIC: 1Gb) (FH)	2, 3	2
Intel (NIC:100Gb) (FH)	2, 3	2
Intel (NIC: 25Gb) (FH)	2, 3	2
Intel (NIC: 2x10Gb SFP+) (FH)	2	1
Intel (NIC: 4x10Gb SFP+) (FH)	2	1
Intel (NIC: 10Gb) (FH) (all others including V2 of 4 x10 SFP+ and 2 x10 SFP+ cards)	2, 3	2
Intel (NIC: 1Gb) (FH)	2, 3	2

Table 31. Configuration 2: R1A+R2+R3 for Front Accessed configuration (continued)

Card type	Slot priority	Maximum number of cards
Intel FPGA Accelerator (LP)	1	1
Dell BOSS S1 card Module	Integrated slot	1
Intel (NIC: 100Gb) (F), 2P, GNSS, R	2, 3	2
Intel (NIC: 100Gb) (FH), 2P, QSF	2, 3	2

Removing the expansion card risers

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to remove the expansion card risers is the same for Rear Accessed and Front Accessed configurations.

Steps

1. For riser 1A, first disconnect the cables from the system board. Using the Phillips 2 screwdriver, loosen the blue thumbscrew. Holding the blue touch points, lift the expansion card riser from the riser connector on the system board.

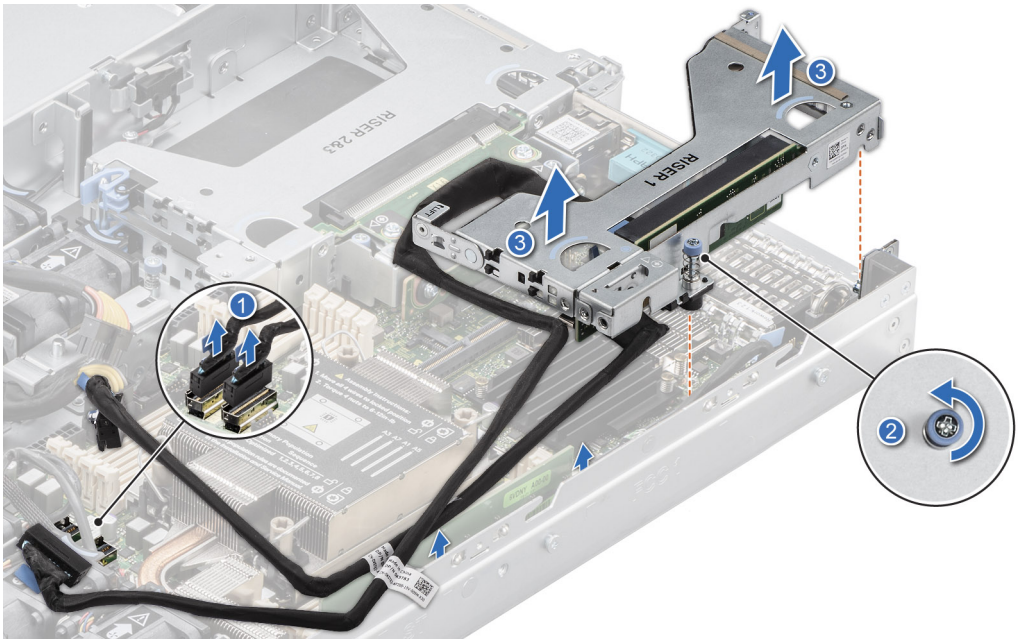

Figure 65. Removing the expansion card riser 1A

2. For Riser 1B, using the Phillips 2 screwdriver, loosen the blue thumbscrew. Hold the blue touch points and lift the expansion card riser from the riser connector on the system board.

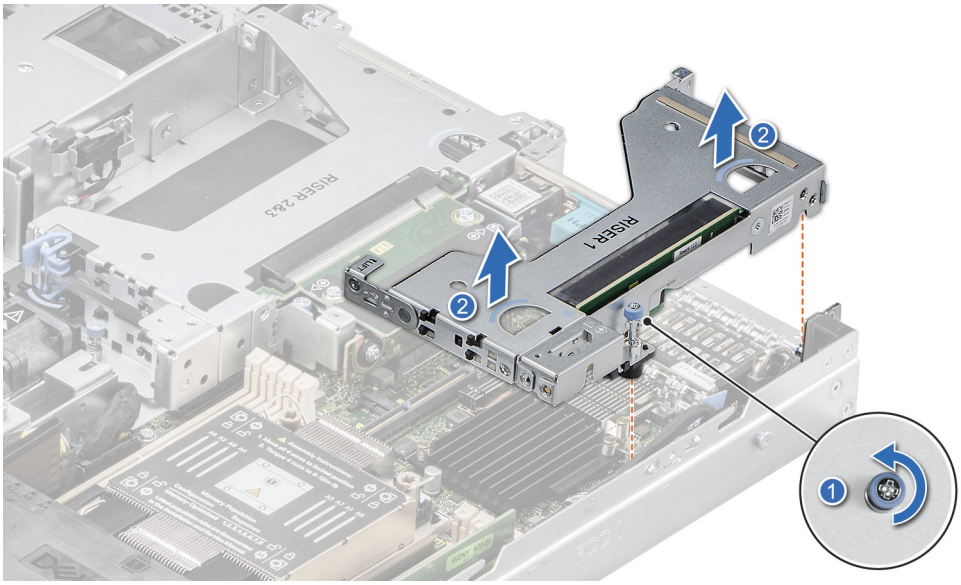

Figure 66. Removing Riser 1B

3. For riser 2 and 3, using Phillips 2 loosen the blue thumbscrews. Hold the blue touch points, and lift the expansion card riser from the riser connector on the system board.

NOTE: Riser 2 and 3 are combined in one expansion card riser.

NOTE: Ensure to disconnect the NCSI cable from the system board when removing the riser with NCSI network card.

NOTE: See the cable routing diagram for more details.

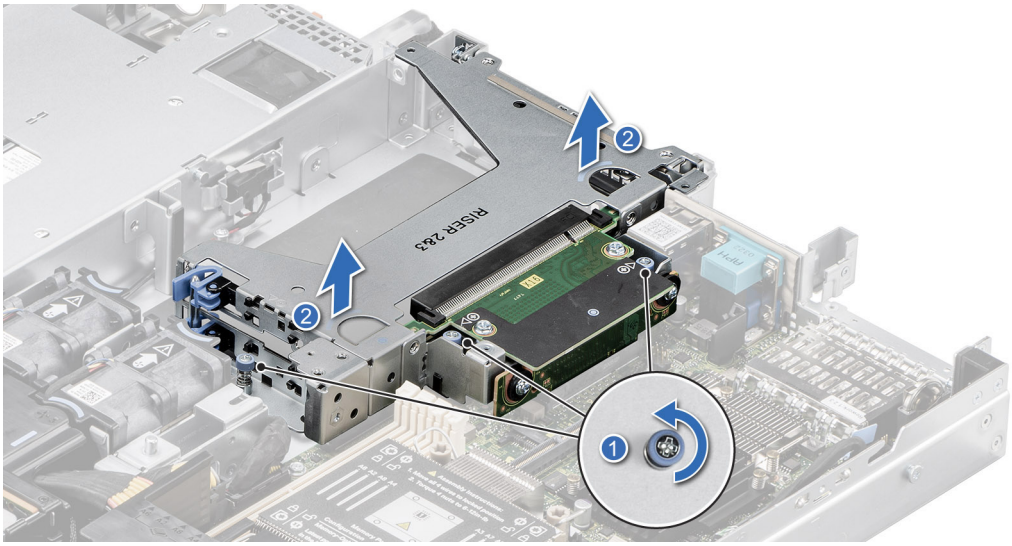

Figure 67. Removing Riser 2 and 3

Next steps

Replace the expansion card riser.

Installing the expansion card risers

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. If removed, install the expansion cards into the expansion card risers and connect all the riser cables.

NOTE: The procedure to install the expansion card risers is the same for Rear Accessed and Front Accessed configurations.

Steps

1. For Riser 1A, holding the blue touch points, align the expansion card riser with the guide pins on the side wall of the chassis and with the connector on the system board. Lower the expansion card riser into place until the expansion card riser connector is fully seated in the connector on the system board. Reconnect the cables from the system board. Route the cables along the chassis wall, behind the memory modules. Using a Phillips 2 screwdriver, tighten the blue thumbscrew.

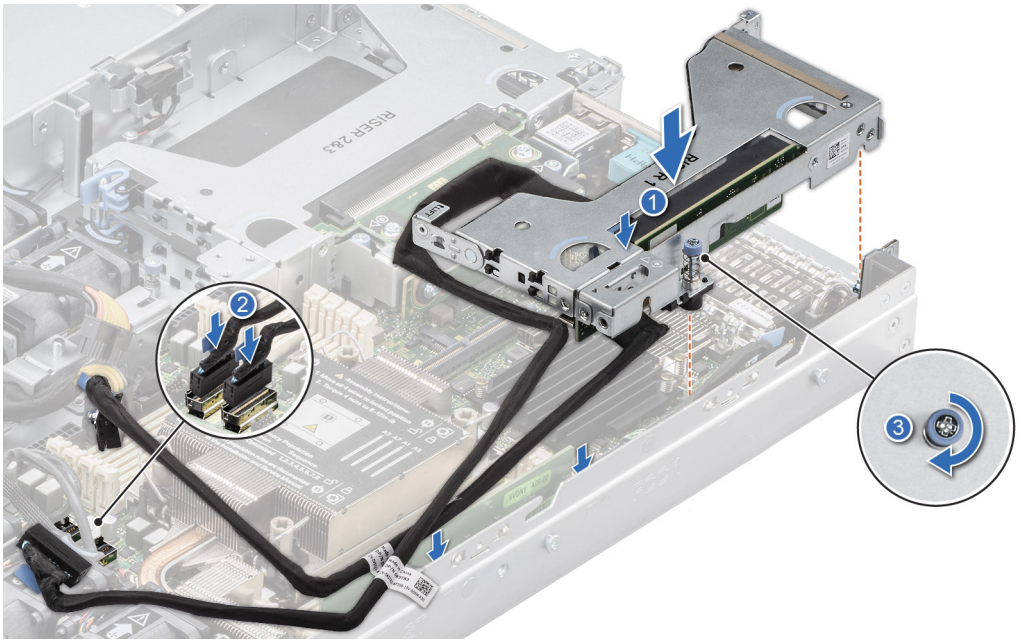

Figure 68. Installing the expansion card riser 1A

2. For Riser 1B, holding the blue touch points, align the expansion card riser with the guide pins on the side wall of the chassis and with the connector on the system board. Lower the expansion card riser into place until the expansion card riser connector is fully seated in the connector on the system board. Using a Phillips 2 screwdriver, tighten the blue thumbscrew.

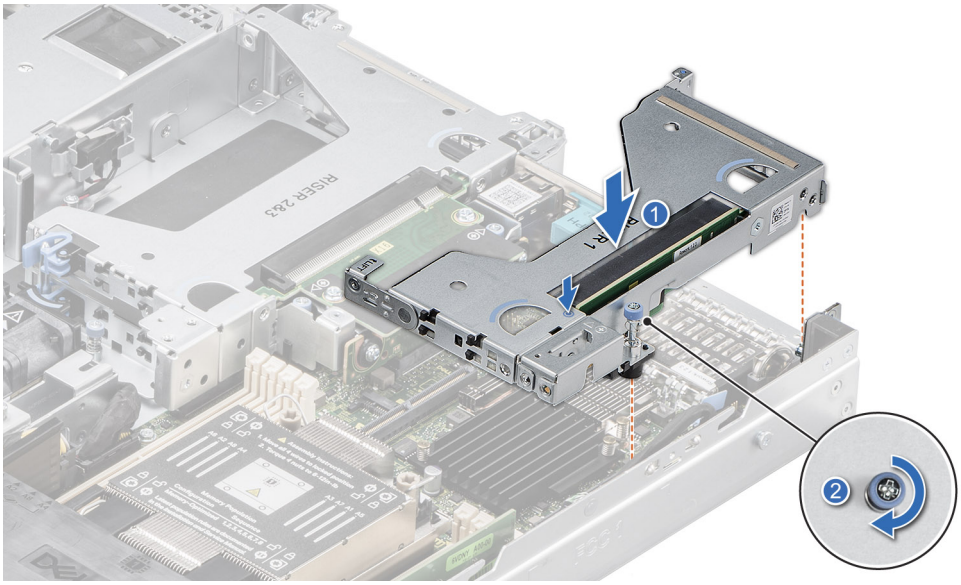

Figure 69. Installing Riser 1B

3. For Riser 2 and 3, hold the blue touch points on the riser and align the connector with the connector and guide pins on the system board. Lower the expansion card riser into place and press the blue push point on the riser until the expansion card riser is fully seated in the connector. Using a Phillips 2 screwdriver, tighten the blue thumbscrews.

   NOTE: Risers 2 and 3 are combined in one expansion card riser.

   NOTE: When installing the riser with an NCSI network card, ensure to route the NCSI cable under the stand off on the system board. Ensure that the NCSI cable does not interfere with the power cable.

   NOTE: See the cable routing diagram for more details.

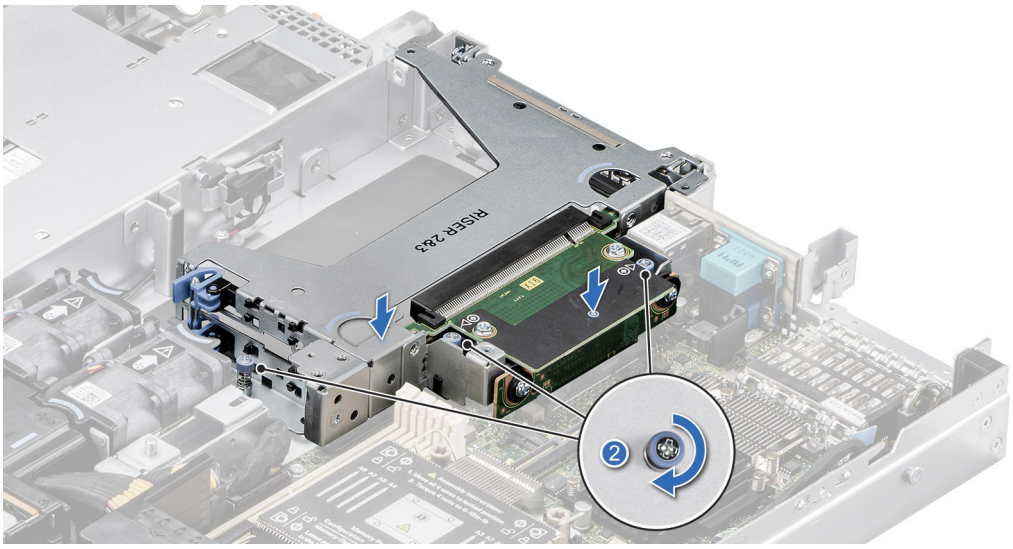

Figure 70. Installing Riser 2 and 3

Next steps

1. Follow the procedure listed in After working inside your system.
2. Install any device drivers required for the card as described in the documentation for the card.

Removing an expansion card from the expansion card riser

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the expansion card risers.

NOTE: The procedure to remove the GPU card and the expansion card is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Pull and lift the expansion card retention latch lock to open.
2. Hold the expansion card by its edges and pull the card until the card edge connector disengages from the connector on the expansion card riser.

   NOTE: The side latch is only used for when a half-length card is installed. If a shorter card is installed the side latch is not applicable.

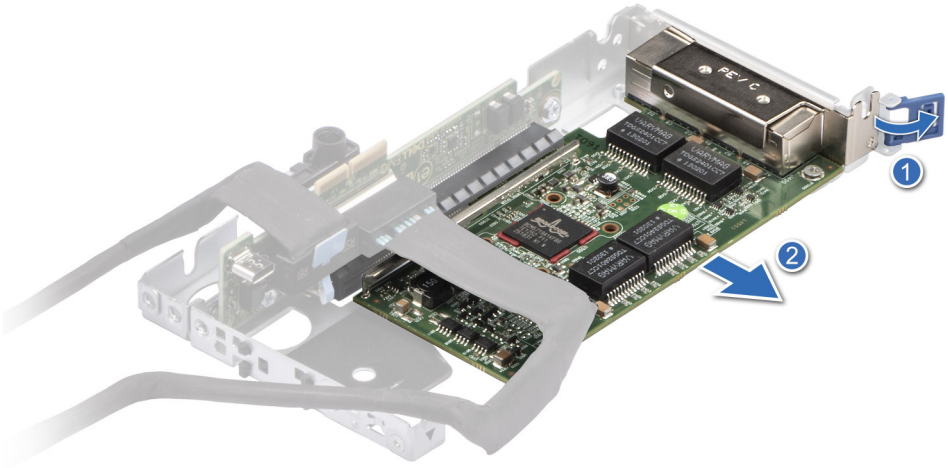

Figure 71. Removing a half-length expansion card from Riser 1A

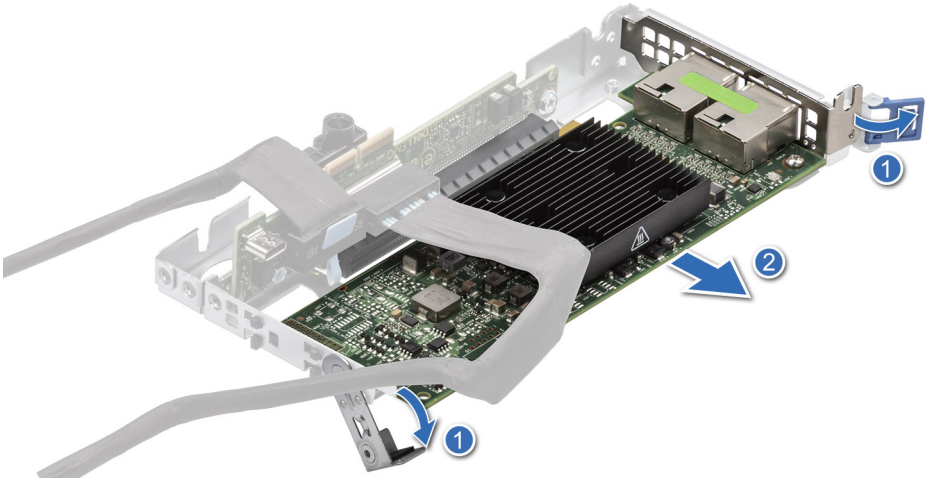

Figure 72. Removing a full-height expansion card from Riser 1A

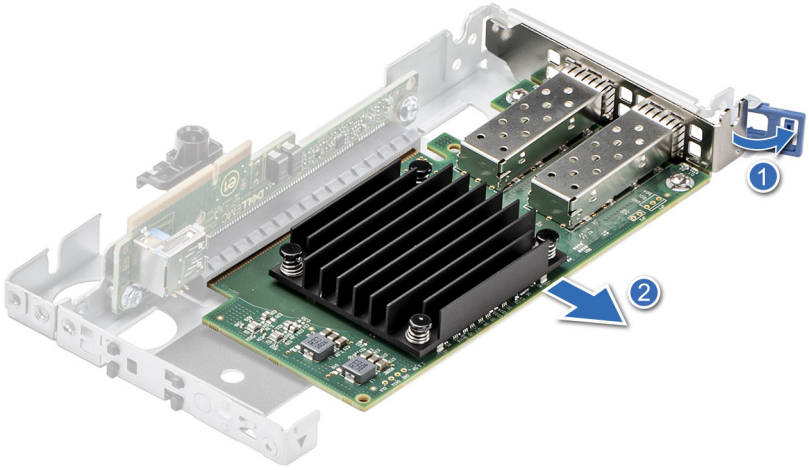

Figure 73. Removing a half-length expansion card from Riser 1B

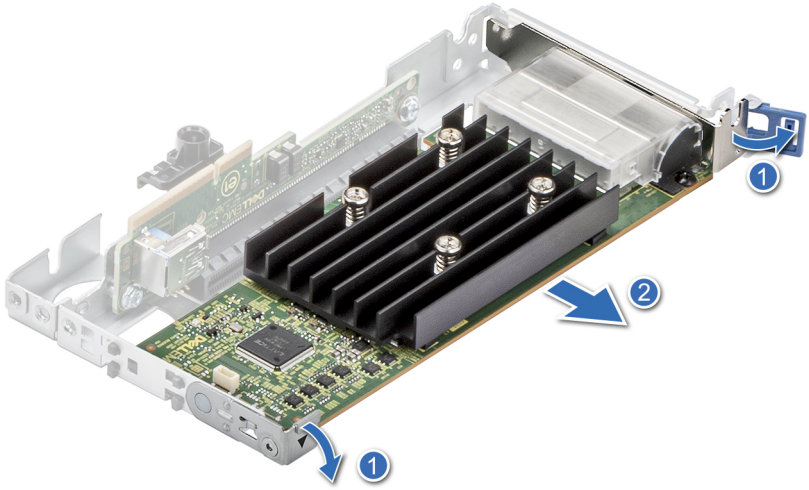

Figure 74. Removing a full-height expansion card from Riser 1B

3. For riser 2 and 3, using Phillip 2 screwdriver loosen the screw and pull the card to disconnect from the connector on the expansion card riser.

NOTE: The blue retention latch is only used when a half-length card is installed. If a shorter card is installed the blue retention latch is not applicable.

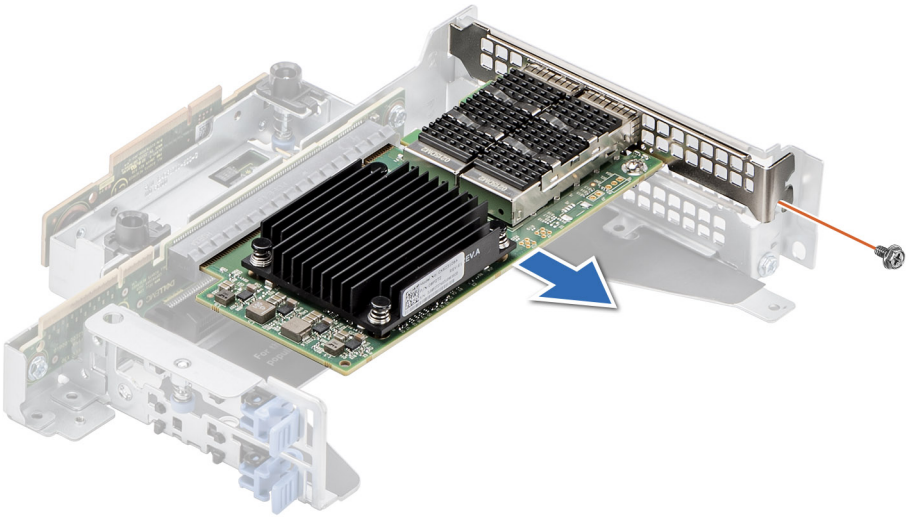

Figure 75. Removing expansion card from Riser 2 and 3

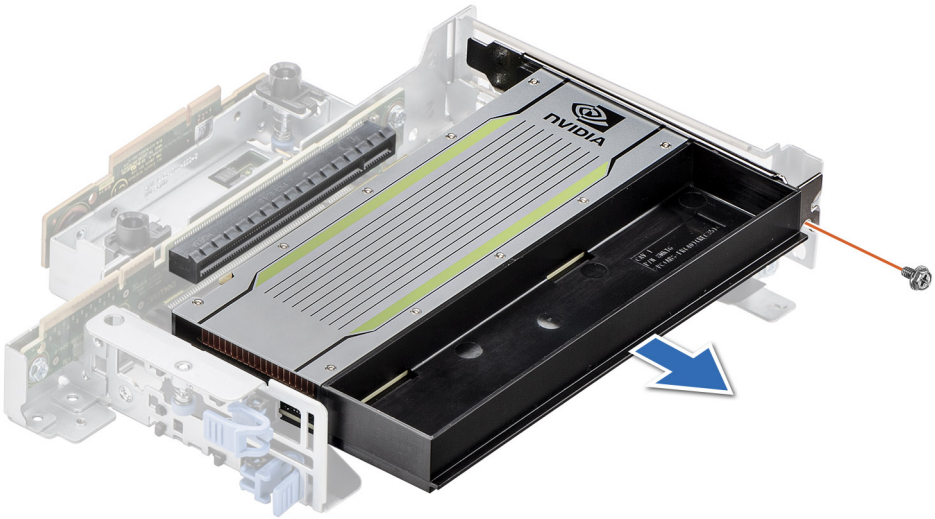

Figure 76. Removing single width GPU card from Riser 2 and 3

4. If the expansion card is not going to be replaced, install a filler bracket and close the card retention latch.

NOTE: You must install a filler bracket over an empty expansion card slot to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.

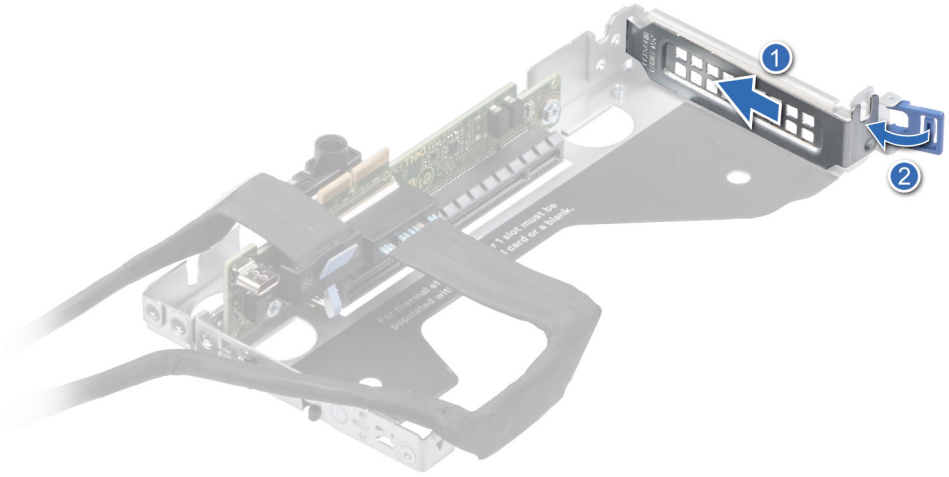

Figure 77. Installing filler bracket in Riser 1A

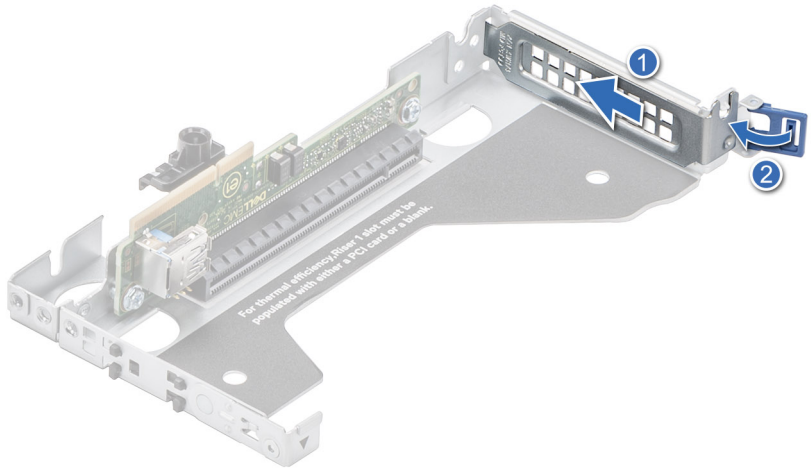

Figure 78. Installing filler bracket in Riser 1B

5. For riser 2 and 3, install the filler bracket and tighten the screw using Phillips 2 screwdriver.

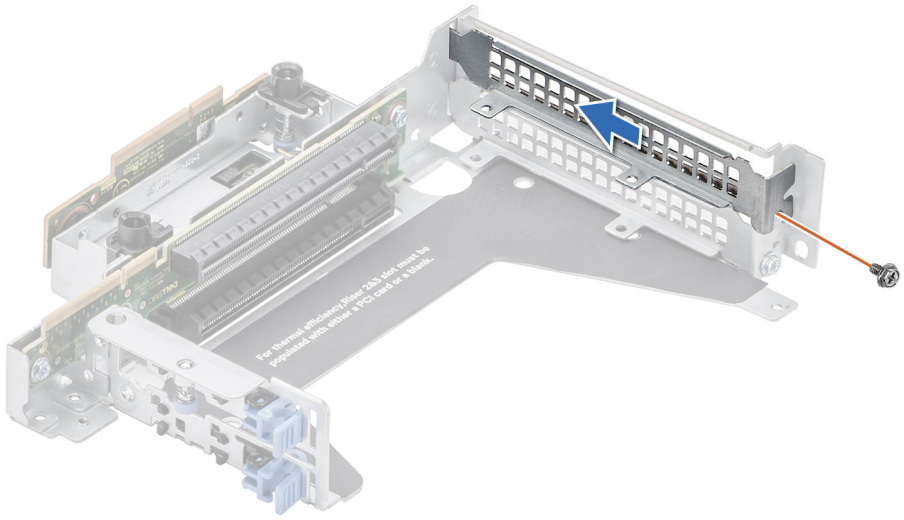

Figure 79. Installing filler bracket in Riser 2 and 3

Next steps

If applicable, install an expansion card into the expansion card riser.

Installing an expansion card into the expansion card riser

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. If installing a new expansion card, unpack it and prepare the card for installation.

NOTE: For instructions, see the documentation accompanying the card.

NOTE: The procedure to install the GPU card and the expansion card is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Pull and lift the expansion card retention latch lock to open.
2. If installed, remove the filler bracket.

NOTE: Store the filler bracket for future use. Filler brackets must be installed in empty expansion card slots to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.

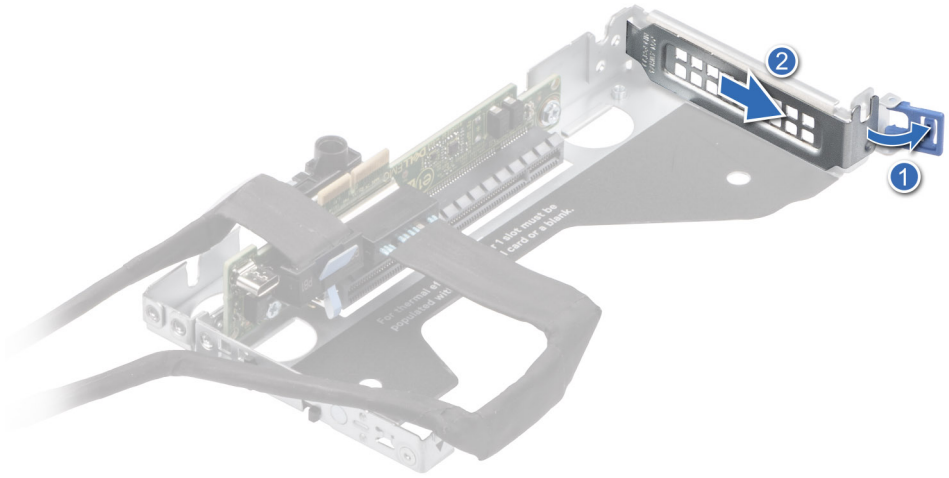

Figure 80. Removing a filler bracket from Riser 1A

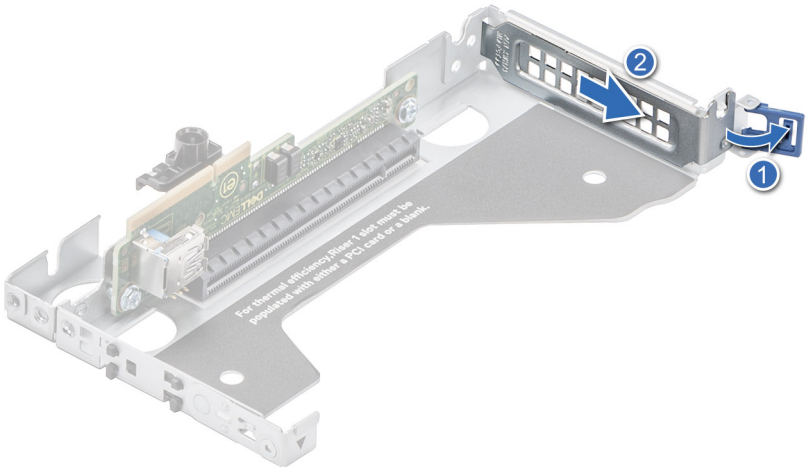

Figure 81. Removing a filler bracket from Riser 1B

3. Hold the card by the edges, and align the card edge connector with the expansion card connector on the riser.
4. Insert the card edge connector firmly into the expansion card connector until the card is fully seated.
5. Rotate and close the card holder and side card holder.
6. Push the side holder and ensure that the latch hook holds the riser cover.

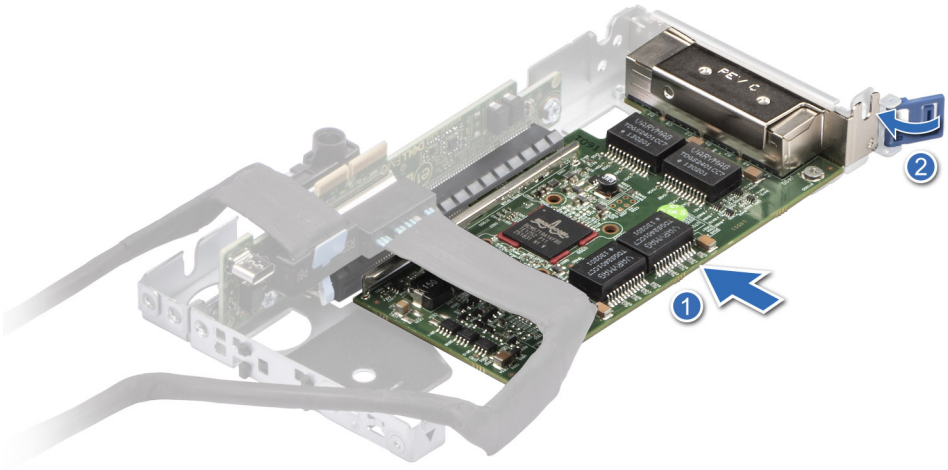

Figure 82. Installing a half-length expansion card into Riser 1A

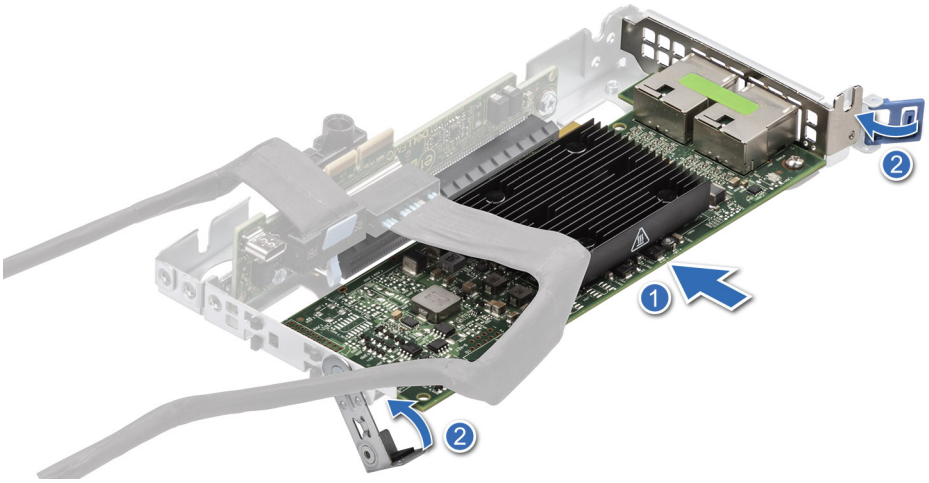

Figure 83. Installing a full-height expansion card into Riser 1A

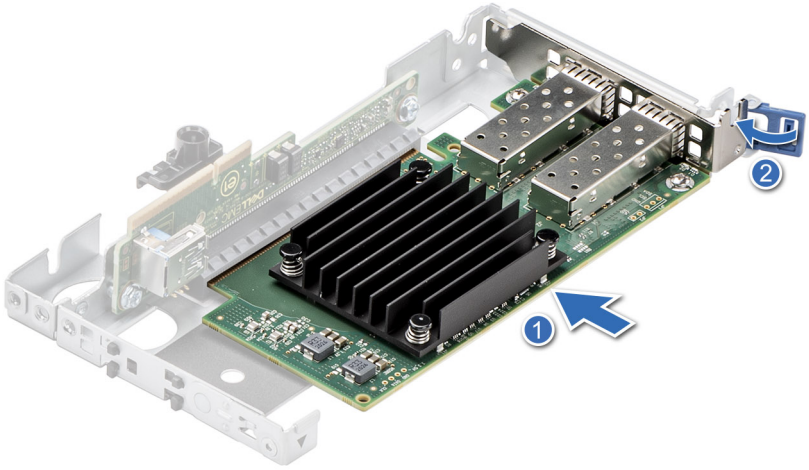

Figure 84. Installing a half-length expansion card into Riser 1B

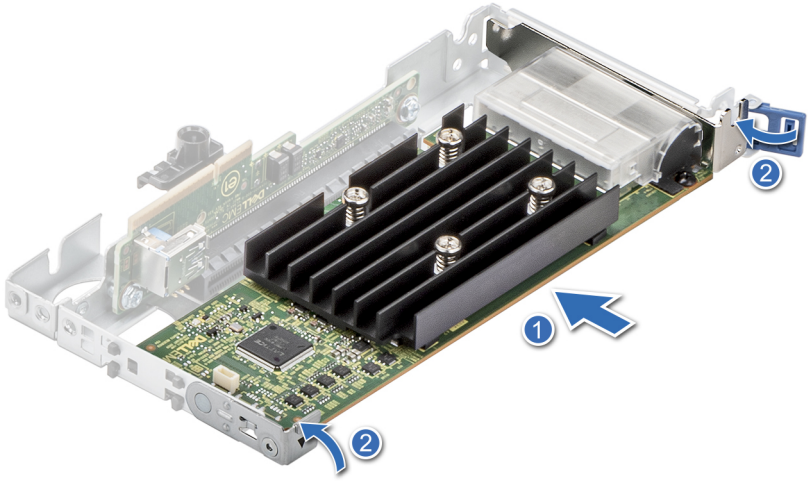

Figure 85. Installing a full-height expansion card into Riser 1B

7. For Riser 2 and 3, to remove the filler bracket remove the screw using Phillips 2 screwdriver.

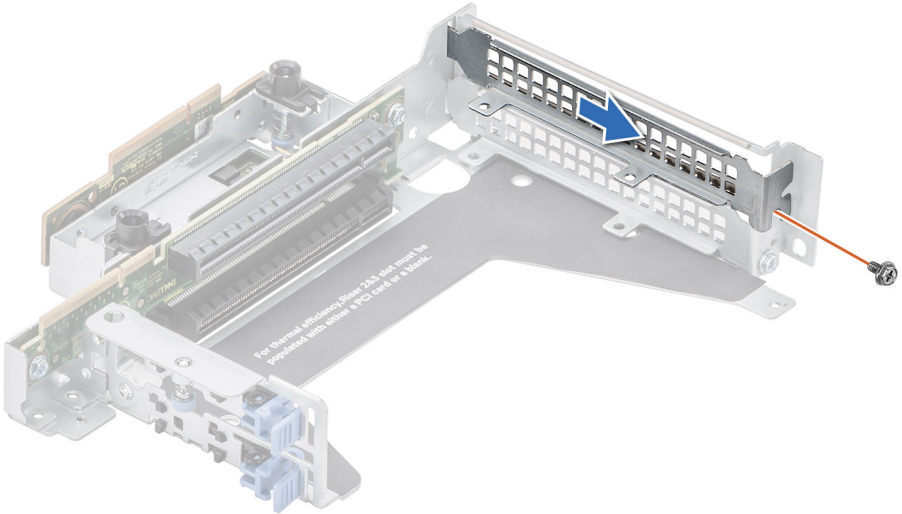

Figure 86. Removing filler bracket from Riser 2 and 3

8. Hold the card by the edges and align the card connector with the connector on the expansion card riser.

9. Insert the card until firmly seated into the connector on the riser.
10. Using Phillips 2 screwdriver tighten the screw on the expansion card riser.

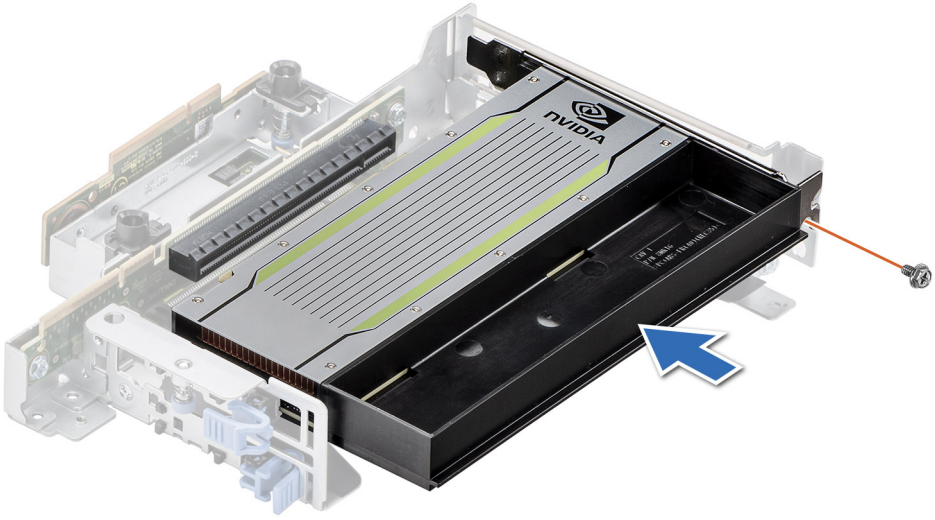

Figure 87. Installing single width GPU in Riser 2 and 3

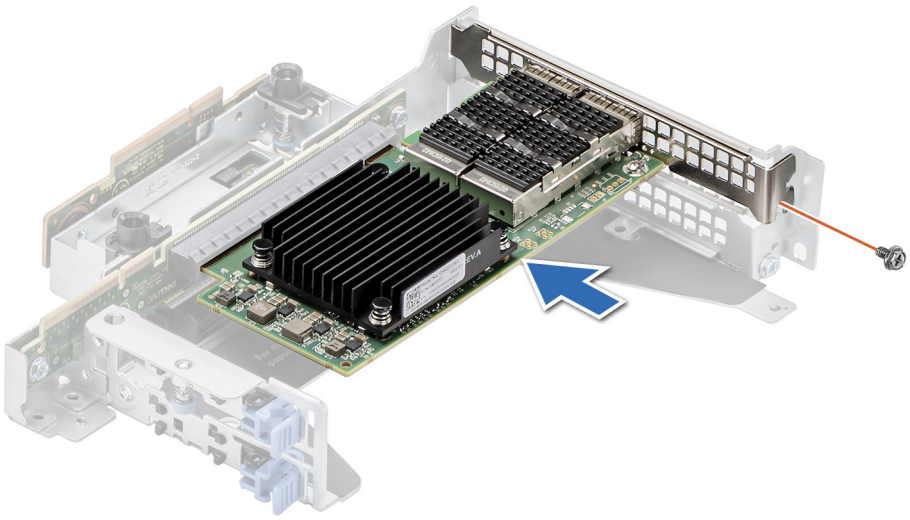

Figure 88. Installing expansion card in Riser 2 and 3

NOTE: The blue retention latch is only used when a half-length card is installed. If a shorter card is installed the blue retention latch is not applicable.

Next steps

1. Follow the procedure listed in After working inside your system.
2. Install any device drivers required for the card as described in the documentation for the card.

NOTE: While replacing a faulty storage controller or NIC card or GPU with the same type of card, after you power on the system; the new card automatically updates to the same firmware and configuration of the faulty one. For more information about the Part replacement configuration, see the *Dell Lifecycle Controller User's Guide* available at iDRAC manuals

Optional BOSS S1 card

Removing the BOSS S1 card

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to remove the BOSS S1 card is the same for Rear Accessed and Front Accessed configurations.

Steps

Holding the blue tag, pull the BOSS S1 card away from the system board connector.

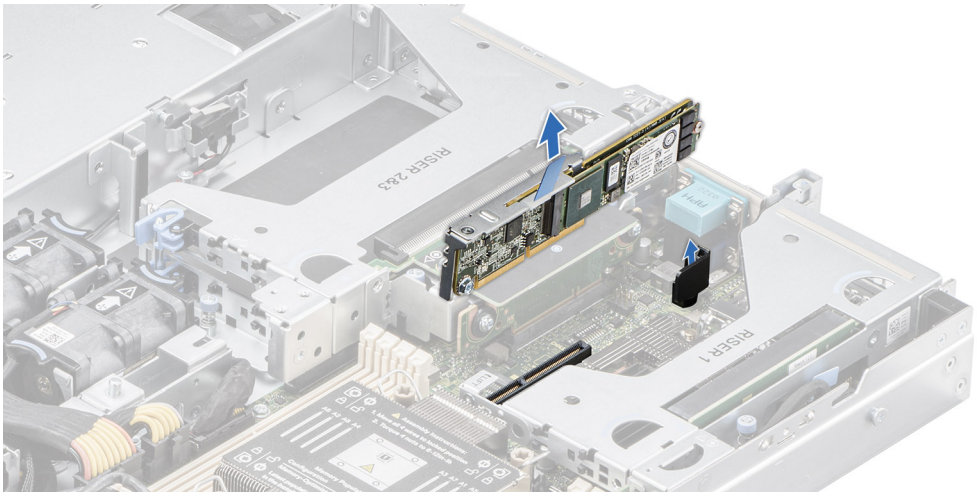

Figure 89. Removing the BOSS S1 card

Next steps

Replace the BOSS S1 card.

Installing the BOSS S1 card

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.

NOTE: The procedure to install the BOSS S1 card is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Align and insert the BOSS S1 card connector with the connectors on the system board.
2. Press the BOSS S1 card firmly until it is fully seated.

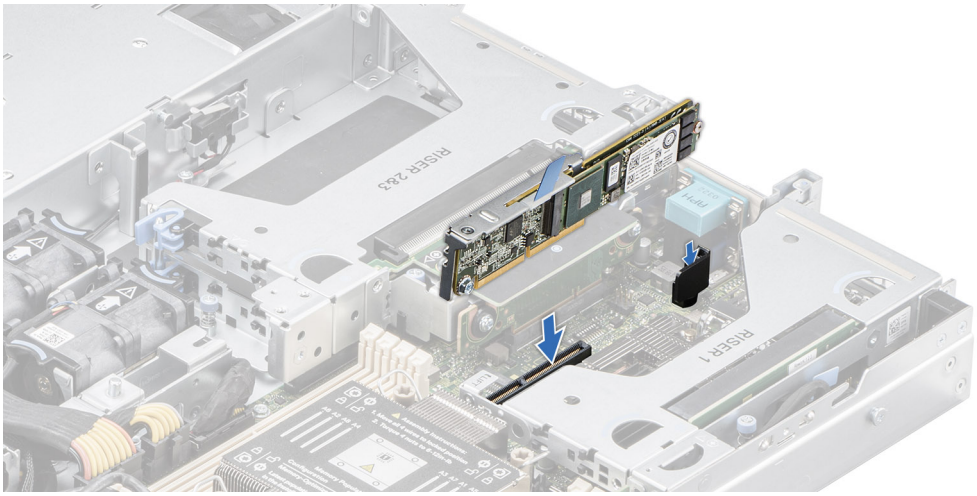

Figure 90. Installing the BOSS S1 card into the system board

Next steps

Follow the procedure listed in After working inside your system.

Removing M.2 SSD module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the BOSS S1 card.

NOTE: The procedure to remove the M.2 SSD module is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Using the Phillips 1 screwdriver, remove the screw securing the M.2 SSD module to the BOSS S1 card.
2. Pull the M.2 SSD module to disconnect from the connector on the BOSS S1 card.

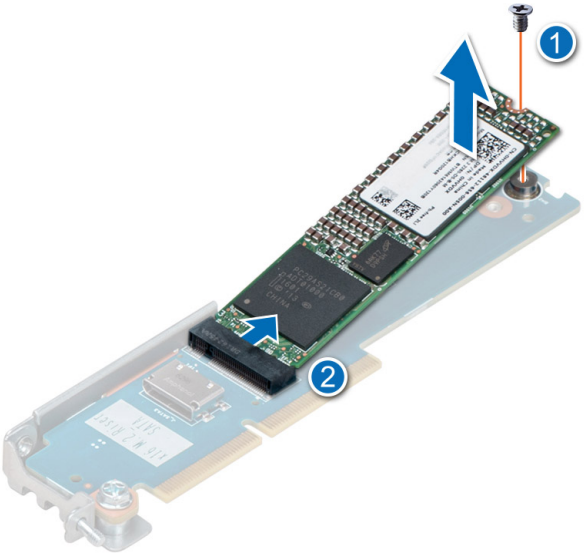

Figure 91. Removing the M.2 SSD module

Next steps

If applicable, install the M.2 SSD module.

Installing M.2 SSD module

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.
3. Remove the BOSS S1 card.

NOTE: The procedure to install the M.2 SSD module is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Align the M.2 SSD module at an angle with the connector on the BOSS S1 card.
2. Insert the M.2 SSD module until it is firmly seated in BOSS S1 card connector.
3. Using the Phillips 1 screwdriver, secure the M.2 SSD module on the BOSS S1 card with the screw.

NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

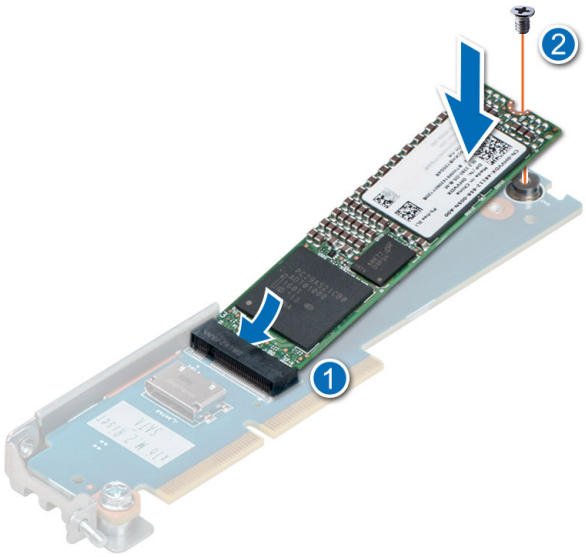

Figure 92. Installing the M.2 SSD module

Next steps

1. If applicable, replace the BOSS module.
2. Follow the procedure listed in the After working inside your system.

System battery

This is a service technician replaceable part only.

Replacing the system battery

Prerequisites

WARNING: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type that is recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions. See the Safety instructions that came with your system for more information.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove expansion card Riser 1.
4. If applicable, disconnect the power or data cables from the expansion cards.

NOTE: The procedure to remove the system battery is the same for Rear Accessed and Front Accessed configurations.

Steps

1. To remove the battery:
   a. Push the battery holder clip away from the battery.

      CAUTION: To avoid damage to the battery holder clip, ensure that you do not bend the battery holder clip while installing or removing a battery.

   b. Pull the battery out of the battery holder.

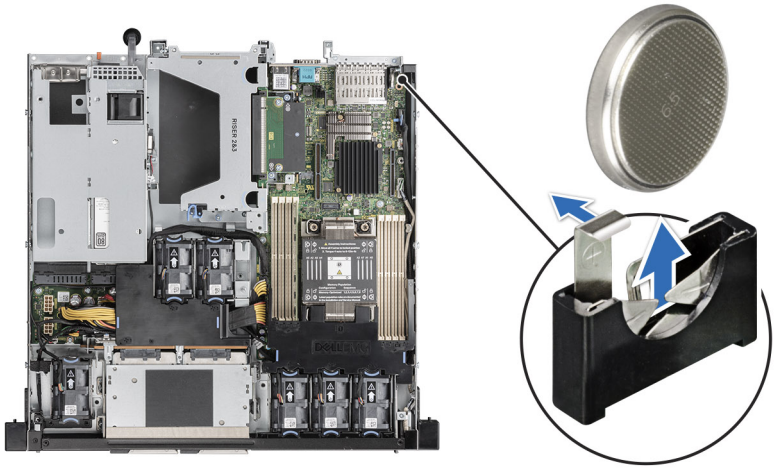

Figure 93. Removing the system battery

CAUTION: To avoid damage to the battery connector, you must firmly support the connector while installing or removing a battery.

2. To install a new system battery:
   a. Push the battery holder clip away.

      NOTE: Ensure that the **+** side of the battery is facing the battery holder clip.

   b. Insert the battery in the battery holder until the battery holder clip snaps into place.

      CAUTION: To avoid damage to the battery holder clip, ensure that you do not bend the battery holder clip while installing or removing a battery.

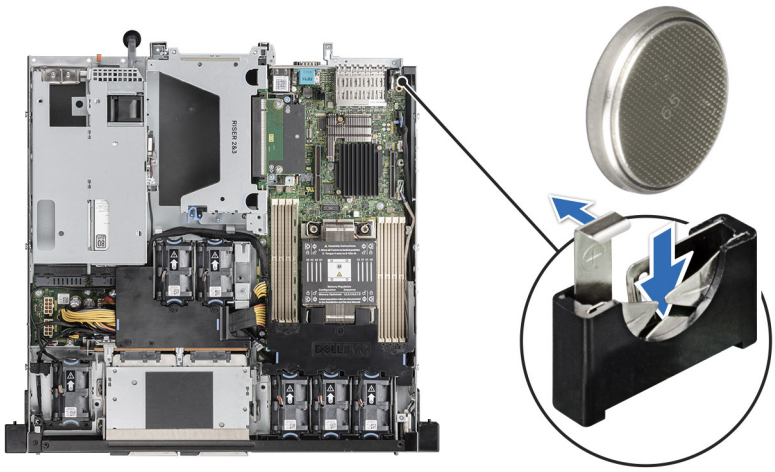

Figure 94. Installing the system battery

Next steps

1. If applicable, Install an expansion card into expansion card Riser 1
2. Install the expansion card riser 1.
3. Follow the procedure listed in the After working inside your system.
4. Confirm that the battery is operating properly, by performing the following steps:
   a. Enter the System Setup, while booting, by pressing F2.
   b. Enter the correct time and date in the System Setup **Time** and **Date** fields.
   c. **Exit** System Setup.
   d. To test the newly installed battery, remove the system from the enclosure for at least an hour.
   e. Enter System Setup and if the time and date are still incorrect, see Getting help section.

Internal USB memory key

Removing the internal USB key

Prerequisites

CAUTION: To avoid interference with other components in the server, the maximum permissible dimensions of the USB memory key are 15.9 mm width x 57.15 mm length x 7.9 mm height.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the expansion card Riser 1B.

NOTE: The procedure to remove the internal USB key is the same for Rear Accessed and Front Accessed configurations.

Steps

Remove USB memory key from the USB port on Riser 1B.

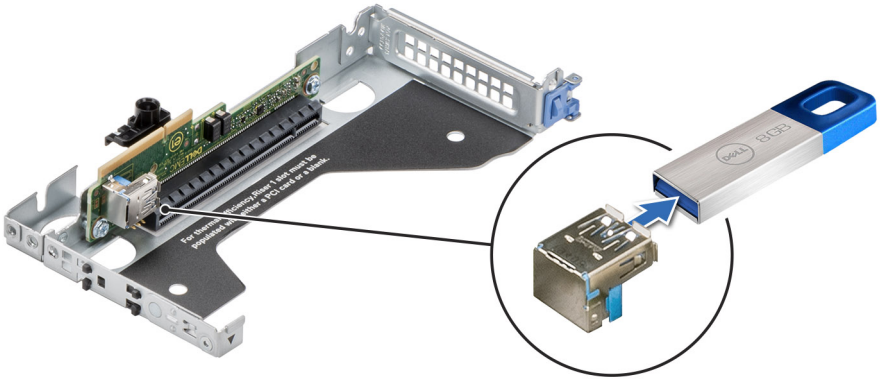

Figure 95. Removing internal USB key

Next steps

Replace internal USB key.

Installing internal USB key

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove expansion card riser 1B.

NOTE: The procedure to install the internal USB key is the same for Rear Accessed and Front Accessed configurations.

Steps

Connect the USB key to the internal USB port on riser 1B.

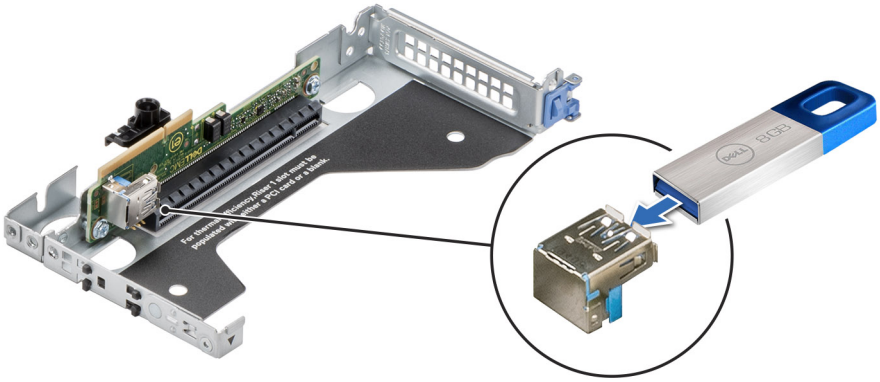

Figure 96. Installing the internal USB key

Next steps

1. Install the expansion card riser 1B.
2. Follow the procedure listed in After working inside your system.
3. While booting, press F2 to enter **System Setup** and verify that the system detects the USB memory key.

Power supply unit

NOTE: While replacing the hot swappable PSU, after next server boot; the new PSU automatically updates to the same firmware and configuration of the replaced one. For updating to the latest firmware and changing the configuration, see the *Lifecycle Controller User's Guide* at iDRAC Manuals.

NOTE: For information about DC PSU cabling instructions, see the *Cabling instructions for – (48 – 60) V DC power supply* Tech sheet that is shipped with your DC PSU or go to PowerEdge Manuals > **XR Servers** > **PowerEdge XR11** > **Select This Product** > **Documentation** > **Manuals and Documents** > *Cabling instructions for – 48 – 60 V DC power supply*

Hot spare feature

Your system supports the hot spare feature that significantly reduces the power overhead associated with the power supply unit (PSU) redundancy.

When the hot spare feature is enabled, one of the redundant PSUs is switched to the sleep state. The active PSU supports 100 percent of the system load, thus operating at higher efficiency. The PSU in the sleep state monitors output voltage of the active PSU. If the output voltage of the active PSU drops, the PSU in the sleep state returns to an active output state.

If having both PSUs active is more efficient than having one PSU in the sleep state, the active PSU can also activate the sleeping PSU.

The default PSU settings are as follows:

- If the load on the active PSU is more than 50 percent of PSU rated power wattage, then the redundant PSU is switched to the active state.
- If the load on the active PSU falls below 20 percent of PSU rated power wattage, then the redundant PSU is switched to the sleep state.

You can configure the hot spare feature by using the iDRAC settings. For more information, see the *iDRAC User's Guide* available at PowerEdge manuals.

Removing a power supply unit blank

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to remove the power supply unit blank is the same for Rear Accessed and Front Accessed configurations.

Steps

Pull the blank out of the system.

CAUTION: To ensure proper system cooling, the PSU blank must be installed in the second PSU bay in a non-redundant configuration. Remove the PSU blank only if you are installing a second PSU.

NOTE: You must install a power supply blank in a unused slot to maintain Federal Communications Commission (FCC) certification of the system. The blank also keeps dust and dirt out of the system and aids in proper cooling and airflow inside the system.

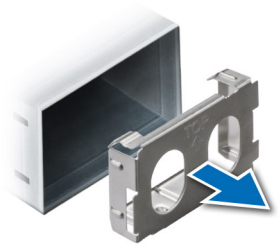

Figure 97. Removing a power supply unit blank

Next steps

Replace the PSU or PSU blank.

Installing a power supply unit blank

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.
3. Remove the PSU.

NOTE: The procedure to install the power supply unit (PSU) is the same for Rear Accessed and Front Accessed configurations.

NOTE: Install the power supply unit (PSU) blank only in the second PSU bay.

Steps

Align the PSU blank with the PSU bay and push it into the PSU bay until it clicks into place.

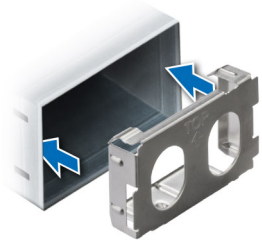

Figure 98. Installing a power supply unit blank

Removing a power supply unit

Prerequisites

CAUTION: The system requires one power supply unit (PSU) for normal operation. On power-redundant systems, remove and replace only one PSU at a time in a system that is powered on.

1. Follow the safety guidelines listed in the Safety instructions.
2. Disconnect the power cable from the power outlet and from the Power Supply Unit (PSU) you intend to remove.
3. Remove the cable from the strap on the PSU handle.
4. Unlatch and lift the optional cable management arm if it interferes with the PSU removal.

For information about the cable management arm, see the system's rack documentation at PowerEdge Manuals.

NOTE: The PowerEdge XR11 has two types of Power Supply Units (PSUs). The PSUs with black straps are designed for Rear Accessed configuration while the PSUs with blue straps are designed for Front Accessed configuration.

Steps

Press the orange release latch, and holding the PSU handle slide the PSU out of the PSU bay.

Figure 99. Removing a power supply unit from Rear Accessed configuration

Figure 100. Removing a power supply unit from Front Accessed configuration

Next steps

Replace the PSU or replace the PSU blank.

Installing a power supply unit

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. For systems that support redundant Power Supply Units (PSUs), ensure that both the PSUs are of the same type and have the same maximum output power.

   NOTE: The maximum output power (shown in watts) is listed on the PSU label.

3. Remove the PSU blank.

NOTE: The PowerEdge XR11 has two types of Power Supply Units (PSUs). The PSUs with black straps are designed for Rear Accessed configuration while the PSUs with blue straps are designed for Front Accessed configuration.

Steps

Slide the PSU into the PSU bay until the release latch snaps into place.

Figure 101. Installing a power supply unit for Rear Accessed configuration

Figure 102. Installing a power supply unit for Front Accessed configuration

Next steps

1. If you have unlatched the cable management arm, relatch it. For information about the cable management arm, see the system's rack documentation at PowerEdge Manuals.
2. Connect the power cable to the PSU, and plug the cable into a power outlet.

CAUTION: When connecting the power cable to the PSU, secure the cable to the PSU with the strap.

NOTE: When installing, hot swapping, or hot adding a new PSU, wait for 15 seconds for the system to recognize the PSU and determine its status. The PSU redundancy may not occur until discovery is complete. The PSU status indicator turns green to indicate that the PSU is functioning properly.

NOTE: For certain premium configurations with high power consumption, system PSU might stay with 2+0 mode only, 1+1 redundant mode is not available.

NOTE: While replacing the hot swappable PSU, after next server boot; the new PSU automatically updates to the same firmware and configuration of the replaced one. For more information about the Part replacement configuration, see the *Lifecycle Controller User's Guide* at iDRAC Manuals

Power interposer board

This is a service technician replaceable part only.

Removing power interposer board (PIB)

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the PCI air shroud.
4. Remove both PSUs.
5. Disconnect all the cables that are connected to the system board, intrusion switch, Fan1, Fan 2 and Fan 3 from the power interposer board (PIB).

NOTE: The procedure to remove the power interposer board (PIB) is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Using a Phillips 2 screwdriver, remove the screws securing the power interposer board to the system.

NOTE: Observe the routing of the cables as you remove them from the system.

2. Lift the PIB away from the system.

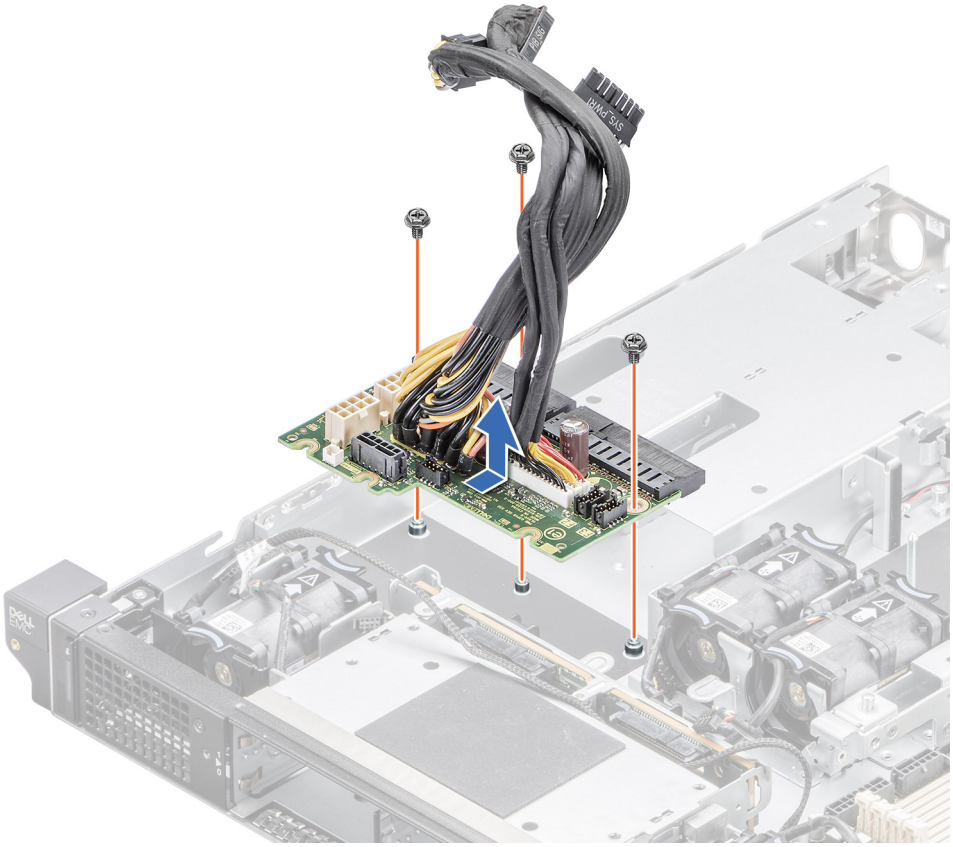

Figure 103. Removing the power interposer board

Next steps

Replace the power interposer board.

Installing the power interposer board (PIB)

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.

NOTE: The procedure to install the power interposer board (PIB) is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Align the slots on the PIB with the hook on the system and slide it into place.
2. Using Phillips 2 screwdriver, tighten the screws to secure the PIB to the system.

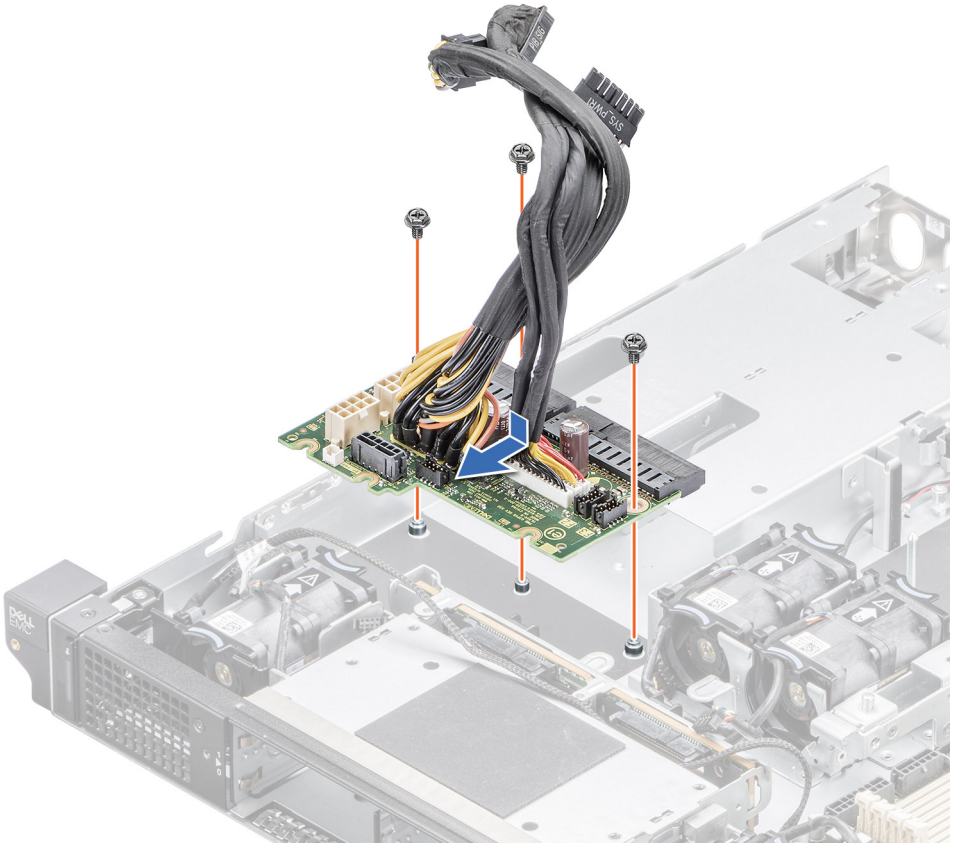

Figure 104. Installing the power interposer board

3. Reconnect all the required cables.

Next steps

1. Install the PSU.
2. Install the PCI air shroud.
3. Follow the procedure listed in After working inside your system.

System board

This is a service technician replaceable part only.

Removing the system board

Prerequisites

CAUTION: If you are using the Trusted Platform Module (TPM) with an encryption key, you may be prompted to create a recovery key during program or System Setup. Be sure to create and safely store this recovery key. If you replace this system board, you must supply the recovery key when you restart your system or program before you can access the encrypted data on your drives.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the following components:
   a. System cover
   b. Expansion card risers
   c. Air shrouds

d. Memory modules
e. Processor and heat sink module
f. Internal USB memory key (if installed)
g. BOSS S1 card
h. Disconnect all cables from the system board.

CAUTION: Take care not to damage the system identification button while removing the system board from the system.

NOTE: The procedure to remove the system board is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Using a Phillips 2 screwdriver, remove the screws that secure the system board to the system.
2. Hold the system board by the edges and slide it towards the fan modules. Lift the system board out of the system.

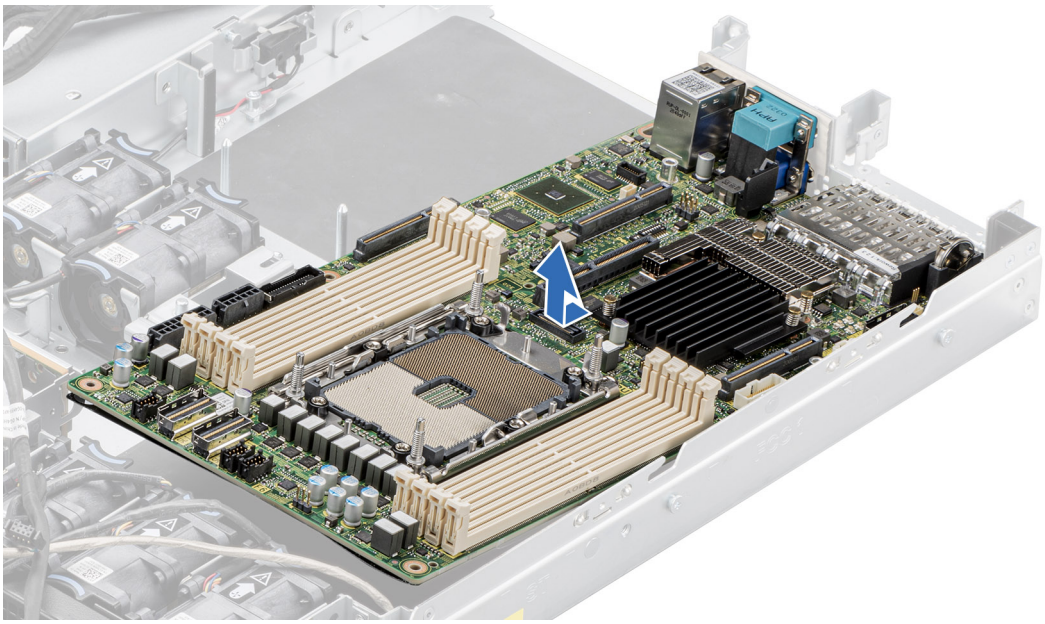

Figure 105. Removing the system board

Next steps

Install the system board.

Installing system board

Prerequisites

NOTE: Before replacing the system board, replace the old iDRAC MAC address label in the Information tag with the iDRAC MAC address label of the replacement system board.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in Before working inside your system.
3. If you are replacing the system board, remove all the components that are listed in the removing the system board section.

NOTE: The procedure to install the system board is the same for Rear Accessed and Front Accessed configurations.

Steps

1. Unpack the new system board assembly.

CAUTION: Do not lift the system board by holding a memory module, processor, or other components.

CAUTION: Take care not to damage the system identification button while placing the system board into the chassis.

NOTE: Do not remove the processor socket cover until the system board is assembled in the system and ready for installation of the processor and heat sink module.

2. Holding the system board by the edges, lower the system board it into the system.
3. Align the connectors on the system board with the slots on the rear of the system until the connectors are firmly seated in the slots.

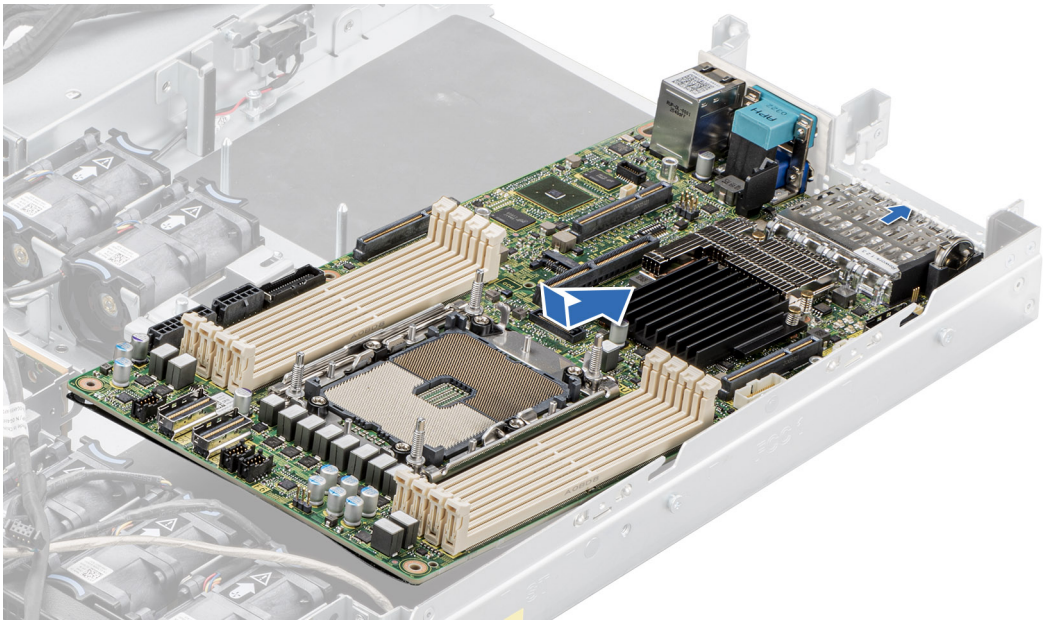

Figure 106. Installing the system board

4. Using a Phillips 2 screwdriver, tighten the screws sequentially and secure the system board to the chassis.

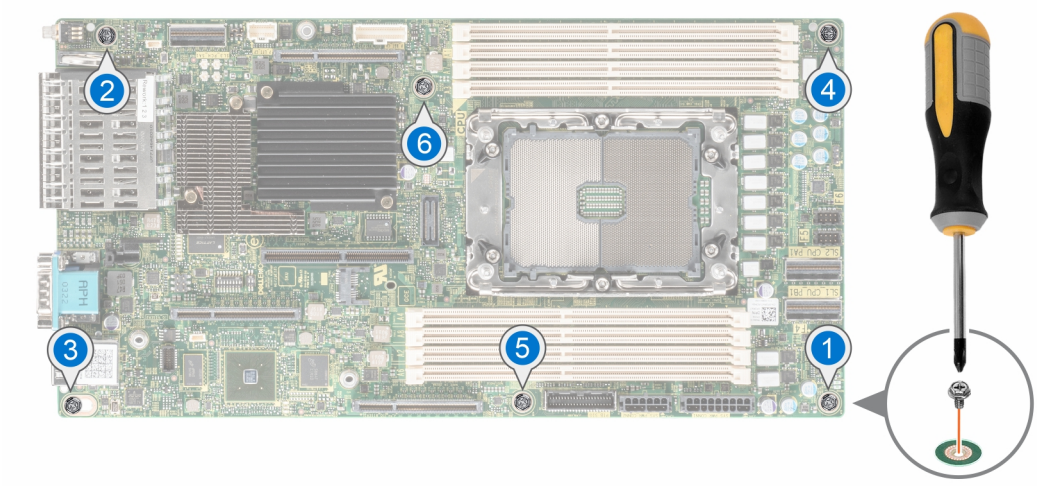

Figure 107. System board screw fastening sequence

Next steps

1. Reconnect all cables to the system board.

NOTE: Ensure that the cables inside the system are routed along the chassis wall and secured using the cable securing brackets.

2. Replace the following components:
   a. Trusted Platform Module (TPM)

      NOTE: The TPM Module must be replaced only while installing a new system board.

   b. Internal USB memory key (if installed)
   c. Processor and heat sink module
   d. BOSS S1 card
   e. Memory modules
   f. Reconnect all cables to the system board.

      NOTE: Ensure that the cables inside the system are routed along the chassis wall and secured using the cable securing brackets.

   g. Expansion card risers
   h. Air shrouds
   i. System cover
3. Ensure that you perform the following steps:
   a. Use the Easy Restore feature to restore the Service Tag. See the Restoring the system by using the Easy Restore feature section.
   b. If the service tag is not backed up in the backup flash device, enter the system service tag manually. See the Manually update the Service Tag using System Setup section.
   c. Update the BIOS and iDRAC versions.

      Re-enable the Trusted Platform Module (TPM). See the Upgrading the Trusted Platform Module section.
4. If you are not using Easy Restore, import your new or existing iDRAC Enterprise license. For more information, see the Integrated Dell Remote Access Controller User's Guide.
5. Follow the procedure listed in After working inside your system.

Restoring the system using Easy Restore

The Easy Restore feature enables you to restore your service tag, license, UEFI configuration, and the system configuration data after replacing the system board. All data is backed up in a backup flash device automatically. If BIOS detects a new system board, and the service tag in the backup flash device, BIOS prompts the user to restore the backup information.

About this task

Below is a list of options/steps available:

Steps

1. Restore the service tag, license, and diagnostics information, press **Y**
2. Navigate to the Lifecycle Controller based restore options, press **N**
3. Restore data from a previously created **Hardware Server Profile**, press **F10**

   NOTE: When the restore process is complete, BIOS prompts to restore the system configuration data.

4. Restore data from a previously created **Hardware Server Profile**, press **F10**
5. To restore the system configuration data, press **Y**
6. To use the default configuration settings, press **N**

   NOTE: After the restore process is complete, system reboots.

Manually update the Service Tag

After replacing a system board, if Easy Restore fails, follow this process to manually enter the Service Tag, using **System Setup**.

About this task

If you know the system service tag, use the **System Setup** menu to enter the service tag.

Steps

1. Power on the system.
2. To enter the **System Setup**, press **F2**.
3. Click **Service Tag Settings**.
4. Enter the service tag.

   NOTE: You can enter the service tag only when the **Service Tag** field is empty. Ensure that you enter the correct service tag. Once the service tag is entered, it cannot be updated or changed.

5. Click **OK**.

Trusted Platform Module

This is a service technician replaceable part only.

Upgrading the Trusted Platform Module

Removing the TPM

Prerequisites

NOTE:

- Ensure the operating system is compatible with the TPM version you are installing.
- Ensure that you download and install the latest BIOS firmware on your system.
- Ensure that the BIOS is configured to enable UEFI boot mode.

CAUTION: The TPM plug-in module is cryptographically bound to that particular system board after it is installed. When the system is powered on, any attempt to remove an installed TPM plug-in module breaks the cryptographic binding, and the removed TPM cannot be installed on another system board. Ensure any keys you have stored on the TPM have been securely transferred.

Steps

1. Locate the TPM connector on the system board. For more information, see System board connectors.
2. Press to hold the module down and remove the screw using the security Torx 8-bit shipped with the TPM module.
3. Slide the TPM module out from its connector.
4. Push the plastic rivet away from the TPM connector and rotate it 90° counterclockwise to release it from the system board.
5. Pull the plastic rivet out of its slot on the system board.

Installing the TPM

Steps

1. To install the TPM, align the edge connectors on the TPM with the slot on the TPM connector.
2. Insert the TPM into the TPM connector such that the plastic rivet aligns with the slot on the system board.
3. Press the plastic rivet until the rivet snaps into place.

4. Replace the screw that secures the TPM to the system board.

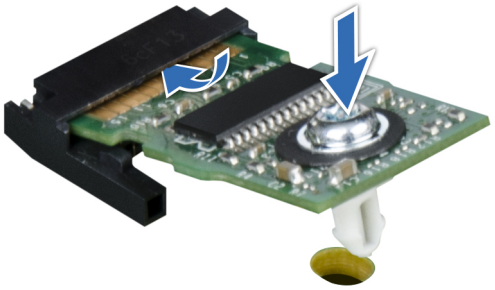

Figure 108. Installing the TPM

Initializing TPM for users

Steps

1. Initialize the TPM.
   For more information, see Initializing the TPM for users.
2. The **TPM Status** changes to **Enabled, Activated**.

Initializing the TPM 1.2 for users

Steps

1. While booting your system, press F2 to enter System Setup.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
3. From the **TPM Security** option, select **On with Preboot Measurements**.
4. From the **TPM Command** option, select **Activate**.
5. Save the settings.
6. Restart your system.

Initializing the TPM 2.0 for users

Steps

1. While booting your system, press F2 to enter System Setup.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
3. From the **TPM Security** option, select **On**.
4. Save the settings.
5. Restart your system.

Control panel

This is a service technician replaceable part only.

Removing the status LED control panel for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the air shrouds.
4. Remove the processor and heat sink module.
5. Remove the expansion card riser 1.

NOTE: If necessary, please remove the backplane signal and power cables.

Steps

1. Using the Phillips 2 screwdriver, remove the screws that secure the left ear handle.

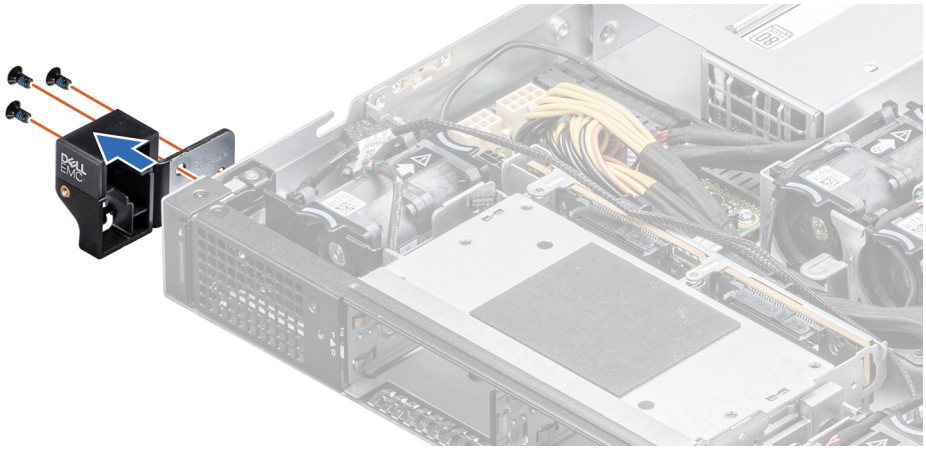

Figure 109. Removing the left ear handle for Rear Accessed configuration

2. Disconnect the status LED control panel cable from the system board connector.

   NOTE: Observe the routing of the cable as you remove it from the system.

3. Using the Torx 8 screwdriver, remove the screws that secure the left control panel assembly to the system.
4. Hold the status LED control panel assembly and remove the control panel along with the cable from the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

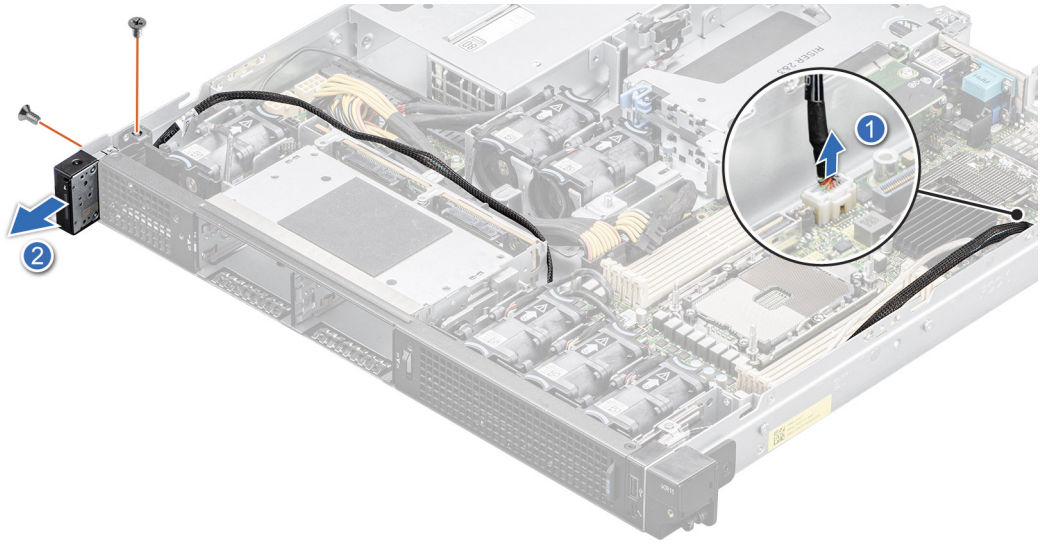

Figure 110. Removing the status LED control panel for Rear Accessed configuration

Next steps

Replace the status LED control panel for Rear Accessed configuration.

Installing the status LED control panel for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the air shrouds.
4. Remove the processor and heat sink module.
5. Remove the expansion card riser 1.

NOTE: If necessary, please remove the backplane signal and power cables.

Steps

1. Align and insert the status LED control panel assembly in the slot on the system.
2. Route the status LED control panel cable through the guide slots in the system and connector on system board.

   NOTE: Route the cable properly to prevent the cable from being pinched or crimped.

3. Using the Torx 8 screwdriver, tighten the screws that secure the left control panel assembly to the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

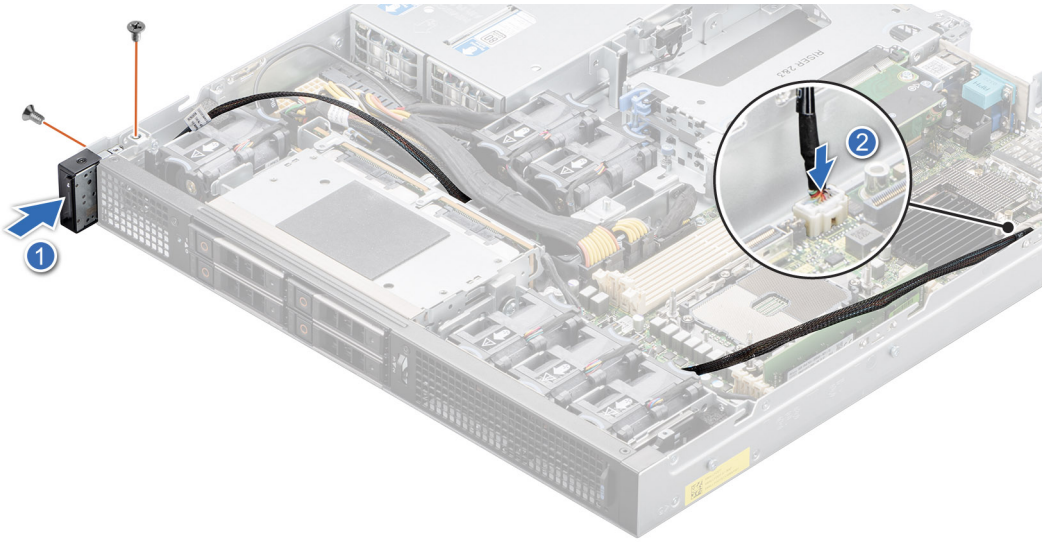

Figure 111. Installing the status LED control panel for Rear Accessed configuration

4. Align and insert the left ear handle in the slot on the system and tighten the screws using Torx 8 screwdriver.

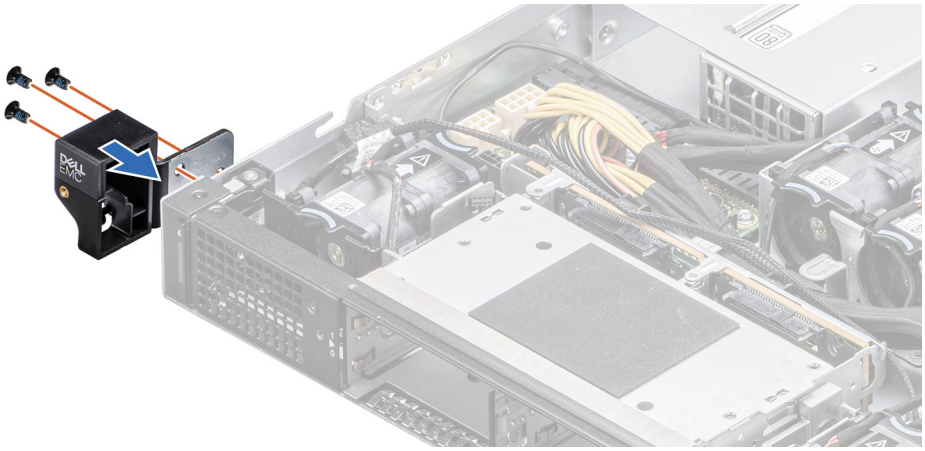

Figure 112. Installing the left ear handle for Rear Accessed configuration

Next steps

1. Install the expansion card riser 1.
2. Install the processor and heat sink module.
3. Install the air shrouds.
4. Follow the procedure listed in the After working inside your system.

Removing the power button control panel for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the processor air shroud.
4. Remove the expansion card riser 1.

Steps

1. Using the Phillips 2 screwdriver, remove the screws that secure the right ear handle.

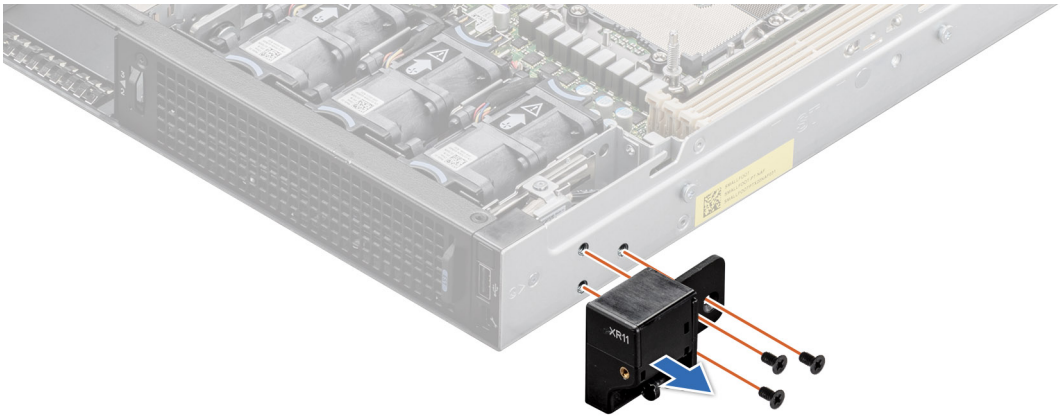

Figure 113. Removing the right ear handle for Rear Accessed configuration

2. Disconnect the power button control panel cable from the system board connector and remove the cable from cable clip.

   NOTE: Observe the routing of the cable as you remove it from the system.

3. Using the Torx 8 screwdriver, remove the screws that secure the right control panel assembly.
4. Hold the power button control panel assembly and remove the control panel along with the cable from the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

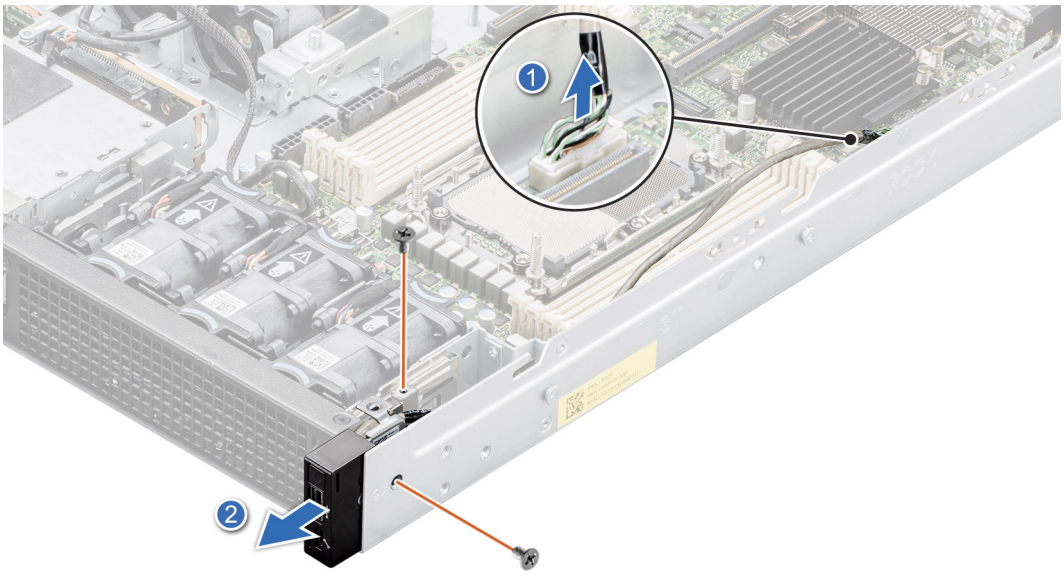

Figure 114. Removing the power button control panel for Rear Accessed configuration

Next steps

Replace the power button control panel.

Installing the power button control panel for Rear Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the air shrouds.
4. Remove the expansion card riser 1.

Steps

1. Route the power button control panel cable through the side wall of the system.

   NOTE: Route the cable properly to prevent the cable from being pinched or crimped.

2. Align and insert the right control panel in the slot on the system.
3. Connect the power button control panel cable to the connector on the system board.
4. Using the Torx 8 screwdriver, tighten the screws that secure the right control panel to the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

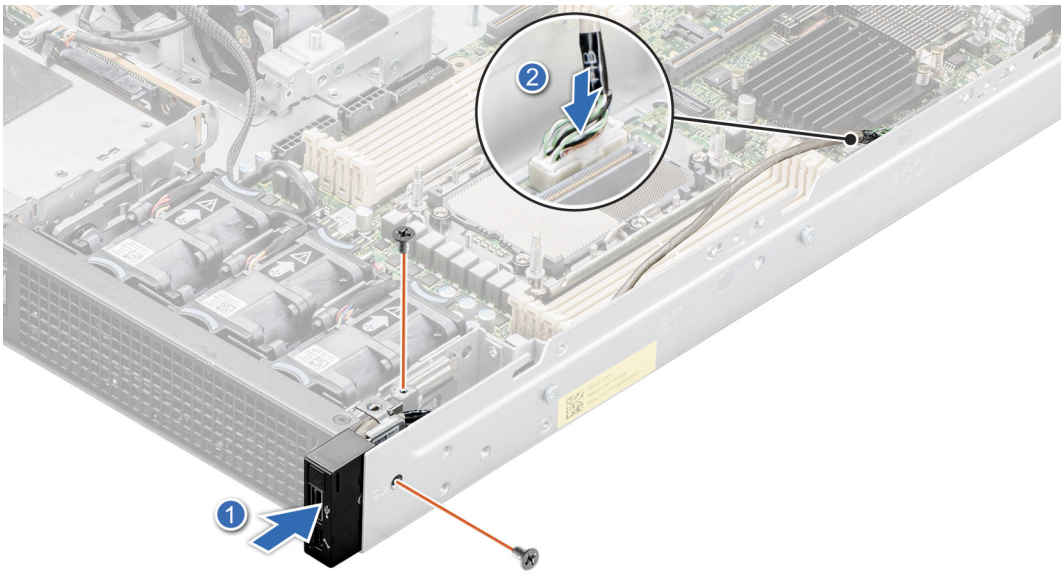

Figure 115. Installing the power button control panel for Rear Accessed configuration

5. Using the Phillips 2 screwdriver, tighten the screws that secure the right ear handle to the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

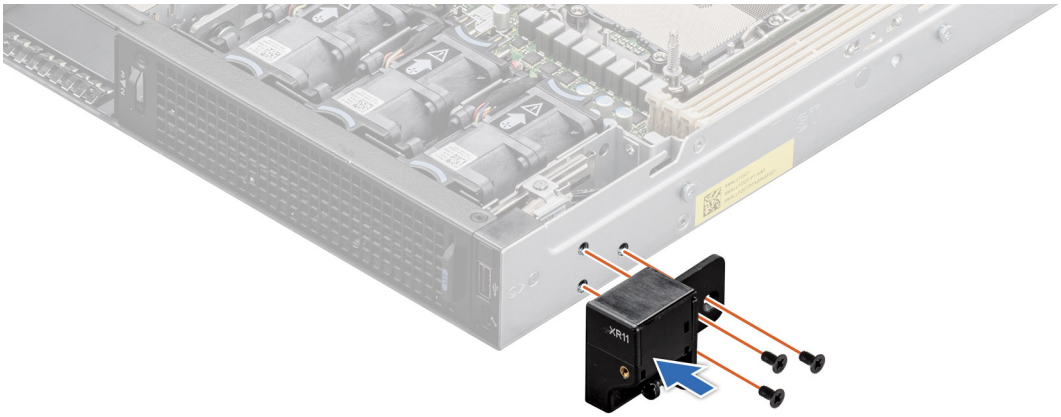

Figure 116. Installing the right ear handle for Rear Accessed configuration

Next steps

1. Install the expansion card riser 1.
2. Install the air shrouds.
3. Follow the procedure listed in the After working inside your system.

Removing the status LED control panel for Front Accessed configuration

Prerequisites

NOTE: For Front Accessed configuration, the status LED control panel is on the rear of the system.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the air shrouds.
4. Remove the processor and heat sink module.
5. Remove the expansion card riser 1.

NOTE: If required, remove the backplane power and signal cables.

Steps

1. Disconnect the status LED control panel cable from the system board connector.

   NOTE: Observe the routing of the cable as you remove it from the system.

2. Using the Torx 8 screwdriver, remove the screws that secure the status LED control panel assembly to the system.
3. Hold the left status LED control panel assembly and remove the control panel along with the cable from the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

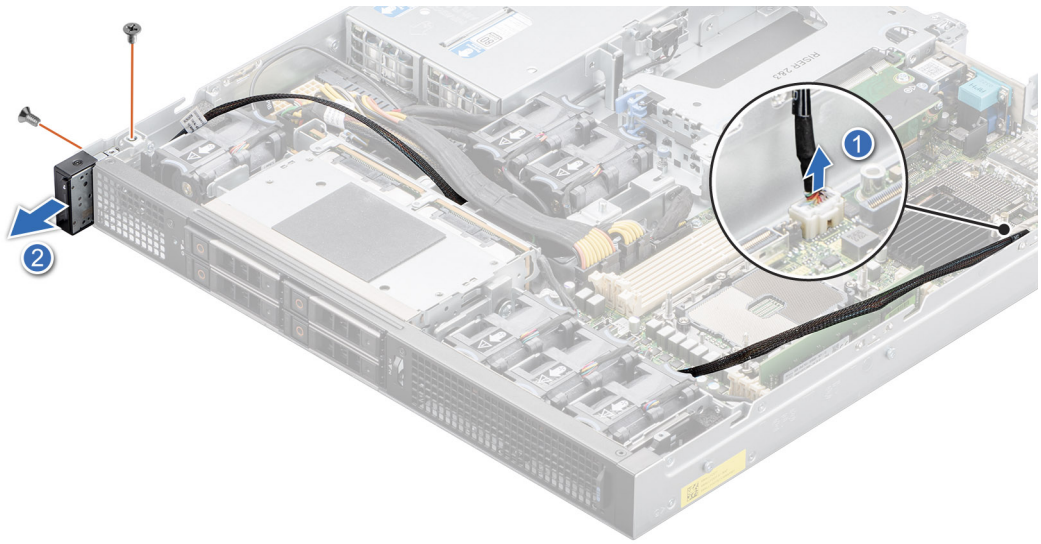

Figure 117. Removing the status LED control panel for Front Accessed configuration

Next steps

Replace the status LED control panel for Front Accessed configuration.

Installing the status LED control panel for Front Accessed configuration

Prerequisites

NOTE: For Front Accessed configuration, the status LED control panel is on the rear of the system.

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the air shrouds.
4. Remove the processor heat sink module.
5. Remove the expansion card riser 1.

NOTE: If required, remove the backplane power and signal cables.

Steps

1. Align and insert the status LED control panel assembly in the slot on the system.
2. Route the status LED control panel cable through the guide slots in the system and connector on system board.

   NOTE: Route the cable properly to prevent the cable from being pinched or crimped.

3. Using the Phillips 1 screwdriver, tighten the screws that secure the status LED control panel assembly to the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

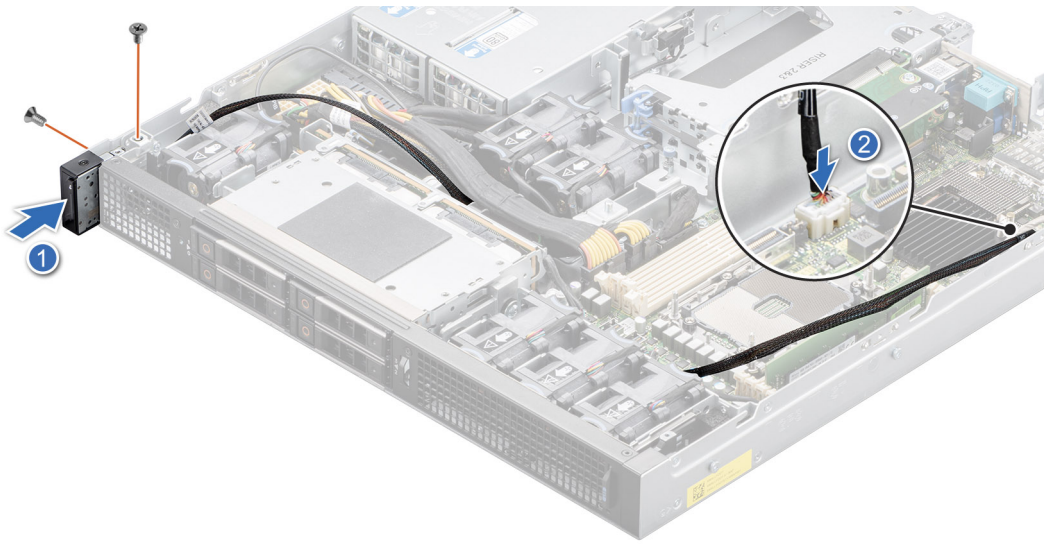

Figure 118. Installing the status LED control panel assembly for Front Accessed configuration

Next steps

1. Install the expansion card riser 1.
2. Install the processor heat sink module.
3. Install the air shrouds.
4. Follow the procedure listed in the After working inside your system.

Removing the power button control panel for Front Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the Riser 1.

Steps

1. Loosen the three screws to remove the left ear for the Front Accessed configuration.
2. Disconnect the power button control panel cable from the system board connector and remove the cable from cable clip.

   NOTE: Observe the routing of the cable as you remove it from the system.

3. Using the Phillips 2 screwdriver, remove the screws that secure the left rack ear.
4. Using the Torx 8 screwdriver, remove the screws that secure the power button control panel assembly.
5. Hold the power button control panel assembly and remove the control panel along with the cable from the system.

   NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

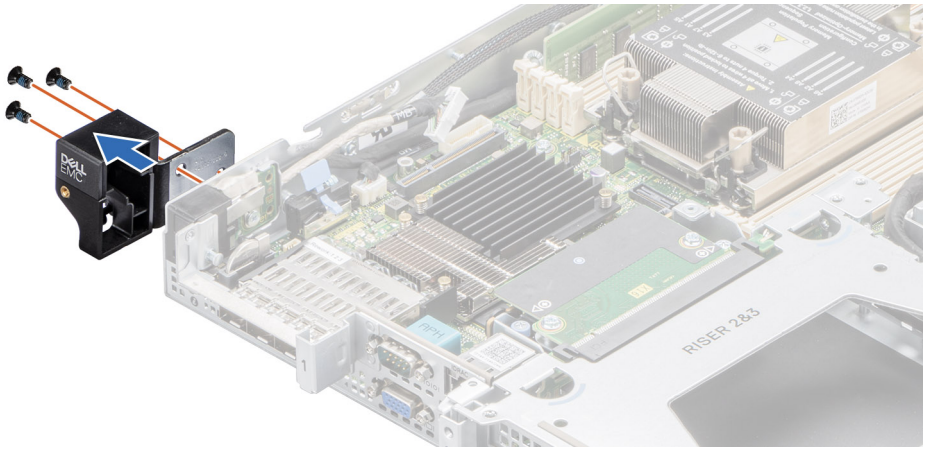

Figure 119. Removing the left ear for the Front Accessed configuration

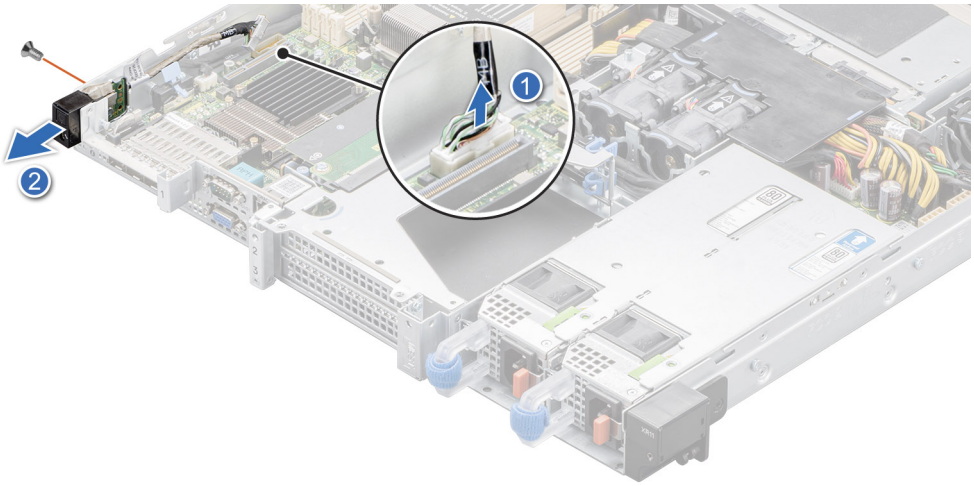

Figure 120. Removing the power button control panel for Front Accessed configuration

Next steps

Replace the power button control panel for Front Accessed configuration.

Installing the power button control panel for Front Accessed configuration

Prerequisites

1. Follow the safety guidelines listed in the Safety instructions.
2. Follow the procedure listed in the Before working inside your system.
3. Remove the expansion card riser 1.

Steps

1. Align and insert the power button control panel in the slot on the system.
2. Route the power button control panel cable through the side wall of the system.

   NOTE: Route the cable properly to prevent the cable from being pinched or crimped.

3. Connect the power button control panel cable to the connector on the system board.
4. Using the Torx 8 screwdriver, tighten the screws that secure the power button control panel to the system.

NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

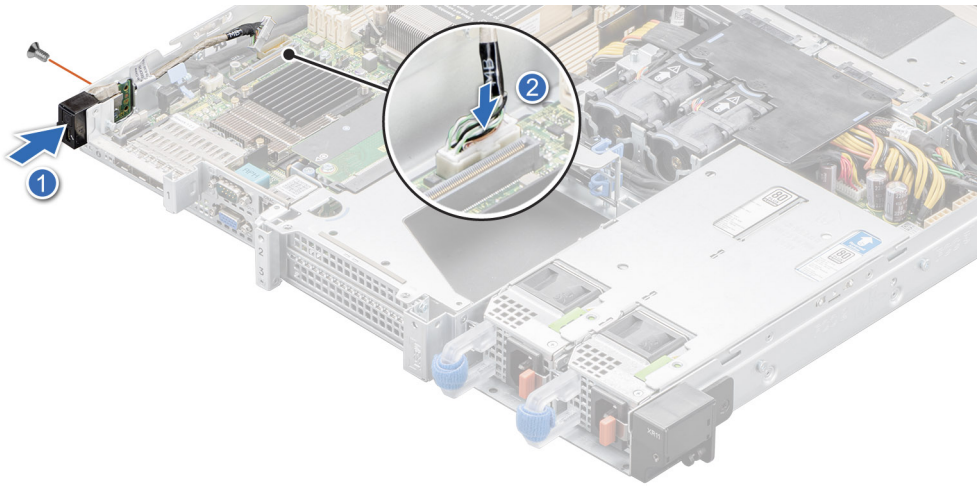

Figure 121. Installing the power button control panel for Front Accessed configuration

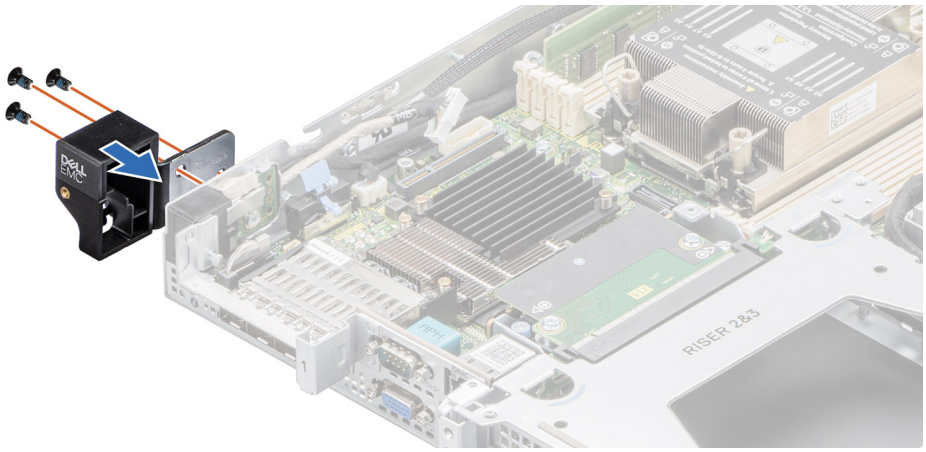

Figure 122. Installing the left ear for the Front Accessed configuration

5. Using the Phillips 2 screwdriver, tighten the screws and secure the rack left ear.

Next steps

1. Install the expansion card riser 1.
2. Follow the procedure listed in the After working inside your system.

MIL 901E and MIL 461G rugged kit

The MIL 901E and MIL 461G rugged kit provides rugged protection for the PowerEdge XR11 server. The MIL 901E and MIL 461G rugged kit consists of the components mentioned below:

- Power supply rugged bracket
- Drive rugged bracket
- Nine countersunk screws
- Riser 1 card holder
- System board guide pin
- Rear I/O bracket

Installing the MIL 901E and MIL 461G rugged kit

Prerequisites

NOTE: The MIL 901E and MIL 461G rugged kits are ordered separately from Dell.

1. Follow the safety guidelines listed in Safety instructions.
2. Unpack the 901E and MIL 461G rugged brackets.
3. Remove the front bezel for Rear Accessed configuration.
4. Remove the system cover.

Steps

1. Remove the expansion card riser 1.
2. Install the expansion card into the expansion card riser 1 for half-length expansion cards.
3. To install the half-length expansion cards, align the expansion card holder to the screw slots on the riser. Using a Phillips 2 screwdriver, tighten the screws to secure the card holder in place.

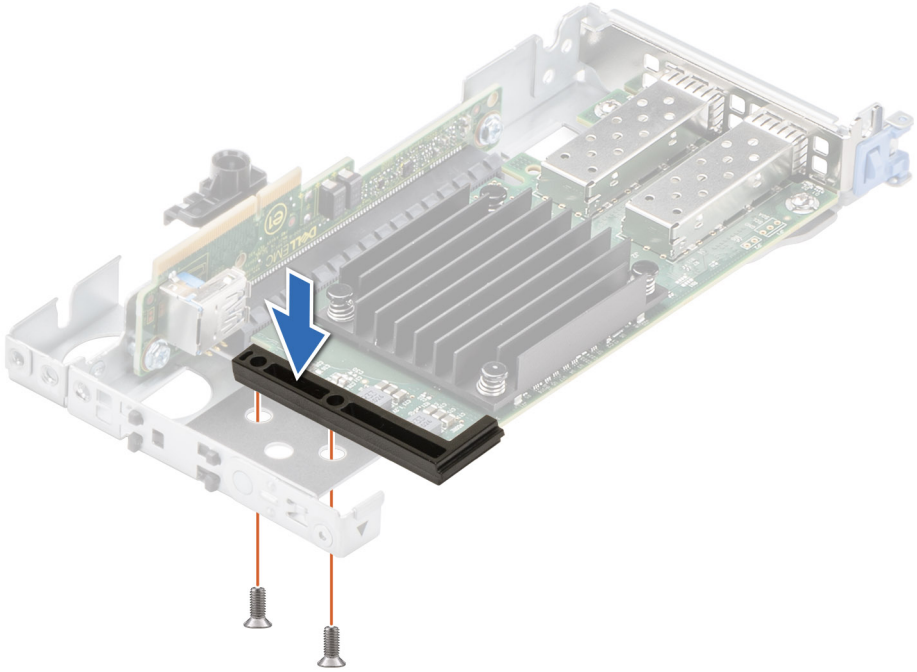

Figure 123. Installing the expansion card holder on riser 1 for half-length expansion cards

4. To install the full-height expansion cards, remove old expansion card holder by pressing the middle retention clip with a screwdriver, and push the card holder to the left.

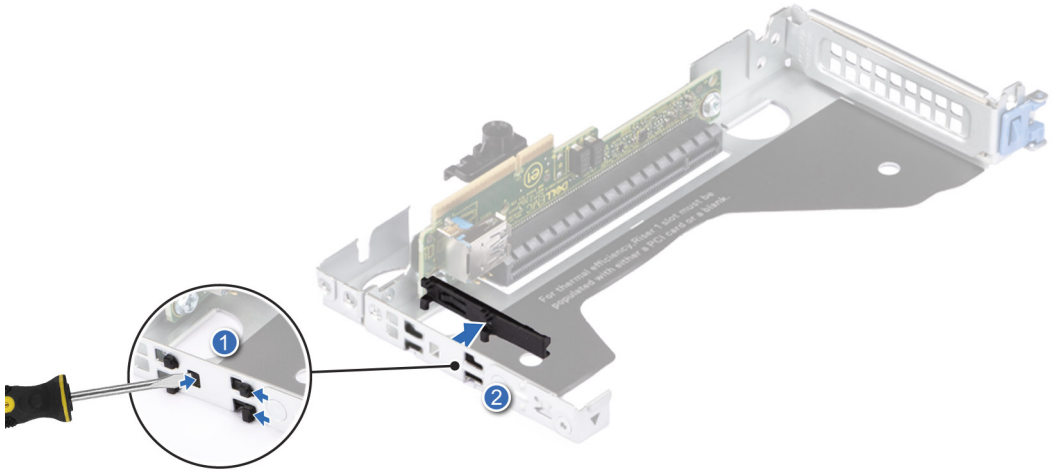

Figure 124. Removing the expansion card holder on riser 1

5. Align the expansion card holder retention clips to the guide slots on the riser and push the bracket to the right to secure it in place.

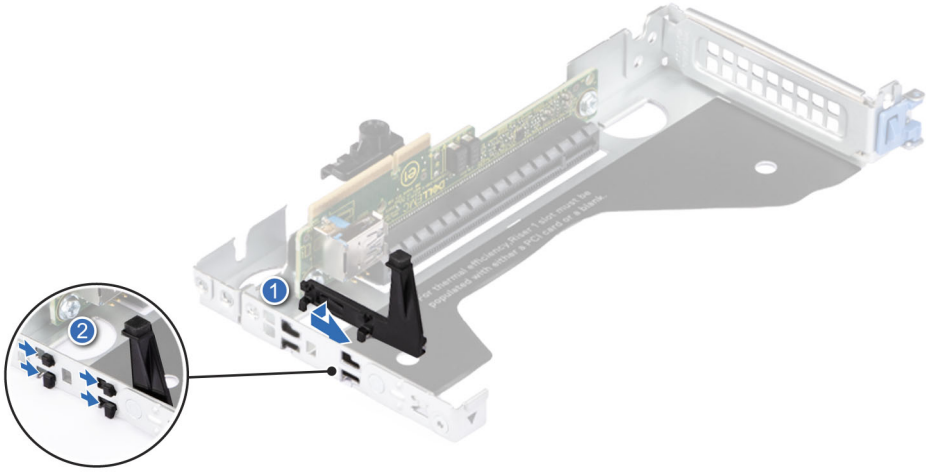

Figure 125. Installing the expansion card holder on riser 1 for full-height expansion cards

6. Install the expansion card into the expansion card riser 1 for full-height expansion cards.
7. Remove the expansion card riser 2 and 3
8. Install the expansion card into the expansion card riser 2 and 3
9. Open the blue clip on the riser. Align the expansion card holder with the screw hole on the right and the retention slot on the left. Slot in the left corner of the card holder into the retention slot and secure it with the blue clip.
10. Using a Phillips 2 screwdriver, secure the card holder on the right to secure it in place.

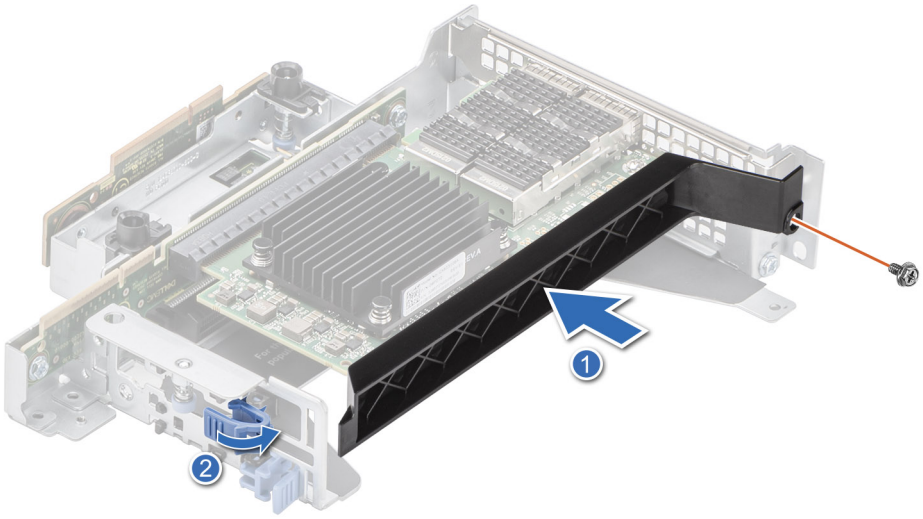

Figure 126. Installing the expansion card holder for riser 2 and 3

11. Remove the M.2 BOSS card and paste the foam on the M.2 BOSS card.

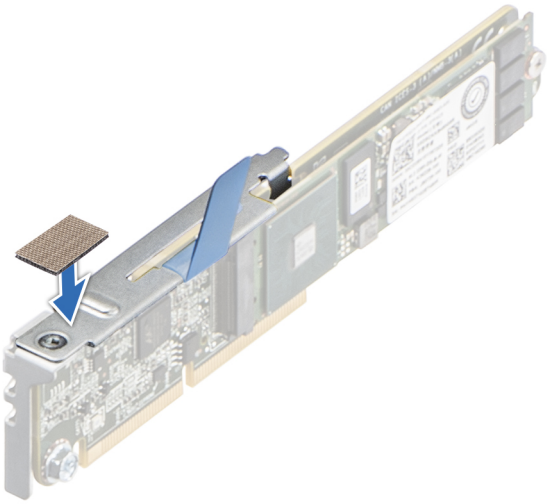

Figure 127. Pasting the foam on the M.2 BOSS card

12. Remove the system board screw. Using the Phillips 2 screwdriver, secure the guide pin on the system board.

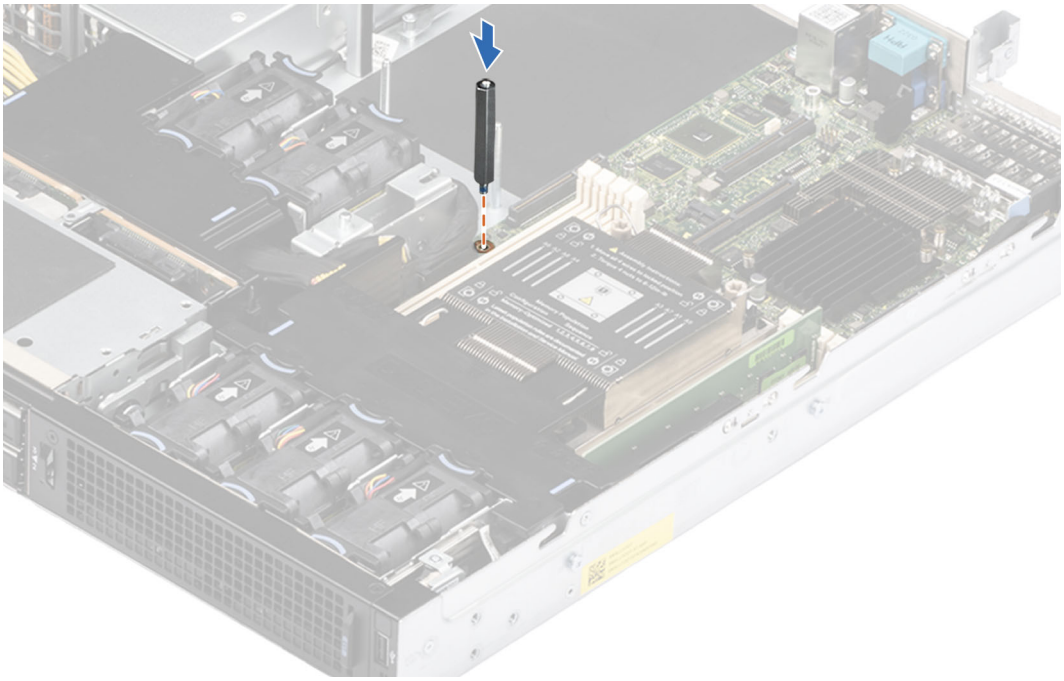

Figure 128. Installing the guide pin

13. Install the expansion card riser 1.
14. Install the expansion card riser 2 and 3.
15. Install the M.2 BOSS card.
16. Align the rear I/O bracket with the guide slots. Rotate the rear I/O bracket towards the I/O ports to secure it in place.

NOTE: The kit consists of screws. The screw on the top side of the chassis is from the system cover.

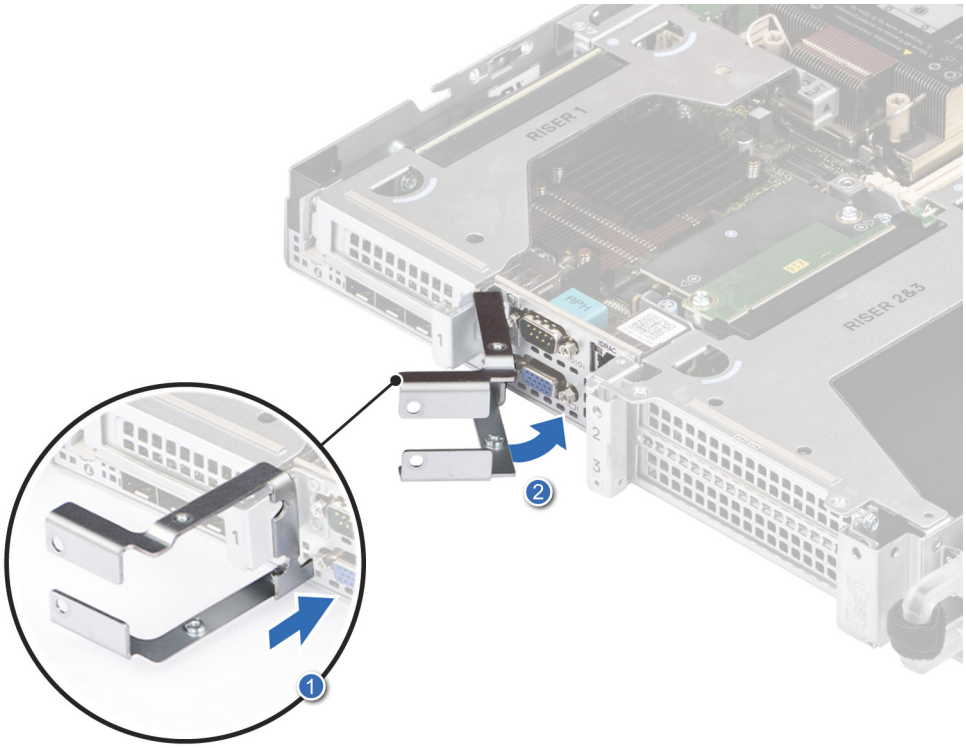

Figure 129. Installing the rear I/O bracket

17. Align the power supply bracket to the rear of the power supply cage and slide it in to secure it in place.

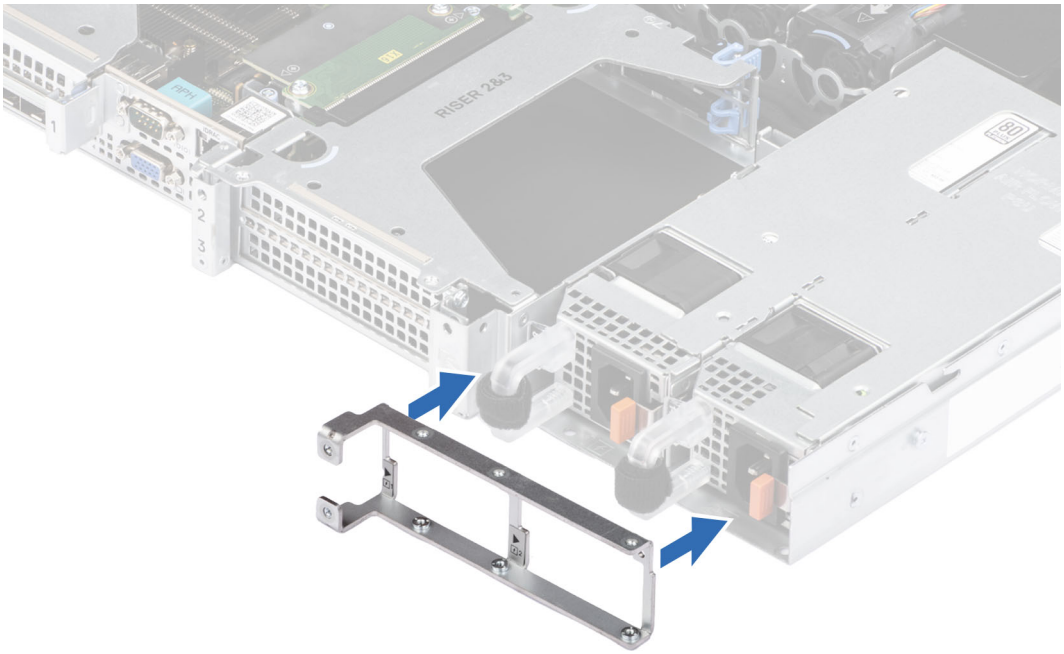

Figure 130. Installing the power supply rugged bracket

18. Align the tabs on the system cover with the guide slots on the system.
19. Close the system cover release latch.
20. Using a 1/4-inch flat head or Phillips 2 screwdriver, rotate the lock clockwise to the lock position.
21. Align the riser bracket to the rear side of the riser 2 and 3. Using a Phillips 2 screwdriver, secure the riser bracket with the four screws. Then secure all the screws on the system cover.

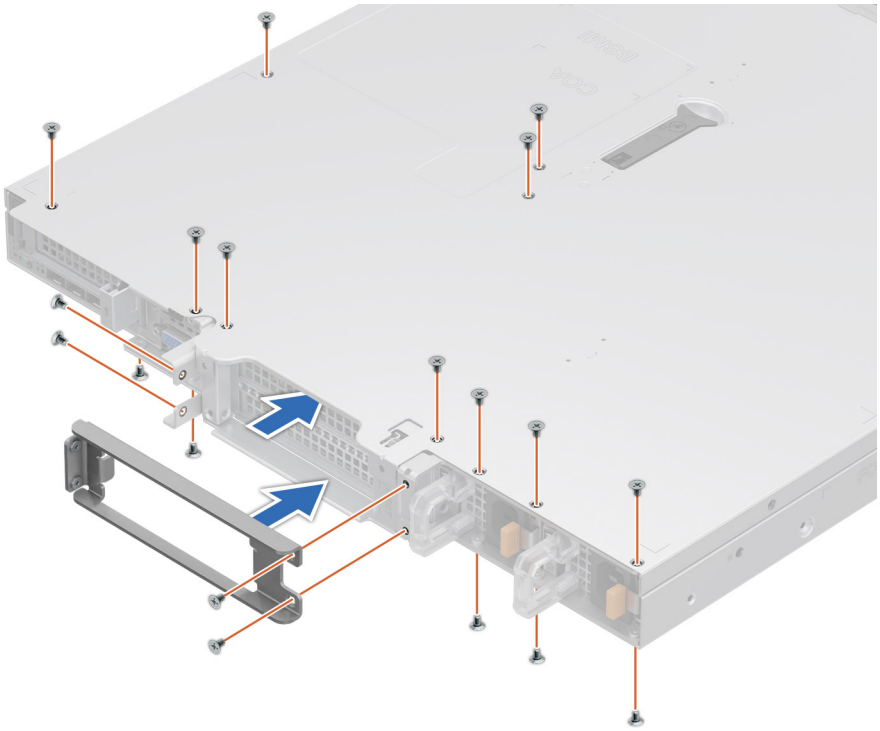

Figure 131. Installing the riser 2 and 3 bracket and securing the system cover

22. Align the left edge of the drive retention bracket to the guide slots on the left side of the drive module. Using a Phillips 2 screwdriver, secure the 901E and MIL 461G drive rugged bracket.

NOTE: To secure the drive rugged bracket, ensure to use the black screws that are shipped with the 901E and MIL 461G kit.

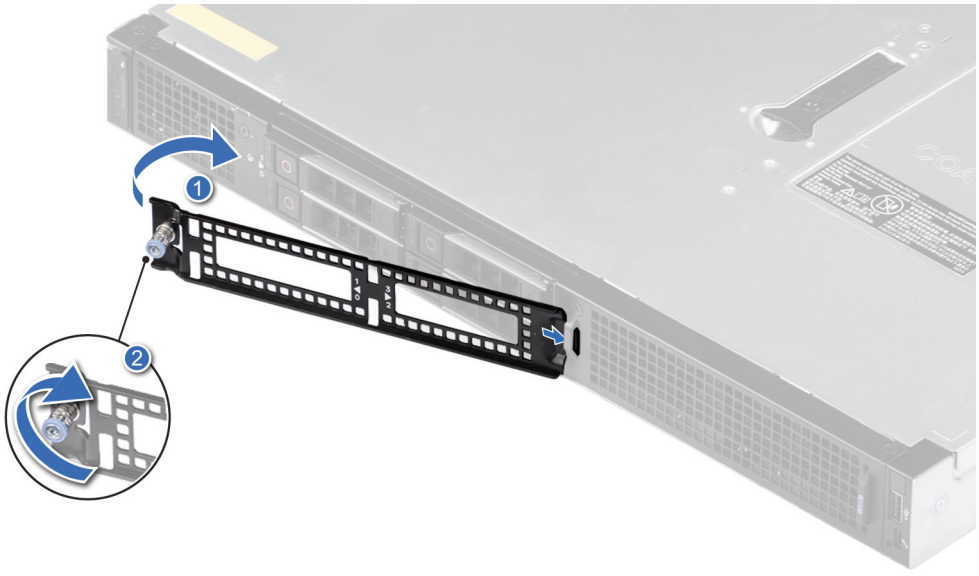

Figure 132. Installing the 901E and MIL 461G drive rugged bracket

23. Rotate the bracket closed against the chassis and slide the latch to the left and then right until seated firmly.
24. Install the front bezel for Rear Accessed configuration.

Next steps

Follow the procedure listed in After working inside your system.

6

Upgrade Kits

Upgrade kits

The table lists the available After Point Of Sale [APOS] kits.

Table 32. Related links to the available kits

Kits	Related links to service instructions
Memory modules	See Installing the memory module
SSDs	See Installing the SSDs
Processors	See Installing the processor
Heat sink	See Installing the heat sink
Storage controller cards	See Installing the expansion card into the expansion card riser
HBA/CNA (3rd party card)	
Network cards	
Power supplies	See Installing the power supply units
Cables	N/A
Rail Kits	N/A
Bezel	See Installing the bezel
Risers	See Installing an expansion card riser
Power cords	N/A

7

Jumpers and connectors

This section provides essential and specific information about jumpers and switches. It also describes the connectors on the various boards in the system. Jumpers on the system board help to disable the system and reset the passwords. To install components and cables correctly, you must be able to identify the connectors on the system board.

Topics:

System board connectors

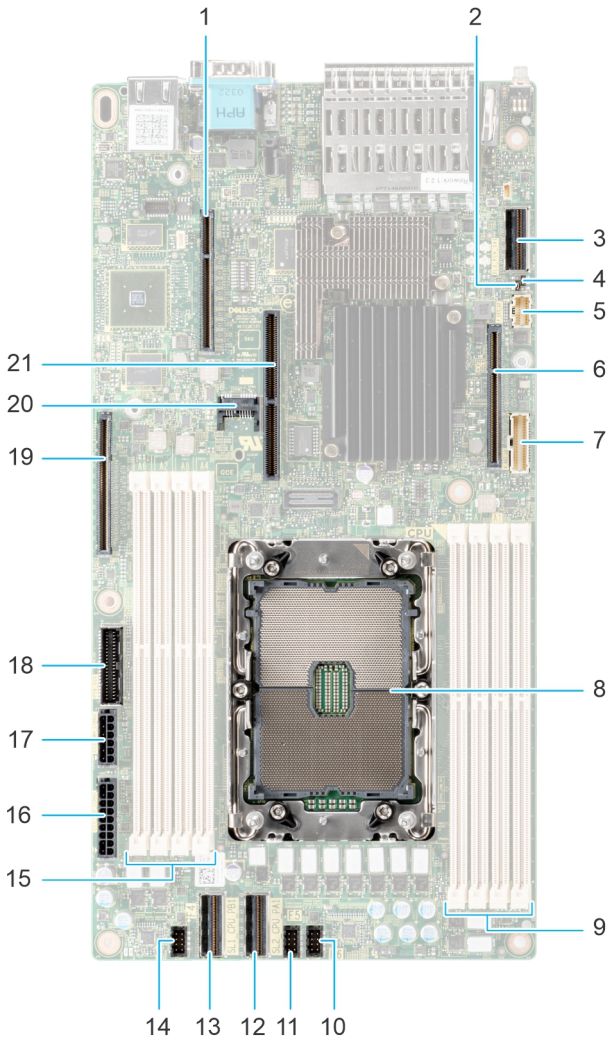

Figure 133. System board jumpers and connectors

1. IO_Riser2 (Riser 1 connector)
2. PWRD_EN (BIOS password jumper)

3. SL3_PCH_SA1 (Signal cable connector for backplane)
4. NVRAM_CLR (NVRAM jumper)
5. Left control panel
6. IO_RISER1 (Riser 1 connector)
7. Right control panel
8. Processor socket
9. DIMM slots (A3, A7, A1, A5)
10. Fan 6 slot
11. Fan 5 slot
12. SL2_CPU2_PA1 (PCIe cable connector)
13. SL1_CPU1_PB1 (PCIe cable connector)
14. Fan 4 slot
15. DIMM slots (A6, A2, A8, A4)
16. SYS_PWR_CONN1 (System power connection 1)
17. SYS_PWR_CONN2 (System power connection 2)
18. PIB_SIG (Power interposer board signal connector)
19. IO_Riser3 (Riser 3 connector)
20. TPM
21. BOSS S1 card slot

System board jumper settings

For information about resetting the password jumper to disable a password, see the Disabling a forgotten password section.

Table 33. System board jumper settings

Jumper	Setting	Description
PWRD_EN		The BIOS password feature is enabled.
		The BIOS password feature is disabled. The BIOS password is now disabled and you are not allowed to set a new password.
NVRAM_CLR		The BIOS configuration settings are retained at system boot.
		The BIOS configuration settings are cleared at system boot.

CAUTION: You should be cautious when changing the BIOS settings. The BIOS interface is designed for advanced users. Any changes in the setting might prevent your system from starting correctly and may even result in data loss.

Disabling a forgotten password

The software security features of the system include a system password and a setup password. The password jumper enables or disables password features and clears any password(s) currently in use.

Prerequisites

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

Steps

1. Power off the system and all attached peripherals. Disconnect the system from the electrical outlet, and disconnect the peripherals.
2. Remove the system cover.
3. Move the jumper on the system board from pins 2 and 4 to pins 4 and 6.
4. Replace the system cover.

   NOTE: The existing passwords are not disabled (erased) until the system boots with the jumper on pins 4 and 6. However, before you assign a new system and/or setup password, you must move the jumper back to pins 2 and 4.

   NOTE: If you assign a new system and/or setup password with the jumper on pins 4 and 6, the system disables the new password(s) the next time it boots.

5. Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.
6. Power off the system.
7. Remove the system cover.
8. Move the jumper on the system board from pins 4 and 6 to pins 2 and 4.
9. Replace the system cover.
10. Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.
11. Assign a new system and/or setup password.

8

System diagnostics and indicator codes

This section describes the diagnostic indicators on the system front panel that displays the system status during system startup.

Topics:

Status LED indicators

NOTE: The indicators display solid amber if any error occurs.

Figure 134. Status LED indicators

Table 34. Status LED indicators and descriptions

Icon	Description	Condition	Corrective action
	Drive indicator	The indicator turns solid amber if there is a drive error.	• Check the System Event Log to determine if the drive has an error. • Run the appropriate Online Diagnostics test. Restart the system and run embedded diagnostics (ePSA). • If the drives are configured in a RAID array, restart the system, and enter the host adapter configuration utility program.
	Temperature indicator	The indicator turns solid amber if the system experiences a thermal error (for example, the ambient temperature is out of range or there is a fan failure).	Ensure that none of the following conditions exist: • A cooling fan has been removed or has failed. • System cover, air shrouds, or back filler bracket has been removed. • Ambient temperature is too high. • External airflow is obstructed. If the problem persists, see the Getting help section.
	Electrical indicator	The indicator turns solid amber if the system experiences an	Check the System Event Log or system messages for the specific issue. If it is due to a problem with

Table 34. Status LED indicators and descriptions (continued)

Icon	Description	Condition	Corrective action
		electrical error (for example, voltage out of range, or a failed power supply unit (PSU) or voltage regulator).	the PSU, check the LED on the PSU. Reseat the PSU. If the problem persists, see the Getting help section.
	Memory indicator	The indicator turns solid amber if a memory error occurs.	Check the System Event Log or system messages for the location of the failed memory. Reseat the memory module. If the problem persists, see the Getting help section.
	PCIe indicator	The indicator turns solid amber if a PCIe card experiences an error.	Restart the system. Update any required drivers for the PCIe card. Reinstall the card. If the problem persists, see the Getting help section. **NOTE:** For more information about the supported PCIe cards, see the Expansion card installation guidelines section.

System health and system ID indicator codes

The system health and system ID indicator is located towards the left control panel of the system for Rear Accessed configuration and towards the right control panel of the system for Front Accessed configuration.

Figure 135. System health and system ID indicator

Table 35. System health and system ID indicator codes

System health and system ID indicator code	Condition
Solid blue	Indicates that the system is powered on, is healthy, and system ID mode is not active. Press the system health and system ID button to switch to system ID mode.
Blinking blue	Indicates that the system ID mode is active. Press the system health and system ID button to switch to system health mode.
Solid amber	Indicates that the system is in fail-safe mode. If the problem persists, see the Getting help section.
Blinking amber	Indicates that the system is experiencing a fault. Check the System Event Log for specific error messages. EEMI Guide

iDRAC Direct LED indicator codes

The iDRAC Direct LED indicator lights up to indicate that the port is connected and is being used as a part of the iDRAC subsystem.

You can configure iDRAC Direct by using a USB to micro USB (type AB) cable, which you can connect to your laptop or tablet. Cable length should not exceed 3 feet (0.91 meters). Performance could be affected by cable quality. The following table describes iDRAC Direct activity when the iDRAC Direct port is active:

Table 36. iDRAC Direct LED indicator codes

iDRAC Direct LED indicator code	Condition
Solid green for two seconds	Indicates that the laptop or tablet is connected.
Blinking green (on for two seconds and off for two seconds)	Indicates that the laptop or tablet connected is recognized.
LED Indicator off	Indicates that the laptop or tablet is unplugged.

LCD panel

The LCD panel provides system information, status, and error messages to indicate if the system is functioning correctly or requires attention. The LCD panel is used to configure or view the iDRAC IP address of the system. EEMI Guide.

The LCD panel is available only on the optional front bezel. The optional front bezel is hot pluggable.

The status and conditions of the LCD panel are outlined here:

- The LCD backlight is white during normal operating conditions.
- If there is an issue, the LCD backlight turns amber and displays an error code followed by descriptive text.

  NOTE: If the system is connected to a power source and an error is detected, the LCD turns amber regardless of whether the system is powered on or off.

- When the system powers off and there are no errors, the LCD enters the standby mode after five minutes of inactivity. Press any button on the LCD to power it on.
- If the LCD panel stops responding, remove the bezel and reinstall it.

  If the problem persists, see Getting help.
- The LCD backlight remains off if LCD messaging is powered off using the iDRAC utility, the LCD panel, or other tools.

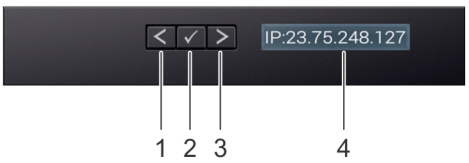

Figure 136. LCD panel features

Table 37. LCD panel features

Item	Button or display	Description
1	Left	Moves the cursor back in one-step increments.
2	Select	Selects the menu item highlighted by the cursor.
3	Right	Moves the cursor forward in one-step increments. During message scrolling: • Press and hold the right button to increase scrolling speed. • Release the button to stop. **NOTE:** The display stops scrolling when the button is released. After 45 seconds of inactivity, the display starts scrolling.
4	LCD display	Displays the system information, status, and error messages or iDRAC IP address.

NIC indicator codes

Each NIC on the back of the system has indicators that provide information about the activity and link status. The activity LED indicator indicates if data is flowing through the NIC, and the link LED indicator indicates the speed of the connected network.

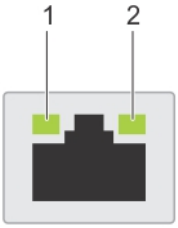

Figure 137. NIC indicator codes

1. Link LED indicator
2. Activity LED indicator

Table 38. NIC indicator codes

NIC indicator codes	Condition
Link and activity indicators are off.	Indicates that the NIC is not connected to the network.
Link indicator is green, and activity indicator is blinking green.	Indicates that the NIC is connected to a valid network at its maximum port speed, and data is being sent or received.
Link indicator is amber, and activity indicator is blinking green.	Indicates that the NIC is connected to a valid network at less than its maximum port speed, and data is being sent or received.
Link indicator is green, and activity indicator is off.	Indicates that the NIC is connected to a valid network at its maximum port speed, and data is not being sent or received.
Link indicator is amber, and activity indicator is off.	Indicates that the NIC is connected to a valid network at less than its maximum port speed, and data is not being sent or received.
Link indicator is blinking green, and activity is off.	Indicates that the NIC identity is enabled through the NIC configuration utility.

Power supply unit indicator codes

AC and DC power supply units (PSUs) have an illuminated translucent handle that serves as an indicator. The indicator shows if power is present or if a power fault has occurred.

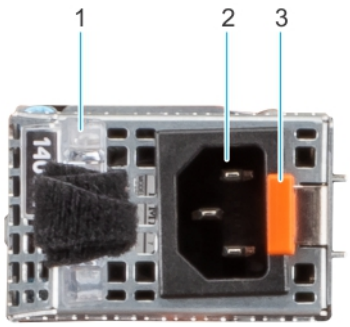

Figure 138. Rear Accessed configuration - AC PSU status indicator

1. AC PSU handle
2. Socket
3. Release latch

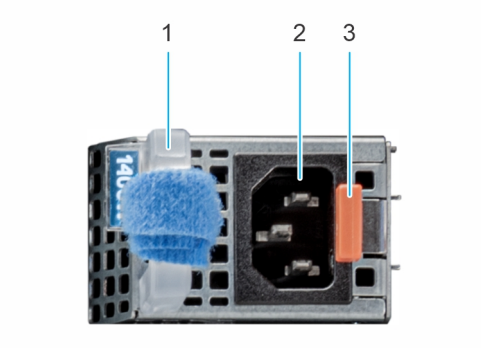

Figure 139. Front Accessed configuration - AC PSU status indicator

1. AC PSU handle
2. Socket
3. Release latch

Table 39. AC and DC PSU status indicator codes

Power indicator codes	Condition
Green	Indicates that a valid power source is connected to the PSU and the PSU is operational.
Blinking amber	Indicates an issue with the PSU.
Not powered on	Indicates that the power is not connected to the PSU.
Blinking green	Indicates that the firmware of the PSU is being updated. **CAUTION: Do not disconnect the power cord or unplug the PSU when updating firmware. If firmware update is interrupted, the PSUs will not function.**
Blinking green and powers off	When hot-plugging a PSU, it blinks green five times at a rate of 4 Hz and powers off. This indicates a PSU mismatch due to efficiency, feature set, health status, or supported voltage. **CAUTION: If two PSUs are installed, both the PSUs must have the same type of label; for example, Extended Power Performance (EPP) label. Mixing PSUs from previous generations of PowerEdge**

Table 39. AC and DC PSU status indicator codes (continued)

Power indicator codes	Condition
	servers is not supported, even if the PSUs have the same power rating. This results in a PSU mismatch condition or failure to power on the system. **CAUTION: If two PSUs are used, they must be of the same type and have the same maximum output power.** **CAUTION: When correcting a PSU mismatch, replace the PSU with the blinking indicator. Swapping the PSU to make a matched pair can result in an error condition and an unexpected system shutdown. To change from a high output configuration to a low output configuration or vice versa, you must power off the system.** **CAUTION: When two identical PSUs receive different input voltages, they can output different wattage, and trigger a mismatch.** *For example a 1100W PSU connected to a High-Line AC (HLAC) 200Vac-240Vac input, it will output 1100W. But if a second 1100W PSU in the same system is connected to a Low Line 100-120Vac input, it will only output 1050W, triggering a mismatch.*

Drive indicator codes

The LEDs on the drive carrier indicate the state of each drive. Each drive carrier has two LEDs: an activity LED (green) and a status LED (bicolor, green/amber). The activity LED blinks whenever the drive is accessed.

Figure 140. Drive indicators

1. Drive activity LED indicator
2. Drive status LED indicator
3. Drive capacity label

NOTE: If the drive is in the Advanced Host Controller Interface (AHCI) mode, the status LED indicator does not power on.

NOTE: Drive status indicator behavior is managed by Storage Spaces Direct. Not all drive status indicators may be used.

Table 40. Drive indicator codes

Drive status indicator code	Condition
Blinks green twice per second	Indicates that the drive is being identified or preparing for removal.
Off	Indicates that the drive is ready for removal.

Table 40. Drive indicator codes (continued)

Drive status indicator code	Condition
	NOTE: The drive status indicator remains off until all drives are initialized after the system is powered on. Drives are not ready for removal during this time.
Blinks green, amber, and then powers off	Indicates that there is an unexpected drive failure.
Blinks amber four times per second	Indicates that the drive has failed.
Blinks green slowly	Indicates that the drive is rebuilding.
Solid green	Indicates that the drive is online.
Blinks green for three seconds, amber for three seconds, and then powers off after six seconds	Indicates that the rebuild has stopped.

Using system diagnostics

If you experience an issue with the system, run the system diagnostics before contacting Dell Technologies for technical assistance. The purpose of running system diagnostics is to test the system hardware without using additional equipment or risking data loss. If you are unable to fix the issue yourself, service and support personnel can use the diagnostics results to help you solve the issue.

Dell Embedded System Diagnostics

NOTE: The Dell Embedded System Diagnostics is also known as Enhanced Pre-boot System Assessment (ePSA) diagnostics.

The Embedded System Diagnostics provide a set of options for particular device groups or devices allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of issues encountered during testing

Running the Embedded System Diagnostics from the Dell Lifecycle Controller

Steps

1. When the system is booting, press F10.
2. Select **Hardware Diagnostics** → **Run Hardware Diagnostics**.
   The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics start executing the tests on all the detected devices.

Running the Embedded System Diagnostics from Boot Manager

Run the Embedded System Diagnostics (ePSA) if your system does not boot.

Steps

1. When the system is booting, press F11.
2. Use the up arrow and down arrow keys to select **System Utilities** > **Launch Diagnostics**.
3. Alternatively, when the system is booting, press F10, select **Hardware Diagnostics** > **Run Hardware Diagnostics**.

The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

System diagnostic controls

Table 41. System diagnostic controls

Menu	Description
Configuration	Displays the configuration and status information of all detected devices.
Results	Displays the results of all tests that are run.
System health	Provides the current overview of the system performance.
Event log	Displays a time-stamped log of the results of all tests run on the system. This is displayed if at least one event description is recorded.

9

Getting help

Topics:

Recycling or End-of-Life service information

Take back and recycling services are offered for this product in certain countries. If you want to dispose of system components, visit How to Recycle and select the relevant country.

Contacting Dell Technologies

Dell provides online and telephone based support and service options. If you do not have an active internet connection, you can find Dell contact information on your purchase invoice, packing slip, bill or Dell product catalog. The availability of services varies depending on the country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer service issues follow these steps:

Steps

1. Go to Dell Support.
2. Select your country from the drop-down menu on the lower right corner of the page.
3. For customized support:
   a. Enter the system Service Tag in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** field.
   b. Click **Search**.
   The support page that lists the various support categories is displayed.
4. For general support:
   a. Select your product category.
   b. Select your product segment.
   c. Select your product.
   The support page that lists the various support categories is displayed.
5. For contact details of Dell Global Technical Support:
   a. Click Contact Technical Support.
   b. The **Contact Technical Support** page is displayed with details to call, chat, or e-mail the Dell Global Technical Support team.

Accessing system information by using QR code

You can use the QR code located on the information tag in the front of the Rear Access configuration and rear of the Front Accessed configuration of the XR11 system, to access information about Dell Technologies PowerEdge XR11. There is also another QR code for accessing product information located on the back of the system cover.

Prerequisites

Ensure that your smart phone or tablet has a QR code scanner installed.

The QRL includes the following information about your system:

- How-to videos
- Reference materials, including the Installation and Service Manual, and mechanical overview
- The system service tag to quickly access the specific hardware configuration and warranty information.
- A direct link to Dell to contact technical assistance and sales teams.

Steps

1. Go to PowerEdge Manuals, and navigate to your specific product or.
2. Use your smart phone or tablet to scan the model-specific Quick Resource (QR) code on your system.

QR code for PowerEdge XR11 system

Figure 141. Quick Resource Locator for PowerEdge XR11 system

Receiving automated support with SupportAssist

Dell EMC SupportAssist is an optional Dell EMC Services offering that automates technical support for your Dell EMC server, storage, and networking devices. By installing and setting up a SupportAssist application in your IT environment, you can receive the following benefits:

- Automated issue detection — SupportAssist monitors your Dell EMC devices and automatically detects hardware issues, both proactively and predictively.
- Automated case creation — When an issue is detected, SupportAssist automatically opens a support case with Dell EMC Technical Support.
- Automated diagnostic collection — SupportAssist automatically collects system state information from your devices and uploads it securely to Dell EMC. This information is used by Dell EMC Technical Support to troubleshoot the issue.
- Proactive contact — A Dell EMC Technical Support agent contacts you about the support case and helps you resolve the issue.

The available benefits vary depending on the Dell EMC Service entitlement purchased for your device. For more information about SupportAssist, go to SupportAssist.

10

Documentation resources

This section provides information about the documentation resources for your system.

To view the document that is listed in the documentation resources table:

- From the Dell Technologies support site:
  1. Click the documentation link that is provided in the Location column in the table.
  2. Click the required product or product version.

     NOTE: To locate the model number, see the front of your system.

  3. On the Product Support page, click **Documentation**.
- Using search engines:
  - Type the name and version of the document in the search box.

Table 42. Additional documentation resources for your system

Task	Document	Location
Setting up your system	For more information about installing and securing the system into a rack, see the Rail Installation Guide included with your rail solution. For information about setting up your system, see the *Getting Started Guide* document that is shipped with your system.	PowerEdge manuals
Configuring your system	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your system remotely, see the Integrated Dell Remote Access Controller User's Guide. For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM CLI Guide for iDRAC. For information about Redfish and its protocol, supported schema, and Redfish Eventing implemented in iDRAC, see the Redfish API Guide. For information about iDRAC property database group and object descriptions, see the Attribute Registry Guide. For information about Intel QuickAssist Technology, see the Integrated Dell Remote Access Controller User's Guide.	PowerEdge manuals
	For information about earlier versions of the iDRAC documents. To identify the version of iDRAC available on your system, on the iDRAC web interface, click **?** > **About**.	idrac manuals

Table 42. Additional documentation resources for your system (continued)

Task	Document	Location
	For information about installing the operating system, see the operating system documentation.	Operating System Manuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	Drivers
Managing your system	For information about systems management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	PowerEdge manuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	OpenManage Manuals > OpenManage Server Administrator
	For information about installing and using Dell SupportAssist, see the Dell SupportAssist Enterprise User's Guide.	serviceability tools
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	OpenManage Manuals
Working with the Dell PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC), Software RAID controllers, or BOSS card and deploying the cards, see the Storage controller documentation.	Storage Controller Manuals
Understanding event and error messages	For information about the event and error messages that are generated by the system firmware and agents that monitor system components, see the EEMI guide.	EEMI Guide
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	PowerEdge manuals