

Dell PowerEdge XR8620t

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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About this document

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

Dell PowerEdge XR8620t system configurations and features

The PowerEdge XR8620t system is a 2U half-width, single processor server sled that supports:

- One 4th Generation Intel Xeon Scalable processor with up to 32 cores
- Eight DDR5 DIMM slots
- PCI Express® (PCIe) 5.0 enabled expansion slots
- 2 x M.2 2280 or 22110 direct connect NVMe drives on dual M.2 NVMe direct riser module (non-RAID) or BOSS-N1 with 2 x 2280 NVMe SSDs.

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 XR8620t](#)
- [System configurations - rear view for PowerEdge XR8620t](#)
- [System configurations - inside view for PowerEdge XR8620t](#)
- [Locating the Express Service Code and Service Tag](#)
- [System information label](#)

System configurations - front view for PowerEdge XR8620t

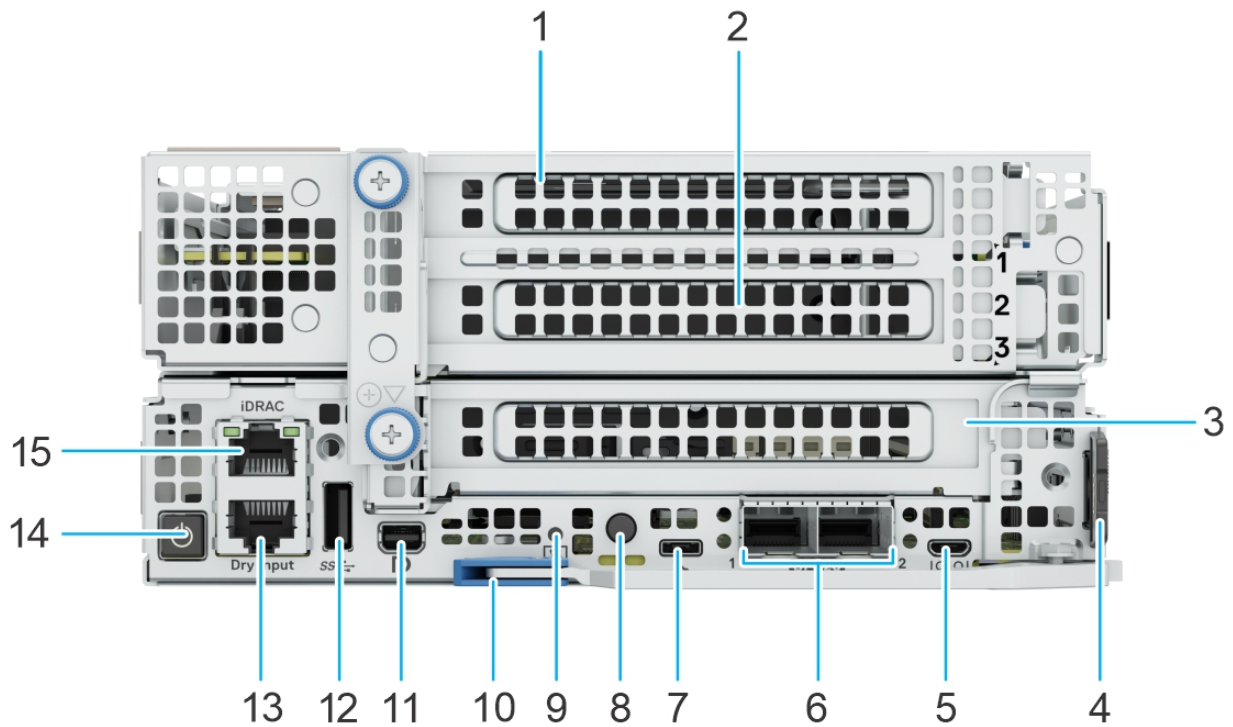


Figure 1. Front view for PowerEdge XR8620t

Table 1. Front view of the sled

Item	Ports, panels, or slots	Icon	Description
1	PCIe expansion card slot 1	N/A	Enables you to access the PCIe expansion card installed on Riser 1 in the system.
2	PCIe expansion card slot 2	N/A	Enables you to access the PCIe expansion card installed on Riser 1 in the system.
3	PCIe expansion card slot 3	N/A	Enables you to access the PCIe expansion card installed on Riser 2 in the system.
4	Information Tag	N/A	The Information tag is a slide-out label panel that contains Service Tag, QR code and iDRAC MAC address.
5	Serial port	IOIOI	Enables you to connect a serial device to the system. NOTE: The serial port is a micro USB type port. It only supports serial connection functions. The serial port does not support any USB functions.

Table 1. Front view of the sled (continued)







Item	Ports, panels, or slots	Icon	Description
6	2x SFP28 LOM ports (Optional)		The LOM ports are optional and are embedded on the system board.
7	iDRAC Direct port (Micro-AB USB)		The iDRAC Direct (Micro-AB USB) port enables you to access the iDRAC direct Micro-AB USB features. For more information, see the <i>Integrated Dell Remote Access Controller User's Guide</i> at www.dell.com/poweredgemanuals .
8	System identification button		<p>The System Identification (ID) button is available on the front of the system. Press the button to identify a system in a rack by turning on the system ID button. You can also use the system ID button to reset iDRAC and to access BIOS using the step through mode. When pressed, the system ID LED in the front panel blinks until the front button is pressed again. Press the button to toggle between on or off mode.</p> <p>i NOTE: If the server stops responding during POST, press and hold the System ID button for more than five seconds to enter the BIOS progress mode.</p> <p>i NOTE: To reset the iDRAC (if not disabled on the iDRAC setup page by pressing F2 during system boot), press and hold the System ID button for more than 15 seconds.</p>
9	Heater LED		<p>The Heater LED explains the heater status of the chassis. The LEDs have a bi-color property: they can display a green or amber status.</p> <p>i NOTE: LED will light Green when system pre-heating is enabled and will turn off when system pre-heating is completed. The heater manager will continue to maintain proper temperature on system after preheating,</p>

Table 1. Front view of the sled (continued)

Item	Ports, panels, or slots	Icon	Description
			<p>but the LED will stay off while the system is on.</p> <p>i NOTE: LED will flash Amber with 1Hz frequency when any required heater or thermal sensor is absent or has failed.</p>
10	Sled handle	N/A	Enables you to remove the sled from the enclosure.
11	Mini-DisplayPort		Enables you to connect a display device to the system.
12	USB 3.0 port		The USB port is 9-pin, 3.0-compliant. This port enables you to connect USB device to the system.
13	RJ-45 Dry Input	N/A	<p>It is a RJ-45 Dry Input port. Enhance penetration in IoT space. These are interruptible inputs to iDRAC. Dry means that no energy is supplied to the contacts.</p> <p>i NOTE: Update iDRAC to 6.10.43.05 or later to enable dry contact feature.</p>
14	Sled power button	N/A	<p>Enables you to power on the sled. Indicates if the system is powered on or off. Press the power button to manually power on or off the system.</p> <p>i NOTE: When XR8620t is installed in the XR8000r chassis, the power button LED indicator status may be delayed for up to two minutes while the sled is initializing. The power button LED will start slowly blinking to indicate the system is performing the power on sequence after this time period.</p>
15	iDRAC9 RJ-45 dedicated port	iDRAC	Enables you to remotely access iDRAC. For more information, see the <i>Integrated Dell Remote Access Controller User's Guide</i> at www.dell.com/poweredgemanuals .

System configurations - rear view for PowerEdge XR8620t

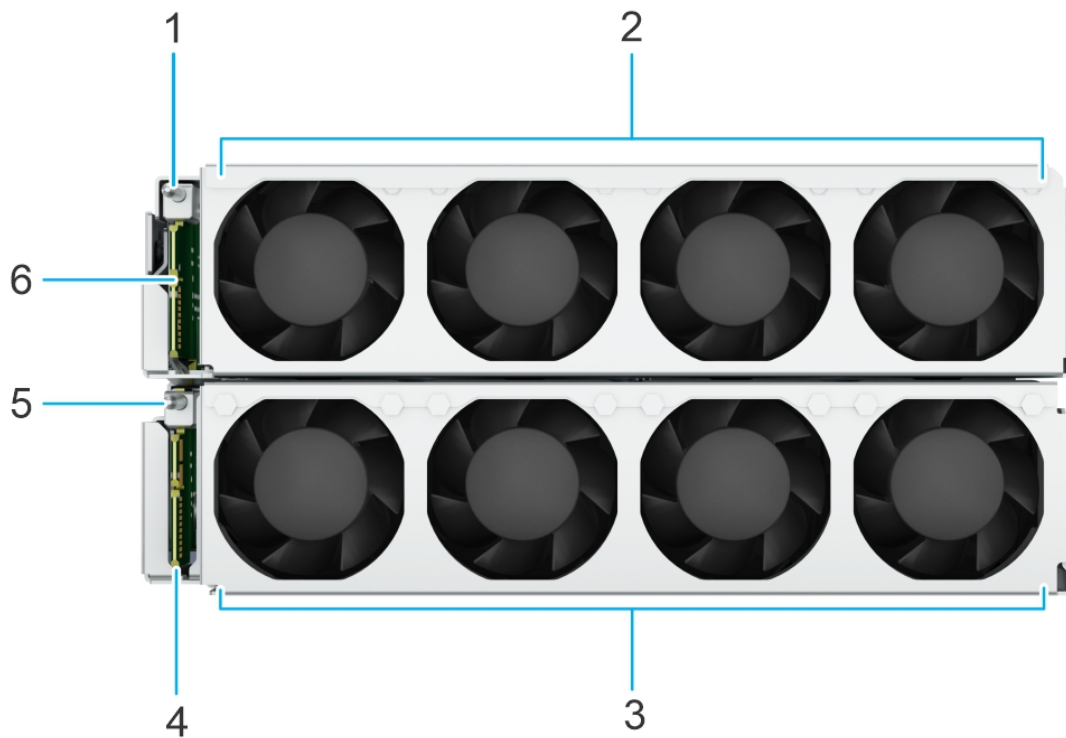


Figure 2. Rear view for PowerEdge XR8620t

Table 2. Rear view of the sled

Item	Ports, panels, or slots	Icon	Description
1	Upper layer 2U guiding pin	N/A	Guiding pin for the 2U sled.
2	Upper layer fans rear view	N/A	Supports 4 cabled cooling fans
3	Bottom layer fans rear view	N/A	Supports 4 cabled cooling fans
4	Bottom layer 1U Power Distribution Board (PDB)	N/A	Provides power to bottom layer cooling fans
5	Bottom layer 1U guiding pin	N/A	Guiding pin for the 1U sled.
6	Upper layer 2U Power Distribution Board (PDB)	N/A	Provides power to upper layer cooling fans

System configurations - inside view for PowerEdge XR8620t

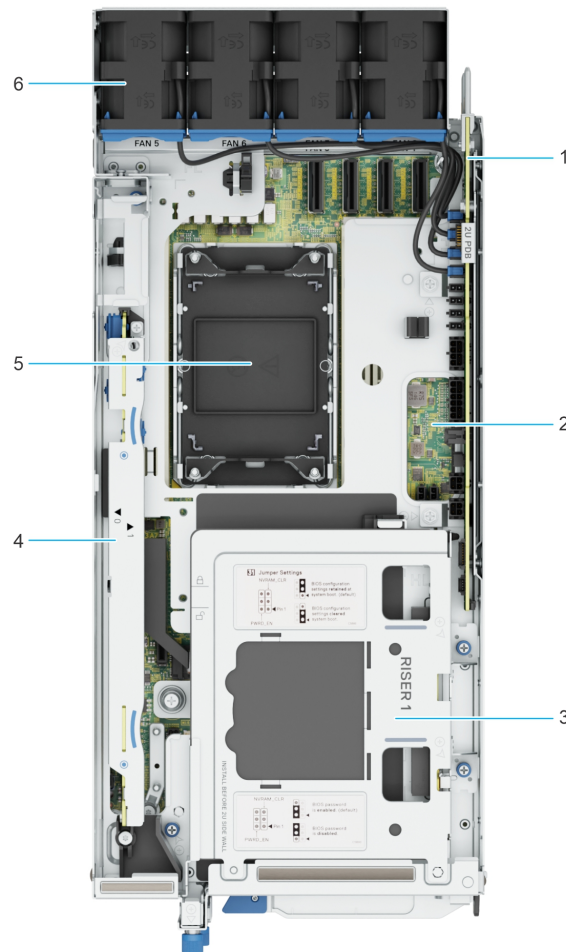


Figure 3. Inside view of the PowerEdge XR8620t sled

- | | |
|--------------------------------------|------------------------|
| 1. 2U Power Distribution Board (PDB) | 2. System Board |
| 3. Riser 1 | 4. M.2 Direct Riser |
| 5. Processor | 6. 2U sled cooling fan |

Locating the Express Service Code and Service Tag

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

The information tag is located on the front of the system that includes system information such as iDRAC MAC address, Express Service Tag label, Quick Resource Locator.

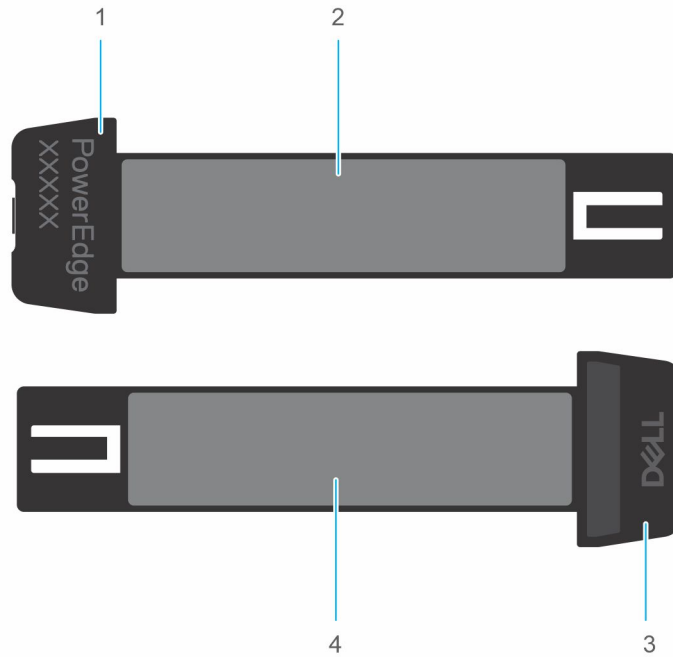


Figure 4. Locating the Service Tag of your system

1. Information tag (right view)
2. iDRAC MAC address information label
3. Information tag (left view)
4. Express Service Tag label and QRL

System information label

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

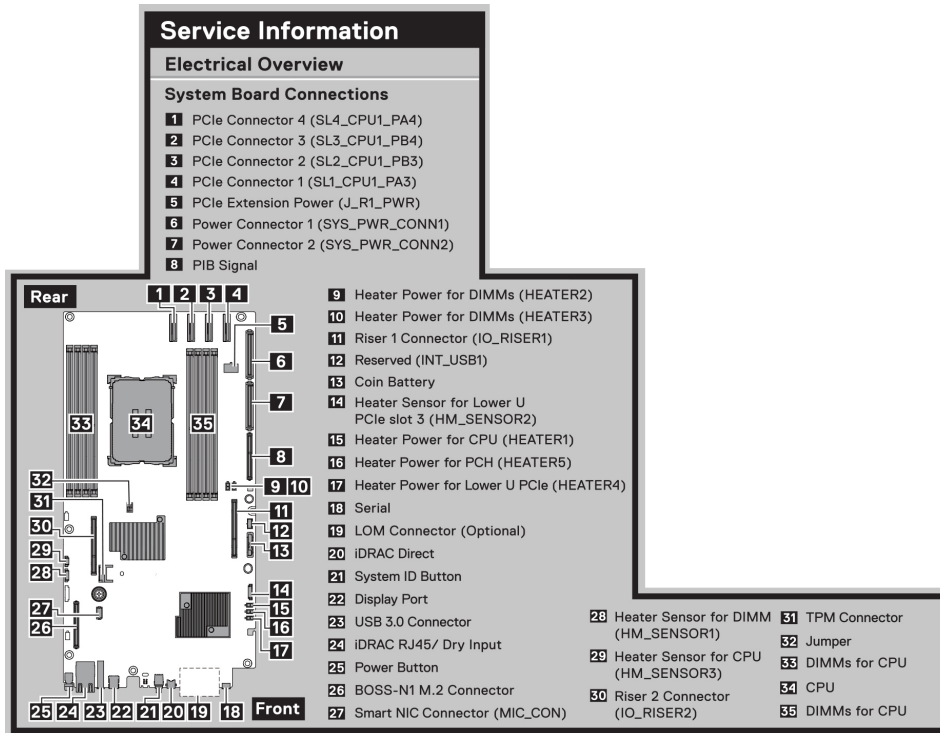


Figure 5. Service information

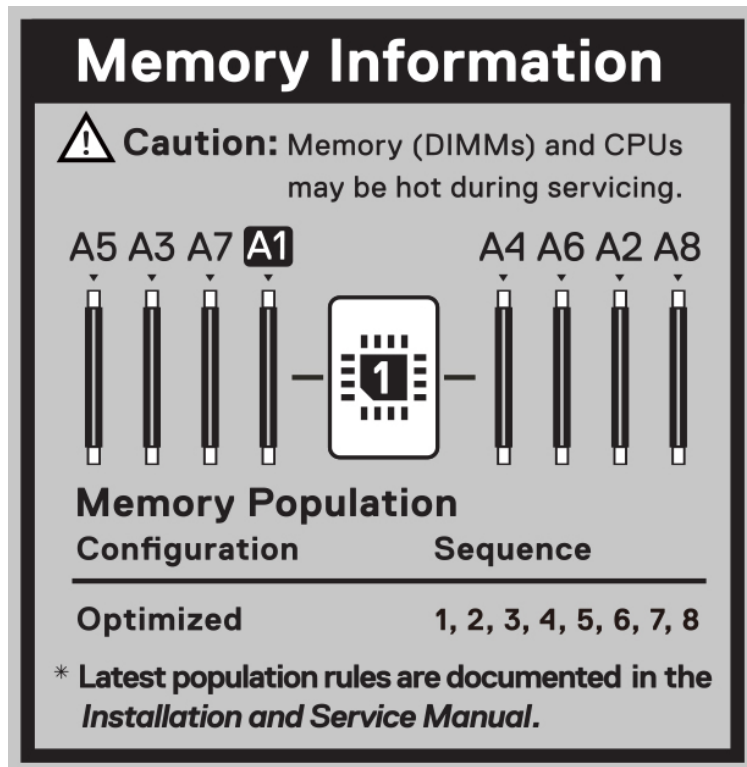


Figure 6. Memory information

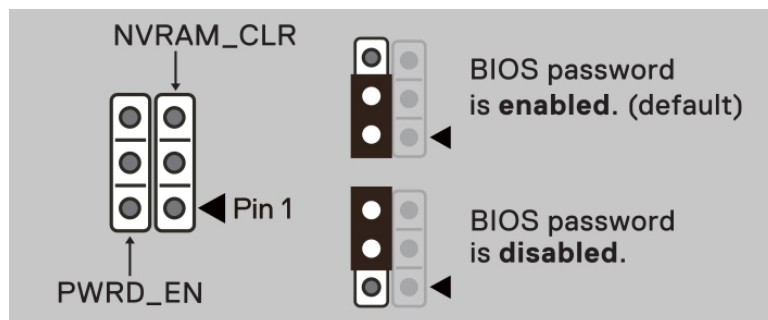


Figure 7. Jumper information

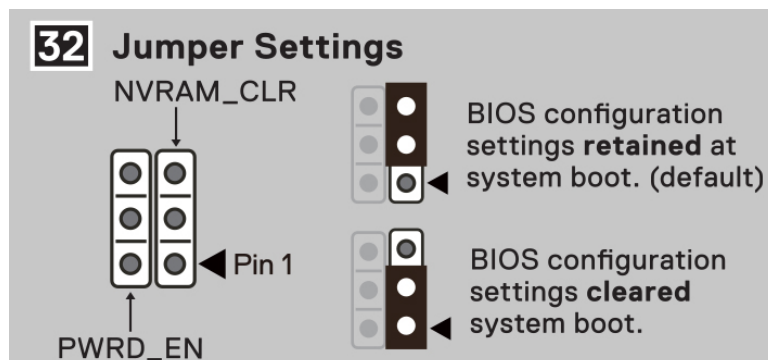


Figure 8. Jumper settings

Technical specifications

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

Topics:

- Sled dimensions
- System weight
- Processor specifications
- Cooling fan specifications
- Supported operating systems
- System battery specifications
- Memory specifications
- Expansion card riser specifications
- Drives
- Ports and connectors specifications
- Video specifications
- Environmental specifications

Sled dimensions

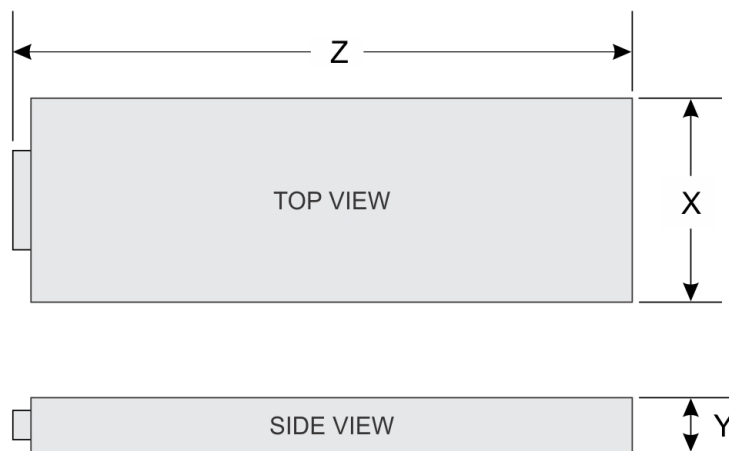


Figure 9. Sled dimensions

Table 3. PowerEdge XR8620t sled dimensions

X	Y	Z (handle closed).
184.8 mm (7.28 inches)	83.28 mm (3.28 inches)	433.5 mm (17.07 inches)

System weight

Table 4. PowerEdge XR8620t system weight

System configuration	Maximum weight
1x DIMM, 1x M.2 NVMe SSDs on M.2 riser	5.197 kg (11.45 pound)
8x DIMMS, 2x M.2 NVMe SSDs on M.2 riser	5.326 kg (11.74 pound)
1x DIMM, Riser1, Riser2 without PCIe cards	4.071 kg (8.97 pound)
8x DIMMS, Riser1, Riser2 with PCIe cards	7.071 kg (15.58 pound)
8x DIMMS, 2x M.2 NVMe SSDs on M.2 riser, Riser1, Riser2 with PCIe cards	7.149 kg (15.76 pound)

Processor specifications

Table 5. PowerEdge XR8620t processor specifications

Supported processor	Number of processors supported
4 th Generation Intel Xeon Scalable and Edge-Enhanced processors with up to 32 cores	One

NOTE: It is recommended to use a maximum of two add-in cards with SPR EE-LCC CPU. Three add-in cards are supported, but this may result in an overall system performance degradation. .

Cooling fan specifications

The PowerEdge XR8620t system supports up to eight cabled cooling fans for airflow.

Supported operating systems

The PowerEdge XR8620t system supports the following operating systems:

- Red Hat Enterprise Linux
- SUSE Linux Enterprise Linux
- WindRiver Solution
- VMware

For more information, go to www.dell.com/ossupport.

System battery specifications

The PowerEdge XR8620t system supports CR 2032 3.0-V lithium coin cell system battery.

Memory specifications

The PowerEdge XR8620t system supports the following memory specifications for optimized operation.

Table 6. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Single processor	
			Minimum RAM	Maximum RAM
RDIMM	Single rank	16 GB	32 GB	128 GB
	Dual rank	32 GB	64 GB	256 GB
	Dual rank	64 GB	128 GB	512 GB

Table 7. Memory module sockets

Memory module sockets	Speed
8, 288-pin	4800 MT/s

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

NOTE: Memory DIMM slots are not hot swappable.

Expansion card riser specifications

WARNING: Consumer-Grade GPU should not be installed or used in the Enterprise Server products.

The PowerEdge XR8620t system supports three PCI express (PCIe) expansion card risers.

Table 8. Expansion card slots supported on the 2U sled

PCIe slots	Expansion card riser	Processor connection	Height	Length	Slot width
Slot 1	R1A	Processor 1	Full Height	Half Length	x16 PCIe (Gen 5)
Slot 2	R1A	Processor 1	Full Height	Half Length	x16 PCIe (Gen 5)
Slot 3	R2A	Processor 1	Full Height	Half Length	x16 PCIe (Gen 5)

Drives

The PowerEdge XR8620t system supports either 2 x M.2 NVMe SSDs (M.2 2280 and M.2 22110) on the M.2 riser or 2 x M.2 NVMe SSDs (M.2 2280) installed on BOSS-N1 card.

Ports and connectors specifications

USB ports specifications

Table 9. PowerEdge XR8620t USB specifications

Front	
USB port type	No. of ports
USB 3.0-compliant port	One
iDRAC Direct port (Micro-AB USB 2.0-compliant port)	One

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

Network port specifications

The PowerEdge XR8620t system supports two (optional) SFP28 LAN on Motherboard (LOM) ports.

Table 10. Network port specification for the system

Feature	Specifications
LOM	2 x 25 GbE SFP 28 LOM connectors (optional).

Serial connector specifications

The PowerEdge XR8620t system supports one Micro USB Type B serial connector, on front of the system.

Display port

The PowerEdge XR8620t system supports One Mini-DisplayPort on front of the system.

iDRAC port specifications

The PowerEdge XR8620t system supports one RJ45 with port status LEDs for iDRAC remote management (dedicated port only) on front of the system.

RJ-45 dry contact port

The PowerEdge XR8620t system supports 1 x RJ45 for dry contact on front of the system.

To enhance usage in the IoT space, the XR8620t comes with a dry input sensor. Each input is configurable and manageable in the iDRAC interface. These are interruptible inputs to iDRAC. Dry means that no energy is supplied to the contacts. The dry contact connection cable with RJ45 connector on one end is custom to each installation and must be provided by the end user.

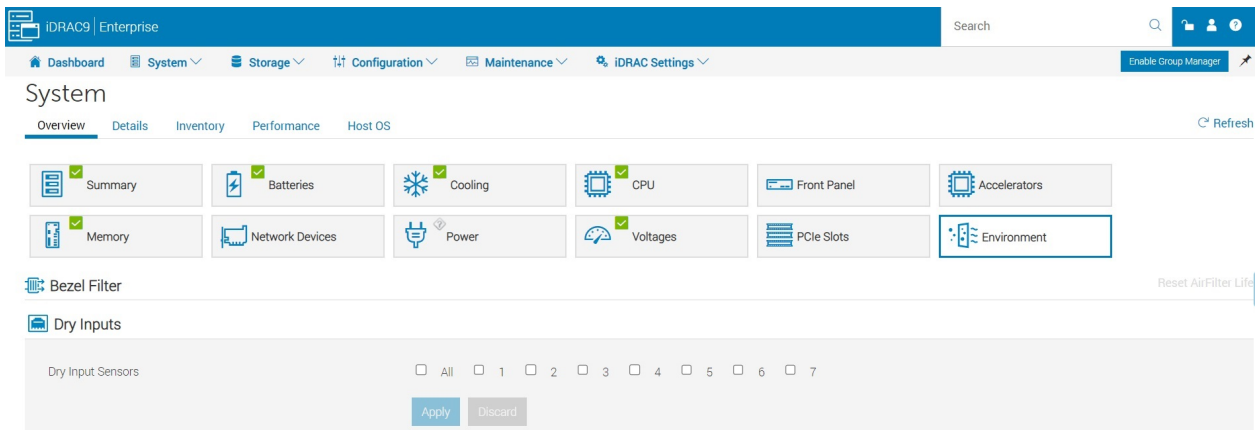


Figure 10. iDRAC interface for Dry Input sensors

NOTE: The RJ45 for dry contact does not support IP function.

The default states of the dry inputs are off/disabled. The user has seven (one for each dry input) enable/disable (default) control that must be enabled before logging occurs.

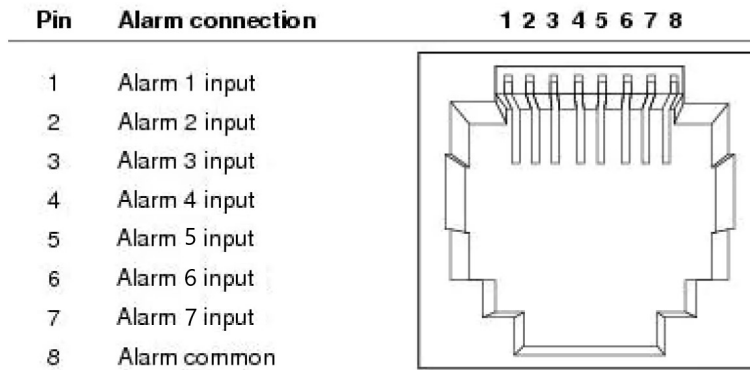


Figure 11. Dry input connection diagram

The seven dry inputs are interruptible inputs to iDRAC. They have the following characteristics:

- Monitored by iDRAC for state transition and LC event are for each state transition.
- NOT modeled as IPMI sensors but LC event only sensors. The current state of the input is not monitored or displayed anywhere.
- Event log - transitions (Open to close or close to Open) are logged in LC only.

Debounce — A debounce of 100mseconds is provided on all inputs.

Table 11. Event and Error Messages

Message ID	Message	RRA	DD	Severity
DCI1000	Dry input <input index> is transitioned to Open state.	None.	None	Severity -3 (Info)
DCI1001	Dry input <input index> is transitioned to Close state.	None.	None	Severity -3 (Info)

Video specifications

The PowerEdge XR8620t system supports integrated Matrox G200 graphics controller embedded in the iDRAC (BMC) chip with 16 MB of video frame buffer.

Table 12. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60	8, 16, 32
800 x 600	60	8, 16, 32
1024 x 768	60	8, 16, 32
1152 x 864	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
1400 x 1050	60	8, 16, 32
1440 x 900	60	8, 16, 32
1600 x 1200	60	8, 16, 32
1680 x 1050	60	8, 16, 32

Table 12. Supported video resolution options (continued)

Resolution	Refresh rate (Hz)	Color depth (bits)
1920 x 1080	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

The PowerEdge XR8620t operates in these environmental categories: ASHRAE A2.

i **NOTE:** For additional information about environmental certifications, refer to the Product Environmental Datasheet located with the Documentation > Regulatory Information on www.dell.com/support/home.

Table 13. Continuous operation specifications for ASHRAE A2

Feature	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 at all times)	8% RH with -12°C minimum dew point to 80% RH with 21°C (69.8°F) maximum dew point
Operational altitude de-rating	Maximum temperature is reduced by 1°C/300 m (33.8°F/984 Ft) above 900 m (2953 Ft)

Table 14. Maximum vibration specifications

Maximum vibration	Specifications
Operating	0.21 G _{rms} at 5 Hz to 500 Hz (all operation orientations)
Storage	1.88 G _{rms} at 10 Hz to 500 Hz for 15 minutes (all six sides tested)

Table 15. Maximum shock pulse specifications

Maximum shock pulse	Specifications
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axis of 6 G for up to 11 ms (4 pulse on each side on the system)
Storage	Six consecutively executed 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 may need to rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

Table 16. Particulate contamination specifications

Particulate contamination	Specifications
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles i NOTE: This condition applies to data center and non-data center environments.
Corrosive dust	<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

Table 16. Particulate contamination specifications (continued)

Particulate contamination	Specifications
	 NOTE: This condition applies to data center and non-data center environments.

Table 17. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013
Silver coupon corrosion rate	<200 Å/month as defined by ANSI/ISA71.04-2013

Environmental considerations

The PowerEdge system is targeted for edge deployments and it meets all the additional standards for thermal, shock, vibration parameters.

Table 18. Environmental considerations

Industry	Configuration	Description
Telco	GR-1089-CORE	Electromagnetic Compatibility and Electrical Safety – Generic Criteria for Network Telecommunications Equipment
	GR-63-CORE	NEBS Requirements: Physical Protection
	SR-3580 (NEBS Level 3)	NEBS Criteria Levels
	GR-3108-CORE (Class 1)	Network Equipment in the Outside Plant (OSP). An exception is made for cold boot at +5C instead of -5C for systems without the heater subsystem enabled.
Military	N/A	
Marine	N/A	
Power Industry	N/A	
Safety	N/A	LDV, IEC/EN, CFR, CSA
EMC	N/A	EN, CISPR, ES, DTAG, CFR, ICES, VCCI
EMV	N/A	RoHS, WEEE, EN, ECE

Thermal restriction matrix

Table 19. XR8620t Thermal Restriction - CPU and Memory

Sled Config			XR8620t Thermal Restriction	
Ambient Temperature			ASHRAE A2 (Max 35°C)	NEBS3 (Max 55°C)
CPU (SPR-EE LCC/MCC)	Intel® Xeon® Gold 6433N	205W	Supported	Supported
	Intel® Xeon® Gold 6423N	195 W	Supported	Supported
	Intel® Xeon® Gold 6403N	185 W	Supported	Supported
	Intel® Xeon® Gold 5423N	145 W	Supported	Supported
CPU	Intel® Xeon® Gold 6421N	185W	Supported	Supported

Table 19. XR8620t Thermal Restriction - CPU and Memory (continued)

Sled Config			XR8620t Thermal Restriction	
Ambient Temperature			ASHRAE A2 (Max 35°C)	NEBS3 (Max 55°C)
(SPR SP MCC)	Intel® Xeon® Gold 5411N	165W	Supported	Supported
Memory	DDR5 RDIMM 64G		Supported	Supported
	DDR5 RDIMM 32G		Supported	Supported
	DDR5 RDIMM 16G		Supported	Supported

NOTE: Do not perform a cold startup below 5°C.

Table 20. XR8620t Thermal Restriction - Raid Controller and Storage

Sled Config		XR8620t Thermal Restriction	
Ambient Temperature		ASHRAE A2 (Max 35°C)	NEBS3 (Max 55°C)
Mancini BOSS-N1 M2 2280	480G	Supported	Supported
	800G	Supported	Supported
	960G	Supported	Supported
Non-Raid M.2 Riser M2 2280/22110	480G	Supported	Supported
	800G	Supported	Supported
	960G	Supported	Supported
	1.92T	Supported	Supported

NOTE: Do not perform a cold startup below 5°C.

Table 21. XR8620t Thermal Restriction - Commodities

Sled Config	XR8620t Thermal Restriction	
Ambient Temperature	ASHRAE A2 (Max 35°C)	NEBS3 (Max 55°C)
PCIe Card	Non-Dell PCIe Cards are not supported.	
PSU	NA	Dual PSUs are required for NEBS3(55°C)

NOTE: Do not perform a cold startup below 5°C.

Other Restrictions

- Hot-swap fans are not supported.
- Minimum cold boot temperature at 5°C.
- Non-Dell PCIe Cards are not supported.
- Dual PSUs are required while ambient $\geq 45^\circ\text{C}$.
- DIMM Blank is required in empty slots.
- Sled blank is required in empty slots.
- PCIE blank is required in empty slots for slot-1&2.
- PCIE blank is required in empty slot for slot-3.

- PSU blank is required in empty slot.

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](#)
- [Options to download drivers and firmware](#)

Setting up the system

Perform the following steps to set up the system:

Steps

1. Unpack the system.
2. Remove the I/O connector cover from the system connectors.


 **CAUTION:** While installing the system, ensure that it is properly aligned with the slot on the enclosure to prevent damage to the system connectors.


3. Install the system in the enclosure.
4. Power on the sled.

Alternatively, you can also power on the system by using iDRAC by any of the below :

- For more information about powering on the system using iDRAC, see the [Options to log in to iDRAC](#).
- Open OpenManage Enterprise-Modular (OME-M 1.3 or later versions), after the iDRAC is configured on the OME. For more information, see the *OME-Modular User's Guide* at <https://www.dell.com/poweredgemanuals>.

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

 **NOTE:** When XR8620t is installed in the XR8000r chassis, the power button LED indicator status may be delayed for up to two minutes while the sled is initializing. The power button LED will start slowly blinking to indicate the system is performing the power on sequence after this time period.


 **NOTE:** For information about managing the basic settings and features of the system, see the [Pre-operating system management applications](#) chapter.

iDRAC configuration

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

Options to set up iDRAC IP address

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

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

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

Table 22. Interfaces to set up iDRAC IP address

Interface	Documentation links
iDRAC Settings utility	<p><i>Integrated Dell Remote Access Controller User's Guide</i> at https://www.dell.com/idracmanuals or for system specific <i>Integrated Dell Remote Access Controller User's Guide</i>, go to https://www.dell.com/poweredgemanuals > Product Support page of your system > Documentation.</p> <p>NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article https://www.dell.com/support/article/sln308699.</p>
OpenManage Deployment Toolkit	<p><i>Dell OpenManage Deployment Toolkit User's Guide</i> available at https://www.dell.com/openmanagemanuals > Open Manage Deployment Toolkit.</p>
iDRAC Direct	<p><i>Integrated Dell Remote Access Controller User's Guide</i> at https://www.dell.com/idracmanuals or for system specific <i>Integrated Dell Remote Access Controller User's Guide</i>, go to https://www.dell.com/poweredgemanuals > Product Support page of your system > Documentation.</p> <p>NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article https://www.dell.com/support/article/sln308699.</p>
Lifecycle Controller	<p><i>Dell Lifecycle Controller User's Guide</i> at https://www.dell.com/idracmanuals or for system specific <i>Dell Lifecycle Controller User's Guide</i>, go to https://www.dell.com/poweredgemanuals > Product Support page of your system > Documentation.</p> <p>NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article https://www.dell.com/support/article/sln308699.</p>

NOTE: To access iDRAC, ensure that you connect the ethernet cable to the iDRAC dedicated network port or use the iDRAC Direct port by using the micro USB (type AB) cable. You can also access iDRAC through the shared mode, if the system is set it to share iDRAC port with OS as an OS NIC or shared LOM mode enabled.

Options to log in to iDRAC

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

You can log in to iDRAC as:

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

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

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

For more information about logging in to the iDRAC and iDRAC licenses, see the latest *Integrated Dell Remote Access Controller User's Guide* available at <https://www.dell.com/idracmanuals>.

NOTE: To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article <https://www.dell.com/support/article/sln308699>.

You can also access iDRAC using command-line protocol - RACADM. For more information, see the *Integrated Dell Remote Access Controller RACADM CLI Guide* available at <https://www.dell.com/idracmanuals>.

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* available at <https://developer.dell.com>.

How to find the iDRAC MAC address of new PowerEdge servers before delivery

For more information, see <https://www.dell.com/support/kbdoc/en-us/000142728/how-to-find-the-idrac-mac-address-of-new-poweredge-servers-before-delivery?lang=en>.

How to reset random password URL into ISM

For more information, see <https://www.dell.com/support/kbdoc/en-us/000133536/dell-poweredge-what-is-the-default-username-and-password-for-idrac>.

Options to download drivers and firmware

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

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

Table 23. Options to download firmware

Option	Documentation link
Using Integrated Dell Remote Access Controller Lifecycle Controller (iDRAC with LC)	www.dell.com/idracmanuals
Using Dell Repository Manager (DRM)	www.dell.com/openmanagemanuals > Repository Manager
Using Dell Server Update Utility (SUU)	www.dell.com/openmanagemanuals > Server Update Utility
Using Dell OpenManage Deployment Toolkit (DTK)	www.dell.com/openmanagemanuals > OpenManage Deployment Toolkit
Using iDRAC virtual media	www.dell.com/idracmanuals

Resources to install operating system

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

Table 24. Resources to install the operating system

Resource	Documentation links
iDRAC	<i>Integrated Dell Remote Access Controller User's Guide</i> at https://www.dell.com/idracmanuals or for system specific <i>Integrated Dell Remote Access Controller User's Guide</i> , go to https://www.dell.com/poweredgemanuals > Product Support page of your system > Documentation . <i>NOTE:</i> To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article at https://www.dell.com/support/article/sln308699 .
Lifecycle Controller	<i>Dell Lifecycle Controller User's Guide</i> at https://www.dell.com/idracmanuals or for system specific <i>Dell Lifecycle Controller User's Guide</i> , go to https://www.dell.com/poweredgemanuals > Product Support page of your system > Documentation . Dell recommends using Lifecycle Controller to install the OS, since all required drivers are installed on the system. <i>NOTE:</i> To determine the most recent iDRAC release for your platform and for latest documentation version, see KB article at https://www.dell.com/support/article/sln308699 .
OpenManage Deployment Toolkit	www.dell.com/openmanagemanuals > OpenManage Deployment Toolkit
Dell certified VMware ESXi	www.dell.com/virtualizationsolutions

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

Topics:

- [Options to download and install OS drivers](#)
- [Downloading drivers and firmware](#)

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 25. Options to download and install OS drivers

Option	Documentation
Dell support site	Downloading drivers and firmware section.
iDRAC virtual media	<i>Integrated Dell Remote Access Controller User's Guide</i> or for system specific, go to <i>Integrated Dell Remote Access Controller User's Guide</i> > Product Support page of your system > Documentation . <i>NOTE:</i> To determine the most recent iDRAC release for your platform and for latest documentation version, see www.dell.com/support/article/sln000178115 .

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 www.dell.com/support/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
- Dell Lifecycle Controller
- Boot Manager
- Preboot Execution Environment (PXE)

Topics:

- [System Setup](#)

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**.

 **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 26. 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 settings utility is an interface to set up and configure the iDRAC parameters by using UEFI (Unified Extensible Firmware Interface). You can enable or disable various iDRAC parameters by using the iDRAC settings utility. For more information about this utility, see <i>Integrated Dell Remote Access Controller User's Guide</i> at www.dell.com/poweredgemanuals .
Device Settings	Enables you to configure device settings for devices such as storage controllers or network cards.

Table 26. System Setup Main Menu (continued)

Option	Description
Service Tag Settings	Enables you to configure the System Service Tag.

System BIOS

To view the **System BIOS** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS**.

Table 27. System BIOS details

Option	Description
System Information	Provides information about the system such as the system model name, BIOS version, and Service Tag.
Memory Settings	Specifies information and options related to the installed memory.
Processor Settings	Specifies information and options related to the processor such as speed and cache size.
NVMe Settings	Specifies options to change the NVMe settings.
Boot Settings	Specifies options to specify the Boot Mode (UEFI). Enables you to modify UEFI boot settings.
Network Settings	Specifies options to manage the UEFI network settings and boot protocols. Legacy network settings are managed from the Device Settings menu.
Integrated Devices	Specifies options to manage integrated device controllers and ports, specifies related features, and options.
Serial Communication	Specifies options to manage the serial ports, its related features, and options.
System Profile Settings	Specifies options to change the processor power management settings, memory frequency.
System Security	Specifies options to configure the system security settings, such as system password, setup password, Trusted Platform Module (TPM) security, and UEFI secure boot. It also manages the power button on the system.
Redundant OS Control	Sets the redundant OS information for redundant OS control.
Miscellaneous Settings	Specifies options to change the system date and time.

System Information

To view the **System Information** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > System Information**.

Table 28. System Information details

Option	Description
System Model Name	Specifies the system model name.
System BIOS Version	Specifies the BIOS version installed on the system.
System Management Engine Version	Specifies the current version of the Management Engine firmware.
System Service Tag	Specifies the system Service Tag.
System Manufacturer	Specifies the name of the system manufacturer.
System Manufacturer Contact Information	Specifies the contact information of the system manufacturer.

Table 28. System Information details (continued)

Option	Description
System CPLD Version	Specifies the current version of the system Complex Programmable Logic Device (CPLD) firmware.
UEFI Compliance Version	Specifies the UEFI compliance level of the system firmware.

Memory Settings

To view the **Memory Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Memory Settings**.

Table 29. Memory Settings details

Option	Description
System Memory Size	Specifies the size of the system memory.
System Memory Type	Specifies the type of memory installed in the system.
System Memory Speed	Specifies the speed of the system memory.
Video Memory	Specifies the size of video memory.
System Memory Testing	Specifies whether the system memory tests are run during system boot. The two options available are Enabled and Disabled . This option is set to Disabled by default.
Memory Operating Mode	Specifies the memory operating mode. The option is available and is set to Optimizer Mode , by default. Options such as Fault Resilient Mode and NUMA Fault Resilient Mode are available for support when the Advanced RAS capability processor is installed on the system.
Current State of Memory Operating Mode	Specifies the current state of the memory operating mode.
Fault Resilient Mode Memory Size [%]	Select to define the percent of total memory size that must be used by the fault resilient mode, when selected in the Memory Operating mode. When Fault Resilient Mode is not selected, this option is grayed out and not used by Fault Resilient Mode. Option is displayed when 8 DIMMs are installed on sled.
Node Interleaving	Enables or disables the Node interleaving option. Specifies if the Non-Uniform Memory Architecture (NUMA) is supported. If this field is set to Enabled , memory interleaving is supported if a symmetric memory configuration is installed. If the field is set to Disabled , the system supports NUMA (asymmetric) memory configurations. This option is set to Disabled by default.
ADDDC Setting	Enables or disables ADDDC Setting feature. When Adaptive Double DRAM Device Correction (ADDDC) is enabled, failing DRAMs are dynamically mapped out. When set to Enabled it can impact the system performance under certain workloads. This feature is applicable for x4 DIMMs only. This option is set to Enabled by default.
Memory Training	<p>When option is set to Fast and memory configuration is not changed, the system uses previously saved memory training parameters to train the memory subsystems and system boot time is also reduced. If memory configuration is changed, the system automatically enables Retrain at Next Boot to force one-time full memory training steps, and then go back to Fast afterward.</p> <p>When option is set to Retrain at Next Boot, the system performs the force one-time full memory training steps at next power on and boot time is slowed on next boot.</p>

Table 29. Memory Settings details (continued)

Option	Description
	When option is set to Enable , the system performs the force full memory training steps on every power on and boot time is slowed on every boot.
DIMM Self Healing (Post Package Repair) on Uncorrectable Memory Error	Enables or disables Post Package Repair (PPR) on uncorrectable memory error. This option is set to Enabled by default.
Correctable Error Logging	Enables or disables correctable error logging. This option is set to Disabled by default.
Memory Map Out	This option controls DIMM slots on the system. This option is set to Enabled by default. It allows to disable system installed DIMMs.

Processor Settings

To view the **Processor Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Processor Settings**.

Table 30. Processor Settings details

Option	Description
Logical Processor	Each processor core supports up to two logical processors. If this option is set to Enabled , the BIOS reports all the logical processors. If this option is set to Disabled , the BIOS reports only one logical processor per core. This option is set to Enabled by default.
Virtualization Technology	Enables or disables the virtualization technology for the processor. This option is set to Enabled by default.
Kernel DMA Protection	This option is set to Disabled by default. When option is set to Enabled , BIOS and Operating System will enable direct memory access protection for DMA capable peripheral devices using virtualization technology.
Directory Mode	Enables or disables the directory mode. This option is set to Enabled by default.
Adjacent Cache Line Prefetch	Optimizes the system for applications that need high utilization of sequential memory access. This option is set to Enabled by default. You can disable this option for applications that need high utilization of random memory access.
Hardware Prefetcher	Enables or disables the hardware prefetcher. This option is set to Enabled by default.
DCU Streamer Prefetcher	Enables or disables the Data Cache Unit (DCU) streamer prefetcher. This option is set to Enabled by default.
DCU IP Prefetcher	Enables or disables the Data Cache Unit (DCU) IP prefetcher. This option is set to Enabled by default.
Sub NUMA Cluster	Enables or disables the Sub NUMA Cluster. This option is set to Disabled by default.
MADT Core Enumeration	Determines how BIOS enumerates processor cores in the ACPI MADT table. When set to Round Robin , processor cores are enumerated in round robin order to evenly distribute interrupt controllers for the OS across all Sockets and Dies. When set to Linear , processor cores are enumerated across

Table 30. Processor Settings details (continued)



Option	Description
	all Dies within a socket before enumerating additional sockets for a linear distribution.
UMA Based Clustering Status	It is a read-only field and displays as Quadrant , when Sub NUMA Cluster is set to 2Way or 4Way then it displays as Disabled .
UPI Prefetch	Enables you to get the memory read started early on DDR bus. The Ultra Path Interconnect (UPI) Rx path spawns the MemSpecRD to Integrated Memory Controller (iMC) directly. This option is set to Enabled by default.
XPT Prefetch	This option is set to Enabled by default.
LLC Prefetch	Enables or disables the LLC Prefetch on all threads. This option is set to Enabled by default.
Dead Line LLC Alloc	Enables or disables the Dead Line LLC. This option is set to Enabled by default. You can enable this option to opportunistically fill the dead lines in LLC or disable the option to not fill the dead lines in LLC.
Directory AtoS	Enables or disables the Directory AtoS. AtoS optimization reduces remote read latencies for repeat read accesses without intervening writes. This option is set to Disabled by default.
AVX P1	Enables you to reconfigure the processor Thermal Design Power (TDP) levels during POST based on the power and thermal delivery capabilities of the system. TDP verifies the maximum heat the cooling system is must dissipate. This option is set to Normal by default.  NOTE: This option is only available on certain stock keeping units (SKUs) of the processors.
Dynamic SST -Performance Profile	Enables you to reconfigure the processor via Dynamic or Static SST-PP Select. This option is set to Disabled by default.
SST-Performance Profile	Enables you to reconfigure the processor via Speed Select Technology(SST).
Intel SST-BF	Enables Intel SST-BF. This option is displayed if Performance Per Watt (OS) or Custom (when OSPM is enabled) system profiles are selected. This option is set to Disabled by default.  NOTE: This option requires a supported CPU.
Intel SST-CP	Enables Intel SST-CP. This knob controls whether SST-CP is enabled. When enabled it activates per core power budgeting. This option is set to Disabled by default.
x2APIC Mode	Enables or disables x2APIC mode. This option is set to Enabled by default.
AVX ICCP Pre-Grant License	Enables or disables AVX ICCP Pre-Grant License. This option is set to Disabled by default.
Dell Controlled Turbo	
Dell Controlled Turbo Setting	Controls the turbo engagement. Enable this option only when System Profile is set to Performance or Custom , and CPU Power Management is set to Performance . This option is set to Disabled by default.

Table 30. Processor Settings details (continued)


Option	Description
Dell AVX Scaling Technology	Enables you to configure the Dell AVX scaling technology. This option is set to 0 by default. Enter the value from 0 to 12 bins. The value that is entered decreases the Dell AVX Scaling Technology frequency when the Dell-controlled Turbo feature is enabled.
Number of Cores per Processor	Controls the number of enabled cores in each processor. This option is set to All by default.
CPU Physical Address Limit	Limit CPU physical address to 46 bits to support older Hyper-V. If enabled, automatically disables TME-MT. This option is set to Enabled by default.
AMP Prefetch	This option enables one of the Mid-Level Cache (MLC) AMP hardware Prefetcher. This option is set to Disabled by default.
Homeless Prefetch	This option allows L1 Data Cache Unit (DCU) to prefetch, when the Fill Buffers (FB) is full. Auto maps to hardware default setting. This option is set to Auto by default.
Uncore Frequency RAPL	This setting controls whether the Running Average Power Limit (RAPL) balancer is enabled or not. If enabled, it activates the uncore power budgeting. This option is set to Enabled by default.
Processor Core Speed	Specifies the maximum core frequency of the processor.
Local Machine Check Exception	Enables or disables the local machine check exception. This is an extension of the MCA Recovery mechanism providing the capability to deliver Uncorrected Recoverable (UCR) Software Recoverable Action Required (SRAR) errors to one or more specific logical processors threads receiving previously poisoned or corrupted data. When enabled, the UCR SRAR Machine Check Exception is delivered only to the affected thread rather than broadcast to all threads in the system. The feature supports operating system recovery for cases of multiple recoverable faults that are detected close, which would otherwise result in a fatal machine check event. The feature is available only on Advanced RAS processors. This option is set to Enabled by default.
CPU Crash Log Support	This field controls Intel CPU Crash Log feature for collection of previous crash data from shared SRAM of Out-of-Band Management Service Module at post reset. This option is set to Disabled by default.
PROCESSOR n	<p> NOTE: Depending on the number of processors, there might be up to n processors listed.</p> <p>The following settings are displayed for each processor:</p>

Table 31. Processor n details

Option	Description
Family-Model-Stepping	Specifies the family, model, and stepping of the processor as defined by Intel.
Brand	Specifies the brand name.
Level 2 Cache	Displays the amount of memory in the processor cache.
Level 3 Cache	Displays the amount of memory in the processor cache.
Number of Cores	Specifies the number of cores per processor.

Table 31. Processor n details (continued)

Option	Description
Microcode	Specifies the processor microcode version.

NVMe Settings

This option sets the NVMe drive mode.

To view the **NVMe Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > NVMe Settings**.

Table 32. NVMe Settings details

Option	Description
NVMe Mode	If the system contains NVMe drives that you want to configure in a RAID array, you must set both this field and the Embedded SATA field on the SATA Settings menu to RAID Mode . You may also need to change the Boot Mode setting to UEFI . Otherwise, you should set this field to Non-RAID Mode . The option is set to Non RAID mode by default.
BIOS NVMe Driver	Dell Qualified NVMe drives always use the UEFI NVMe driver built into the Dell BIOS. When this option is set to All Drives , the BIOS driver will also be used with any NVMe drives in the system that has not been qualified by Dell. <i>i</i> NOTE: When this option is set to All Drives and non-Dell qualified NVMe drives are present, you have a configuration that has not been validated which may lead to unexpected behavior. The available options are Dell Qualified Drives and All Drives . This option is set to Dell Qualified Drives by default.

Boot Settings

Boot Settings enables you to specify the boot order. The **Boot Settings** only support **UEFI** mode.

- **UEFI:** The Unified Extensible Firmware Interface (UEFI) is a new interface between operating systems and platform firmware. The interface consists of data tables with platform related information, boot and runtime service calls that are available to the operating system and its loader. The following benefits are available when the **Boot Mode** is set to **UEFI**:
 - Support for drive partitions larger than 2 TB.
 - Enhanced security (e.g., UEFI Secure Boot).
 - Faster boot time.

i **NOTE:** You must use only the UEFI boot mode in order to boot from NVMe drives.

To view the **Boot Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Boot Settings**.

Table 33. Boot Settings details

Option	Description
Boot Mode	Enables you to set the boot mode of the system. This option is set to UEFI by default.
Boot Sequence Retry	Enables or disables the Boot sequence retry feature or resets the system. When this option is set to Enabled and the system fails to boot, the system re-attempts the boot sequence after 30 seconds. When this option is set to Reset and the system fails to boot, the system reboots immediately. This option is set to Enabled by default.
Generic USB Boot	Enables or disables the generic USB boot placeholder. This option is set to Disabled by default.
Hard-disk Drive Placeholder	Enables or disables the Hard-disk drive placeholder. This option is set to Disabled by default.

Table 33. Boot Settings details (continued)


Option	Description
Clean all SysPrep variables and order	When this option is set to None , BIOS will do nothing. When set to Yes , BIOS will delete variables of SysPrep #### and SysPrepOrder this option is a onetime option, will reset to none when deleting variables. This setting is only available in UEFI Boot Mode . This option is set to None by default.
UEFI Boot Settings	Specifies the UEFI boot sequence. Enables or disables UEFI Boot options.  NOTE: This option controls the UEFI boot order. The first option in the list will be attempted first.

Table 34. UEFI Boot Settings

Option	Description
UEFI Boot Sequence	Enables you to change the boot device order.
Boot Option Enable/Disable	Enables you to select the enabled or disabled boot devices

Network Settings

To view the **Network Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Network Settings**.


 **NOTE:** Network Settings are not supported in BIOS boot mode.

Table 35. Network Settings details

Option	Description
UEFI PXE Settings	Enables you to control the configuration of the UEFI PXE device.
Number of PXE Devices	This field specifies the number of PXE devices. This option is set to 4 by default.
PXE Device n (n = 1 to 4)	Enables or disables the device. When enabled, a UEFI PXE boot option is created for the device.
PXE Device n Settings (n = 1 to 4)	Enables you to control the configuration of the PXE device.
UEFI HTTP Settings	Enables you to control the configuration of the UEFI HTTP device.
HTTP Device n (n = 1 to 4)	Enables or disables the device. When enabled, a UEFI HTTP boot option is created for the device.
HTTP Device n Settings (n = 1 to 4)	Enables you to control the configuration of the HTTP device.
UEFI iSCSI Settings	Enables you to control the configuration of the iSCSI device.
iSCSI Initiator Name	Specifies the name of the iSCSI initiator in IQN format.
iSCSI Device1	Enables or disables the iSCSI device. When disabled, a UEFI boot option is created for the iSCSI device automatically. This is set to Disabled by default.
iSCSI Device1 Settings	Enables you to control the configuration of the iSCSI device.
UEFI NVMe-oF Settings	Enables you to control the configuration of the NVMe-oF devices.
NVMe-oF	Enables or disables the NVMe-oF feature. When enabled, it allows to configure the host and target parameters needed for fabric connection. This is set to Disabled by default.
NVMe-oF Host NQN	This field specifies the name of the NVMe-oF host NQN. Allowed input is in the following format: nqn.yyyy-mm.<Reserved Domain Name>:<Unique String>. Leave it empty to use system generated value with following format: nqn.1988-11.com.dell:<Model name>.<Model number>.<Service

Table 35. Network Settings details (continued)

Option	Description
	Tag>. This is set to nqn.1988-11.com.dell:<model name>.<model number>.<service tag> by default.
NVMe-oF Host Id	This field specifies a 16 bytes value of the NVMe-oF host identifier that uniquely identifies this host with the controller in the NVM subsystem. Allowed input is a hexadecimal-encoded string in this format: 00112233-4455-6677-8899-aabbccddeeff. Leave it empty to use system generated value. A value of all FF is not allowed. This is set to FFFFFFFF-FFFF-FFFF-FFFF-FFFFFFFFFFFFFF by default.
Host Security Key Path	This field specifies the Host security key path.
NVMe-oF SubSystem Settings	This field controls the parameters for the NVMe-oF subsystem n connections.

Table 36. PXE Device n Settings details

Option	Description
Interface	Specifies NIC interface used for the PXE device.
Protocol	Specifies Protocol used for PXE device. This option is set to IPv4 or IPv6 . This option is set to IPv4 by default.
VLAN	Enables VLAN for PXE device. This option is set to Enabled or Disabled . This option is set to Disabled by default.
VLAN ID	Shows the VLAN ID for the PXE device
VLAN Priority	Shows the VLAN Priority for the PXE device.

Table 37. HTTP Device n Settings details

Option	Description
Interface	Specifies NIC interface used for the HTTP device.
Protocol	Specifies Protocol used for HTTP device. This option is set to IPv4 or IPv6 . This option is set to IPv4 by default.
VLAN	Enables VLAN for HTTP device. This option is set to Enable or Disable . This option is set to Disable by default.
VLAN ID	Shows the VLAN ID for the HTTP device
VLAN Priority	Shows the VLAN Priority for the HTTP device.
DHCP	Enables or disables DHCP for this HTTP device. This option is set to Enable by default.
IP Address	Specifies IP address for the HTTP device.
Subnet Mask	Specifies subnet mask for the HTTP device.
Gateway	Specifies gateway for the HTTP device.
DNS info via DHCP	Enables or disables DNS Information from DHCP. This option is set to Enable by default.
Primary DNS	Specifies the primary DNS server IP address for the HTTP Device.
Secondary DNS	Specifies the secondary DNS server IP address for the HTTP Device.
URI (will obtain from DHCP server if not specified)	Obtain URI from the DHCP server if not specified
TLS Authentication Configuration	Specifies the option for TLS authentication configuration.

Table 38. TLS Authentication Configuration screen details

Option	Description
TLS Authentication Mode	View or modify the device's boot TLS Authentication Mode. This option is set to One Way by default. None means the HTTP server and the client will not authenticate each other for this boot.
Root Certificate Configuration	Import, delete, or export the root certificate.

Table 39. UEFI ISCSI Settings screen details

Option	Description
ISCSI Initiator Name	Specifies the name of the ISCSI initiator in IQN format.
ISCSI Device1	Enables or disables the ISCSI device. When disabled, a UEFI boot option is created for the ISCSI device automatically. This is set to Disabled by default.
ISCSI Device1 Settings	Enables you to control the configuration of the ISCSI device.

Table 40. ISCSI Device1 Settings screen details

Option	Description
Connection 1	Enables or disables the ISCSI connection. This option is set to Disabled by default.
Connection 2	Enables or disables the ISCSI connection. This option is set to Disabled by default.
Connection 1 Settings	Enables you to control the configuration for the ISCSI connection.
Connection 2 Settings	Enables you to control the configuration for the ISCSI connection.
Connection Order	Enables you to control the order for which the ISCSI connections will be attempted.

Table 41. NVMe-oF SubSystem Settings screen details

Option	Description
NVMe-oF SubSystem n (n = 1 to 4)	Enables or disables NVMe-oF SubSystem. This option is set to Disabled by default.
NVMe-oF SubSystem n Settings (n = 1 to 4)	Enables you to control the configuration of the NVMe-oF SubSystem, if Enabled .

Table 42. NVMe-oF SubSystem Settings

Option	Description
Interface	NIC interface used for NVMe-oF connections.
Transport Type	This field sets the value of transport type for NVMe-oF connection. This option is set to TCP by default.
Protocol	This field sets the value of protocol type for NVMe-oF connection. This option is set to IPv4 by default.
VLAN	Enables or disables VLAN for this NVMe-oF connections. This option is set to Disabled by default.
VLAN Id	Specifies the VLAN Id for this NVMe-oF connection. This option is set to 1 by default.
VLAN Priority	Specifies the VLAN priority for this NVMe-oF connection. This option is set to 0 by default.
Retry Count	Specifies the retry count for this NVMe-oF connection. This option is set to 3 by default.
Timeout	Specifies the time out for this NVMe-oF connection. This option is set to 10000 by default.

Table 42. NVMe-oF SubSystem Settings (continued)

Option	Description
DHCP	Enables and disables the DHCP for this NVMe-oF connection. This option is set to Disabled by default.
Host IP Address	Specifies the Host IP Address for this NVMe-oF connection.
Host Subnet Mask	Specifies the Host Subnet Mask for this NVMe-oF connection.
Host Gateway	Specifies the Host Gateway for this NVMe-oF connection.
NVMe-oF Subsystem info via DHCP	Enables and disables the NVMe-oF subsystem's DHCP for this connection. This option is set to Disabled by default.
NVMe-oF Subsystem NQN	Specifies the NVMe-oF subsystem's NQN for this connection.
NVMe-oF Subsystem Address	Specifies the NVMe-oF subsystem's IP address for this connection.
NVMe-oF Subsystem Port	Specifies the NVMe-oF subsystem's port for this connection. This option is set to 4420 by default.
NVMe-oF Subsystem NID	Specifies the NamespaceID (NID) for this NVMe-oF connection.
NVMe-oF Subsystem Controller ID	Specifies the NVMe-oF subsystem's Controller ID for this connection. This option is set to 0 by default.
Security	Enables or disables the security option for this NVMe-oF connection. This option is set to Disabled by default.
Authentication Type	Specifies the authentication type for this NVMe-oF connection. This option is set to None by default.
SecuritykeyPath	Specifies the SecuritykeyPath for this NVMe-oF connection.

Integrated Devices

To view the **Integrated Devices** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Integrated Devices**.

Table 43. Integrated Devices details

Option	Description
User Accessible USB Ports	Configures the user accessible USB ports. Selecting All Ports Off disables all USB ports. ; Selecting All Ports Off (Dynamic) disables all USB ports during POST. Front ports can be enabled or disabled dynamically by authorized users without resetting the system. This option is set to All Ports On by default. The USB keyboard and mouse still function in certain USB ports during the boot process, depending on the selection. After the boot process is complete, the USB ports will be enabled or disabled as per the setting.
iDRAC Direct USB Port	The iDRAC Direct USB port is managed by iDRAC exclusively with no host visibility. This option is set to ON or OFF . When set to OFF , iDRAC does not detect any USB devices installed in this managed port. This option is set to On by default.
Embedded NIC1 and NIC2	Enables or disables the Embedded NIC1 and NIC2. If set to Disabled (OS) , the NIC may still be available for shared network access by the embedded management controller. This option is set to Enabled by default.
I/OAT DMA Engine	Enables or disables the I/O Acceleration Technology (I/OAT) option. I/OAT is a set of DMA features designed to accelerate network traffic and lower CPU utilization. Enable only if the hardware and software support the feature. This option is set to Disabled by default.
Embedded Video Controller	Enables or disables the use of Embedded Video Controller as the primary display. When set to Enabled , the Embedded Video Controller will be the

Table 43. Integrated Devices details (continued)

Option	Description
	<p>primary display even if add-in graphic cards are installed. When set to Disabled, an add-in graphics card is used as the primary display. BIOS will output displays to both the primary add-in video and the embedded video during POST and preboot environment. The embedded video will then be disabled right before the operating system boots. This option is set to Enabled by default.</p> <p>NOTE: When there are multiple add-in graphic cards installed in the system, the first card discovered during PCI enumeration is selected as the primary video. You might have to rearrange the cards in the slots in order to control which card is the primary video.</p>
I/O Snoop HoldOff Response	<p>Selects the number of cycles PCI I/O can withhold snoop requests, from the CPU, to allow time to complete its own write to LLC. This setting can help improve performance on workloads where throughput and latency are critical. The option available is 2K Cycles by default.</p>
Current State of Embedded Video Controller	<p>Displays the current state of the embedded video controller. The Current State of Embedded Video Controller option is a read-only field. If the Embedded Video Controller is the only display capability in the system (that is, no add-in graphics card is installed), then the Embedded Video Controller is automatically used as the primary display even if the Embedded Video Controller setting is set to Disabled.</p>
SR-IOV Global Enable	<p>Enables or disables the BIOS configuration of Single Root I/O Virtualization (SR-IOV) devices. This option is set to Disabled by default.</p>
OS Watchdog Timer	<p>If your system stops responding, this watchdog timer aids in the recovery of your operating system. When this option is set to Enabled, the operating system initializes the timer. When this option is set to Disabled (the default), the timer does not have any effect on the system.</p>
Empty Slot Unhide	<p>Enables or disables the root ports of all the empty slots that are accessible to the BIOS and operating system. This option is set to Disabled by default.</p>
Slot Disablement	<p>Enables or disables the available PCIe slots on your system. The slot disablement feature controls the configuration of the PCIe cards installed in the specified slot. Slots must be disabled only when the installed peripheral card prevents booting into the operating system or causes delays in system startup. If the slot is disabled, both the Option ROM and UEFI drivers are disabled. Only slots that are present on the system will be available for control.</p> <p>Slot n: Enables or disables or only the boot driver is disabled for the PCIe slot n. This option is set to Enabled by default.</p>
Slot Bifurcation	<p>Auto Discovery Bifurcation Settings allows Platform Default Bifurcation and Manual Bifurcation Control.</p>
	<p>This option is set to Platform Default Bifurcation by default. The slot bifurcation field is accessible when set to Manual Bifurcation Control and is grayed out when set to Platform Default Bifurcation.</p> <p>NOTE: The slot bifurcation supports on PCIe slot only, does not support slot type from Paddle card to Riser and Slimline connector to Riser.</p>

Serial Communication

To view the **Serial Communication** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Serial Communication**.

NOTE: The serial port is optional for the PowerEdge XR8620t system. The Serial Communication option is applicable only if the serial COM port is installed in the system.

Table 44. Serial Communication details

Option	Description
Serial Communication	<p>Enables the serial communication options. Selects serial communication devices (Serial Device 1 and Serial Device 2) in BIOS. BIOS console redirection can also be enabled, and the port address can be specified.</p> <p>The options available for System are On without Console Redirection, On with Console Redirection via COM1, On with Console Redirection via COM2, Off, Auto. This option is set to Auto by default.</p>
Serial Port Address	<p>Enables you to set the port address for serial devices. This option is set to Serial Device1=COM2, Serial Device2=COM1 by default.</p> <p>i NOTE: You can use only Serial Device 2 for the Serial Over LAN (SOL) feature. To use console redirection by SOL, configure the same port address for console redirection and the serial device.</p> <p>i NOTE: Every time the system boots, the BIOS syncs the serial MUX setting that is saved in iDRAC. The serial MUX setting can independently be changed in iDRAC. Loading the BIOS default settings from within the BIOS setup utility may not always revert the serial MUX setting to the default setting of Serial Device 1.</p>
External Serial Connector	<p>Enables you to associate the External Serial Connector to Serial Device 1, Serial Device 2, or the Remote Access Device by using this option. This option is set to Serial Device 1 by default.</p> <p>i NOTE: Only Serial Device 2 can be used for Serial Over LAN (SOL). To use console redirection by SOL, configure the same port address for console redirection and the serial device.</p> <p>i NOTE: Every time the system boots, the BIOS syncs the serial MUX setting saved in iDRAC. The serial MUX setting can independently be changed in iDRAC. Loading the BIOS default settings from within the BIOS setup utility may not always revert this setting to the default setting of Serial Device 1.</p>
Failsafe Baud Rate	<p>Specifies the failsafe baud rate for console redirection. The BIOS attempts to determine the baud rate automatically. This failsafe baud rate is used only if the attempt fails, and the value must not be changed. This option is set to 115200 by default.</p>
Remote Terminal Type	<p>Sets the remote console terminal type. This option is set to VT100/VT220 by default.</p>
Redirection After Boot	<p>Enables or disables the BIOS console redirection when the operating system is loaded. This option is set to Enabled by default.</p>

System Profile Settings

To view the **System Profile Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > System Profile Settings**.

Table 45. System Profile Settings details

Option	Description
System Profile	<p>Sets the system profile. If you set the System Profile option to a mode other than Performance Per Watt (DAPC), the BIOS automatically sets the rest of the options. You can only change the rest of the options if the mode is set to Custom. This option is set to Performance Per Watt (DAPC) by default. Other options include Performance, Performance Per Watt (OS), Workstation Performance and Custom.</p>

Table 45. System Profile Settings details (continued)




Option	Description
	<p> NOTE: All the parameters on the system profile setting screen are available only when the System Profile option is set to Custom.</p>
CPU Power Management	Sets the CPU power management. This option is set to System DBPM (DAPC) by default. Other option includes Maximum Performance, OS DBPM .
Memory Frequency	Sets the speed of the system memory. This option is set to Maximum Performance by default.
Turbo Boost	Enables or disables the processor to operate in the turbo boost mode. This option is set to Enabled by default.
Energy Efficient Turbo	Energy Efficient Turbo (EET) is a mode of operation where a processor's core frequency is adjusted within the turbo range based on workload. This option is set to Enabled by default.
C1E	Enables or disables the processor to switch to a minimum performance state when it is idle. This option is set to Enabled by default.
C-States	Enables or disables the processor to operate in all available power states. C-States allow the processor to enter lower power states when idle. When set to Enabled (OS controlled) or when set to Autonomous (if hardware controlled is supported), the processor can operate in all available Power States to save power, but may increase memory latency and frequency jitter. This option is set to Enabled by default.
Memory Patrol Scrub	Sets the memory patrol scrub mode. This option is set to Standard by default.
Memory Refresh Rate	Sets the memory refresh rate, this option is set to 1x by default.
Uncore Frequency	Enables you to select the Uncore Frequency option. Dynamic enables the processor to optimize power resources across cores and uncores during runtime. The optimization of the uncore frequency to either save power or optimize performance is influenced by the setting of the Energy Efficiency Policy option.
Energy Efficient Policy	Enables you to select the Energy Efficient Policy option. The CPU uses the setting to manipulate the internal behavior of the processor and determines whether to target higher performance or better power savings. This option is set to Balanced Performance by default.
Monitor/Mwait	<p>Enables the Monitor/Mwait instructions in the processor. This option is set to Enabled for all system profiles, except Custom by default.</p> <p> NOTE: This option can be disabled only if the C States option in the Custom mode is set to disabled.</p> <p> NOTE: When C States is set to Enabled in the Custom mode, changing the Monitor/Mwait setting does not impact the system power or performance.</p>
Workload Profile	<p>This option allows the user to specify the targeted workload of a server. It allows optimization of performance based on the workload type. This option is set to Not Configured by default. Below is the list of available profiles:</p> <ul style="list-style-type: none"> ● Not Configured ● HPC Profile ● Low Latency Optimized Profile ● Virtualization Optimized Performance Profile ● Virtualization Optimized Performance Per Watt Profile ● DataBase Optimized Performance Profile ● Database Optimized Performance Per Watt Profile ● SDS Optimized Performance Profile ● SDS Optimized Performance Per Watt Profile ● Telco Optimized Profile ● NFVI FP Optimized Turbo Profile ● NFVI FP Energy-Balance Turbo Profile

Table 45. System Profile Settings details (continued)

Option	Description
CPU Interconnect Bus Link Power Management	Enables or disables the CPU Interconnect Bus Link Power Management. This option is set to Enabled by default.
PCI ASPM L1 Link Power Management	Enables or disables the PCI ASPM L1 Link Power Management . This option is set to Enabled by default.
Workload Configuration	This field controls the Energy Performance Bias settings to allow BIOS to choose a configuration that improve performance on certain workload. The two options for selection are Balance and IO Sensitive . This option is set to Balance by default.

System Security

To view the **System Security** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > System Security**.

Table 46. System Security details

Option	Description
CPU AES-NI	Improves the speed of applications by performing encryption and decryption by using the Advanced Encryption Standard Instruction Set (AES-NI). This option is set to Enabled by default.
System Password	Sets the system password. This option is read-only if the password jumper is not installed in the system.
Setup Password	Sets the setup password. This option is read-only if the password jumper is not installed in the system.
Password Status	Locks the system password. This option is set to Unlocked by default.
TPM Information	Indicates the type of Trusted Platform Module, if present.

Table 47. TPM 2.0 security information


Option	Description
TPM Information	
TPM Security	 NOTE: The TPM menu is available only when the TPM module is installed.
	Enables you to control the reporting mode of the TPM. When set to Off, the presence of the TPM is not reported to the OS. When set to On, the presence of the TPM is reported to the OS. The TPM Security option is set to Off by default.
	When TPM 2.0 is installed, the TPM Security option is set to On or Off . This option is set to Off by default.
TPM Information	Indicates the type of Trusted Platform Module, if present.
TPM Firmware	Indicates the firmware version of the TPM.
TPM Hierarchy	Enables, disables, or clears the storage and endorsement hierarchies. When set to Enabled , the storage and endorsement hierarchies can be used.
	When set to Disabled , the storage and endorsement hierarchies cannot be used.
	When set to Clear , the storage and endorsement hierarchies are cleared of any values, and then reset to Enabled .
TPM Advanced Settings	Specifies TPM Advanced Settings details.

Table 48. System Security details

Option	Description
Intel(R) TXT	Enables you to set the Intel Trusted Execution Technology (TXT) option. To enable the Intel TXT option, virtualization technology and TPM Security must be enabled with Pre-boot measurements. This option is set to Off by default. It is set On for Secure Launch (Firmware Protection) support.
Memory Encryption	Enables or disables the Intel Total Memory Encryption (TME) and Multi-Tenant (Intel® TME-MT). When option is set to Disabled , BIOS disables both TME and TME-MT technology. When option is set to Single Key BIOS enables the TME technology. When option is set to Multiple Keys , BIOS enables the TME-MT technology. This option is set to Disabled by default.
TME Encryption Bypass	Enables you to bypass the Intel Total Memory Encryption. This option is set to Disabled by default.
Intel(R) SGX	Enables you to set the Intel Software Guard Extension (SGX) option. To enable the Intel SGX option, processor must be SGX capable, memory population must be compatible (minimum x8 identical DIMM1 to DIMM8 per CPU socket, not support on persistent memory configuration), memory operating mode must be set at optimizer mode, memory encryption must be enabled and node interleaving must be disabled. This option is set to Off by default. When this option is to Off , BIOS disables the SGX technology. When this option is to On , BIOS enables the SGX technology.
Power Button	Enables or disables the power button on the front of the system. This option is set to Enabled by default.
AC Power Recovery	Sets how the system behaves after AC power is restored to the system. This option is set to Last by default. <i>i</i> NOTE: The host will not power up until iDRAC completes cryptographic verification of BIOS to ensure platform security. Host power on will be delayed by few minutes after AC power is applied.
AC Power Recovery Delay	Sets the time delay for the system to power up after AC power is restored to the system. This option is set to Immediate by default. When this option is set to Immediate , there is no delay for power up. When this option is set to Random , the system creates a random delay for power up. When this option is set to User Defined , the system delay time is manually to power up.
User Defined Delay (120 s to 600 s)	Sets the User Defined Delay option when the User Defined option for AC Power Recovery Delay is selected. The actual AC recovery time needs to add iDRAC cryptographic verification of BIOS time.
UEFI Variable Access	Provides varying degrees of securing UEFI variables. When set to Standard (the default), UEFI variables are accessible in the operating system per the UEFI specification. When set to Controlled , selected UEFI variables are protected in the environment and new UEFI boot entries are forced to be at the end of the current boot order.
In-Band Manageability Interface	When set to Disabled , this setting hides the Management Engine's (ME), HECI devices, and the system's IPMI devices from the operating system. This prevents the operating system from changing the ME power capping settings, and blocks access to all in-band management tools. All management should be managed through out-of-band. This option is set to Enabled by default. <i>i</i> NOTE: BIOS update requires HECI devices to be operational and DUP updates require IPMI interface to be operational. This setting needs to be set to Enabled to avoid updating errors.
SMM Security Mitigation	Enables or disables the UEFI SMM security mitigation protections. It is set to Disabled by default.
Secure Boot	Enables Secure Boot, where the BIOS authenticates each pre-boot image by using the certificates in the Secure Boot Policy. Secure Boot is set to Disabled by default.
Secure Boot Policy	When Secure Boot policy is set to Standard , the BIOS uses the system manufacturer's key and certificates to authenticate pre-boot images. When Secure Boot policy is set to

Table 48. System Security details (continued)

Option	Description
	Custom , the BIOS uses the user-defined key and certificates. Secure Boot policy is set to Standard by default.
Secure Boot Mode	<p>Configures how the BIOS uses the Secure Boot Policy Objects (PK, KEK, db, dbx).</p> <p>If the current mode is set to Deployed Mode, the available options are User Mode and Deployed Mode. If the current mode is set to User Mode, the available options are User Mode, Audit Mode, and Deployed Mode</p> <p>Below are the details of different boot modes available in the Secure Boot Mode option.</p> <p>User Mode In User Mode, PK must be installed, and BIOS performs signature verification on programmatic attempts to update policy objects. The BIOS allows unauthenticated programmatic transitions between modes.</p> <p>Audit mode In Audit Mode, PK is not present. BIOS does not authenticate programmatic update to the policy objects and transitions between modes. The BIOS performs a signature verification on pre-boot images and logs the results in the image Execution Information Table, but executes the images whether they pass or fail verification. Audit Mode is useful for programmatic determination of a working set of policy objects.</p> <p>Deployed Mode Deployed Mode is the most secure mode. In Deployed Mode, PK must be installed and the BIOS performs signature verification on programmatic attempts to update policy objects. Deployed Mode restricts the programmatic mode transitions.</p>
Secure Boot Policy Summary	Specifies the list of certificates and hashes that secure boot uses to authenticate images.
Secure Boot Custom Policy Settings	Configures the Secure Boot Custom Policy. To enable this option, set the Secure Boot Policy to Custom option.

Redundant OS Control

To view the **Redundant OS Control** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Redundant OS Control**.

Table 49. Redundant OS Control details





Option	Description
Redundant OS Location	<p>Enables you to select a backup disk from the following devices:</p> <ul style="list-style-type: none"> • None • BOSS PCIe Cards (Internal M.2 Drives) <p> NOTE: RAID configurations and NVMe cards are not included, as BIOS does not have the ability to distinguish between individual drives in those configurations.</p> • NVMe Direct Riser (Internal M.2 NVMe Direct Riser Disk n)
Redundant OS State	<p> NOTE: This option is disabled if Redundant OS Location is set to None.</p> <p>When set to Visible, the backup disk is visible to the boot list and OS. When set to Hidden, the backup disk is disabled and is not visible to the boot list and OS. This option is set to Visible by default.</p> <p> NOTE: BIOS disables the device in hardware, so it is not accessed by the OS.</p>


Table 49. Redundant OS Control details (continued)

Option	Description
Redundant OS Boot	<p> NOTE: This option is disabled if Redundant OS Location is set to None or if Redundant OS State is set to Hidden.</p> <p>When set to Enabled, BIOS boots to the device specified in Redundant OS Location. When set to Disabled, BIOS preserves the current boot list settings. This option is set to Disabled by default.</p>

Miscellaneous Settings


To view the **Miscellaneous Settings** screen, power on the system, press F2, and click **System Setup Main Menu > System BIOS > Miscellaneous Settings**.

Table 50. Miscellaneous Settings details

Option	Description
System Time	Enables you to set the time on the system.
System Date	Enables you to set the date on the system.
Time Zone	Enables you to set the time zone on the system.
Daylight Savings Time	Enables you to set whether the Daylight Savings Time is enabled or disabled.
Asset Tag	Specifies the asset tag and enables you to modify it for security and tracking purposes.
Keyboard NumLock	Enables you to set whether the system boots with the NumLock enabled or disabled. This option is set to On by default.  NOTE: This option does not apply to 84-key keyboards.
F1/F2 Prompt on Error	Enables or disables the F1/F2 prompt on error. This option is set to Enabled by default. The F1/F2 prompt also includes keyboard errors.
Load Legacy Video Option ROM	Enables you to let the system BIOS determine whether it will load legacy video (INT 10h) option ROM from the video controller, in UEFI Boot Mode. This option is set to disabled by default.
Dell Wyse P25/P45 BIOS Access	Enables or disables the Dell Wyse P25/P45 BIOS Access. This option is set to Enabled by default.
Power Cycle Request	Enables or disables the Power Cycle Request. This option is set to None by default.

iDRAC Settings

The iDRAC settings is an interface to set up and configure the iDRAC parameters by using UEFI. You can enable or disable various iDRAC parameters by using the iDRAC settings.

 **NOTE:** Accessing some of the features on the iDRAC settings needs the iDRAC Enterprise License upgrade.

For more information about using iDRAC, see *Dell Integrated Dell Remote Access Controller User's Guide* at <https://www.dell.com/idracmanuals>.


Device Settings

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

Minimum configuration to POST

The components listed below are the minimum configuration to POST:

- One processor (CPU) in processor socket
- Two memory module (DIMM) in socket A1 and A2
- One power supply unit
- XR8000r chassis (Power Distribution Board, cables)
- System board
- XR8620t sled

 **NOTE:** The system may generate errors when it is in a minimum to POST configuration. This behavior is expected as the configuration is not validated for operational use, instead, only for troubleshooting or diagnostic purposes.

Installing and removing system components

Topics:

- Safety instructions
- Before working inside your system
- After working inside your system
- XR8000r chassis
- Sled cover
- Air shroud
- M.2 direct riser module
- 2U sled
- Storage interposer module
- Cooling fans
- Expansion cards and expansion card risers
- BOSS-N1 card
- Power distribution board
- Cable routing
- System memory
- Processor and heat sink module
- System battery
- System board
- Trusted Platform Module

Safety instructions

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.

NOTE: System with a cold start requirement will require active heating. When the temperature is below 5°C, it will continue to heat up to below 10°C and stop heating.

Before working inside your system

Prerequisites

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

Steps

1. Power off the sled.
2. Remove the sled from the enclosure.

After working inside your system

Prerequisites

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

Steps

Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.

XR8000r chassis

Removing a sled blank

Prerequisites

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

Steps

Pull the sled blank to remove it from the enclosure.



Figure 12. Removing a sled blank

Next steps

Install a sled or sled blank.

Installing a sled blank

Prerequisites

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

Steps

1. Align the sled blank with the bay of the chassis.
2. Insert and push the sled blank, until it locks into place.



Figure 13. Installing a sled blank

Removing a sled

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Remove the front bezel, if applicable.

Steps

1. Pull the blue lever on the sled to release the sled handle.
2. Holding the sled handle, slide the sled out of the enclosure.

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

 **CAUTION:** Support the system with both hands while sliding it out of the enclosure.



Figure 14. Removing a sled from XR8000r

Next steps

[Installing the sled](#)

Installing a sled

Prerequisites

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

Steps

1. Pull the blue lever on the sled to free the sled handle.
2. Holding the sled with both hands, align the sled along the sled-bay into the chassis.
3. Slide the sled into the chassis, ensure that the sled handle is in lock position.
4. Push the sled handle inwards so that it locks into place and secures the sled in the chassis.

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



Figure 15. Installing a sled into XR8000r

Next steps

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

Sled cover

Removing the sled cover

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions.](#)
2. Power off the sled, and any attached peripherals.
3. Follow the steps for [Removing a sled.](#)
4. Place the sled on the flat surface with the top cover facing upwards.

Steps

1. Press the latch and slide the cover toward the front of the server until it reaches the unlock position.
2. Lift the cover from the sled.

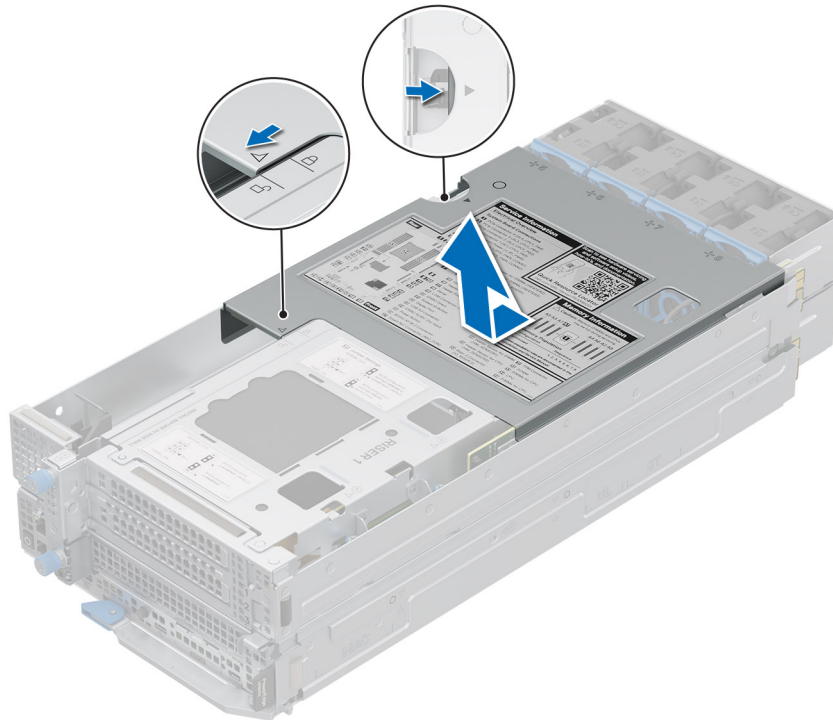


Figure 16. Removing the sled cover

Next steps

Follow the procedure listed in [Replace the sled cover](#).

Installing the sled cover

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. 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 sled cover with the guide slots on the sled and place down the sled cover.
2. Slide the cover towards the rear of the system until it locks in to place.

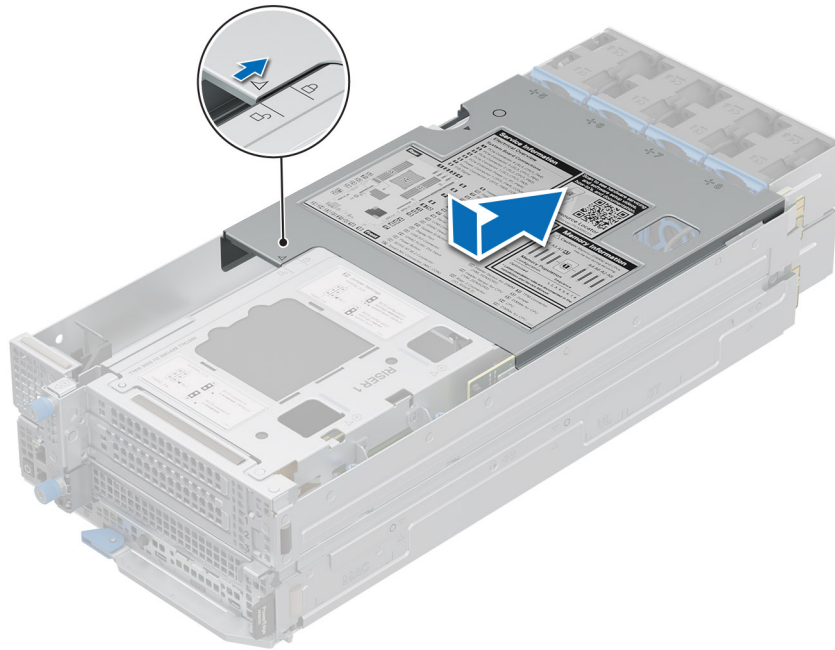


Figure 17. Installing the sled cover

Next steps

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

Air shroud

Removing the air shroud

Prerequisites

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

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

Steps

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

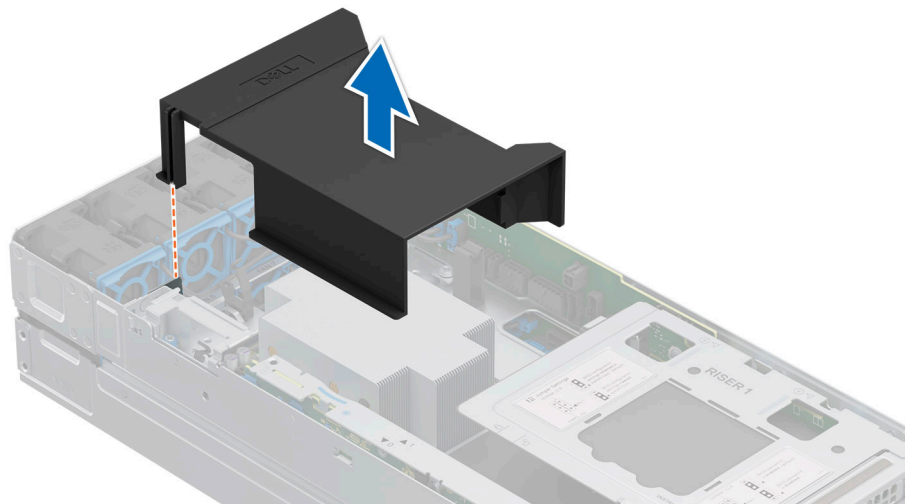


Figure 18. Removing the air shroud

Next steps

[Replace the air shroud.](#)

Installing the air shroud

Prerequisites

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

Steps

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

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

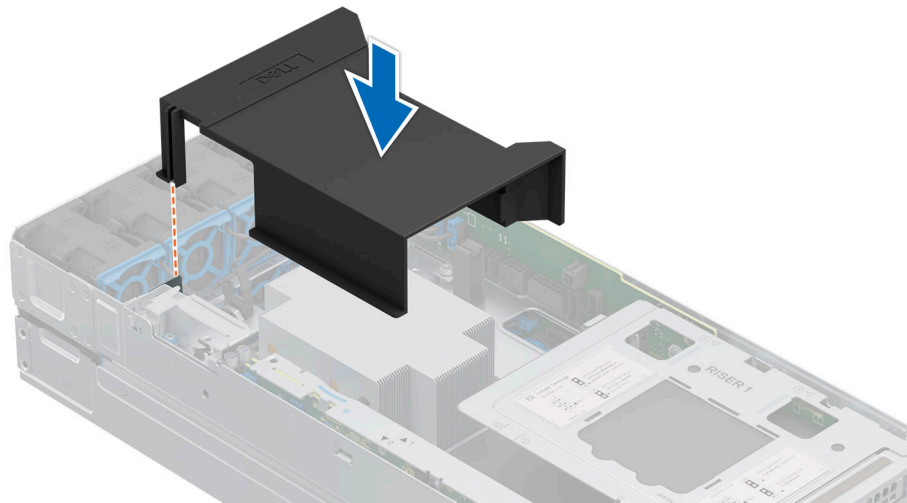


Figure 19. Installing the air shroud

Next steps

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

M.2 direct riser module

Removing the M.2 direct riser module

Prerequisites

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

Steps

1. Using a Phillips 2 screwdriver, loosen the captive screw that secure the M.2 direct riser.
2. Lift the riser using the blue touch point to disengage it from the connector on the system board.

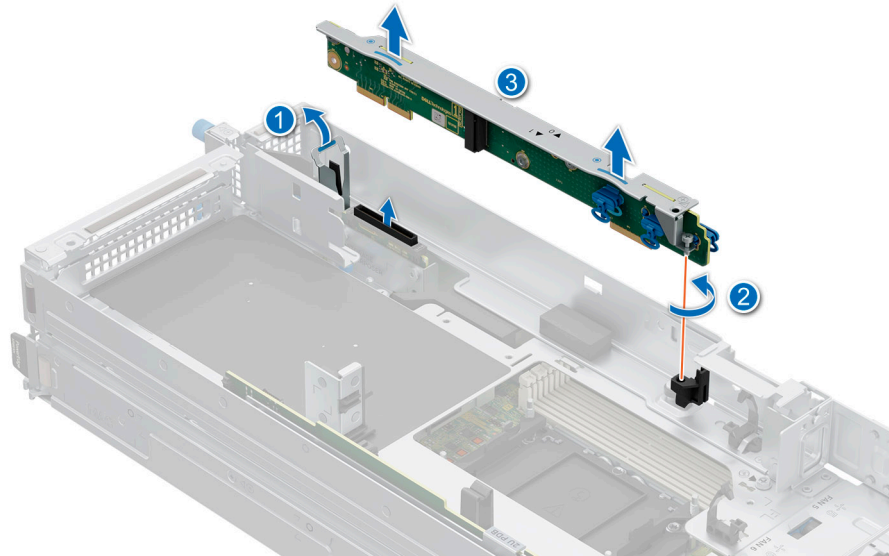


Figure 20. Removing the M.2 direct riser

Next steps

Replace the M.2 direct riser.

Installing the M.2 direct riser module

Prerequisites

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

Steps

1. Align the M.2 module with the system board and insert it firmly using the blue touch point until the riser is fully seated in the slot.
2. Using a Phillips 2 screwdriver, tighten the screw to secure the riser to the system board.

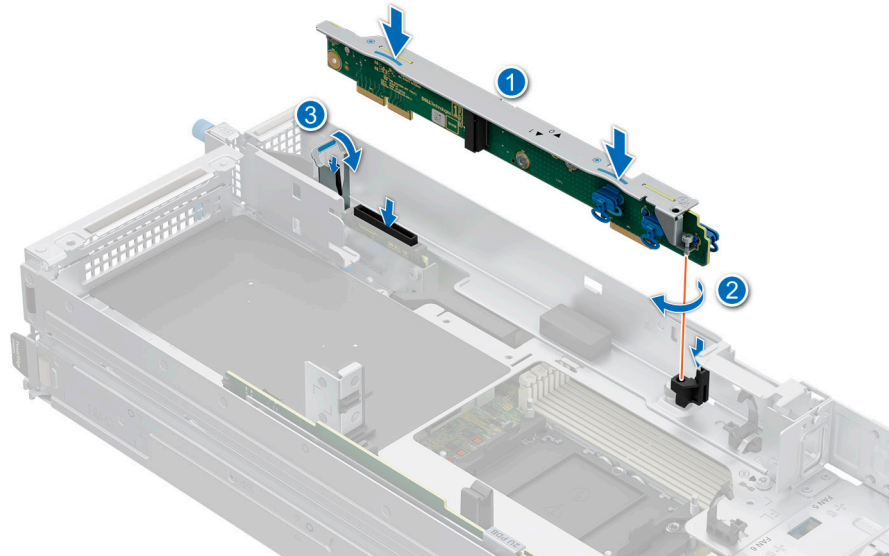


Figure 21. Installing the M.2 direct riser

Next steps

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

Removing the M.2 NVMe module from the M.2 direct riser module

Prerequisites

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

Steps

1. To remove the M.2 NVMe module from the M.2 direct riser, rotate the latch to a horizontal position and then pull out the engage pin.
2. Pull the M.2 NVMe module to remove it from the M.2 direct riser.

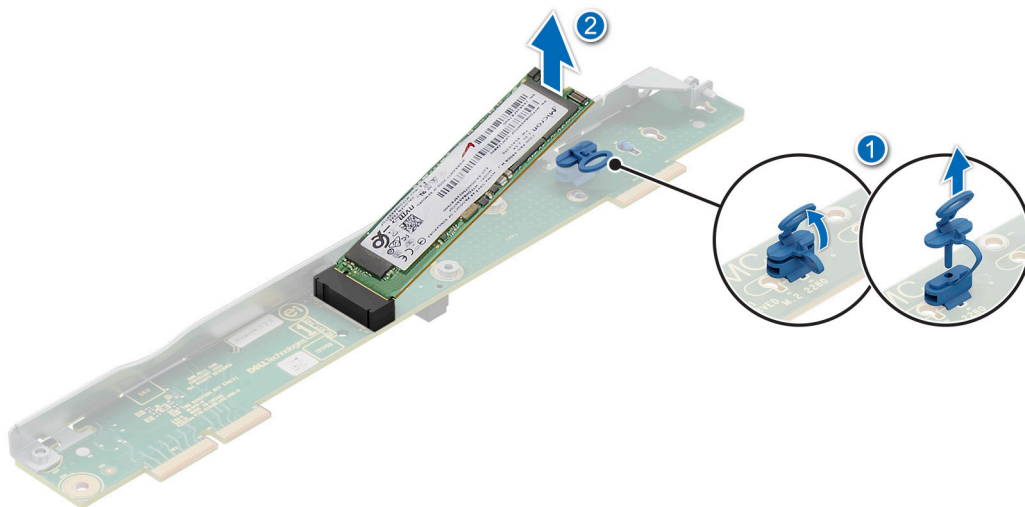


Figure 22. Removing the M.2 NVMe module

Next steps

Replace the M.2 NVMe module.

Installing the M.2 NVMe module on the M.2 direct riser

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. Remove the latch on the snap clip and rotate the latch to a vertical position.

NOTE: The position of the blue latch used for the M.2 2280 and M.2 22110 NVMe drives are different.

Steps

1. Align the M.2 NVMe module at an angle with the M.2 direct riser connector.
2. Insert the M.2 NVMe module firmly until it is fully seated in the M.2 direct riser connector.
3. To secure the M.2 NVMe module on the M.2 direct riser module, insert the engage pin to rotate the latch to a vertical position and then insert the latch into the snap clip.

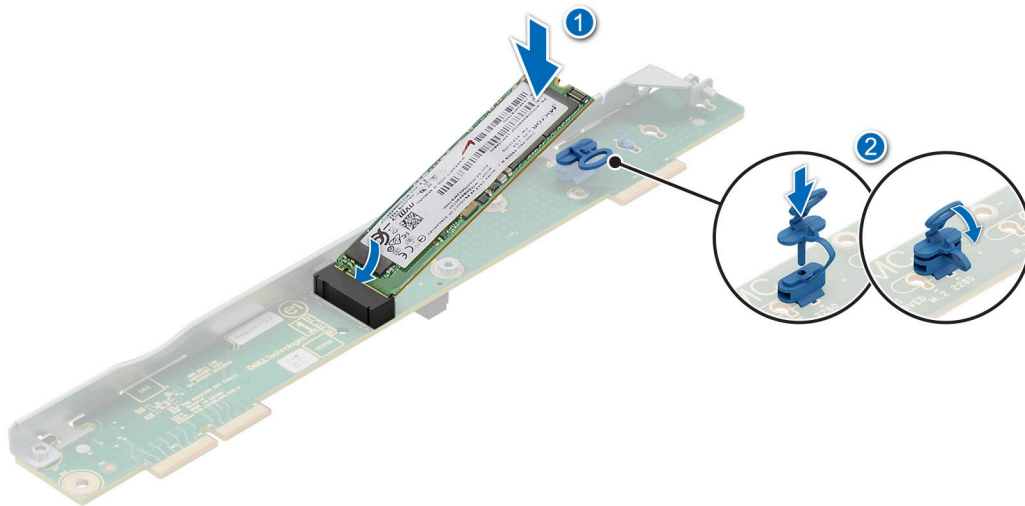


Figure 23. Installing the M.2 NVMe module

Next steps

1. [Installing the M.2 direct riser module](#).
2. Follow the procedure listed in the [After working inside your system](#).

2U sled

This is a service technician replaceable part only.

Removing the side cover

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the M.2 direct riser module](#).

Steps

1. Using the Phillips 2 screwdriver, loosen the captive screws that secure the side cover to the 2U sled.
2. Slide the side cover outward to remove it from the sled.

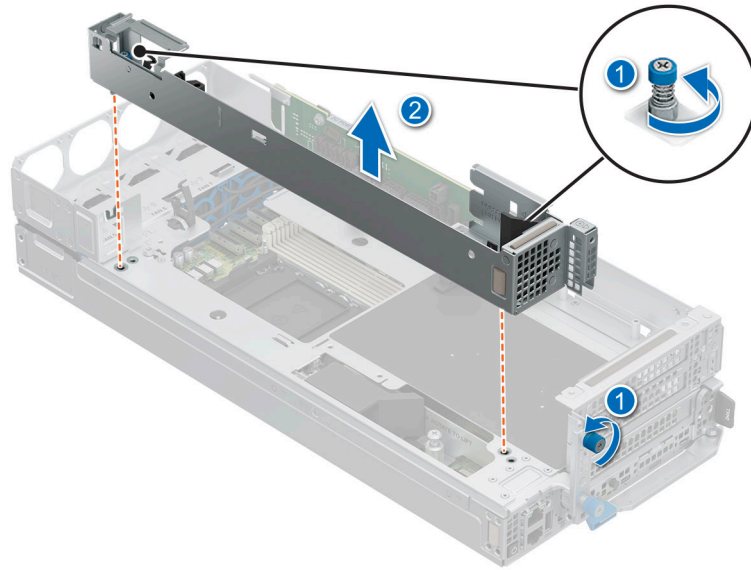


Figure 24. Removing the 2U side cover

Next steps

Remove the 2U top sled from the 2U node.

Installing the side cover

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Install the 2U top sled on the 2U node](#).

Steps

1. Align the side cover with the slot on the 2U sled.
2. Using a Phillips 2 screwdriver, tighten the captive screws to secure the 2U side cover.

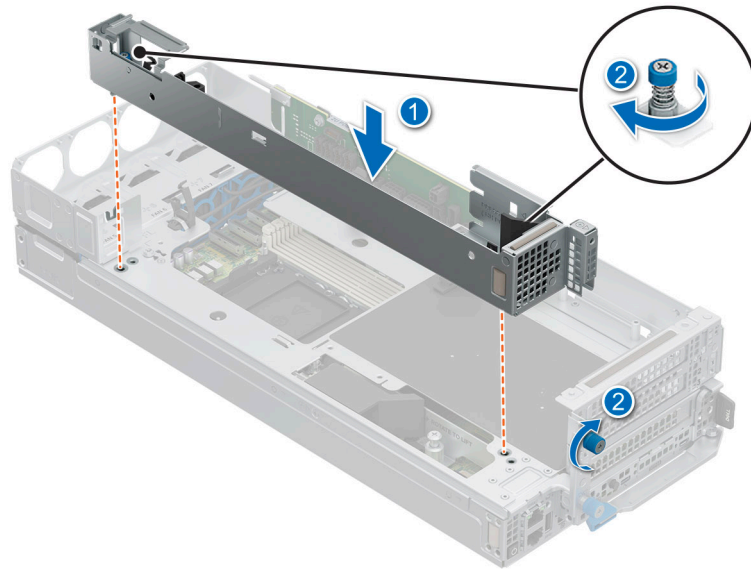


Figure 25. Installing the 2U sled side cover

Next steps

Install the M.2 direct riser module.

Removing the 2U top sled from the 2U node

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#)
3. [Remove the sled cover](#).
4. [Remove the air shroud](#).
5. [Remove the M.2 direct riser](#)
6. [Remove the side cover](#)
7. Remove the Riser1 4x signal cables from connectors on the system board
8. Remove the sideband cables between the 1U and 2U PDBs

Steps

1. Using Phillips 1 screwdriver, remove the side screws and loosen the front captive screw that secure the 2U top sled from the 2U node.
2. Using both hands, slide forward and lift the 2U top sled from the 2U node.

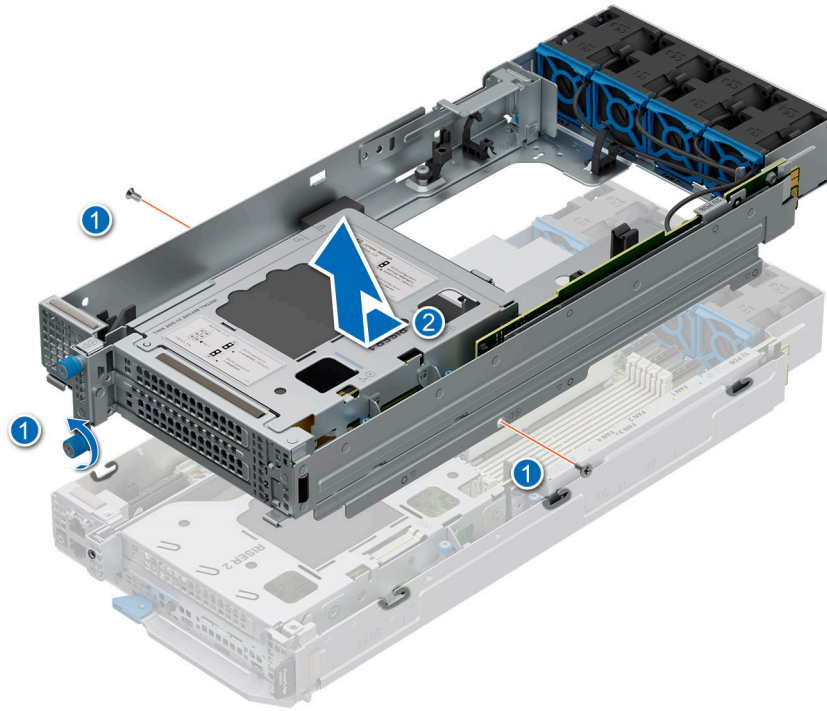


Figure 26. Removing the 2U top sled from the 2U node

Next steps

Replace the 2U top sled from the 2U node.

Installing the 2U top sled on the 2U node

Prerequisites

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

Steps

1. Align the 2U top sled horizontally and place it on top of the 2U node.

CAUTION: Support the 2U top sled with both hands while placing it on the 2U node.

2. Using Phillips 1 screwdriver, tighten the side screws and front captive screw that secure the 2U top sled on the 2U node.

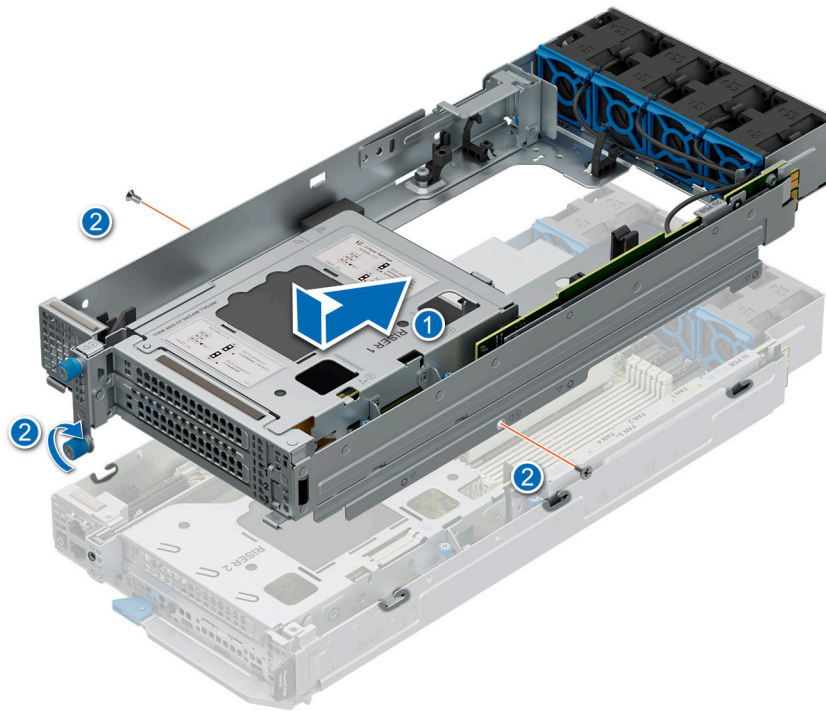


Figure 27. Installing the 2U top sled on the 2U node

Next steps

1. Connect the sideband cables between the 1U and 2U PDBs
2. Connect the Riser1 4x signal cables to connectors on the system board
3. [Install the side cover.](#)
4. [Install the M.2 direct riser](#)
5. [Install the air shroud.](#)
6. [Install the sled cover.](#)
7. Follow the procedure listed in [After working inside your system](#)

Storage interposer module

Removing the storage interposer module

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the M.2 direct riser module.](#)

Steps

1. Using Phillips 2 screwdriver, remove the screw that secure the storage interposer module to the system.

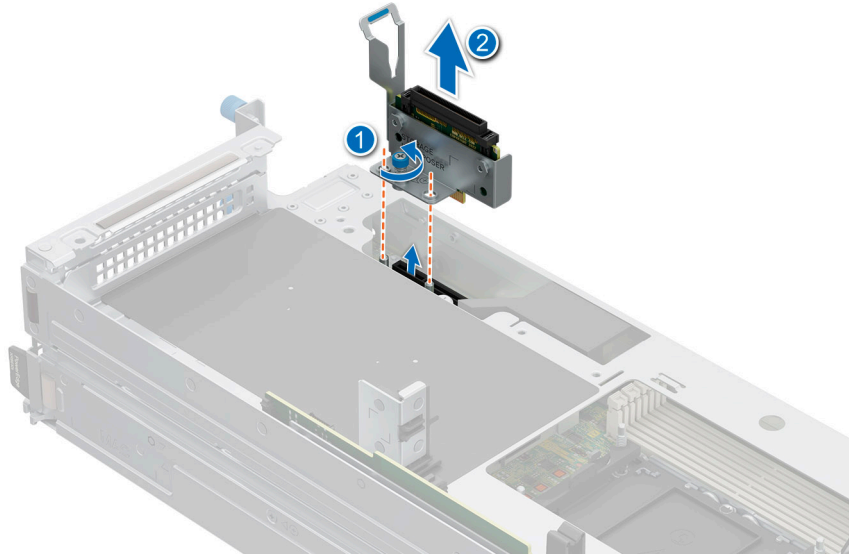


Figure 28. Removing the storage interposer module

2. Lift the board to remove it from the system.

Next steps

Replace the storage interposer module.

Installing the storage interposer module

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the M.2 direct riser module](#).

Steps

1. Align the storage interposer module with the connector on the system board.
2. Using a Phillips 2 screwdriver, tighten the screw to secure the storage interposer module on the system board.

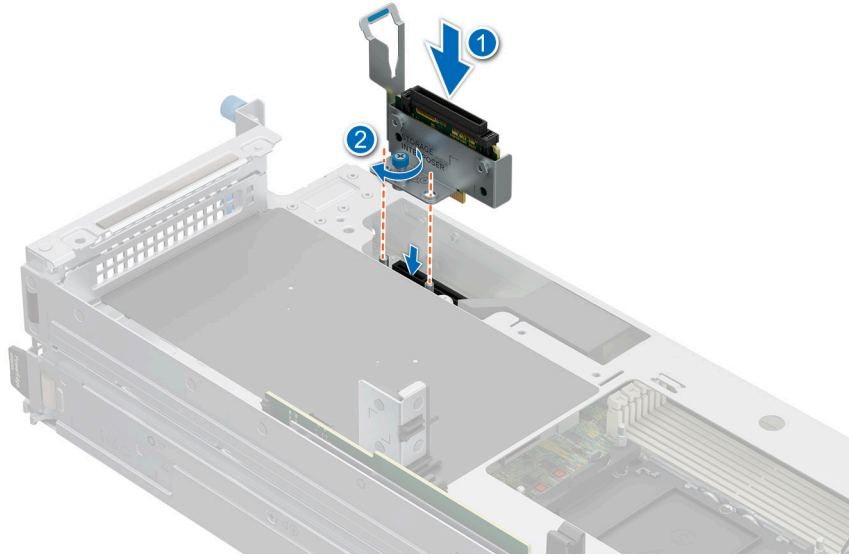


Figure 29. Installing the storage interposer module

Next steps

1. [Install the M.2 direct riser module](#)

Cooling fans

Removing a cooling fan on 2U sled

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#)
 - NOTE:** Observe the fan cable routing or make a note of the fan cable routing.

Steps

1. Route the fan cables properly through the fan guard and disconnect the cable from the connector on the power distribution board (PDB) of the 2U sled.
 - NOTE:** Fan 5, 6, 7 and 8 are connected to the 2U PDB.

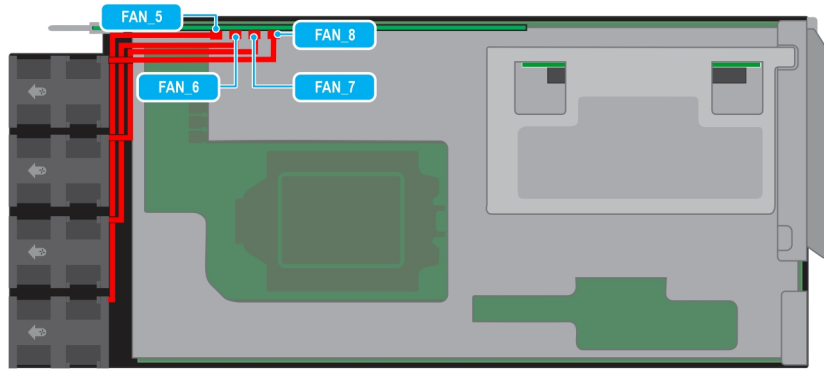


Figure 30. 2U sled fan cable routing

2. Pull slightly to disengage the fan cable from the fan guard and then lift the fan module out of the fan cage.

NOTE: The airflow directional arrow outward on the fan indicates Reverse-Air-Flow (RAF).

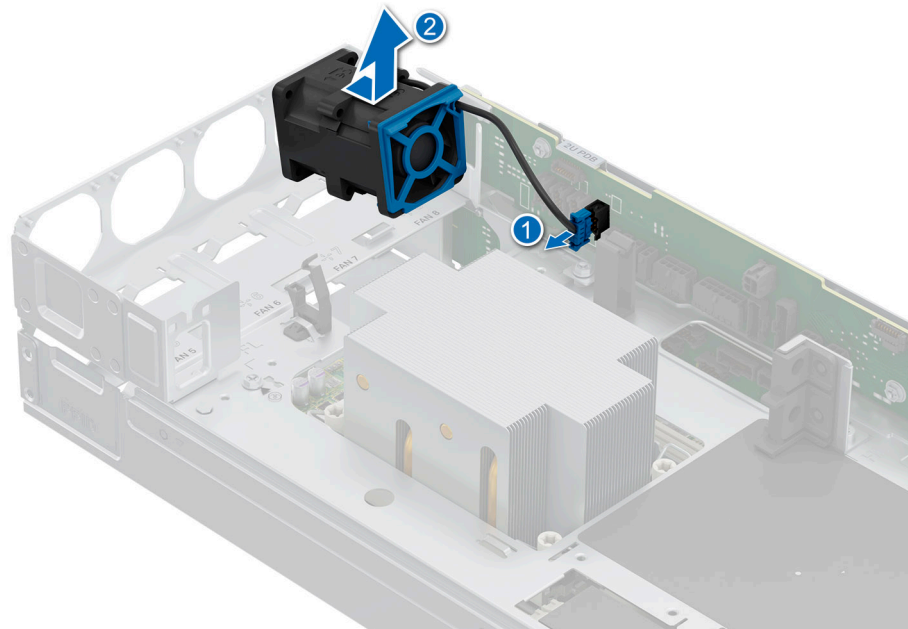


Figure 31. Removing a cooling fan

Next steps

1. [Replace a fan](#)
2. [Install the air shroud](#)

Installing a cooling fan on 2U sled

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#).

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

Steps

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

NOTE: The airflow directional arrow outward on the fan indicates Reverse-Air-Flow (RAF).

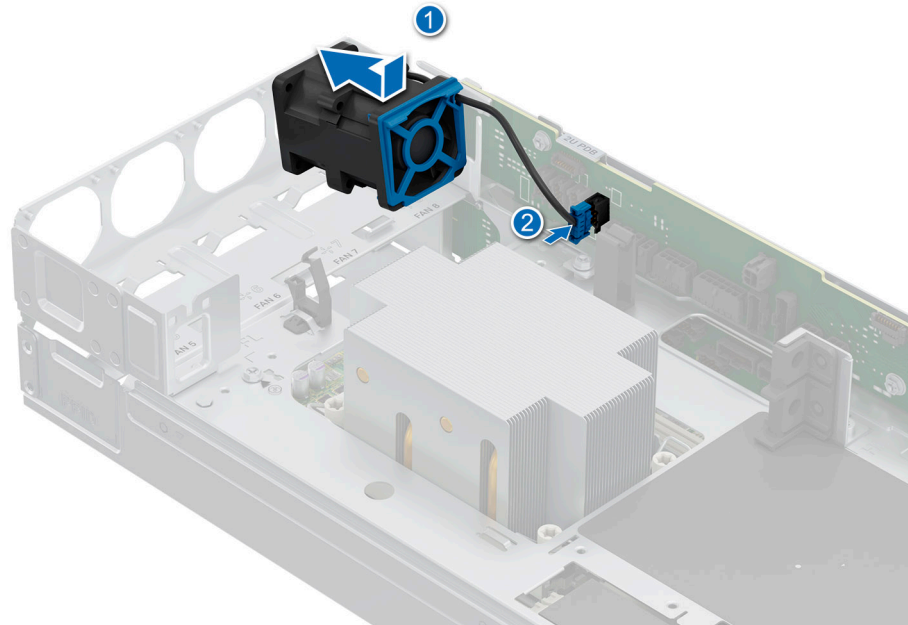


Figure 32. Installing a cooling fan

2. Route the fan cables properly through the fan guard and connect the cable to the connector on the power distribution board (PDB) of the 2U sled as shown in the image below.

NOTE: Fan 5, 6, 7 and 8 are connected to the 2U PDB.

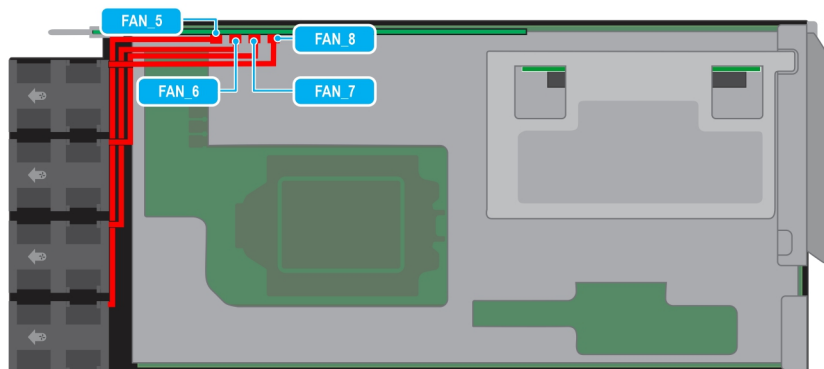


Figure 33. 2U sled fan cable routing

Next steps

Install the air shroud .

Removing a cooling fan on 1U sled

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U sled from 1U node](#).
i **NOTE:** Observe the fan cable routing or make a note of the fan cable routing.

Steps

1. Route the fan cables properly through the fan guard and disconnect the fan cable connected to the connector on the power distribution board (PDB) of the 1U sled.
i **NOTE:** Fan 1, 2, 3 and 4 are connected to the 1U PDB.

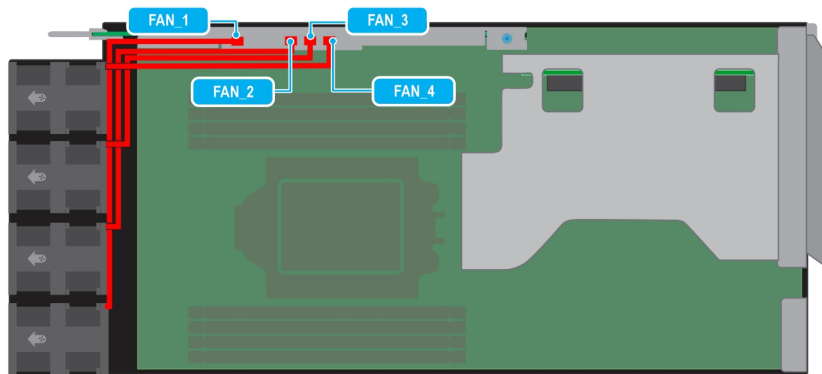


Figure 34. 1U sled fan cable routing

2. Pull slightly to disengage the fan cable from the fan guard and then lift the fan module out of the fan cage.
i **NOTE:** The airflow directional arrow outward on the fan indicates Reverse-Air-Flow (RAF).

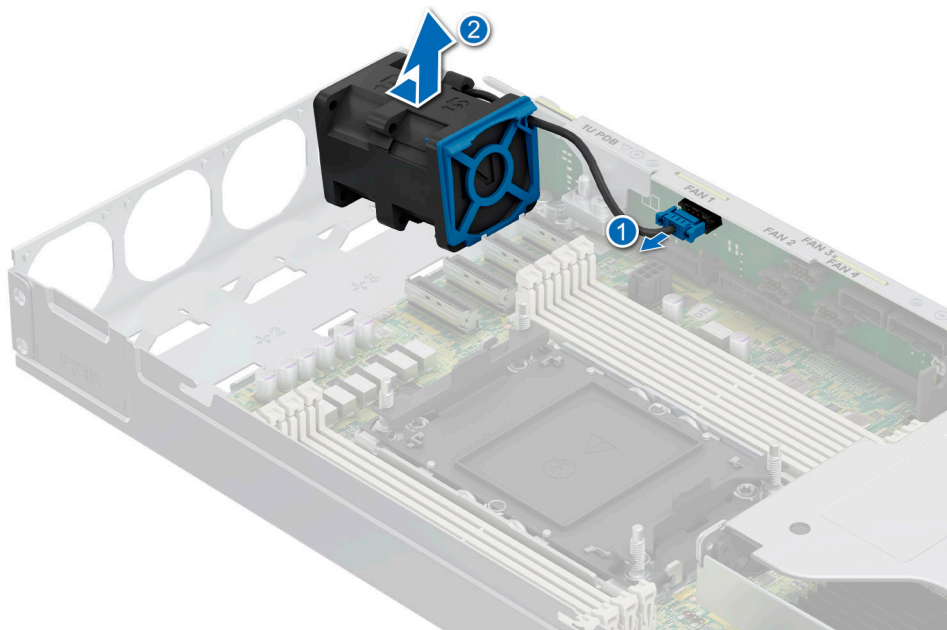


Figure 35. Removing a cooling fan

Next steps

1. [Replace a fan on 1U sled](#)
2. [Install the 2U sled on 1U node](#)

Installing a cooling fan on 1U sled

Prerequisites

1. Follow the safety guidelines listed in [Safety Instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U sled from 1U node](#).

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

Steps

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

NOTE: The airflow directional arrow outward on the fan indicates Reverse-Air-Flow (RAF).

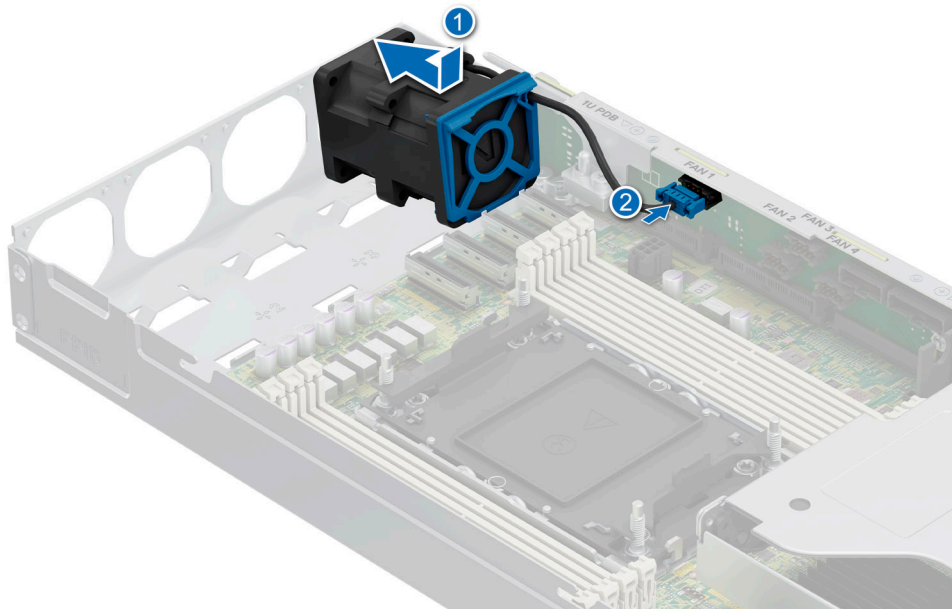


Figure 36. Installing a cooling fan

2. Route the fan cables properly through the fan guard and connect the cable to the connector on the power distribution board (PDB) of the 1U sled as shown in the image below.

NOTE: Fan 1, 2, 3 and 4 are connected to the 1U PDB.

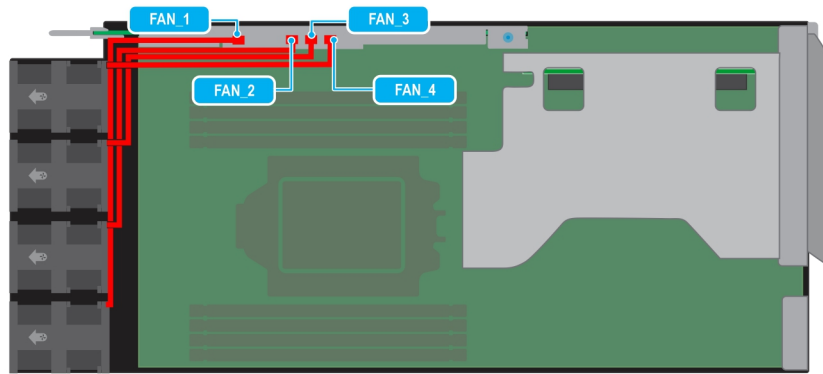


Figure 37. 1U sled fan cable routing

Next steps

Install the 2U sled on 1U node.

Expansion cards and expansion card risers

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

Expansion card installation guidelines

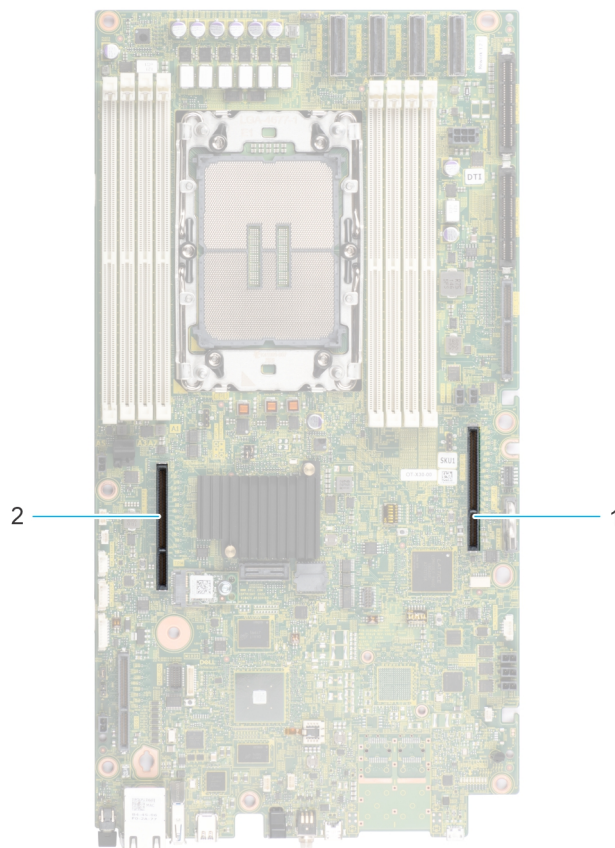


Figure 38. Expansion card slot connector

1. Riser 1U connector(Riser 2)
2. Reserved (IO_RISER2)

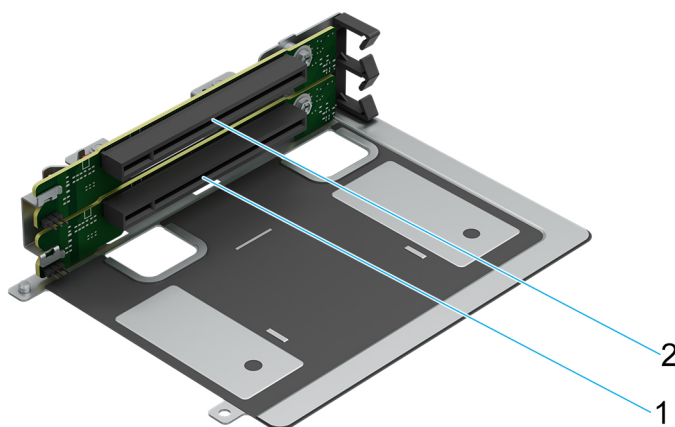


Figure 39. Riser 1A slots

1. Slot 1
2. Slot 2

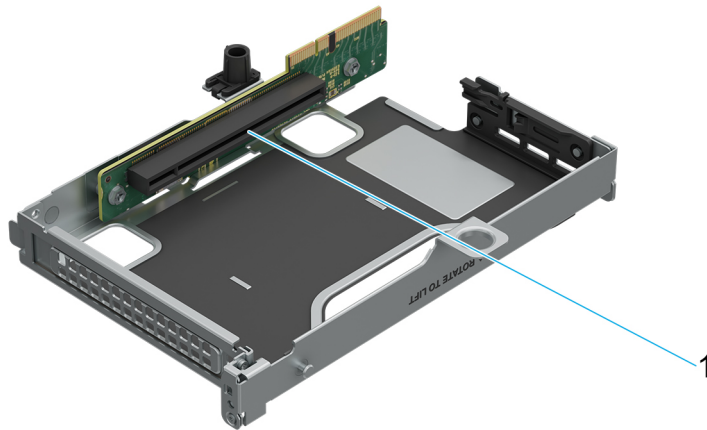


Figure 40. Riser 2A slot

1. Slot 3

Table 51. Riser Configurations

Config #	RSR Configuration	# of CPUs	PERC type supported	Rear Storage Possible	x16 CPU1	X16 CPU2
0	No riser	1	No	No	0	0
1	R1A+R2A	1	No	No	3	0

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

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

Table 52. Configuration 0: No Riser

Card type	Slot priority	Maximum number of cards
M.2 NVMe Riser HW Non-RAID	Integrated slot	1
ROR-N1	Integrated slot	1
M.2 NVMe Riser HW Non-RAID HM	Integrated slot	1
ROR-N1 HM	Integrated slot	1

Table 53. Configuration 1: R1A_HL+R2A

Card type	Slot priority	Maximum number of cards
INTEL (NIC: 25GB, FH)	3, 2, 1	3
INTEL (NIC: 100GB, FH)	3, 2, 1	3
DELL (PCIe: INTFC, 3.0, FH)	3, 2, 1	3
NOKIA (NIC:100GB, FH)	3, 2, 1	3
QUALCOMM (NIC: 100GB, FH)	3, 2, 1	3
INTEL(NIC: MacLaren, FH)	3, 2, 1	1
Mellanox (NIC: 100GB, FH)	3, 2, 1	3
NVIDIA (GPU: L4, 24GB, FH)	3, 2, 1	1

Table 53. Configuration 1: R1A_HL+R2A (continued)

Card type	Slot priority	Maximum number of cards
M.2 NVMe Riser HW Non-RAID	Integrated slot	1
BOSS-N1	Integrated slot	1
ROR-N1	Integrated slot	1

Removing the expansion card riser 1

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#)
4. [Remove the M.2 direct riser](#)
5. [Remove the side cover](#) .
6. Disconnect the riser card power cables from 2U PDB and 4x signal cables from connectors on the system board.

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

Steps

1. Using the Phillips 2 screwdriver, loosen the captive screws that secure the riser 1 on the 2U sled.
2. Hold the expansion card riser 1 by the edges and lift the expansion card riser from the riser connector on the 2U sled.

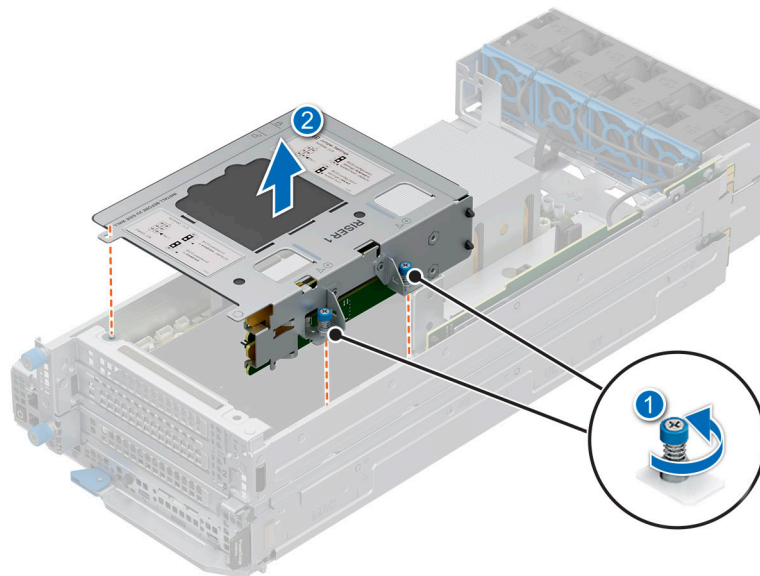


Figure 41. Removing the expansion card riser 1

Next steps

[Replace the expansion card riser 1.](#)

Installing the expansion card riser 1

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#)
4. [Remove the M.2 direct riser](#)
5. [Remove the side cover](#).

Steps

1. Align the riser with the riser slot on the 2U sled.
2. Using both hands, lower the riser 1 until it is seated firmly.
3. Using a Phillips 2 screwdriver, tighten the captive screws to secure the expansion card riser 1 on to the 2U sled.

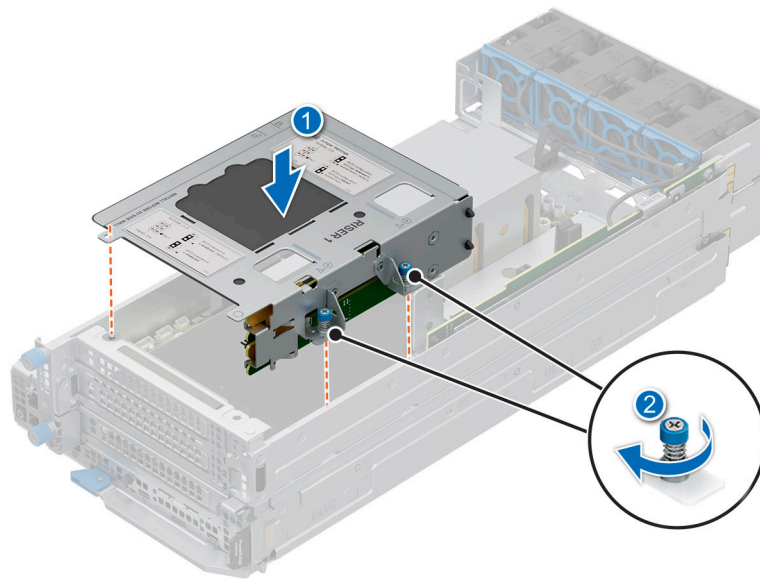


Figure 42. Installing the expansion card riser 1

4. Connect the riser card power cables to 2U PDB and 4x signal cables to connectors on the system board.

Next steps

[After working inside your system](#).

Removing the expansion card riser 2

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled from the 2U node](#).

Steps

1. Using the Phillips 2 screwdriver, loosen the captive screw that secure the riser 2 on the 1U node.
2. Hold the expansion card riser 2 by the edges and lift the expansion card riser from the riser connector on the 1U node.

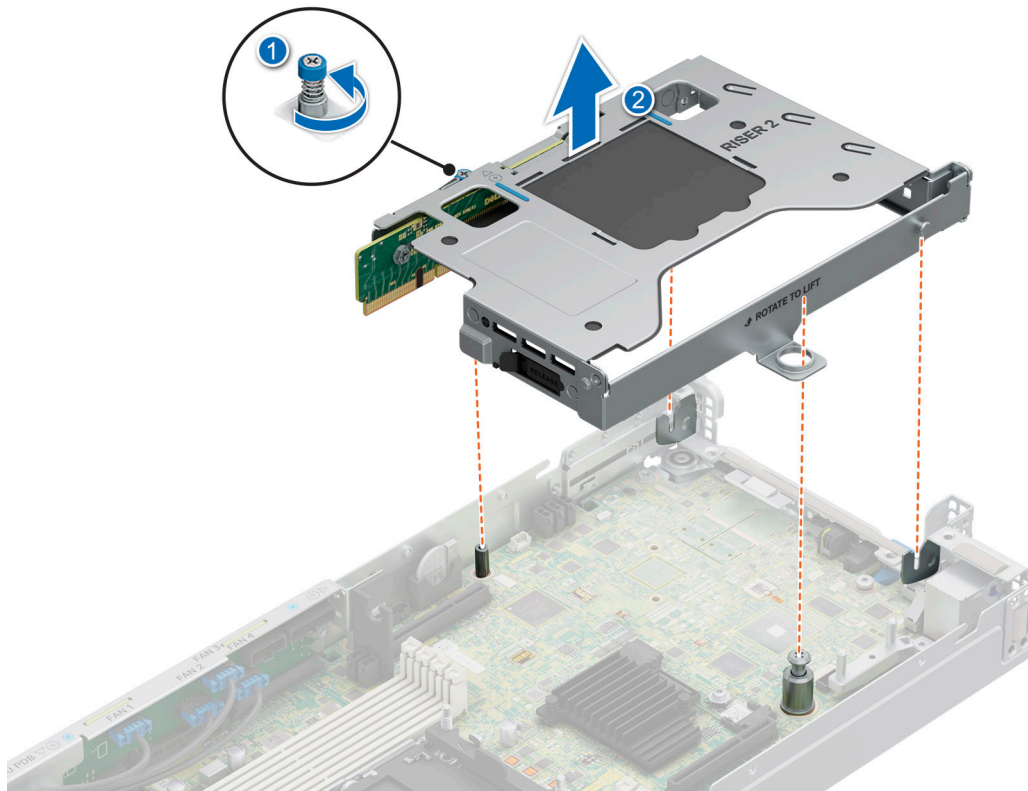


Figure 43. Removing the expansion card riser 2

Next steps

Replace the expansion card riser 2.

Installing the expansion card riser 2

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled on the 2U node](#).

Steps

1. Align the riser with the riser slot on the 1U node.
2. Using both hands, lower the riser 2 until it is seated firmly.
3. Using a Phillips 2 screwdriver, tighten the captive screw to secure the expansion card riser 2 on to the 1U node.

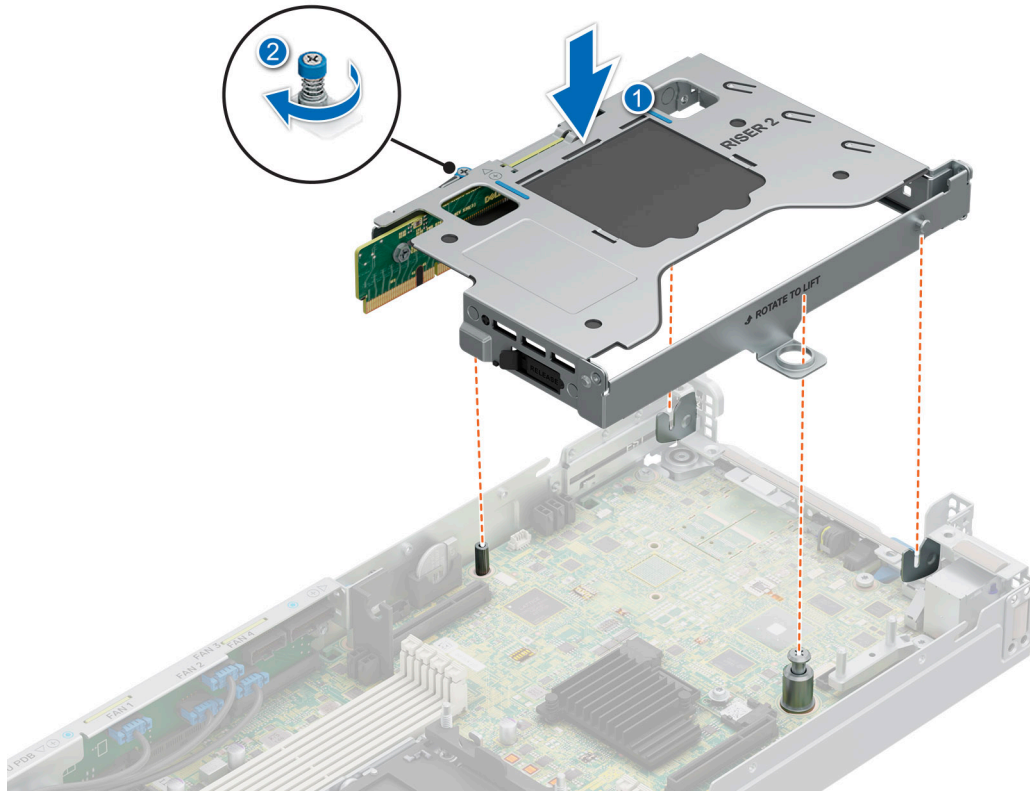


Figure 44. Installing the expansion card riser 2

Next steps

Install the 2U top sled on the 2U node.

Removing the PCIe card from Riser

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#).
4. [Remove the M.2 direct riser](#)
5. [Remove the side cover](#)

Steps

1. Using both hands, hold the PCIe card by the edges and pull the card away from the riser slot.

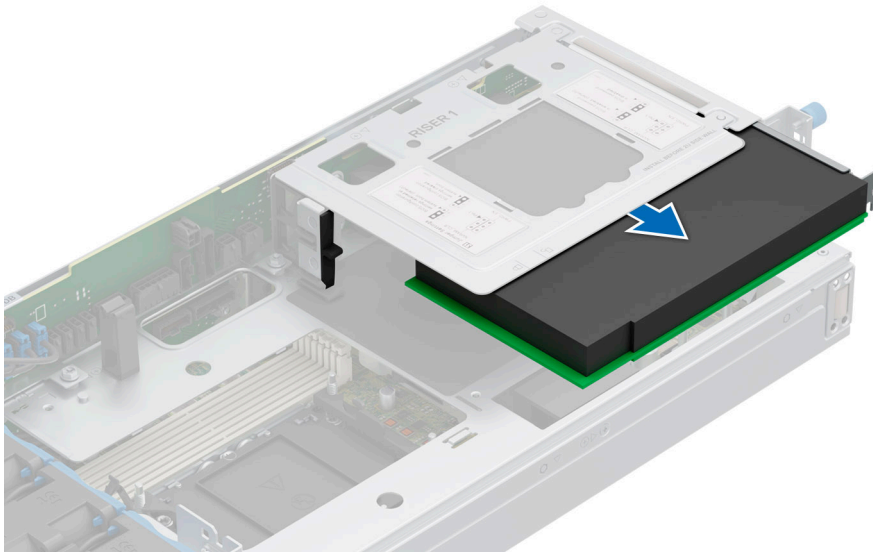


Figure 45. Removing the PCIe card from Riser

2. Replace the expansion card filler bracket.

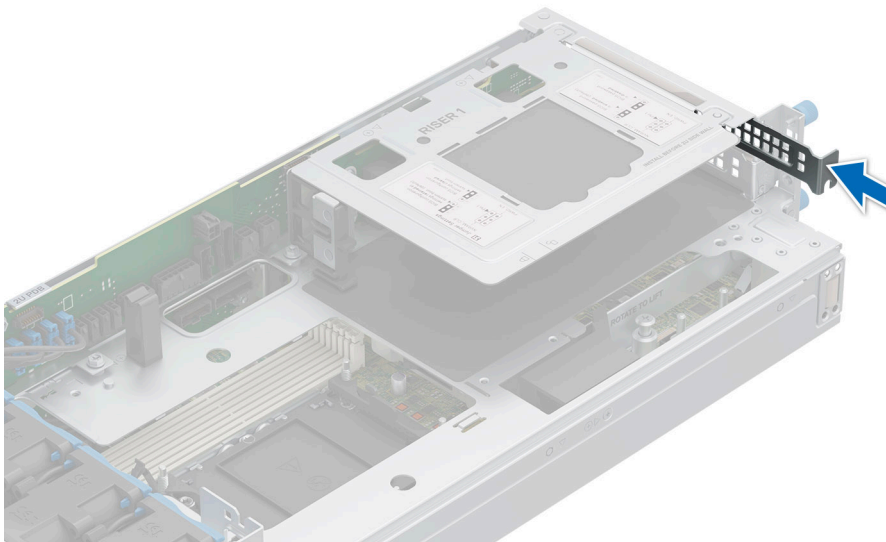


Figure 46. Installing the expansion card filler bracket

Next steps

Replace the PCIe card on Riser.

Installing the PCIe card on Riser

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#).
4. [Remove the M.2 direct riser](#)
5. [Remove the side cover](#)

Steps

1. Remove the expansion card filler bracket by sliding it out of the sled.

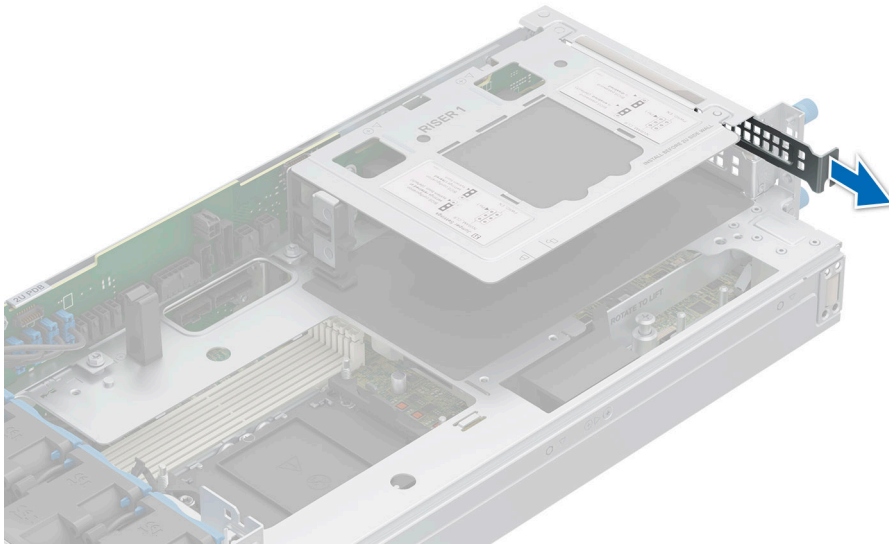


Figure 47. Removing the expansion card filler bracket

2. Using both hands, insert the PCIe card into the riser slot till it clicks into place.

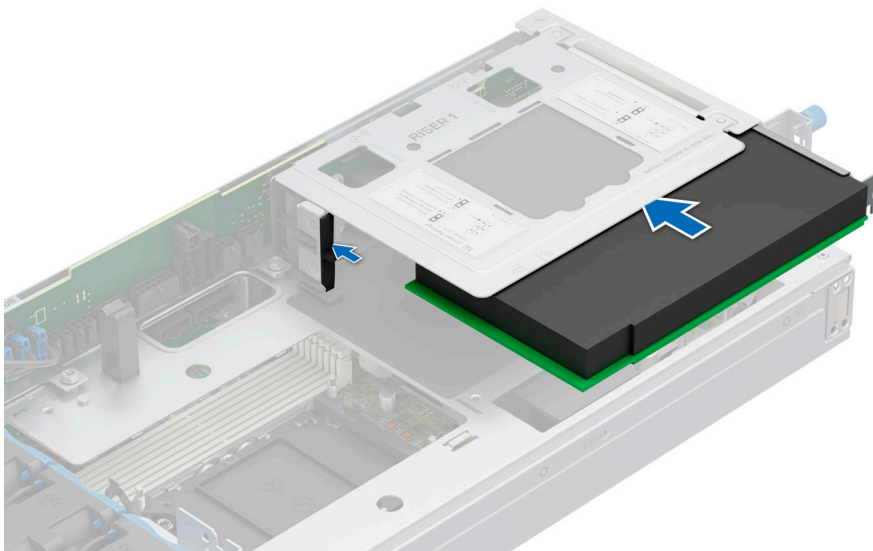


Figure 48. Installing the PCIe card on Riser

Next steps

Replace the side cover.

BOSS-N1 card

Removing the BOSS-N1 card

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled](#) from the 2U node.

Steps

1. Press the latch located on system board to unlock the BOSS-N1 card from the system.
2. Pull the blue pull tab to remove the BOSS-N1 card from the slot on system board.

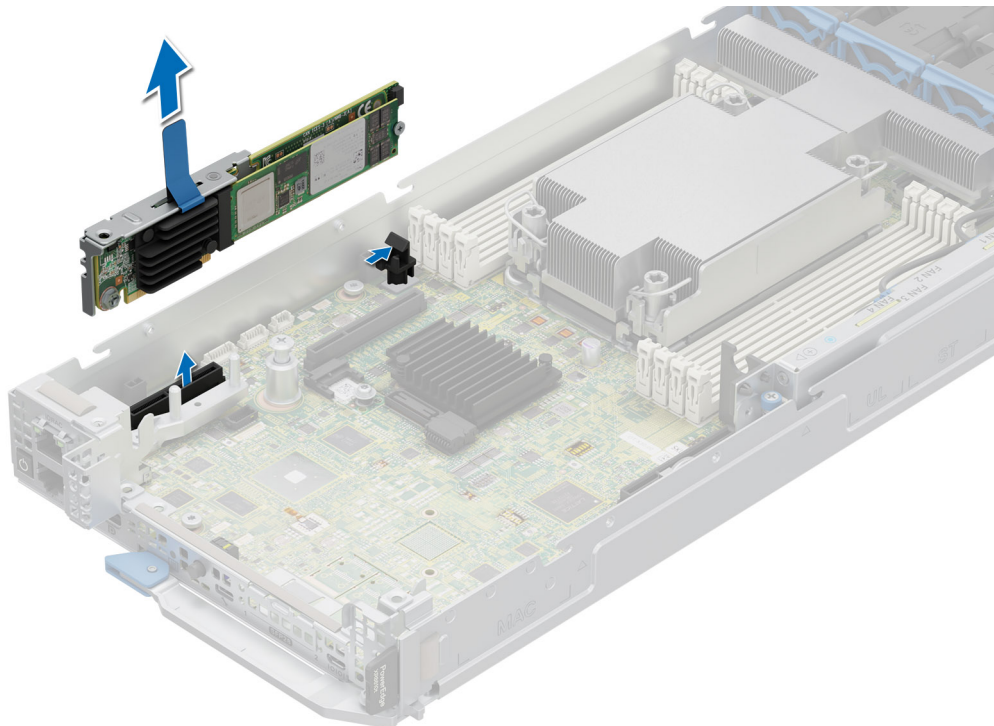


Figure 49. Removing the BOSS-N1 card

Next steps

Replace the BOSS-N1 card.

Installing the BOSS-N1 card

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled](#) from the 2U node.

Steps

1. Align the notch on the BOSS-N1 card with the slot on the system board.

2. Press the BOSS-N1 card and insert it firmly until the card is fully seated in the slot and locked to the latch on the system board.

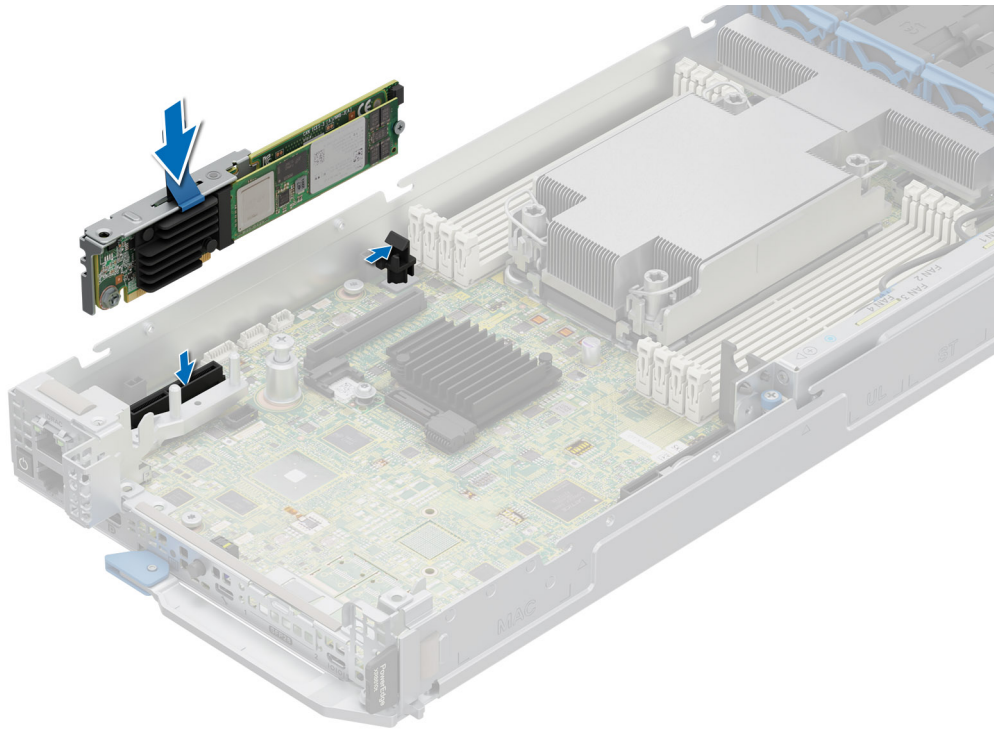


Figure 50. Installing the BOSS-N1 card

Next steps

Follow the procedure listed in [Install the 2U top sled on the 2U node](#).

Removing the M.2 SSD module from the BOSS-N1 card

Prerequisites

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

Steps

1. Remove the screw that is on the BOSS-N1 card using Philips 2 screwdriver.
2. Pull the M.2 SSD module from the M.2 slot on the BOSS-N1 card.

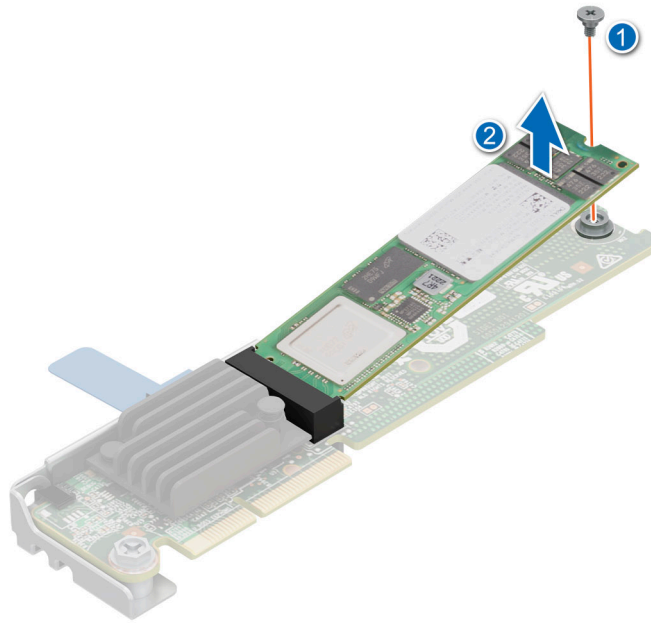


Figure 51. Removing the M.2 SSD module

Next steps

Replace the M.2 SSD module.

Installing the M.2 SSD module on the BOSS-N1 card

Prerequisites

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

Steps

1. Align the M.2 NVMe module at an angle with the M.2 direct riser connector on BOSS-N1 card.
2. Insert the M.2 NVMe module firmly until it is fully seated in the M.2 direct riser connector.
3. Replace the screw and tighten it to secure the M.2 SSD module on the BOSS-N1 card.

NOTE: The BOSS-N1 card can accommodate two M.2 SSD modules, repeat the same procedure to install the second M.2 SSD module.

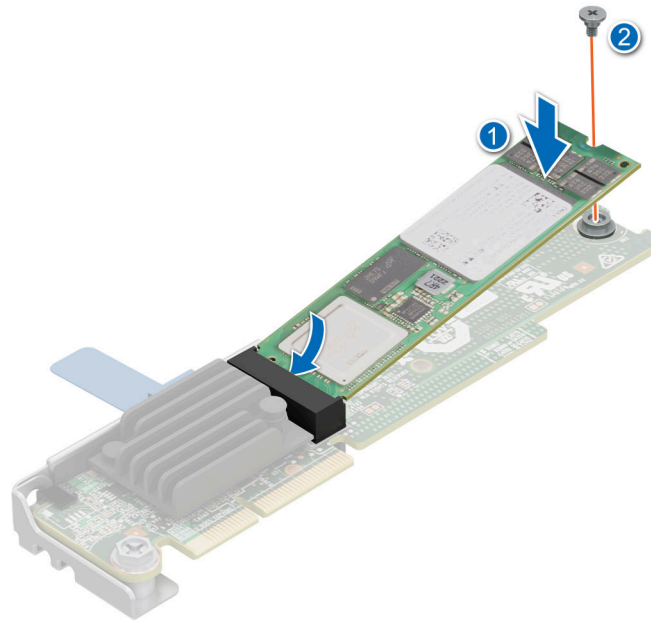


Figure 52. Installing the M.2 SSD module

Next steps

1. [Installing the BOSS-N1 card.](#)
2. Follow the procedure listed in the [After working inside your system.](#)

Power distribution board

This is a service technician replaceable part only.

Removing the 2U power distribution board

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions.](#)
2. Follow the procedure listed in [Before working inside your system.](#)
3. [Remove the air shroud.](#)
4. [Remove the M.2 direct riser.](#)
5. [Remove the side cover.](#)
6. [Remove the Riser 1.](#)
7. Disconnect the cables connected from cooling fans and system board to the 2U power distribution board (PDB).

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

Steps

1. Using a Phillips 2 screwdriver, remove the screws that secure the PDB to the system.

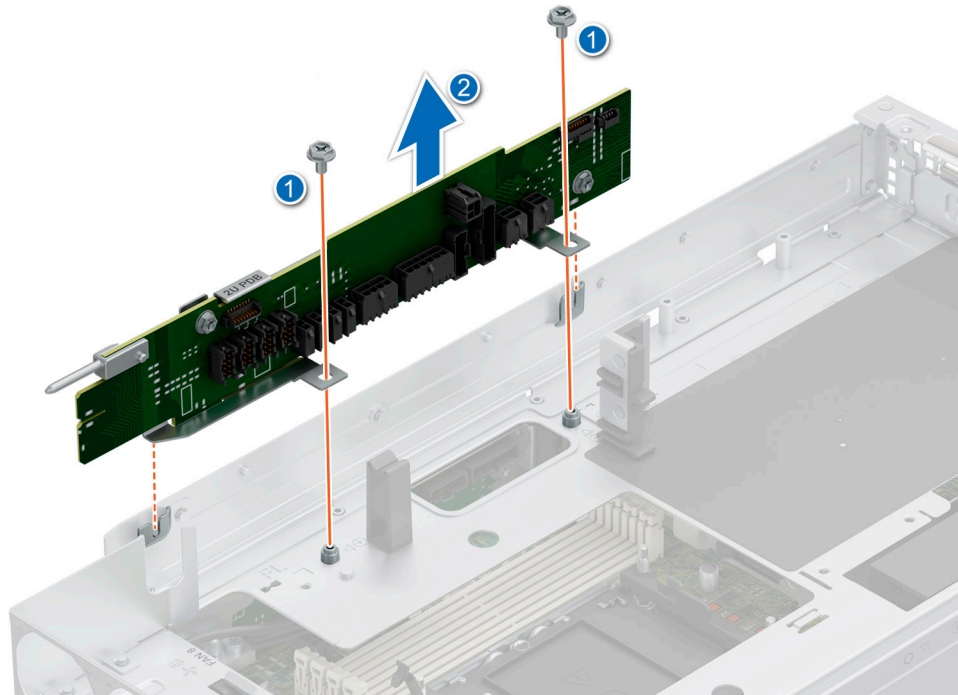


Figure 53. Removing the 2U power distribution board

2. Lift the board to remove it from the system.

Next steps

Replace the power distribution board.

Installing the 2U power distribution board

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the air shroud](#).
4. [Remove the Riser 1](#).

Steps

1. Align the slots of the Power distribution board (PDB) with the fix hook on the 2U sled.
2. Using a Phillips 2 screwdriver, tighten the screws to secure the PDB on the 2U sled.

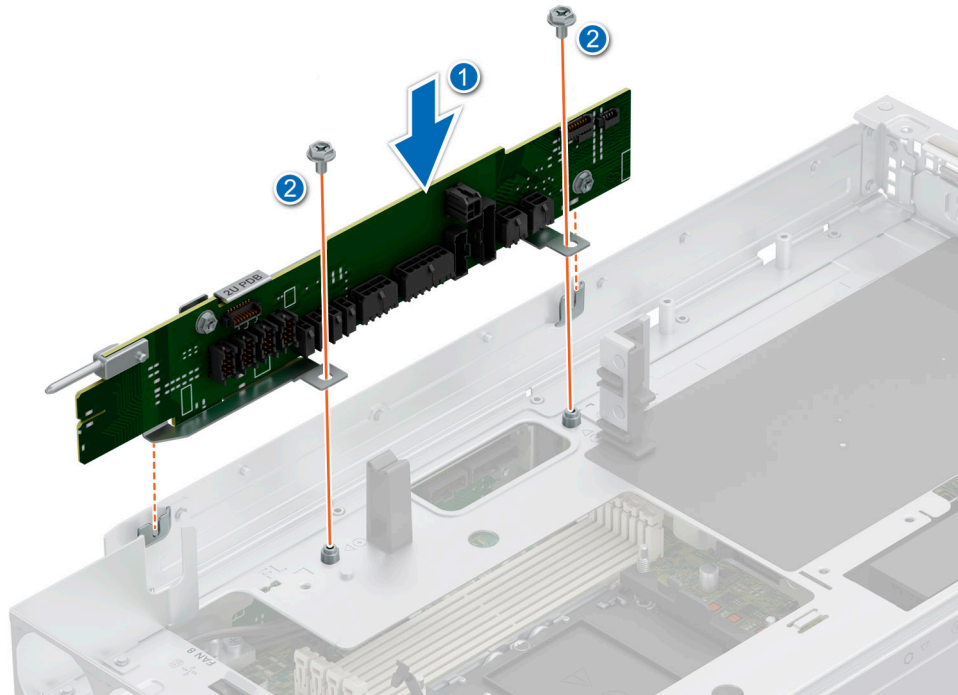


Figure 54. Installing the 2U power distribution board

Next steps

1. Connect the cables connected from cooling fans and system board to the 2U power distribution board (PDB).
2. [Install the Riser 1](#)
3. [Install the air shroud](#)

Removing the 1U power distribution board

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled from the 2U node](#).
4. Disconnect the cables connected from cooling fans and system board to the 1U power distribution board (PDB).
i **NOTE:** Observe the routing of the cable as you remove it from the system.

Steps

1. Using a Phillips 2 screwdriver, remove the screws that secure the PDB to the system.

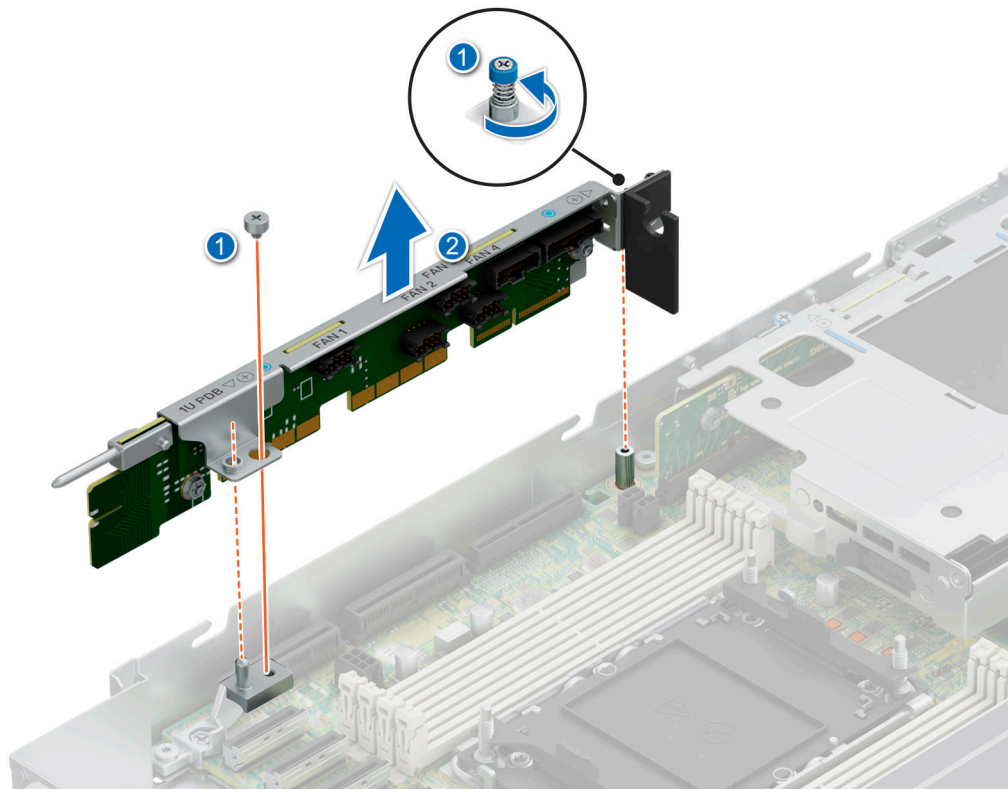


Figure 55. Removing the 1U power distribution board

2. Lift the board to remove it from the system.

Next steps

Replace the 1U power distribution board.

Installing the 1U power distribution board

Prerequisites

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. [Remove the 2U top sled from the 2U node](#).
4. [Remove the Riser 2](#).

Steps

1. Align the slots of the Power distribution board (PDB) with the fix hook on the 1U node.
2. Using a Phillips 2 screwdriver, tighten the screws to secure the PDB on the 1U sled.

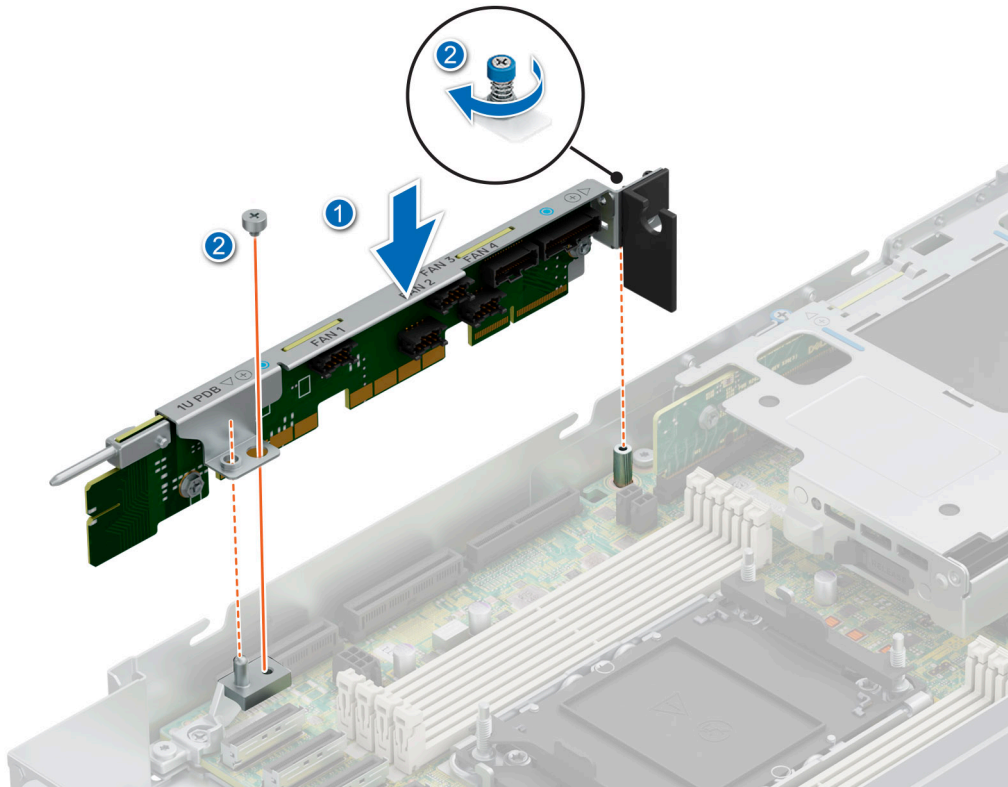


Figure 56. Installing the 1U power distribution board

Next steps

1. Connect the cables connected from cooling fans and system board to the 1U power distribution board (PDB).
2. Install the Riser 2
3. Install the 2U top sled on the 2U node

Cable routing

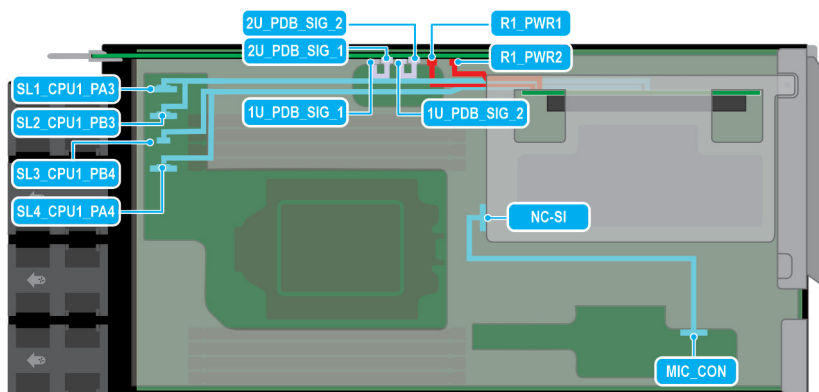


Figure 57. Configuration 1

Table 54. Configuration 1

Order	From	To
1	Riser 1 (Slot 1)	R1_PWR1 (power distribution board power connector)
2	Riser 1 (Slot 1)	SL1_CPU1_PA3 (PCIe connector 1 on system board) and SL2_CPU1_PB3 (PCIe connector 2 on system board)
3	Riser 1 (Slot 2)	R1_PWR2 (power distribution board power connector)
4	Riser 1 (Slot 2)	SL3_CPU1_PA3 (PCIe connector 3 on system board) and SL4_CPU1_PB3 (PCIe connector 4 on system board)
5	1U_PDB_SIG_1 (1U power distribution board signal connector)	2U_PDB_SIG_1 (2U power distribution board signal connector)
6	1U_PDB_SIG_2 (1U power distribution board signal connector)	2U_PDB_SIG_2 (2U power distribution board signal connector)
7	MIC_CON (Smart NIC connector)	NC-SI (NC-SI Connector)

System memory

System memory guidelines

The PowerEdge XR8620t system supports DDR5 registered DIMMs (RDIMMs). System memory holds the instructions that are performed by the processor.

Your system memory is organized into eight channels(one memory slot per channel).

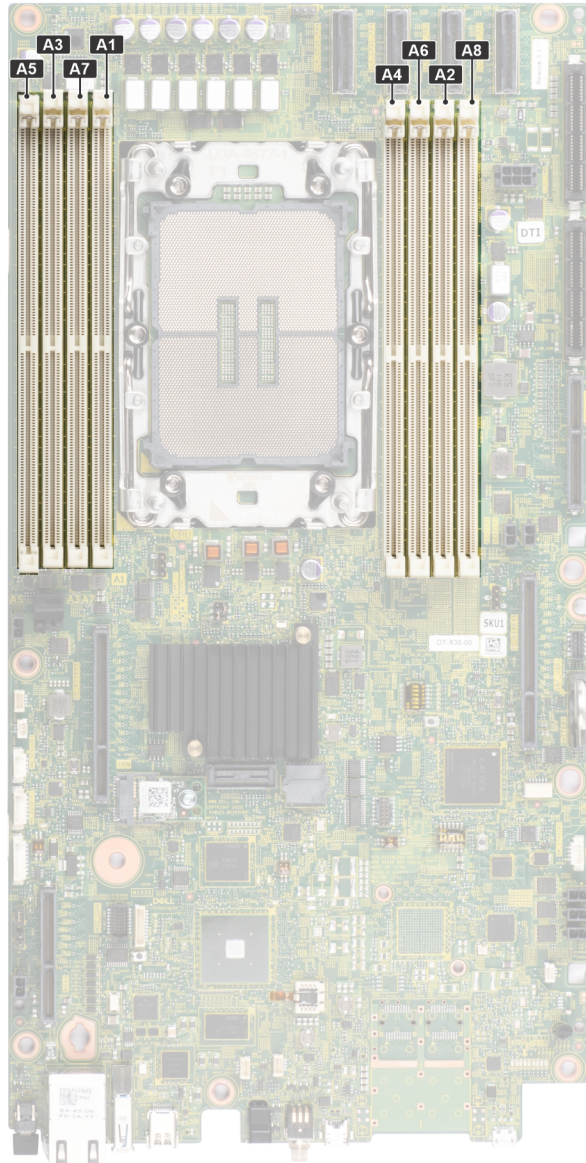


Figure 58. Memory channels

Memory channels are organized as follows:

Table 55. Memory channels

Processor	Channel A	Channel B	Channel C	Channel D	Channel E	Channel F	Channel G	Channel H
Processor 1	Slots A1	Slots A7	Slots A3	Slots A5	Slots A4	Slots A6	Slots A2	Slots A8

Table 56. Supported memory matrix

DIMM type	Rank	Capacity	DIMM rated voltage	Operating Speed
				1 DIMM per channel (DPC)
RDIMM	1 R	16 GB	DDR5 (1.1 V)	4800 MT/s
	2 R	32 GB, 64 GB	DDR5 (1.1 V)	4800 MT/s


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

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 4800 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 MegaTransfers per second.

The following are the recommended guidelines for installing memory modules:

- All DIMMs must be DDR5.
- If memory modules with different speeds are installed, they operate at the speed of the slowest installed memory module(s).
- Populate memory module sockets only if a processor is installed.
- In **Optimizer Mode**, the DRAM controllers operate independently in the 64-bit mode and provide optimized memory performance.

Table 57. 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}	8 DIMMs are supported per system.


- Not more than two DIMM part numbers allowed in the system.
- x4 and x8 DRAM based memory modules can be mixed.
- For best performance, populate all memory channels equally (8DIMMs per CPU) using identical DIMMs.
- Supported total number of RDIMMs in system: 2DIMMs, 4DIMMs, 6DIMMs, 8DIMMs.
- 3 DIMMs, 5 DIMMs, 7DIMMs configurations are not supported.
- Population order requires the largest capacity DIMM be placed first. For example, if we are populating with 32GB and 64GB RDIMMs, we would populate 64GB RDIMMs first.

Removing a memory module

Prerequisites


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

 **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.

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

Steps

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

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

3. Lift the memory module away from the system.

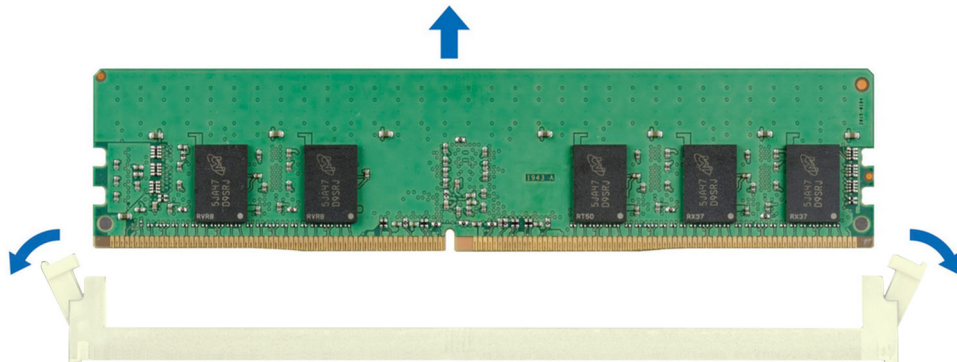


Figure 59. Removing a memory module

Next steps

1. [Installing the memory module.](#)
2. If you are removing the memory module permanently, install a memory module blank. The procedure to install a memory module blank is similar to that of the memory module.

Installing a memory module

Prerequisites

1. Follow the safety guidelines listed in [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.

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

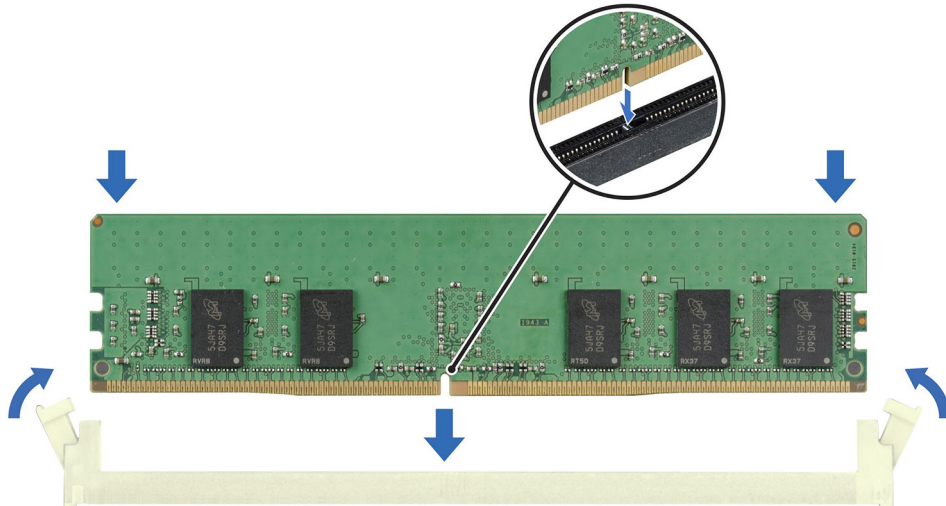


Figure 60. Installing a memory module

Next steps

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

Processor and heat sink module

This is a service technician replaceable part only.

Removing the processor and heat sink module

Prerequisites

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in the [Before working inside your system](#).
3. [Remove the 2U sled from 1U node](#).

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. Ensure all four anti-tilt wires are in the locked position (outward position), and then using a Torx T30 screwdriver, loosen the captive nuts on the processor heat sink module (PHM) 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.

NOTE: Ensure that the anti-tilt wires on the PHM are in locked position when loosening the captive nuts.

2. Set all the anti-tilt wires to unlocked position (inward position).

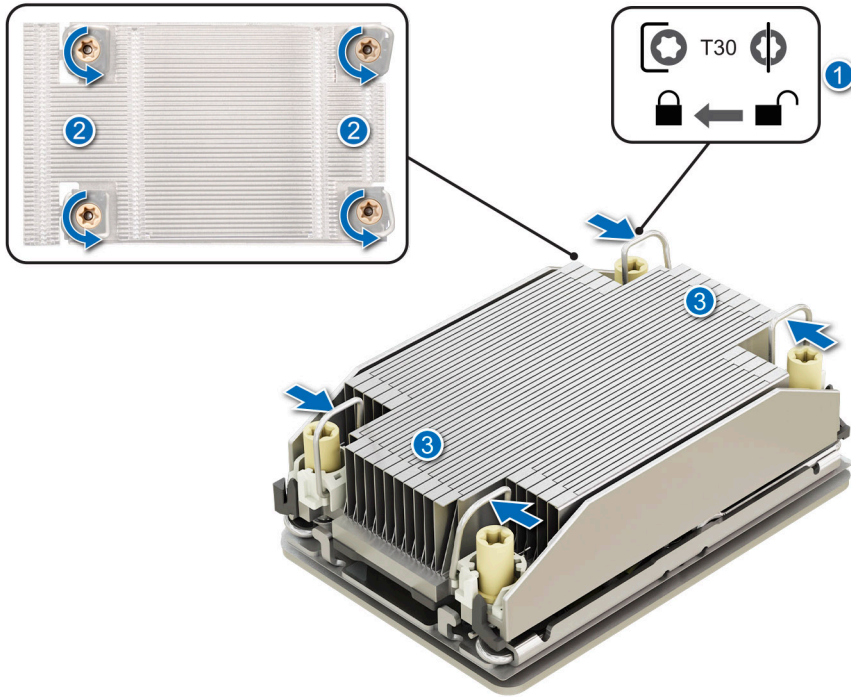


Figure 61. Removing the processor heat sink module

3. Lift the PHM from the system and set the PHM aside with the processor side facing up.

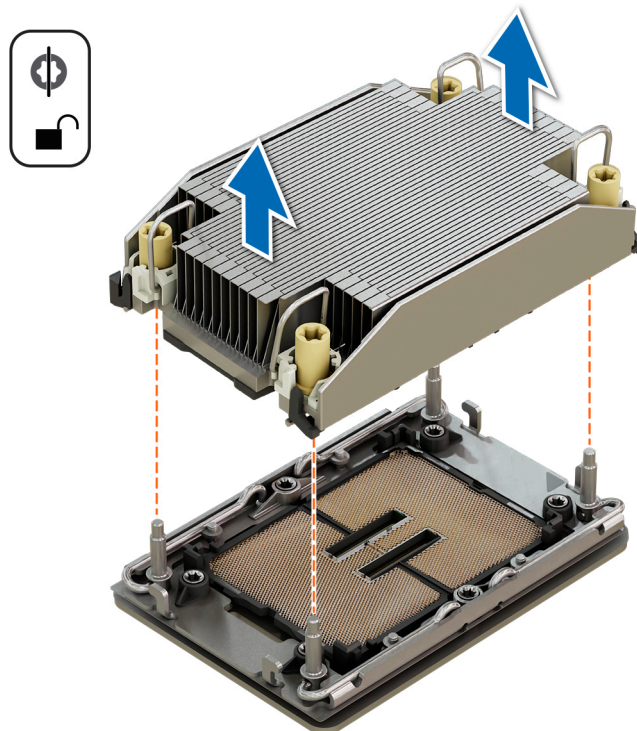


Figure 62. Removing a heat sink

Next steps

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

Removing the processor

Prerequisites

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

1. Follow the safety guidelines listed in the [Safety instructions](#).
2. Follow the procedure listed in the [Before working inside your system](#).
3. [Remove the 2U sled from 1U node](#)
4. [Remove the processor heat sink module](#).

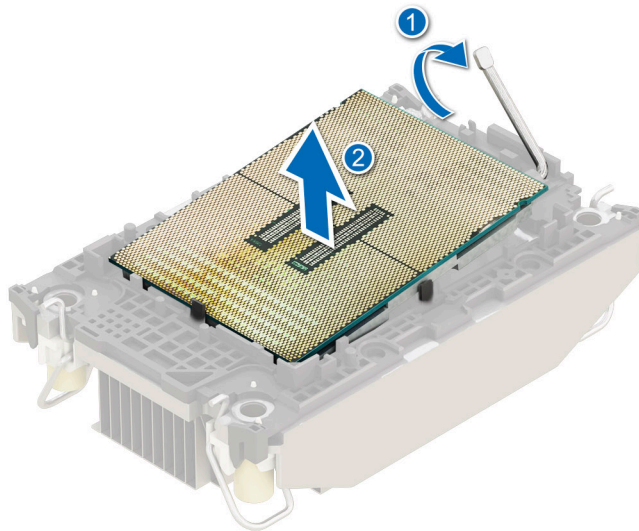
⚠ CAUTION: You may find the CMOS battery loss or CMOS checksum error that is displayed during the first instance of powering on the system after the processor or system board replacement which is expected. To fix this, simply go to setup option to configure the system settings.

Steps

1. Place the heat sink with the processor side facing up.
2. Using your thumb, lift the thermal interface material (TIM) break lever to release the processor from the TIM and retaining clip.
3. Holding the processor by the edges, lift the processor away from the retaining clip.

i NOTE: Ensure to hold the retaining clip to the heat sink as you lift the TIM break lever.

Figure 63. Removing the processor



i NOTE: Ensure to return the TIM break lever back to original position.

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

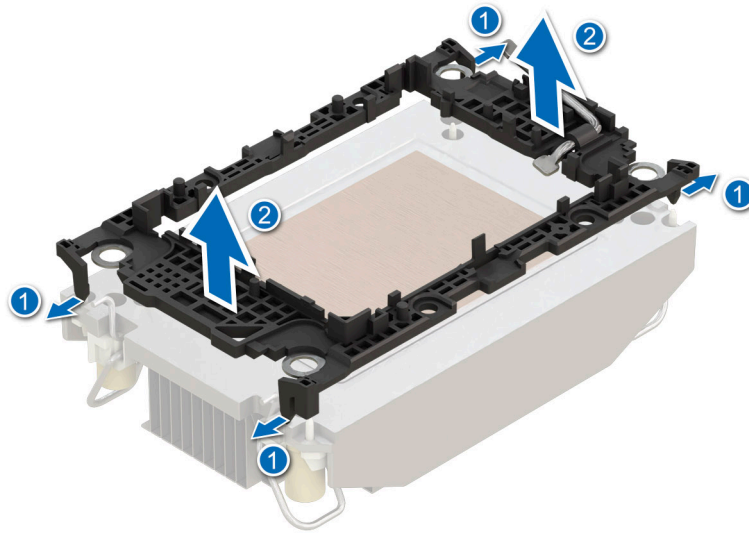


Figure 64. Removing the retaining clip

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 [Before working inside your system](#).
3. [Remove the 2U sled from 1U node](#)
4. [Remove the processor](#).

Steps

1. Place the processor in the processor tray.

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

2. Place the retaining clip on top of the processor in the processor tray aligning pin 1 indicator on the processor.

i **NOTE:** Ensure the pin 1 indicator on the retaining clip is aligned with the pin 1 indicator on the processor before placing the retaining clip on the processor.

i **NOTE:** Before you install the heat sink, ensure to place the processor and retaining clip in the tray.

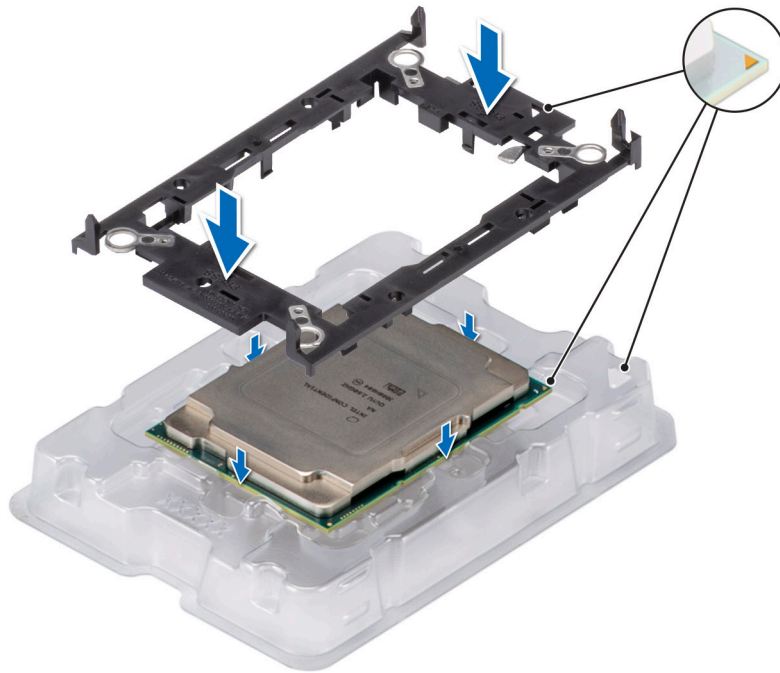


Figure 65. Installing the retaining clip

3. Align the processor with retaining clip, by using your fingers press the retaining clip on all the four sides until it clicks into place.

i **NOTE:** Ensure that the processor is securely latched to the retaining clip.

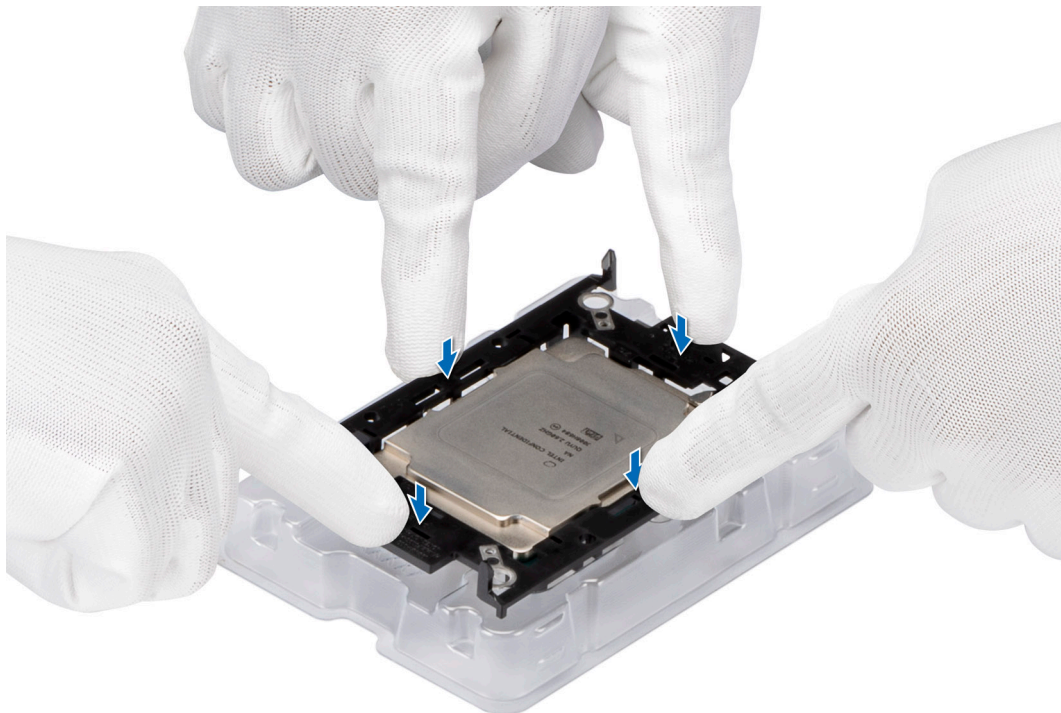


Figure 66. Press the retaining clip on the four sides

4. If you are using an existing heat sink, remove the thermal grease from the heat sink by using a clean lint-free cloth.
5. Apply the thermal grease in a thin spiral design on the bottom of the heat sink.

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

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

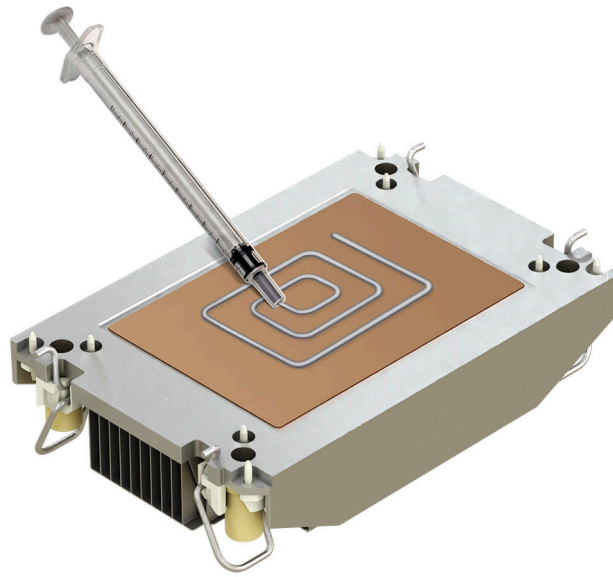


Figure 67. Applying thermal grease

6. For new heat sink, pull and remove the plastic cover from the base of heat sink.

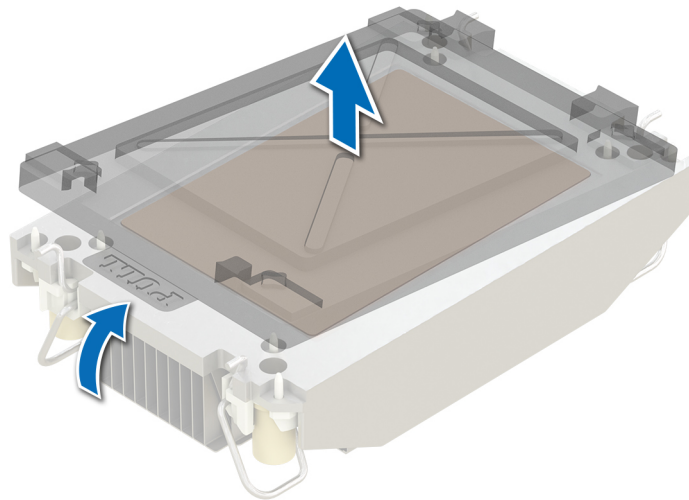


Figure 68. Removing the cover

7. Place the heat sink on the processor and press the base of the heat sink until the retaining clip locks onto the heat sink at all the four corners.

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

NOTE:

- Ensure latching features on retaining clip, and heat sink are aligned during assembly.
- Ensure that the pin 1 indicator on the heat sink is aligned with the pin 1 indicator on the retaining clip before placing the heat sink onto the retaining clip.

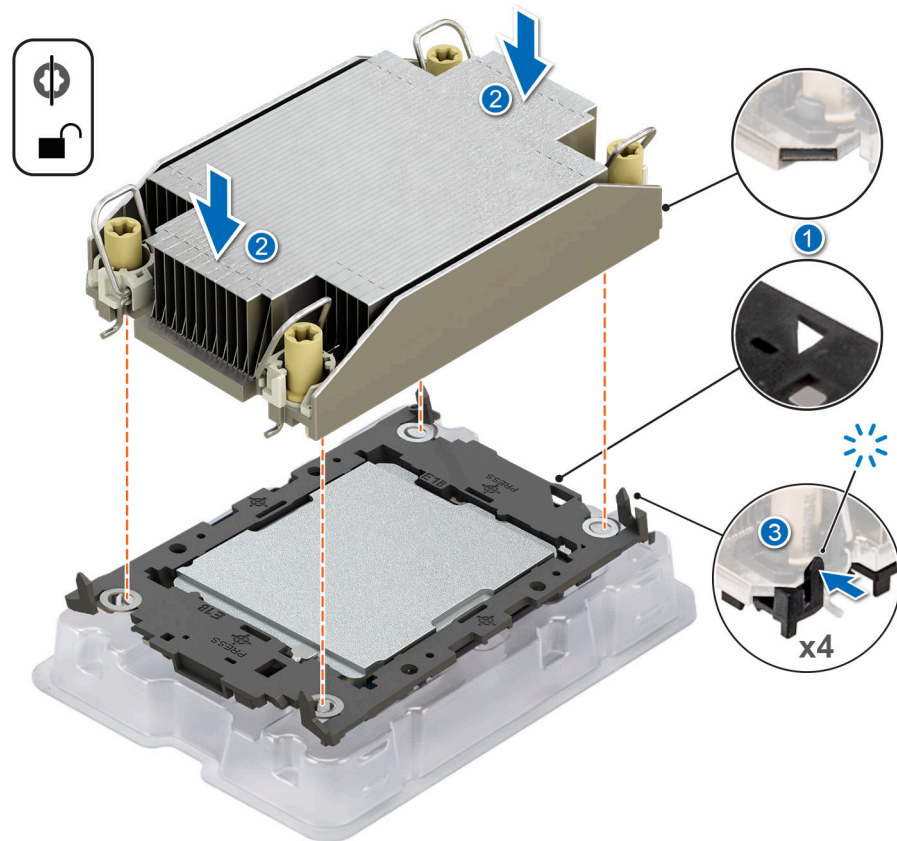


Figure 69. Installing the heat sink onto the processor

Next steps

1. Install the processor heat sink module.
2. Install the 2U sled on 1U node
3. Follow the procedure listed in [After working inside your system.](#)

Installing the processor and heat sink module

Prerequisites

Never remove the heat sink from a processor unless you intend to replace the processor or 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. [Remove the 2U sled from 1U node](#)
4. If installed, remove the processor dust cover.

Steps

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

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

NOTE: Ensure that the PHM is held parallel to the system board to prevent damaging the components.

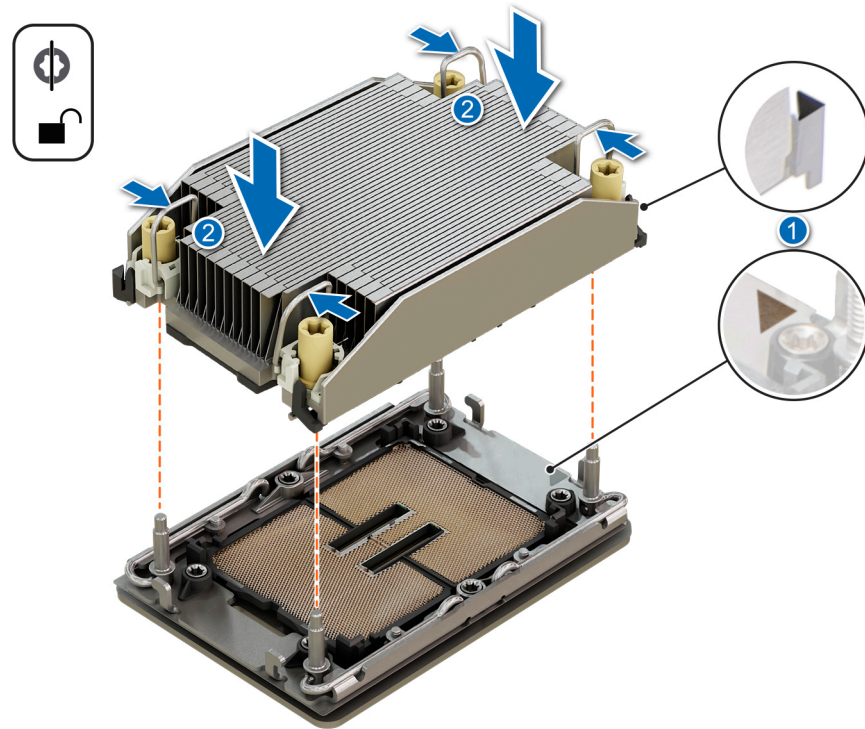


Figure 70. Installing the processor heat sink

3. Set the anti-tilt wires to the locked position (outward position), and then using the Torx T30 screwdriver, tighten the captive nuts (8 in-lbf) on the heat sink 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 they are firmly secured.

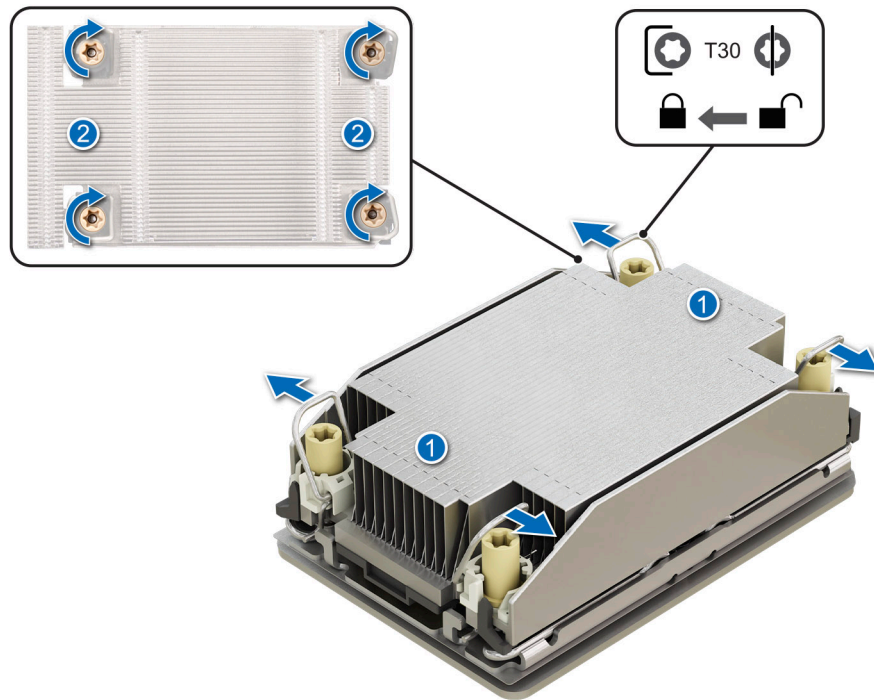


Figure 71. Set the anti-tilt wires to the locked position and tightening the nuts

Next steps

1. [Install the 2U sled on 1U node](#)
2. Follow the procedure listed in the [After working inside your system](#).

System battery

This is a service technician replaceable part only.

Replacing the system battery

Prerequisites

⚠ WARNING: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type 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 [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).

Steps

1. To remove the battery:
 - a. Use a plastic scribe to pry out the system battery.

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

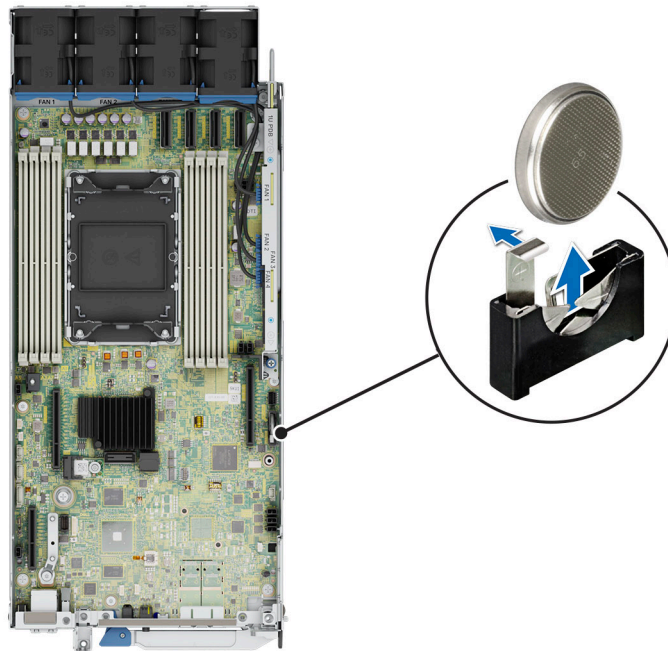


Figure 72. Removing the system battery

2. To install a new system battery:
 - a. Hold the battery with the positive side facing up and slide it under the securing tabs.
 - b. Press the battery into the connector until it snaps into place.

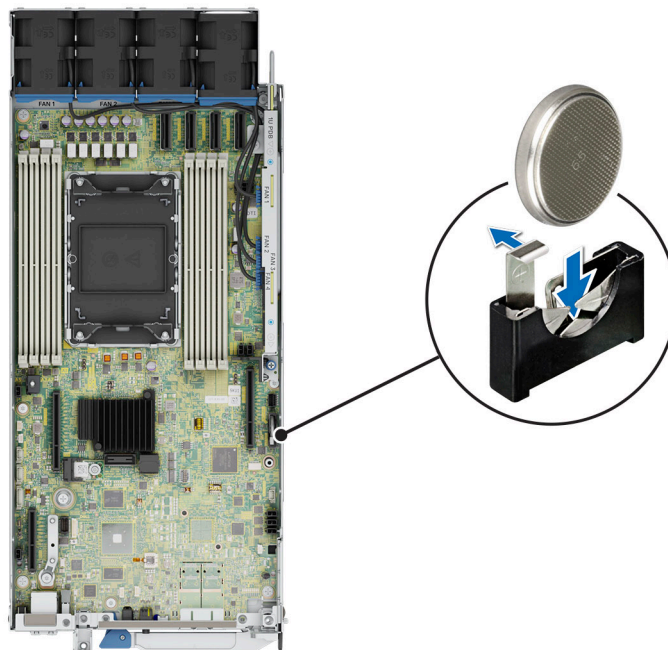


Figure 73. Installing the system battery

Next steps

1. Follow the procedure listed in the [After working inside your system](#).
2. 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, remove the system from the enclosure for at least an hour.
- e. Reinstall the system into the enclosure after an hour.
- f. Enter the System Setup and if the time and date are still incorrect, see [Getting help](#) section.


System board


This is a service technician replaceable part only.

Removing the system board

Prerequisites

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

 **CAUTION:** To avoid damage to the system board, ensure that the system board does not touch the side walls of the sled chassis, while sliding the system board into the sled.

1. Follow the safety guidelines listed in [Safety instructions](#).
2. Follow the procedure listed in [Before working inside your system](#).
3. Remove the following components:
 - a. [Air shroud](#)
 - b. [M.2 Direct Riser](#)
 - c. [Storage Interposer module](#)
 - d. [Side cover](#)
 - e. [Riser 1](#)
 - f. [2U Cooling fans](#)
 - g. [2U Power distribution board](#)
 - h. [2U sled from the 1U sled](#)
 - i. [1U Power distribution board](#)
 - j. [Riser 2](#)
 - k. [Memory modules](#)
 - l. [Heatsink](#)
 - m. [Processor](#)
 - n. [Trusted platform module \(TPM\)](#).
 **NOTE:** The TPM Module must be replaced only while installing new system board.
 - o. Disconnect all cables from the system board.

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

Steps

1. Using a Phillips 2 screwdriver, remove the screws that secure the system board to the chassis.
2. To disengage the ports from the slots on the chassis, slide the system board toward the rear of the chassis. Lift the system board out of the chassis.

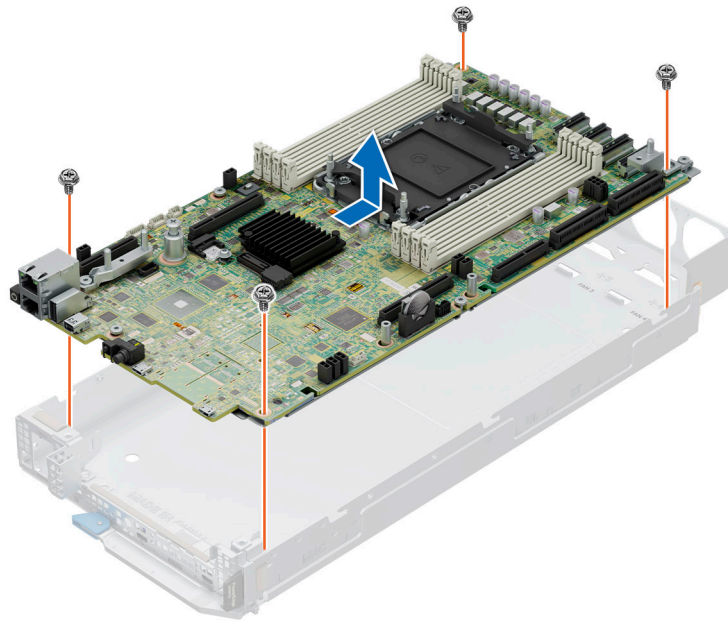


Figure 74. Removing the system board

Next steps

Installing the system board.

Installing the system board

Prerequisites

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

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

CAUTION: To avoid damage to the system board, ensure that the system board does not touch the side walls of the sled chassis, while sliding the system board into the sled.

Steps

1. Unpack the new system board assembly.

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

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

2. Holding the system board by the edges, lower the system board into the chassis.
3. Incline the system board at an angle and align the connectors on the system board with the slots on the front of the chassis until the connectors are firmly seated in the slots.
4. Using a Phillips 2 screwdriver, tighten the screws that secure the system board to the chassis.

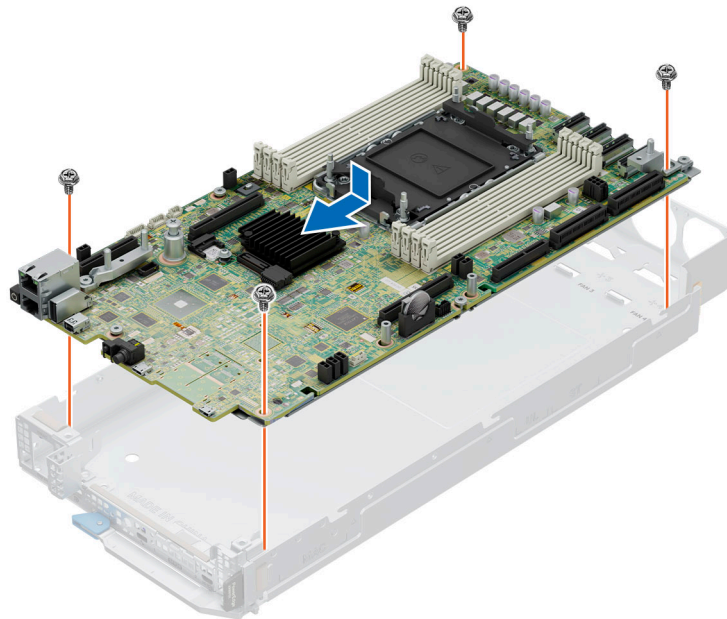


Figure 75. Installing the system board

Next steps

1. Replace the following components:
 - a. [Trusted platform module \(TPM\)](#).
 - i** **NOTE:** The TPM Module must be replaced only while installing new system board.
 - b. [Processor](#)
 - c. [Heatsink](#)
 - d. [Memory modules](#)
 - e. [Riser 2](#)
 - f. [1U Power distribution board](#)
 - g. [2U sled from the 1U sled](#)
 - h. [2U Power distribution board](#)
 - i. [2U Cooling fans](#)
 - j. [Riser 1](#)
 - k. [side cover](#)
 - l. [Storage Interposer module](#)
 - m. [M.2 Direct Riser](#)
 - n. [Air shroud](#)
2. Reconnect all cables to the system board.
 - i** **NOTE:** Ensure that the cables inside the system are routed along the chassis wall and secured using the cable securing bracket.
3. Ensure that you perform the following steps:
 - a. Use the Easy Restore feature to restore the Service Tag. See the [Restoring the system by using the Easy Restore feature](#) section.
 - b. If the service tag is not backed up in the backup flash device, enter the system service tag manually. See the [Manually update the Service Tag by using System Setup](#) section.
 - c. Update the BIOS and iDRAC versions.
 - Re-enable the Trusted Platform Module (TPM). See the [upgrading the Trusted Platform Module](#) section.
4. If you are not using Easy Restore, import your new or existing iDRAC Enterprise license. For more information, see the *Integrated Dell Remote Access Controller User's Guide* available at <https://www.dell.com/idracmanuals>.
5. Follow the procedure listed in [After working inside your system](#).



Restoring the system using Easy Restore

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

About this task

Below is a list of options/steps available:

Steps

1. Restore the service tag, license, and diagnostics information, press **Y**
2. Navigate to the Lifecycle Controller based restore options, press **N**
3. Restore data from a previously created **Hardware Server Profile**, press **F10**
 **NOTE:** When the restore process is complete, BIOS prompts to restore the system configuration data.
4. Restore data from a previously created **Hardware Server Profile**, press **F10**
5. To restore the system configuration data, press **Y**
6. To use the default configuration settings, press **N**
 **NOTE:** After the restore process is complete, system reboots.


Manually update the Service Tag

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

About this task

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

Steps

1. Power on the system.
2. To enter the **System Setup**, press **F2**.
3. Click **Service Tag Settings**.
4. Enter the service tag.
 **NOTE:** You can enter the service tag only when the **Service Tag** field is empty. Ensure that you enter the correct service tag. Once the service tag is entered, it cannot be updated or changed. Incorrectly entered service tag will lead to system board replacement.
5. Click **OK**.

Trusted Platform Module

This is a service technician replaceable part only.


Upgrading the Trusted Platform Module

Removing the TPM

Prerequisites

NOTE:

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

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

Steps

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

Installing the TPM

Steps

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

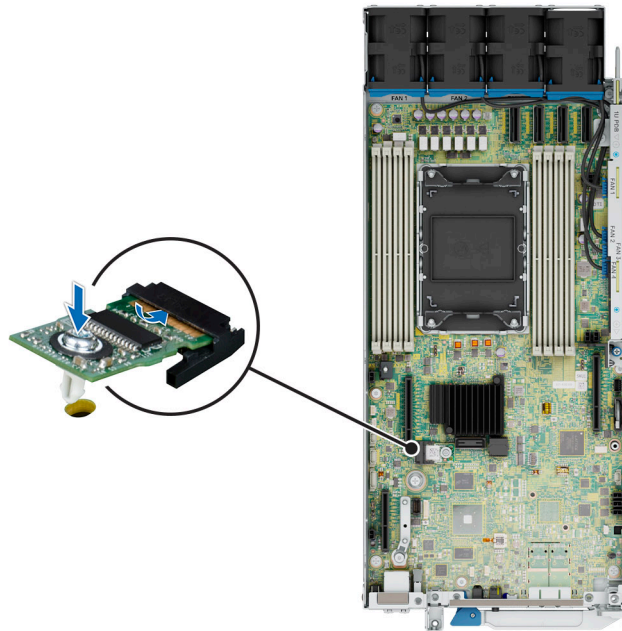


Figure 76. Installing the TPM

Initializing TPM for users

Steps

1. Initialize the TPM.
For more information, see [Initializing the TPM 2.0 for users](#).
2. The **TPM Status** changes to **Enabled, Activated**.

Initializing the TPM 2.0 for users

Steps

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

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 system board help to disable the system and reset the passwords. To install components and cables correctly, you must know the connectors on the system board.

Topics:

- [System board jumpers and connectors](#)
- [System board jumper settings](#)
- [Disabling a forgotten password](#)

System board jumpers and connectors

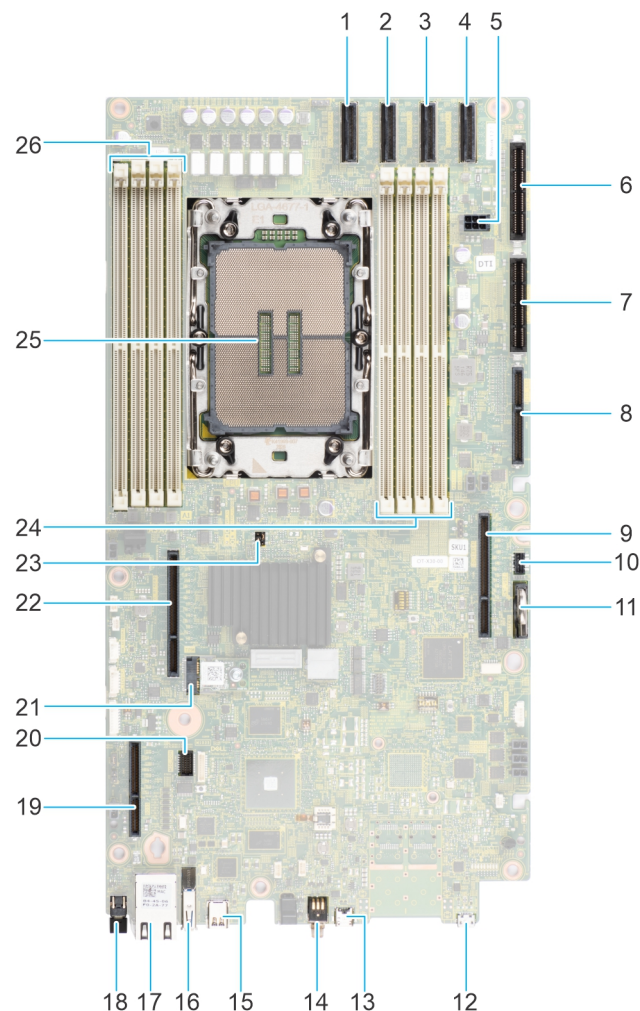


Figure 77. System board connectors

Table 58. System board connectors description

Item	Connector	Description
1	SL4_CPU1_PA4	PCIe connector 4
2	SL3_CPU1_PB4	PCIe connector 3
3	SL2_CPU1_PB3	PCIe connector 2
4	SL1_CPU1_PA3	PCIe connector 1
5	J_R1_PWR	PCIe Extension Power
6	SYS_PWR_CONN1	Power connector 1
7	SYS_PWR_CONN2	Power connector 2
8	PIB Signal	PIB Signal
9	IO_RISER1	Riser 1 connector
10	Reserved(INT_USB1)	Reserved for debug purpose
11	Coin cell battery	Coin cell battery
12	Micro-USB Serial	Micro-USB Serial Port
13	iDRAC_DIRECT	iDRAC Direct Port
14	SYS_ID	System ID button
15	Display	Display Port
16	USB	USB 3.0 connector
17	iDRAC RJ45/Dry Input	iDRAC RJ45/Dry Input
18	POWER	Power button
19	BOSS-N1	BOSS-N1 M.2 connector
20	MIC_CON	Smart NIC connector
21	TPM	TPM connector
22	Reserved(IO_RISER2)	Riser 2 connector
23	JUMPER	BIOS password and NVRAM jumper
24	A4, A6, A2, A8	DIMM slots (A4, A6, A2, A8)
25	CPU	Processor socket
26	A5, A3, A7, A1	DIMM slots (A5, A3, A7, A1)

System board jumper settings

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

Table 59. System board jumper settings





Jumper	Setting	Description
PWRD_EN	 2 4 6 (default)	The BIOS password feature is enabled.
	 2 4 6	The BIOS password feature is disabled. The BIOS password is now disabled and you are not allowed to set a new password.
NVRAM_CLR	 1 3 5 (default)	The BIOS configuration settings are retained at system boot.

Table 59. System board jumper settings (continued)

Jumper	Setting	Description
		The BIOS configuration settings are cleared at system boot.

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

Disabling a forgotten password

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

Prerequisites

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

Steps

1. Power off the system and all attached peripherals. Disconnect the system from the electrical outlet, and disconnect the peripherals.
2. [Remove the system cover.](#)
3. Move the jumper on the system board from pins 2 and 4 to pins 4 and 6.
4. [Replace the system cover.](#)
 - NOTE:** The existing passwords are not disabled (erased) until the system boots with the jumper on pins 4 and 6. However, before you assign a new system and/or setup password, you must move the jumper back to pins 2 and 4.
 - NOTE:** If you assign a new system and/or setup password with the jumper on pins 4 and 6, the system disables the new password(s) the next time it boots.
5. Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.
6. Power off the system.
7. [Remove the system cover.](#)
8. Move the jumper on the system board from pins 4 and 6 to pins 2 and 4.
9. [Replace the system cover.](#)
10. Reconnect the peripherals and connect the system to the electrical outlet, and then power on the system.
11. Assign a new system and/or setup password.


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.

Topics:

- [Dell Embedded System Diagnostics](#)

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 Boot Manager

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

Steps

1. When the system is booting, press F11.
2. Use the up arrow and down arrow keys to select **System Utilities > Launch Diagnostics**.
3. Alternatively, when the system is booting, press F10, select **Hardware Diagnostics > Run Hardware Diagnostics**. The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

Running the Embedded System Diagnostics from the Dell Lifecycle Controller

Steps

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

System diagnostic controls

Table 60. System diagnostic controls

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

Getting help

Topics:

- [Recycling or End-of-Life service information](#)
- [Contacting Dell Technologies](#)
- [Accessing system information by using QRL](#)
- [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 www.dell.com/recyclingworldwide and select the relevant country.

Contacting Dell Technologies

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

Steps

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

Accessing system information by using QRL

You can use the Quick Resource Locator (QRL) located on the Express service tag in the front of the XR8620t system, to access information about PowerEdge XR8620t. There is also another QRL for accessing product information located on the back of the system cover.

Prerequisites

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

The QRL includes the following information about your system:

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

Steps

1. Go to www.dell.com/qrl, and navigate to your specific product or
2. Use your smart phone or tablet to scan the model-specific Quick Resource (QR) code on your system or in the Quick Resource Locator section.

Quick Resource Locator for PowerEdge XR8620t system



Figure 78. Quick Resource Locator for PowerEdge XR8620t 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 www.dell.com/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 61. Additional documentation resources for your system

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

Table 61. Additional documentation resources for your system (continued)

Task	Document	Location
	For information about installing the operating system, see the operating system documentation.	www.dell.com/operatingsystemmanuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	www.dell.com/support/drivers
Managing your system	For information about systems management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	www.dell.com/poweredgemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	www.dell.com/openmanagemanuals > OpenManage Server Administrator
	For information about installing and using Dell Secure Connect Gateway, see the Dell Secure Connect Gateway Enterprise User's Guide.	https://www.dell.com/serviceabilitytools
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	www.dell.com/openmanagemanuals
Working with the Dell PowerEdge RAID controllers (if applicable)	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.	www.dell.com/storagecontrollermanuals
Understanding event and error messages	For information about the event and error messages generated by the system firmware and agents that monitor system components, go to qrl.dell.com > Look Up > Error Code , type the error code, and then click Look it up .	www.dell.com/qrl
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	www.dell.com/poweredgemanuals