

Dell PowerEdge R6715

Installation and Service Manual

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.

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Introduction

This document provides a system overview, information about installing and replacing components, diagnostic tools, and guidelines for installing certain components.

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, go to [How to Recycle](#) and select the relevant country or region.

Automated support with secure connect gateway

Secure connect gateway is an optional Services offering that automates technical support for your server, storage, and networking devices. A secure connect gateway in your IT environment provides the following benefits:

- Automated issue detection: Monitors your devices and detects hardware issues.
- Automated case creation: Detects issues and opens a support case with Technical Support.
- Automated diagnostic collection: Collects system state information and uploads it securely to Dell Support. This information is used by Technical Support to troubleshoot the issue.
- Proactive contact: Technical Support agents contacts you about the support case.

The available benefits vary depending on the Service entitlement that is purchased for your device. For more information about secure connect gateway, go to [secureconnectgateway](#).

PowerEdge R6715 system configurations and features

The PowerEdge R6715 system is a 1U server that supports:

- One 5th Generation AMD EPYC 9005 Series processor with up to 160 Zen5 cores per processor
- 24 DIMM slots
- Two redundant AC or DC power supply units
- No backplane configuration
- Up to 4 x 3.5-inch SAS/SATA drives
- Up to 8 x 2.5-inch Universal drives
- Up to 8 x U.2 drives
- Up to 10 x 2.5-inch SAS/SATA drives
- Up to 10 x 2.5-inch with 4 x Universal drives
- Up to 16 x EDSFF E3.S Gen5 NVMe drives
- Up to 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe drives

NOTE: System board is known as the Host Processor Module (HPM) board in this document.

NOTE: For more information about how to hot swap NVMe PCIe SSD device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at [Dell Support](#) page > **Browse all products** > **Infrastructure** > **Data Center Infrastructure** > **Storage Adapters & Controllers** > **Dell PowerEdge Express Flash NVMe PCIe SSD** > **Select This Product** > **Documentation** > **Manuals and Documents**.

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

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.

Topics:

- [System configurations - front view for PowerEdge R6715 system](#)
- [System configurations - rear view for PowerEdge R6715 system](#)
- [Inside the system](#)
- [Locating the Express Service Code and Service Tag](#)
- [System information label](#)
- [Rail sizing and rack compatibility matrix](#)

System configurations - front view for PowerEdge R6715 system

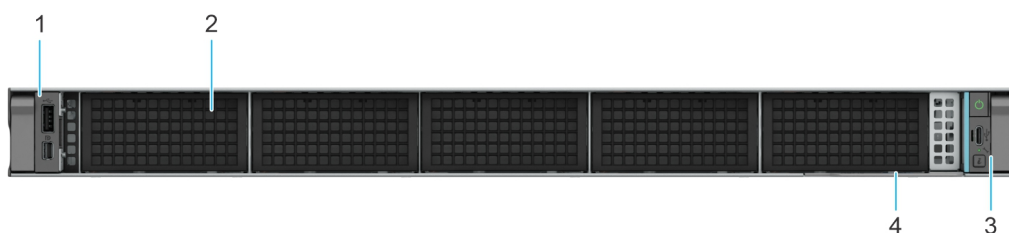


Figure 1. Front view of no backplane configuration system

Table 1. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Blank panel | N/A | Blank panel to allow air flow for thermal efficiency. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | Blank panel | N/A | Blank panel to allow air flow for thermal efficiency. |



Figure 2. Front view of 4 x 3.5-inch SAS/SATA drives system

Table 2. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|--------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM). |

Table 2. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|-------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>i NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>i NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |

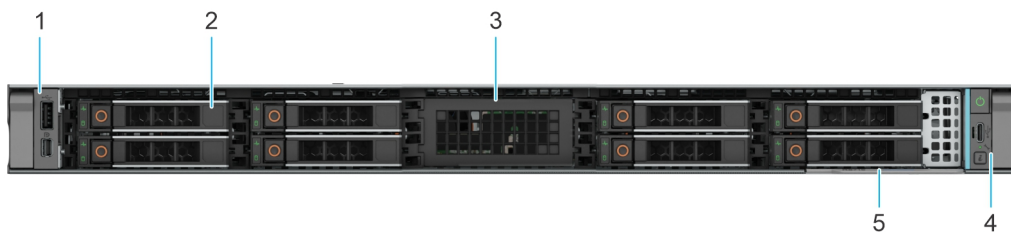


Figure 3. Front view of 8 x 2.5-inch Universal drive system

Table 3. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>i NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>i NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Blank panel | N/A | Blank panel to allow air flow for thermal efficiency. |
| 4 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 5 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |

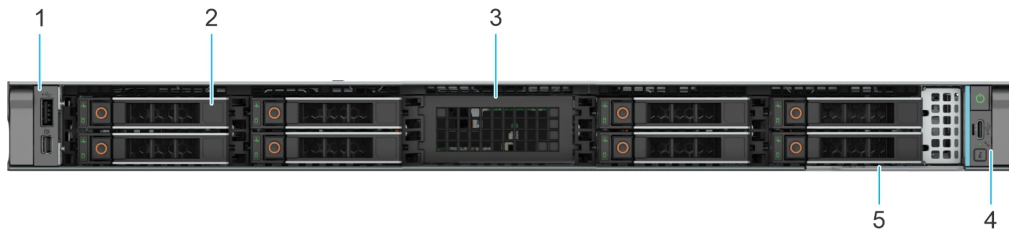


Figure 4. Front view of 8 x U.2 NVMe drives system

Table 4. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>i NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>i NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Blank panel | N/A | Blank panel to allow air flow for thermal efficiency. |
| 4 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 5 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also |

Table 4. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------|------|-----------------------------------------|
| | | | contains iDRAC secure default password. |



Figure 5. Front view of 10 x 2.5-inch SAS/SATA system

Table 5. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If |

Table 5. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------|------|-----------------------------------------------------------------------------------------------------------------------------|
| | | | you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |



Figure 6. Front view of 10 x 2.5-inch SAS/SATA with 4 x Universal drives system

Table 6. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | Express service tag | N/A | The Express service tag is a slide-out label panel that |

Table 6. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |

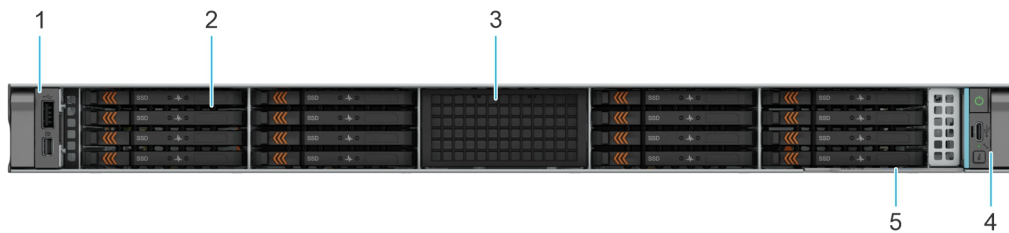


Figure 7. Front view of 16 x EDSFF E3.S Gen5 NVMe drive system

Table 7. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort.</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM) Enables you to connect a display device to the system. <p>NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Blank panel | N/A | Blank panel to allow air flow for thermal efficiency. |
| 4 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port |

Table 7. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | | | (HOST/BMC Direct), and the system identification button. |
| 5 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |



Figure 8. Front view of 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe system

Table 8. Features are available on the front of the system

| Item | Ports, panels, and slots | Icon | Description |
|------|--------------------------------------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | Left Control Panel (LCP) - Secondary | N/A | <p>Contains the USB 2.0 Type-A port (optional LCP KVM) and the Mini DisplayPort (optional LCP KVM).</p> <ul style="list-style-type: none"> • USB 2.0 Type-A port (optional LCP KVM): This port is USB 2.0-compliant with optional LCP KVM functions. • Mini DisplayPort (optional LCP KVM): Enables you to connect a display device to the system. <p>NOTE: Use a certified Mini DisplayPort to DisplayPort cable complying with VESA DisplayPort standards for video output with a monitor.</p> <p>NOTE: Mini DisplayPort to VGA or Mini DisplayPort to HDMI adapters are not recommended.</p> |

Table 8. Features are available on the front of the system (continued)

| Item | Ports, panels, and slots | Icon | Description |
|------|-------------------------------------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2 | Drive | N/A | Enables you to install drives that are supported on your system. |
| 3 | Right Control Panel (RCP) - Primary | N/A | Contains the power button, USB 2.0 Type-C port (HOST/BMC Direct), and the system identification button. |
| 4 | Express service tag | N/A | The Express service tag is a slide-out label panel that contains system information such as Service Tag, NIC, MAC address, and so on. If you have opted for the secure default access to iDRAC, the Express service tag also contains iDRAC secure default password. |

NOTE: For more information about the ports, see the Technical Specifications in the *Installation and Service Manual* available on the [PowerEdge Manuals](#).

Left Control Panel (LCP) - Secondary

The left control panel (LCP) - secondary supports an optional KVM module.

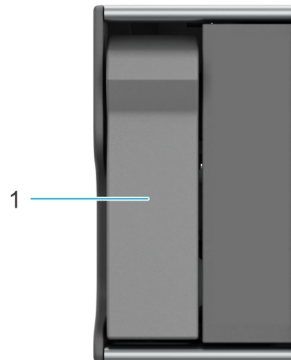


Figure 9. Left Control Panel (LCP) - Secondary blank

- Blank
 - KVM module
 - Quick Sync 2.0
1. Blank control panel

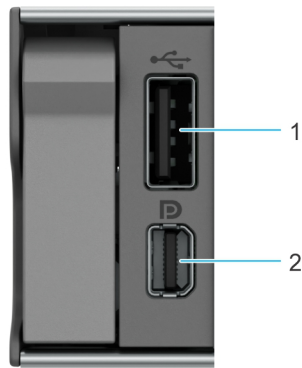


Figure 10. Left Control Panel (LCP) - Secondary with optional KVM

1. USB 2.0 (optional LCP KVM)
2. Mini DisplayPort (optional LCP KVM)

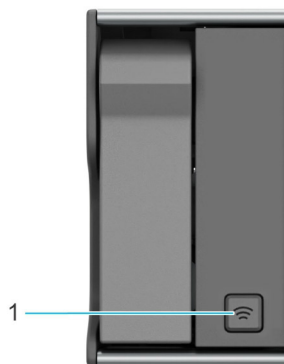


Figure 11. Left Control Panel (LCP) - Secondary with optional Quick Sync 2.0

1. Quick Sync 2.0 button

Right Control Panel (RCP) - Primary

The right control panel (RCP) - primary encompasses many of the features that are no longer supported by the left control panel (LCP) - secondary.

Features of the RCP - primary include:

1. Power button with integrated power LED
2. Status LED for host
3. Host/iDRAC Mode LED
4. System ID button
5. USB 2.0 Type-C

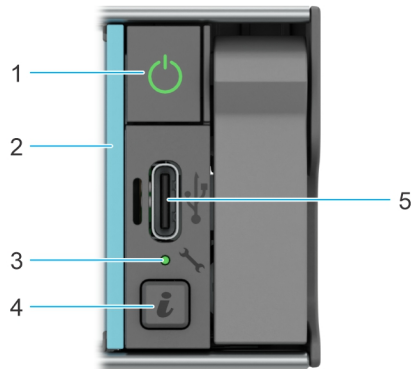


Figure 12. Right Control Panel (RCP) - Primary of R6715

Table 9. 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 ID button to switch to system ID mode. |
| Blinking blue | Indicates that the system ID mode is active. Press the system ID button to switch to system health mode. |
| Blinking amber | Indicates that the system is experiencing a fault. Check the System Event Log for specific error messages. For more information about the event and error messages that are generated by the system firmware and agents that monitor system components, go to PowerEdge Manuals . |

System configurations - rear view for PowerEdge R6715 system

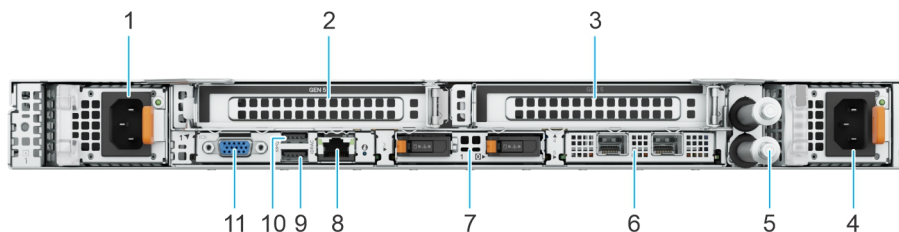





Figure 13. Rear view of the liquid cooling system

Table 10. Rear view of the liquid cooling system

| Item | Ports, panels, or slots | Icon | Description |
|------|--------------------------------|------|-------------------------------------------------------------------------------------------------------|
| 1 | Power supply unit (PSU 1) | | Indicates the PSU 1. |
| 2 | PCIe expansion card riser slot | N/A | Enables you to connect PCI Express expansion cards. |
| 3 | PCIe expansion card riser slot | N/A | Enables you to connect PCI Express expansion cards. |
| 4 | Power supply unit (PSU 2) | | Indicates the PSU 2. |
| 5 | Liquid cooling module tubes | N/A | Cold coolant flows into the system from one tube and hot coolant leaves the system from another tube. |

Table 10. Rear view of the liquid cooling system (continued)

| Item | Ports, panels, or slots | Icon | Description |
|------|-----------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 6 | OCP NIC ports | N/A | This port supports OCP 3.0. |
| 7 | BOSS-N1 DC-MHS | N/A | Enables you to install the BOSS-N1 DC-MHS. |
| 8 | Dedicated BMC Ethernet port | N/A | Enables you to remotely access Open Server Manager. |
| 9 | USB 3.1 port |  | The USB port is 9-pin and 3.1-compliant. This port enables you to connect USB devices to the system. |
| 10 | USB 3.1 port |  | The USB port is 9-pin and 3.1-compliant. This port enables you to connect USB devices to the system. |
| 11 | VGA port |  | Enables you to connect a display device to the system. |

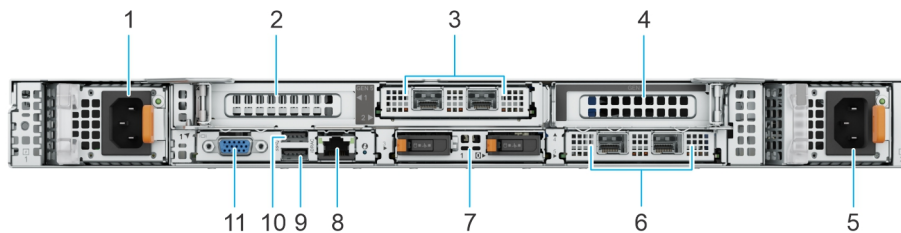







Figure 14. Rear view of the system

Table 11. Rear view of the system

| Item | Ports, panels, or slots | Icon | Description |
|------|--------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1 | Power supply unit (PSU 1) |  | Indicates the PSU 1. |
| 2 | PCIe expansion card riser slot | N/A | Enables you to connect PCI Express expansion cards. |
| 3 | OCP NIC ports | N/A | This port supports OCP 3.0. |
| 4 | PCIe expansion card riser slot | N/A | Enables you to connect PCI Express expansion cards. |
| 5 | Power supply unit (PSU 2) |  | Indicates the PSU 2. |
| 6 | OCP NIC ports | N/A | This port supports OCP 3.0. |
| 7 | BOSS-N1 DC-MHS | N/A | Enables you to install the BOSS-N1 DC-MHS. |
| 8 | Dedicated BMC Ethernet port | N/A | Enables you to remotely access Open Server Manager. |
| 9 | USB 3.1 port |  | The USB port is 9-pin and 3.1-compliant. This port enables you to connect USB devices to the system. |
| 10 | USB 3.1 port |  | The USB port is 9-pin and 3.1-compliant. This port enables you to connect USB devices to the system. |
| 11 | VGA port |  | Enables you to connect a display device to the system. |

Inside the system

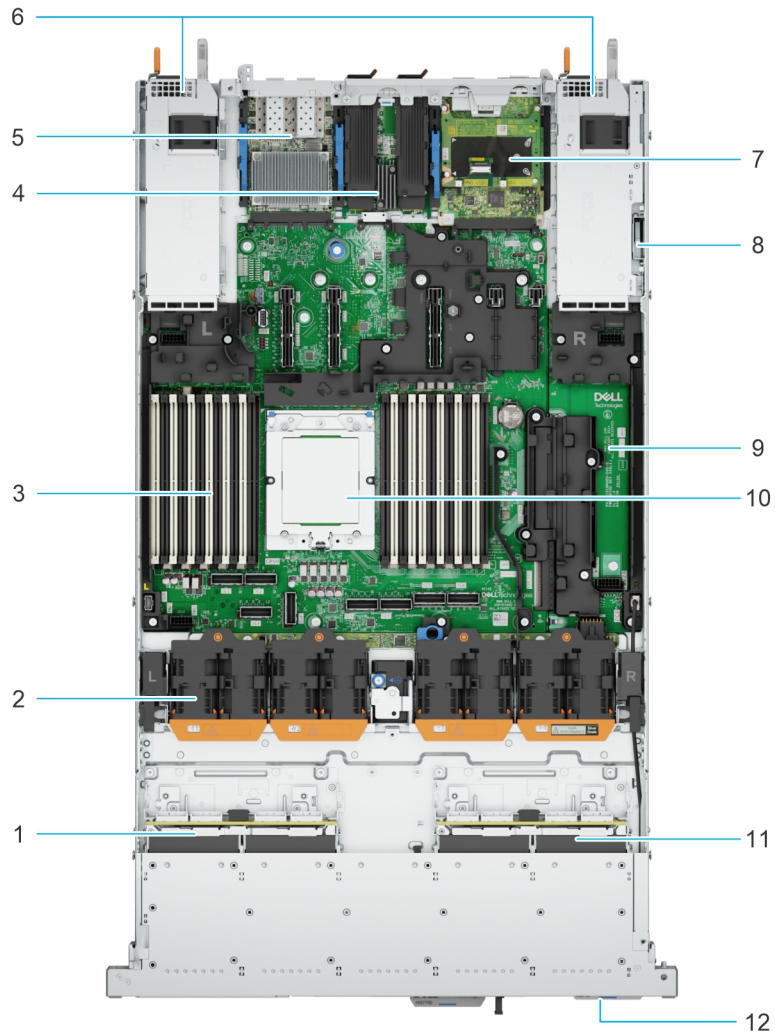


Figure 15. Inside the system

- 1. Backplane
- 2. Cooling fans
- 3. Memory module slots
- 4. BOSS-N1 DC-MHS
- 5. OCP 3.0 NIC card
- 6. Power supplies
- 7. DC-SCM card
- 8. Intrusion switch
- 9. HPM board
- 10. CPU
- 11. Backplane
- 12. Information tag

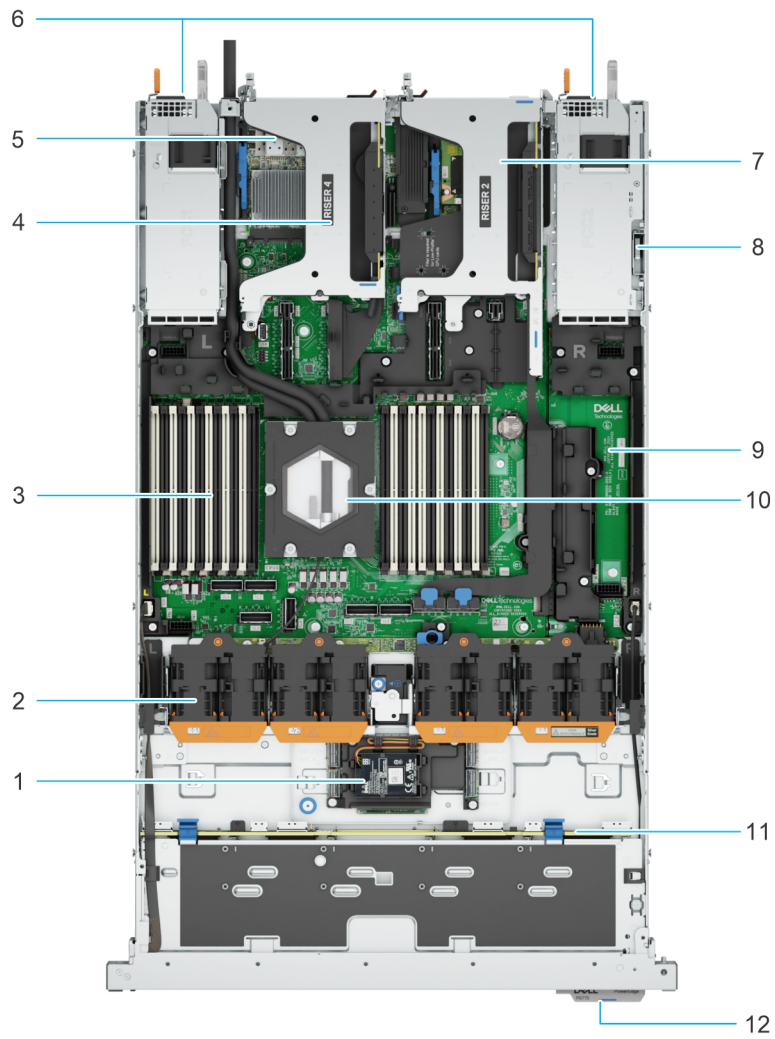


Figure 16. Inside the liquid cooling configuration system

1. Front PERC
2. Cooling fans
3. Memory module slots
4. Riser R4a
5. OCP 3.0 NIC card
6. Power supplies
7. Riser R2k
8. Intrusion switch
9. HPM board
10. Liquid cooling module
11. Backplane
12. Information tag

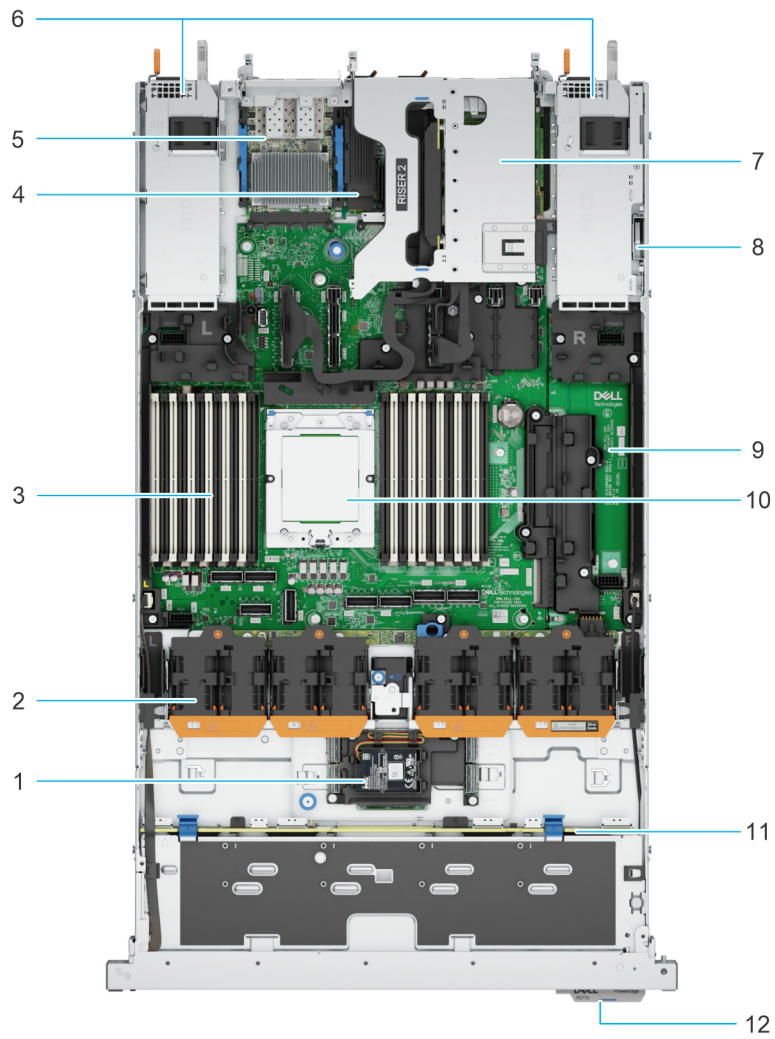


Figure 17. Inside the system view riser R2r

1. Front PERC
2. Cooling fans
3. Memory module slots
4. BOSS-N1 DC-MHS
5. OCP 3.0 NIC card
6. Power supplies
7. Riser R2r
8. Intrusion switch
9. HPM board
10. CPU
11. Backplane
12. Information tag

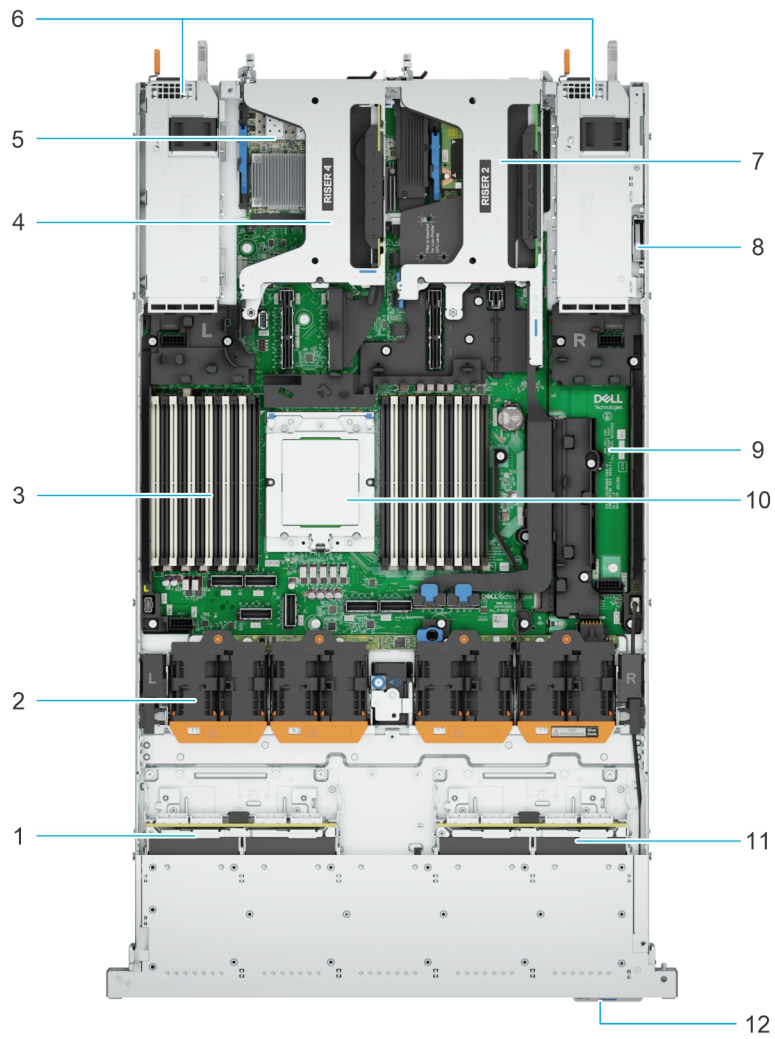


Figure 18. Inside the system with riser R4a and riser R2k

1. Backplane
2. Cooling fans
3. Memory module slots
4. Riser R4a
5. OCP 3.0 NIC card
6. Power supplies
7. Riser R2k
8. Intrusion switch
9. HPM board
10. CPU
11. Backplane
12. Information tag

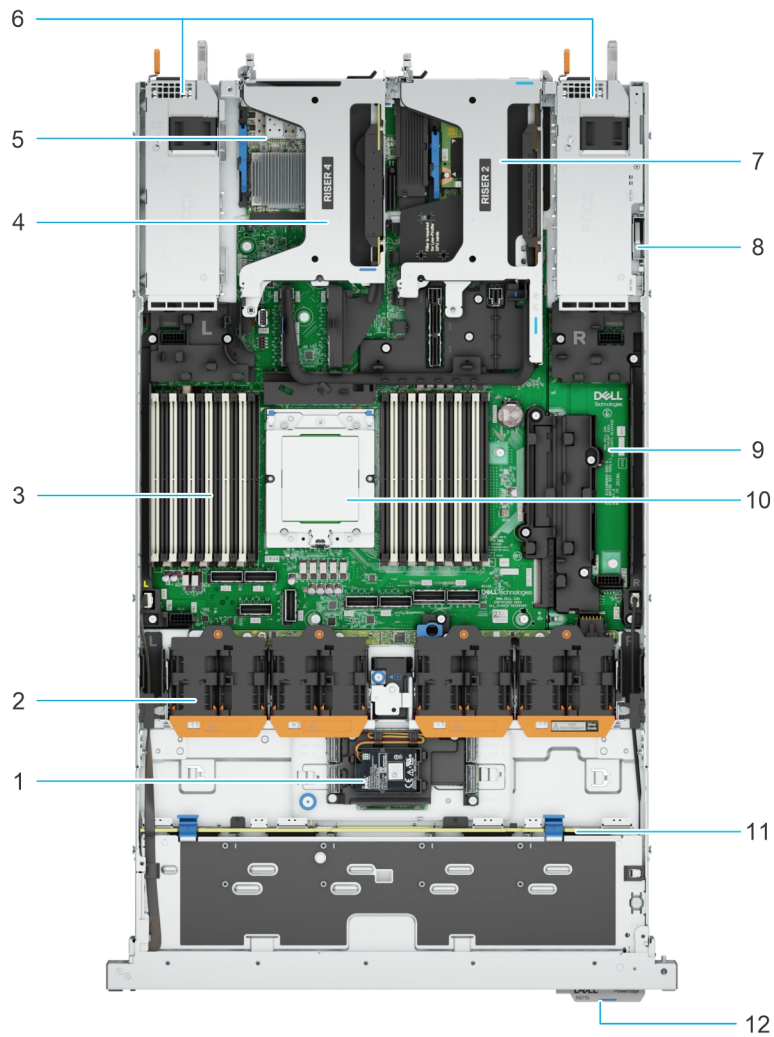


Figure 19. Inside the system with riser R2q and R4b

1. Front PERC
2. Cooling fans
3. Memory module slots
4. Riser R4b
5. OCP 3.0 NIC card
6. Power supplies
7. Riser R2q
8. Intrusion switch
9. HPM board
10. CPU
11. Backplane
12. Information tag

Locating the Express Service Code and Service Tag

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

The Express Service Tag is on the front of the system that includes system information such as the Service Tag, Express Service Code, Manufacture date, NIC, MAC address, MyDell label, and so on.

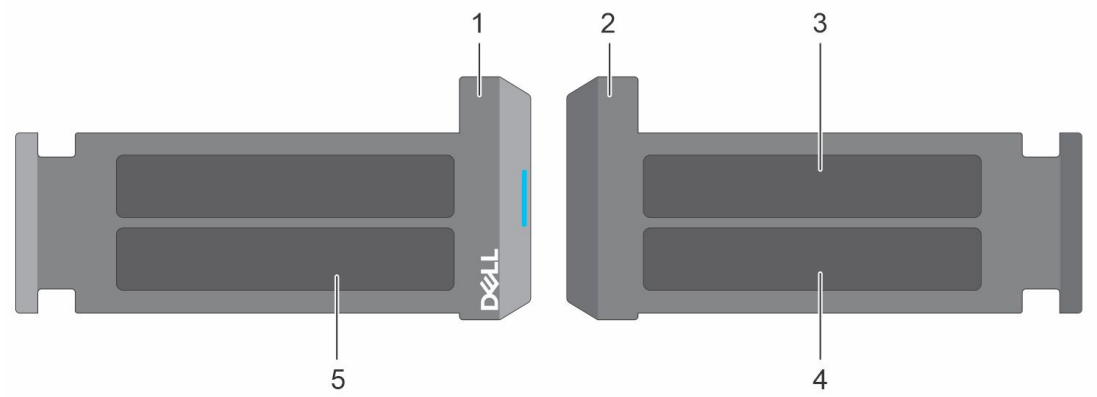


Figure 20. Locating the Express Service Code and Service tag

1. Express Service Tag (front view)
2. Express Service Tag (rear view)
3. OMM (not applicable)
4. Password MAC address
5. Service Tag, Express Service Code, MyDell label

System information label

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

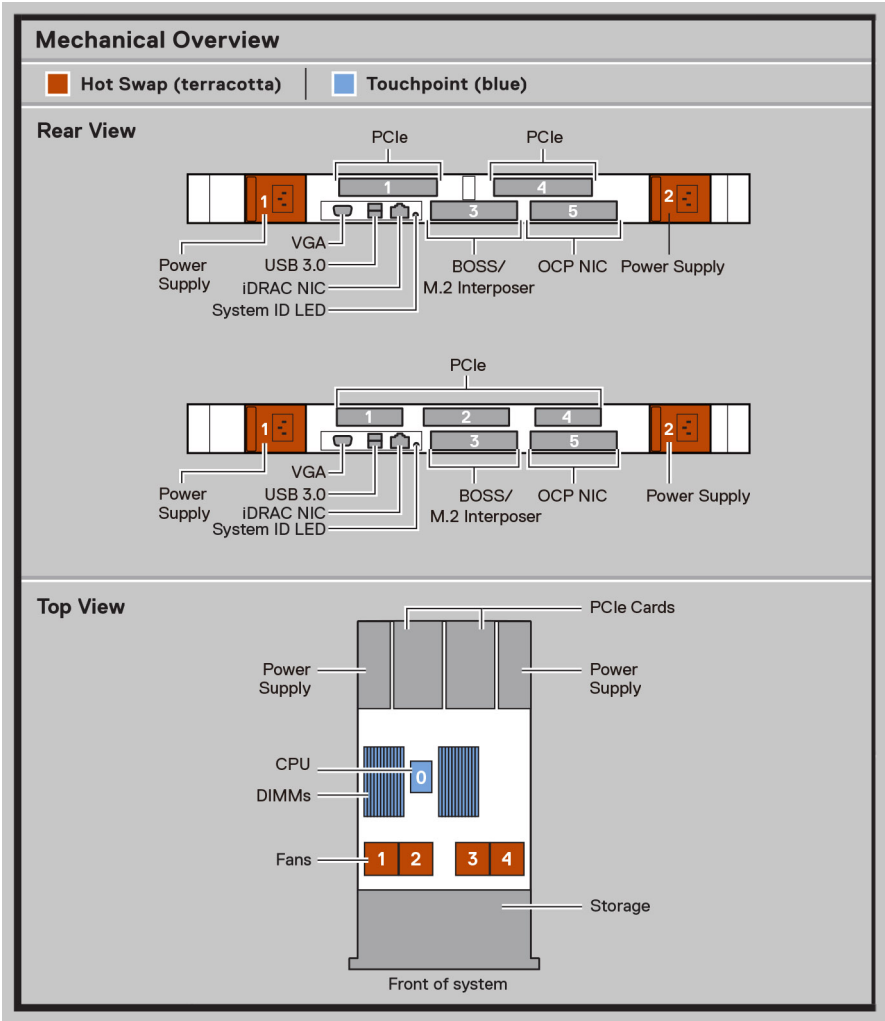


Figure 21. Service information—Mechanical Overview

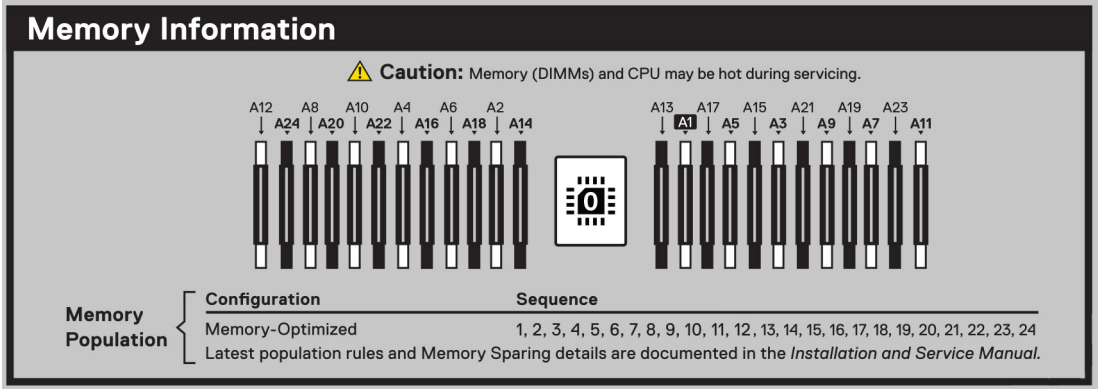


Figure 22. Memory information

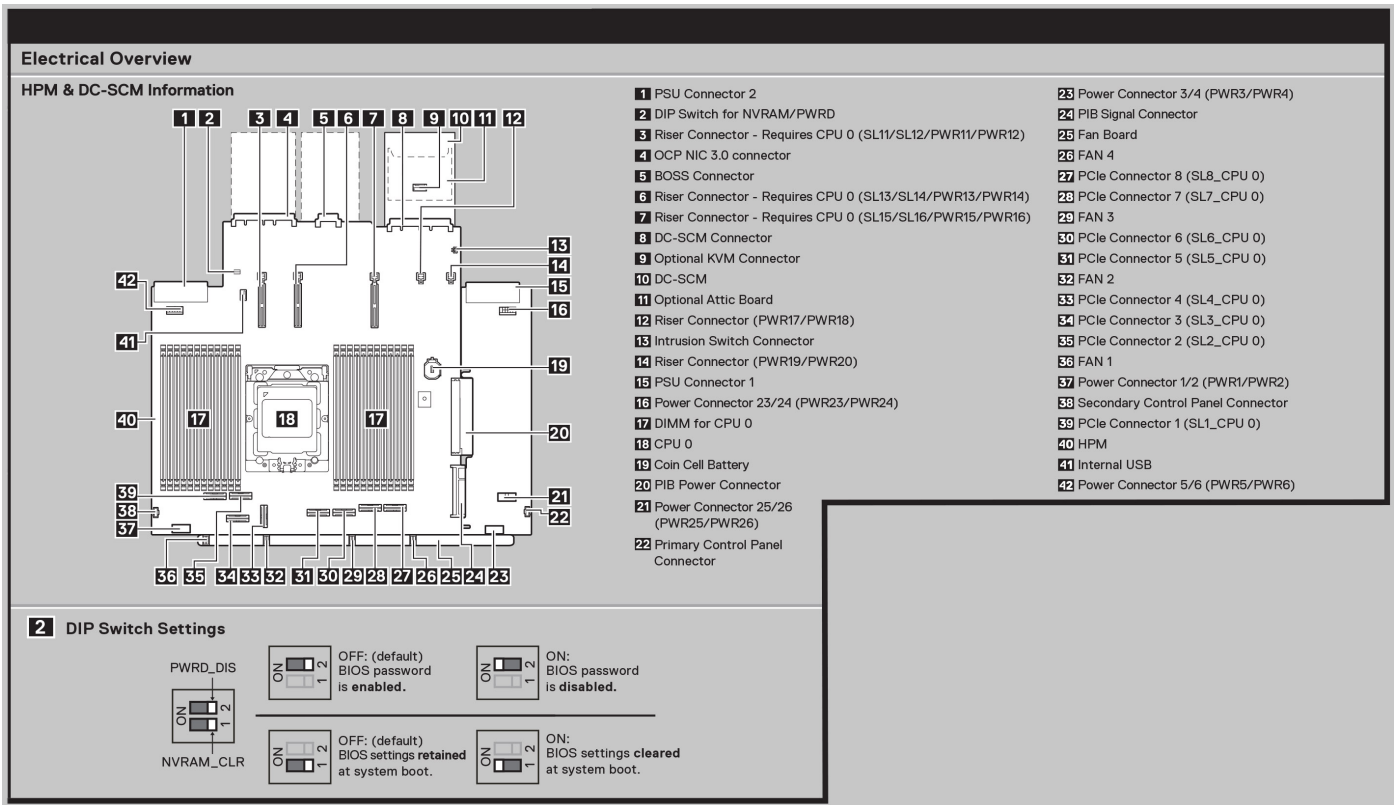


Figure 23. Electrical overview



Figure 24. Caution label

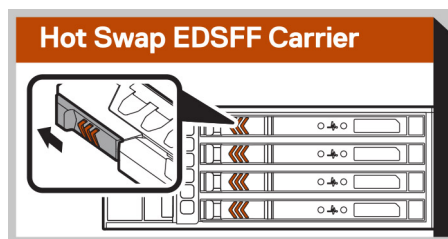


Figure 25. Hot Swap EDSFF carrier

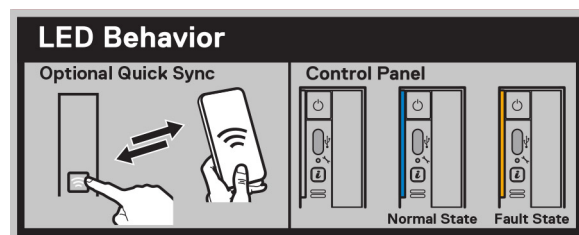


Figure 26. LED Behavior



Figure 27. Express Service Tag

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* available at [rail-rack-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.

Technical specifications

The technical and environmental specifications of your system are outlined in this chapter.

Topics:

- Chassis dimensions
- System weight
- Memory specifications
- Processor specifications
- PSU specifications
- Cooling fan specifications
- Expansion card riser specifications
- Storage controller specifications
- Drives
- GPU Specifications
- DPU Specifications
- System battery specifications
- Supported operating systems
- Ports and connectors specifications
- Video specifications
- Environmental specifications

Chassis dimensions

Chassis dimensions are provided.

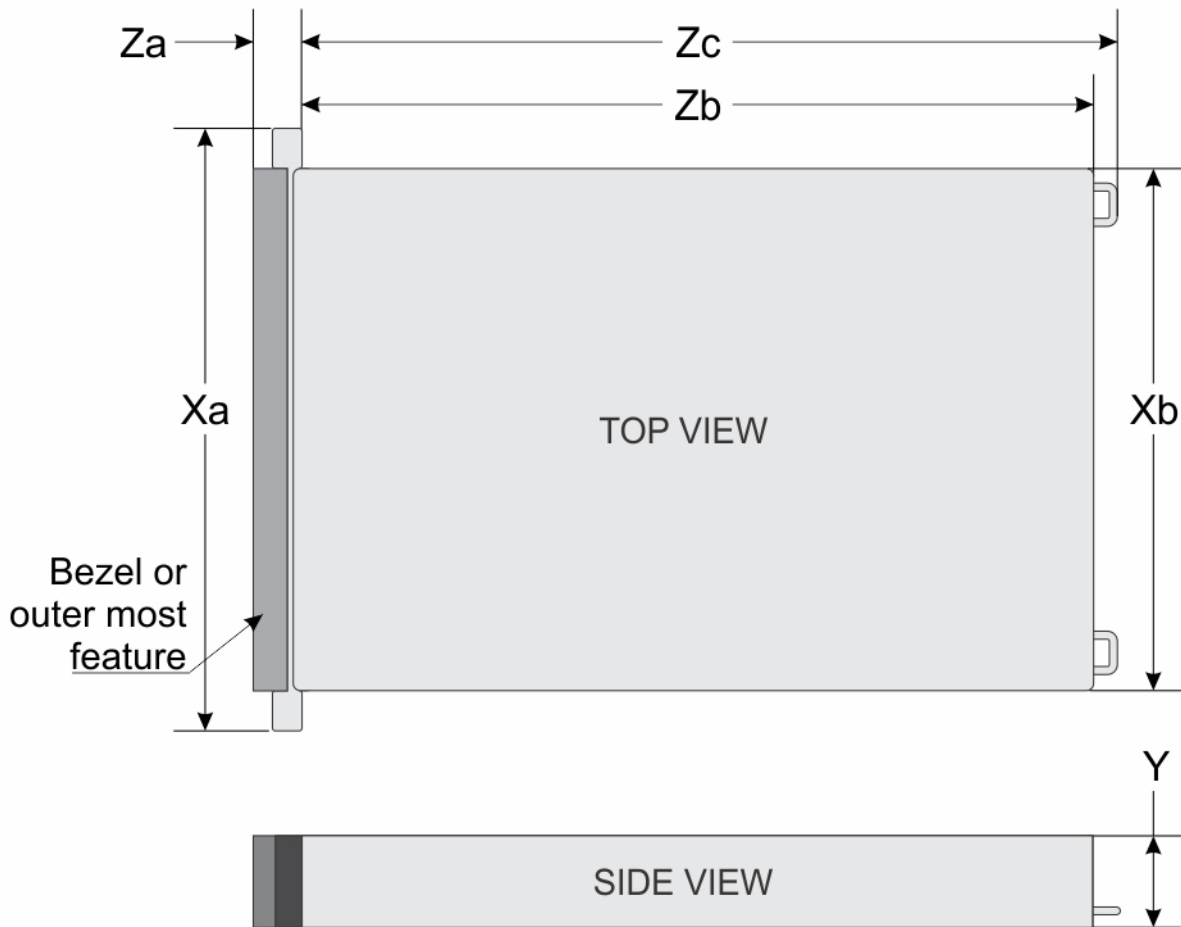


Figure 28. Chassis dimensions

Table 12. Chassis dimensions

| Drives | Xa | Xb | Y | Za (with bezel) | Za (without bezel) | Zb | Zc |
|--------------------------|-------------------------|-------------------------|-----------------------|-----------------------|------------------------|---------------|-------------------------------------|
| All drive configurations | 482.0 mm (18.97 inches) | 434.0 mm (17.08 inches) | 42.8 mm (1.68 inches) | 42.8 mm (1.68 inches) | 28.96 mm (1.14 inches) | without bezel | 786.14 mm (30.95 inches) with bezel |

NOTE: Zb is the nominal rear wall external surface where the HPM board I/O connectors reside.

System weight

Table 13. PowerEdge R6715 system weight

| System configuration | Maximum weight (with all drives/SSDs) |
|------------------------------|--------------------------------------------------------------------------------------------------|
| 4 x 3.5-inch SAS/SATA drives | RC4 (3 x 16 FH) : 19.54 kg (43.07 pounds) RC5 (2 x 16 LP + 2nd OCP) : 19.41 kg (42.79 pounds) |

Table 13. PowerEdge R6715 system weight (continued)

| System configuration | Maximum weight (with all drives/SSDs) |
|------------------------------------------------------------------|---------------------------------------|
| 8 x 2.5-inch Universal SSDs | 19.96 kg (44.00 pounds) |
| 8 x U.2 SSDs | 20.78 kg (45.81 pounds) |
| 10 x 2.5-inch SAS/SATA drives | 21.19 kg (46.71 pounds) |
| 10 x 2.5-inch with 4 x Universal drives | 21.09 kg (46.49 pounds) |
| 16 x EDSFF E3.S Gen5 NVMe drives | 21.09 kg (46.49 pounds) |
| 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe drives | 20.25 kg (46.64 pounds) |

Table 14. PowerEdge R6715 weight handling recommendations

| Chassis weight | Description |
|----------------|--------------------------------|
| 40–70 pounds | Recommend two people to lift |
| 70–120 pounds | Recommend three people to lift |
| ≥ 121 pounds | Recommend to use a server-lift |

Memory specifications

The PowerEdge R6715 system supports the following memory specifications for optimized operation.

Table 15. Memory specifications

| DIMM type | DIMM rank | DIMM capacity | Dual processor | |
|-----------|-------------|---------------|-------------------------|-------------------------|
| | | | Minimum system capacity | Maximum system capacity |
| RDIMM | Single rank | 16 GB | 16 GB | 384 GB |
| | Dual rank | 32 GB | 32 GB | 768 GB |
| | | 64 GB | 64 GB | 1.5 TB |
| | | 96 GB | 96 GB | 2.3 TB |
| | | 128 GB | 128 GB | 3 TB |
| | Eight rank | 256 GB | 256 GB | 6 TB |

Table 16. Memory module sockets

| Memory module sockets | Speed |
|-----------------------|----------------------|
| 24, DDR5 DIMM slots | 5200 MT/s, 4000 MT/s |

NOTE: Memory DIMM slots are not hot pluggable.

NOTE: The processor may reduce the performance of the rated DIMM speed.

Processor specifications

Table 17. PowerEdge R6715 processor specifications

| Supported processor | Number of processors supported |
|-----------------------------------------------------------|--------------------------------|
| 5 th Generation AMD EPYC 9005 Series processor | One |

PSU specifications

The PowerEdge R6715 system supports up to two AC or DC power supply units (PSUs).

Table 18. PSU specifications

| PSU | Class | Heat dissipation (maximum) (BTU/hr) | Frequency (Hz) | Input voltage | Current (A) |
|-----------------------|----------|-------------------------------------|----------------|-------------------|-------------|
| 1800 W Titanium * | Titanium | 6750 | 50/60 | 200-240 Vac | 9.8-8.2 |
| | N/A | 6750 | N/A | 240 Vdc | 8.2 |
| 1500 W Titanium | Titanium | 5625 | 50/60 | 100-240 Vac | 12-8.2 |
| | N/A | 5625 | N/A | 240 Vdc | 6.8 |
| 1500 W 277 Vac & HVDC | Titanium | 5625 | 50/60 | 277 Vac | 6.1 |
| | N/A | 5625 | N/A | 336 Vdc | 4.91 |
| 1400 W -48 Vdc | Telco | 5310 | N/A | (-48) - (-60) Vdc | 33 |
| 1100 W Titanium | Titanium | 4125 | 50/60 | 100-240 Vac | 12-6.1 |
| | N/A | 4125 | N/A | 240 Vdc | 5.1 |
| 1100 W Platinum | Platinum | 4125 | 50/60 | 100-240 Vac | 12-6.1 |
| | N/A | 4125 | N/A | 240 Vdc | 5.1 |
| 800 W Titanium | Titanium | 3000 | 50/60 | 100-240 Vac | 9.2-4.5 |
| | N/A | 3000 | N/A | 240 Vdc | 3.7 |
| 800 W Platinum | Platinum | 3000 | 50/60 | 100-240 Vac | 9.2-4.5 |
| | N/A | 3000 | N/A | 240 Vdc | 3.7 |

- NOTE:** If a system with AC 1500 W PSUs operates at low line 100-120 Vac, then the power rating per PSU is d e-rated to 1050 W.
- NOTE:** This document provides a comprehensive list of product features. However, features marked with an asterisk (*) may not be available at launch but introduced in future updates. Please note that this document does not confirm the availability or release timeline of any feature. For the most accurate and up-to-date information on feature availability, please refer to the product configurator page on dell.com.
- NOTE:** * Feature not available at product launch in November,2025. Please refer to the product configurator page on Dell.com to confirm feature availability.
- NOTE:** Heat dissipation is calculated using the PSU wattage rating.
- NOTE:** When selecting or upgrading the system configuration, to ensure optimum power utilization, verify the system power consumption with the Enterprise Infrastructure Planning Tool available at [calc](#).
- NOTE:** If a system with AC 1500 W PSUs operates at low line 100-120 Vac, then the power rating per PSU is d e-rated to 1050 W.



Figure 29. C13 power cord

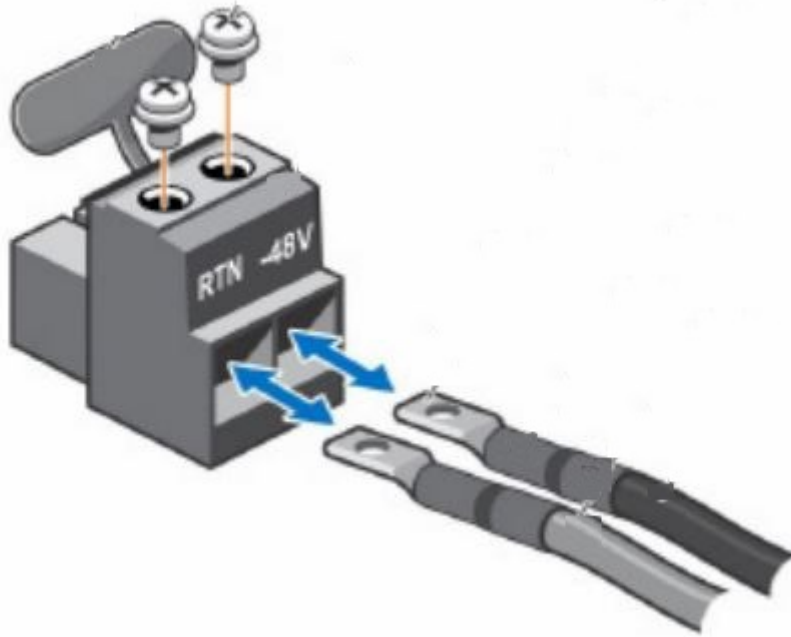


Figure 30. DC PSU power cord

Table 19. PSU power cables

| Form factor | Output | Power cable |
|-----------------|------------------------------|----------------|
| Redundant 60 mm | 1800 W Titanium mixed mode * | C13 |
| Redundant 60 mm | 1500 W Titanium mixed mode | C13 |
| Redundant 60 mm | 1500 W 277 Vac and HVDC | APP/Saf-D-Grid |
| Redundant 60 mm | 1400 W Telco | DC power cable |
| Redundant 60 mm | 1100 W Titanium mixed mode | C13 |
| Redundant 60 mm | 1100 W Platinum mixed mode | C13 |
| Redundant 60 mm | 800 W Titanium mixed mode | C13 |
| Redundant 60 mm | 800 W Platinum mixed mode | C13 |



NOTE: This document provides a comprehensive list of product features. However, features marked with an asterisk (*) may not be available at launch but introduced in future updates. Please note that this document does not confirm the availability or release timeline of any feature. For the most accurate and up-to-date information on feature availability, please refer to the product configurator page on dell.com.

NOTE: *Feature not available at product launch in November,2025. Please refer to the product configurator page on Dell.com to confirm feature availability.

Cooling fan specifications

The PowerEdge R6715 system supports up to four sets high-performance silver (HPR SLVR) hot-swappable cooling fans, each consisting of a dual fan module.

Table 20. Cooling fan specifications

| Fan type | Abbreviation | Also known as | Label color | Label image |
|------------------------------------|--------------|---------------|-------------|------------------------------------------------------------------------------------------------------------------------------------|
| High performance (HPR) silver fans | HPR SLVR | HPR | Silver |  <p>Figure 31. High performance silver fans</p> |
| Standard (STD) fans | STD | STD | No label |  <p>Figure 32. Standard fans</p> |

NOTE: Cooling fans rotate at slower speed, even while the system is in standby mode, and the fan speed varies in response to changes in the ambient temperature.

Expansion card riser specifications

The PowerEdge R6715 system support up to two low-profile Gen5 PCIe slots on the HPM board.

Table 21. Expansion card slots supported on the HPM board

| PCIe slot | Expansion card riser | Processor connection | Height | Length | Slot width |
|-----------|----------------------|----------------------|--------------------------|-------------|------------|
| Slot 1 | Riser 2 | Processor 0 | Low Profile/ Full Height | Half Length | x16 |
| Slot 2 | R2k (second OCP) | Processor 0 | SFF | SFF | x16 |
| Slot 3 | BOSS | Processor 0 | BOSS Flatbread carrier | | x4 |
| Slot 4 | Riser 4 | Processor 0 | Low Profile /Full Height | Half Length | x16 |
| Slot 5 | OCP | Processor 0 | SFF | SFF | x16 |

Storage controller specifications

The PowerEdge R6715 system supports the following controller cards:

Table 22. Storage controller cards

| Supported storage controller cards |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Internal controllers <ul style="list-style-type: none"> • PERC H365i • PERC H965i • PERC H975i • HBA465e • H965e |
| Internal Boot <ul style="list-style-type: none"> • Boot Optimized Storage Subsystem (BOSS-N1 DC-MHS) |

NOTE: For the ESXi operating system, H975i is supported on 9.0 or later versions.

Drives

The PowerEdge R6715 system supports:

- No backplane configuration
- Up to 4 x 3.5-inch SAS/SATA drives
- Up to 8 x 2.5-inch SAS/SATA/NVME drives
- Up to 8 x U.2 NVMe SSDs
- Up to 10 x 2.5-inch SAS/SATA drives
- Up to 10 x 2.5-inch SAS/SATA with 4 x U.2 drives
- Up to 16 x EDSFF E3.S Gen5 NVMe drives
- Up to 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe drives

NOTE: For more information about how to hot swap NVMe PCIe SSD device, see the *Dell Express Flash NVMe PCIe SSD User's Guide* at [Dell Support](#) page > **Browse all products > Infrastructure > Data Center Infrastructure > Storage Adapters & Controllers > Dell PowerEdge Express Flash NVMe PCIe SSD > Select This Product > Documentation > Manuals and Documents.**

GPU Specifications

The PowerEdge R6715 system supports one of the following GPU configurations:

- Up to 3 x 70W single-width cards (x16 PCIe)

DPU Specifications

The PowerEdge R6715 platform accommodates Data Processing Units (DPUs). These units are system-on-chip solutions that combine ARM cores, high-performance NICs, and programmable acceleration engines to offload and accelerate data center infrastructure services.

Table 23. Supported Data Processing Units(DPU) Cards

| Feature | NVIDIA BlueField-3 2x200 GbE B3220 | NVIDIA BlueField-3 1x400 GbE B3140H * |
|------------|------------------------------------|---------------------------------------|
| Type | Data Processing Units (DPU) | Data Processing Units (DPU) |
| Networking | 2 x 200 GbE | 1x400 GbE |

Table 23. Supported Data Processing Units(DPU) Cards (continued)

| Feature | NVIDIA BlueField-3 2x200 GbE B3220 | NVIDIA BlueField-3 1x400 GbE B3140H * |
|-------------------|------------------------------------|---------------------------------------|
| Form Factor | FHHL | FHHL |
| Interface | PCIe Gen5 x16 | PCIe Gen5 x16 |
| Power Consumption | 150 W | 75 W |
| Compatible Risers | RC 3(Slot 1) | TBD |

NOTE: This document provides a comprehensive list of product features. However, features marked with an asterisk (*) may not be available at launch but introduced in future updates. Please note that this document does not confirm the availability or release timeline of any feature. For the most accurate and up-to-date information on feature availability, please refer to the product configurator page on dell.com.

NOTE: * Feature not available at product launch in November,2025. Please refer to the product configurator page on Dell.com to confirm feature availability.

System battery specifications

The PowerEdge R6715 system uses one CR 2032 3.0-V lithium coin cell battery.

Supported operating systems

The PowerEdge R6715 system supports the following operating systems:

- Microsoft Windows Server with Hyper-V
- Canonical Ubuntu Server LTS
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
- VMware ESXi

For specifications and interoperability details, see [OS support](#).

Ports and connectors specifications

NIC port specifications

The PowerEdge R6715 system supports one 10/100/1000 Mbps BMC Ethernet, up to three PCIe Add-in cards, up to two fibre channel HBA cards, and two optional Open Compute Project (OCP) cards.

Table 24. NIC port specification for the system

| Feature | Specifications |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Datacenter-Secure Control Module (DC-SCM) | 1 Gb Dedicated BMC Ethernet port x1 |
| 2 x OCP NIC 3.0 card | 200GbE x 2 (configurable to 400GbE x1), 100 GbE x 2, 25 GbE x 2, 25 GbE x 4 , 10 GbE x 4, 10 GbE x 2, 1 GbE x 4 |
| PCIe Add-in Card (AIC) NIC | 400 GbE x 1, 100 GbE x 2 |
| Fibre channel HBA | FC32, FC64 |

NOTE: The system allows either DS-SCM or an OCP NIC card or both to be installed in the system.

NOTE: On the HPM board, the supported OCP NIC PCIe width is x8; when x16 PCIe width is installed, it is downgraded to x8.

NOTE: The system allows either DS-SCM or a MIC card to be installed in the system.

USB ports specifications

Table 25. Systems USB Specifications

| Front | | Rear | | Internal | |
|-----------------------------------|--------------|----------------|--------------|------------------|--------------|
| USB port type | No. of ports | USB port type | No. of ports | USB port type | No. of ports |
| USB 2.0 Type-A (optional LCP KVM) | 1 | USB 3.1 Type-A | 1 | USB x.3.1 Type-A | 1 |
| USB 2.0 Type-C (HOST/BMC Direct) | 1 | | 1 | | |

NOTE: The micro USB 2.0 compliant port can only be used as an iDRAC Direct or a management port.

VGA ports specifications

The PowerEdge R6715 system supports DB-15 VGA port on the rear I/O board.

Video specifications

Table 26. Supported video resolution options

| Resolution | Refresh rate (Hz) | Color depth (bits) |
|-------------|-------------------|--------------------|
| 1024 x 768 | 60 | 8, 16, 32 |
| 1280 x 800 | 60 | 8, 16, 32 |
| 1280 x 1024 | 60 | 8, 16, 32 |
| 1360 x 768 | 60 | 8, 16, 32 |
| 1440 x 900 | 60 | 8, 16, 32 |
| 1600 x 900 | 60 | 8, 16, 32 |
| 1600 x 1200 | 60 | 8, 16, 32 |
| 1680 x 1050 | 60 | 8, 16, 32 |
| 1920 x 1080 | 60 | 8, 16, 32 |
| 1920 x 1200 | 60 | 8, 16, 32 |

NOTE: RB—Reduced Blanking for digital displays requiring less blank time. This was introduced for signal integrity improvements by reducing pixel clock rates for VGA analog input devices.

Environmental specifications

Environmental certifications and operational climatic ranges are provided.

Additional information about environmental certifications is available in the [Product Environmental Datasheet](#).

Table 27. Operational climatic range for category A2

| Item | Allowable continuous operations |
|-------------------------------------------------------|-----------------------------------------------------------------------------------|
| Temperature range for altitudes <= 900 m (<= 2953 ft) | 10–35°C (50–95°F) with no direct sunlight on the equipment |
| Humidity percent range (non-condensing always) | 8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point |
| Operational altitude derating | Maximum temperature is reduced by 1°C/300 m (1.8°F/984 Ft) above 900 m (2953 Ft) |

Table 28. Operational climatic range for category A3

| Item | Allowable continuous operations |
|-------------------------------------------------------|-----------------------------------------------------------------------------------|
| Temperature range for altitudes <= 900 m (<= 2953 ft) | 5–40°C (41–104°F) with no direct sunlight on the equipment |
| Humidity percent range (non-condensing always) | 8% RH with -12°C minimum dew point to 85% RH with 24°C (75.2°F) maximum dew point |
| Operational altitude derating | Maximum temperature is reduced by 1°C/175 m (1.8°F/574 Ft) above 900 m (2953 Ft) |

Table 29. Operational climatic range for category A4

| Item | Allowable continuous operations |
|-------------------------------------------------------|-----------------------------------------------------------------------------------|
| Temperature range for altitudes <= 900 m (<= 2953 ft) | 5–45°C (41–113°F) with no direct sunlight on the equipment |
| Humidity percent range (non-condensing always) | 8% RH with -12°C minimum dew point to 90% RH with 24°C (75.2°F) maximum dew point |
| Operational altitude derating | Maximum temperature is reduced by 1°C/125 m (1.8°F/410 Ft) above 900 m (2953 Ft) |

Table 30. Shared requirements

| Item | Allowable continuous operations |
|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Maximum Temperature Gradient (applies to both operation and nonoperation) | 20°C in an hour* (36°F in an hour) and 5°C in 15 minutes (9°F in 15 minutes), 5°C in an hour* (9°F in an hour) for tape hardware |
| Non-Operational Temperature Limits | <ul style="list-style-type: none"> -40°C to 65°C (-40°F to 149°F) applicable for air cooling configuration -40°C to -5°C (-40°F to 23°F**) applicable for DLC configuration <p>NOTE: ** Liquid filled components, or systems/solutions containing liquid filled components are limited to approximately 5°C above their freeze point. At this time the only authorized liquid coolant is Recohem PG25 with a freeze point between -9°C and -13°C, therefore the lower non-operational temperature limit is -5°C. Components and systems/solutions that can contain liquid but do not at the time of testing shall be tested to the -40°C lower non-operational temperature limit.</p> |
| Non-Operational Humidity Limits (Non-Condensing always) | 5% to 95%RH with 27°C (80.6°F) maximum dew point. |
| Maximum Non-Operational Altitude | 12,000 meters (39,370 ft) |
| Maximum Operational Altitude | 3,048 meters (10,000 ft) |

Table 31. Maximum vibration specifications

| Maximum vibration | Specifications |
|-------------------|--------------------------------------------------------------------------------|
| Operating | 0.26 G _{rms} at 5 Hz to 350 Hz (all operation orientations) |
| Storage | 1.88 G _{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested) |

Table 32. Maximum shock pulse specifications

| Maximum shock pulse | Specifications |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating | Six consecutively run shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 ms. |
| Storage | Six consecutively run shock pulses in the positive and negative x, y, and z axis (one pulse on each side of the system) of 71 G for up to 2 ms. |

Particulate and gaseous contamination specifications

The following table defines the limitations that help avoid any equipment damage or failure from particulates and gaseous contamination. If the levels of particulates or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you must rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

Table 33. Particulate contamination specifications

| Particulate contamination | Specifications |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Air filtration: Conventional Data Center only | <p>Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit</p> <p>i NOTE: Filtering room air with a MERV8 filter, as specified in ANSI/ASHRAE Standard 127, is a recommended method for achieving the necessary environmental conditions.</p> <p>i NOTE: Air entering the data center must have MERV11 or MERV13 filtration.</p> <p>i NOTE: This condition applies to data center environments only. Air filtration requirements do not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor.</p> |
| Walk-Up Edge Data Center or Cabinet (sealed, closed loop environment) | <p>Filtration is not required for cabinets that are anticipated to be opened six times or less per year. Class 8 per ISO 1466-1 filtration as defined above is required otherwise.</p> <p>i NOTE: In environments commonly above ISA-71 Class G1 or that may have known challenges, special filters may be required.</p> |
| Conductive dust: data center and non-data center environments | <p>Air must be free of conductive dust, zinc whiskers, or other conductive particles.</p> <p>i NOTE: Conductive dust, which can interfere with equipment operation, can originate from various sources, including manufacturing processes and zinc whiskers that may develop on the plating of raised floor tiles.</p> <p>i NOTE: This condition applies to data center and non-data center environments.</p> |
| Corrosive dust: data center and non-data center environments | <ul style="list-style-type: none"> Air must be free of corrosive dust. Residual dust present in the air must have a deliquescent point less than 60% relative humidity. <p>i NOTE: This condition applies to data center and non-data center environments.</p> |

Table 34. Gaseous contamination specifications

| Gaseous contamination | Specifications | Notes |
|------------------------------|-------------------------------|-------------------|
| Copper coupon corrosion rate | ISA-71 Class G1: <300 Å/month | Per ANSI/ISA71.04 |
| Silver coupon corrosion rate | ISA-71 Class G1: <200 Å/month | Per ANSI/ISA71.04 |

Thermal restriction matrix

Table 35. Label reference

| Label | Description |
|--------------|----------------------------------------|
| STD | Standard |
| HPR (Silver) | High performance Silver (HPR SLVR) fan |
| HPR (Gold) | High performance Gold (HPR GOLD) fan |
| HSK | Heat sink |
| LP | Low profile |
| FH | Full height |
| DLC | Direct Liquid Cooling |

Table 36. Heat sink thermal restriction matrix

| Heat sink | Processor TDP |
|------------|--------------------------|
| C-type HSK | Supports all air cooling |

Table 37. R6715 thermal restriction Air cooling matrix

| Supported at 35°C | | | | | R6715 Air Cooling | | |
|-------------------|------|------|----------|------------|---------------------------------------|---------------------------------------|----------------------------------------------|
| Configuration | | | | | No Backplane | 8 x 2.5-inch | 16 x EDSFF E3.S NVMe |
| Rear storage | | | | | No rear Drive | No rear Drive | No rear Drive |
| CPU | CPU | cTDP | Max cTDP | Core Count | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| | 9015 | 125 | 155 | 8 | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| | 9115 | 125 | 155 | 16 | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| | 9135 | 200 | 240 | 16 | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| | 9255 | 200 | 240 | 24 | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| | 9335 | 280 | 300 | 32 | C Type HSK (8W71V) | C Type HSK (8W71V) | C Type HSK (8W71V) |

Table 37. R6715 thermal restriction Air cooling matrix (continued)

| Supported at 35°C | | | | | R6715 Air Cooling | | |
|-------------------|-----|-----|-----|--|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| | | | | | STD Fan (9P02K) | STD Fan (9P02K) | HPR Silver Fan (J7DTN) |
| 9355p | 280 | 300 | 32 | | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) STD Fan (9P02K) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9175F | 320 | 400 | 16 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9275F | 320 | 400 | 24 | | Not Supported | Not Supported | Not Supported |
| 9375F | 320 | 400 | 32 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9475F | 400 | 400 | 48 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9555P | 360 | 400 | 64 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9575F | 400 | 400 | 64 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9655P | 320 | 400 | 96 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9745 | 400 | 400 | 128 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| 9825 | 390 | 400 | 144 | | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |

Table 37. R6715 thermal restriction Air cooling matrix (continued)

| Supported at 35°C | | | | | R6715 Air Cooling | | |
|-------------------|--------------|-----|-----|-----|----------------------------------------------|----------------------------------------------|----------------------------------------------|
| | 9845 | 390 | 400 | 160 | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) | C Type HSK (8W71V) HPR Silver Fan (J7DTN) |
| Memory | 16 GB RDIMM | | | | STD Fan (9P02K) | STD Fan (9P02K) | HPR Silver Fan (J7DTN) |
| | 32 GB RDIMM | | | | STD Fan (9P02K) | STD Fan (9P02K) | HPR Silver Fan (J7DTN) |
| | 64 GB RDIMM | | | | STD Fan (9P02K) | STD Fan (9P02K) | HPR Silver Fan (J7DTN) |
| | 96 GB RDIMM | | | | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) |
| | 128 GB RDIMM | | | | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) |
| | 256 GB RDIMM | | | | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) | HPR Silver Fan (J7DTN) |

NOTE: The AMD 400w 24c 9275F can't be supported by air cooling based on current test result.

NOTE: The configuration's ambient temperature is dictated by its critical component. For example, if the processor's ambient temperature is 35°C, the DIMM is 35°C, and the GPU is 30°C, the configuration's ambient temperature can only be 30°C.

NOTE: Rear HDD configurations do not support drive capacities of 30TB or higher.

R6715 thermal restriction Liquid cooling matrix

No thermal restriction requirement for all CPUs with liquid cooling supported config.

Thermal air restrictions

Fresh air environment

- Two PSUs are required in redundant mode, however a single PSU failure is not supported.
- PCIe SSD is not supported.
- 128 GB or greater capacity DIMMs are not supported.
- GPU and FPGA are not supported.
- CPU TDP equal or greater than 180 W are not supported.
- Rear drives are not supported.
- Non-Dell qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.

Table 38. Air cooling configuration thermal restriction for AHSRAE A3 and A4

| ASHRAE | A3/40°C (104°F) | A4/45°C (113°F) |
|---------------|------------------------------------------------------|----------------------------------|
| Front storage | Support at 2.5" SATA/SAS x 8 configuration only | |
| Fan type | HPR Silver Fan J7DTN is required. | |
| CPU | CPU TDP > 240 W is not supported. | CPU TDP > 200W are not supported |
| Memory | 128 GB and higher capacity RDIMMS are not supported. | |

Table 38. Air cooling configuration thermal restriction for AHSRAE A3 and A4 (continued)

| ASHRAE | A3/40°C (104°F) | A4/45°C (113°F) |
|---------------|-----------------------------------------------------------------------------------------------------------|------------------------|
| PCIe card | Non-Dell qualified peripheral cards and consuming power greater than 25 W are not supported. | |
| GPU | GPU cards are not supported. | |
| Rear storage | Not supported | |
| OCP | Supported with 85°C (185°F) active optic cable. | |
| PSU | Two PSUs are required in redundant mode. System performance may be reduced in the event of a PSU failure. | |
| BOSS | Supported | Not Supported |

Table 39. Liquid cooling configuration thermal restriction for AHSRAE A3 and A4

| ASHRAE | A3/40°C (104°F) | A4/45°C (113°F) |
|---------------|-----------------------------------------------------------------------------------------------------------|------------------------|
| Front storage | 3.5" / E.3 config is not supported | |
| Fan type | HPR Gold Fan (7F0CF) or up are required | |
| Memory | 128GB and higher Capacity RDIMMS are not supported. | |
| PCISSD | Not Supported | |
| PCIe card | Non-Dell qualified peripheral cards and consuming power greater than 25 W are not supported. | |
| GPU | GPU cards are not supported. | |
| Rear storage | Not supported | |
| OCP | Supported with 85°C (185°F) active optic cable. | Not supported |
| PSU | Two PSUs are required in redundant mode. System performance may be reduced in the event of a PSU failure. | |
| BOSS | Supported | Not supported |

Initial system setup and configuration

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

Topics:

- [Setting up the system](#)
- [iDRAC configuration](#)
- [Install an operating system](#)

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.

iDRAC configuration

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

Set up iDRAC IP address

To communicate with iDRAC, configure the network settings based on your network infrastructure. The network settings option is set to **DHCP**, by default.

For static IP configuration, request for the settings at the time of purchase.

For information about setting up an iDRAC IP address, see the links provided in the table:

Table 40. Interfaces to set up iDRAC IP address

| Interface | Documentation links |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iDRAC Direct | See the Integrated Dell Remote Access Controller User's Guide or for system-specific iDRAC guide, go to PowerEdge Manuals > Product Support page of your system > Documentation . To determine the most recent iDRAC release for your platform and for the latest documentation version, see KB 305325 . |
| OpenManage Deployment Toolkit | Dell OpenManage Deployment Toolkit User's Guide > Open Manage Deployment Toolkit. |

To access iDRAC, ensure that you connect the Ethernet cable to the iDRAC dedicated network port or use the BMC Direct port by using the USB (type A) cable.

Log in to iDRAC

To log in to iDRAC, open a browser, enter the IP address and log in as an:

- iDRAC user
- Microsoft AD user
- LDAP user

For secure default access to iDRAC, the default username is `root`. Enter the iDRAC secure default password on the back of the Service Tag. For a legacy password, use `root/calvin`, the iDRAC default password is blank on the express service tag. Create a password before proceeding. You can also log in using VMware SSO or Smart Card.

Do not 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 [Integrated Dell Remote Access Controller User's Guide](#).

See [KB78115](#) to determine the most recent iDRAC release for your platform and the latest documentation version.

You can also access iDRAC using 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](#).

Install an operating system

You can install an operating system on a system shipped without one using the information provided.

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

Table 41. Resources to install the operating system

| Interface | Documentation links |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iDRAC | See the Integrated Dell Remote Access Controller User's Guide or for system-specific iDRAC guide, go to PowerEdge Manuals > Product Support page of your system > Documentation . To determine the most recent iDRAC release for your platform and for the latest documentation version, see KB 305325 . |
| OpenManage Deployment Toolkit | Dell OpenManage Deployment Toolkit User's Guide > Open Manage Deployment Toolkit. |
| Dell certified VMware ESXi | Virtualization solutions Virtualization solutions |

For more information about installation and how-to videos for operating systems that are supported on PowerEdge systems, see [Supported Operating Systems for Dell PowerEdge systems](#).

Options to download drivers and firmware

You can download drivers and firmware from the [FTP site](#). For more information about username and password, contact your TAM (Tech Account Manager).

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 42. Options to download and install OS drivers

| Option | Documentation |
|-------------------|-----------------------------------------------------------|
| Dell support site | Downloading drivers and firmware section. |

Table 42. Options to download and install OS drivers (continued)

| Option | Documentation |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| iDRAC virtual media | <p>Integrated Dell Remote Access Controller User's Guide or for system specific, go to Integrated Dell Remote Access Controller User's Guide > Product Support page of your system > Documentation .</p> <p>NOTE: To determine the most recent iDRAC release for your platform and for the latest documentation version, see TBD.</p> |

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 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.

Pre-operating system management applications

You can manage basic settings and features of a system without booting to the operating system by using the system firmware.

Options to manage the pre-operating system applications

You can use any one of the following options to manage the pre-operating system applications:

- System Setup
- Boot Manager
- Preboot Execution Environment (PXE)

Topics:

- [System Setup](#)
- [Boot Manager](#)
- [PXE boot](#)

System Setup

Using the **System Setup** option, you can configure the BIOS settings, iDRAC settings, and device settings of the system.

You can access system setup by using any one of the following interfaces:

- Graphical User interface — To access go to iDRAC Dashboard, click **Configurations > BIOS Settings**.
- Text browser — To enable the text browser, use the Console Redirection.

To view

System Setup, power on the system, press F2, and click **System Setup Main Menu**.

i **NOTE:** If the operating system begins to load before you press F2, wait for the system to finish booting, and then restart the system and try again.

The options on the

System Setup Main Menu screen are described in the following table:

Table 43. System Setup Main Menu

| Option | Description |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| System BIOS | Enables you to configure the BIOS settings. |
| iDRAC Settings | Enables you to configure the iDRAC settings. The iDRAC utility is an interface to set up and configure the iDRAC parameters . You can enable or disable various iDRAC parameters by using the iDRAC utility. For more information about this utility, <i>Integrated Dell Remote Access Controller User's Guide</i> at PowerEdge Manuals . |
| Device Settings | Enables you to configure device settings for devices such as storage controllers or network cards. |
| Service Tag Settings | Enables you to configure the System Service Tag. |

System BIOS

See the common options of the System BIOS here: [Support for General Solution Resources | Documentation | Dell US > Manuals and Documents > Set up BIOS on 17th Generation Dell PowerEdge Servers.](#)

Dell Open Server Manager Settings

The OSM settings is an interface to set up and configure the OSM parameters by using UEFI. You can enable or disable various OSM parameters by using the OSM settings. For more information about using OSM, see the latest Dell Open Server Manager built on OpenBMC™ User's Guide [Support for Open Server Manager | Documentation | Dell India.](#)

Device Settings

Device Settings enables you to configure device parameters such as storage controllers or network cards.

Boot Manager

The **Boot Manager** option enables you to select boot options and diagnostic utilities.

To enter **Boot Manager**, power on the system and press F11.

Table 44. Boot Manager details

| Option | Description |
|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Continue Normal Boot | The system attempts to boot to devices starting with the first item in the boot order. If the boot attempt fails, the system continues with the next item in the boot order until the boot is successful or no more boot options are found. |
| One-shot UEFI Boot Menu | Enables you to access the boot menu, where you can select a one-time boot device to boot from. |
| Launch System Setup | Enables you to access System Setup. |
| System Utilities | Enables you to launch the System Utilities menu such as Launch Diagnostics, BIOS update File Explorer, Reboot System. |

PXE boot

You can use the Preboot Execution Environment (PXE) option to boot and configure the networked systems remotely.

To access the **PXE boot** option, boot the system and then press F12 during POST instead of using standard Boot Sequence from BIOS Setup. It does not pull any menu or allows managing of network devices.

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 system.


Topics:

- [Minimum configuration to POST](#)

Minimum configuration to POST

The components that are listed below are the minimum configuration to POST:

- One CPU on CPU0
- One memory module (DIMM) in slot A1
- One power supply unit
- Host Processor Module (HPM)* + Data Center Secured Control Module (DC-SCM)

 **NOTE:** HPM is also known as System Board.

Configuration validation

The new generation of Dell systems have added interconnect flexibility and 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, floating card (fPERC, adapter PERC, BOSS), and processor is obtained from the CPLD and backplane memory maps are analyzed. This information forms a unique configuration, which is compared with one of the qualified configurations that are stored in a table that is 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) log. The reported events are categorized in the configuration validation error table.

Table 45. 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, and so on) 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. | A missing element or cable is reported in HWC8010 error logs. Install the missing element (cable, riser, and so on). | Config Missing : Backplane Cable PLANAR_SL3 and BP_DST_SA1 |
| Comm Error | A configuration element is not responding to iDRAC using the management interface while running an inventory check. | System management sideband communication | Comm Error: Backplane 0 |
| | | Unplug AC Power, reseal the element and replace the element if the problem persists. | |


Disassembly and reassembly

Topics:


- Safety instructions
- Before working inside your system
- After working inside your system
- Recommended tools
- Optional front metal bezel
- System cover
- Cooling fans
- Drive backplane cover
- Drives
- Drive backplane
- Side wall brackets
- Middle bracket
- Cable routing
- PERC module
- System memory
- Direct Liquid Cooling (DLC) Module
- Processor and heat sink
- Expansion cards and expansion card risers
- M.2 SSD module
- Optional BOSS-N1 DC-MHS module
- Optional OCP NIC card
- Datacenter-Secure Control Module (DC-SCM)
- Attic board
- Optional internal USB port
- System battery
- Intrusion switch
- Power supply unit
- Trusted Platform Module
- HPM board
- Control panel


Safety instructions

 **CAUTION:** 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: 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.

NOTE: Maximum operation pressure specified by the manufacturer is 43 PSI.

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.

NOTE: While removing the hot-swappable components from the front or rear of the system, do not remove the system cover.

After working inside your system

Prerequisites

Follow the safety guidelines listed in [Safety instructions](#).

Steps

1. Replace the system covers.
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 to the electrical outlet, and then power on the system.

Recommended tools

- Key to the bezel lock. The key is required only if your system includes a bezel.
- Phillips 1 screwdriver
- Phillips 2 screwdriver
- Torx T8 screwdriver
- Torx T20 screwdriver
- Torx T6 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

NOTE: For information about DC PSU cabling instructions, go to [PowerEdge Manuals > Rack Servers > PowerEdge R6715 > Select This Product > Documentation > Manuals and Documents > Cabling instructions for – 48 – 60 V DC power supply](#).

Optional front metal bezel

Removing the front bezel

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Keep the bezel key handy.

NOTE: The bezel key is part of the bezel package.

Steps

1. Unlock the bezel.
2. Press the release button, and disengage the left end of the bezel.
3. Unhook the right end, and remove the bezel.

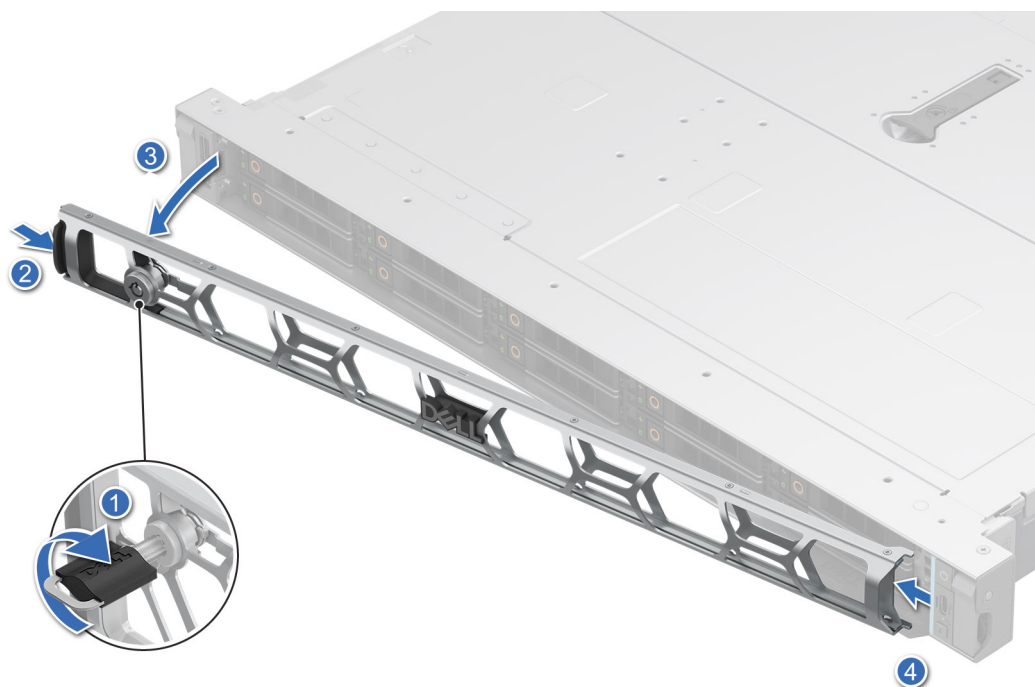


Figure 33. Removing the front bezel

Next steps

Replace front bezel.

Installing the front bezel

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Locate and remove the bezel key.

NOTE: The bezel key is part of the bezel package.

Steps

1. Align and insert the tabs on the bezel into the slots on the system.
2. Press the bezel until the release button clicks in place.
3. Lock the bezel.



Figure 34. Installing the front bezel

System cover

Removing the system cover

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Power off the system, and any attached peripherals.
3. Disconnect the system from the electrical outlet and peripherals.

Steps

1. Using a Phillips 2 screwdriver, rotate the lock counterclockwise to the unlocked position.
2. Lift the release latch until the system cover slides back.
3. Lift the cover from the system.

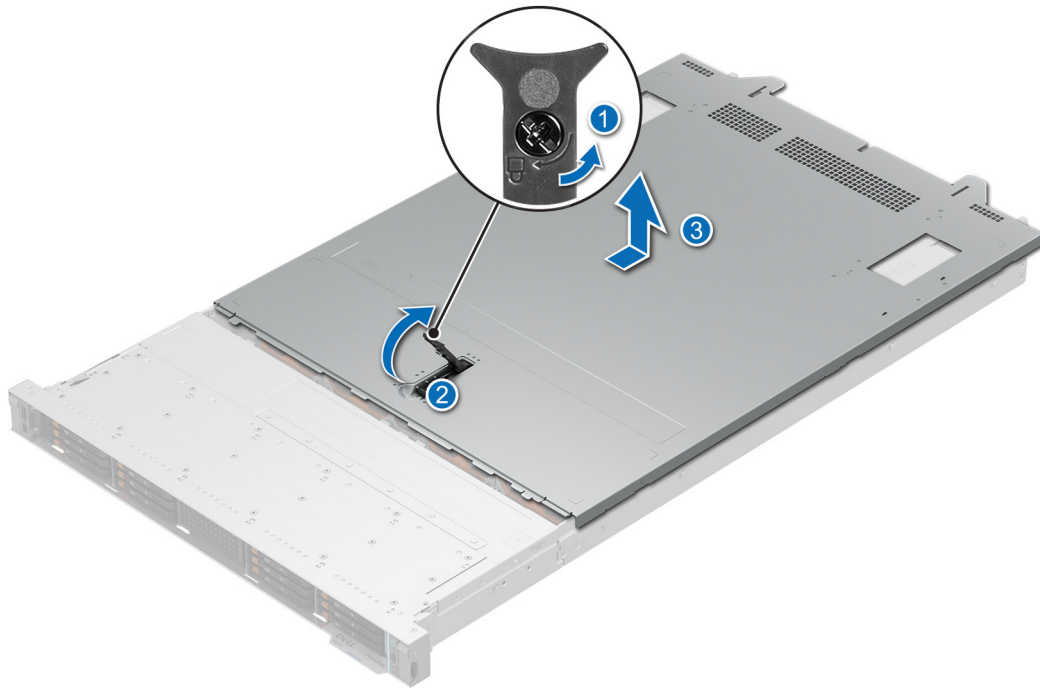


Figure 35. Removing the system cover

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 and slide the system cover.
2. Close the system cover release latch.
3. Using a Phillips 2 screwdriver, rotate the lock clockwise to the lock position.

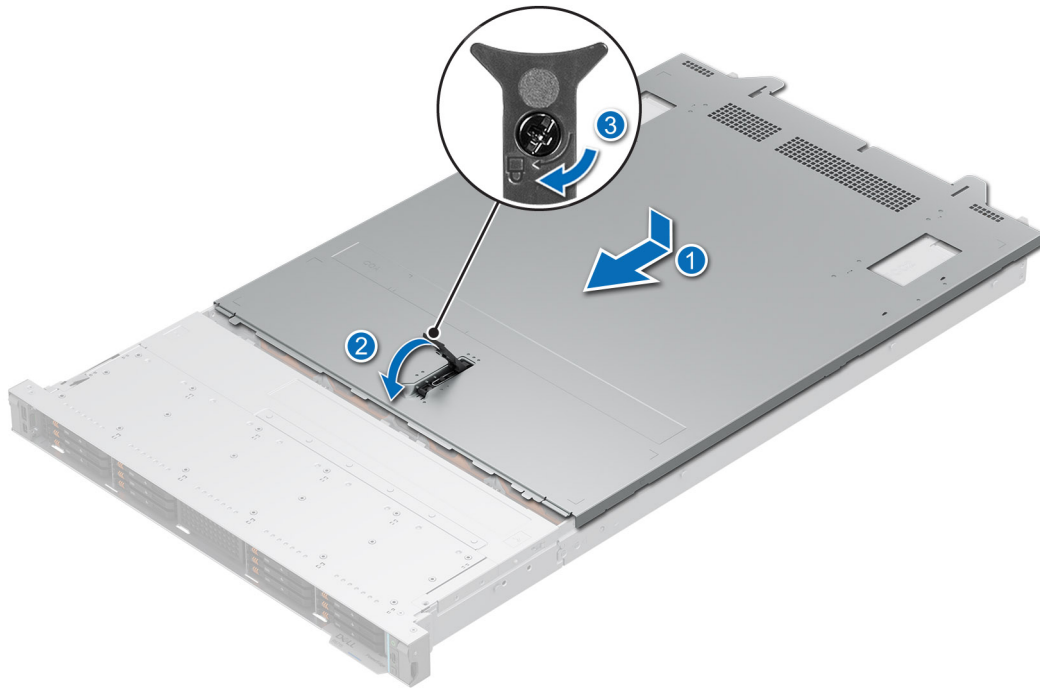


Figure 36. Installing the system cover

Next steps

Follow the procedure listed in [After working inside your system](#).

Cooling fans

Removing a cooling fan

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

Steps

Holding the orange and black edges on the fan module, lift the cooling fan module to disconnect from the connector on the fan board.

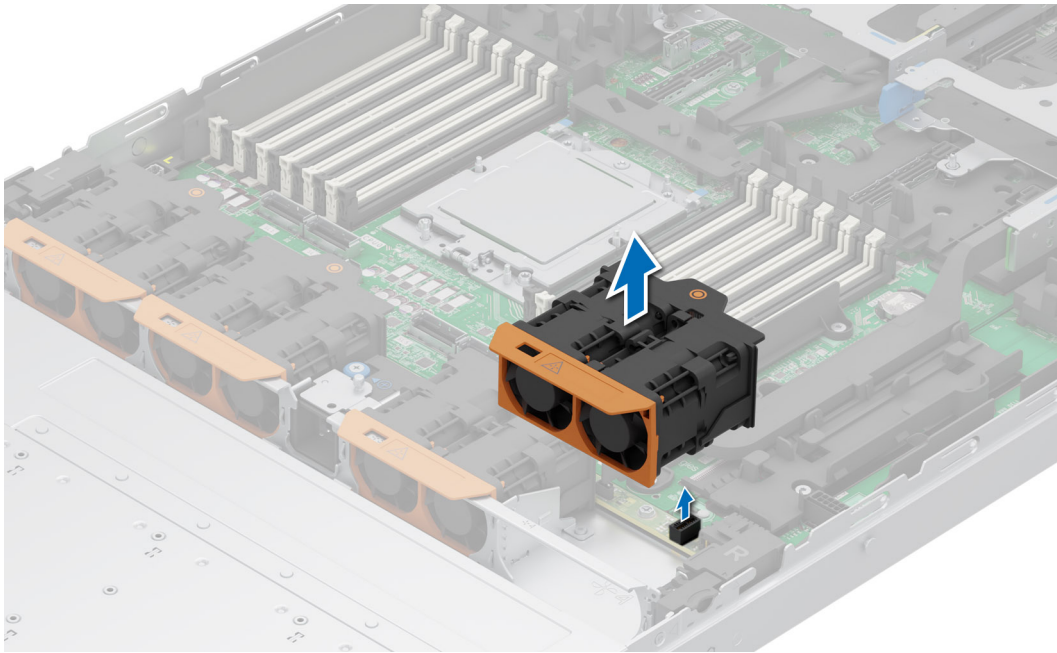


Figure 37. Removing a cooling fan

Next steps

Replace a cooling fan.

Installing a cooling fan

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

Steps

Align and lower the cooling fan onto the connector on the fan board. Press the orange touch point on the cooling fan module until it is firmly connected.

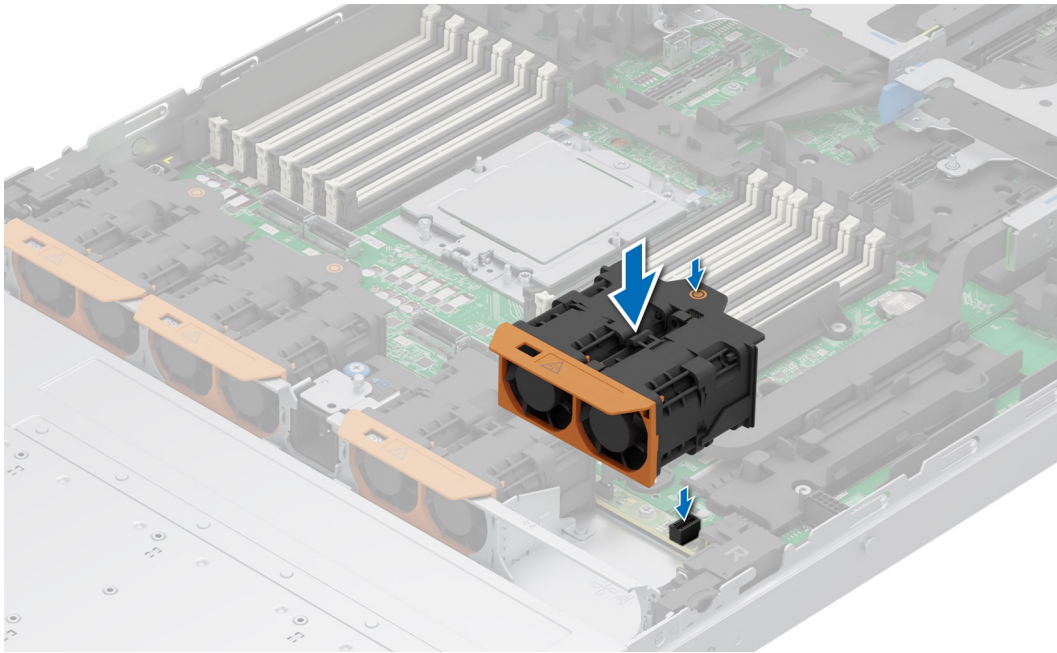


Figure 38. Installing a cooling fan

Next steps

Follow the procedure listed in [After working inside your system](#).

Drive backplane cover

Removing the drive backplane cover

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

Steps

1. Slide the drive backplane cover in the direction of the arrows marked on the drive backplane cover.
2. Lift the drive backplane cover from the system.

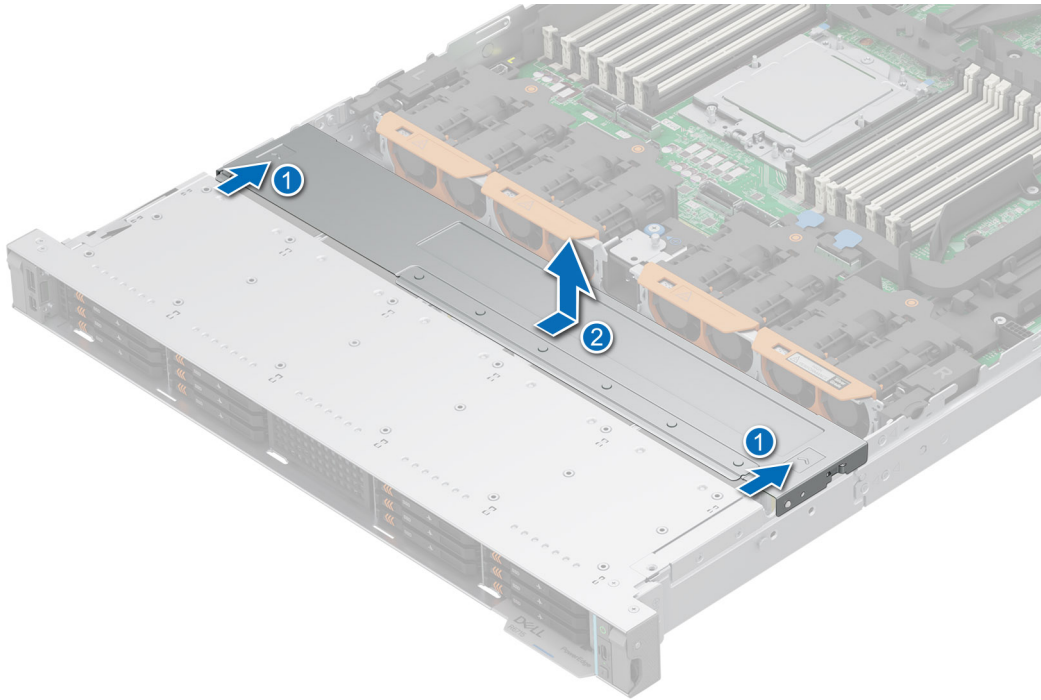


Figure 39. Removing the drive backplane cover

Next steps

1. [Replace the drive backplane cover.](#)

Installing the drive backplane cover

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

Steps

1. Align the drive backplane cover with the guide slots on the system.
2. Slide the drive backplane cover to the front of the system until the drive backplane cover fits into place.

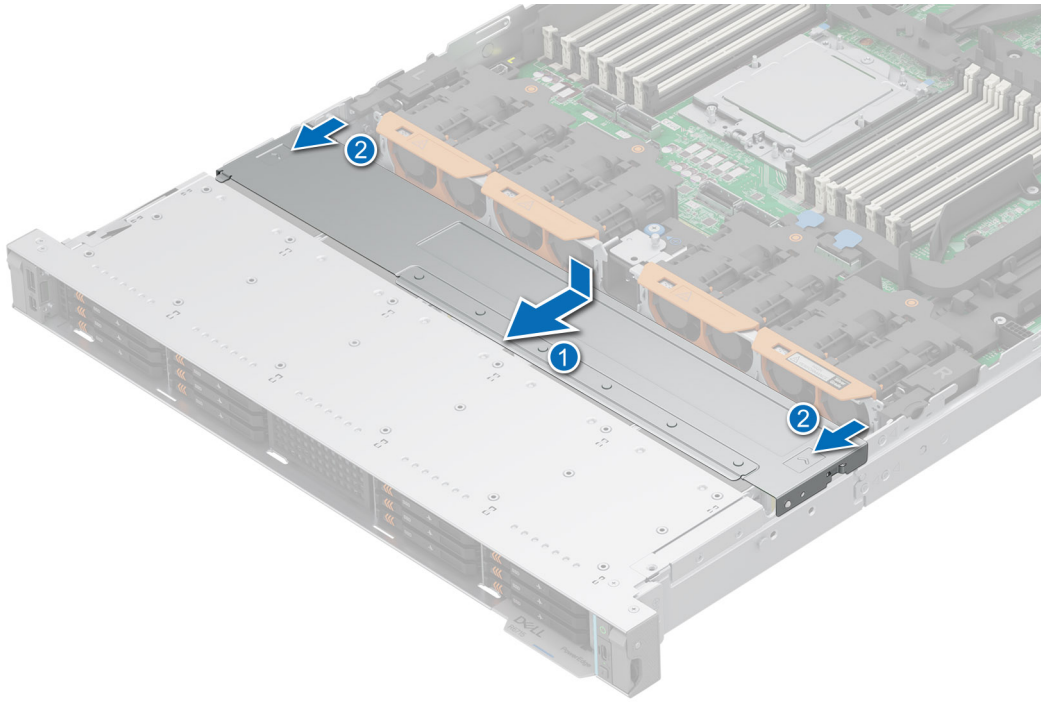


Figure 40. Installing the drive backplane cover

Next steps

1. Follow the procedure listed in [After working inside your system](#).

Drives

Removing an EDSFF E3.S Gen5 NVMe drive and SSD 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.

Steps

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



Figure 41. Removing an EDSFF E3.S Gen5 NVMe drive blank

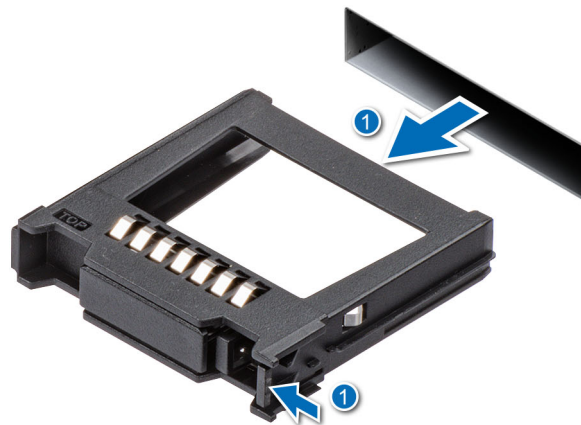


Figure 42. Removing a SSD drive blank

Next steps

1. Replace the EDSFF E3.S Gen5 NVMe and SSD drive blank.

Installing an EDSFF E3.S Gen5 NVMe and SSD drive blank

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).

Steps

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



Figure 43. Installing an EDSFF E3.S Gen5 NVMe drive blank

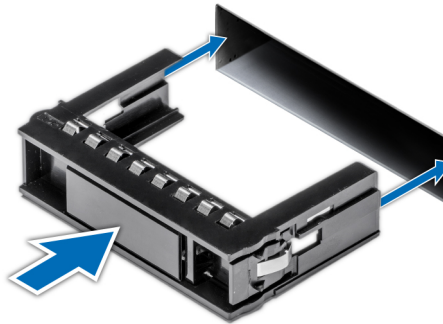


Figure 44. Installing a SSD drive blank

Removing an EDSFF E3.S Gen5 NVMe and SSD drive carrier

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Using the management software, prepare the drive for removal. If the drive is online, the green activity or fault indicator flashes while the drive is turning off. When the drive indicators are off, the drive is ready for removal. For more information, see the storage controller documentation.

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. Lift 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.

NOTE: If you are not replacing the drive immediately, install an EDSFF E3.S Gen5 NVMe drive blank in the empty drive slot to maintain proper system cooling.

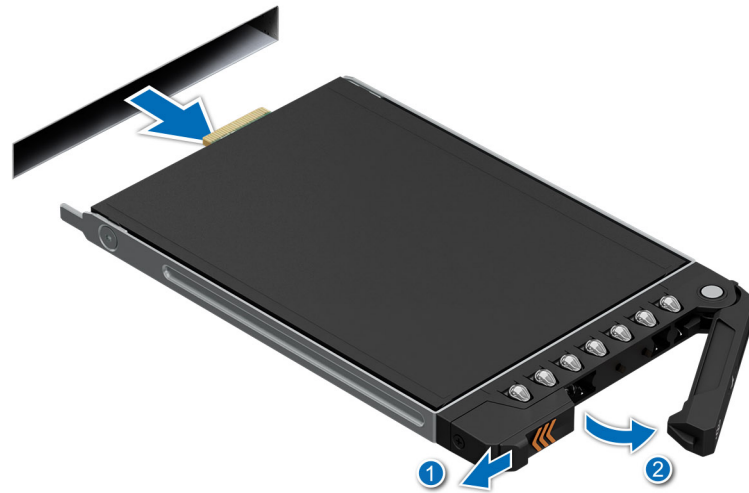


Figure 45. Removing an EDSFF E3.S Gen5 NVMe drive carrier

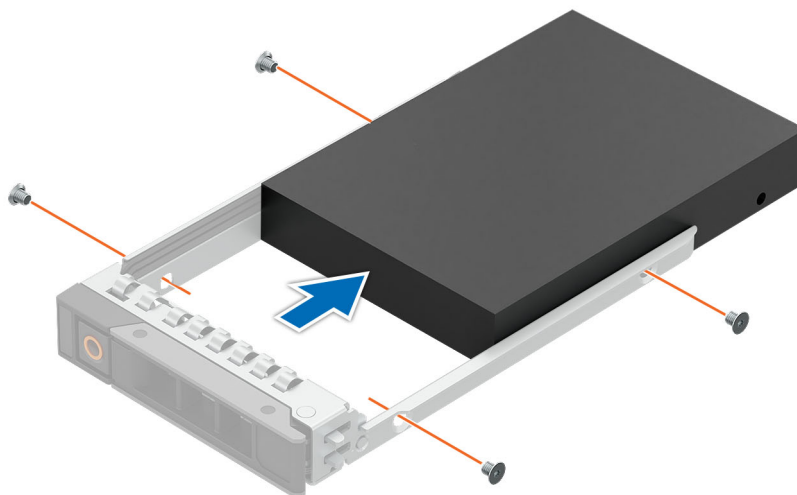


Figure 46. Removing a SSD drive carrier

Next steps

Replace the EDSFF E3.S Gen NVMe drive or an EDSFF E3.S Gen5 NVMe drive blank.

Installing an EDSFF E3.S Gen5 NVMe and SSD drive carrier

Prerequisites

- △ **CAUTION:** Before removing or installing a drive while the system is running, see the [Storage Controller Manuals](#) 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.
- i **NOTE:** Ensure that the drive carrier's release handle is in the open position before inserting the carrier into the slot.

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.

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Remove the drive carrier or remove the drive blank when you want to assemble the drive into the system.

Steps

1. Slide the drive carrier into the drive slot and push until the drive connects with the backplane.
2. Close the drive carrier release handle to lock the drive in place.



Figure 47. Installing an EDSFF E3.S Gen5 NVMe drive carrier

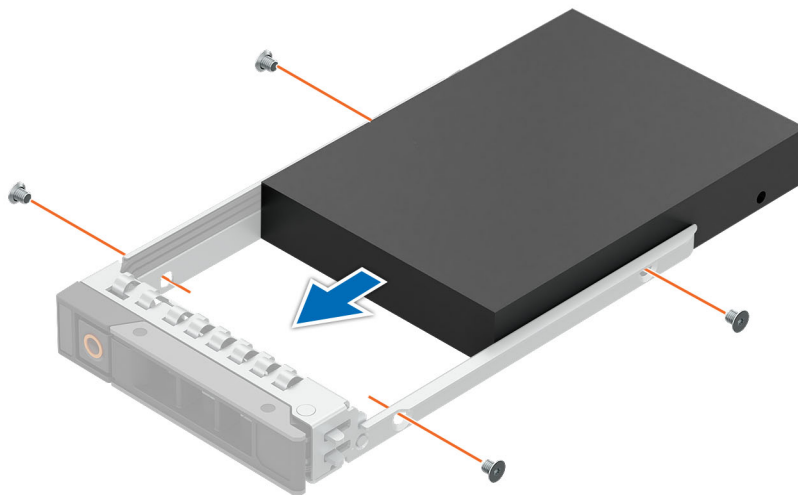


Figure 48. Installing a SSD drive carrier

Removing an EDSFF E3.S Gen5 NVMe and SSD drive from the drive carrier

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. [Remove the drive carrier](#).

Steps

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

i **NOTE:** If the hard drive or SSD carrier has a Torx screw, use Torx 6 (for 2.5-inch drive) or Torx 8 (for 3.5-inch drive) screwdriver to remove the drive.



2. Lift the drive out of the drive carrier.



Figure 49. Removing the SSD drive from the drive carrier

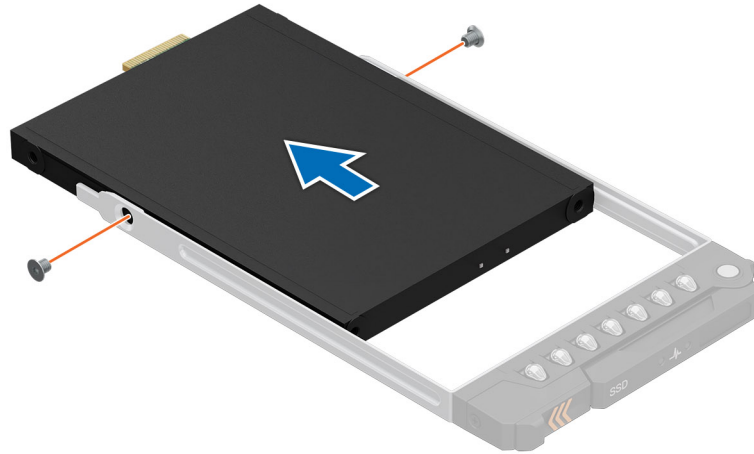


Figure 50. Removing the E3.S drive from the drive carrier

Next steps

Install an EDSFF E3.S Gen5 NVMe and SSD drive into the drive carrier.

Installing an EDSFF E3.S Gen5 NVMe and SSD drive into the drive carrier

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. [Remove an EDSFF E3.S Gen5 NVMe and SSD drive blank](#) or [Remove an EDSFF E3.S Gen5 NVMe and SSD drive carrier](#).

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

NOTE: If the hard drive or SSD carrier has a Torx screw, use Torx 6 (for 2.5-inch drive) or Torx 8 (for 3.5-inch drive) screwdriver to install the drive.





Figure 51. Installing a SSD drive into the drive carrier

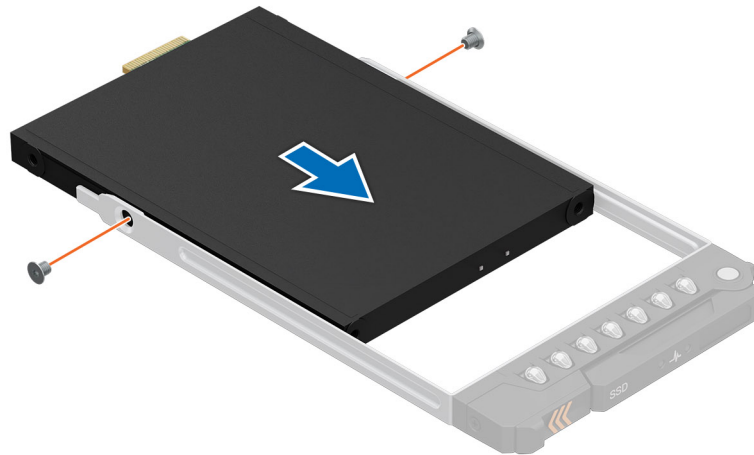


Figure 52. Installing the E3.S drive into the drive carrier

Next steps

1. [Install the drive carrier.](#)

Drive backplane

This is a service technician replaceable part only.

Drive backplane

Depending on your system configuration, the drive backplanes that are supported are listed here:

Table 46. Supported backplane options

| System | Supported drives options |
|-----------------|-----------------------------------------------------------|
| PowerEdge R6715 | 8 x 2.5-inch Universal |
| | 16 x EDSFF E3.S Gen5 NVMe |
| | 4 x 3.5-inch SAS/SATA |
| | 8 x U.2 |
| | 10 x 2.5-inch SAS/SATA |
| | 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe |



Figure 53. 8 x 2.5-inch Universal drive backplane

- 1. BP_DST_PB2 (PCIe/NVMe connector) BP_PWR_CTRL
- 2. BP_DST_SB1 (PERC to backplane)
- 3. BP_DST_PA2 (PCIe/NVMe connector)
- 4. BP_DST_PB1 (PERC to backplane)
- 5. BP_DST_SA1 (PERC to backplane))
- 6. BP_PWR_1 (backplane power cable to HPM board)
- 7. BP_DST_PA1 (PCIe/NVMe connector)

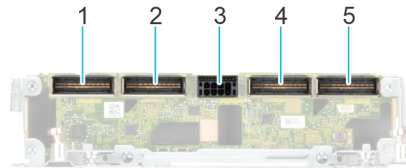


Figure 54. 16 x EDSFF E3.S Gen5 NVMe drives backplane

- 1. BP_DST_PA2 (PCIe/NVMe connector)
- 2. BP_DST_PB2 (PCIe/NVMe connector)
- 3. BP_PWR_CTRL_1 (connecting to power cable on the HPM board)
- 4. BP_DST_PA1 (PCIe/NVMe connector)
- 5. BP_DST_PB1 (PCIe/NVMe connector)

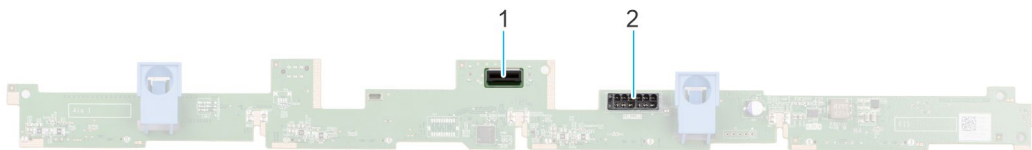


Figure 55. 3.5-inch SAS/SATA backplane*

- 1. BP_DST_SA1 (backplane signal connector)
- 2. BP_PWR_1 (backplane power connector)



Figure 56. 10 x 2.5-inch backplane*

- 1. BP_DST_PA3 (backplane connector)
- 2. BP_DST_SB1 (backplane connector)

- 3. BP_DST_PB2 (backplane connector)
- 4. BP_PWR_CTL (backplane power cable to PERC power connector)
- 5. BP_DST_SA1 (backplane connector)
- 6. BP_PWR_1 (backplane power connector)

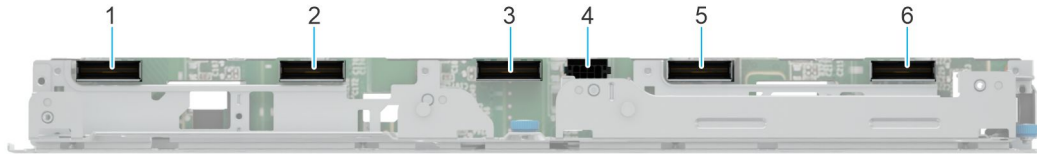


Figure 57. 20 x EDSFF E3.S Gen5 NVMe*

- 1. BP_DST_PA3 (PCIe/NVMe connector)
- 2. BP_DST_PB2 (PCIe/NVMe connector)
- 3. BP_DST_PA2 (PCIe/NVMe connector)
- 4. BP_PWR_1 (connecting to power cable on the HPM board)
- 5. BP_DST_PB1 (PCIe/NVMe connector)
- 6. BP_DST_PA1 (PCIe/NVMe connector)

Removing the drive backplane

Prerequisites

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.

NOTE: The procedure to remove the backplane is similar for all backplane configurations.

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 drive backplane cover](#).
4. [Remove the drives](#).
5. Disconnect the power cable and other required cables, observe the cable routing.

NOTE: See [cable routing](#) section.

Steps

1. Press the blue release tabs to disengage the drive backplane from the hooks on the system.
2. Lift and pull the drive backplane out of the system.

NOTE: To avoid damaging the backplane, ensure that you move the control panel cables from the cable routing clips before removing the backplane.

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

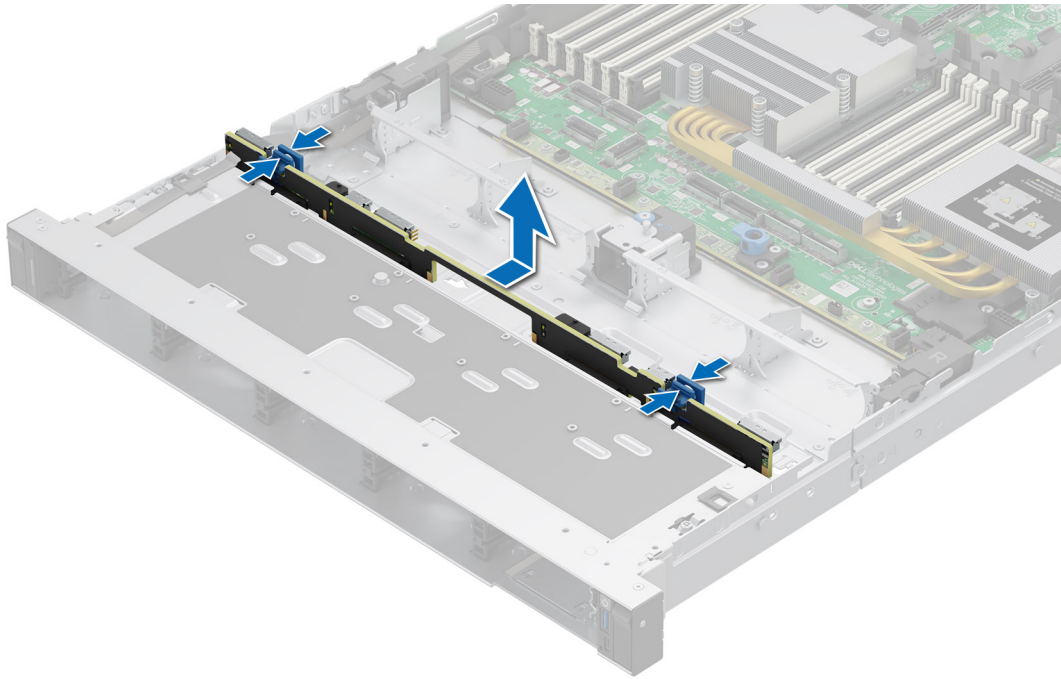


Figure 58. Removing the drive backplane

Next steps

1. [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 drive backplane cover.](#)
4. [Remove the drives.](#)

Steps

NOTE: To avoid damaging the backplane, ensure to move the control panel cables from the cable routing clips before removing the backplane.

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

1. Use the guide slots on the system to align the backplane.
2. Insert the backplane into the guide slots and push it downwards until the blue release tabs clicks into place.

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

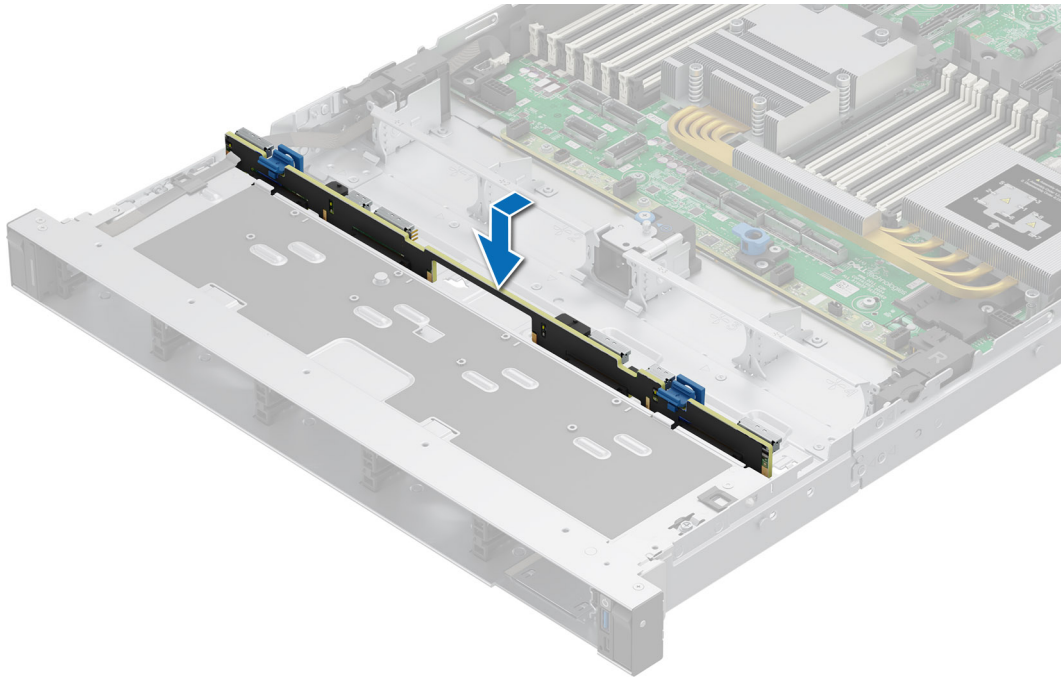


Figure 59. Installing the drive backplane

3. Route the cables properly through the cable guide and connect the cables to the connector on the HPM board.

Next steps

1. [Install all the drives.](#)
2. [Install the backplane cover.](#)
3. Follow the procedure listed in [After working inside your system.](#)

Removing the EDSFF E3.S Gen5 NVMe direct drive backplane 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 cooling fans.](#)
4. [Remove the drive backplane cover.](#)
5. [Remove the EDSFF E3.S Gen5 NVMe drives.](#)
6. Disconnect the power cable and other required cables, observe the cable routing.

NOTE: See [cable routing](#) section.

Steps

1. Using a Phillips 2 screwdriver, loosen the captive screws on the backplane module.
2. Slide the backplane module towards the front of the server and remove it from the system.

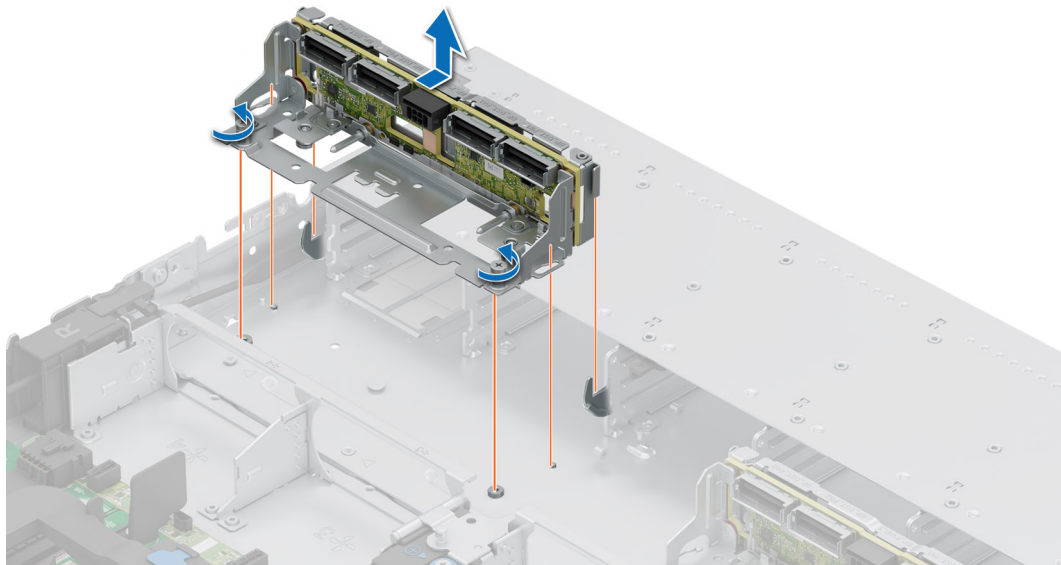


Figure 60. Removing the EDSFF E3.S Gen5 backplane module

Next steps

1. [Replace the EDSFF E3.S Gen5 NVMe direct drive backplane module.](#)

Installing the EDSFF E3.S Gen5 NVMe direct drive backplane 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 cooling fans](#).
4. [Remove the drive backplane cover](#).
5. [Remove the EDSFF E3.S Gen5 drives](#).
6. Disconnect the power cables and other required cables, observe the cable routing.

 **NOTE:** See [cable routing](#) section.

Steps

1. Align the backplane module with the guide pin on the backplane bracket and position it from the top down, ensuring proper alignment.

 **NOTE:** Locate and place the backplane module on the unlocked position line.

2. Push the module towards the rear of the server until it is securely in place.
3. Using a Phillips 2 screwdriver, tighten the captive screws to secure the module.

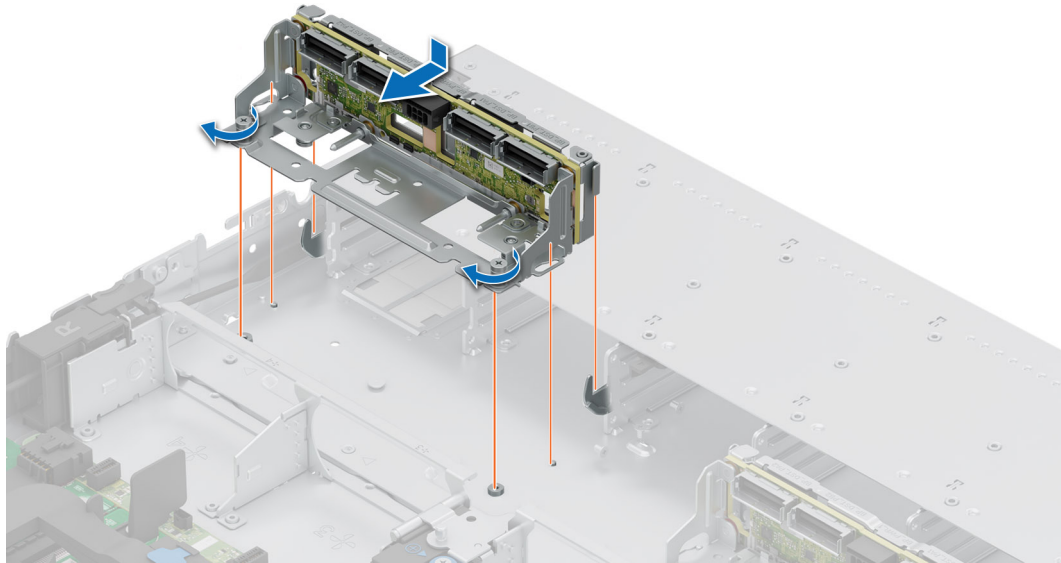


Figure 61. Installing the EDSFF E3.S Gen5 NVMe direct drive backplane module.

Next steps

1. Connect all the cables, and ensure that all the cables are routed through the respective cable clip.

NOTE: See [cable routing](#) section.

2. Install the [EDSFF E3.S Gen5 drives](#).
3. Install the [drive backplane cover](#).
4. Install the [cooling fans](#).
5. Follow the procedure listed in [After working inside your system](#).

Side wall brackets

Removing the left side wall bracket

There are two side wall brackets on either side of the system. The procedure to remove is similar.

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 drive backplane cover](#).
4. [Remove the cooling fans](#).

NOTE: Ensure that you note the routing of the cables as you remove them from the HPM board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

Steps

1. Lift the left side wall bracket.
2. Move the cables out of the side wall cable holder if there are cables that are installed, and lift it away from the system.

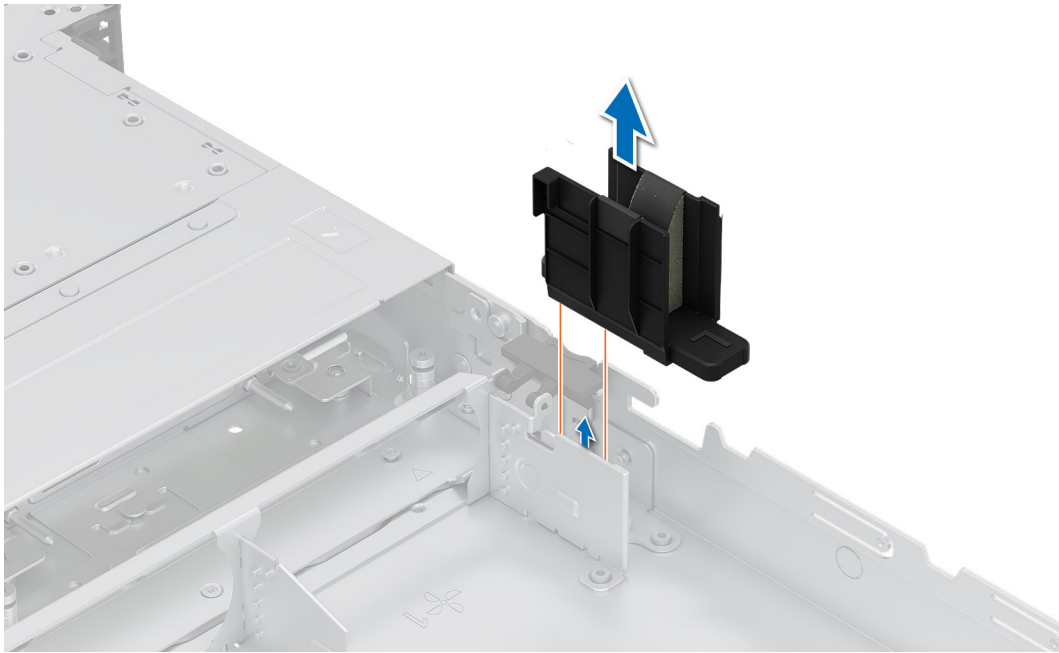


Figure 62. Removing the side wall bracket

Next steps

1. [Replace the side wall bracket.](#)

Installing the left side wall bracket

There are two side wall brackets on either side of the system. The procedure to install is similar.

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 required, [remove the drive backplane cover](#).
4. [Remove the cooling fans](#).

NOTE: Ensure that you note the routing of the cables as you remove them from the HPM board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

Steps

Route the cables through the side wall cable holder if required. Align the guide slots on the side wall bracket with the guides on the system and slide until the cover is seated firmly.

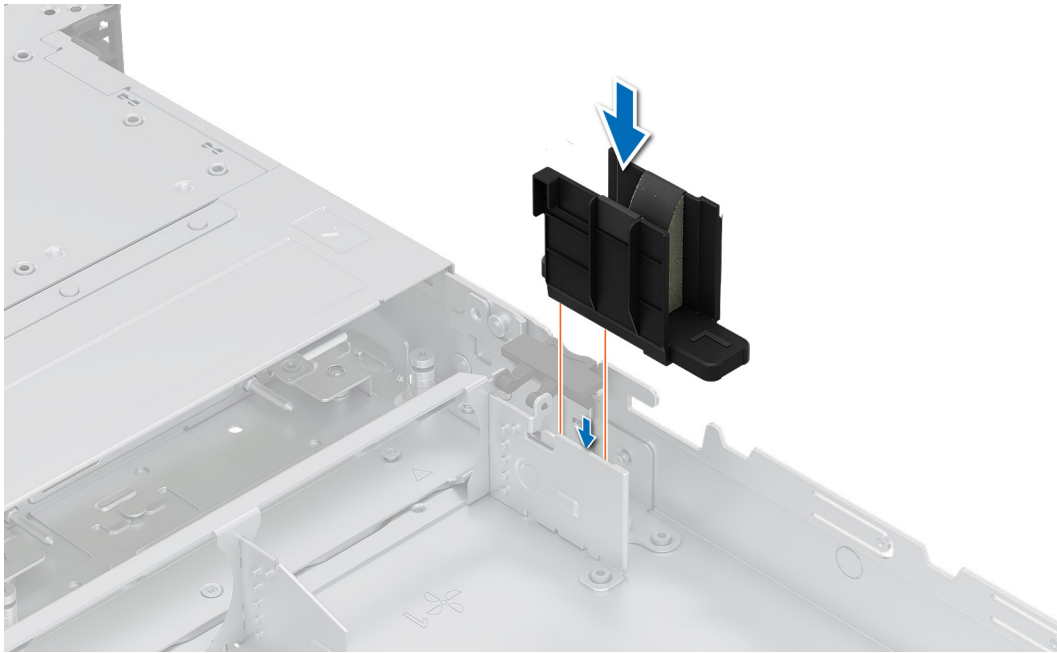


Figure 63. Installing the side wall bracket

Next steps

1. [Install the cooling fans.](#)
2. If removed, [install the back plane cover.](#)
3. Follow the procedure listed in the [After working inside your system.](#)

Middle bracket

Removing the cables from the middle bracket

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 required, [Remove the drive backplane cover.](#)
4. [Remove the cooling fans.](#)

i **NOTE:** Ensure that you note the routing of the cables as you remove them from the HPM board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

Steps

1. Loosen the captive screw using a Phillips 2 screwdriver.
2. Open the middle metal cover and the middle cable holder.

i **NOTE:** Remove the cables sequentially from top to bottom.

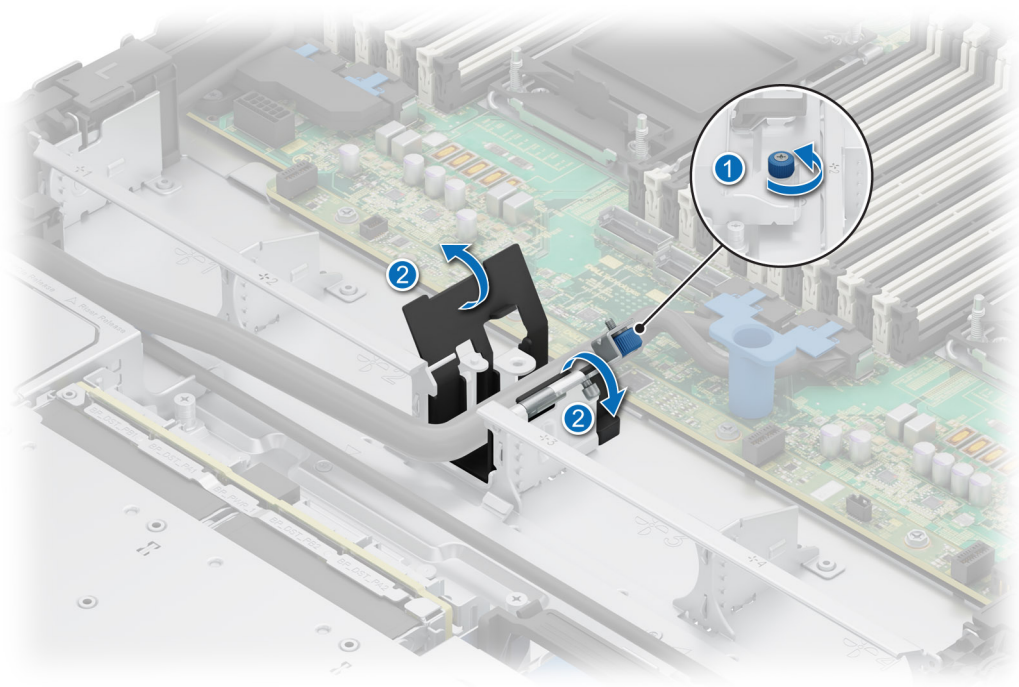


Figure 64. Removing the middle bracket

Next steps

1. Replace the cables into the middle bracket .

Installing the cables into the middle bracket

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 required, [remove the drive backplane cover](#).
4. [Remove the cooling fans](#).

i **NOTE:** Ensure that you note the routing of the cables as you remove them from the HPM board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

Steps

1. Open the middle metal cover and the middle cable holder.

i **NOTE:** Route the cables through the middle cable holder.

2. Close the middle cable holder and the metal cover, and fasten the captive screw using a Phillips 2 screwdriver.

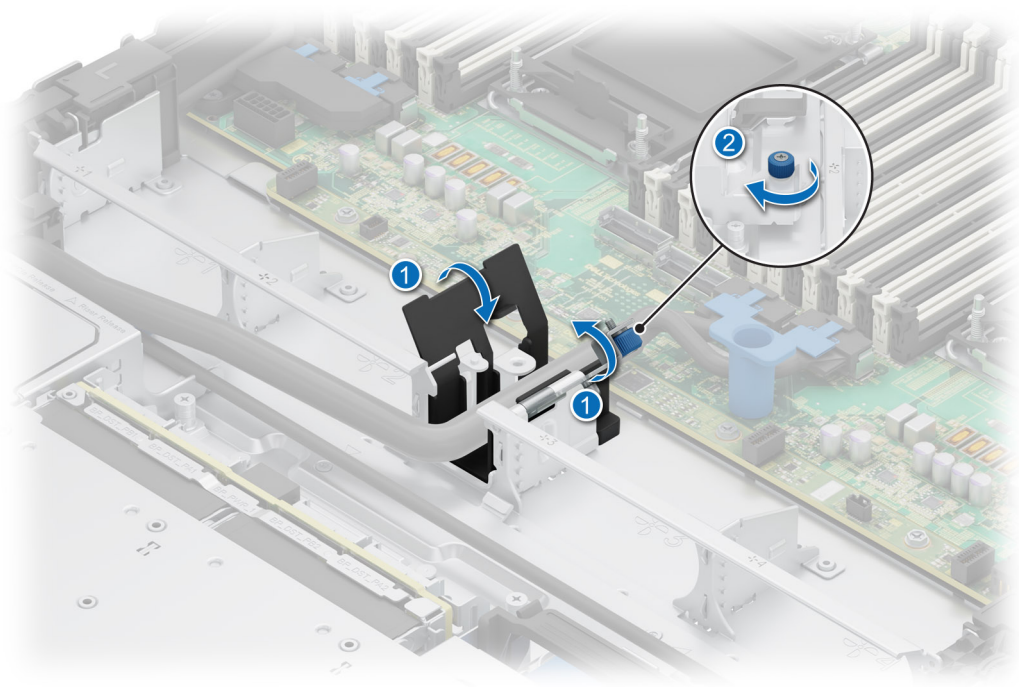


Figure 65. Installing the middle bracket

Next steps

1. Install the cooling fans.
2. Install the drive backplane cover.
3. Follow the procedure listed in the *After working inside your system.*

Cable routing

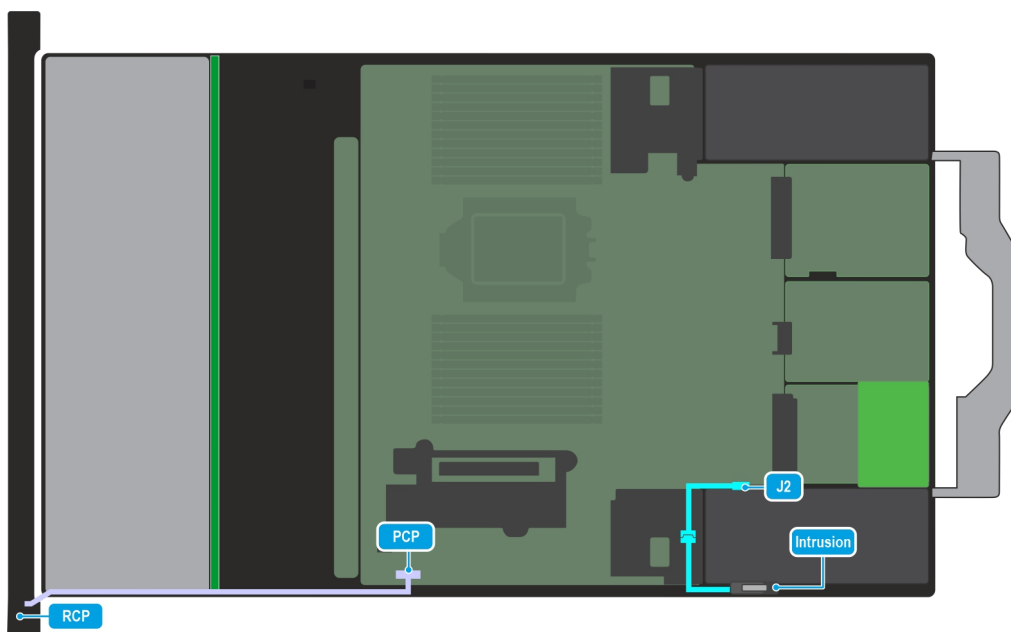


Figure 66. C0 : No Backplane config

Table 47. C0 : No Backplane config

| Order | From | To |
|-------|---------------------------------------|----------------------------------------|
| 1 | CTRL_DST_PA1 (right control panel) | PCP (HPM board) |
| 2 | HPM_J2 (power connector on HPM board) | INTRUSION (intrusion switch connector) |

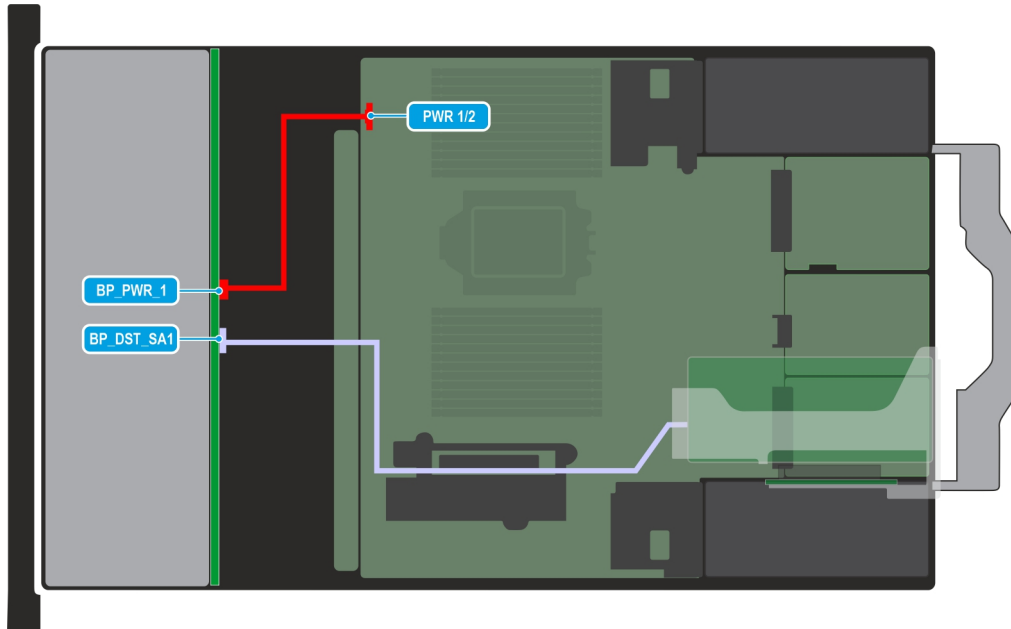


Figure 67. C01: 4 x 3.5-inch SAS/SATA drives

Table 48. C01: 4 x 3.5-inch SAS/SATA drives

| Order | From | To |
|-------|----------------------------------------|-----------------------------------------|
| 1 | PWR_1/2 (power connector on HPM board) | BP_PWR_1 (backplane power connector) |
| 2 | CTRL_PA1 (Adapter PERC) | BP_DST_SA1 (backplane signal connector) |

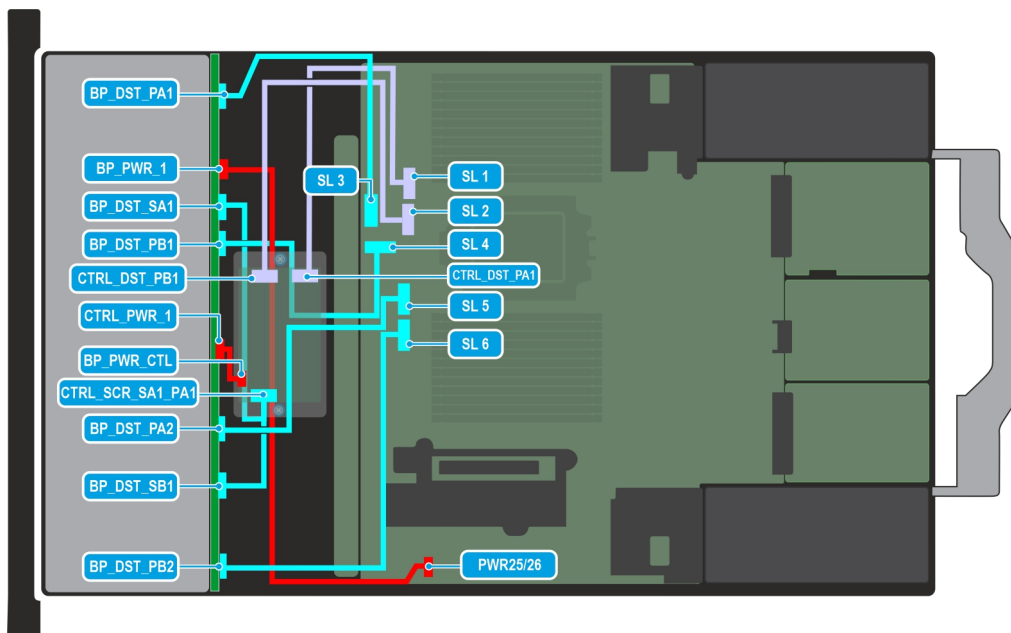


Figure 68. C2-4: 8 x 2.5-inch Universal SSDs

Table 49. C2-4: 8 x 2.5-inch Universal SSDs

| Order | From | To |
|-------|-------------------------------------------------|--------------------------------------------------|
| 1 | HPM_SL1 (signal connector on HPM board) | PERC (CTRL_DST_PA1) (PERC signal connector) |
| 2 | HPM_SL2 (signal connector on HPM board) | PERC (CTRL_DST_PB1) (PERC signal connector) |
| 3 | HPM_SL3 (signal connector on HPM board) | Uni x8 (BP_DST_PA1) (backplane signal connector) |
| 4 | HPM_SL4 (signal connector on HPM board) | Uni x8 (BP_DST_PB1) (backplane signal connector) |
| 5 | HPM_SL5 (signal connector on HPM board) | Uni x8 (BP_DST_PA2) (backplane signal connector) |
| 6 | HPM_SL6 (signal connector on HPM board) | Uni x8 (BP_DST_PB2) (backplane signal connector) |
| 7 | PERC (CTRL_SRC_SA1_PA1) (PERC signal connector) | Uni x8 (BP_DST_SA1)(BP_DST_SB1) |
| 8 | PERC (CTRL_PWR1) (PERC power connector) | Uni x8 (BP_PWR_CTL) (backplane power connector) |
| 9 | HPM_PWR25/26 (HPM board power connector) | Uni x8 (BP_PWR_1) (backplane power connector) |

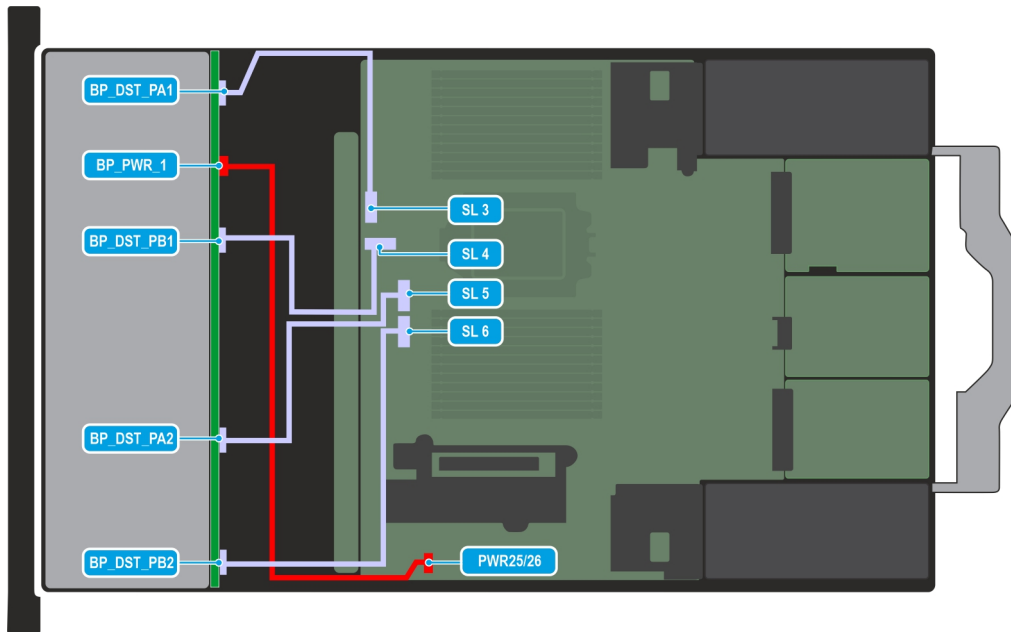


Figure 69. C02-2 : 8 x U.2 SSDs

Table 50. C02-2 : 8 x U.2 SSDs

| Order | From | To |
|-------|------------------------------------------|--------------------------------------------------|
| 1 | HPM_PWR25/26 (HPM board power connector) | Uni x8 (BP_PWR_1) (backplane power connector) |
| 3 | HPM_SL3 (signal connector on HPM board) | Uni x8 (BP_DST_PA1) (backplane signal connector) |
| 4 | HPM_SL4 (signal connector on HPM board) | Uni x8 (BP_DST_PB1) (backplane signal connector) |

Table 50. C02-2 : 8 x U.2 SSDs (continued)

| Order | From | To |
|-------|-----------------------------------------|--------------------------------------------------|
| 5 | HPM_SL5 (signal connector on HPM board) | Uni x8 (BP_DST_PA2) (backplane signal connector) |
| 6 | HPM_SL6 (signal connector on HPM board) | Uni x8 (BP_DST_PB2) (backplane signal connector) |

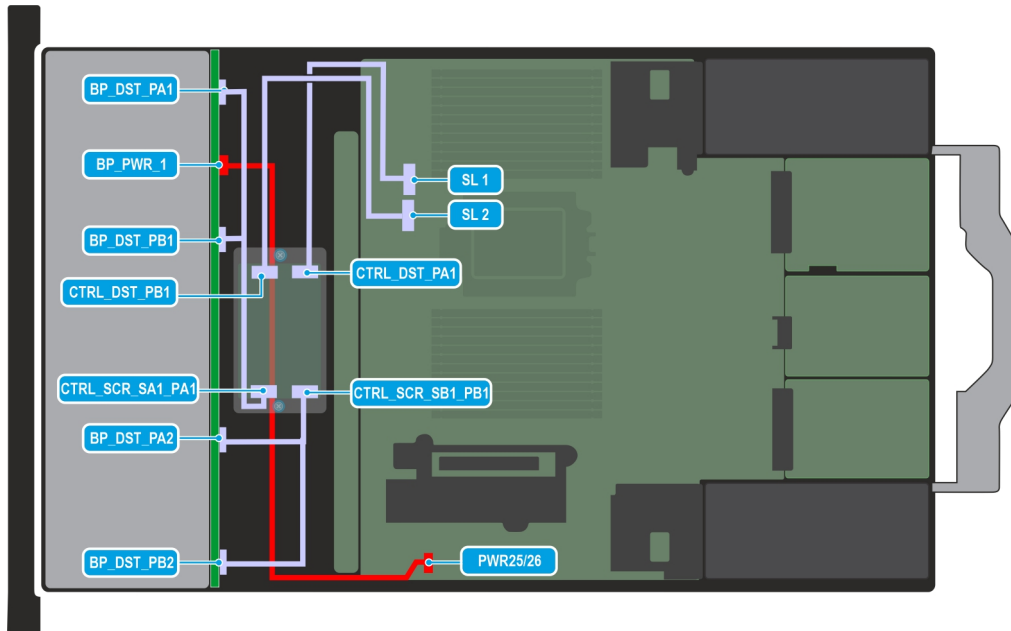


Figure 70. C02-3 : 8 x U.2 SSDs G4 NVMe RAID

Table 51. C02-2 : 8 x U.2 SSDs

| Order | From | To |
|-------|------------------------------------------|------------------------------------------------------------------------------------------------------|
| 1 | HPM_PWR25/26 (HPM board power connector) | Uni x8 (BP_PWR_1) (backplane power connector) |
| 2 | CTRL_SRC_SA1_PA1 (PERC) | Uni x8 (BP_DST_PA1) (backplane signal connector) Uni x8 (BP_DST_PB1) (backplane signal connector) |
| 3 | CTRL_SRC_SB1_PB1 (PERC) | Uni x8 (BP_DST_PA2) (backplane signal connector) Uni x8 (BP_DST_PB2) (backplane signal connector) |
| 4 | CTRL_PWR_1 (PERC) | BP_PWR_CTRL (backplane power connector) |
| 5 | HPM_SL1 (signal connector on HPM board) | Uni x8 (BP_DST_PA1) (backplane signal connector) |
| 6 | HPM_SL2 (signal connector on HPM board) | Uni x8 (BP_DST_PB1) (backplane signal connector) |

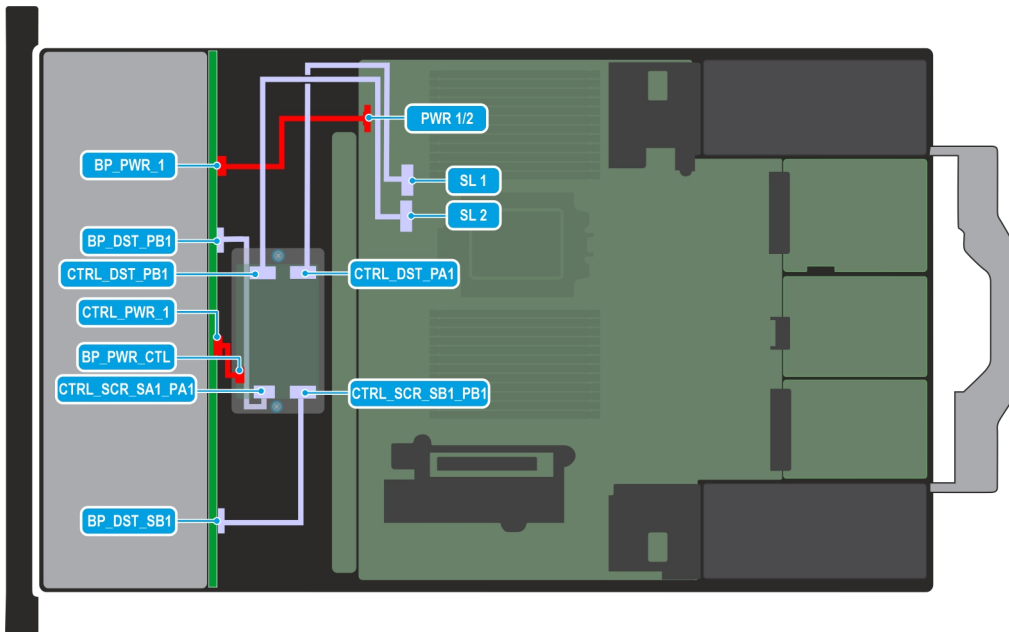


Figure 71. C03-1 : 10 x 2.5-inch SAS/SATA drives

Table 52. C03-1 : 10 x 2.5-inch SAS/SATA drives

| Order | From | To |
|-------|-------------------------------------------------|-------------------------------------------------|
| 1 | HPM_PWR1/2 (HPM board power connector) | Uni x10 (BP_PWR_1) (backplane power connector) |
| 2 | PERC (CTRL_SRC_SA1_PA1) (PERC signal connector) | Uni x10 (BP_DST_SA1) |
| 3 | PERC (CTRL_SRC_SB1_PB1) (PERC signal connector) | Uni x10 (BP_DST_SB1) |
| 4 | HPM_SL1 (signal connector on HPM board) | PERC (CTRL_DST_PA1) (PERC signal connector) |
| 5 | HPM_SL2 (signal connector on HPM board) | PERC (CTRL_DST_PB1) (PERC signal connector) |
| 6 | PERC (CTRL_PWR1) (PERC power connector) | Uni x8 (BP_PWR_CTL) (backplane power connector) |

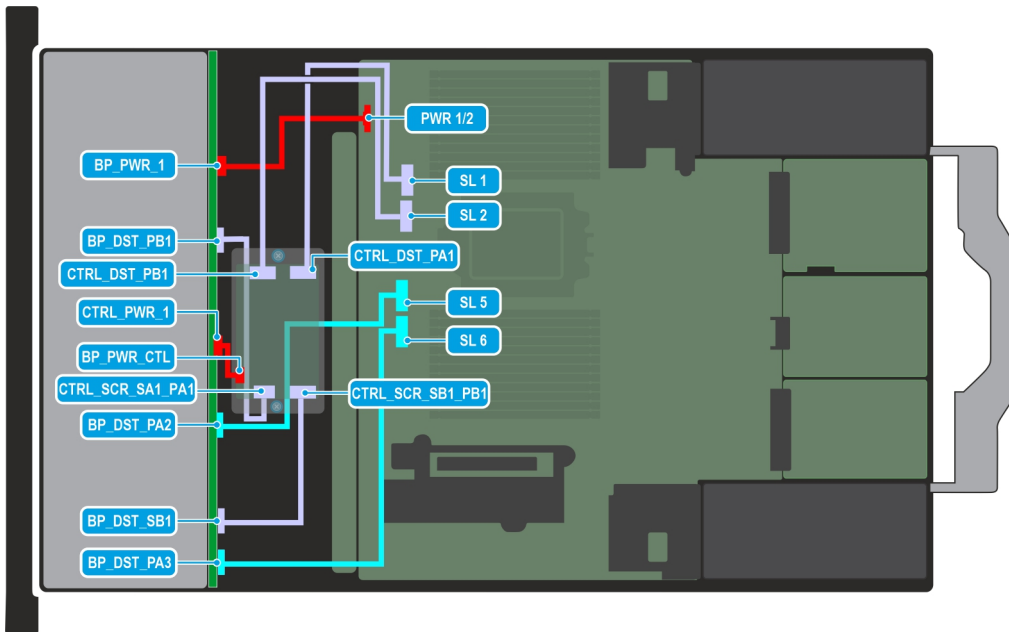


Figure 72. C03-2 : 10 x 2.5-inch with 4 x Universal drives

Table 53. C03-2 : 10 x 2.5-inch with 4 x Universal drives

| Order | From | To |
|-------|-------------------------------------------------|-------------------------------------------------|
| 1 | HPM_PWR1/2 (HPM board power connector) | Uni x10 (BP_PWR_1) (backplane power connector) |
| 2 | PERC (CTRL_SRC_SA1_PA1) (PERC signal connector) | Uni x10 (BP_DST_SA1) |
| 3 | PERC (CTRL_SRC_SB1_PB1) (PERC signal connector) | Uni x10 (BP_DST_SB1) |
| 4 | HPM_SL1 (signal connector on HPM board) | PERC (CTRL_DST_PA1) (PERC signal connector) |
| 5 | HPM_SL2 (signal connector on HPM board) | PERC (CTRL_DST_PB1) (PERC signal connector) |
| 6 | PERC (CTRL_PWR1) (PERC power connector) | Uni x8 (BP_PWR_CTL) (backplane power connector) |
| 7 | HPM_SL5 (signal connector on HPM board) | Uni x10 (BP_DST_PB2) |
| 8 | HPM_SL6 (signal connector on HPM board) | Uni x10 (BP_DST_PA3) |

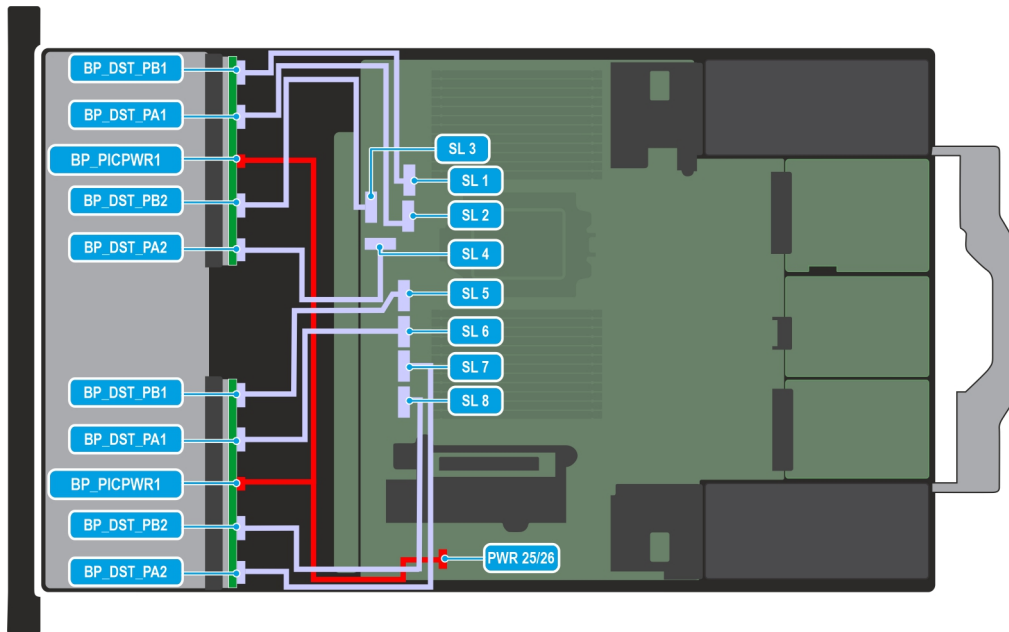


Figure 73. C4-2: EDSFF 16 x E3.S (G5x4 NVMe direct connect)

Table 54. C4-2: EDSFF 16 x E3.S (G5x4 NVMe direct connect)

| Order | From | To |
|-------|------------------------------------------|----------------------------------------------|
| 1 | HPM_SL1 (signal connector on HPM board) | E3 (BP_DST_PB1) (backplane signal connector) |
| 2 | HPM_SL2 (signal connector on HPM board) | E3 (BP_DST_PA1) (backplane signal connector) |
| 3 | HPM_SL3 (signal connector on HPM board) | E3 (BP_DST_PB2) (backplane signal connector) |
| 4 | HPM_SL4 (signal connector on HPM board) | E3 (BP_DST_PA2) (backplane signal connector) |
| 5 | HPM_SL5 (signal connector on HPM board) | E3 (BP_DST_PB1) (backplane signal connector) |
| 6 | HPM_SL6 (signal connector on HPM board) | E3 (BP_DST_PA1) (backplane signal connector) |
| 7 | HPM_SL7 (signal connector on HPM board) | E3 (BP_DST_PA2) (backplane signal connector) |
| 8 | HPM_SL8 (signal connector on HPM board) | E3 (BP_DST_PB2) (backplane signal connector) |
| 9 | HPM_PWR25/26 (HPM board power connector) | E3 (BP_PICPWR_1) (backplane power connector) |

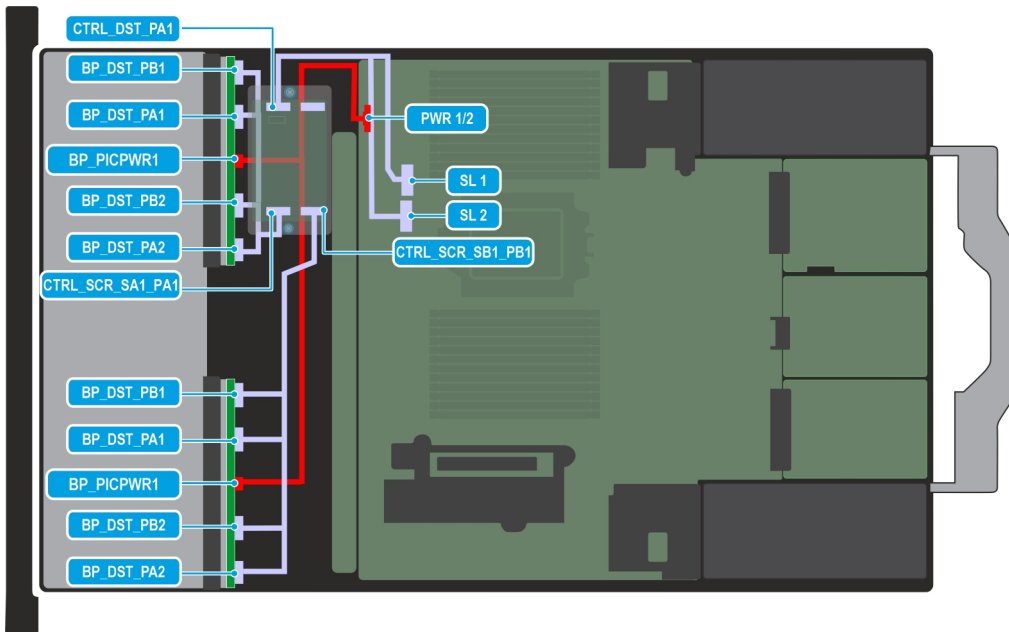


Figure 74. C04-03: 16 x EDSFF E3.S Gen5 NVMe with PERC H975i

Table 55. C4-3: 16 x EDSFF E3.S Gen5 NVMe with PERC H975i

| Order | From | To |
|-------|-------------------------------------------------|----------------------------------------------------------------------------------------------|
| 1 | HPM_PWR1/2 (HPM board power connector) | BP_PWR_1 (backplane power connector) |
| 2 | CTRL_SRC_SA1_PA1(PERC signal connector) | E3_L (BP_DST_PA2, BP_DST_PB2, BP_DST_PA1, BP_DST_PB1)(Left E3 backplane signal connectors) |
| 3 | CTRL_SRC_SB1_PB1(PERC signal connector) | E3_R (BP_DST_PA2, BP_DST_PB2, BP_DST_PA1, BP_DST_PB1)(Right E3 backplane signal connectors) |
| 4 | HPM_SL1/HPM_SL2 (signal connector on HPM board) | (CTRL_DST_PA1) (Controller signal connector) |

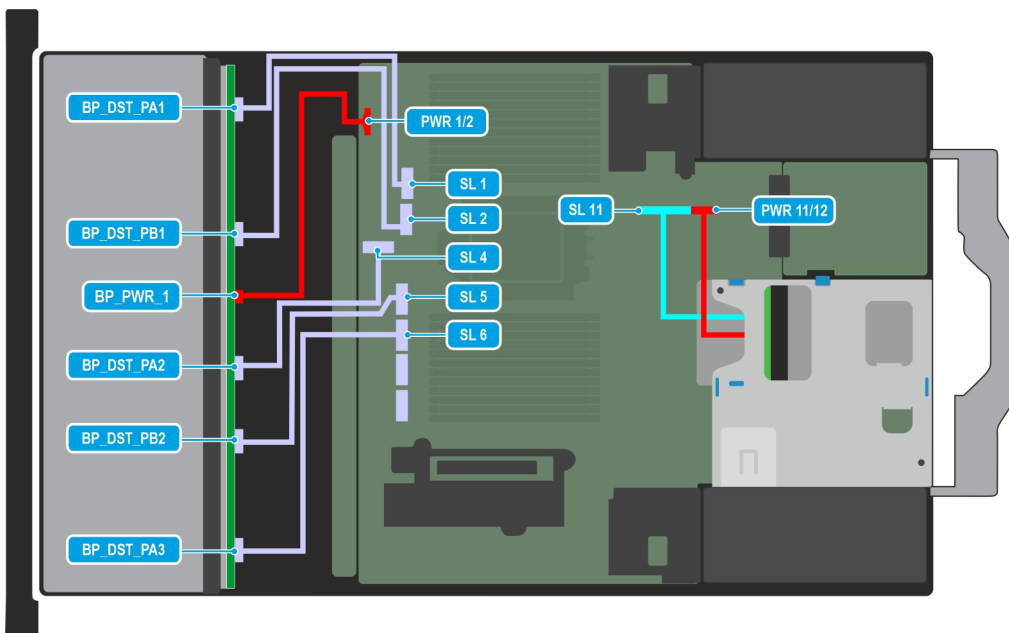


Figure 75. 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe drives

Table 56. 20 x EDSFF E3.S Gen5 NVMe + rear 2 x EDSFF E3.S Gen5 NVMe drives

| Order | From | To |
|-------|------------------------------------------|----------------------------------------------|
| 9 | HPM_PWR1/2 (HPM board power connector) | E3 (BP_PWR_1) (backplane power connector) |
| 1 | HPM_SL1 (signal connector on HPM board) | E3 (BP_DST_PA1) (backplane signal connector) |
| 2 | HPM_SL2 (signal connector on HPM board) | E3 (BP_DST_PB1) (backplane signal connector) |
| 4 | HPM_SL4 (signal connector on HPM board) | E3 (BP_DST_PA2) (backplane signal connector) |
| 5 | HPM_SL5 (signal connector on HPM board) | E3 (BP_DST_PB2) (backplane signal connector) |
| 6 | HPM_SL6 (signal connector on HPM board) | E3 (BP_DST_PA3) (backplane signal connector) |
| 7 | HPM_PWR11/12 | Riser R2 |
| 8 | HPM_SL11 (signal connector on HPM board) | Riser R2 |

NOTE: Follow the sequential order as shown in the table to remove the cables, to install the cables follow the reverse sequential order.

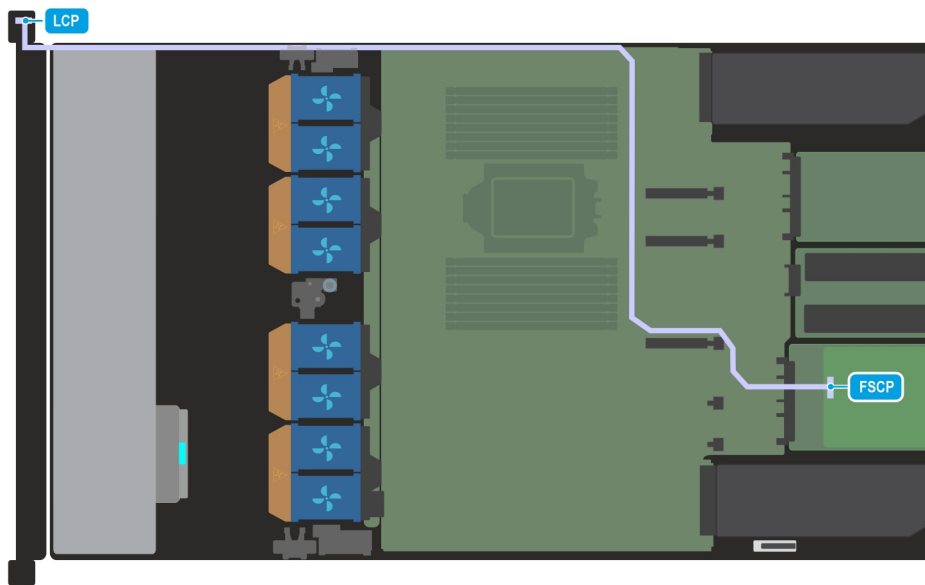


Figure 76. Attic board to the Left Control Panel (LCP) - Secondary

Table 57. Attic Board to Left Control Panel (LCP) - Secondary

| Order | From | To |
|-------|-------------------------------------|--------------------------------------|
| 1 | Attic_fSCP (Attic signal connector) | Left Control Panel (LCP) - Secondary |

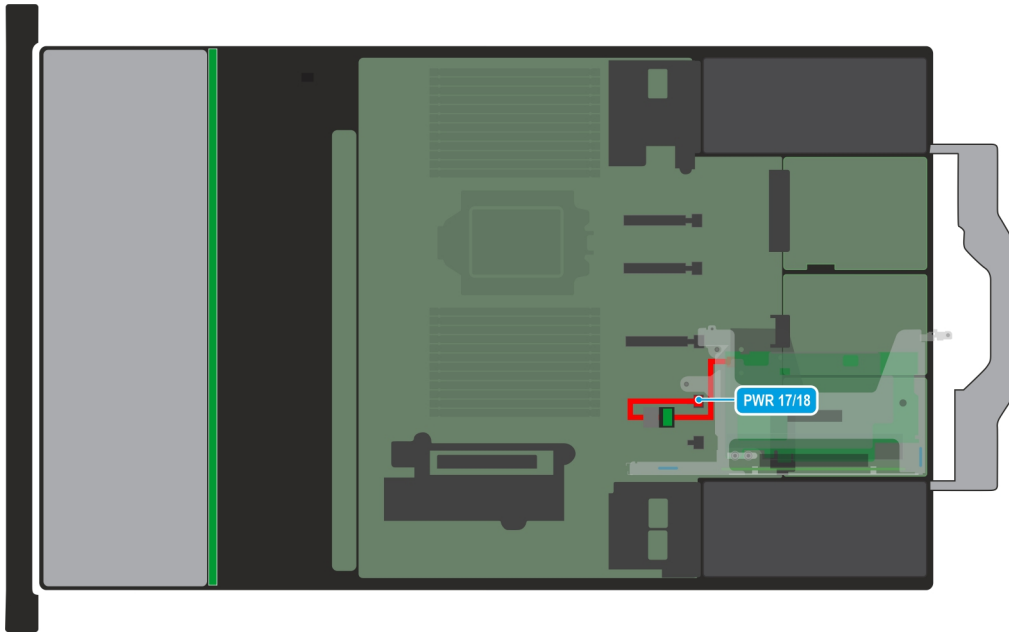


Figure 77. DPU cable connections

Table 58. DPU cable connections

| Order | From | To |
|-------|------------------------------------|----------|
| 1 | PWR 17 (HPM board power connector) | R2 (DPU) |

PERC module

This is a service technician replaceable part only.

Removing the PERC H975i 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 drive backplane cover](#).
4. Disconnect the PCIe cable from PERC, observe the cable routing.

i **NOTE:** See the [cable routing](#) section for more information.

Steps

1. Disconnect the power cable from the H975i module. Using a Phillips 2 screwdriver, loosen the screw and slide the battery cage out from the system.

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

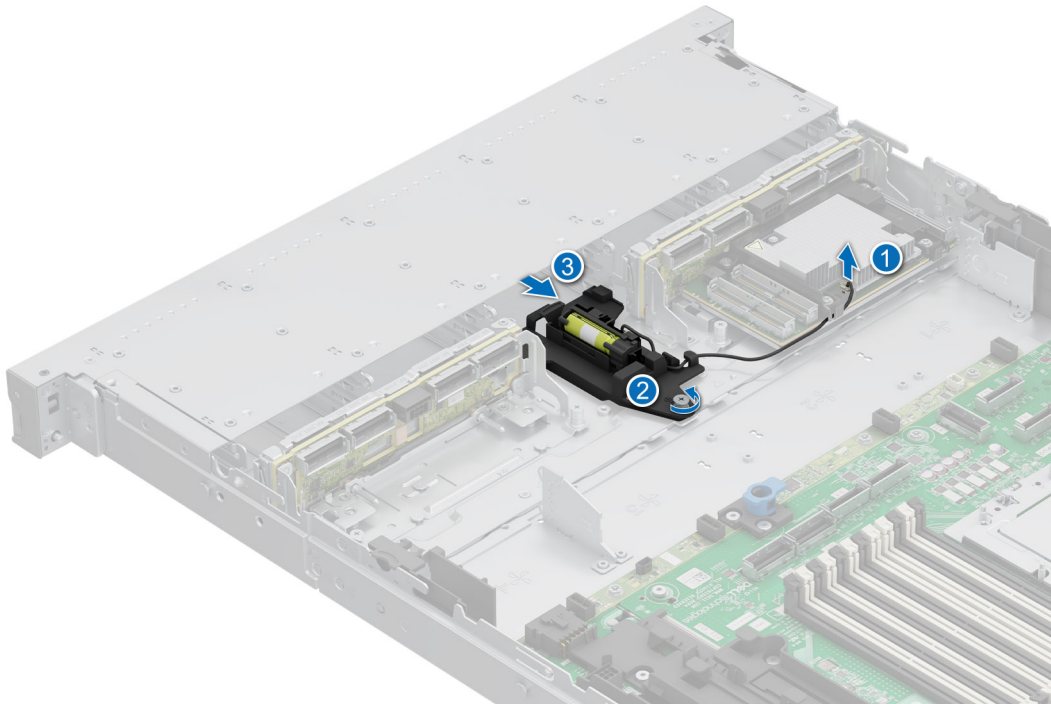


Figure 78. Removing the battery cage

2. Remove the PERC backplane from the backplane bay.
3. Using a Phillips 2 screwdriver, loosen the screws and slide out the H975i module from the backplane bay.

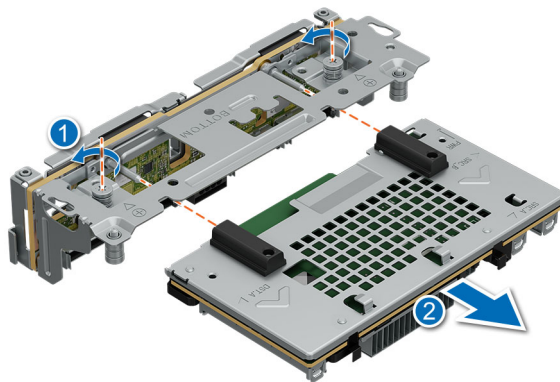


Figure 79. Removing the H975i module from the backplane bay

4. Using a Phillips 2 screwdriver, loosen the screws and remove the H975i from the bracket, and the shroud from the H975i.

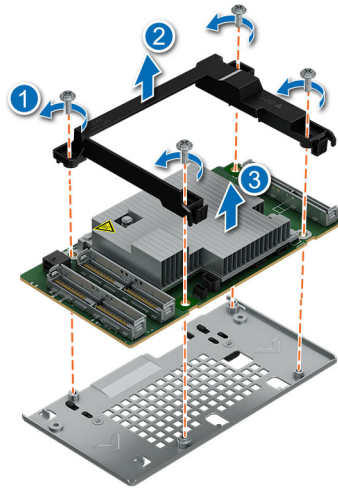


Figure 80. Removing the H975i and shroud

5. Pull the flexible rib backward, slide the battery backward, and then lift the battery.

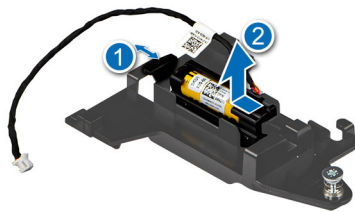


Figure 81. Removing the battery holder

Next steps

1. [Replace the front PERC module.](#)

Installing the H975i PERC 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 drive backplane cover.](#)
4. Route the cable properly to prevent the cable from being pinched or crimped.

Steps

1. Insert the battery holder into the cage and slide it forward to secure it in place.

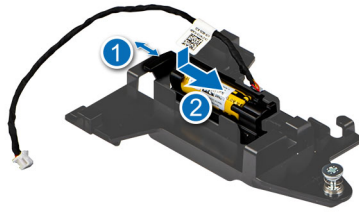


Figure 82. Installing the battery holder to the battery cage

2. Align the H975i and the shroud with the screw-guide pins on the bracket. Using a Phillips 2 screwdriver, tighten the screws to secure them in place.

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

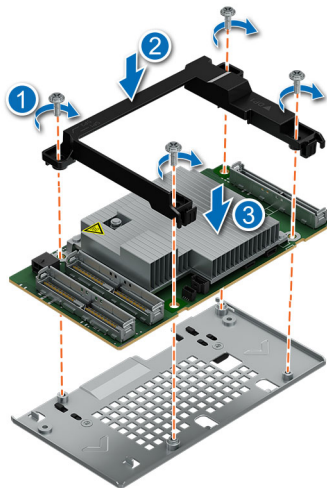


Figure 83. Installing the H975i, bracket, and shroud

3. Align the H975i module with the guide pins on the PERC backplane bay and slide it in. Using the Phillips 2 screwdriver, secure the module in place.

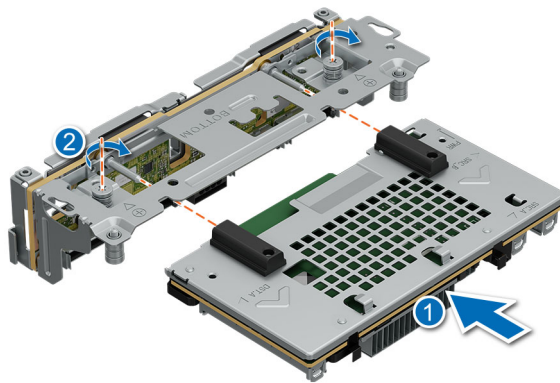


Figure 84. Installing the H975i to the backplane bay

4. Insert the battery cage into the drive bay. Using a Phillips 2 screwdriver, tighten the screw to secure it in place. [Install the PERC backplane](#) to the drive bay. Connect the power cable from the battery to the H975i module.

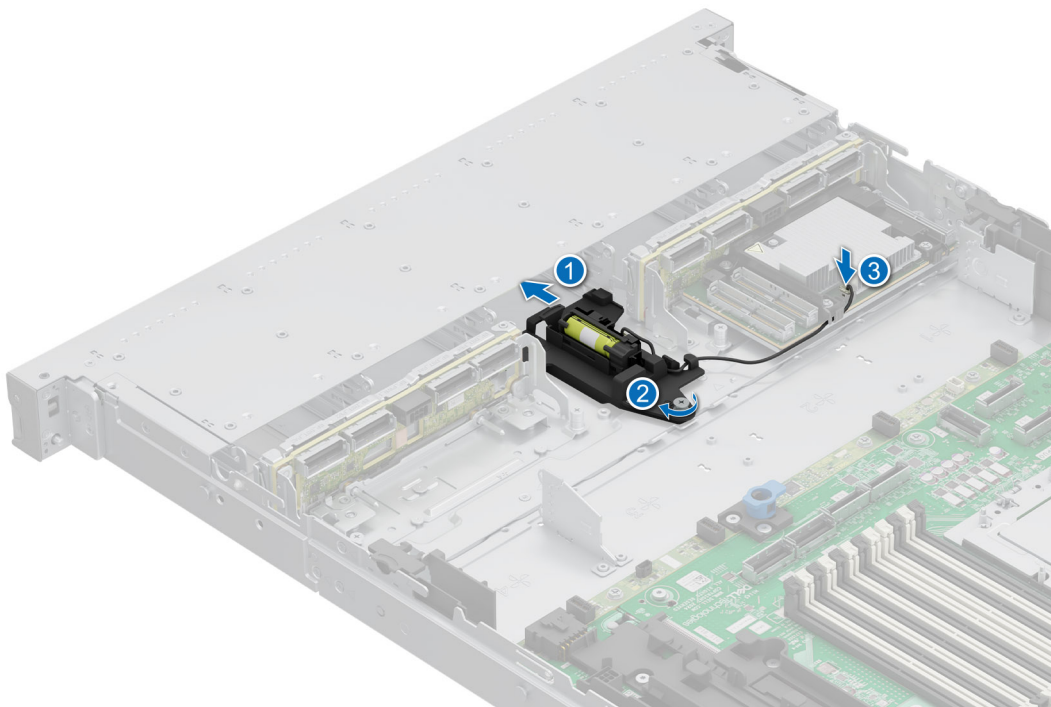


Figure 85. Installing the battery cage to the system

NOTE: See the [cable routing](#) section for more information.

Next steps

1. Reconnect the required cables.
2. [Install the drive backplane cover](#).
3. Follow the procedure listed in [After working inside your system](#).


Removing the front PERC 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 drive backplane cover](#).
4. Disconnect the SAS cable from PERC, observe the cable routing.

Steps

1. Loosen the captive screws on the front PERC module.
2. Lift the front PERC module to disengage from the system.

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

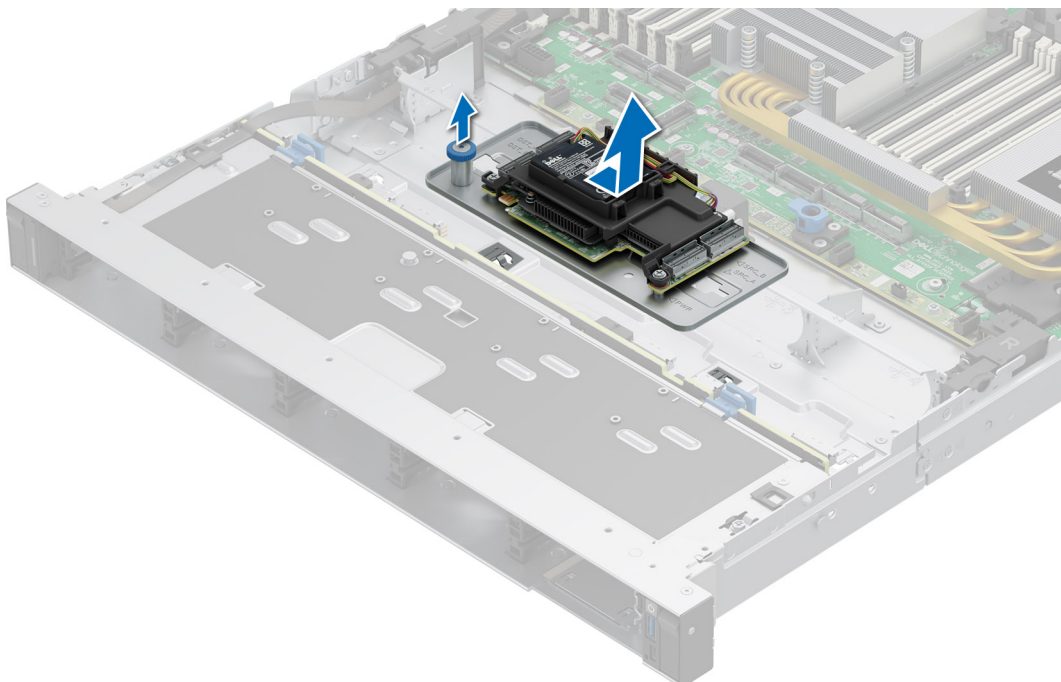


Figure 86. Removing the front PERC module

Next steps

1. [Replace the front PERC module](#).

Installing the front mounting front PERC 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 drive backplane cover](#).
4. Route the cable properly to prevent the cable from being pinched or crimped.

Steps

1. Align the front PERC module at an angle until the tray touches the slot in the system.
2. Tighten the captive screws on the front PERC module.
3. Connect the PERC cable to the backplane.

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

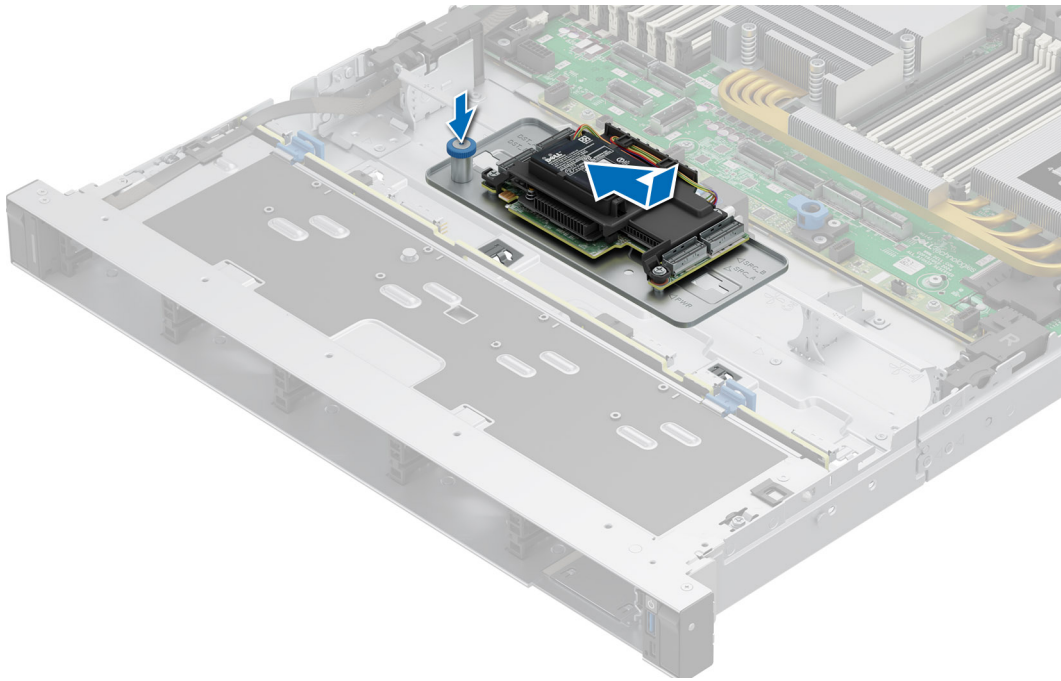


Figure 87. Installing the front PERC module

Next steps

1. Reconnect the required cables.
2. [Install the drive backplane cover.](#)
3. Follow the procedure listed in [After working inside your system.](#)

System memory

System memory guidelines

The PowerEdge R6715 system supports DDR5 registered DIMMs (RDIMMs). System memory holds the instructions that are started by the processor.

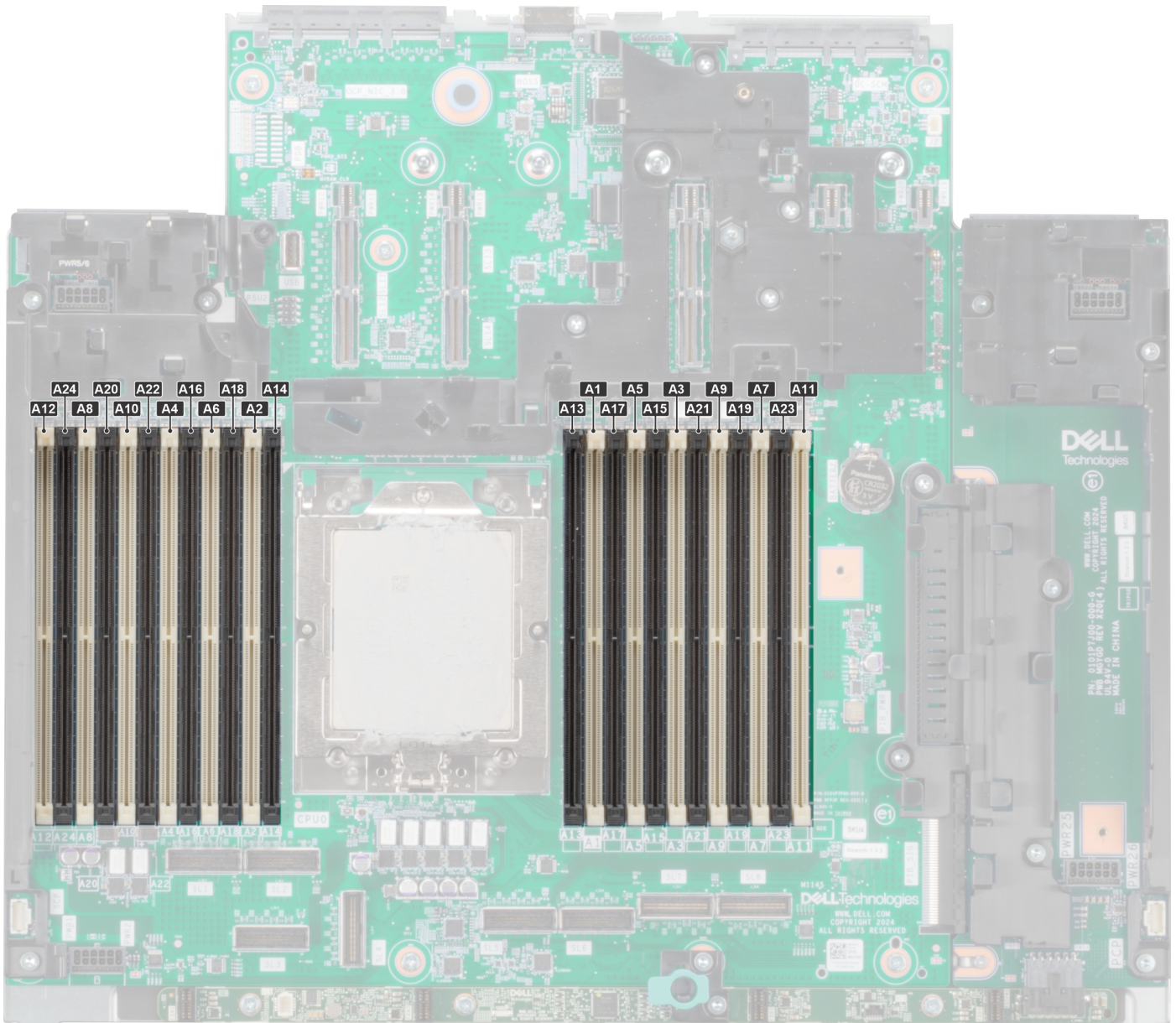


Figure 88. Memory channels

Memory channels are organized as follows:

Table 59. Memory channels

| Processor | Channel A | Channel B | Channel C | Channel D | Channel E | Channel F |
|-------------|------------------|------------------|------------------|------------------|------------------|-------------------|
| Processor 0 | Slots A1 and A13 | Slots A5 and A17 | Slots A3 and A15 | Slots A9 and A21 | Slots A7 and A19 | Slots A11 and A23 |

Table 60. Memory channels

| Processor | Channel G | Channel H | Channel I | Channel J | Channel K | Channel L |
|-------------|------------------|------------------|------------------|-------------------|------------------|-------------------|
| Processor 0 | Slots A2 and A14 | Slots A6 and A18 | Slots A4 and A16 | Slots A10 and A22 | Slots A8 and A20 | Slots A12 and A24 |

Table 61. Supported memory matrix

| DIMM type | Rank | Capacity | DIMM rated voltage and speed | Operating Speed | |
|-----------|------|------------------------------|------------------------------|--------------------------|---------------------------|
| | | | | 1 DIMM per channel (DPC) | 2 DIMMs per channel (DPC) |
| RDIMM | 1 R | 16 | DDR5 (1.1 V), 6400 MT/s | 5200 MT/s | 4400 MT/s |
| | 2 R | 32 GB, 64 GB , 96 GB, 128 GB | DDR5 (1.1 V), 6400 MT/s | 5200 MT/s | 4000 MT/s |
| | 8 R | 256 GB | DDR5 (1.1 V), 6400 MT/s | 5200 MT/s | 4000 MT/s |

Table 62. Memory Capacity Requirement For Supported GPU Cards

| Recommended System Memory Range (1.5x - 2x GPU Memory) | | | | |
|--------------------------------------------------------|------------|------------|------------|--------------|
| GPU Name | GPU Memory | x1 GPU | x2 GPUs | x3 GPUs |
| L4 | 24 GB | 36 - 48 GB | 72 - 96 GB | 108 - 144 GB |

NOTE: The processor may reduce the performance of the rated DIMM speed.

NOTE: Maximum DIMM transfer speed support dependent on CPU SKU and DIMM population.

Memory interleaving with Non-uniform memory access (NUMA)

Non-uniform memory access (NUMA) is a memory design used in multi-processing, where the memory access time depends on the memory location relative to the processor. In NUMA, a processor can access its own local memory faster than the non-local memory.

NUMA nodes per socket (NPS) is a new feature added that allows you to configure the memory NUMA domains per socket. The configuration can consist of one whole domain (NPS1), two domains (NPS2), or four domains (NPS4). In the case of a two-socket platform, an additional NPS profile is available to have whole system memory to be mapped as single NUMA domain (NPS0). For more information on the memory interleaving for NPSx, see the Memory interleaving population rules section in this topic.

BIOS implementation for NPSx

- The BIOS Setup menu presents the applicable NPSx options based on the underlying model number. A change to the current NPSx is communicated to pre-BIOS firmware to take effect on the next boot. The default NPS setting is 1.
- During boot, if the selected NPSx option is not allowed for the model number (for example, if the processor model number changes between reboot), system will halt at the end of POST with UEFI0388 message displayed. On the next reboot, the system will fall back to NPS1 default setting.
- During boot, if the preferred interleaving for the current NPSx is not possible due to memory configuration (for example, the memory population is inconsistent with the preferred interleaving), BIOS shows a warning message UEFI0391.

Table 63. NPS option and Memory Interleave

| NPS Option | CCD Configuration | Memory Interleaving | Server Package (12 memory channels) |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------------------------------|
| NPS4: Four NUMA nodes per socket, one node per quadrant. | Symmetric configuration across all quadrants of the SoC. | Firmware will attempt to interleave all memory channels on each Quadrant of the SoC. | 3- way interleave per node: {ABD}, {CEF}, {GHK}, and {IKL} |
| NPS2: Two NUMA nodes per socket, one node per left/right half of the SoC. | Requires symmetrical CCD configuration across left/right halves of the SoC. | Firmware will attempt to interleave all memory channels on each Half of the SoC. | 6-way Interleave per Node: {ABCDEF} and {GHIJKL} |
| NPS1: One NUMA node per socket. | Available for any CCD configuration in the SoC. Default configuration | Firmware will attempt to interleave all memory channels in the Socket. | 12-way Interleave per Socket: {ABCDEFGHIJKL} |

Table 63. NPS option and Memory Interleave (continued)

| NPS Option | CCD Configuration | Memory Interleaving | Server Package (12 memory channels) |
|---------------------------------|-------------------------------------------|------------------------------------------------------------------------|---------------------------------------------------------------|
| NPS0: One NUMA node per system. | Available on dual processor systems only. | Firmware will attempt to interleave all memory channels in the System. | 24-way Interleave per System: {ABCDEFGHJKLM} from each socket |

NOTE:

1. If the CCD configuration is altered by software (e.g., BIOS Setup Option), NPS4 or NPS2 configurations may not be available, based on the Symmetry requirements noted above.
2. Not all OPNs support NPS2 or NPS4, based on CCD configuration per package.

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 configuration fails 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 5200 MT/s or 4000 MT/s depending on the following factors:

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

NOTE: MT/s indicates DIMM speed in Mega-Transfers per second.

The following are the recommended guidelines for installing memory modules:

- All DIMMs must be DDR5.
- DIMM mixing configurations are not supported. All DIMM slots must be populated with the exact same DIMMs.
- Populate memory module sockets only if a processor is installed.
 - For single-processor systems, sockets A1 to A23 are available.
 - A minimum of one DIMM must be populated for each installed processor.
- In **Optimizer Mode**, the DRAM controllers operate independently in the 64-bit mode and provide optimized memory performance.

Table 64. Memory population rules

| Processor | Memory population | Memory population information |
|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Single processor | A{1}, A{2}, A{3}, A{4}, A{5}, A{6}, A{7}, A{8}, A{9}, A{10}, A{11}, A{12} | 1, 2, 4, 6, 8, 10, 12 DIMMs are allowed. |
| | A{1}, A{13}, A{2}, A{14}, A{3}, A{15}, A{4}, A{16}, A{5}, A{17}, A{6}, A{18}, A{7}, A{19}, A{8}, A{20}, A{10}, A{22}, A{11}, A{23}, A{12}, A{24} | 16, 20, 24 DIMMs are allowed. |

- Populate all the sockets with white release tabs first, followed by the sockets with black release tabs.
- Populate all the sockets with white release tabs first.
- Unbalanced or odd memory configurations result in a performance loss, and the system may not identify the memory modules being installed. Always populate memory channels identically with equal DIMMs for the best performance.
- Odd memory configuration with 3 RDIMMs is not supported.
- Mixing of any different memory module capacities is not supported.
- Mixing module types within a memory channel is not supported. All DIMMs populated must be RDIMM.
- Mixing different widths (x4 and x8) is not supported.

NOTE: Equal memory modules refer to DIMMs with identical electrical specifications and capacity that maybe from different vendors.

Removing a memory module

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

⚠ 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.

i NOTE: For proper system cooling, memory module blanks must be installed in any memory socket that is not populated. Remove the memory module blanks only if you intend to install the memory module in these sockets. DIMM blanks are only required when the CPU TDP is equal or greater than 225 W. CPU with TDP less than 225 W do not require DIMM blanks.

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.

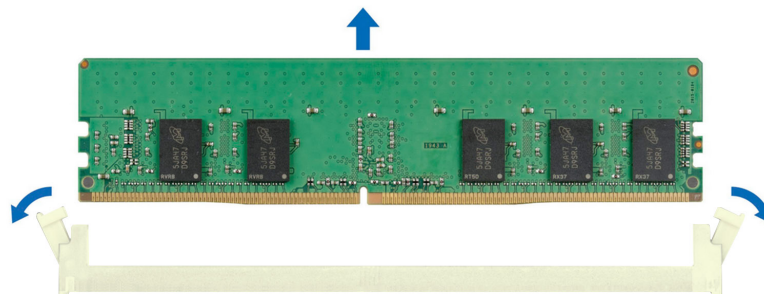


Figure 89. Removing a memory module

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 [Before working inside your system](#).

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.

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

2. 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.

3. 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 memory module socket levers align with the levers on the other sockets that have memory modules that are installed.

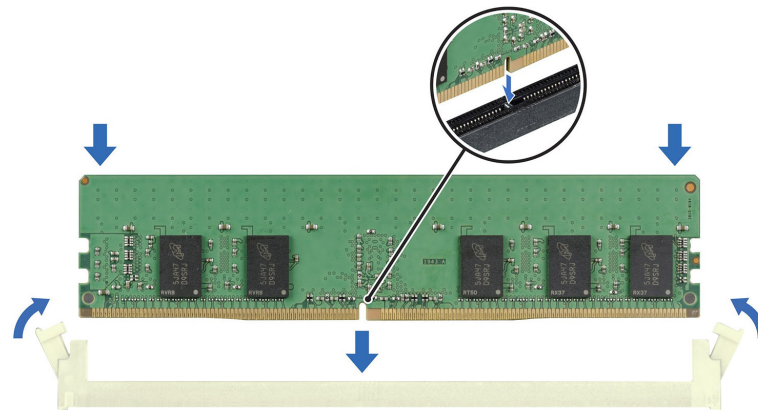


Figure 90. Installing a memory module

Next steps


1. Follow the procedure listed in [After working inside your system](#).
2. To verify that the memory module has been installed properly, press **F2** during reboot and click **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.
3. If the **System Memory Size** is incorrect, one or more of the memory modules may not be installed properly. Shut down the system and ensure that the memory modules are firmly seated in the correct sockets.
4. Run the system memory test in system diagnostics.

Direct Liquid Cooling (DLC) Module

This is a service technician replaceable part only.


Removing the Direct Liquid Cooling(DLC)

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in the [Before working inside your system](#).
3.  **WARNING:** The Direct liquid cooling (DLC) module and processor are too hot to touch for some time after the system has been powered off. Allow the liquid cooling module and processor to cool down before handling them.

Steps

1. Disconnect the DLC leak sensor cable from the HPM board.
2. Using a Torx T20 screwdriver, loosen the captive nuts on the DLC module in the order that is mentioned below:
 - a. Loosen the first nut three turns.
 - b. Loosen the nut diagonally opposite to the nut you loosened first.
 - c. Repeat the procedure for the remaining two nuts.
 - d. Return to the first nut and loosen it completely.
3. Using a Phillips 1 screw driver, loosen the captive screw on the DLC tube cover.
4. Tilt the DLC ring holder to loosen the DLC tubes.
5. Lift the DLC tubes from the tube holder.

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

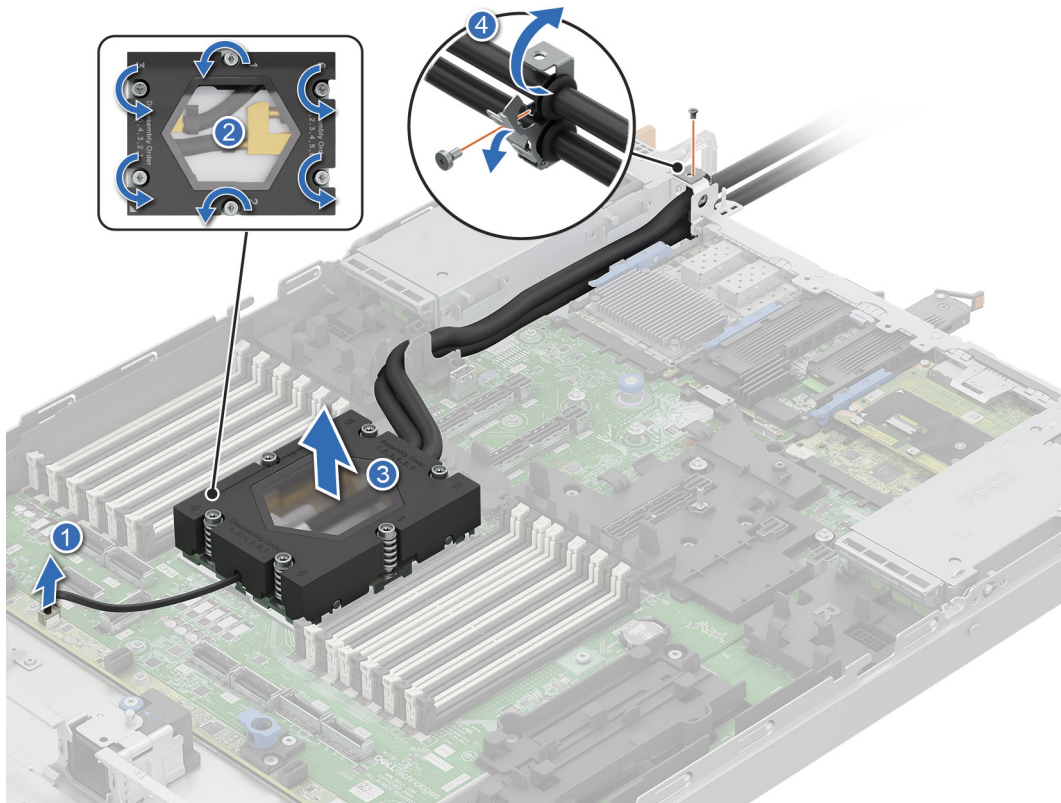


Figure 91. Removing the DLC module

6. If required, replace the DLC blank.
7. Align the DLC blank with the guide pin at the bottom of the chassis.
8. Using a Phillips 1 screwdriver, tighten the screw to secure the DLC blank in place.

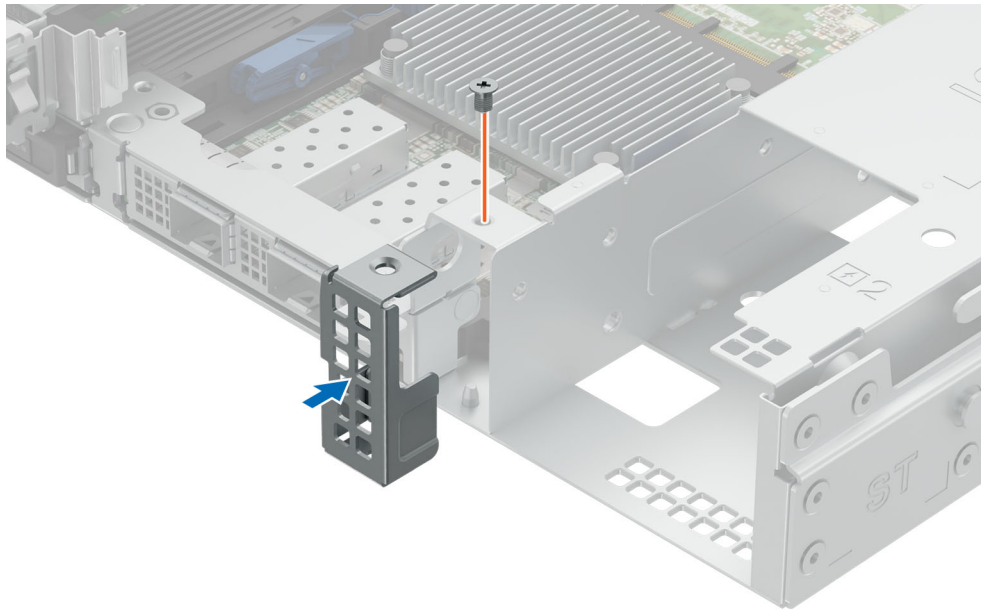


Figure 92. Installing the DLC module blank

Next steps

If you are removing a faulty heat sink [replace the DLC](#), if not [remove the processor](#).

Installing the Direct Liquid Cooling(DLC)

Prerequisites

Never remove the heat sink from a processor unless you intend to replace the processor or heat sink. 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](#).

Steps

1. If required, remove the DLC module blank.
2. Using the Phillips 1 screwdriver, loosen the screw to remove the DLC module.

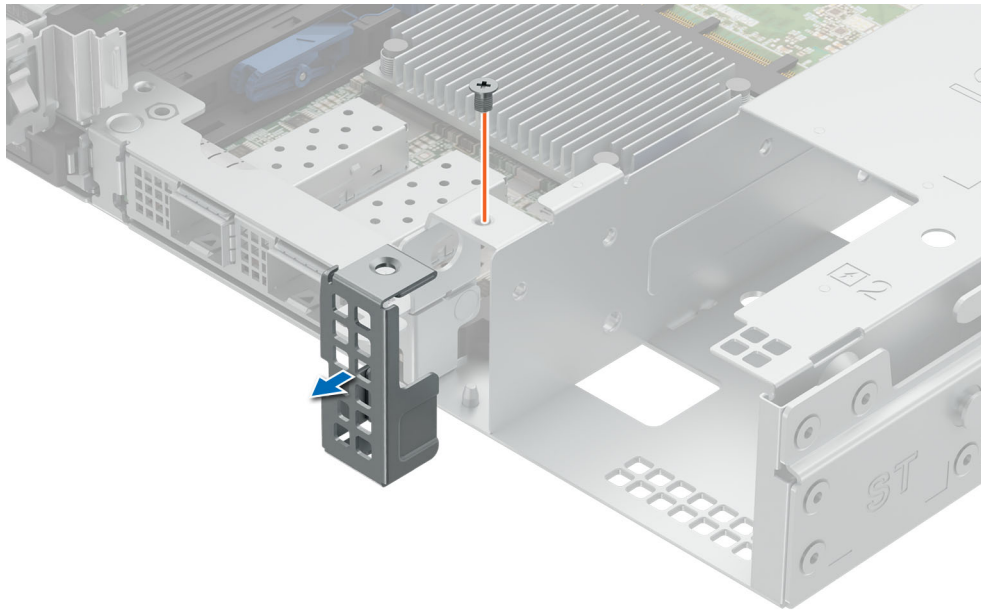


Figure 93. Removing the DLC module blank

3. Align the DLC module with the standoff screws on the HPM board.
4. Using the Torx T20 screwdriver, tighten the captive nuts (12 in-lbf) on the DLC module in the order below:
 - a. In a random order, tighten the first nut three turns.
 - b. Tighten the nut diagonally opposite to the nut that you tighten first.
 - c. Repeat the procedure for the remaining two nuts.
 - d. Return to the first nut to tighten it completely.
 - e. Check all the nuts to ensure that they are firmly secured.
5. Route the DLC tubes and secure it to the holder.
6. Route the DLC tubes to the rear of the system and align the rubber ring on the tubes with the ring holders.

i **NOTE:** Follow the number labels on the DLC tubes and ring holders (1,2).
7. Tilt the ring holder close. Using a Phillips 1 screwdriver, tighten the captive screw on the DLC ring holder to secure it in place.
8. Connect the DLC leak sensor cable on the HPM board.

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

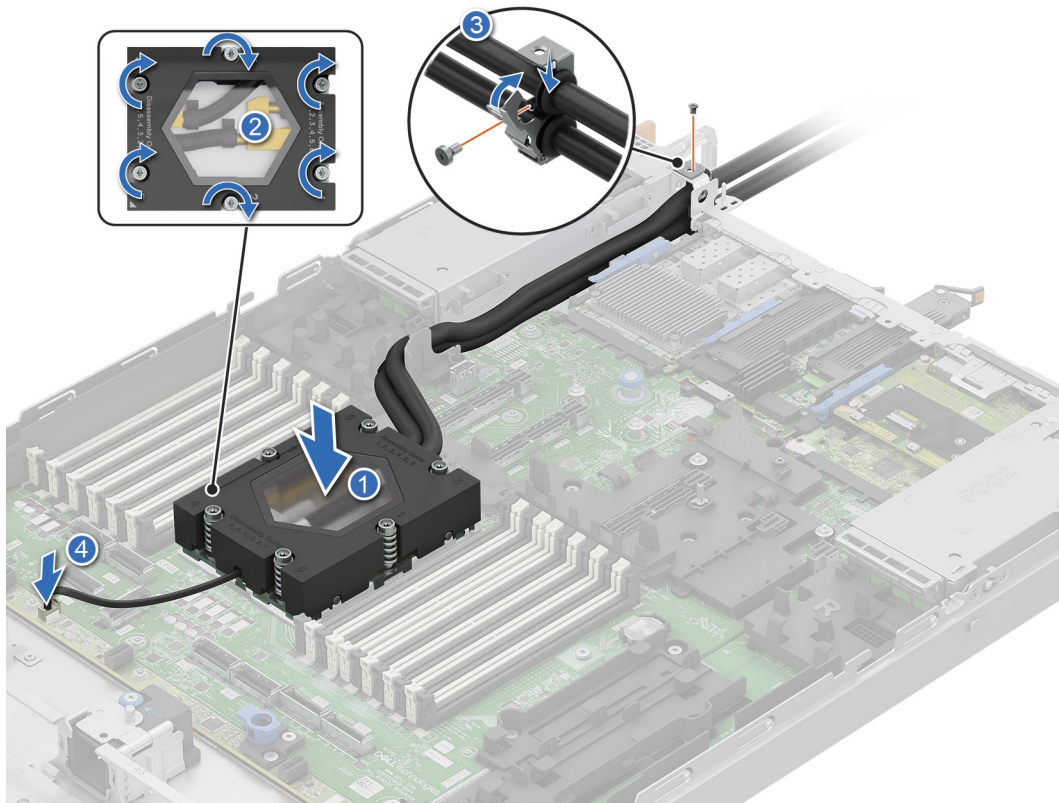


Figure 94. Installing the DLC module

Next steps

1. Follow the procedure listed in the [After working inside your system](#).

Processor and heat sink

Removing the heat sink

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

Steps

1. Using a Phillips 2 screwdriver, loosen the captive screws on the heat sink in the numbered order that is mentioned on the heat sink assembly instructions label.
2. Lift the heat sink away from the system.

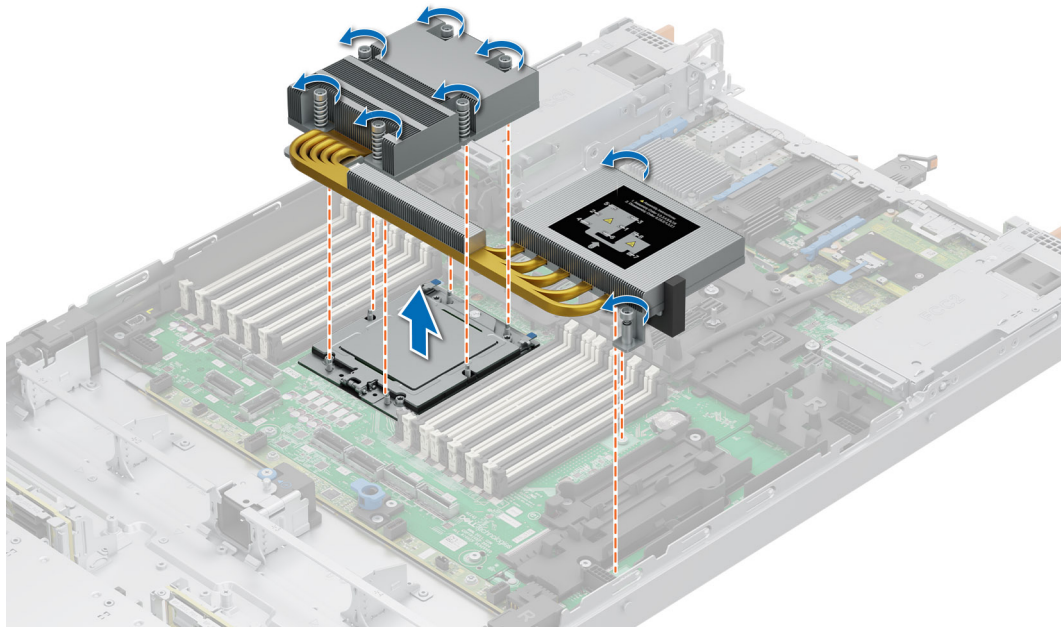


Figure 95. Removing the heat sink

Next steps

If you are removing a faulty heat sink [replace the heat sink](#), if not [remove the processor](#).

Removing the processor

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 heat sink module](#).

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 HPM board replacement which is expected. To fix this, go to setup option to configure the system settings.

Steps

1. Using a T-20 Torx screwdriver, loosen the captive screws on the spring-loaded retention frame.

NOTE: Hold and rotate the retention frame until it is fully open.

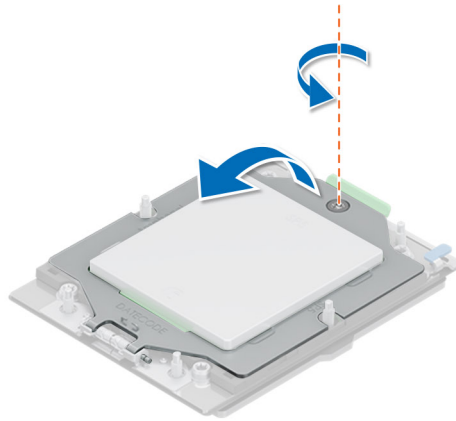


Figure 96. Releasing the retention frame

2. Lift the rail frame by gripping the two blue tabs and rotate the rail frame upwards to a vertical position.

i **NOTE:** Hold and rotate the rail frame until it is fully open.

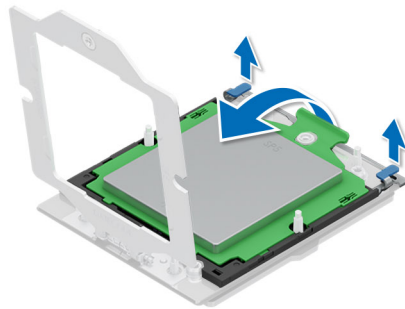


Figure 97. Releasing the rail frame

3. Slide the carrier frame together with the processor out from the rail frame by holding on to the green tab.

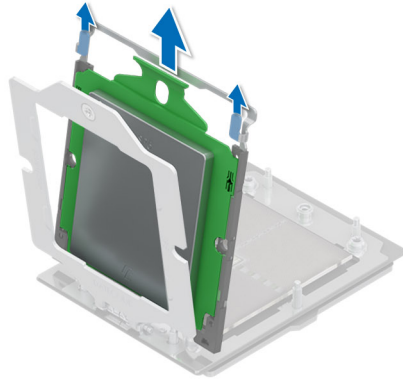


Figure 98. Removing the carrier frame with the processor

Next steps

Replace the processor.

Installing the processor

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 heat sink](#).

Steps

1. Release the retention frame and rail frame. See step 1 and step 2 of the [removing the processor](#).
2. Insert the carrier frame with the processor into the rail frame until the carrier frame clicks in place with the rail frame.

i **NOTE:** If there is a blank external cap in the rail frame, remove it by sliding it out from the rail frame.

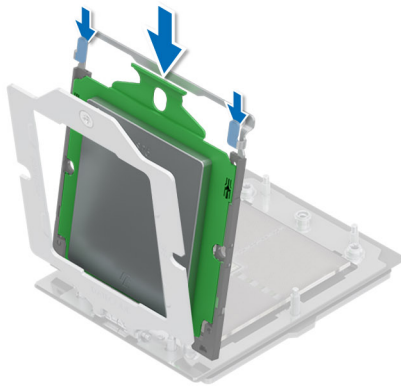


Figure 99. Inserting the carrier frame with the processor

3. Close the rail frame down and press the left blue tab first to click in place. Then perform the same on the right blue tab.

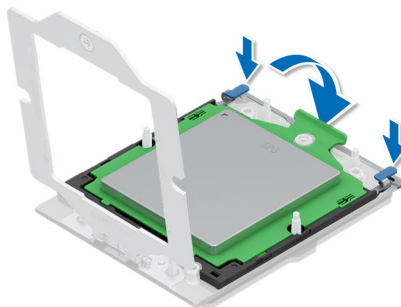


Figure 100. Closing the rail frame with the carrier frame

4. Rotate and close the retention frame and tighten the captive screw.

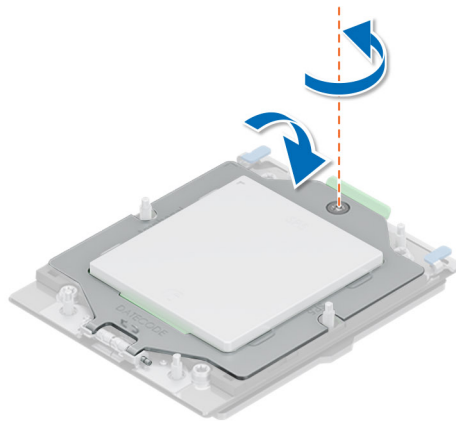


Figure 101. Securing the retention frame

Next steps

1. [Install the heat sink.](#)
2. Follow the procedure listed in [After working inside your system.](#)

Installing the heat sink

Prerequisites

Never remove the heat sink from a processor unless you intend to replace the processor or heat sink. 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. The system supports different to types of heat sinks and the procedure to install them are similar.

Steps

1. If you are using an existing heat sink, remove the thermal grease on the heat sink by using the provided presaturated alcohol wipe.

NOTE: For a new heat sink, the thermal paste is preapplied to the heat sink. Remove the protective cover, and install the heat sink.

2. Use the thermal grease syringe included with your processor kit to apply the grease in a thin quadrilateral spiral on the top of the processor.

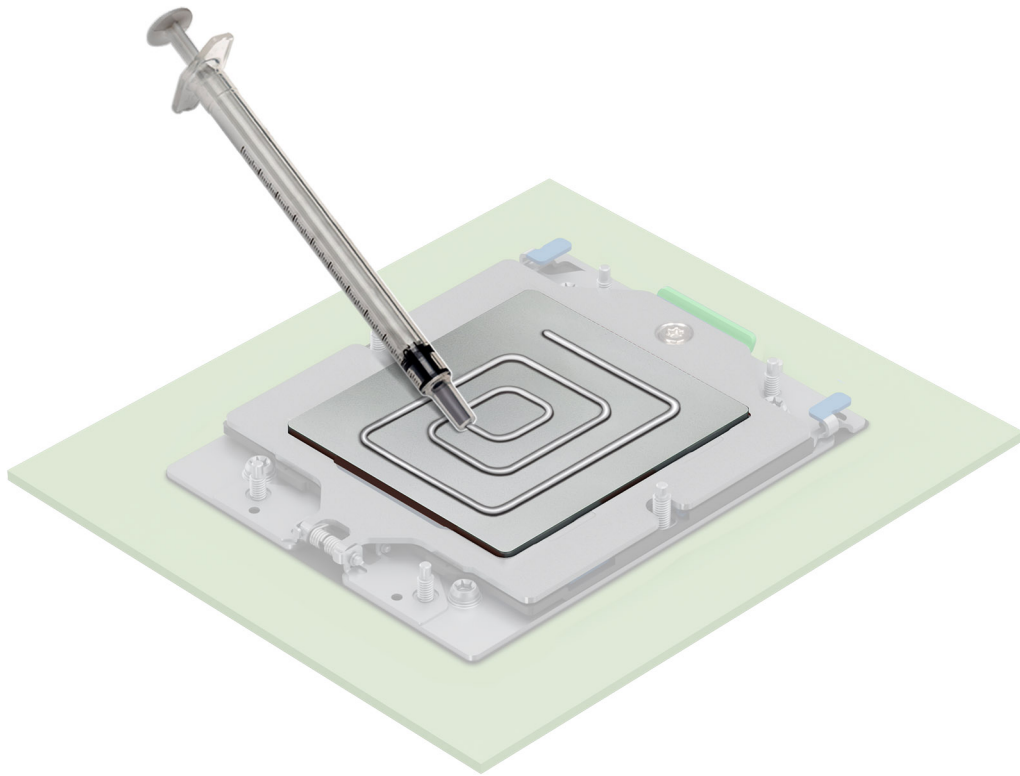
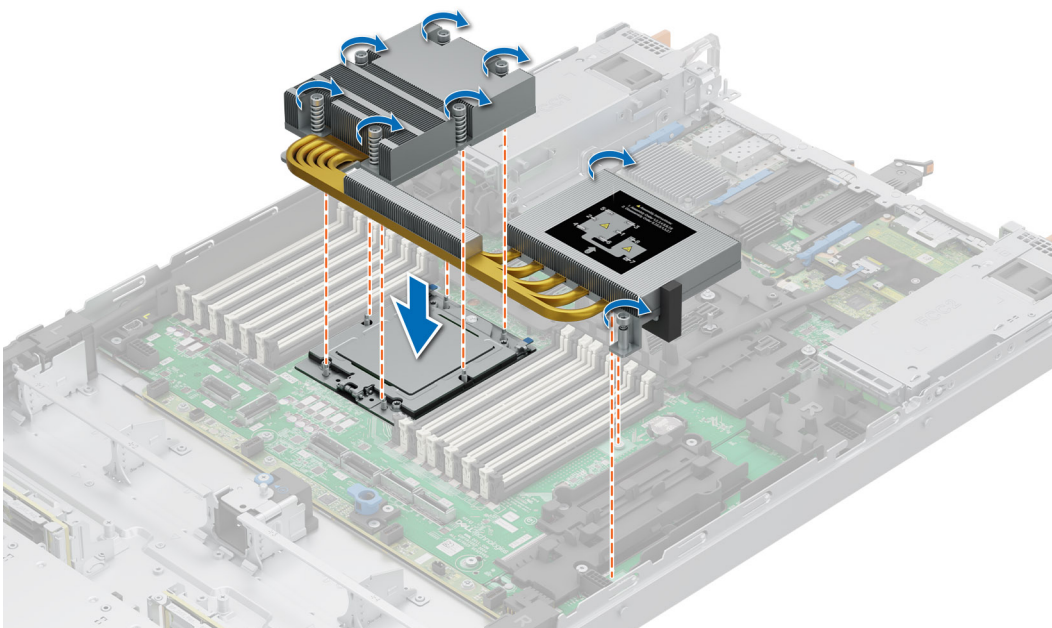


Figure 102. Applying thermal grease

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

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

3. Align the screws on the heat sink the guide pins on the CPU, and lower it down.
4. Using the Phillips 2 screwdriver, secure the captive screws on the heat sink in the numbered order that is mentioned on the heat sink assembly instructions label.



Next steps

1. Follow the procedure listed in the [After working inside your system](#).

Expansion cards and expansion card risers

NOTE: When an expansion card is not supported or missing, the iDRAC logs an event. This does not prevent your system from booting. However, if a F1/F2 pause occurs with an error message, see [EEMI guide](#).

Expansion card installation guidelines

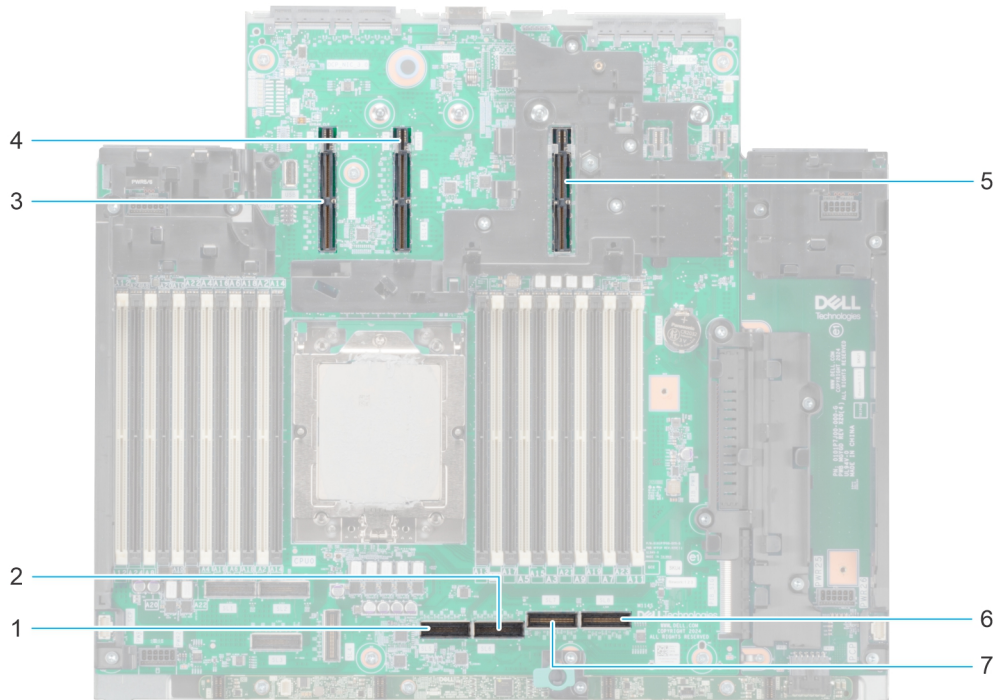


Figure 103. Expansion card riser slot connectors

1. PCIe connector 5 (SL5_CPU 0)
2. PCIe connector 6 (SL6_CPU 0)
3. Riser 1 slot
4. Riser 2 slot
5. Riser 4 slot
6. PCIe connector 8 (SL8_CPU 0)
7. PCIe connector 7 (SL7_CPU 0)

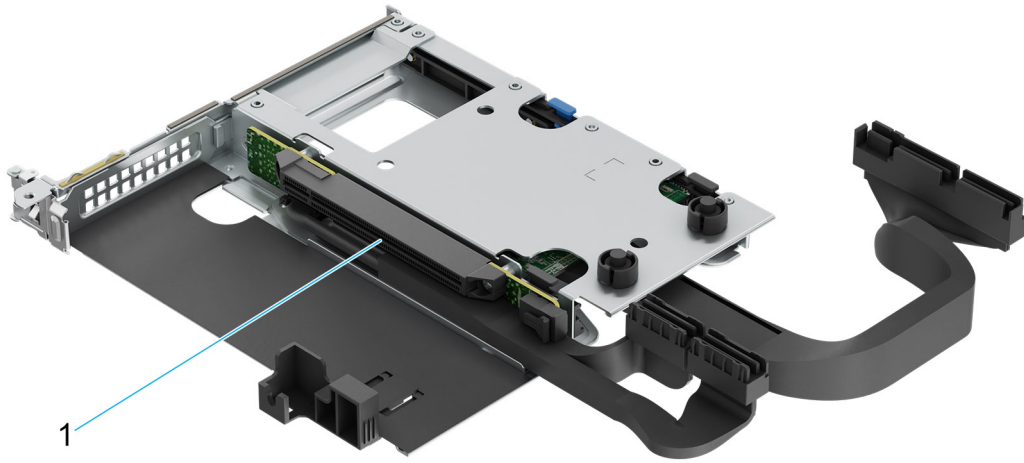


Figure 104. Riser 2k

1. Slot 1

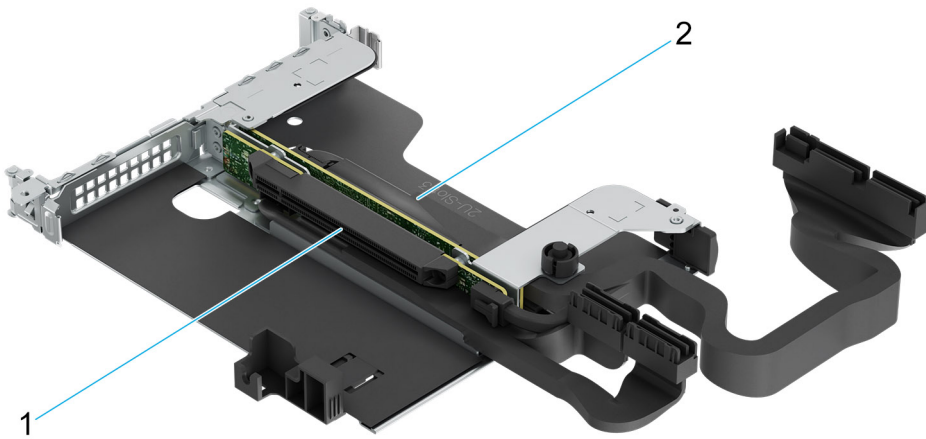


Figure 105. Riser 2q

1. Slot 1

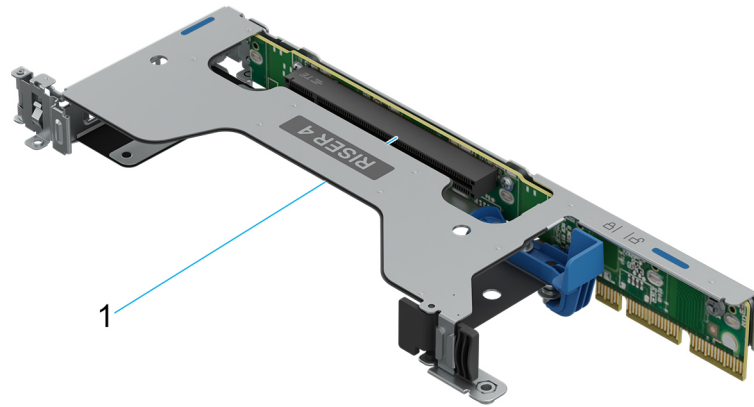


Figure 106. Riser 4a

1. Slot 4

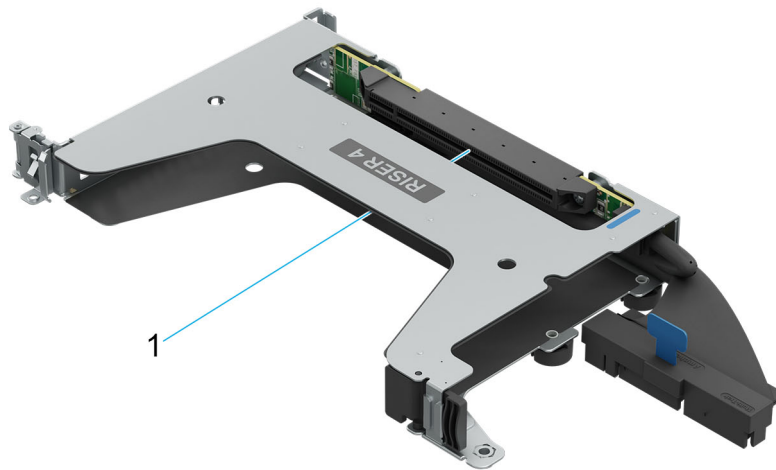


Figure 107. Riser 4b

1. Slot 4

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.

Expansion card riser configurations

Table 65. Expansion card riser configurations

| Riser Configurations (RC) | Expansion card risers | PCIe Slots | Form factor | Controlling processor | Slot's electrical bandwidth/ physical connector |
|---------------------------|-----------------------|------------|-------------|-----------------------|-------------------------------------------------|
| RC2: R2R LP + R4 LP | R2r | 1 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |

Table 65. Expansion card riser configurations (continued)

| Riser Configurations (RC) | Expansion card risers | PCIe Slots | Form factor | Controlling processor | Slot's electrical bandwidth/ physical connector |
|---------------------------|-----------------------|------------|-----------------------|-----------------------|-------------------------------------------------|
| | | 2 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | OCP3 | 5 | OCP3 | CPU0 | PCIe Gen5 x16 (4C+ connector) |
| | BOSS | 3 | BOSS | CPU0 | PCIe Gen3 x4 (1C connector) |
| RC3: R2q FH + R4b FH | R4b | 4 | FH | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | R2q | 1 | FH | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | OCP3 | 5 | OCP3 | CPU0 | PCIe Gen5 x16 (4C+ connector) |
| | BOSS | 3 | BOSS | CPU0 | PCIe Gen3 x4 (1C connector) |
| RC4: R2r LP + R4a LP | R4a | 4 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | R2r | 1 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | | 2 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | OCP3 | 5 | OCP3 | CPU0 | PCIe Gen5 x16 (4C+ connector) |
| | BOSS | 3 | BOSS | CPU0 | PCIe Gen3 x4 (1C connector) |
| RC 5 : R2k LP + R4a LP | R2k | 2 | Low profile + 2nd OCP | Processor 0 | PCIe Gen5 x16 (x16 connector) |
| | R4a | 1 | Low profile | Processor 0 | PCIe Gen5 x16 (x16 connector) |
| | BOSS | 3 | BOSS | Processor 0 | PCIe Gen3 x4 (1C connector) |
| | OCP | 5 | OCP | Processor 0 | PCIe Gen5 x16 (OCP 4C+ connector) |
| RC6: R2s + R4a LP | R4a | 4 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | R2s | 1 | LP | CPU0 | PCIe Gen5 x16 (x16 connector) |
| | OCP3 | 5 | OCP3 | CPU0 | PCIe Gen5 x16 (4C+ connector) |
| | BOSS | 3 | BOSS | CPU0 | PCIe Gen3 x4 (1C connector) |

NOTE: Riser 2q and Riser 4b supports DPU cards.

NOTE: The system supports either Front I/O configuration (system with front risers) or Rear I/O configuration (system with rear risers).

Table 66. RC 2: R2r

| Card type | Slot priority | Maximum number of cards |
|-----------------------------------------------|---------------|-------------------------|
| Nvidia (L4 GPU) | 1,2 | 2 |
| FOXCONN (BOSS-N1) | 3 | 1 |
| FOXCONN (Front: PERC H365I) | Internal | 1 |
| Broadcom (OCP: 1Gb, 10Gb, 25Gb, 100Gb, 200Gb) | 5 | 1 |
| Intel (OCP: 1Gb, 10Gb) | 5 | 1 |
| Mellanox (OCP: 25Gb, 100Gb) | 5 | 1 |
| Mellanox (NIC: 25Gb, 100Gb, 200Gb, 400Gb) | 1,2 | 2 |
| Broadcom (NIC: 25Gb, 100Gb, 200Gb) | 1,2 | 2 |
| Emulex (HBA: FC32) | 1,2 | 2 |
| Marvell (HBA: FC32) | 1,2 | 2 |
| FOXCONN (PERC H965E, HBA465E) | 1,2 | 1 |

Table 67. RC 3: R2q+R4b

| Card type | Slot priority | Maximum number of cards |
|-----------------------------------------------|---------------|-------------------------|
| Nvidia (DPU: 200Gb) | 1 | 1 |
| Nvidia (L4 GPU) | 1,4 | 2 |
| FOXCONN (BOSS-N1) | 3 | 1 |
| FOXCONN (Front PERC H975I) | Internal | 1 |
| Broadcom (OCP: 1Gb, 10Gb, 25Gb, 100Gb, 200Gb) | 5 | 1 |
| Intel (OCP: 1Gb, 10Gb) | 5 | 1 |
| Mellanox (OCP: 25Gb, 100Gb) | 5 | 1 |
| Nvidia (NIC: NDR400) | 1,4 | 2 |
| Broadcom (NIC: 25Gb, 100Gb, 200Gb) | 1,4 | 2 |
| Mellanox (NIC: 25Gb, 100Gb) | 1,4 | 2 |
| Emulex (HBA: FC32) | 1,4 | 2 |
| Marvell (HBA: FC32) | 1,4 | 2 |
| FOXCONN (PERC H965E, HBA465E) | 1,4 | 1 |
| NVidia BlueField-3 B3220 | 1 | 1 |

Table 68. RC 4: R2r+R4a

| Card type | Slot priority | Maximum number of cards |
|-----------------------------------------------|---------------|-------------------------|
| FOXCONN (PERC H965I, H365I) | 1 | 1 |
| Nvidia (L4 GPU) | 1,2,4 | 3 |
| FOXCONN (BOSS-N1) | 3 | 1 |
| FOXCONN (Front PERC:H965I, H365I, H975I) | Internal | 1 |
| Broadcom (OCP: 1Gb, 10Gb, 25Gb, 100Gb, 200Gb) | 5 | 1 |

Table 68. RC 4: R2r+R4a (continued)

| Card type | Slot priority | Maximum number of cards |
|-------------------------------------------|---------------|-------------------------|
| Intel (OCP: 1Gb, 10Gb, 25Gb, 100Gb) | 5 | 1 |
| Mellanox (OCP NIC 25Gb) | 1,4 | 2 |
| Mellanox (OCP: 25Gb, 100Gb) | 5 | 1 |
| Mellanox (NIC: 25Gb, 100Gb, 200Gb, 400Gb) | 1,2,4 | 3 |
| Intel (NIC: 100Gb, 200Gb) | 1,2,4 | 3 |
| Broadcom (NIC: 25Gb, 100Gb, 200Gb) | 1,2,4 | 3 |
| Marvell (HBA: FC32,FC64) | 1,2,4 | 3 |
| Emulex (HBA: FC32, FC64) | 1,2,4 | 3 |
| QLogic (HBA: FC32) | 1,2,4 | 3 |
| FOXCONN (PERC H965E, HBA465E) | 1,2,4 | 1 |

Table 69. RC 5: R2k+R4a

| Card type | Slot priority | Maximum number of cards |
|-----------------------------------------------|---------------|-------------------------|
| FOXCONN (PERC H965I, H365I) | 1 | 1 |
| Nvidia (L4 GPU) | 1,4 | 2 |
| FOXCONN (BOSS-N1) | 3 | 1 |
| FOXCONN (Front PERC: H965I, H365I, H975I) | Internal | 1 |
| Broadcom (OCP: 1Gb, 10Gb, 25Gb, 100Gb, 200Gb) | 5,2 | 2 |
| Intel (OCP: 1Gb, 10Gb) | 5,2 | 2 |
| Mellanox (NIC: 25Gb, 100Gb, 200Gb, 400Gb) | 1,4 | 2 |
| Mellanox (OCP: 25Gb, 100Gb) | 5,2 | 2 |
| Broadcom (NIC: 25Gb, 100Gb, 200Gb) | 1,4 | 2 |
| Emulex (HBA: FC32) | 1,4 | 2 |
| Marvell (HBA: FC32) | 1,4 | 2 |
| FOXCONN (PERC H965E, HBA465E) | 1,4 | 1 |

Table 70. RC 6: R2s+R4a

| Card type | Slot priority | Maximum number of cards |
|-----------------------------------------------|---------------|-------------------------|
| Nvidia (L4 GPU) | 1,4 | 2 |
| FOXCONN (BOSS-N1) | 3 | 1 |
| Broadcom (OCP: 1Gb, 10Gb, 25Gb, 100Gb, 200Gb) | 5 | 1 |
| Intel (OCP: 1Gb, 10Gb, 25Gb) | 5 | 1 |
| Mellanox (OCP: 100Gb) | 5 | 1 |
| Mellanox (NIC: 25Gb, 100Gb, 200Gb, 400Gb) | 1,4 | 2 |
| Broadcom (NIC: 25Gb, 100Gb, 200Gb) | 1,4 | 2 |

Table 70. RC 6: R2s+R4a (continued)

| Card type | Slot priority | Maximum number of cards |
|-------------------------------|---------------|-------------------------|
| Emulex (HBA: FC32) | 1,4 | 2 |
| Marvell (HBA: FC32) | 1,4 | 2 |
| FOXCONN (PERC H965E, HBA465E) | 1,4 | 1 |

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](#).
3. If applicable, disconnect the cables from the expansion card or HPM board.

Steps

1. For Riser 2k, disconnect the cables from the connectors and lift the expansion card riser to disengage it from the riser connector, and carefully remove it from the guide pin and cage guide hole.

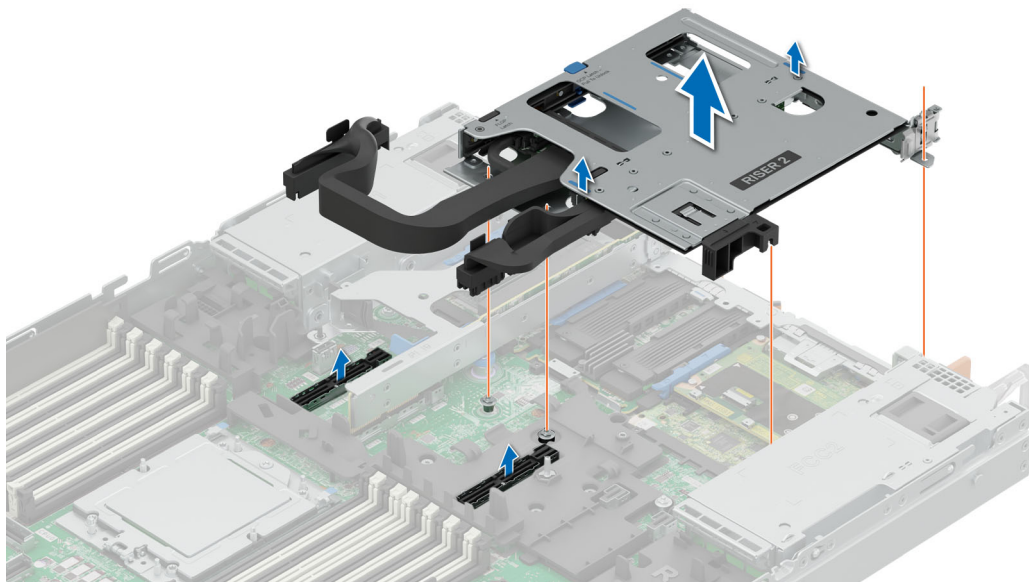


Figure 108. Removing the expansion card riser 2k (R2k)

2. For Riser 2s, disconnect the cables from the connectors and lift the expansion card riser to disengage it from the riser connector, and carefully remove it from the guide pin and cage guide hole. See [cable routing](#) section for more information about disconnecting the PERC cables.

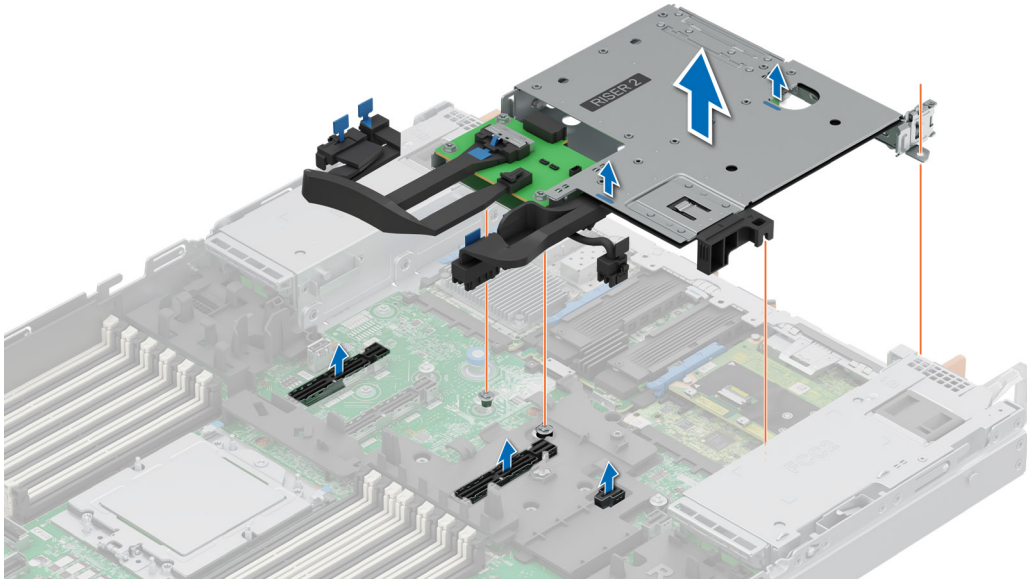


Figure 109. Removing the expansion card riser 2s (R2s)

3. For Riser 4a, ensure that the riser latch is unlocked. Lift the expansion card riser to disengage it from the connector and guide pin on the HPM board. Carefully remove the riser from the system.

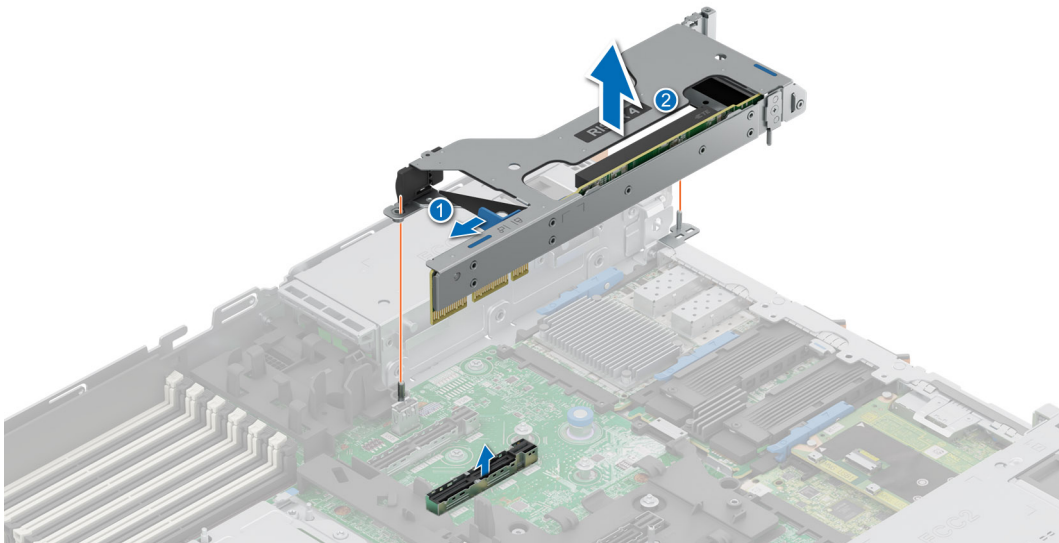


Figure 110. Removing the expansion card riser 4a (R4a)

4. For Riser 2q, ensure that the riser latch is unlocked. Lift the expansion card riser to disengage it from the connector and guide pin on the HPM board. Carefully remove the riser from the system.

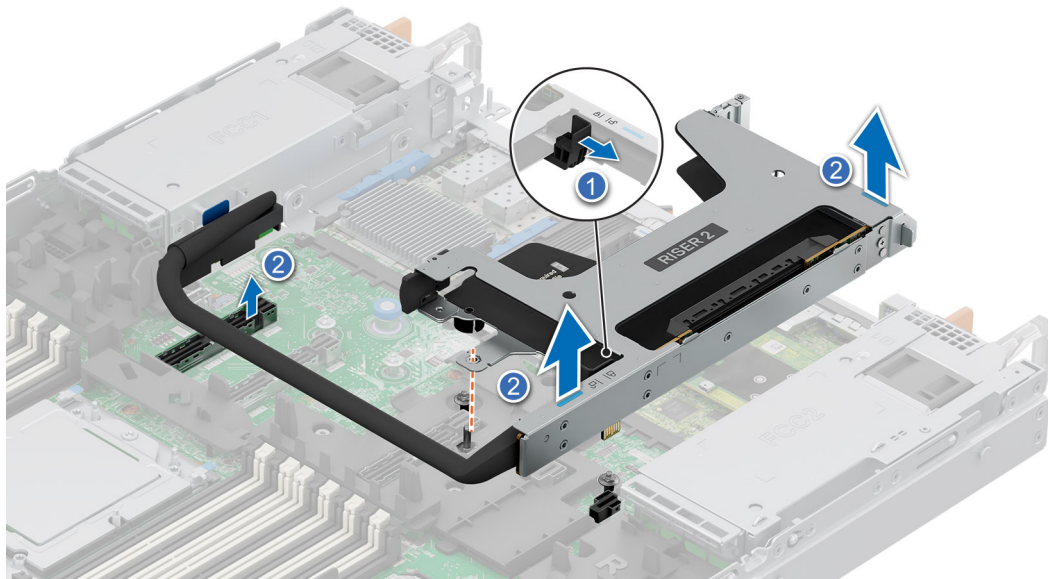


Figure 111. Removing the expansion card riser 2q (R2q)

5. For Riser 4b, ensure that the riser latch is unlocked. Lift the expansion card riser to disengage it from the connector and guide pin on the HPM board. Carefully remove the riser from the system. .

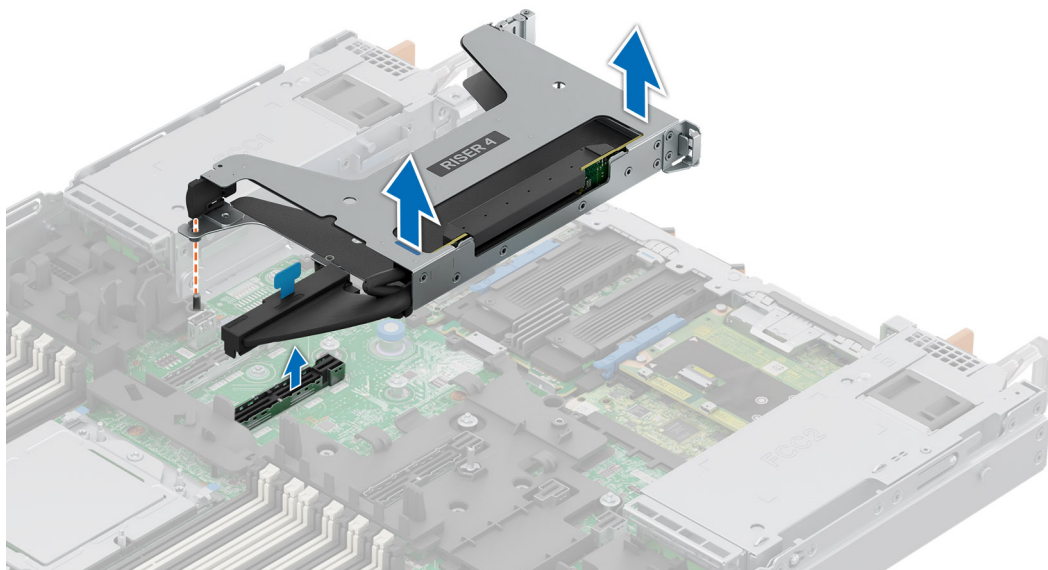


Figure 112. Removing the expansion card riser 4b (R4b)

Next steps

Replace the expansion card risers.

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](#).

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.

Steps

1. For Riser 2k, align the riser with the connector and guide pin, lower it into place, press to ensure that the riser is fully seated on the connector, and connect the cables to the connectors.

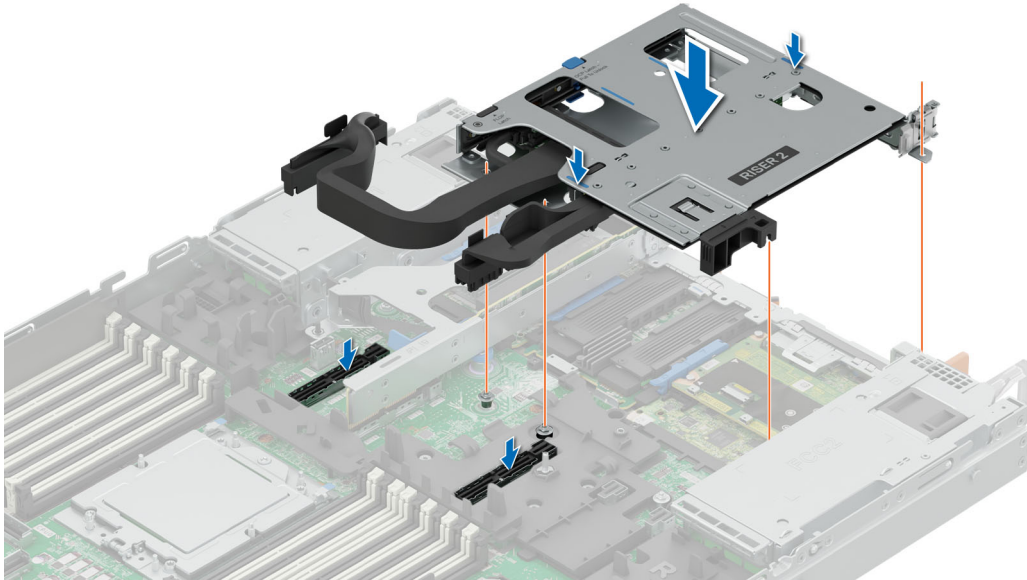


Figure 113. Installing the expansion card riser 2k (R2k)

2. For Riser 2s, align the riser with the connector and guide pin, lower it into place, press to ensure that the riser is fully seated on the connector, and connect the cables to the connectors. See [cable routing](#) section for more information about connecting the PERC cables.

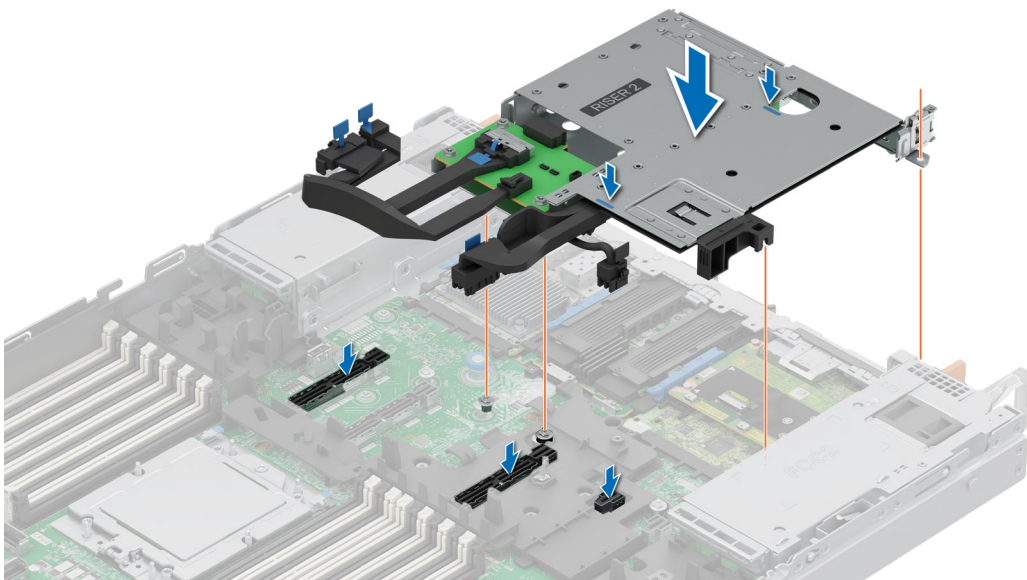


Figure 114. Installing the expansion card riser 2s (R2s)

3. For Riser 4a, align the expansion card riser with the connector and the riser guide pin on the HPM board. Lower the expansion card riser into place until the expansion card riser connector is fully seated in the connector. Press the touch points (indicated by blue line) to ensure proper engagement. Ensure that the riser latch is locked.

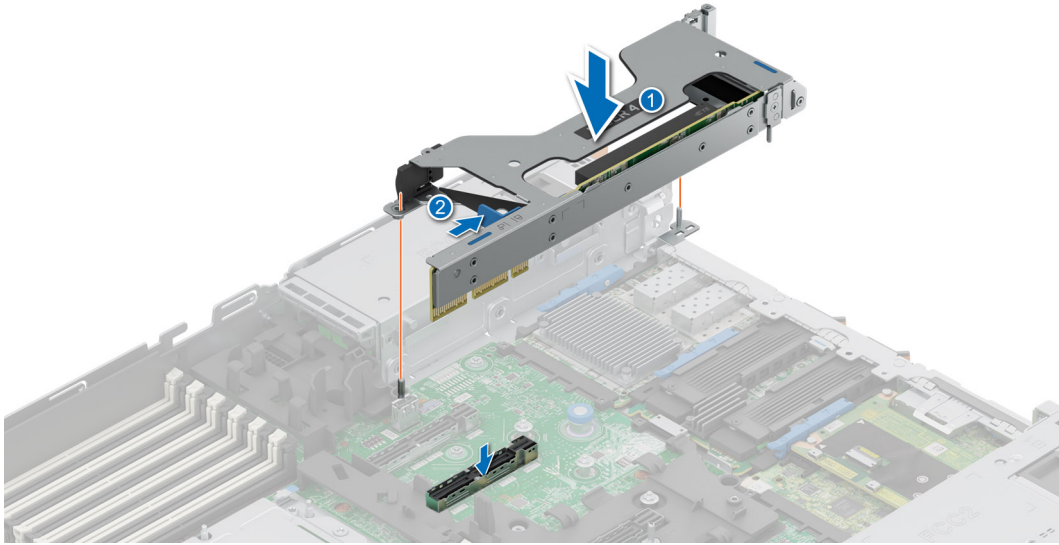


Figure 115. Installing the expansion card riser 4a (R4a)

4. For Riser 2q, align the riser with the connector and guide pin, lower it into place, press to ensure that the riser is fully seated on the connector, and connect the cables to the connectors.

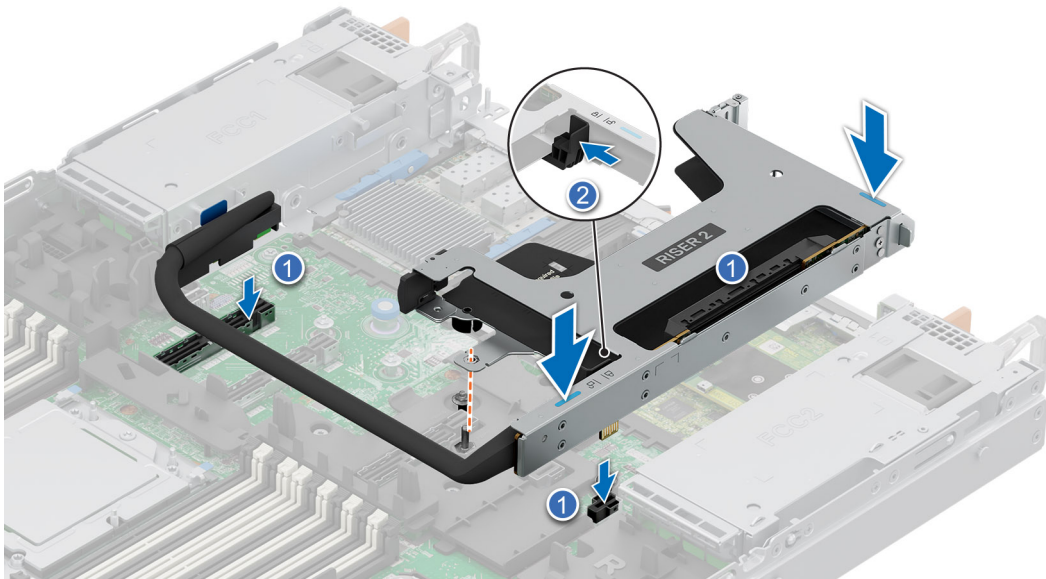


Figure 116. Installing the expansion card riser 2q (R2q)

5. For Riser 4b, align the expansion card riser with the connector and the riser guide pin on the HPM board. Lower the expansion card riser into place until the expansion card riser connector is fully seated in the connector. Press the touch points (indicated by blue line) to ensure proper engagement. Ensure that the riser latch is locked.

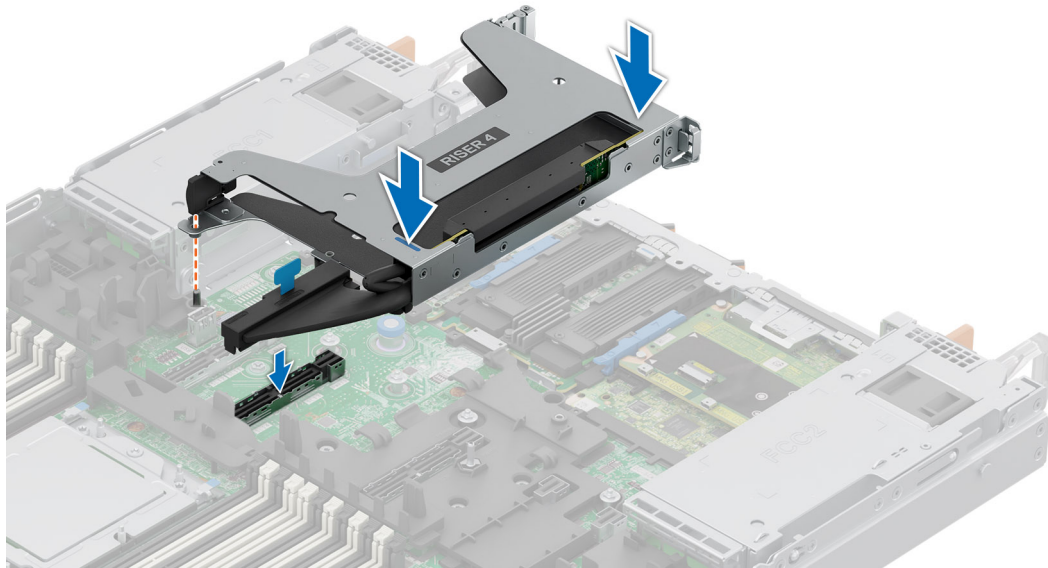


Figure 117. Installing the expansion card riser 4b (R4b)

Next steps

1. If required, reconnect the cables to the expansion card or HPM board.
2. Follow the procedure listed in [After working inside your system](#).

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 [Before working inside your system](#).
3. If applicable, disconnect the cables from the expansion card.
4. [Remove the expansion card riser](#).

Steps

1. For Riser 2k:
 - a. Lift the blue OCP latch to unlock the OCP card. Pull out and remove the OCP card from the riser.
 - b. Open the expansion card latches. Hold the expansion card by its edges and pull the card until the card edge connector disengages from the expansion card connector on the riser.

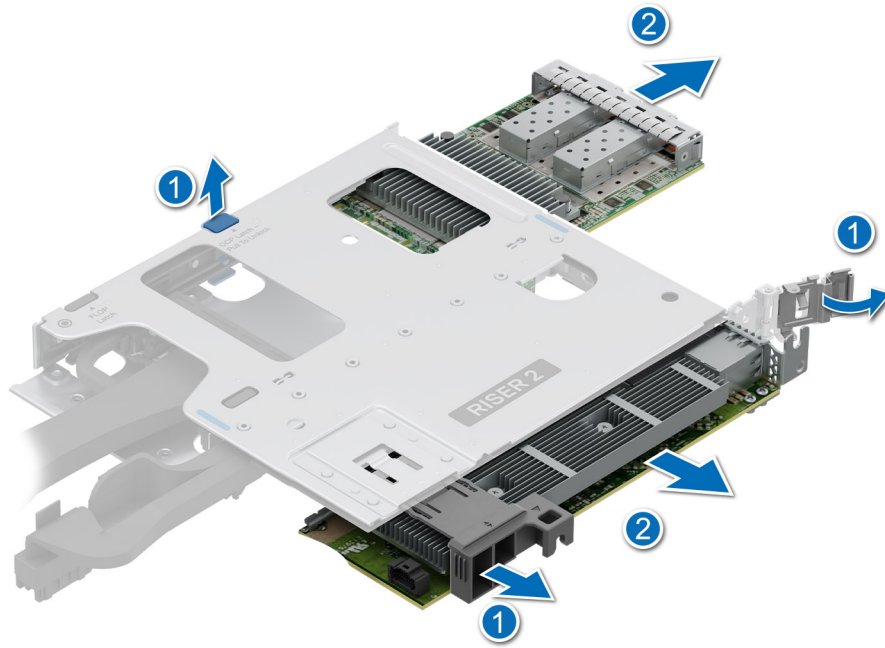


Figure 118. Removing an expansion card and OCP from the expansion card riser 2k

2. For Riser 4a:
 - a. Open the expansion card latches. Hold the expansion card by its edges and pull the card until the card edge connector disengages from the expansion card connector on the riser.

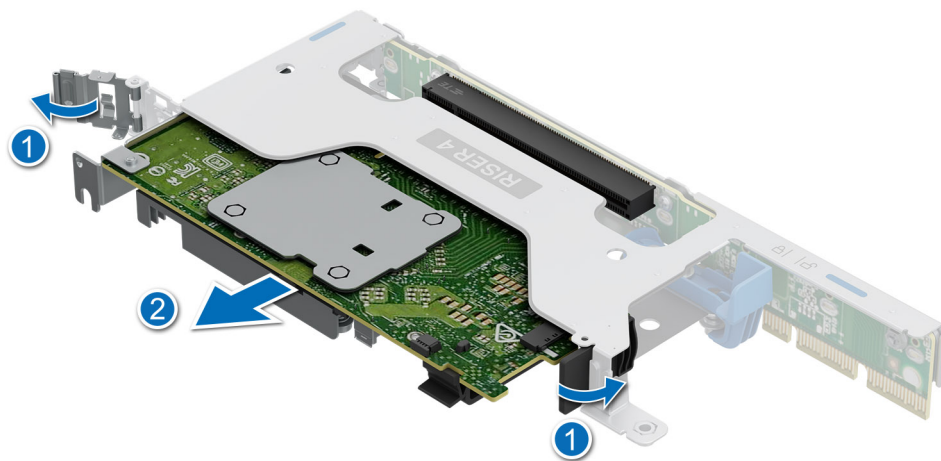


Figure 119. Removing expansion card from the expansion card riser 4a

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

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 [Before working inside your system](#).
3. [Remove the expansion card riser](#).
4. If installing a new expansion card, unpack it and prepare the card for installation.

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

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.

Steps

1. Open the expansion card latch.
2. If installed, remove the PCIe blank from the risers.

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

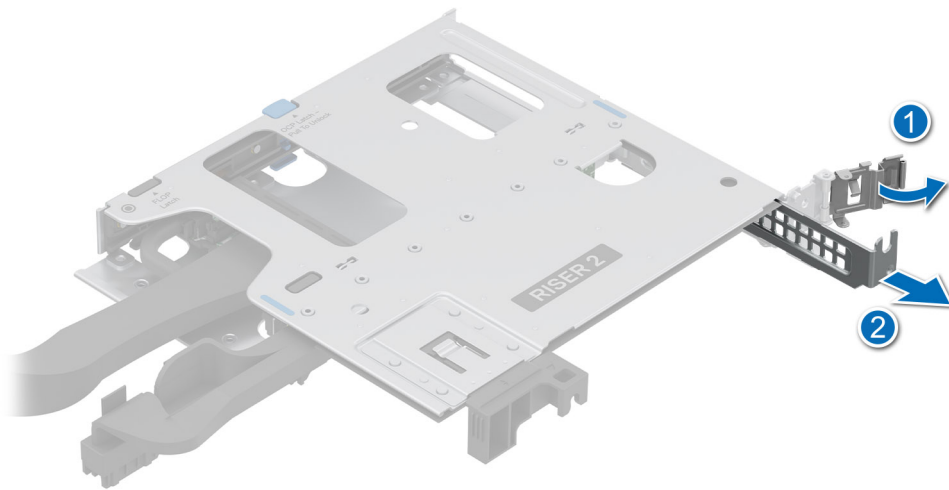


Figure 120. Removing the PCIe blank for the riser 2k

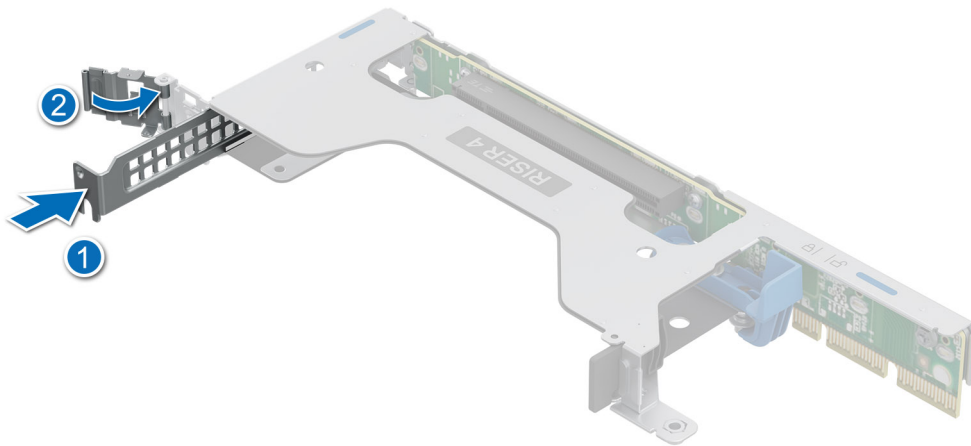


Figure 121. Removing the PCIe blank for the riser 4a

3. For riser 2b:
 - a. Unlock the OCP latch. Slide the OCP card into the riser and lock the OCP latch.
 - b. Open the expansion card latches. Hold the card by the edges, and align the card edge connector with the expansion card connector on the riser.
 - c. Insert the card edge connector firmly into the expansion card connector until the card is fully seated.
 - d. Close the expansion card latches on both ends of the riser.

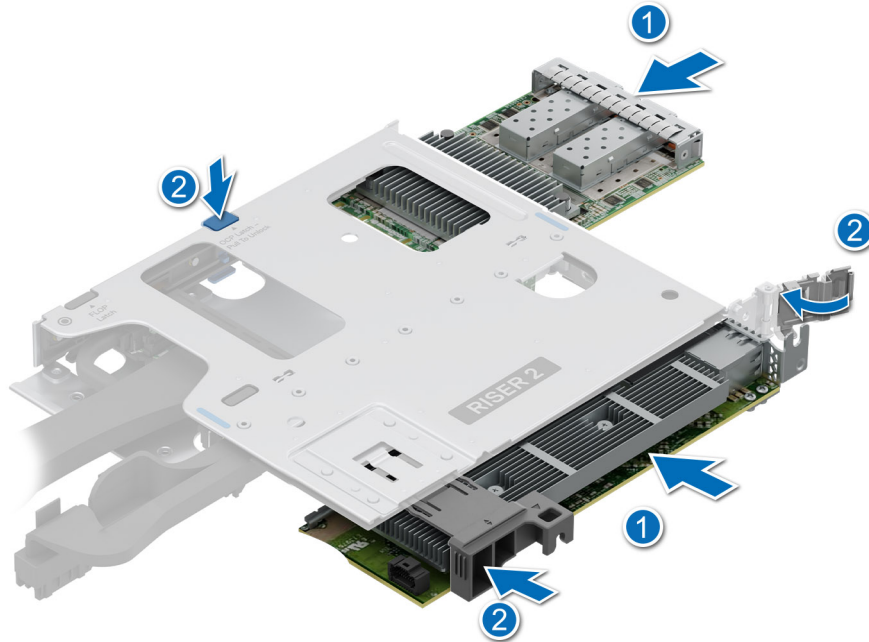


Figure 122. Installing an expansion card and OCP card into the riser 2k

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

4. For riser 4a:
 - a. Open the expansion card latches. Hold the card by the edges, and align the card edge connector with the expansion card connector on the riser.
 - b. Insert the card edge connector firmly into the expansion card connector until the card is fully seated.
 - c. Align and slide the card holder guides into the slots on the riser until seated.
 - d. Close the expansion card latches on both ends of the riser.

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

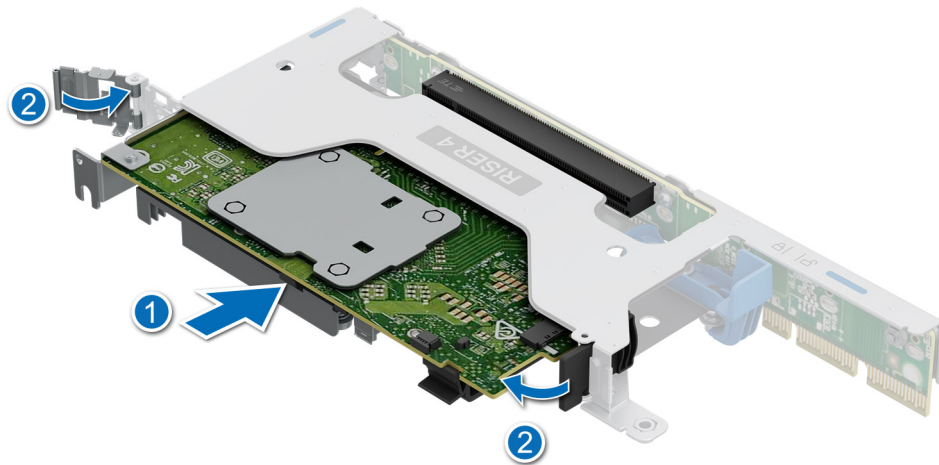


Figure 123. Installing an expansion card into the riser 4a

Next steps

1. If applicable, connect the cables to the expansion card.
2. [Install the expansion card riser.](#)
3. Follow the procedure listed in the [After working inside your system.](#)
4. Install any device drivers required for the card as described in the documentation for the card.

M.2 SSD module

Removing the M.2 NVMe SSD module

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions.](#)
2. Follow the procedure listed in [Before working inside your system.](#)

Steps

1. Pull and lift the BOSS-N1 DC-MHS carrier latch to open.
2. Slide the BOSS-N1 DC-MHS carrier out.

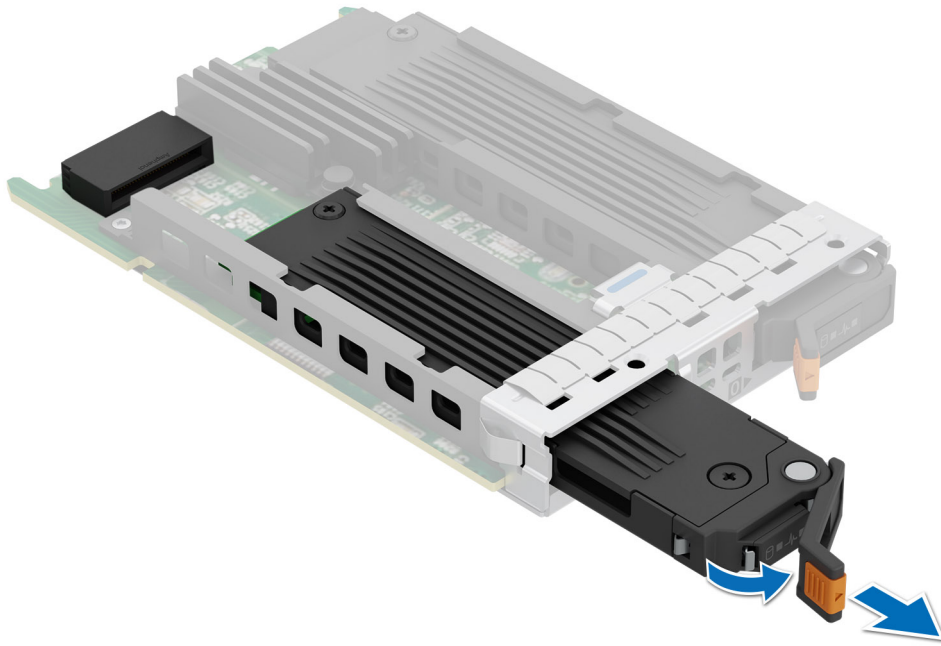


Figure 124. Removing the BOSS-N1 DC-MHS carrier

3. Using the Phillips 1 screwdriver, loosen the captive screws securing the top cover of the BOSS-N1 DC-MHS carrier.

NOTE: Follow the sequence to loosen the captive screws. First, loosen the screw at the connector end, and then the screw at the front handle end.



Figure 125. Loosen the captive screws

4. Tilt the top cover from the side and lift the top cover out of the BOSS-N1 DC-MHS card carrier.

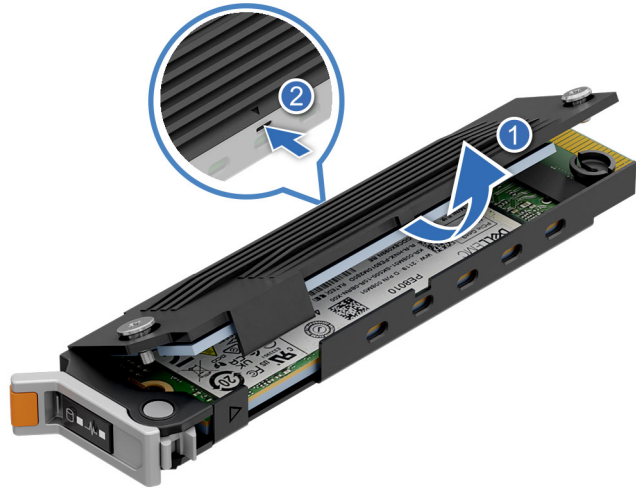


Figure 126. Removing the top cover

5. Lift the M.2 NVMe SSD module to disconnect from the BOSS-N1 DC-MHS carrier connector.

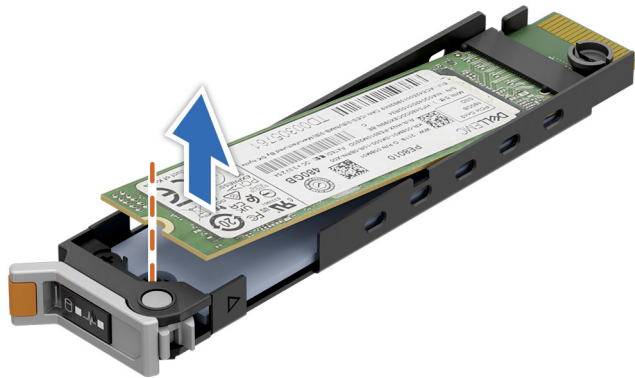


Figure 127. Removing the M.2 NVMe SSD module

NOTE: For information about Thermal pad and BOSS-N1 DC-MHS carrier replacement, go to [PowerEdge Manuals > Rack Servers > PowerEdge R6715 > Select This Product > Documentation > Manuals and Documents > BOSS-N1 DC-MHS M.2 NVMe SSD Card Installation and Replacement Tech Sheet](#).

Next steps

1. Replace the M.2 NVMe SSD module.

Installing the M.2 NVMe 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. Replace the thermal pads on the top and bottom cover of the BOSS-N1 DC-MHS card carrier, when replacing the M.2 NVMe SSD module.

NOTE: For information about Thermal pad and BOSS-N1 DC-MHS card carrier replacement, go to [PowerEdge Manuals > Rack Servers > PowerEdge R6715 > Select This Product > Documentation > Manuals and Documents > BOSS-N1 DC-MHS M.2 NVMe SSD Card Installation and Replacement Tech Sheet.](#)

Steps

1. Align the M.2 NVMe SSD module at an angle with the BOSS-N1 DC-MHS card carrier connector.
2. Insert the M.2 NVMe SSD module until it is firmly seated in the BOSS-N1 DC-MHS card carrier connector.

NOTE: Press the M.2 NVMe SSD card until it adheres to the thermal pad.

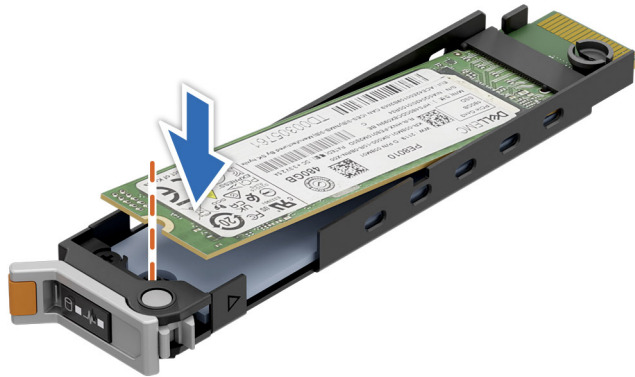


Figure 128. Installing the M.2 NVMe SSD module

3. Align at an angle, place the top cover hook into the slot on the bottom cover of the BOSS-N1 DC-MHS card carrier.
4. Press the opposite side of the top cover until firmly seated.

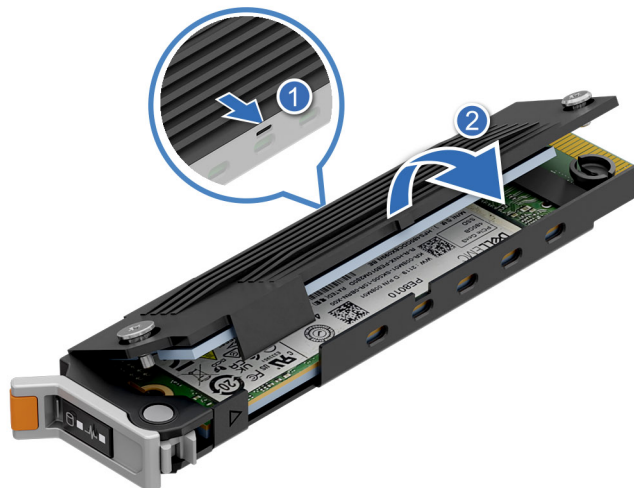


Figure 129. Installing the top cover

5. Using the Phillips 1 screwdriver, tighten the captive screws on the BOSS-N1 DC-MHS card carrier top cover.

NOTE: Follow the sequence to tighten the captive screws. First, tighten the screw available at the front handle end, and then the screw at the connector end.



Figure 130. Tighten the top cover captive screws

6. Slide the BOSS-N1 DC-MHS card carrier into the BOSS-N1 DC-MHS module slot.
7. Close the BOSS-N1 DC-MHS card carrier release latch to lock the carrier in place.

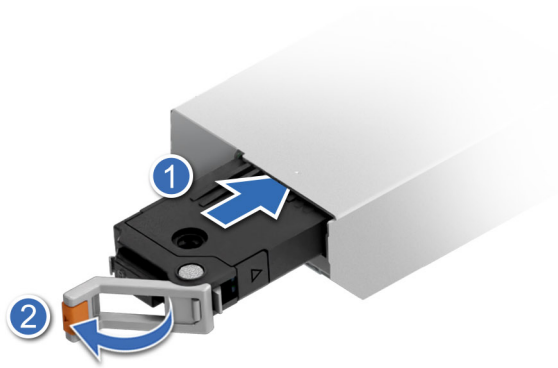


Figure 131. Installing the BOSS-N1 DC-MHS card carrier

Optional BOSS-N1 DC-MHS module

This is a service technician replaceable part only.

Removing the BOSS-N1 DC-MHS 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 expansion card riser](#).

Steps

1. Open the blue latch to disengage the BOSS-N1 DC-MHS module.
2. Push the BOSS-N1 DC-MHS module towards the rear end of the system to disconnect from the connector on the HPM board.
3. Slide the BOSS-N1 DC-MHS module out of the slot on the system.

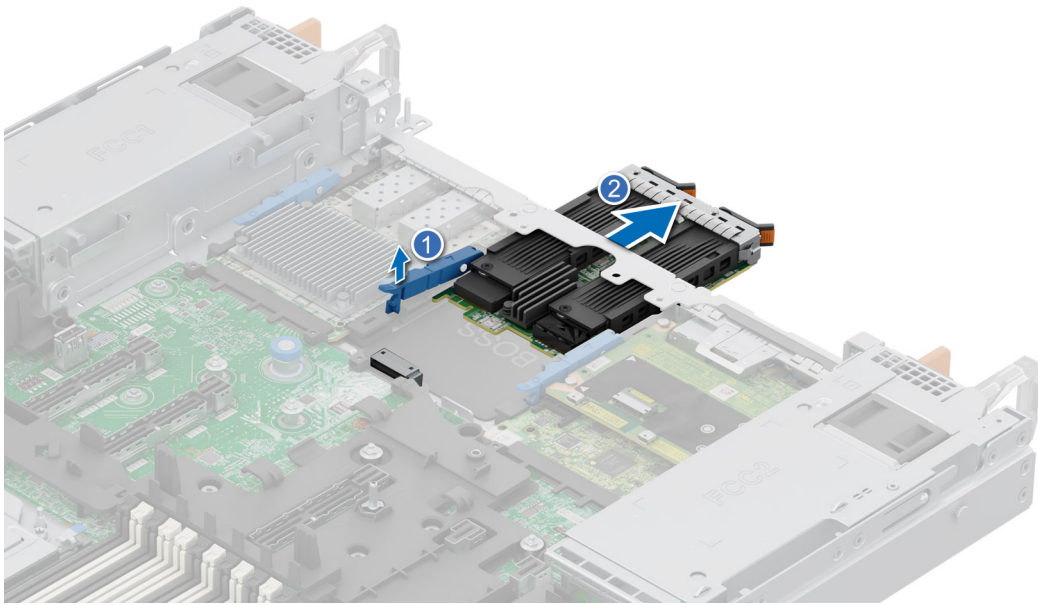


Figure 132. Removing the BOSS-N1 DC-MHS module

4. If the BOSS-N1 DC-MHS module is not going to be replaced, install a filler bracket.

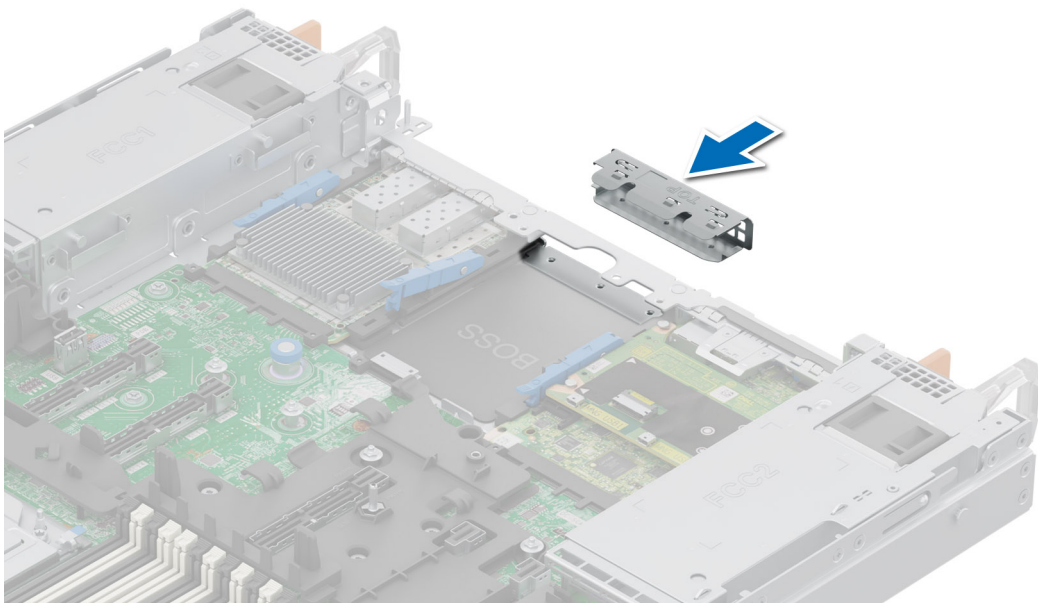


Figure 133. Installation of filler bracket

Next steps

1. [Replace the BOSS-N1 DC-MHS module.](#)

Installing the BOSS-N1 DC-MHS 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 expansion card riser](#).

Steps

1. If installed, remove the filler bracket.

i **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.

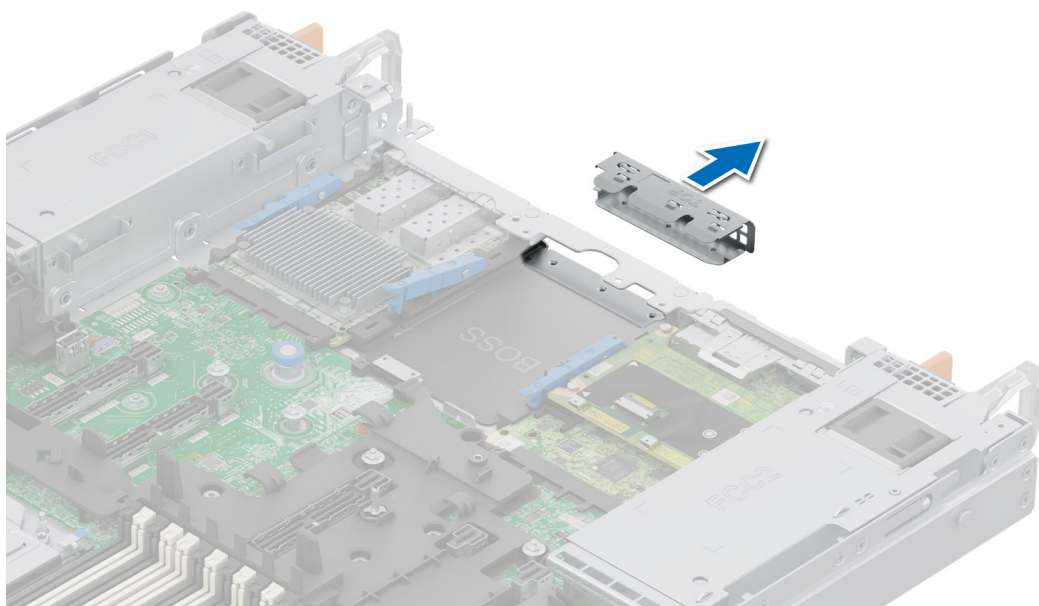


Figure 134. Removal of filler bracket

2. Open the blue latch on the HPM board.
3. Slide the BOSS-N1 DC-MHS module into the slot in the system.
4. Push until the BOSS-N1 DC-MHS module is connected to the connector on the HPM board.
5. Close the blue latch to lock the BOSS-N1 DC-MHS module to the system.

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

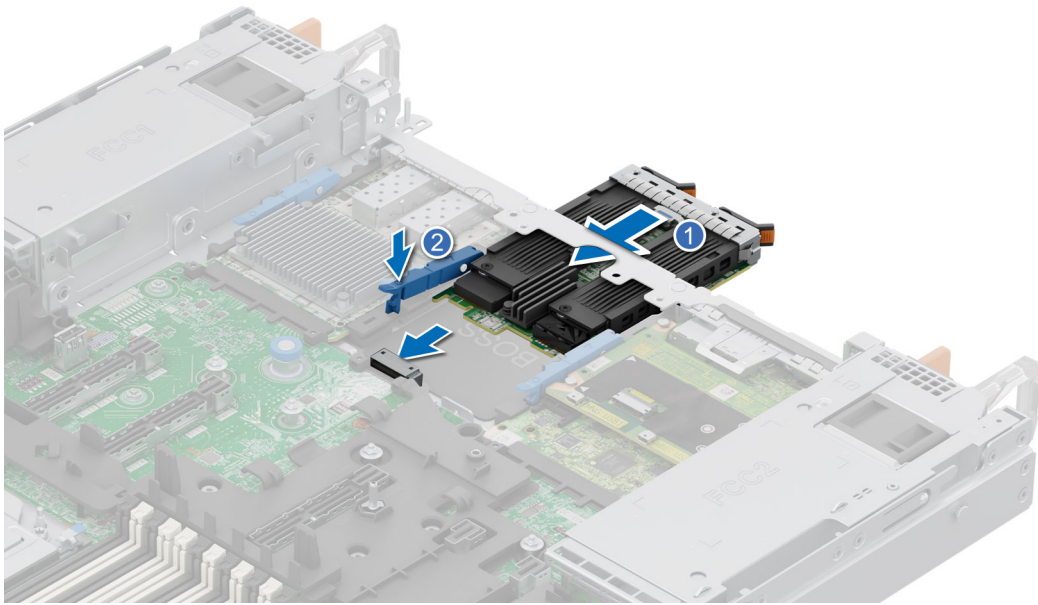


Figure 135. Installing the BOSS-N1 DC-MHS module

Next steps

1. [Install the expansion card riser.](#)
2. Follow the procedure listed in the [After working inside your system.](#)

Optional OCP NIC card

Removing the rear OCP NIC card

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.](#)

Steps

1. Open the blue latch to disengage the OCP NIC card.
2. Push the OCP NIC card towards the rear end of the system to disconnect from the connector on the HPM board.
3. Slide the OCP NIC card out of the slot on the system.

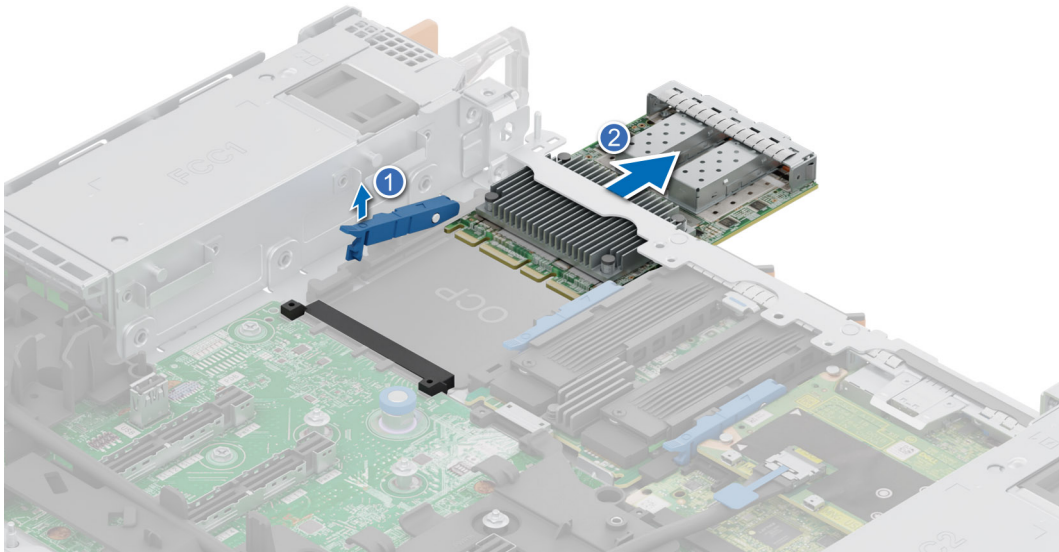


Figure 136. Removing the OCP NIC card

4. If the OCP NIC card is not going to be replaced, install a filler bracket .

i **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.

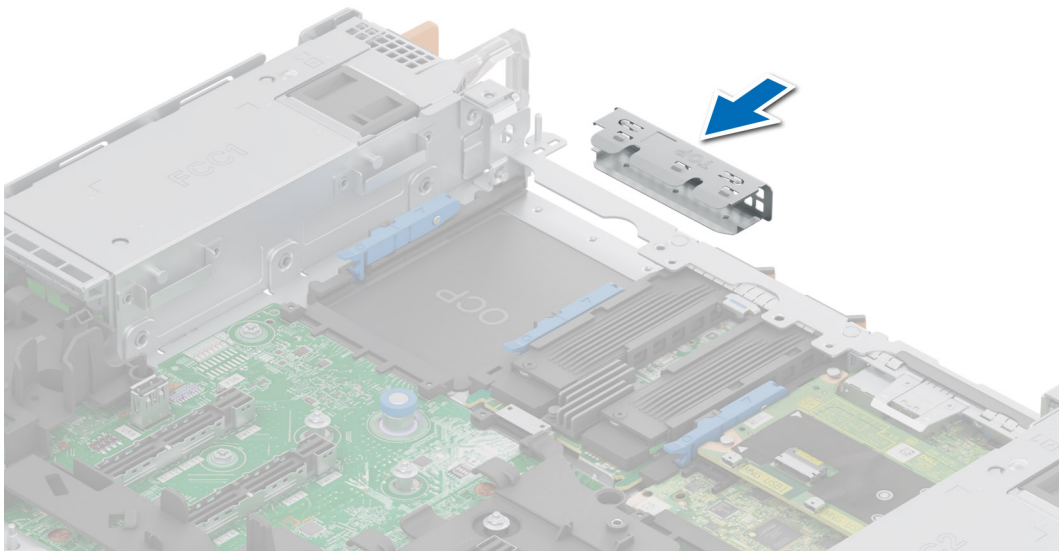


Figure 137. Installation of filler bracket

Next steps

1. [Replace the OCP NIC card.](#)

Installing the rear OCP NIC card

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](#).

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.

Steps

1. 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.

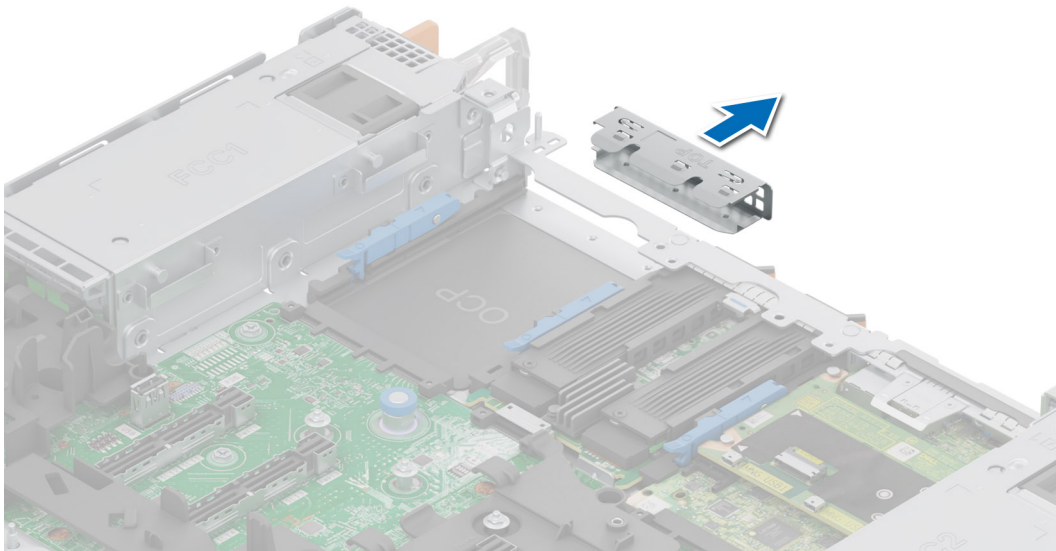


Figure 138. Removal of filler bracket

2. Open the blue latch on the HPM board.
3. Slide the OCP NIC card into the slot in the system.
4. Push until the OCP NIC card is connected to the connector on the HPM board.
5. Close the blue latch to lock the OCP NIC card to the system.

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

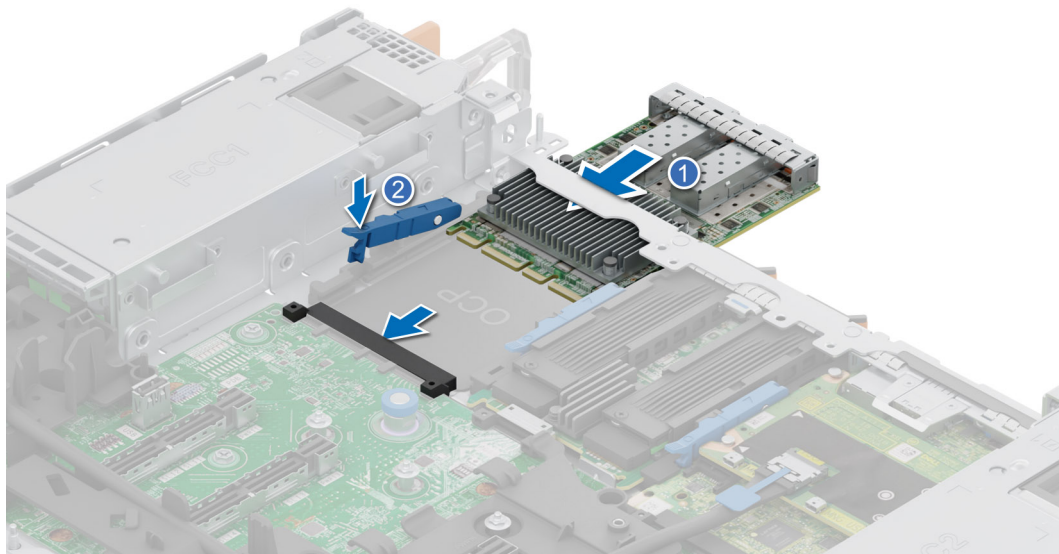


Figure 139. Installing the OCP NIC card

Next steps

1. Route and connect the cables, taking care not to damage them.

NOTE: See [cable routing](#) section for more information.

2. [Install the expansion card riser.](#)
3. Follow the procedure listed in [After working inside your system.](#)

Datacenter-Secure Control Module (DC-SCM)

This is a service technician replaceable part only.

Removing the DC-SCM board

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.](#)

NOTE: Disconnect the Attic cable, see [cable routing](#) section.

Steps

1. Open the blue latch to disengage the DC-SCM board.
2. Push the DC-SCM board towards the rear end of the system to disconnect from the connector on the HPM board.
3. Slide the DC-SCM board out of the slot on the system.

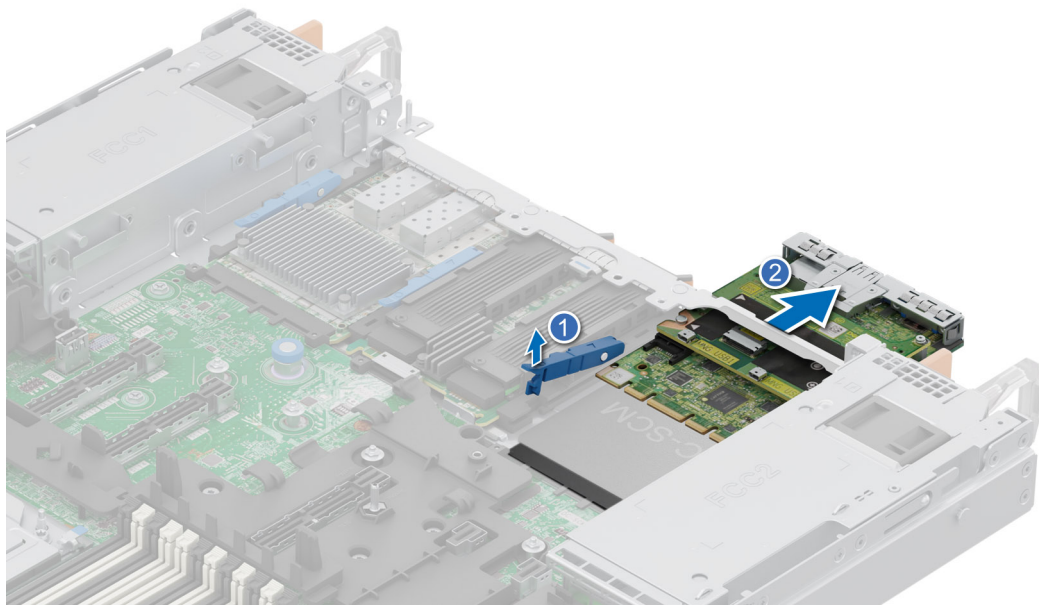


Figure 140. Removing the DC-SCM board


Next steps


1. [Remove the Attic card.](#)
2. [Replace the DC-SCM board.](#)

Installing the DC-SCM board

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.](#)
4. [Remove the attic board](#)

 **NOTE:** Disconnect the Attic cable, see [cable routing](#) section.

 **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.

Steps

1. Open the blue latch on the HPM board.
2. Slide the DC-SCM board into the slot in the system.
3. Push until the DC-SCM board is connected to the connector on the HPM board.
4. Close the blue latch to lock the DC-SCM board to the system.

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

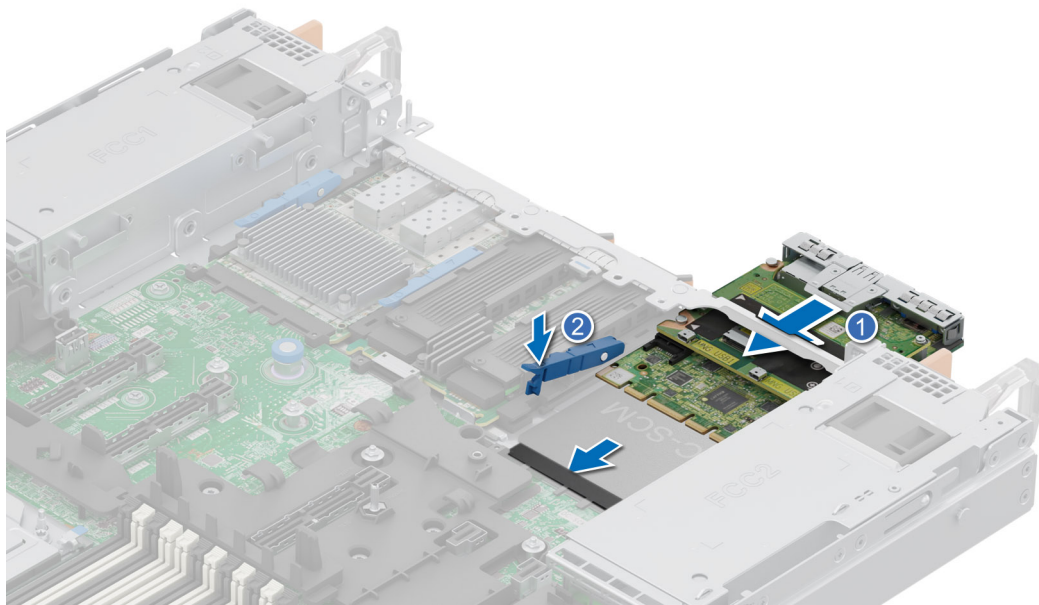


Figure 141. Installing the DC-SCM board

Next steps

1. [Install the Attic board.](#)

i **NOTE:** Connect the Attic cable, see [cable routing](#) section.

2. [Install the expansion card riser.](#)
3. Power on the system.
4. Ensure that you perform the following steps:
 - a. Use the Easy Restore feature to restore the BIOS and Service Tag. See the [Restoring the system 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](#) by using System Setup section.
 - c. Install BIOS and iDRAC version updates, Diagnostic, and OS Drivers Pack and OS Collector.
 - d. Re-enable the Trusted Platform Module (TPM). See the [Upgrading the Trusted Platform Module](#) section.
5. Follow the procedure listed in [After working inside your system.](#)

Attic board

This is a service technician replaceable part only.

Removing the Attic board

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.](#)
4. [Remove the DC-SCM board.](#)

Steps

1. Using the Phillips 1 screwdriver, loosen the captive screws securing the attic board to the DC-SCM board.

2. Tilt and lift the Attic board from the DC-SCM guide pins.

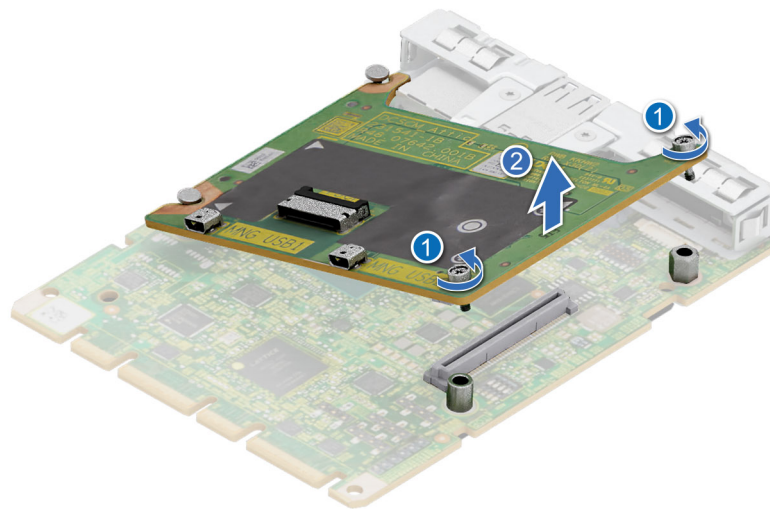


Figure 142. Removing the Attic board

Next steps

1. [Replace the Attic board.](#)

Installing the Attic board

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.](#)
4. [Remove the DC-SCM board.](#)

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.

Steps

1. Align the Attic board at an angle with the guide pins on the DC-SCM board.
2. Press until the Attic board is connected to the connector on the DC-SCM board.
3. Using a Phillips 1 screwdriver, tighten the captive screws.

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

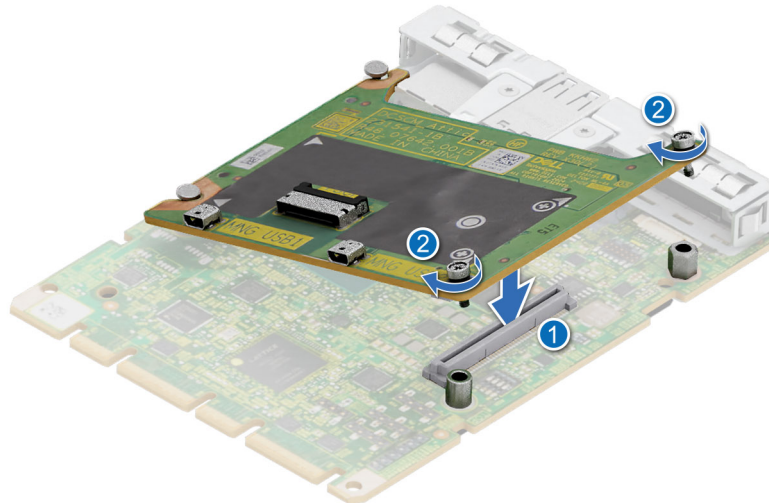


Figure 143. Installing the Attic board

Next steps

1. Install the DC-SCM board.
2. Install the expansion card riser.
3. Follow the procedure listed in [After working inside your system](#).

Restoring the system using Easy Restore

The Easy Restore feature restores the server service tag and BIOS configuration data after replacing the Datacenter-Secure Control Module (DC-SCM). System configuration data is automatically maintained in a backup flash device within the system. If the BIOS detects a new DC-SCM during server boot, the system prompts the user to restore the backup system configuration data.

About this task

When the DC-SCM is booted for the first time, it presents a screen with settings it can restore, below is a list of option/steps available:

Steps

1. To restore the system configuration data, press **Y**.
2. To skip restore for this boot, press **N**.
3. Enter BIOS setup to manually restore Service Tag, press **F2**.

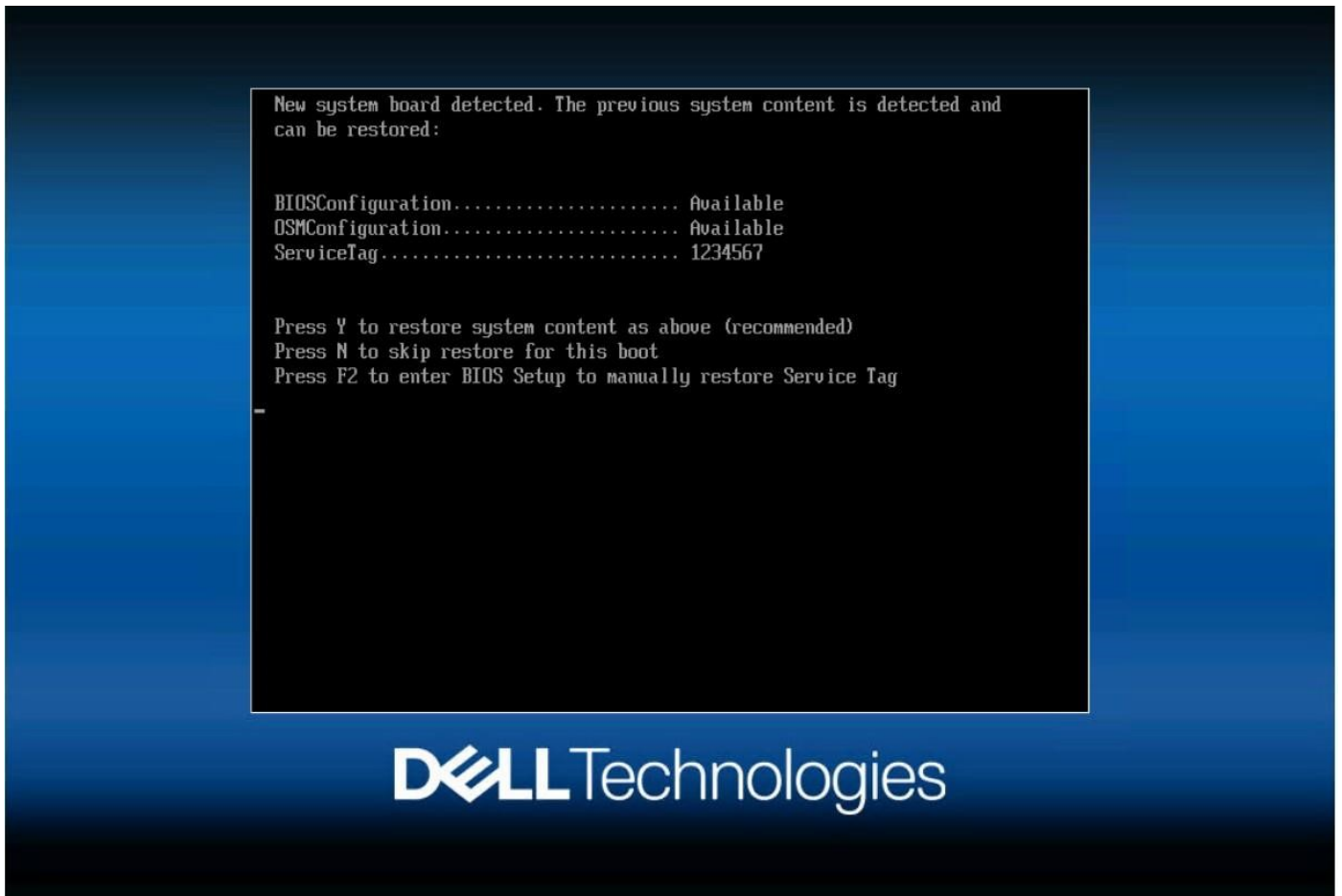


Figure 144. Easy Restore

Manually update the Service Tag

After replacing a HPM 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. Incorrectly entered service tag leads to HPM board replacement.

5. Click **OK**.

Optional internal USB port

This is a service technician replaceable part only.

Removing the internal USB card

Prerequisites

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

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](#).

Steps

Lift the internal USB card to disconnect from the connector on the HPM board.

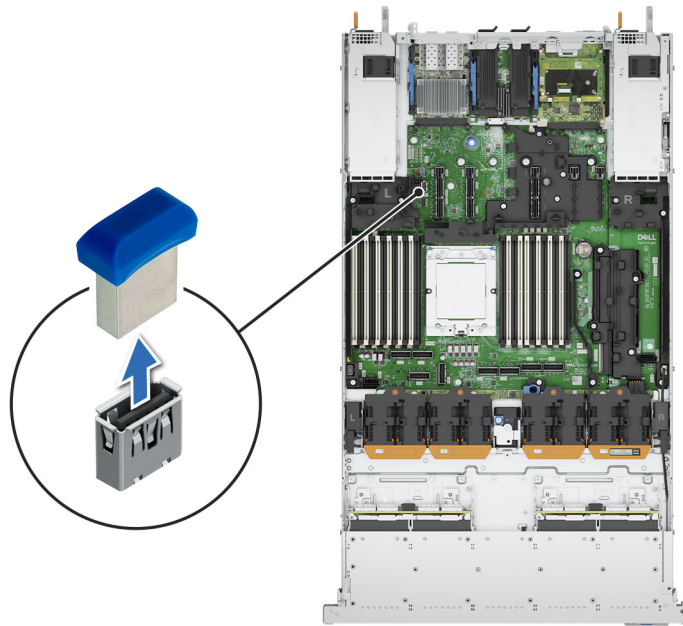


Figure 145. Removing the internal USB card

Next steps

1. [Replace the internal USB card](#).

Installing the Internal USB card

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](#).

Steps

Align the internal USB card with the USB port on the HPM board and press firmly until it is properly seated.

NOTE: For information about the exact location of USB on HPM board, see [HPM board jumpers and connectors](#) section.

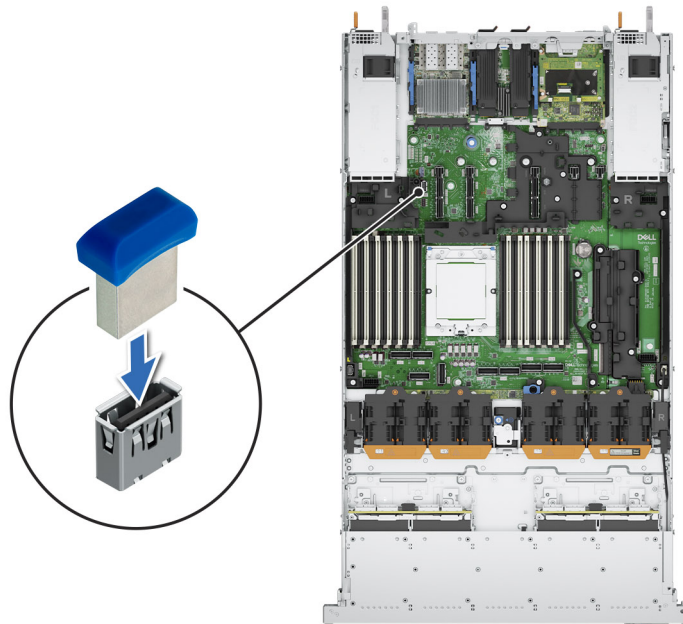


Figure 146. Installing the internal USB card

Next steps

1. Install the expansion card riser.
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.

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.

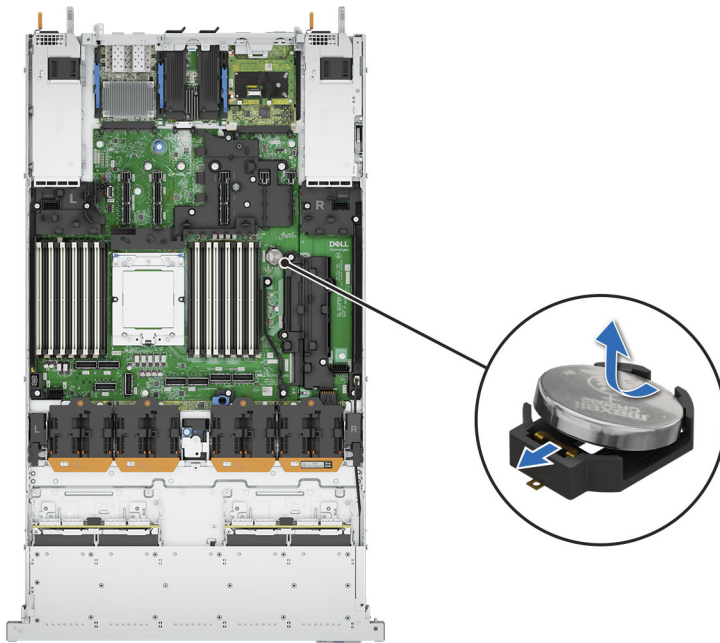
1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in the [Before working inside your system](#).
3. If applicable, disconnect the power or data cables from the expansion cards.

Steps

1. Press and hold the battery socket retention latch, for the battery to pop out.

i NOTE: If the battery does not pop out, then lift it out of the socket.

Figure 147. Removing the system battery



2. To install a new system battery, hold the battery with the positive side facing up at an angle and slide it under the battery holder socket latch.
3. Press the battery into the connector until it snaps into place.

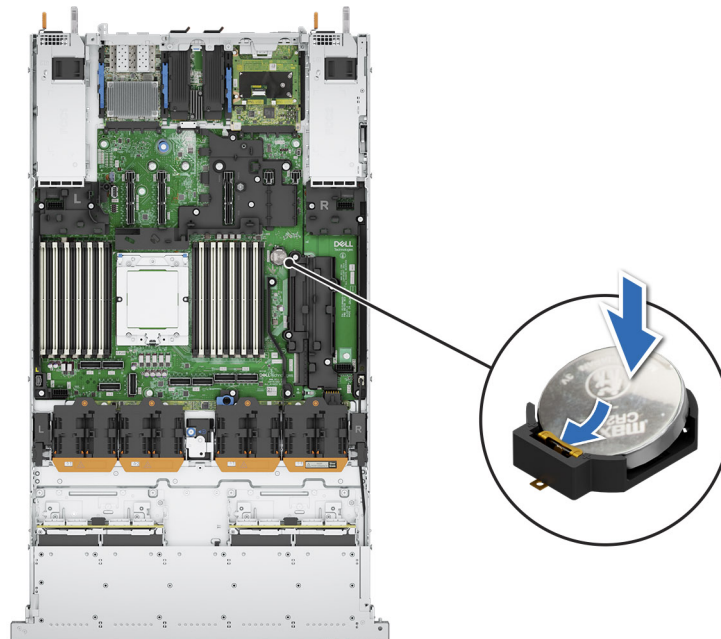


Figure 148. Installing the system battery

Next steps

1. If applicable, connect the cables to one or more expansion cards.
2. Follow the procedure listed in [After working inside your system](#).
3. 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** the System Setup.
 - d. To test the newly installed battery, check the time and date at least an hour after installing the battery.
 - e. Enter the System Setup and if the time and date are still incorrect, see [Getting help](#) section.

Intrusion switch

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:** Ensure that you note the routing of the cable as you remove it from the HPM board. Route the cable properly when you replace it to prevent the cable from being pinched or crimped.

Steps

1. Using a Phillips 1 screwdriver, loosen the screws on the intrusion switch module.
2. Disconnect the intrusion switch cable and the dongle cable.
NOTE: The intrusion switch cable is connected to the dongle cable, which in turn is connected to the HPM board. See the [cable routing](#) section.
3. Disconnect the dongle cable in the J slot connector on the HPM board.
4. Lift the intrusion switch module along with dongle cable out of the system.
NOTE: The numbers on the image do not depict the exact steps. The numbers are for representation of sequence.

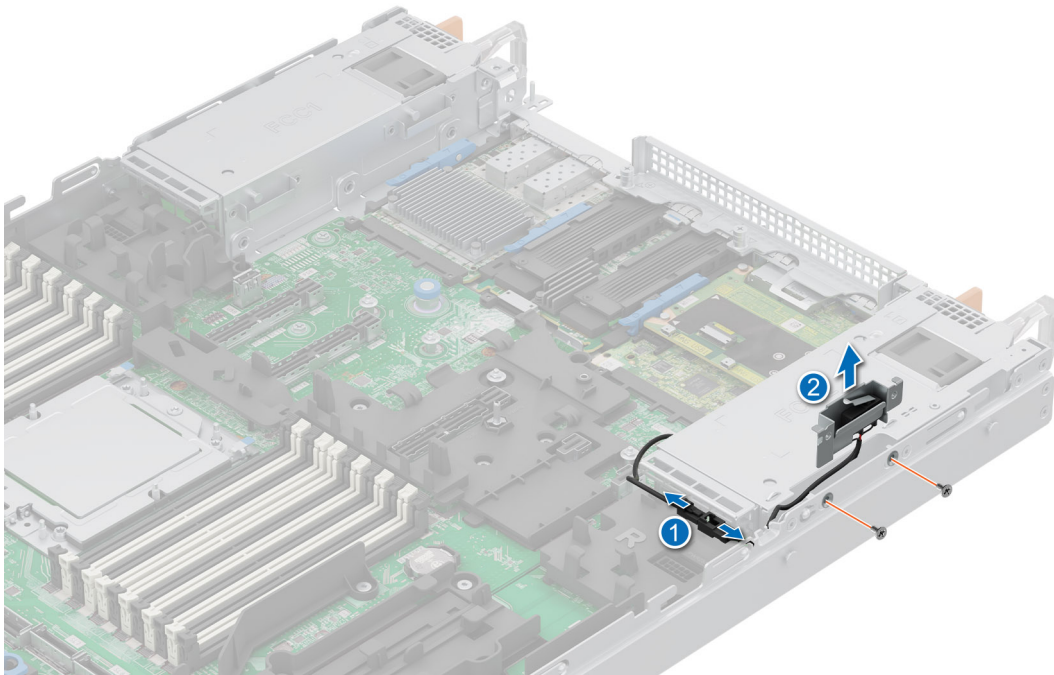


Figure 149. Removing the intrusion switch module

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: Ensure that you note the routing of the cable as you remove it from the HPM board. Route the cable properly when you replace it to prevent the cable from being pinched or crimped.

Steps

1. Align and place the intrusion switch module into the system.
2. Using a Phillips 1 screwdriver, tighten the screws to secure the intrusion switch module to the system chassis.
3. Connect the dongle cable and the intrusion switch cable.
4. Reconnect the dongle cable in the J slot connector on the HPM board.

NOTE: The intrusion switch cable is connected to the dongle cable, which in turn is connected to the HPM board.

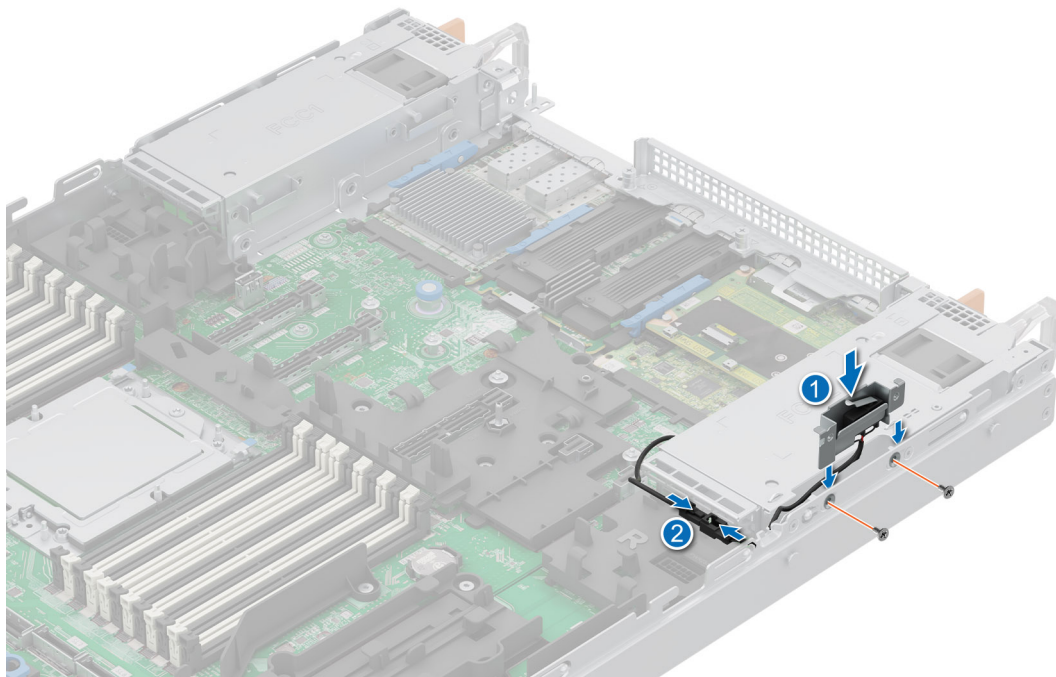


Figure 150. Installing the intrusion switch module

Next steps

[After working inside your system](#)

Power supply unit

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 PSU that you intend to remove.
3. Remove the cable from the strap on the PSU handle.
4. Unlatch and lift or remove the optional cable management accessory if it interferes with the PSU removal.

NOTE: For information about the cable management when the PSU is removed or installed while the system is in a rack, see the cable management arm documentation at [PowerEdge Manuals](#).

Steps

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

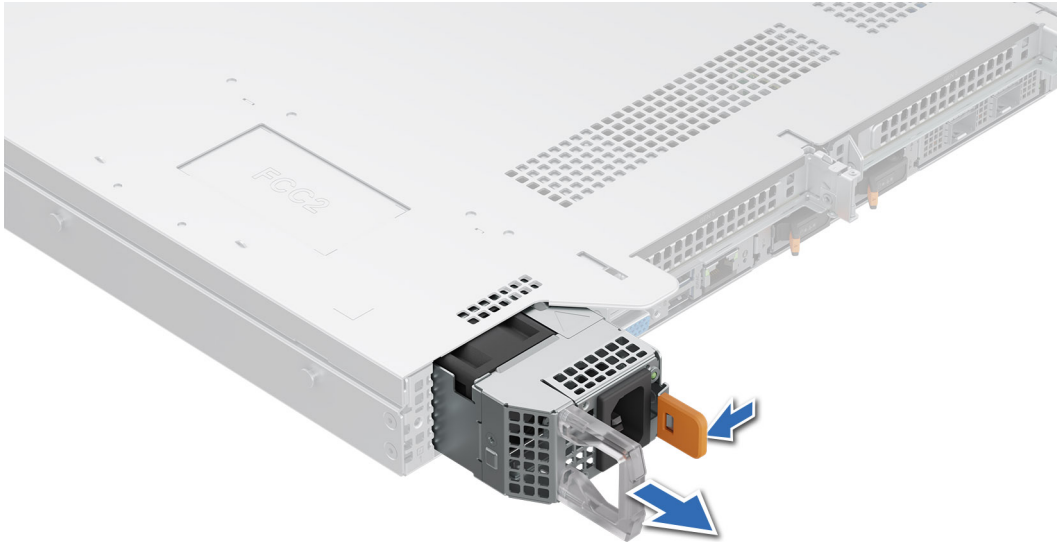


Figure 151. Removing a power supply unit

Next steps

1. [Replace the PSU](#) or [install 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 PSU, 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. If required, [Remove the PSU blank](#).

Steps

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

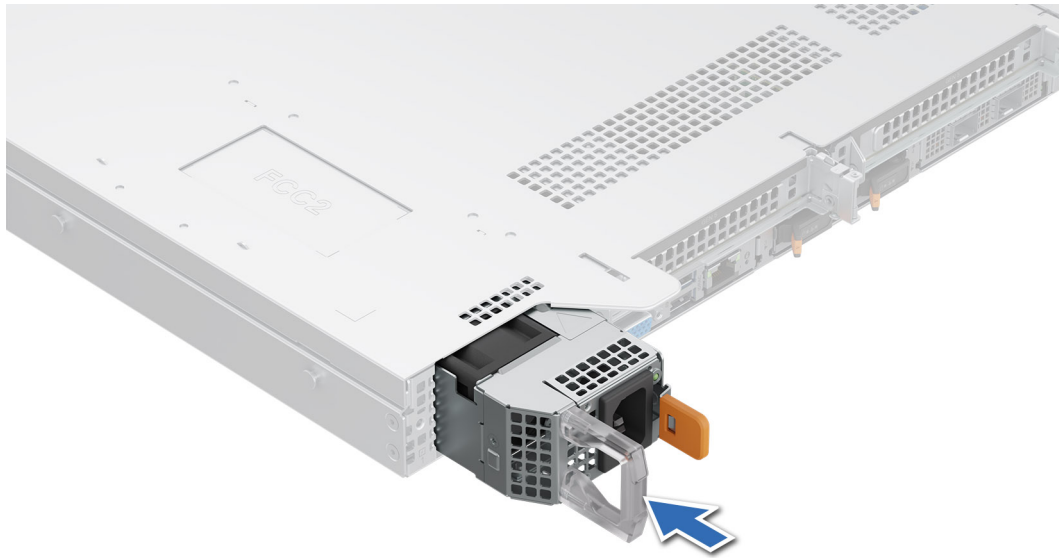


Figure 152. Installing a power supply unit

Next steps

1. If you have unlatched or removed the cable management accessory, reinstall or relatch it. For information about the cable management when the PSU is removed or installed while the system is in the rack, see the system's cable management accessory 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.

Removing a power supply unit blank

Prerequisites

Follow the safety guidelines listed in the [Safety instructions](#).

Steps

Pull the blank out of the system.

CAUTION: For proper system cooling, the PSU blank must be installed in the second PSU bay in a nonredundant configuration. Remove the PSU blank only if you are installing a second PSU.

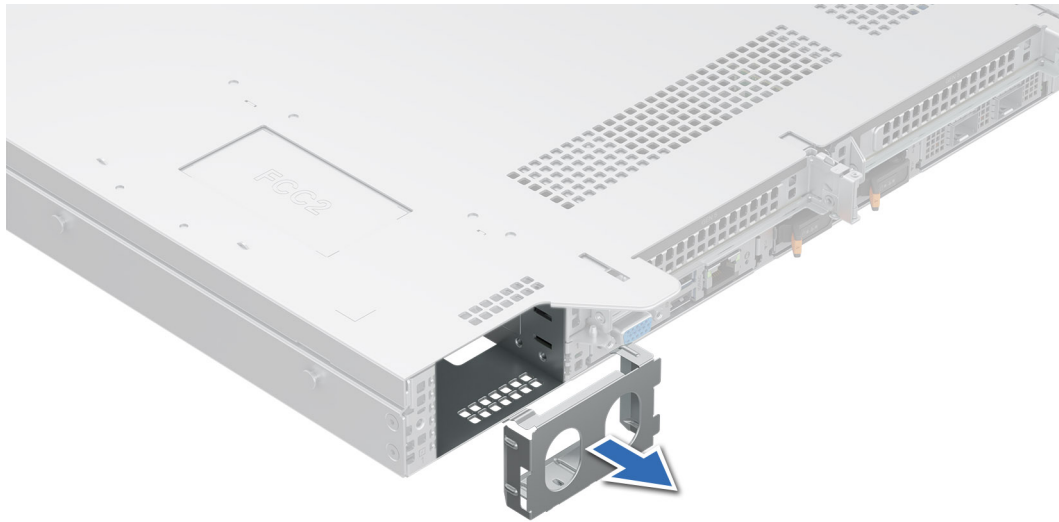


Figure 153. Removing a power supply unit blank

Next steps

1. [Replace the PSU blank](#) or [install the PSU](#).

Installing a power supply unit blank

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).

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

2. If required, [Remove the PSU](#).

Steps

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

NOTE: Make sure that the "Top" mark on the PSU blank is on the upper side.

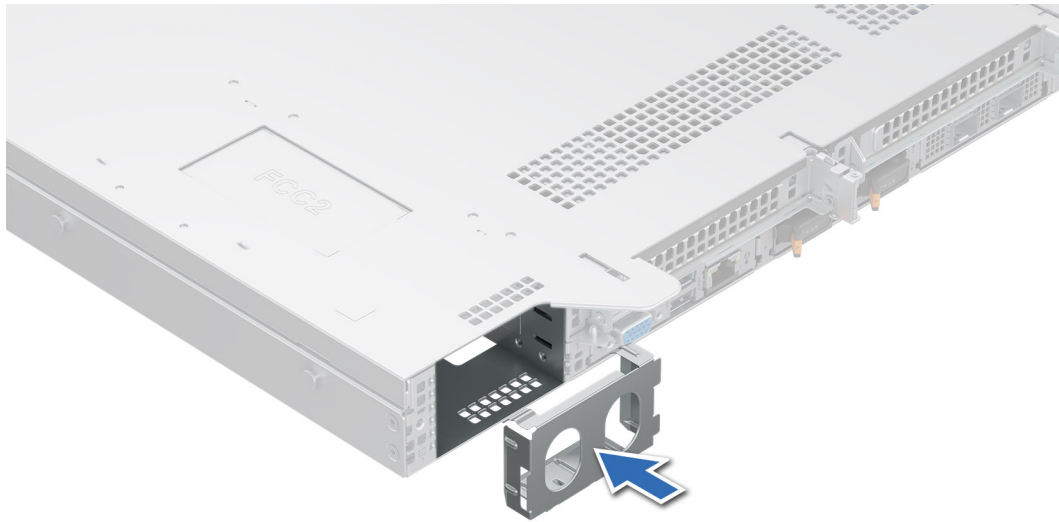


Figure 154. Installing a power supply unit blank

Trusted Platform Module

TPM is soldered down to the DC-SCM.

If the Trusted Platform Module (TPM) is identified as the root cause of the problem, a full DC-SCM replacement is necessary.

For more information on TPM see [Trusted Platform Module \(TPM\) Summary](#).

Initializing TPM 2.0 for users

Steps

1. Initialize the TPM.
 - a. While booting your system, press F2 to enter System Setup.
 - b. On the **System Setup Main Menu** screen, click **System BIOS > System Security Settings**.
 - c. From the **TPM Security** option, select **On**.
 - d. Save the settings.
 - e. Restart your system.
2. The **TPM Status** changes to **Enabled, Activated**.

TPM Support

Table 71. TPM Support

| OS | Resource Link |
|-------------------------------|---------------------------------------------------------|
| Microsoft Windows Server 2022 | Dell KB article for Windows server 2022 |
| Red Hat Enterprise Linux 7.3 | RHE Linux |

BitLocker Key: It is important to backup the BitLocker key incase of possible replacement of HPM board and/or TPM card.


Refer [backup BitLocker recovery key](#) for steps.

HPM board


This is a service technician replaceable part only.


Removing the HPM 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 HPM 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. [Cooling fans](#)
 - b. [Side wall bracket](#)
 - c. [Middle bracket](#)
 - d. [Memory modules](#)
 - e. [Expansion card risers](#)
 - f. [Heat sink module](#)
 - g. [OCP \(if installed\)](#)
 - h. [BOSS-N1 DC-MHS](#)
 - i. [DC-SCM](#)
 - j. [Internal USB memory key \(if installed\)](#)
 - k. [Power supply units \(PSU\)](#)
 - l. Disconnect all the cables from the HPM board and make note of all the cable connections.

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

 **NOTE:** Do not lift the HPM board by holding a memory module, processor, or other components.

Steps

1. Using the HPM board holder and plunger, slide the HPM board towards the front of the system.
2. Securely hold the holder and plunger to carefully lift the HPM board out of the chassis.

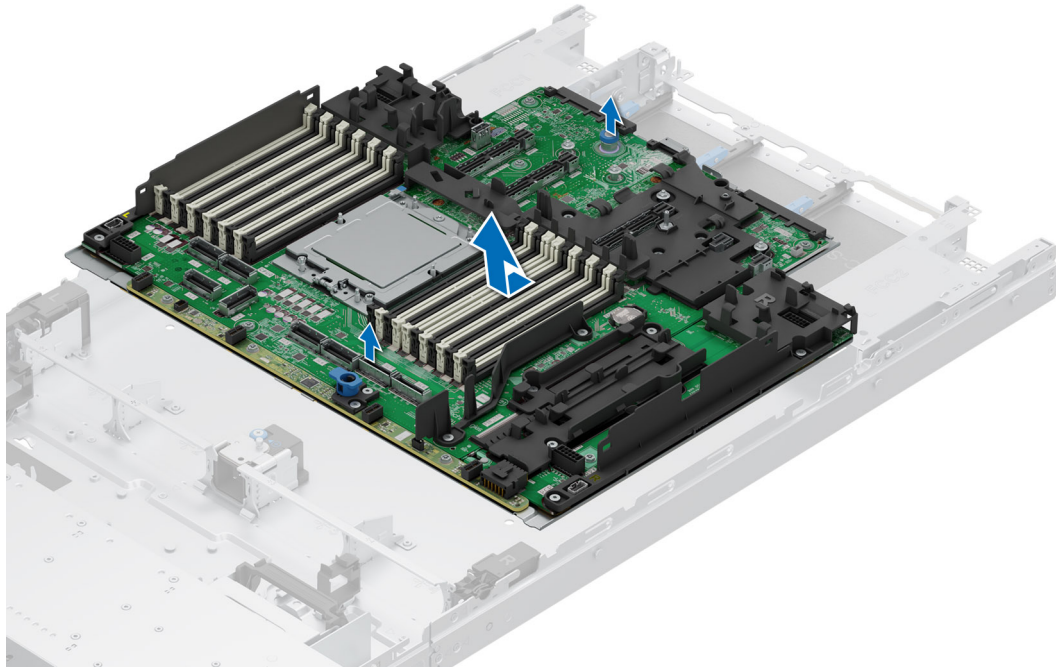


Figure 155. Removing the HPM board

Next steps

1. [Install the HPM board.](#)

Installing the HPM board

Prerequisites

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 HPM board, remove all the components that are listed in the removing the HPM board section.

Steps

1. Unpack the new HPM board assembly.

i **NOTE:** Do not lift the HPM board by holding a memory module, processor, or other components.

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

2. Holding the HPM board holder and plunger, align and lower the HPM board into the system.
3. Slide the HPM board towards the rear of the chassis until the connectors are firmly seated in the slots.

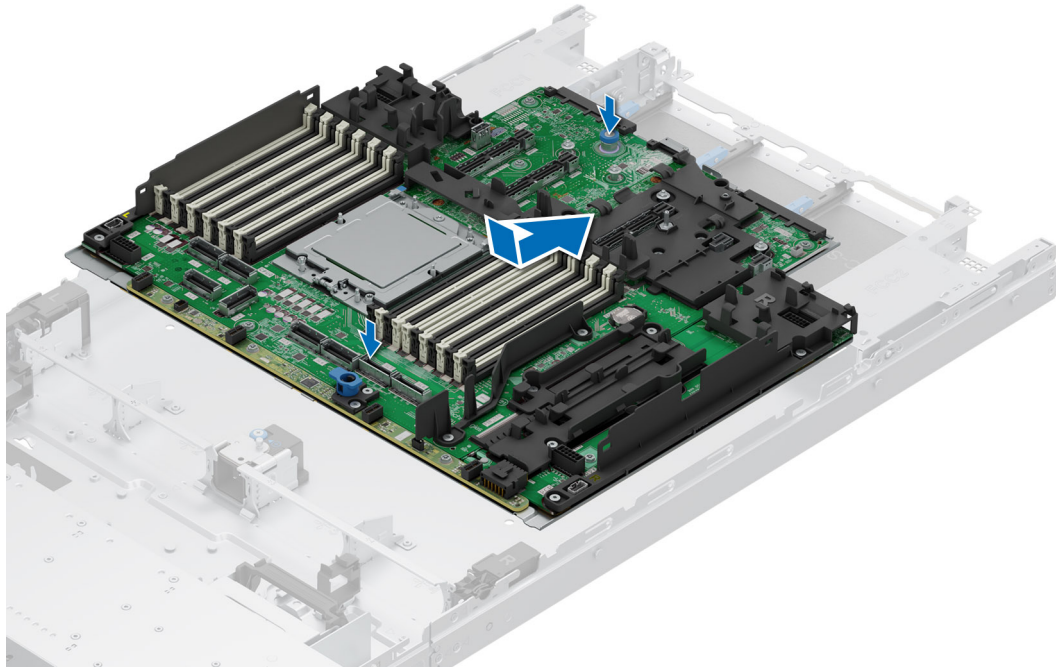


Figure 156. Installing the HPM board

Next steps

1. Replace the following components:
 - a. Internal USB memory key (if removed)
 - b. OCP card (if removed)
 - c. BOSS-N1 DC-MHS
 - d. DC-SCM
 - e. Heat sink module
 - f. Memory modules
 - g. Expansion card risers
 - h. Middle bracket
 - i. Side wall bracket
 - j. Cooling fans
 - k. Power supply units (PSU)
2. Reconnect all cables to the HPM board.

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

3. Follow the procedure listed in [After working inside your system](#).

Control panel

This is a service technician replaceable part only.

Removing the Right Control Panel (RCP)- Primary

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 system cover.
4. Remove the drive backplane cover.
5. Remove the side wall bracket.

Steps

1. Disconnect the RCP cable from the connectors on the HPM board.
2. Using the Phillips 1 screwdriver, remove the screws that secure the RCP and cable cover to the system.
3. Remove the cable cover away from the system.
4. Holding the RCP, slide it out of the system.

i **NOTE:** Observe the routing of the cable assembly as you remove the RCP panel from the system.

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

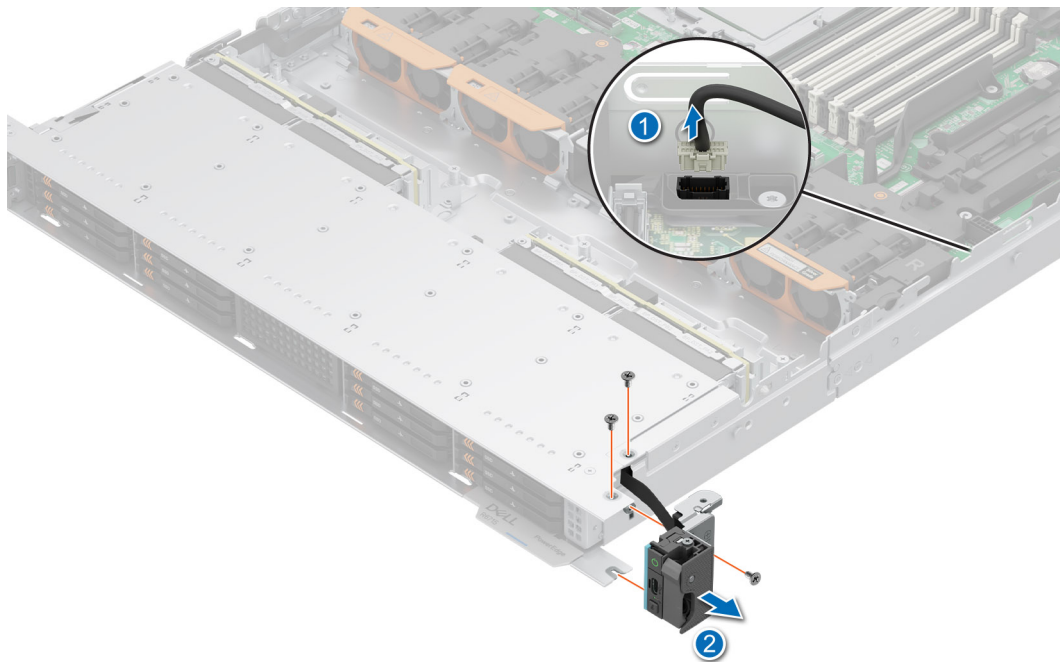


Figure 157. Removing the Right Control Panel (RCP) - Primary

Next steps

1. Replace the Right Control Panel (RCP) - Primary.

Installing the Right Control Panel (RCP) - Primary

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 drive backplane cover](#).
4. [Remove the side wall bracket](#).

Steps

1. Align and slide the RCP into the slot on the system.
2. Route the RCP cable through the side wall of the system.
3. Align and slide the RCP cable cover in the slot on the system.

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

4. Connect the RCP cable and VGA cable to the connectors on the HPM board.
5. Using the Phillips 1 screwdriver, tighten the screws that secure the RCP and the cable cover to the system.

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

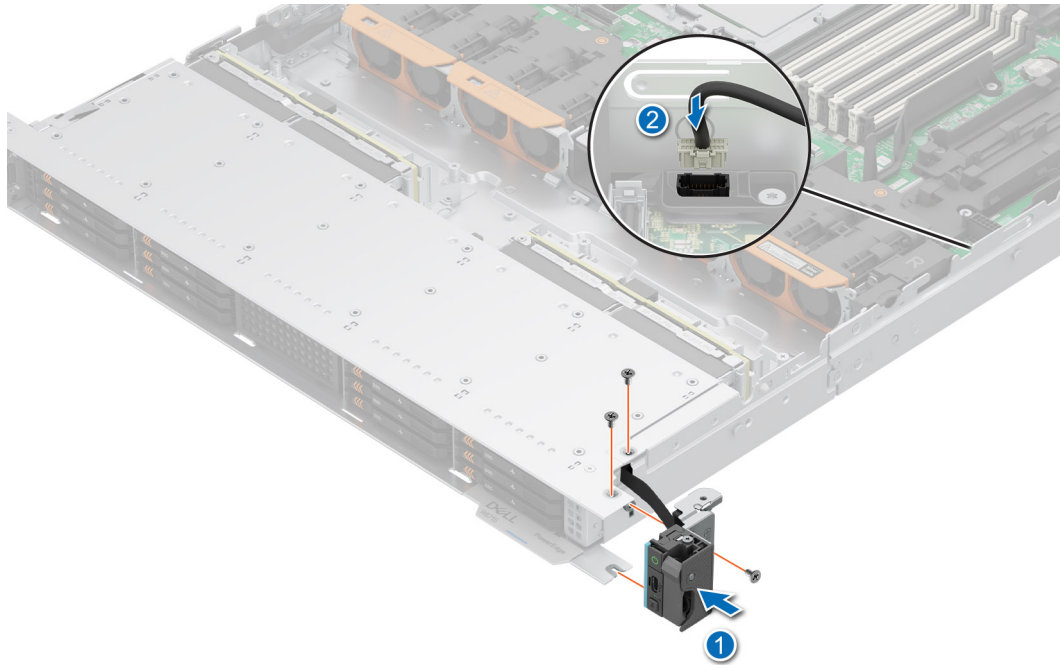


Figure 158. Installing the Right Control Panel (RCP) - Primary

Next steps

1. [Install the side wall bracket.](#)
2. [Install the drive backplane cover.](#)
3. Follow the procedure listed in [After working inside your system.](#)

Removing the Left Control Panel (LCP) - Secondary

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 system cover.](#)
4. [Remove the drive backplane cover.](#)
5. [Remove the side wall bracket.](#)
6. [Remove the expansion card riser](#)

Steps

1. For the EDSFF E3.S Gen5 NVMe configuration, disconnect the LCP cable from the connector on the HPM board.
2. Using the Phillips 1 screwdriver, remove the screws that secure the LCP and the bracket .
3. Remove the bracket away from the system.
4. Holding the cable, slide the LCP out of the system.

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

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

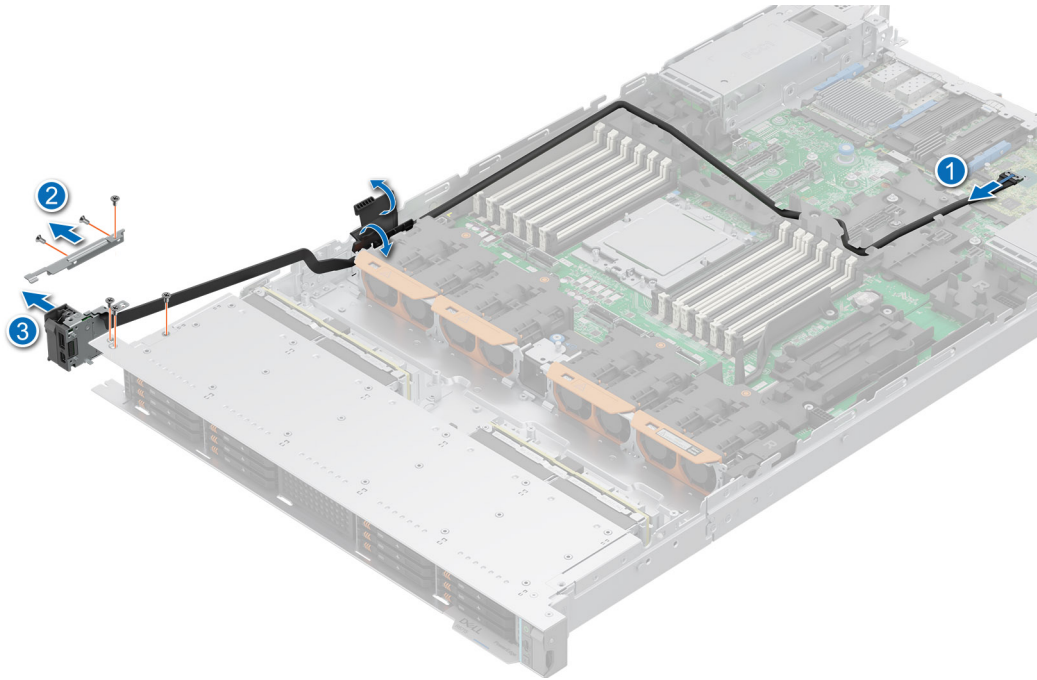


Figure 159. Removing the Left Control Panel (LCP) - Secondary of EDSFF E3.S Gen5 configuration

5. For the 2.5-inch Universal SSD configuration, disconnect the LCP cable from the connector on attic card.
6. Using the Phillips 1 screwdriver, remove the screws that secure the LCP.
7. Release the cable from the clip. While holding the cable, slide the LCP out of the system.

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

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

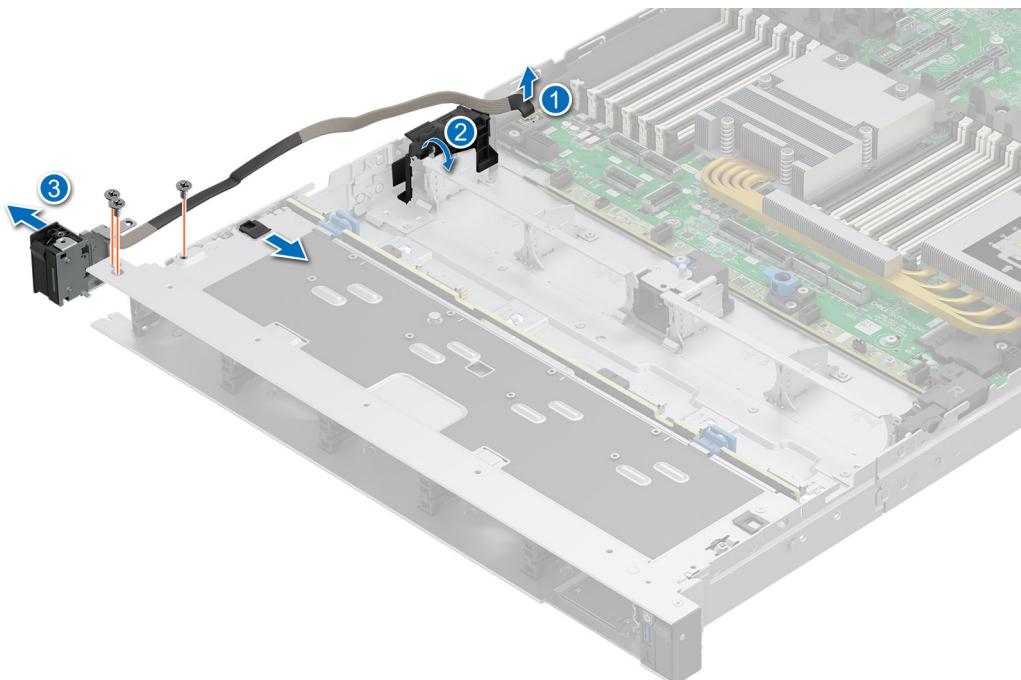


Figure 160. Removal of the Left Control Panel (LCP) - Secondary of 2.5-inch Universal SSD configuration

Next steps

1. [Replace the Left Control Panel \(LCP\) - Secondary](#).

Installing the Left Control Panel (LCP) - Secondary

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 drive backplane cover](#).
4. [Remove the side wall bracket](#).
5. [Remove the expansion card riser](#).

Steps

1. For the EDSFF E3.S Gen5 NVMe configuration, align and slide the LCP panel in the slot on the system.
2. Using the Phillips 1 screwdriver, tighten the screws to secure the LCP and the bracket to the system.
3. Route the LCP cable through the side wall of the system. Align and slide the LCP cable cover in the slot on the system.

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

4. Connect the LCP cable to the connector on the attic card.

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

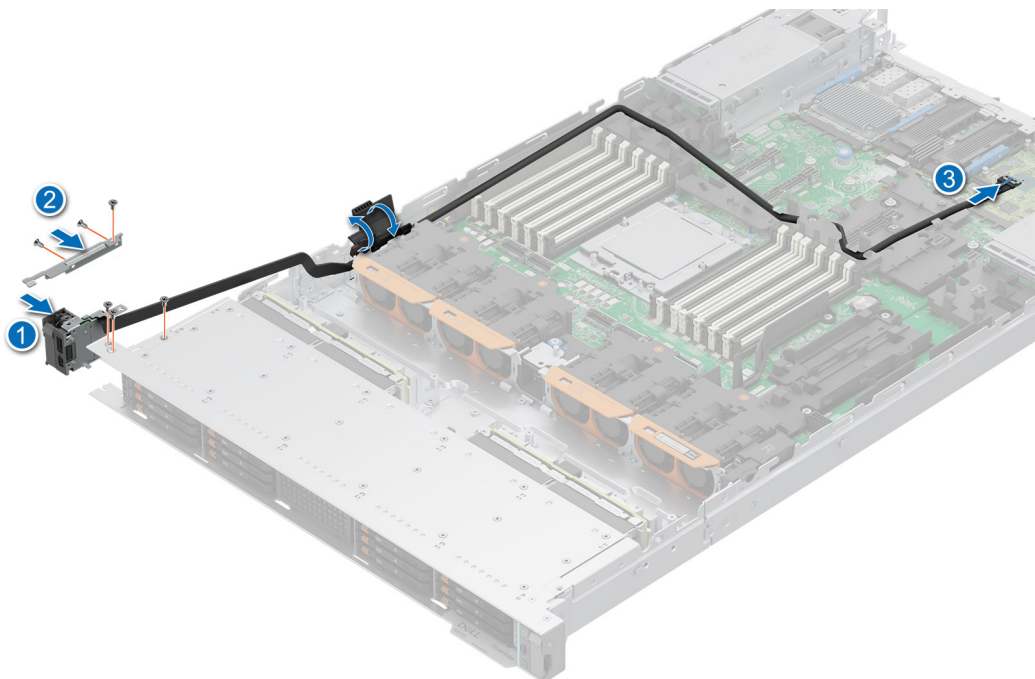


Figure 161. Installing the Left Control Panel (LCP) - Secondary for EDSFF E3.S Gen5 configuration

5. For the 2.5-inch Universal SSD configuration, align and slide the LCP in the slot on the system.
6. Using the Phillips 1 screwdriver, tighten the screws to secure the LCP.
7. Route the LCP cable through the side wall of the system. Align and slide the LCP cable under the bracket.

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

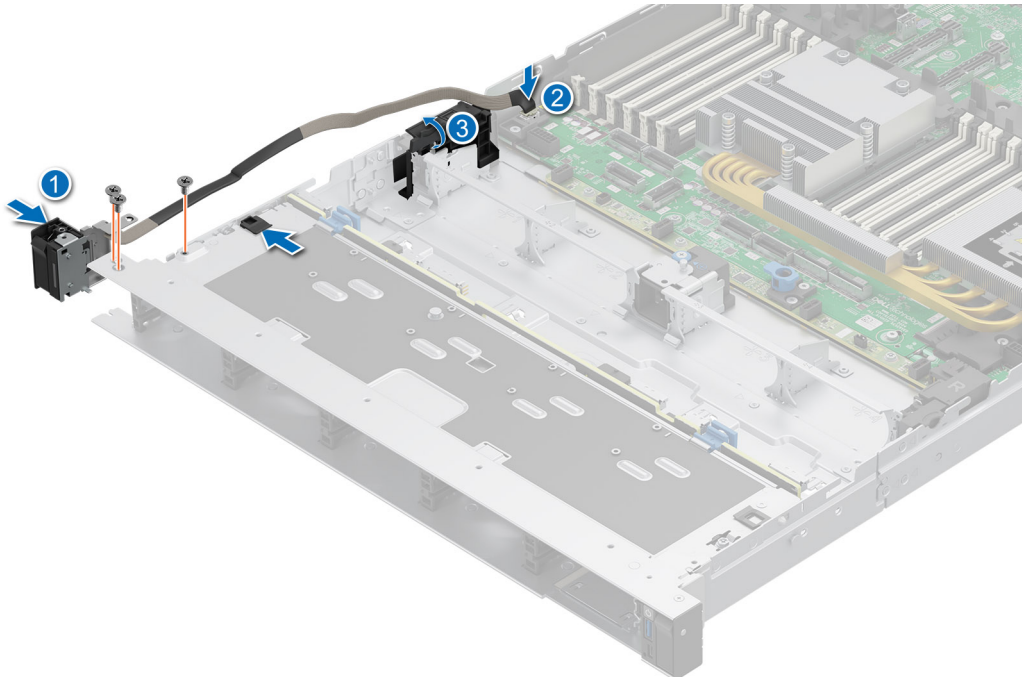


Figure 162. Installing the Left Control Panel (LCP) - Secondary for 2.5-inch Universal SSD configuration

8. Fasten the cable with the clip.
9. Connect the LCP cable to the connector on the HPM board.

Next steps

1. [Install the side wall bracket.](#)
2. [Install the drive backplane cover.](#)
3. [Install the expansion card riser](#)
4. Follow the procedure listed in [After working inside your system.](#)

Upgrade kits

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

Table 72. Upgrade kits

| Kits | Related links to service instructions |
|-----------|-----------------------------------------------------------|
| Processor | See Installing the processor. |
| BOSS-N1 | See Installing the BOSS-N1 DC-MHS module. |
| PERC | See Installing the PERC card. |

Topics:

- [Processor upgrade kit components](#)
- [BOSS-N1 DCMHS module kit](#)
- [Perc module kit](#)

Processor upgrade kit components


The system supports only one processor.

Before you begin the installation or removal process, follow the [safety guidelines](#) and [before working inside the system](#) instructions.

Table 73. Processor upgrade kit components matrix

| System configuration | CPU | Heatsink | FAN |
|----------------------|-----|------------|-----------------------------------------------------|
| • All storage config | 1 | No Changes | • HPR Silver fan for CPU TDP > 300 W and < 400 W |
| • All storage config | 1 | No Changes | HPR Silver fan for Memory >96 GB |

For installation procedures of the Heatsink and Processor see: [Installing the processor](#) section.

 **NOTE:** The install procedure for the remote and extended heatsinks are the same.

BOSS-N1 DCMHS module kit

The BOSS-N1 DCMHS module supports up to two M.2 SSDs. On the PowerEdge R6715 the BOSS-N1 DCMHS modules are supported at the rear of the system.

Before you begin the installation or removal process, follow the [safety guidelines](#) and [before working inside the system](#) instructions.

Table 74. BOSS-N1 DCMHS module kit components

| Components in kit | Quantity |
|--------------------------------------|----------|
| BOSS-N1 DCMHS controller card module | 1 |
| BOSS-N1 DCMHS card carrier | 2 |
| M.2 NVMe SSD capacity label | 2 |

Table 74. BOSS-N1 DCMHS module kit components (continued)

| Components in kit | Quantity |
|----------------------------------|----------|
| BOSS-N1 DCMHS card carrier blank | 1 |

For installation procedures of the BOSS-N1 DCMHS modules see: [Installing the BOSS-N1 DCMHS module](#) section.

Perc module kit

Before you begin the installation or removal process, follow the [safety guidelines](#) and [before working inside the system](#) instructions.

Table 75. PERC module kit components for configuration: 8 x U.2

| Components in kit | Quantity |
|-------------------|----------------------------------------------------------------------------------|
| PERC bracket | 1 |
| Shroud | 1 |
| Screw 3 x 8.5 mm | 4 |
| Power cable | <ul style="list-style-type: none"> One for 8 x U.2 configuration |
| PCIe cable | <ul style="list-style-type: none"> Four for 8 x U.2 configuration |

Table 76. PERC module kit components for configuration: 16 x EDSFF E3.S NVMe

| Components in kit | Quantity |
|-------------------|----------------------------------------------------------------------------------|
| PERC bracket | 1 |
| Shroud | 1 |
| Screw 3 x 8.5 mm | 4 |
| Screw 3 x 5.3 mm | 1 |
| Power cable | <ul style="list-style-type: none"> One for 8 x U.2 configuration |
| PCIe cable | <ul style="list-style-type: none"> Four for 8 x U.2 configuration |

Table 77. PERC upgrade kit details for configuration: 8 x U.2 and 16 x EDSFF E3.S NVMe

| Backplane configuration | Upgrade from | Upgrade to | Remove card or cables | Replace with the card or cables |
|-------------------------|--------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8 x U.2 | Onboard controller | H965i front PERC | Backplane to HPM board signal cable | <ul style="list-style-type: none"> H975i card PERC shroud Four 3 x 8.5 mm screw PERC power cable Four PERC signal cables. |
| 16 x EDSFF E3.S NVMe | Onboard controller | H975i front PERC | <ul style="list-style-type: none"> Backplane to HPM board signal cable Backplane to HPM board power cable | <ul style="list-style-type: none"> H975i card PERC shroud Four 3 x 8.5 mm screw One 3 x 5.3 mm screw PERC power cable Three PERC signal cables |

Table 78. PERC module kit components for configuration: 8 x 2.5-inch Universal, 10 x 2.5-inch SAS/SATA, 10 x 2.5-inch with 4 x Universal drives

| Components in kit | Quantity |
|-------------------|----------|
| PERC signal cable | 1 |

Table 79. PERC upgrade kit details for configuration: 8 x 2.5-inch Universal, 10 x 2.5-inch SAS/SATA, 10 x 2.5-inch with 4 x Universal drives

| Backplane configuration | Upgrade from | Upgrade to | Remove card or cables | Replace with the card or cables |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-----------------------|---------------------------------|
| <ul style="list-style-type: none"> • 8 x 2.5-inch Universal • 10 x 2.5-inch SAS/SATA • 10 x 2.5-inch with 4 x Universal drives | H365i front PERC | H965i front PERC | N/A | One PERC signal cables. |

System diagnostics and indicator codes

The diagnostic indicators on the system front panel display system status during system startup.

Topics:

- [Power button LED](#)
- [System health and system ID indicator codes](#)
- [NIC indicator codes](#)
- [Power supply unit indicator codes](#)
- [Drive indicator codes](#)
- [Using system diagnostics](#)

Power button LED

The power button LED is on the front panel of your system.



Figure 163. Power button LED

Table 80. Power button LED

| Power button LED indicator code | Condition |
|---------------------------------|-------------------------------------------------------------------------------------------------|
| Off | System is not operating or idle in standby power mode regardless of the power supply available. |
| On | System is operating, one or more of the non-standby power supply units are active. |
| Slowly blinking | System is performing powering on sequence, and is still booting. |

System health and system ID indicator codes

The system health and system ID indicator is located on the right control panel (RCP) - primary of the system.



Figure 164. System health and system ID indicator

Table 81. 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 ID button to switch to system ID mode. |
| Blinking blue | Indicates that the system ID mode is active. Press the system ID button to switch to system health mode. |
| Blinking amber | Indicates that the system is experiencing a fault. Check the System event log for specific error messages. For information about the event and error messages that are generated by the system firmware and agents that monitor system components, go to MyDell . |

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.

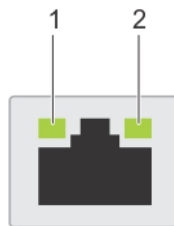


Figure 165. NIC indicator codes

1. Link LED indicator
2. Activity LED indicator

Table 82. 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. |

Table 82. NIC indicator codes (continued)

| NIC indicator codes | Condition |
|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 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 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.

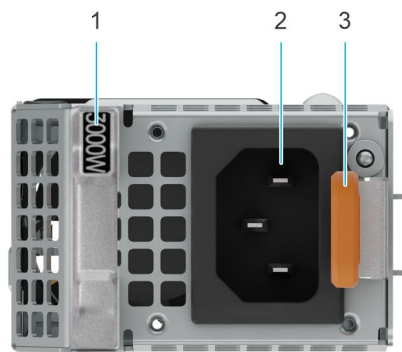


Figure 166. AC PSU status indicator

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

Table 83. AC 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 greens 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 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. |

Table 83. AC PSU status indicator codes (continued)

| Power indicator codes | Condition |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <p>⚠ CAUTION: If two PSUs are used, they must be of the same type and have the same maximum output power.</p> <p>⚠ 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.</p> <p>⚠ CAUTION: AC PSUs support both 240 V and 120 V input voltages with the exception of Titanium PSUs, which support only 240 V. When two identical PSUs receive different input voltages, they can output different wattages, and trigger a mismatch.</p> |

Drive indicator codes

The LEDs on the drive carrier indicates 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 167. 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 84. Drive indicator codes

| Drive status indicator code | Condition |
|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Blinks green twice per second | Indicates that the drive is being identified or preparing for removal. |
| Not powered on | Indicates that the drive is ready for removal. 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 expected drive failure. |
| Blinks amber four times per second | Indicates that the drive has failed. |
| Blinks green slowly | Indicates that the drive is rebuilding. |

Table 84. Drive indicator codes (continued)

| Drive status indicator code | Condition |
|------------------------------------------------------------------------------------------------|-----------------------------------------|
| 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. |

EDSFF E3.S drive led codes

The LEDs on the drive carrier indicate the state of each drive. The LEDs on the EDSFF E3.S drive have two LEDs: an activity LED (green) and a locate/fault LED (blue/amber). The activity LED blinks whenever the drive is accessed.



Figure 168. EDSFF E3.S drive indicators

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

EDSFF E3.S drive led codes

E3.S hard drives have Green LED and Blue/Amber LED.

- Green LED shows : Drive power status , Activity
- Blue/Amber LED shows: Drive Fault, Locate

EDSFF indicator behavior

Table 85. EDSFF indicator behavior

| Pattern Name | Description | Blue Element | Amber Element |
|--------------|---------------------------------------------------|-------------------------|-------------------------|
| Locate | This device is being identified. | ON (1 sec ON 1 sec OFF) | OFF |
| Fault | The device is in a fault condition. | OFF | ON (2 sec ON 1 sec OFF) |
| N/A | This device does not have fault or locate device. | OFF | OFF |

NOTE: Locate behavior overrides Fault state.

Green LED

The green LED is driven and controlled by the device. The two functions for this LED are defined as follows:

- Power: This function indicates that the device has power and has no issues with its power regulation. Once the green LED is ON, it shall either remain ON or blink at the activity frequency unless the device determines power is no longer within its operating range.
- Activity: This function indicates if the device is being used.


Table 86. LED and device state per function for Green LED

| Function/Device state | LED state |
|--------------------------------------------------------------------|-------------------------|
| Power ON/Device is powered, no activity occurring. | ON |
| Activity/Device is powered, host initiated I/O activity occurring. | 4 Hz nominal blink rate |
| Power OFF/Device is not powered. | OFF |

Using system diagnostics

If you experience an issue with the system, run the system diagnostics before contacting Dell 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 Boot Manager

Steps

1. Download the UEFI ePSA Diagnostics SWB from the Dell support site.
2. Install the UEFI ePSA Diagnostics SWB from iDRAC Web Interface.
3. Power cycle the system and Press F11 during boot.
4. Select **System Utilities** → **Launch Diagnostics**.
The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics start running the tests on all the detected devices.

System diagnostic controls

Table 87. 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 an overview of the system performance. |
| Event log | Displays a time-stamped log of test results. This displays if at least one event description is recorded. |

Jumpers and connectors

This topic provides some basic and specific information about jumpers and switches. It also describes the connectors on the various boards in the system. Jumpers on the HPM board help to disable the system and reset the passwords. To install components and cables correctly, you must know the connectors on the HPM board.

Topics:

- [HPM board jumpers and connectors](#)
- [DIP switch settings](#)
- [Disabling a forgotten password](#)

HPM board jumpers and connectors

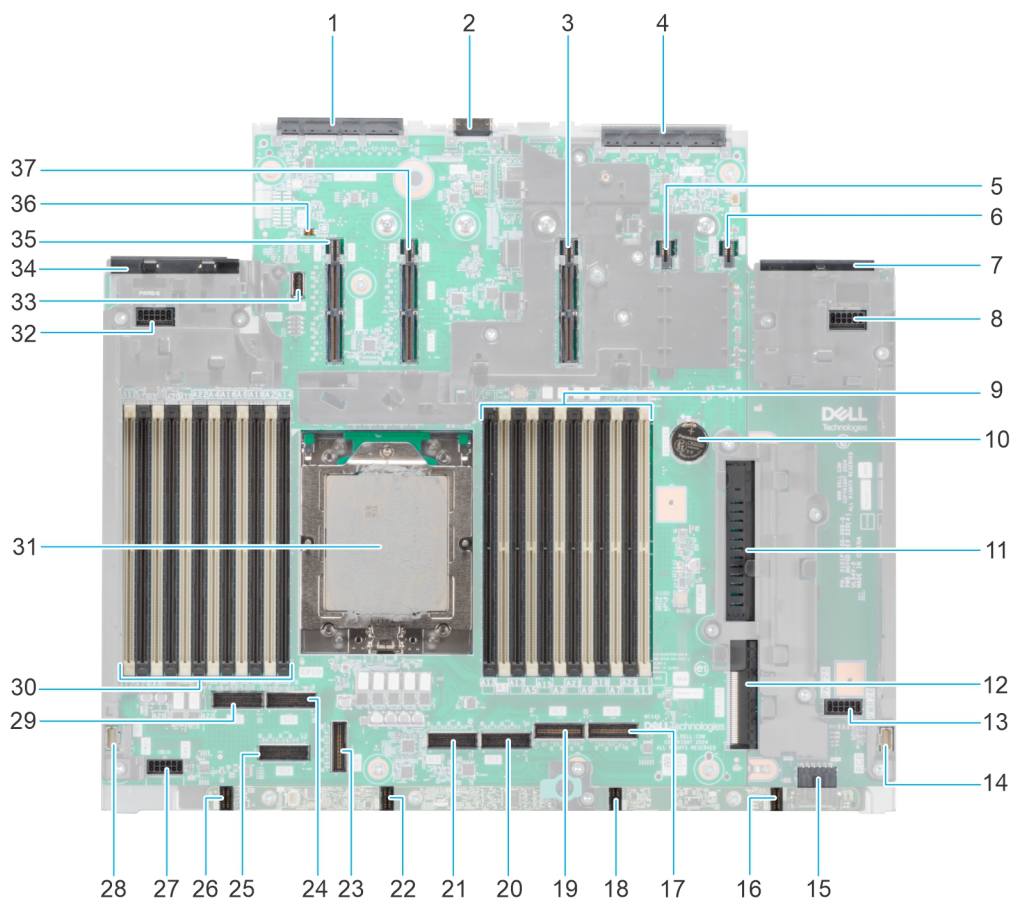


Figure 169. HPM board jumpers and connectors

Table 88. HPM board jumpers and connectors

| Item | Connector |
|------|------------------------------------------------------------|
| 1 | OCP NIC 3.0 connector |
| 2 | BOSS connector |
| 3 | Riser connector 2 - requires CPU 0 (SL15/SL16/PWR15/PWR16) |

Table 88. HPM board jumpers and connectors (continued)

| Item | Connector |
|------|------------------------------------------------------------|
| 4 | DC-SCM connector |
| 5 | Riser connector (PWR17/PWR18) |
| 6 | Riser connector (PWR19/PWR20) |
| 7 | PSU connector 1 |
| 8 | Power connector 23/24 (PWR23/PWR24) |
| 9 | DIMM for CPU 0 |
| 10 | Coin cell battery |
| 11 | PIB power connector |
| 12 | PIB signal connector |
| 13 | Power connector 25/26 (PWR25/PWR26) |
| 14 | Right Control Panel (RCP) - Primary connector |
| 15 | Power connector 3/4 (PWR3/PWR4) |
| 16 | Fan 4 connector |
| 17 | PCIe connector 8 (SL8_CPU 0) |
| 18 | Fan 3 connector |
| 19 | PCIe connector 7 (SL7_CPU 0) |
| 20 | PCIe connector 6 (SL6_CPU 0) |
| 21 | PCIe connector 5 (SL5_CPU 0) |
| 22 | Fan 2 connector |
| 23 | PCIe connector 4 (SL4_CPU 0) |
| 24 | PCIe connector 2 (SL2_CPU 0) |
| 25 | PCIe connector 3 (SL3_CPU 0) |
| 26 | Fan 1 connector |
| 27 | Power connector 1/2 (PWR1/PWR2) |
| 28 | Left Control Panel (LCP) - Secondary connector |
| 29 | PCIe connector 1 (SL1_CPU 0) |
| 30 | DIMM for CPU 0 |
| 31 | CPU 0 |
| 32 | Power connector 5/6 (PWR5/PWR6) |
| 33 | Internal USB |
| 34 | PSU connector 2 |
| 35 | Riser connector 2 - requires CPU 0 (SL11/SL12/PWR11/PWR12) |
| 36 | DIP switch for NVRAM/PWRD |
| 37 | Riser connector 4 - requires CPU 0 (SL13/SL14/PWR13/PWR14) |

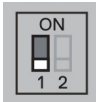
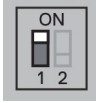
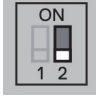
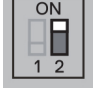
DIP switch settings

For information about resetting the password jumper to disable a password, see the [Disabling a forgotten password](#) section.



Watch video: How to clear the NVRAM on a PowerEdge R6715

Table 89. DIP switch settings

| Jumper | Setting | Description |
|-----------|-----------------------------------------------------------------------------------|---------------------------------------------------------------|
| NVRAM_CLR |  | OFF (default): The BIOS settings are retained at system boot. |
| |  | ON: The BIOS settings cleared at system boot. |
| PWRD_DIS |  | OFF (default): The BIOS password is enabled. |
| |  | ON: The BIOS password is disabled. |

CAUTION: Be careful when changing the BIOS settings. The BIOS interface is designed for advanced users. Any change in the setting could prevent your system from starting correctly, and you might have potential loss of data.

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 passwords 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 the attached peripherals, and disconnect the system from the electrical outlet.
2. Remove the system cover.
3. Move the jumper on the HPM 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 passwords the next time it boots.
5. Reconnect the system and all the attached peripherals.
6. Power off the system.
7. Remove the system cover.
8. Move the jumper on the HPM board from pins 4 and 6 to pins 2 and 4.

9. Replace the system cover.
10. Reconnect the system to the electrical outlet and power on the system, and all the attached peripherals.
11. Assign a new system and/or setup password.

Getting Help

Topics:

- [Recycling or End-of-Life service information](#)
- [Contact Dell Technologies](#)
- [Accessing system information by using MyDell](#)
- [Receiving automated support with Secure Connect Gateway \(SCG\)](#)

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.

Contact Dell Technologies

Dell provides online support, mobile support, and onsite service options. If you do not have an active Internet connection, you can find Dell contact information on your invoice, packing slip, bill, or Dell product catalog. The availability of services varies depending on the country or region and product, and some services may not be available in your area. You can contact Dell for sales, technical support, or customer service issues.

Steps

1. Go to [Dell Support](#) and follow the prompts.
2. For contact details of Dell Global Technical Support, click [Contact Technical Support](#).

Accessing system information by using MyDell

You can use the MyDell label located on the Express service tag in the front of the PowerEdge system, to access information about PowerEdge R6715 system.

Prerequisites

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

The MyDell 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 support and sales teams.

Steps

Go to product-specific page in [PowerEdge Manuals](#) or scan the model-specific QR code on your system using your smartphone or tablet.

Quick Resource Locator for PowerEdge R6715 system

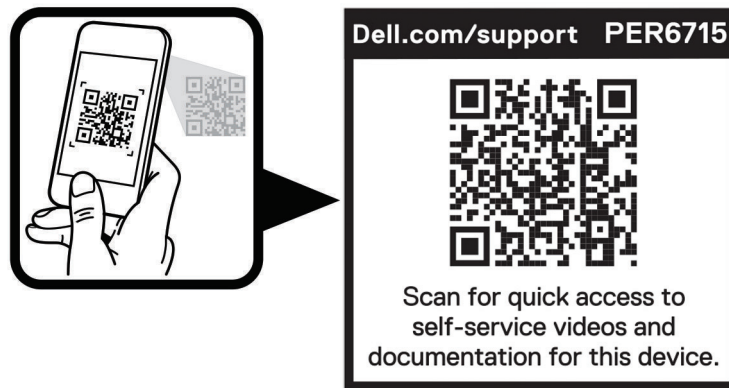


Figure 170. Quick Resource Locator for PowerEdge R6715 system

Receiving automated support with Secure Connect Gateway (SCG)

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

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


The available benefits vary depending on the Dell Service entitlement purchased for your device. For more information about Secure Connect Gateway (SCG), go to [secureconnectgateway](https://www.dell.com/support/secureconnectgateway).

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 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 90. 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 <i>Getting Started Guide</i> 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. | 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 |
| | For information about installing the operating system, see the operating system documentation. | Operating System Manuals |

Table 90. Additional documentation resources for your system (continued)

| Task | Document | Location |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| | 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 |
| | 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 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 |