



**Hewlett Packard**  
Enterprise

## HPE ProLiant DL325 Gen10 Plus v2 Server User Guide

Part Number: 30-25EA2ED1-003

Published: March 2022

Edition: 3

# HPE ProLiant DL325 Gen10 Plus v2 Server User Guide

## Abstract

This document is for the person who installs, administers, and troubleshoots servers and storage systems. Hewlett Packard Enterprise assumes you are qualified in the servicing of computer equipment and trained in recognizing hazards in products with hazardous energy levels, and are familiar with the weight and stability precautions for rack installations.

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## Revision history

Part number	Publication date	Edition	Summary of changes
30-25EA2ED1-003	March 2022	3	

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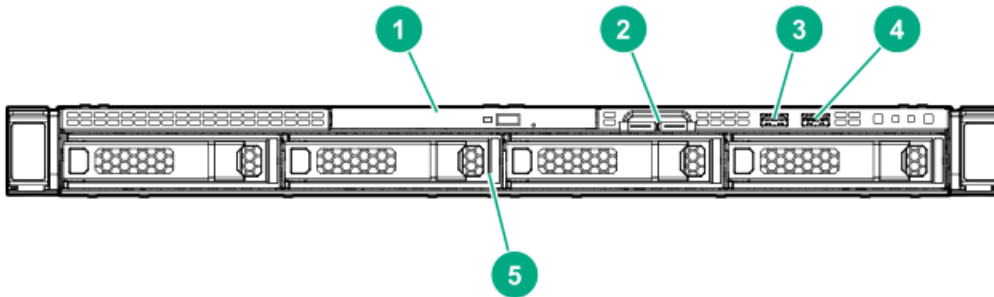
# Component identification

This chapter describes the external and internal server features and components.



## Front panel components

### LFF front panel components

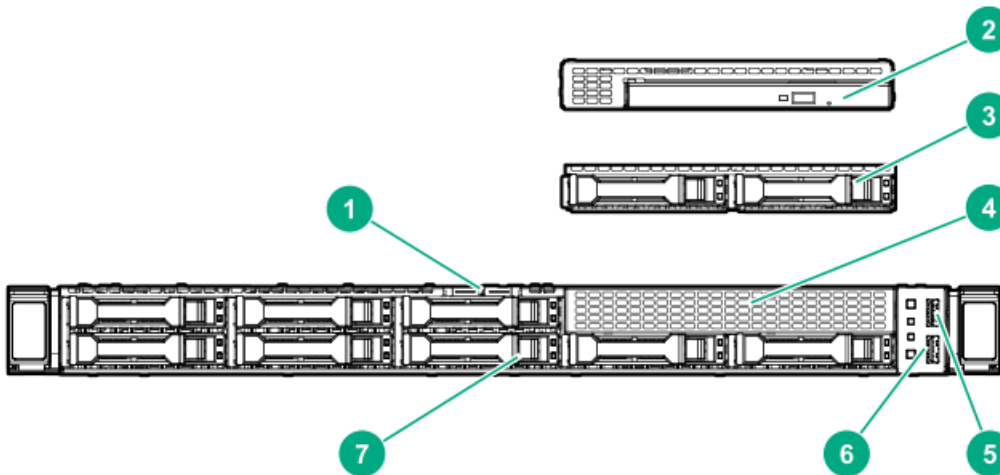


Item	Description
1	Optical drive (optional)
2	Serial number/iLO information pull tab <sup>1</sup>
3	<u>iLO service port</u>
4	USB 3.0 port
5	LFF drive bays <sup>2</sup>

<sup>1</sup> The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

<sup>2</sup> The server supports LFF SAS and SATA drives.

### SFF front panel components



Item	Description
1	Serial number/iLO information pull tab <sup>1</sup>
2	Optical drive (optional)
3	2 SFF drive cage <sup>2</sup>
4	Universal media bay <sup>3</sup>
5	USB 3.0 port
6	<u>iLO service port</u>
7	SFF drive bays <sup>4</sup>

<sup>1</sup> The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag



label. The other side shows the default iLO account information.

- <sup>2</sup> The server supports two 2 SFF drive cage options. The following drive types are supported: SATA, SAS, U.2 NVMe, and U.3 NVMe drives.
- <sup>3</sup> The universal media bay supports the optical drive or the 2 SFF drive cage option.
- <sup>4</sup> The 8 SFF drive cage supports the following drive types: SATA, SAS, U.2 NVMe, and U.3 NVMe drives.



## iLO Service Port

The Service Port is a USB port with the label **iLO** on supported servers and compute modules.

To find out if your server or compute module supports this feature, see the server specifications document at the following website: <https://www.hpe.com/info/qs>.

When you have physical access to a server, you can use the Service Port to do the following:

- Download the Active Health System Log to a supported USB flash drive.  
When you use this feature, the connected USB flash drive is not accessible by the host operating system.
- Connect a client (such as a laptop) with a supported USB to Ethernet adapter to access the following:
  - iLO web interface
  - Remote console
  - iLO RESTful API
  - CLI

Hewlett Packard Enterprise recommends the HPE USB to Ethernet Adapter (part number Q7Y55A).

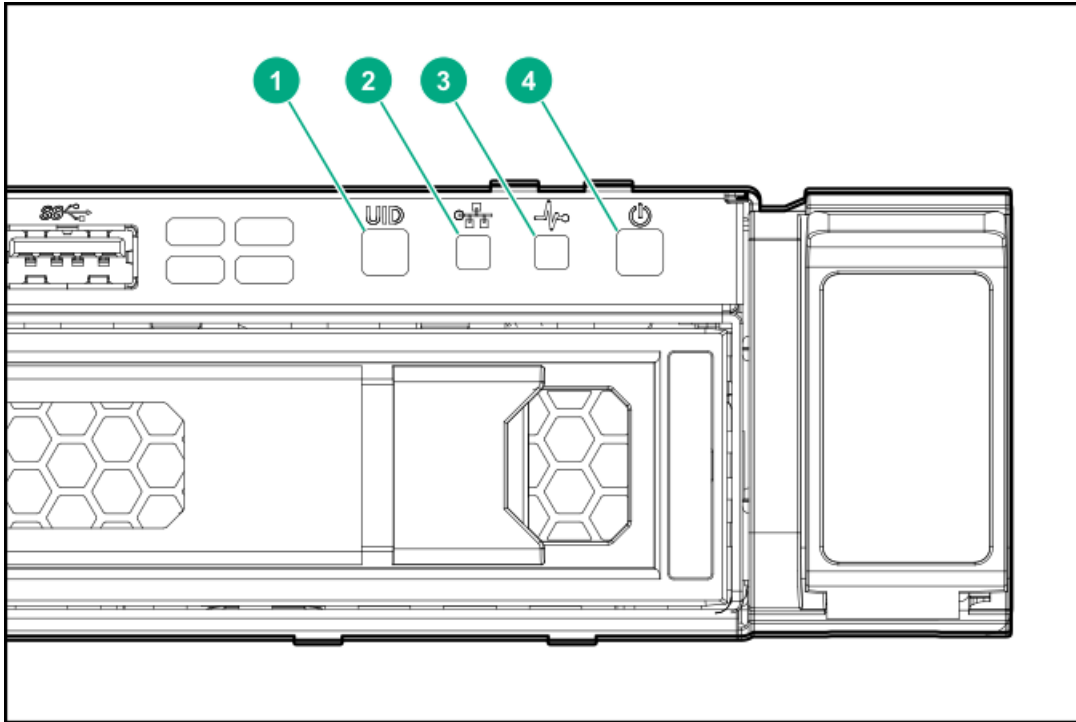
When you use the iLO Service Port:

- Actions are logged in the iLO event log.
- The server UID flashes to indicate the Service Port status.  
You can also retrieve the Service Port status by using a REST client and the iLO RESTful API.
- You cannot use the Service Port to boot any device within the server, or the server itself.
- You cannot access the server by connecting to the Service Port.
- You cannot access the connected device from the server.

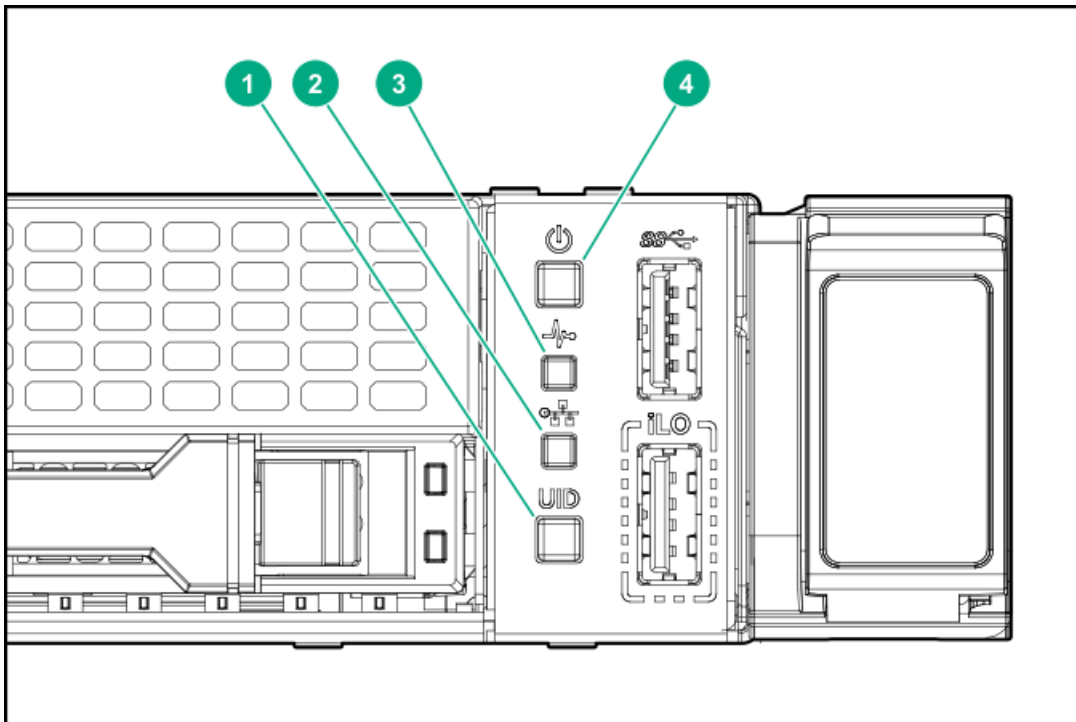
For more information about the iLO Service Port, see the iLO user guide at the following website: <https://www.hpe.com/support/iLO-docs>.

## Front panel LEDs and buttons

### LFF front panel LEDs and buttons



### SFF front panel LEDs and button



Item	Description	Status	Definition
1	UID button/LED <sup>1</sup>	Solid blue	Activated

Item	Description	Status	Definition
		Flashing blue	<ul style="list-style-type: none"> <li>• 1 flash per second = Remote management or firmware upgrade in progress</li> <li>• 4 flashes per second = iLO manual reboot sequence initiated</li> <li>• 8 flashes per second = iLO manual reboot sequence in progress</li> </ul>
		Off	Deactivated
2	NIC status LED <sup>1</sup>	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	Health LED <sup>1</sup>	Solid green	Normal
		Flashing green	iLO is rebooting
		Flashing amber	System degraded <sup>2</sup>
		Flashing red	System critical <sup>2</sup>
4	Power On/Standby button and system power LED <sup>1</sup>	Solid green	System on
		Flashing green	Performing power-on sequence
		Solid amber	System in standby
		Off	No power present <sup>3</sup>

<sup>1</sup> When all LEDs flash simultaneously, a power fault has occurred. For more information, see [Front panel LED power fault codes](#).

<sup>2</sup> If the health LED indicates a degraded or critical state, review the system Integrated Management Log (IML) or use HPE iLO to review the system health status.

<sup>3</sup> Facility power is not present, power cord is not attached, no power supplies are installed, power supply failure has occurred, or the front I/O cable is disconnected.

## Server UID LED

The UID LED is used to locate a particular server when it is deployed in a dense rack with other equipment. Activating the UID LED helps an on-site technician to quickly identify a server for maintenance tasks.



## Using the UID button to view the Server Health Summary

You can use the UID button to display the iLO Server Health Summary screen on an external monitor. This function works both when the server is powered on or off. Use this feature for troubleshooting if the server will not start up.

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**⚠ CAUTION:** Press and release the UID button. Holding it down at any time for more than five seconds initiates a graceful iLO reboot or a hardware iLO reboot. Data loss or NVRAM corruption might occur during a hardware iLO reboot.

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### Prerequisites

- An external monitor is connected.
- In the iLO web interface, the Show Server Health on External Monitor feature is enabled on the Access Settings page.

### Procedure

1. Press and release the UID button.

The Server Health Summary screen is displayed on the external monitor. For more information, see the iLO troubleshooting guide on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/ilo-docs>).

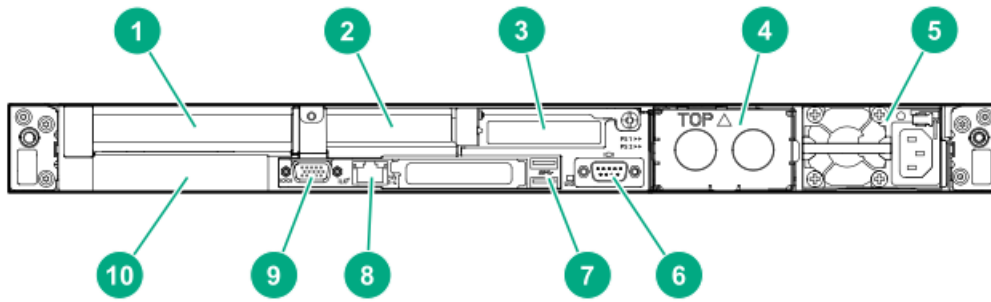
2. Press the UID button again to close the Server Health Summary screen.

## Front panel LED power fault codes

The following table provides a list of power fault codes, and the subsystems that are affected. Not all power faults are used by all servers.

Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Storage controller	6 flashes
System board PCIe slots	7 flashes
Power backplane	8 flashes
Storage backplane	9 flashes
Power supply	10 flashes
PCIe expansion cards installed in riser board	11 flashes
Chassis	12 flashes
GPU card	13 flashes

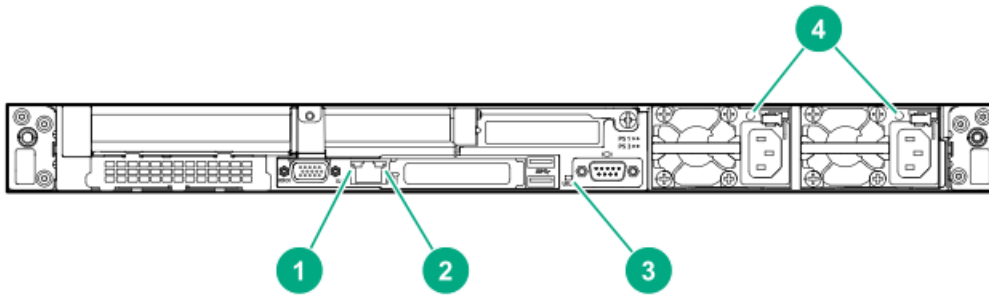
## Rear panel components



Item	Description
1	Slot 1 PCIe4 x16 (16, 8, 4, 1)
2	Slot 2 PCIe4 x16 (16, 8, 4, 1)
3	Slot 3 PCIe4 x16 (16, 8, 4, 1) (optional)
4	Flex Slot power supply 2 (optional)
5	Flex Slot power supply 1
6	Serial port (optional)
7	USB 3.0 ports (2)
8	iLO management port
9	Video port
10	OCP NIC 3.0 slot

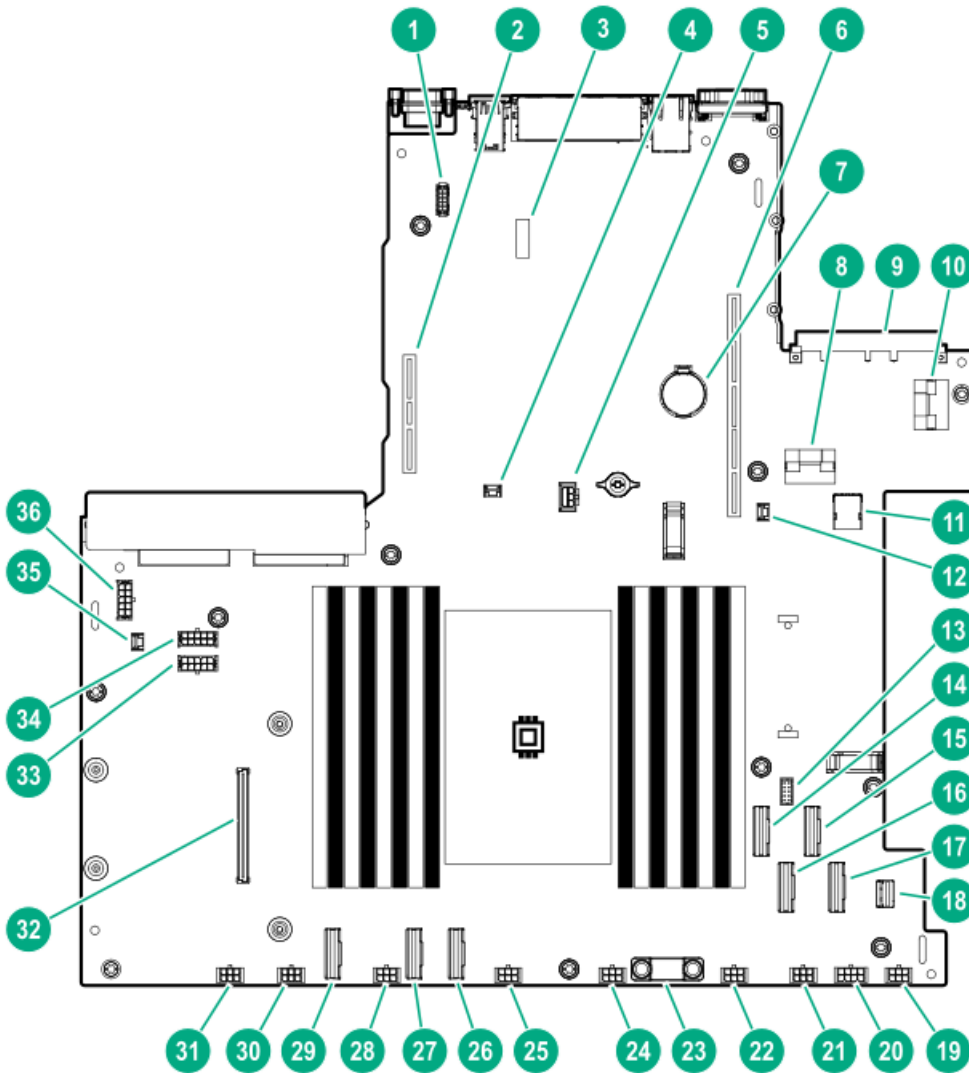


## Rear panel LEDs



Item	LED	Status	Definition
1	iLO link	Solid green	Network link
		Off	No network link
2	iLO status	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	UID	Solid blue	Activated
		Flashing blue	<ul style="list-style-type: none"> <li>1 flash per sec = Remote management or firmware upgrade in progress</li> <li>4 flashes per sec = iLO manual reboot sequence initiated</li> <li>8 flashes per sec = iLO manual reboot sequence in progress</li> </ul>
		Off	Deactivated
		Off	Deactivated
4	Power supply	Solid green	The power supply is operating normally.
		Off	One or more of the following conditions exists: <ul style="list-style-type: none"> <li>Power is unavailable</li> <li>Power supply failure</li> <li>Power supply is in standby mode</li> <li>Power supply error</li> </ul>

## System board components



Item	Description
1	Serial port connector
2	Secondary PCIe4 riser connector
3	<u>System maintenance switch</u>
4	Storage controller backup power connector 2
5	Graphics card power connector 2
6	Primary PCIe4 riser connector
7	System battery
8	NVMe port 6A
9	OCP NIC 3.0 slot
10	OCP NIC 3.0 x16 upgrade connector
11	Internal USB 3.0 port
12	Storage controller backup power connector 1
13	Energy pack connector
14	NVMe/SATA port 9A
15	NVMe port 4A
16	NVMe/SATA port 8A

Item	Description
17	NVMe port 5A
18	Front I/O connector
19	Fan connector 8
20	Graphics card power connector 1
21	Fan connector 7
22	Fan connector 6
23	TPM connector
24	Fan connector 5
25	Fan connector 4
26	NVMe port 3A
27	NVMe port 1A
28	Fan connector 3
29	NVMe port 2A
30	Fan connector 2
31	Fan connector 1
32	Type-a modular storage controller slot
33	Not for use in this server
34	Not for use in this server
35	Chassis intrusion detection switch connector
36	Drive backplane power connector

## System maintenance switch descriptions

Position	Default	Function
S1 <sup>1</sup>	Off	<ul style="list-style-type: none"><li>Off = iLO 5 security is enabled.</li><li>On = iLO 5 security is disabled.</li></ul>
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5 <sup>1</sup>	Off	<ul style="list-style-type: none"><li>Off = Power-on password is enabled.</li><li>On = Power-on password is disabled.</li></ul>
S6 <sup>1, 2, 3</sup>	Off	<ul style="list-style-type: none"><li>Off = No function</li><li>On = Restore default manufacturing settings</li></ul>
S7	Off	Reserved
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

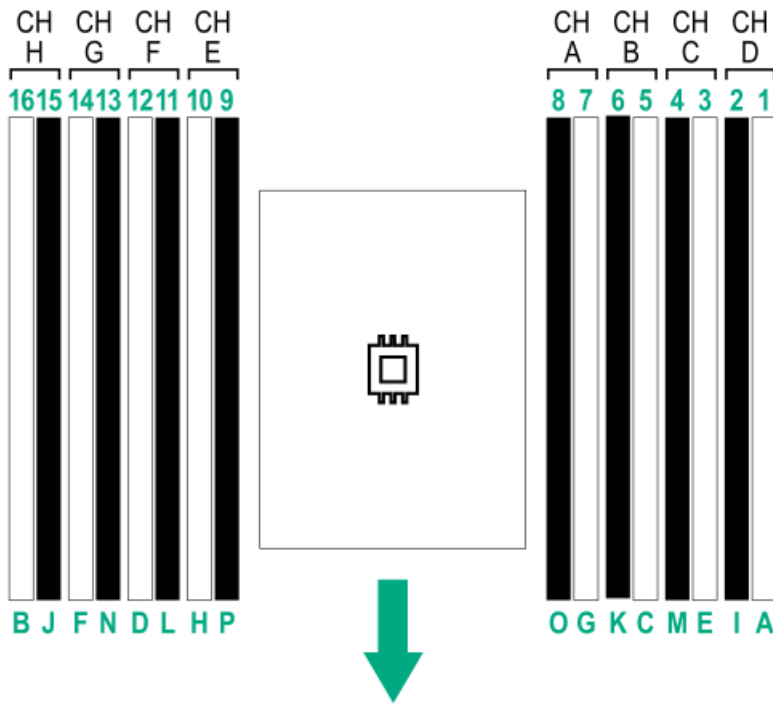
<sup>1</sup> To access the redundant ROM, set S1, S5, and S6 to On.

<sup>2</sup> When the system maintenance switch position 6 is set to the On position, the system is prepared to restore all configuration settings to their manufacturing defaults.

<sup>3</sup> When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see [Configuring security](#).

## DIMM slot locations

DIMM slots are numbered sequentially (1 through 16). The supported Advance Memory Protection (AMP) modes use the letter assignments for population guidelines.

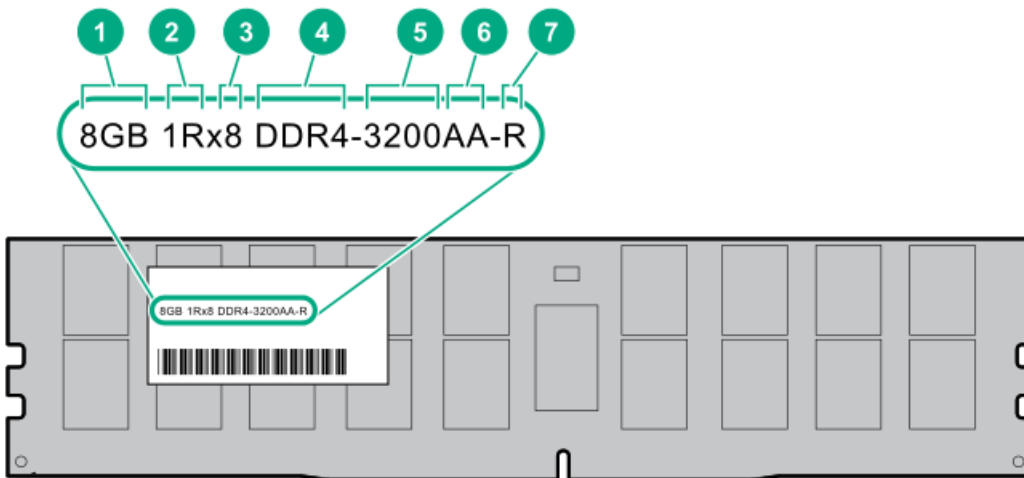


The arrow points to the front of the server.

## DIMM label identification

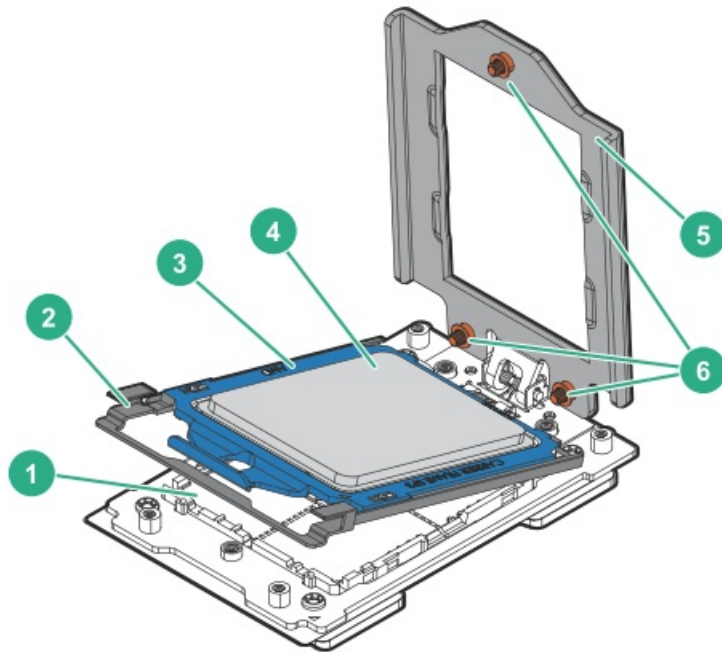
To determine DIMM characteristics, see the label attached to the DIMM. The information in this section helps you to use the label to locate specific information about the DIMM.

For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR4 SmartMemory QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/DDR4SmartMemoryQS>).



Item	Description	Example
1	Capacity	8 GB 16 GB 32 GB 64 GB 128 GB 256 GB
2	Rank	1R = Single rank 2R = Dual rank 4R = Quad rank 8R = Octal rank
3	Data width on DRAM	x4 = 4-bit x8 = 8-bit
4	Memory generation	PC4 = DDR4
5	Maximum memory speed	3200 MT/s
6	CAS latency	AA = CAS 22-22-22 AA = CAS 26-22-22 (for 3DS LRDIMM)
7	DIMM type	E = Unbuffered ECC (UDIMM) R = RDIMM (registered) L = LRDIMM (load reduced)

## Processor and socket components



Item	Description
1	Pin field
2	Rail frame
3	Carrier frame
4	Processor
5	Force frame
6	Captive screws (Torx T-20)

## Drive bay numbering

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### CAUTION:

When a server is purchased without any drive installed, some drive bays might be empty while other drive bays might be populated with drive blanks. To maintain proper system cooling, do not operate the server without a drive or a drive blank installed.

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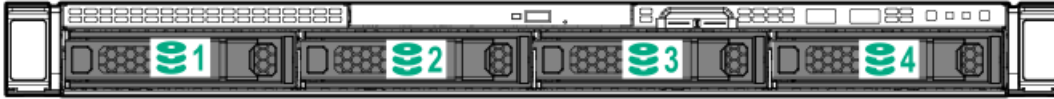
- 4 LFF drive bay numbering
- 8 SFF + 2 SFF drive bay numbering



## 4 LFF drive bay numbering

In the LFF drive configuration:

- All drives belong to the same box 1.
- SAS and SATA drives are supported.
- All box 1 drives connected to the NVMe/SATA port 8A are covered in the SATA software RAID.



## 8 SFF + 2 SFF drive bay numbering

In the SFF drive configuration:

- Drives are assigned to box 1 (green) and the optional box 2 (orange).
- SAS, SATA, U.2 NVMe, and U.3 NVMe drives are supported.

When a Gen10 Plus tri-mode controller is used together with a U.3 drive backplane, the system will support mixed drive configuration.

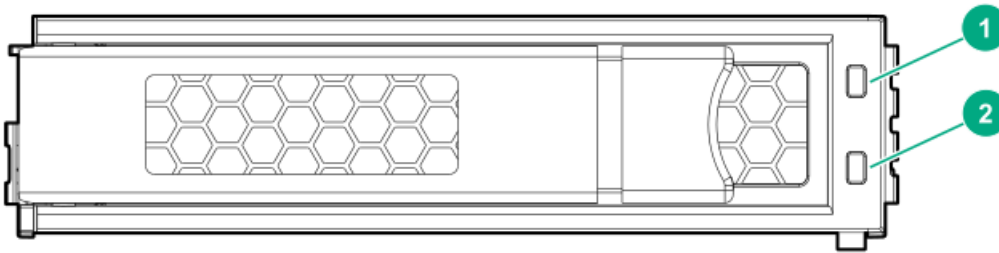
- When installing NVMe drives, install either all U.2 or all U.3 drives. Mixed NVMe drive type installation is not supported.
- 8 SFF SAS/SATA: All box 1 drives connected to the NVMe/SATA port 8A supports SATA software RAID.
- 8 SFF NVMe: The box 1, drives 1–2 connected to the NVMe port 3A supports NVMe software RAID.
- 8 SFF SAS/SATA + 2 SFF NVMe:
  - All box 1 drives connected to the NVMe/SATA port 8A supports SATA software RAID.
  - All box 2 drives connected to the NVMe port 4A supports NVMe software RAID.
- 8 SFF NVMe + 2 SFF NVMe:
  - The box 1, drives 1–2 connected to the NVMe port 3A supports NVMe software RAID.
  - The box 1, drives 3–8 and the box 2 drives will not support software RAID.



## HPE Basic Drive LED definitions

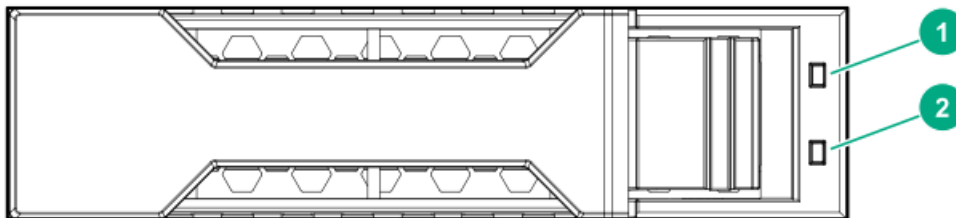
### LFF low-profile drive carrier

The LFF low-profile drive carrier supports hot-plug SAS and SATA drives.



### SFF basic drive carrier

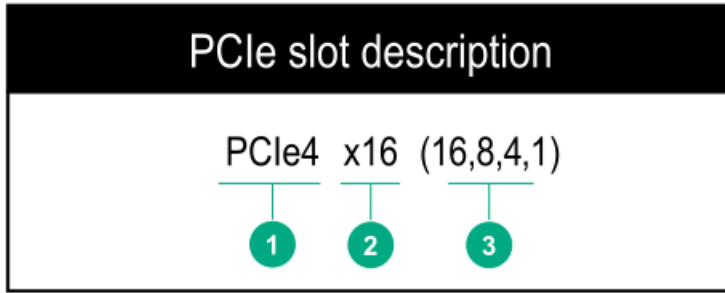
The SFF basic drive carrier supports hot-plug SAS, SATA, and U.2/U.3 NVMe drives.



Item	LED	Status	Definition
1	Fault/Locate	Solid amber	This drive has failed, is unsupported, or is invalid.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue	The drive has failed, or a predictive failure alert has been received for this drive. The drive has also been identified by a management application.
		Flashing amber	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
2	Online/Activity	Solid green	The drive is online and has no activity.
		Flashing green (1 flash per second)	The drive is doing one of the following: <ul style="list-style-type: none"> <li>Rebuilding or performing a RAID</li> <li>Performing a stripe size migration</li> <li>Performing a capacity expansion</li> <li>Performing a logical drive extension</li> <li>Erasing</li> <li>Spare part activation</li> </ul>
		Flashing green (4 flashes per second)	The drive is operation normally and has activity.

Item	LED	Status	Definition
		Off	The drive is not configured by a RAID controller or is a spare drive.

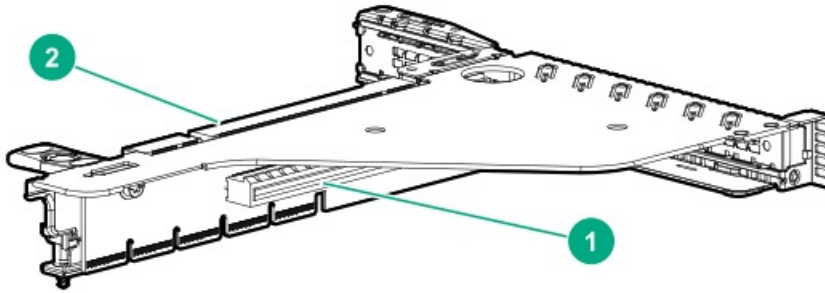
## PCIe4 slot description



Item	Description	Definition
1	PCI Express version	<p>Each PCIe version corresponds to a specific data transfer rate between the processor and peripheral devices. Generally, a version update corresponds to an increase in transfer rate.</p> <ul style="list-style-type: none"><li>• PCIe 1.x</li><li>• PCIe 2.x</li><li>• PCIe 3.x</li><li>• PCIe 4.x</li></ul> <p>The PCIe technology is under constant development. For the latest information, see the <a href="#">PCI-SIG website</a>.</p>
2	Physical connector link width	<p>PCIe devices communicate through a logical connection called an interconnect or link. At the physical level, a link is composed of one or more lanes. The number of lanes is written with an x prefix with x16 being the largest size in common use.</p> <ul style="list-style-type: none"><li>• x1</li><li>• x2</li><li>• x4</li><li>• x8</li><li>• x16</li></ul>
3	Negotiable link width	<p>These numbers correspond to the maximum link bandwidth supported by the slot.</p>

## Riser board components

### Primary riser

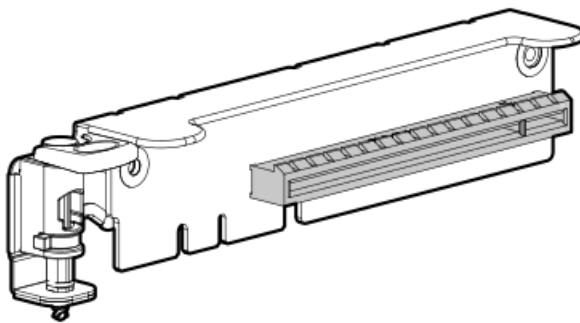


Slot number	Description	Supported form factors
1	PCIe4 x16 (16, 8, 4, 1) slot	<ul style="list-style-type: none"><li>• Full-height, full-length</li><li>• Full-height, half-length</li><li>• Half-height, half-length (low-profile)</li></ul>
2	PCIe4 x16 (16, 8, 4, 1) slot	Half-height, half-length (low-profile) <sup>1</sup>

<sup>1</sup> When a full-height expansion card is installed in the secondary riser slot 3, the primary riser slot 2 will no longer support card installation.

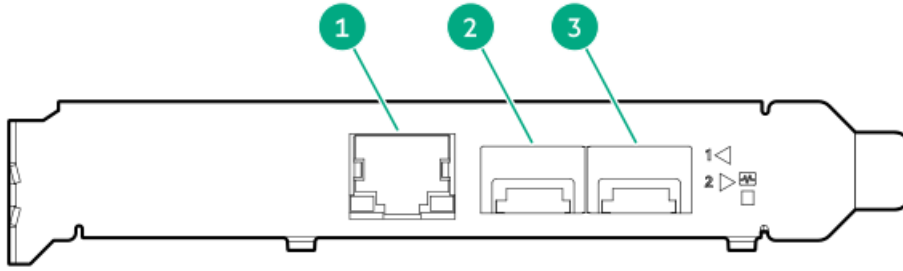
### Secondary riser

The secondary riser has a single slot—Slot 3 PCIe4 x16 (16, 8, 4, 1). Slot 3 supports a full-height, half-length or a half-height, half-length (low-profile) expansion card.



# DSC-25 2-port SFP28 card ports and LEDs

## Ports

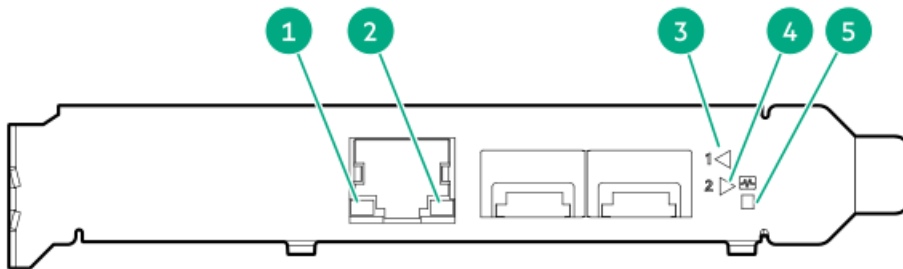


**Table 1: Ports**

Item	Port	Description
1	Management port	1GbE RJ45
2	Network interface port	10/25G SFP+ based
3	Network interface port	10/25G SFP+ based

## LEDs

The HPE for Pensando DSP DSC-25 2p SFP28 card is a dual-port, single-slot, half-height, half-length (HHHL) SFP28 network adapter. It has LEDs for Link (L) and Activity (A) for each port. A half-height bracket is shown in the following illustration with SFP28 ports and LEDs.



**Table 2: LED indicators**

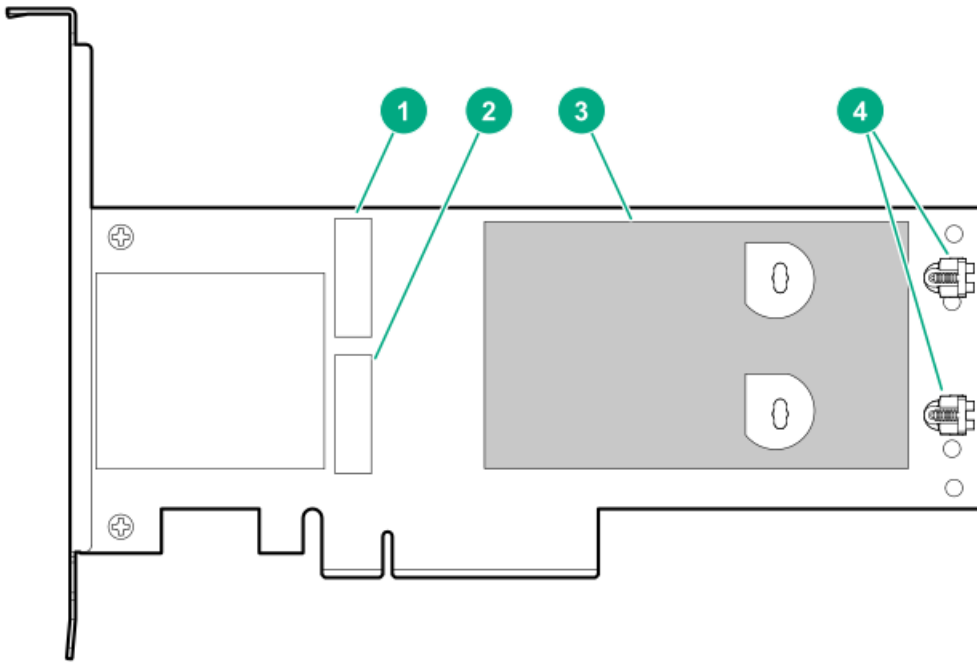
Item	LED	Status	Description
1	Management Port Activity LED	Off	No activity
		Flashing	Passing traffic; flashing frequency indicates traffic intensity
2	Management Port Link LED	Off	A link has not been established
		Solid green	Valid Ethernet link
3	SFP Port 1 Link/Activity LED	Off	A link has not been established
		Solid green	Valid Ethernet link
		Flashing green	Passing traffic; flashing frequency indicates traffic intensity
		Solid amber	Link fault

Item	LED	Status	Description
4	SFP Port 2 Link/Activity LED	Off	A link has not been established
		Solid green	Valid Ethernet link
		Flashing green	Passing traffic; flashing frequency indicates traffic intensity
		Solid amber	Link fault
5	System status LED	Off	System is not powered
		Solid amber	Power is up, software has not booted yet
		Solid green	System is up and fully operational



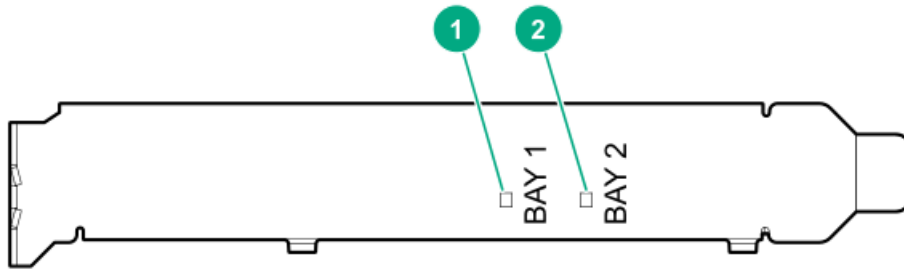


## HPE NS204i-p NVMe OS Boot Device components



Item	Description
1	Drive bay 1
2	Drive bay 2
3	Thermal interface pad with removable liner
4	M.2 drive retaining latches

## HPE NS204i-p NVMe OS Boot Device LED definitions



Item	Description	Fault LED status
1	Bay 1 LED	Off: Normal
2	Bay 2 LED	Flashing 1Hz: Drive predictive failure Amber: Drive failure

## Fan numbering

To provide sufficient airflow to the system, the server is by default populated by eight fans. The fans can either be standard, single-rotor fans or high-performance, dual-rotor fans. Mixed fan configuration is not supported.



The arrow points to the front of the server.

# Operations

This chapter describes the hardware operations carried out prior to and after installing or removing a hardware option, or performing a server maintenance or troubleshooting procedure. Before performing these hardware operations, review:

- [Rack warnings and cautions](#)
- [Server warnings and cautions](#)

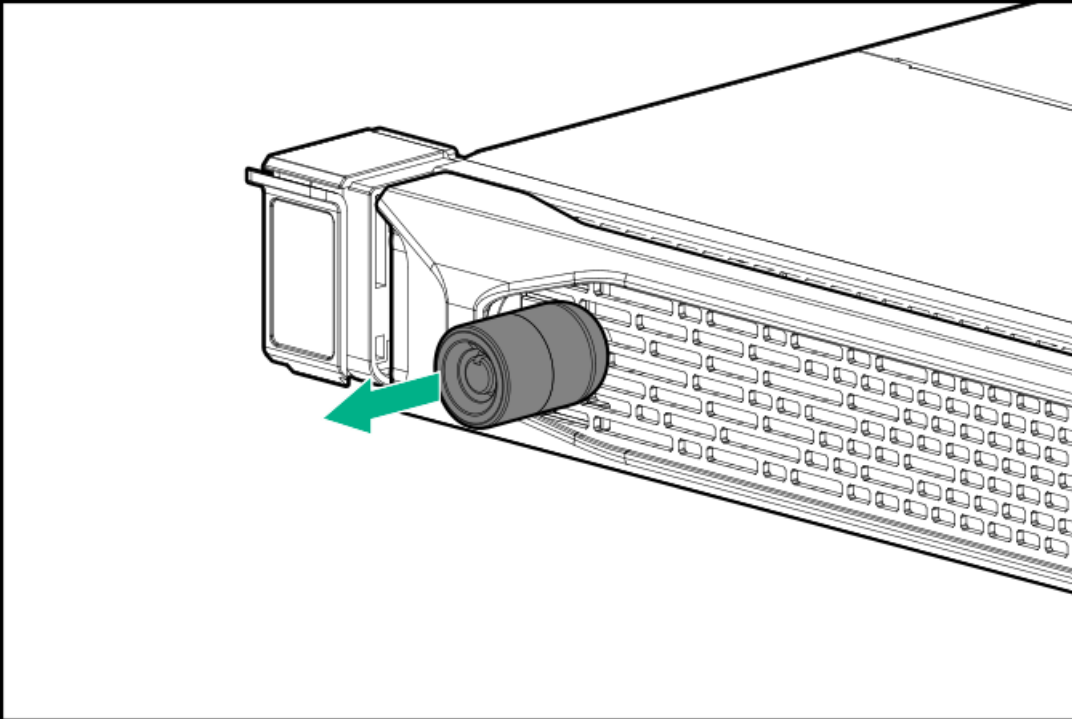
## Remove the front bezel

If you are using the virtual power button in iLO to power the server on/off, you do not need to remove the front bezel. Remove the front bezel only if you need to access the front panel components.

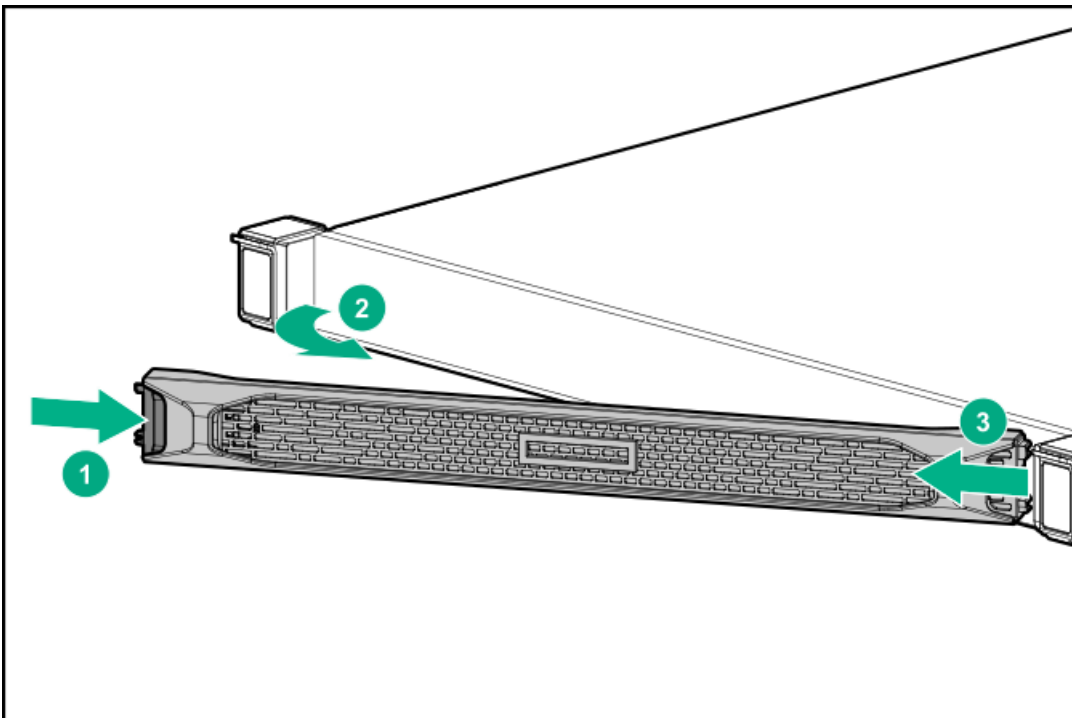
### Procedure

1. If installed, remove the Kensington security lock.

For more information, see the lock documentation.



2. Press the bezel release latch (callout 1), and then pivot the bezel open (callout 2).
3. Release the right side of the bezel from the front panel.



## Power up the server

To power up the server, use one of the following methods:

- Press the Power On/Standby button.
- Use the virtual power button through iLO 5.

## Power down the server

Before powering down the server for any upgrade or maintenance procedures, perform a backup of critical server data and programs.

---

**i IMPORTANT:**

When the server is in standby mode, auxiliary power is still being provided to the system.

---

To power down the server, use one of the following methods:

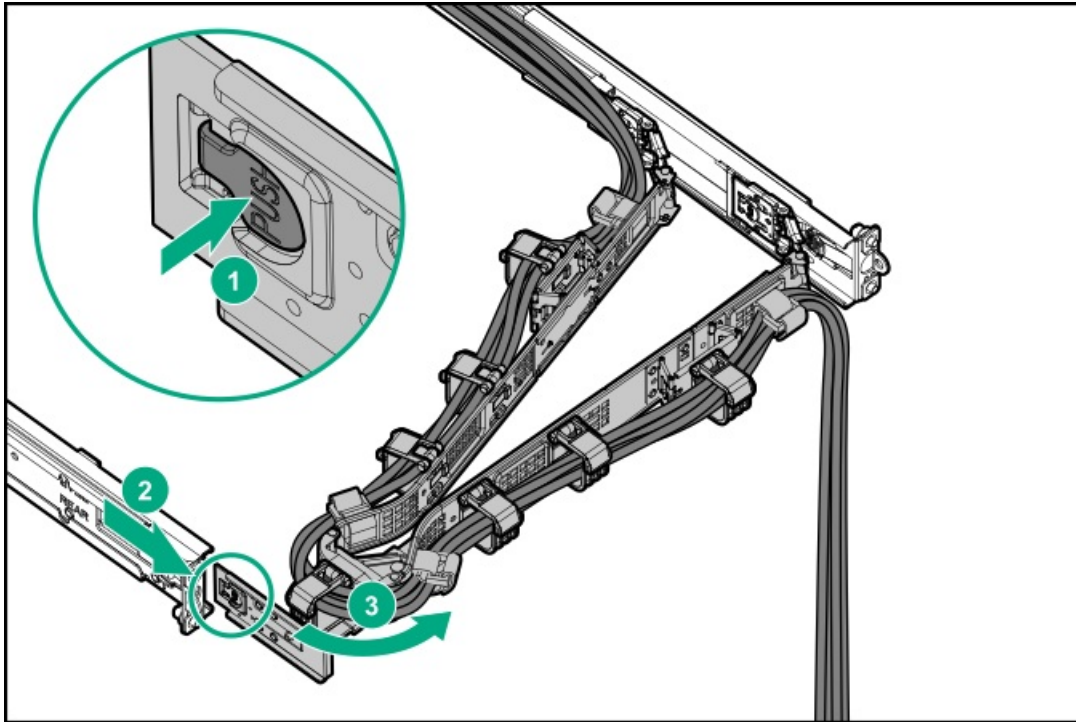
- Press and release the Power On/Standby button.  
This method initiates a controlled shutdown of applications and the OS before the server enters standby mode.
- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.  
This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.
- Use a virtual power button selection through iLO 5.  
This method initiates a controlled remote shutdown of applications and the OS before the server enters standby mode.

Before proceeding, verify that the server is in standby mode by observing that the system power LED is amber.

## Release the cable management arm

### Procedure

Release the cable management arm, and then swing the arm away from the rack.





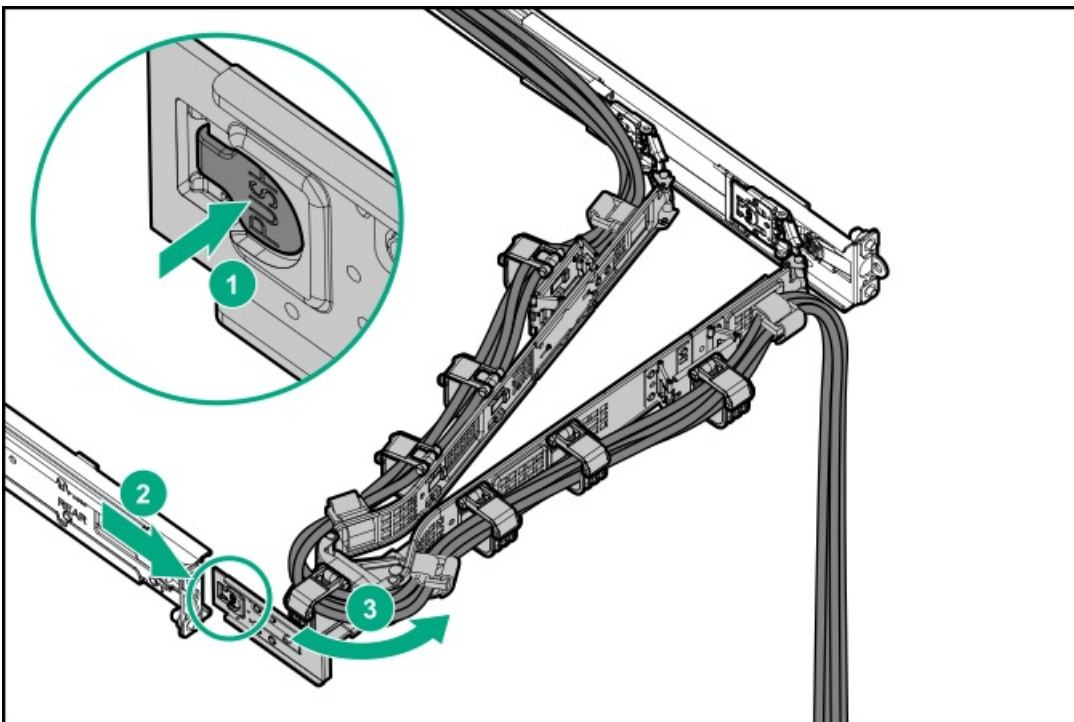
# Remove the server from the rack

## Prerequisites

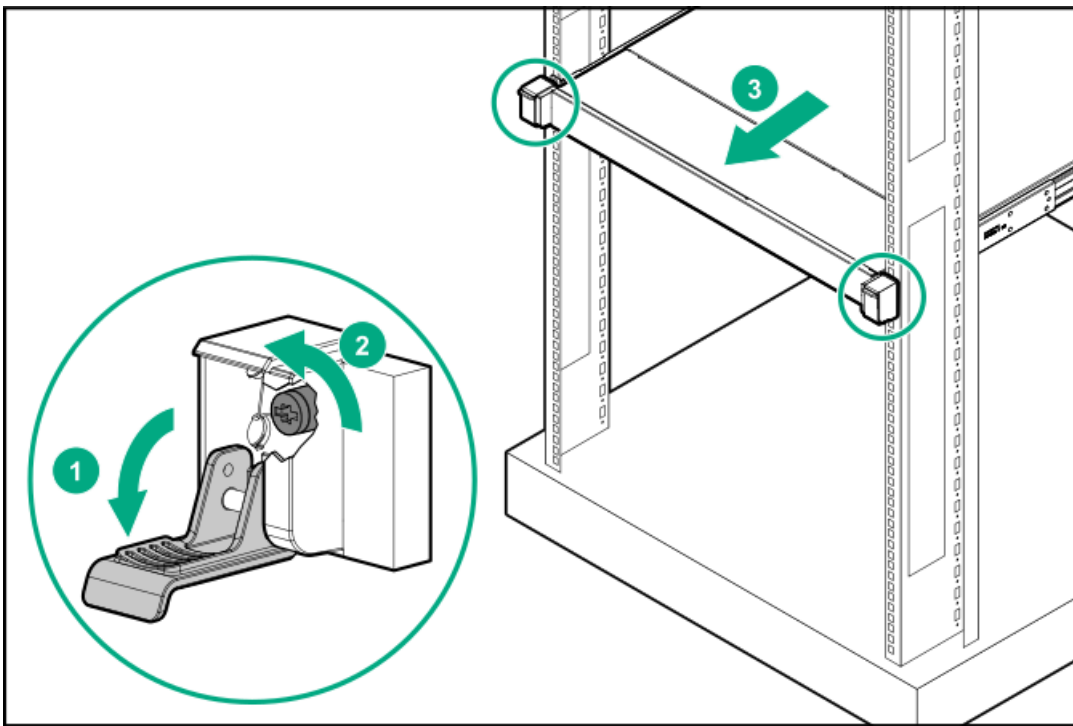
- Before you perform this procedure, review the:
  - [Rack warnings and cautions](#)
  - [Server warnings and cautions](#)
- A fully populated server is heavy. Hewlett Packard Enterprise recommends removing the external chassis components before removing the server from the rack.
- Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

## Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.

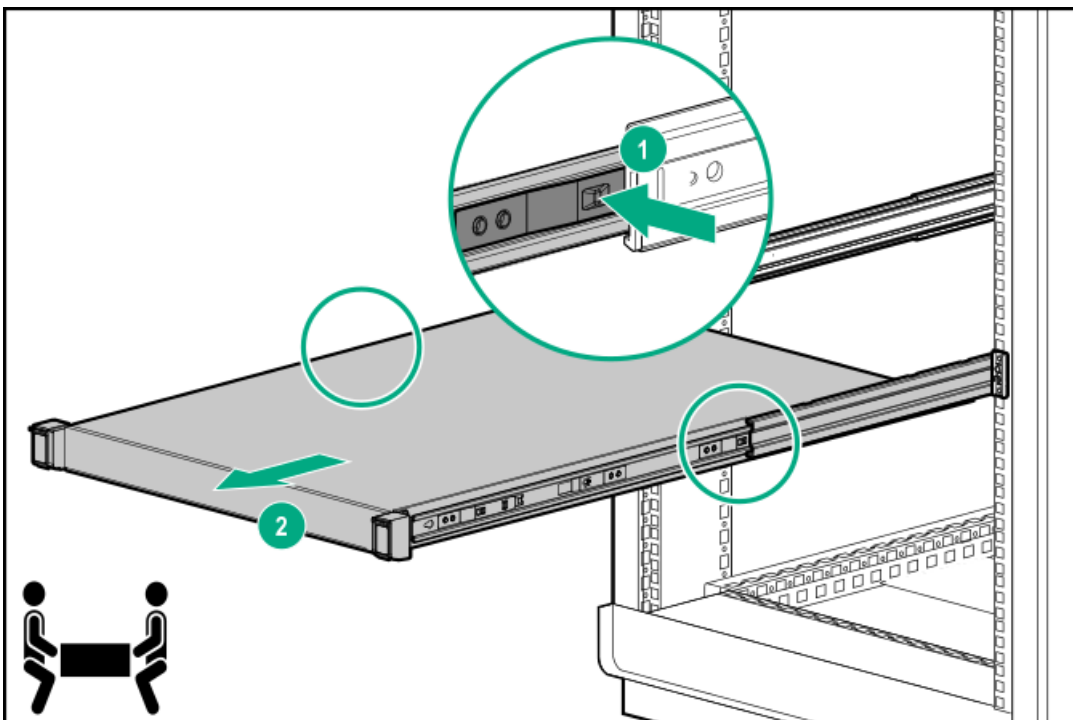


4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Extend the server from the rack:
  - a. Open the chassis ear latch (callout 1).
  - b. If necessary, use a T-25 Torx screwdriver to loosen the shipping screws (callout 2).
  - c. Slide the server out of the rack until the server rail-release latches are engaged (callout 3).



**⚠ WARNING:** To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.

7. Remove the server from the rack:
  - a. Press and hold the server rail-release latches (callout 1).
  - b. Pull the server from the rack (callout 2).

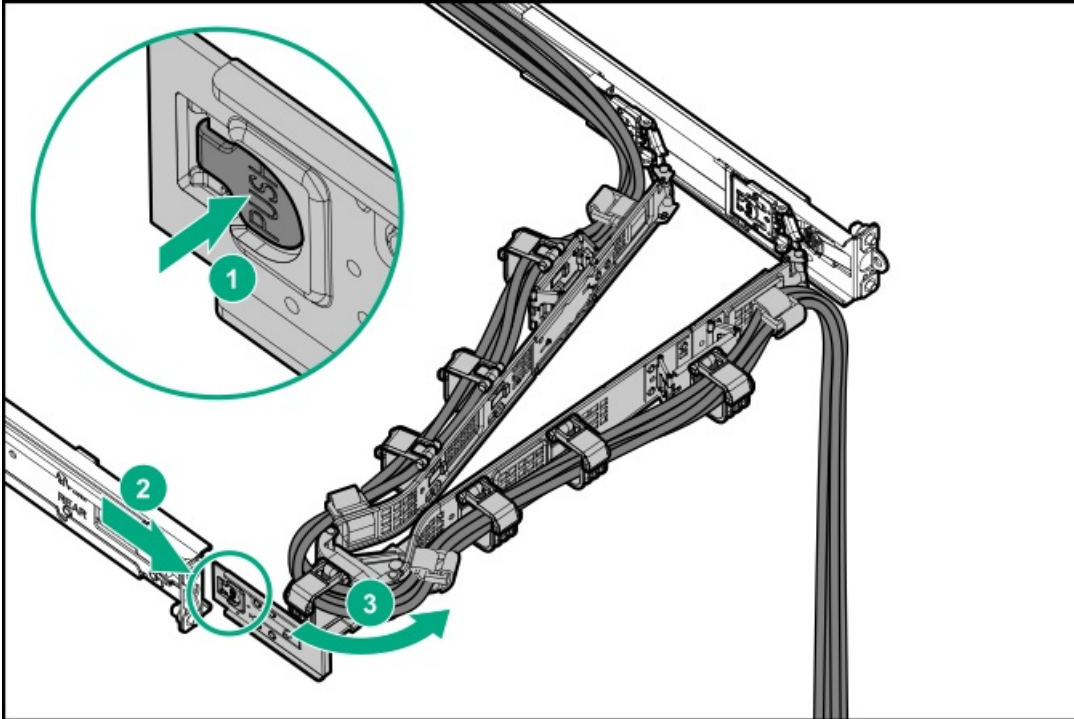


8. Place the server on a flat, level work surface.

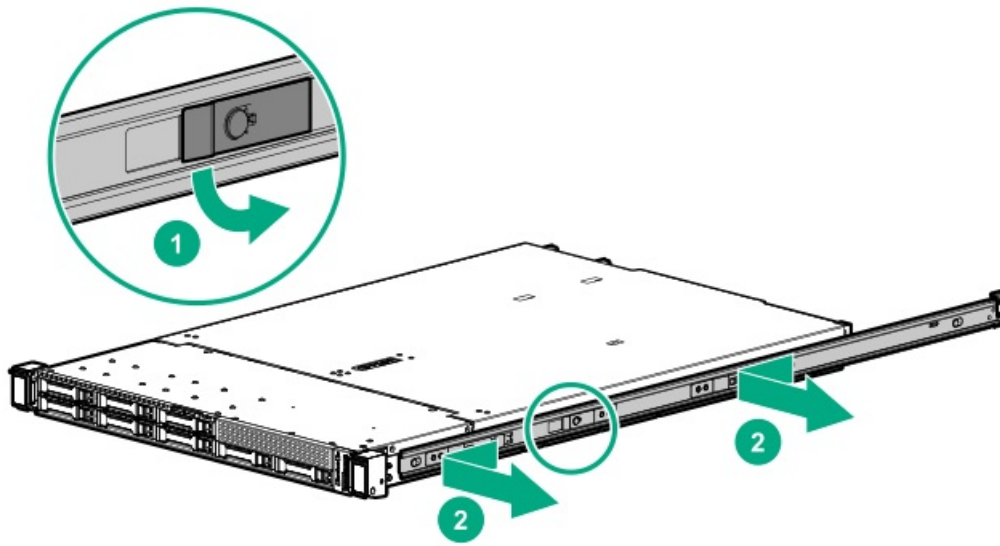
## Remove the rack sliding rails

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the rack sliding rails:
  - a. Pull and hold the release latch (callout 1).
  - b. Slide the rail towards the front panel and pull it from the server (callout 2).



c. Repeat steps a and b to remove the other rail.

## Remove the access panel

**⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

**⚠ CAUTION:**

To prevent damage to electrical components, properly ground the server before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

**⚠ CAUTION:**

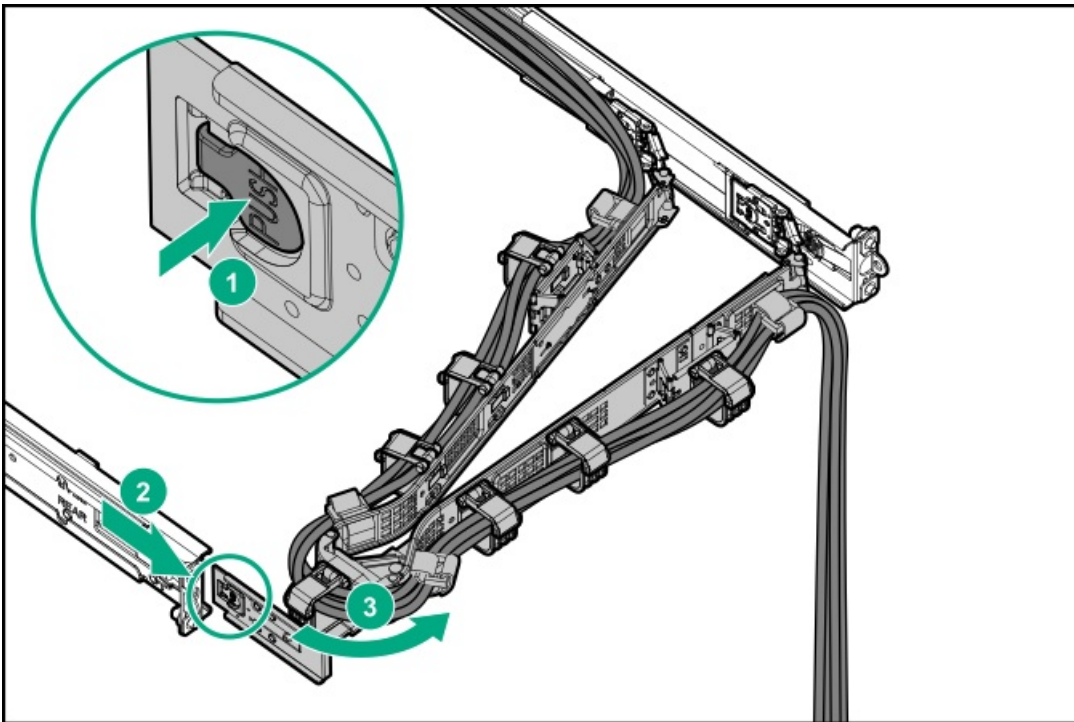
Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

### Prerequisites

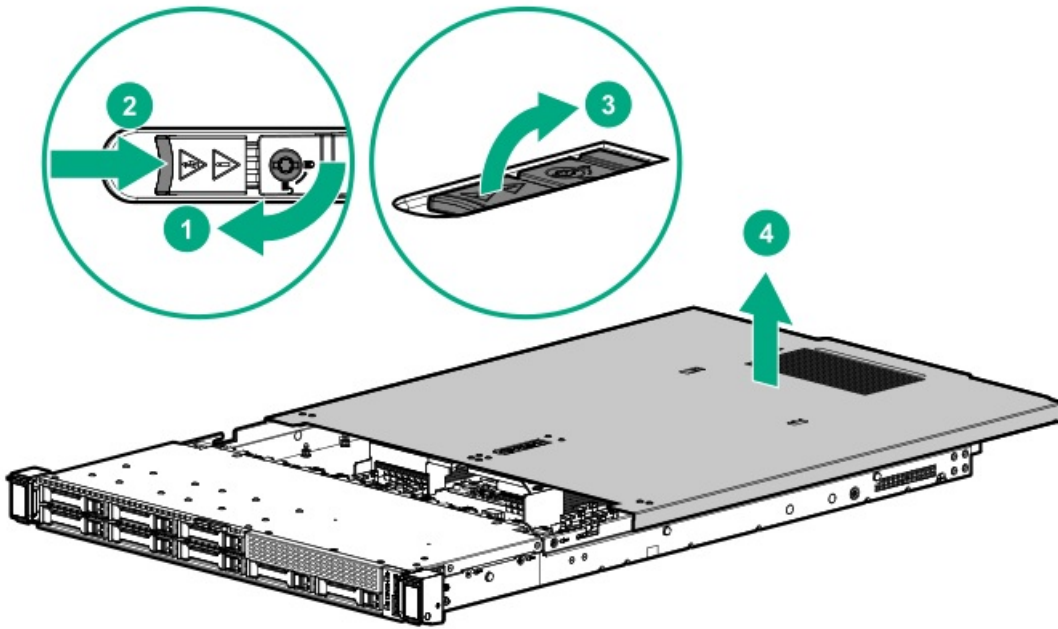
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel:
  - a. If necessary, unlock the access panel latch (callout 1).
  - b. To disengage the access panel from the chassis, press the release button and pull up the latch (callouts 2 and 3).
  - c. Lift the access panel (callout 4).



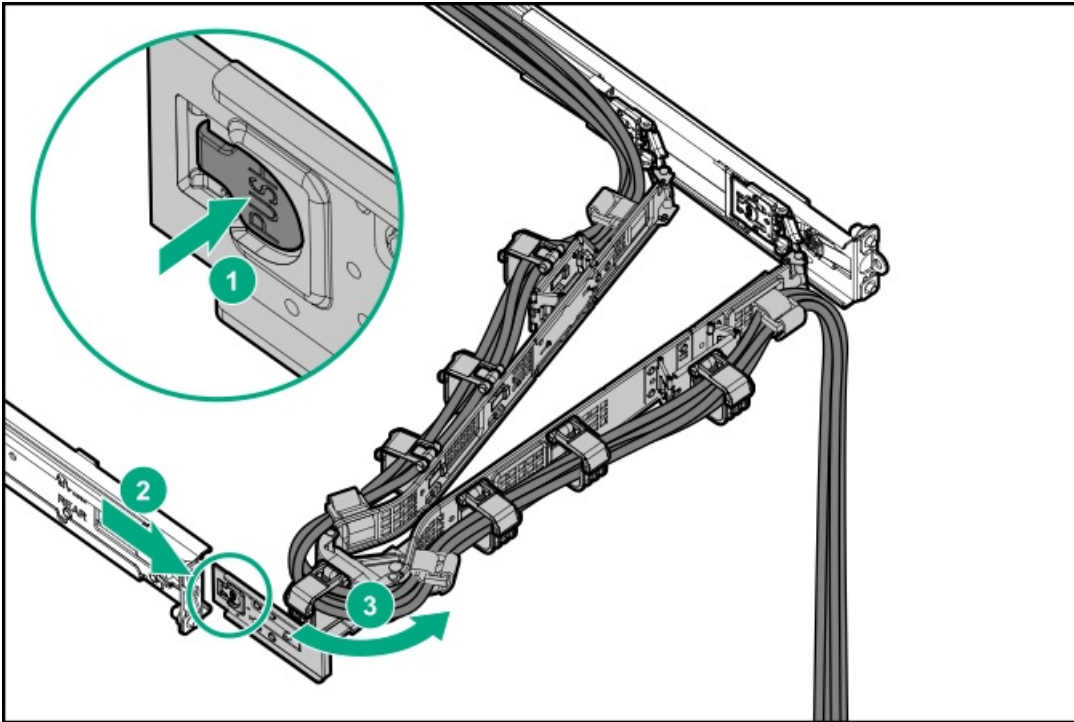
# Remove the front drive cage

## Prerequisites

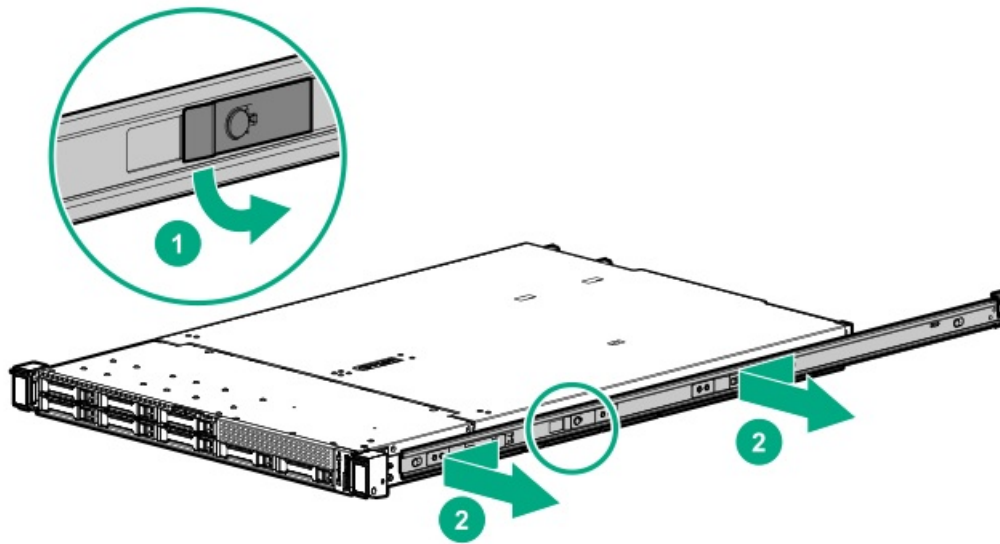
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

## Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the rack sliding rails.



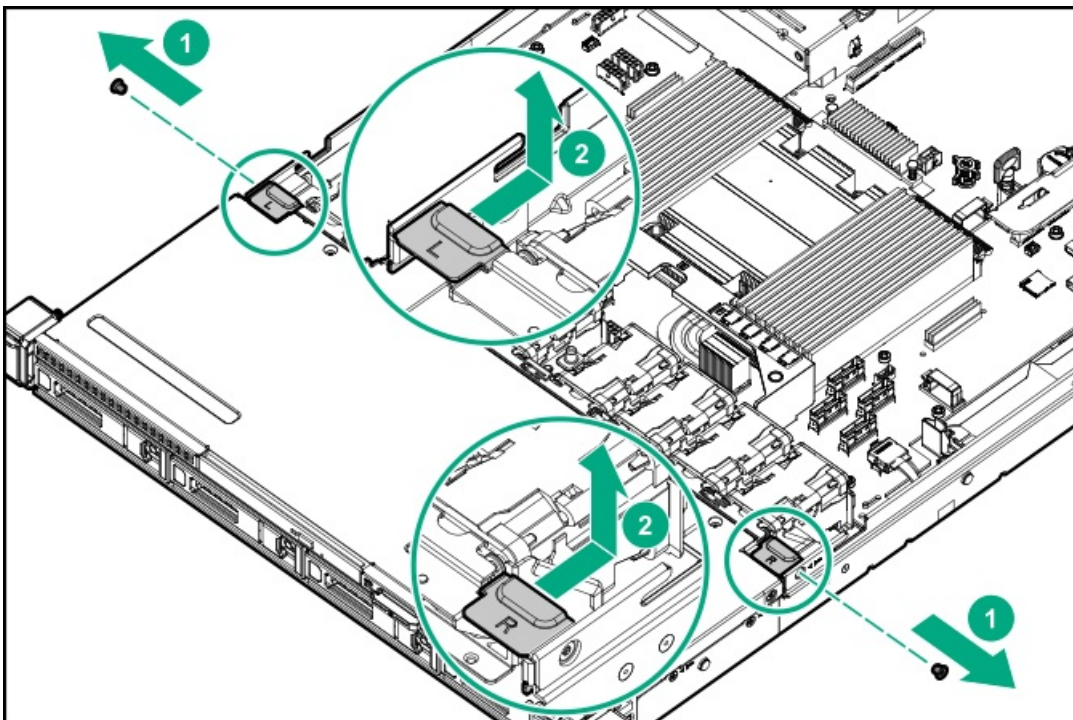
10. Disconnect the following cables from their system board and controller connectors:

- Drive power cable
- Storage controller cable

Make sure to release the controller cables from the cable tie/clip securing them.

- Front I/O cable

11. Remove the fan wall brackets.

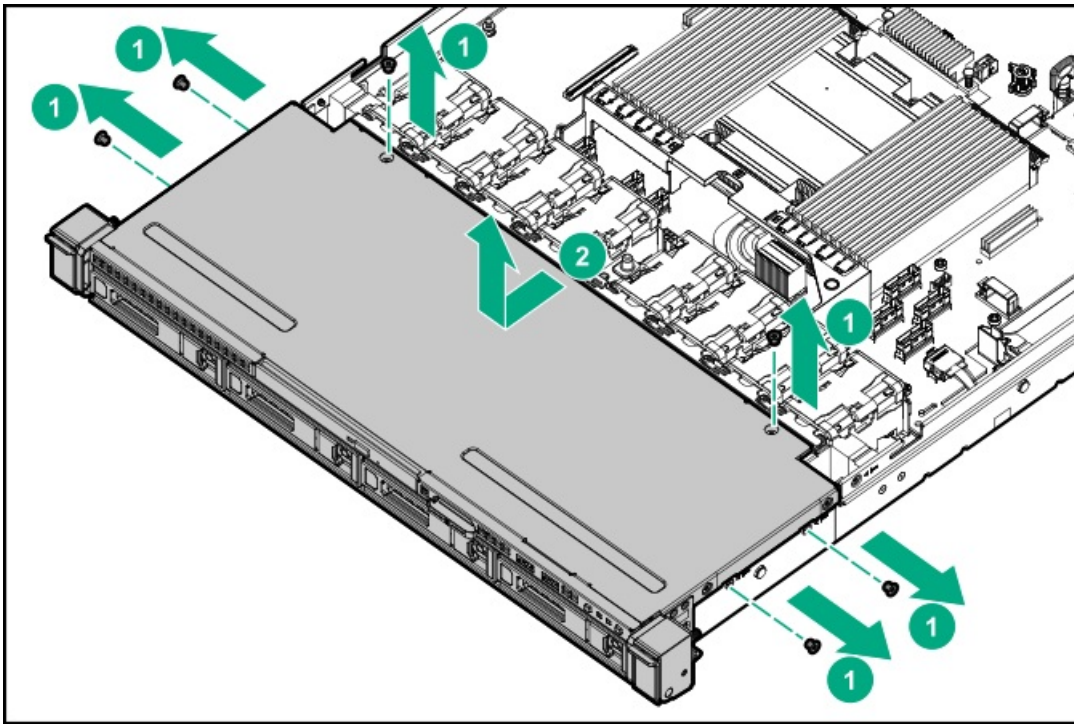


12. Release the disconnected cables from the foams on both sides of the fan wall.

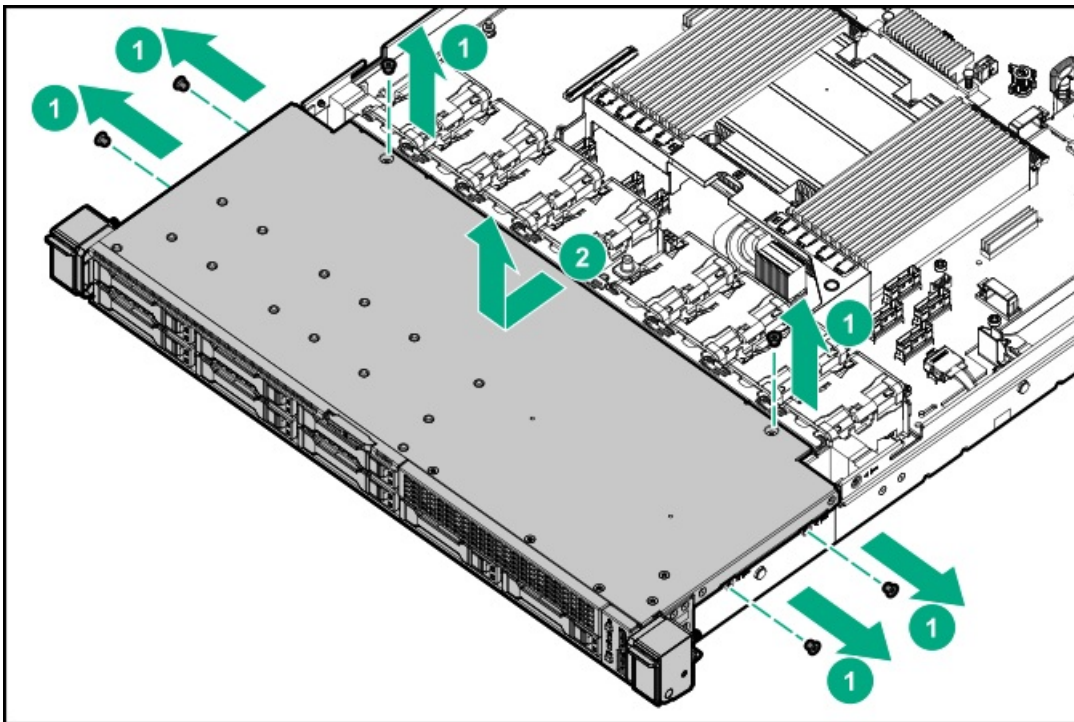
13. Remove the front drive cage:

- a. Remove the drive cage screws (callout 1).
  - b. Slide the drive cage forward, and then lift it from the base pan of the chassis (callout 2).
- LFF drive cage





- SFF drive cage

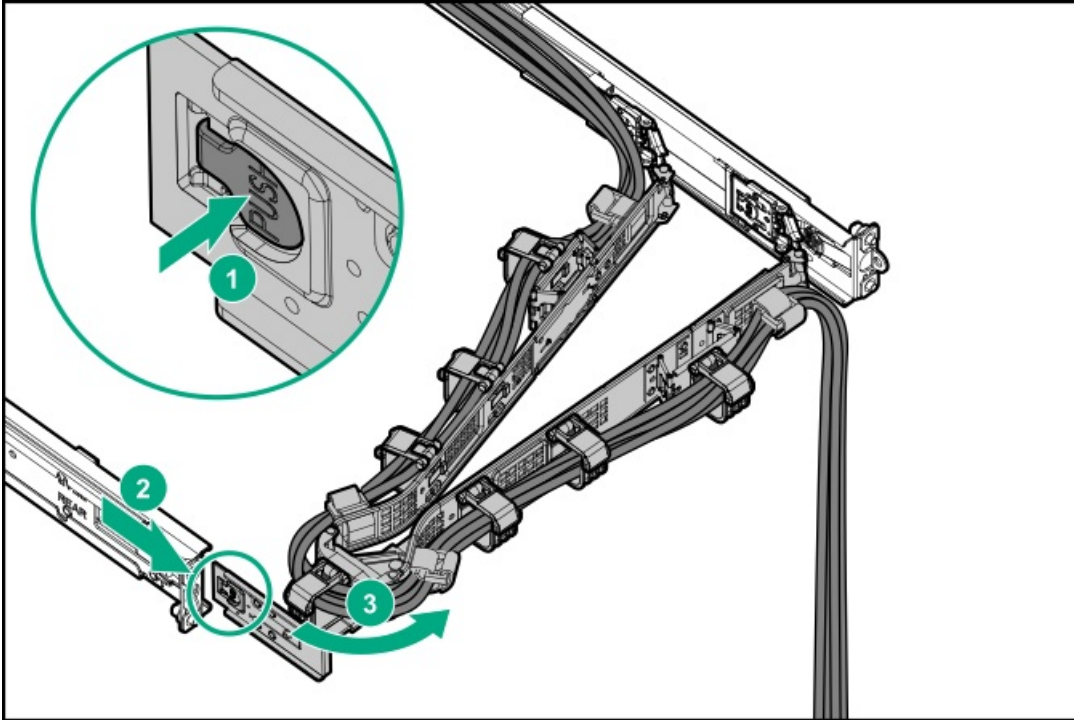


## Remove the air baffle

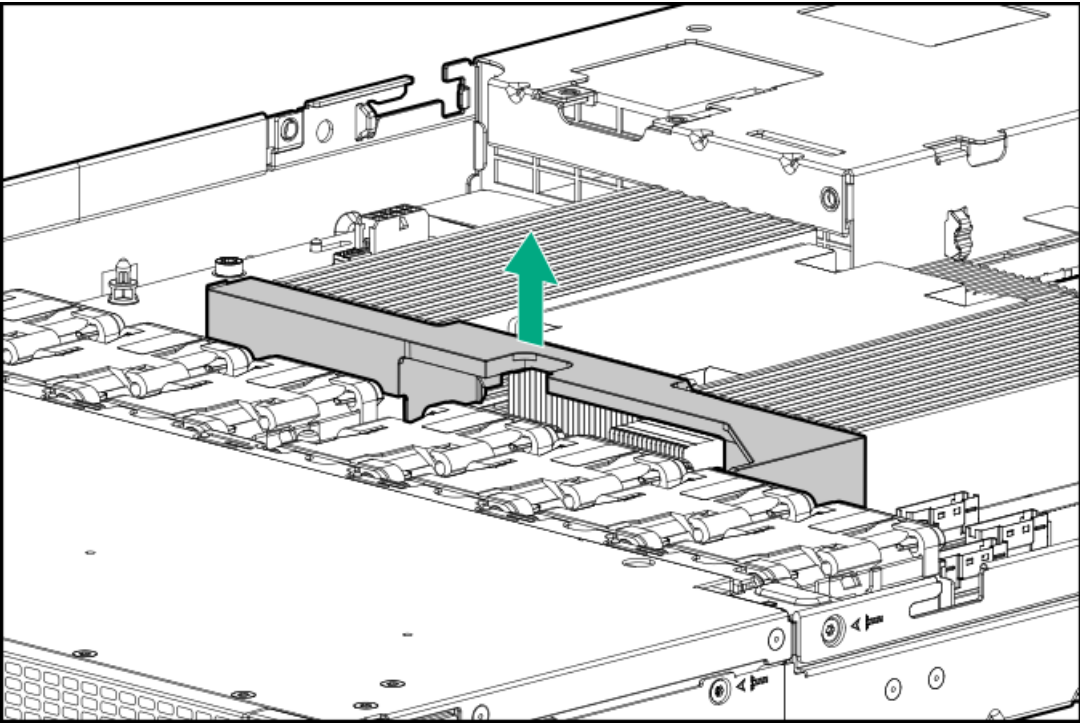
**CAUTION:** For proper cooling, do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed. If the server supports hot-plug components, minimize the amount of time the access panel is open.

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the air baffle.

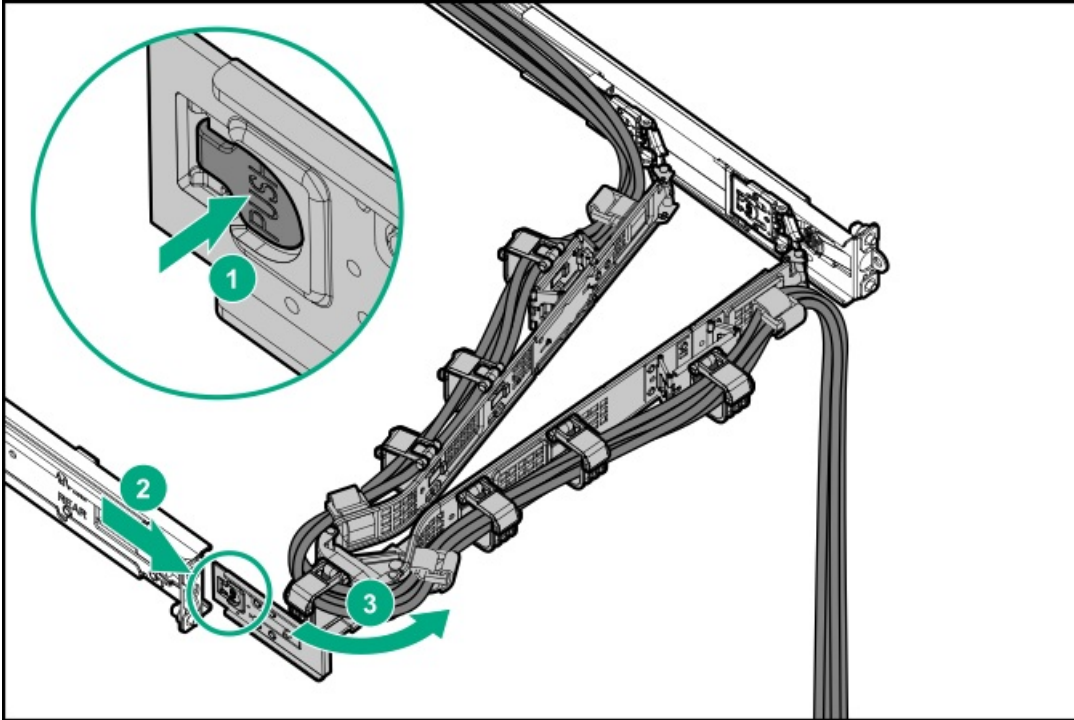


## Remove the riser cage

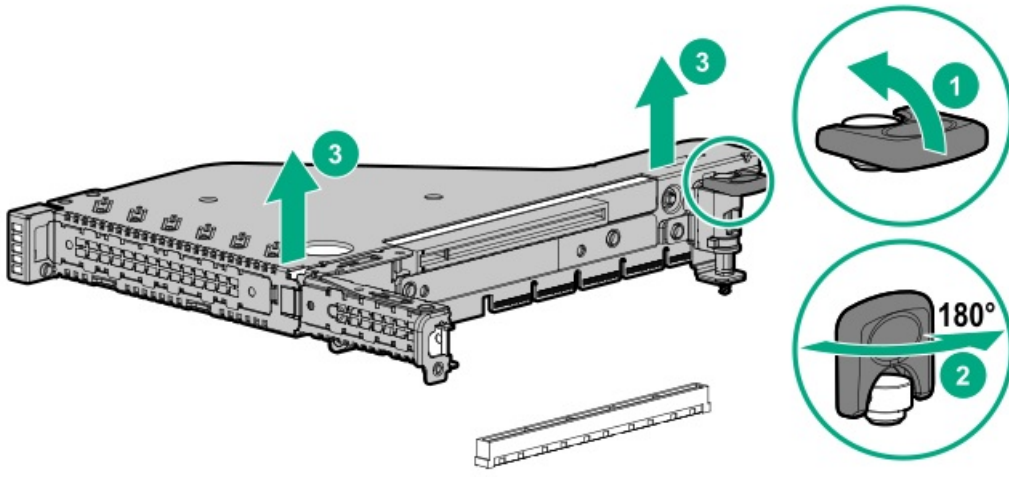
**⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

### Procedure

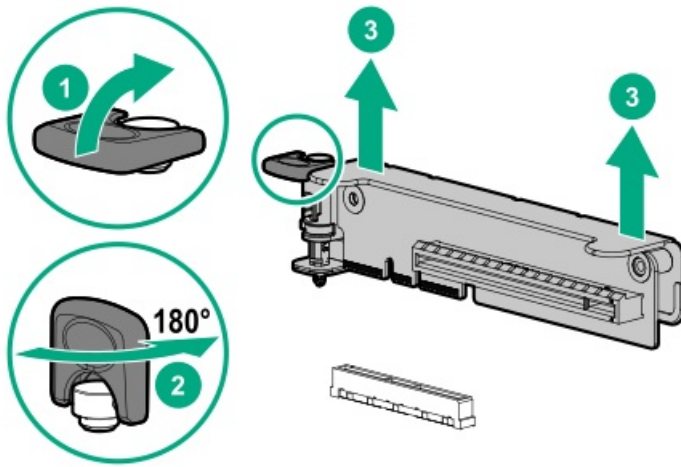
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.
10. Release the half-turn spring latch (callouts 1 and 2), and then lift the riser cage off the system board (callout 3).
  - Primary riser cage



- Secondary riser cage



## Remove a riser slot blank

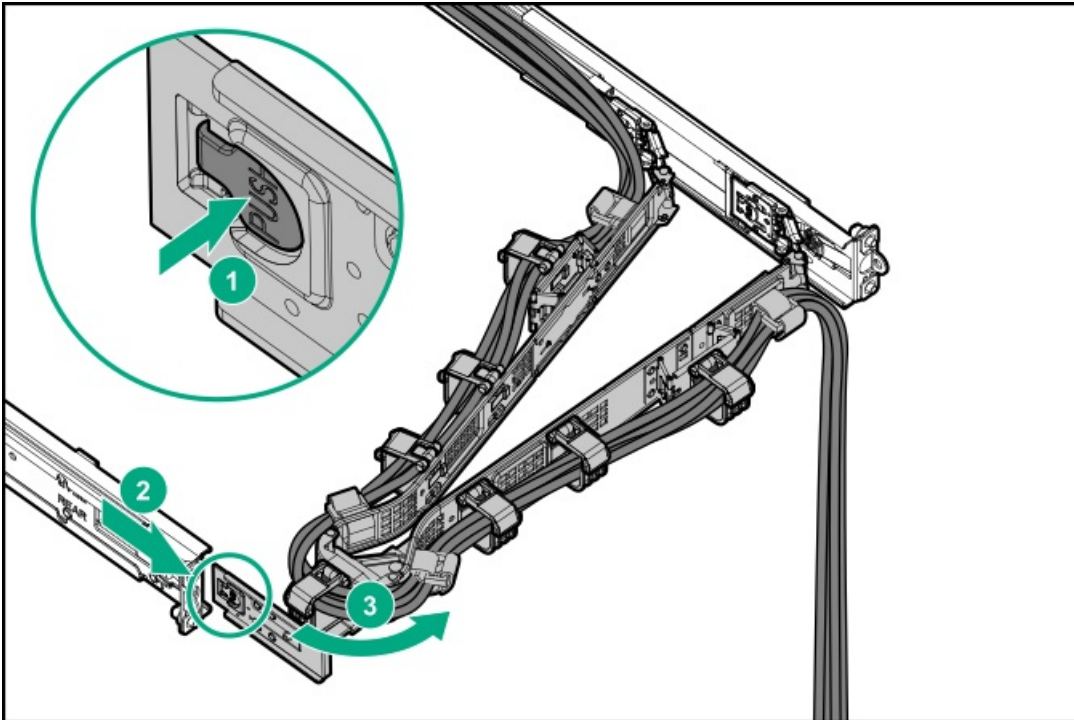
**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

### Prerequisites

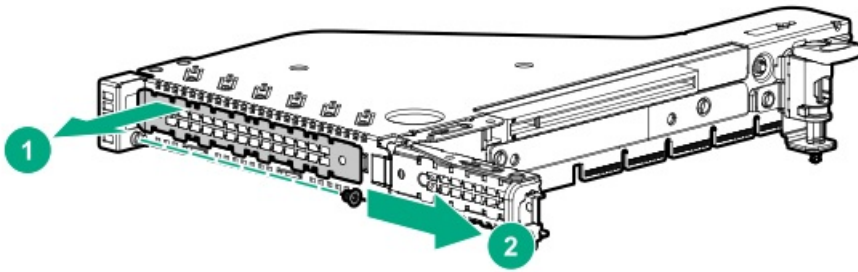
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

### Procedure

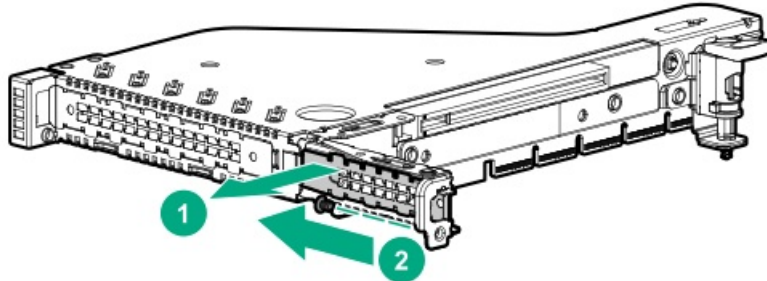
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. To remove a riser slot blank from primary riser, do the following:
  - a. Remove the primary riser cage.
  - b. Pull out the riser slot blank.  
Retain the blank for future use.
    - Primary riser slot 1



- Primary riser slot 2



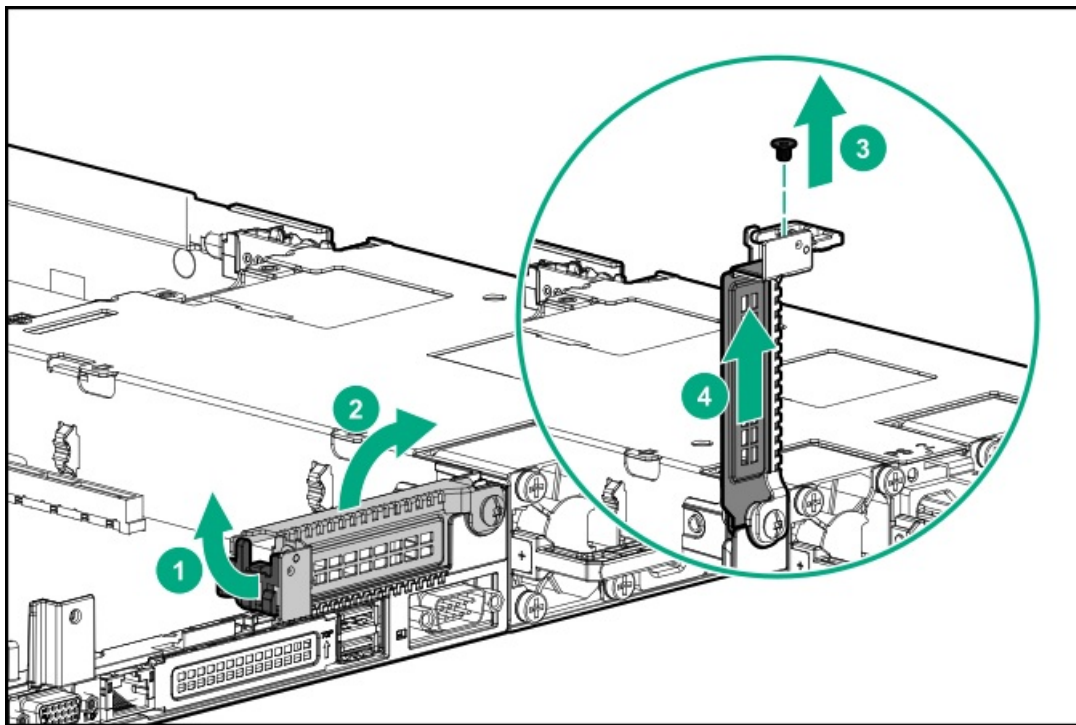
- Remove the screw.

Use this screw to secure the new expansion card installation.

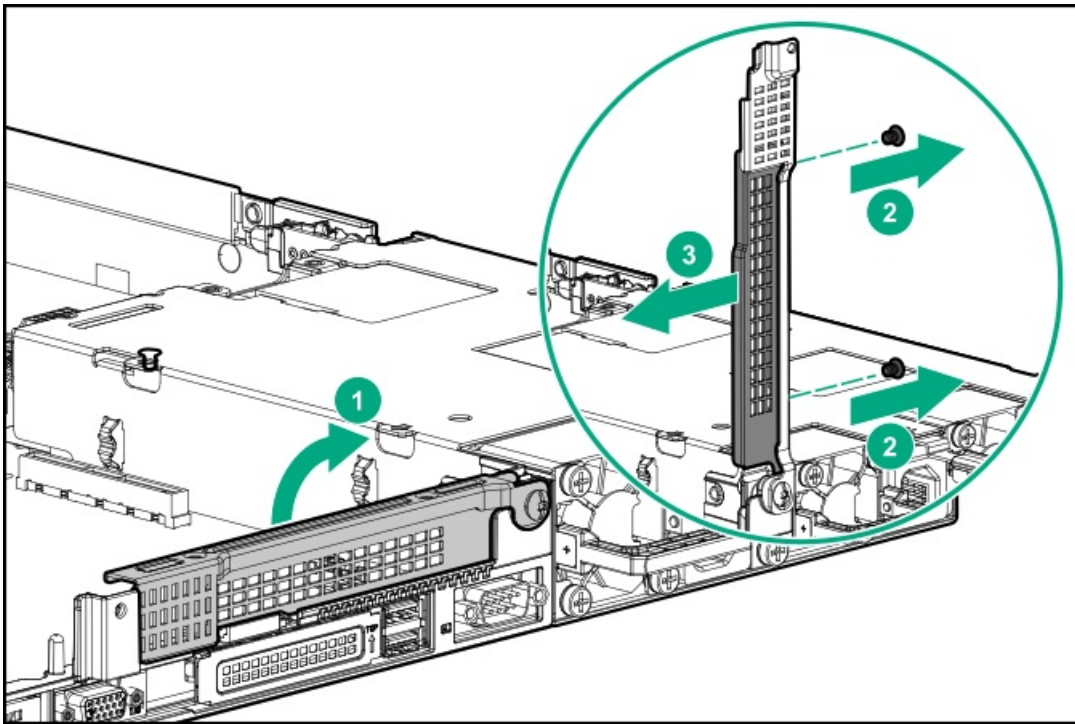
10. To remove a riser slot blank from secondary riser, do the following:

- Open the retainer bracket.
- Remove the screw.
- Pull out the riser slot blank.

- Slot 3 low-profile retainer bracket



- Slot 3 full-height card retainer bracket

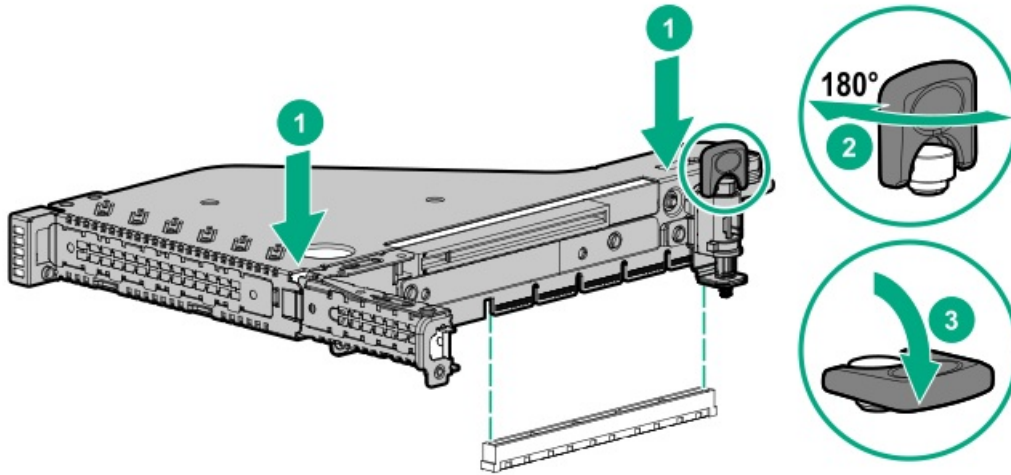




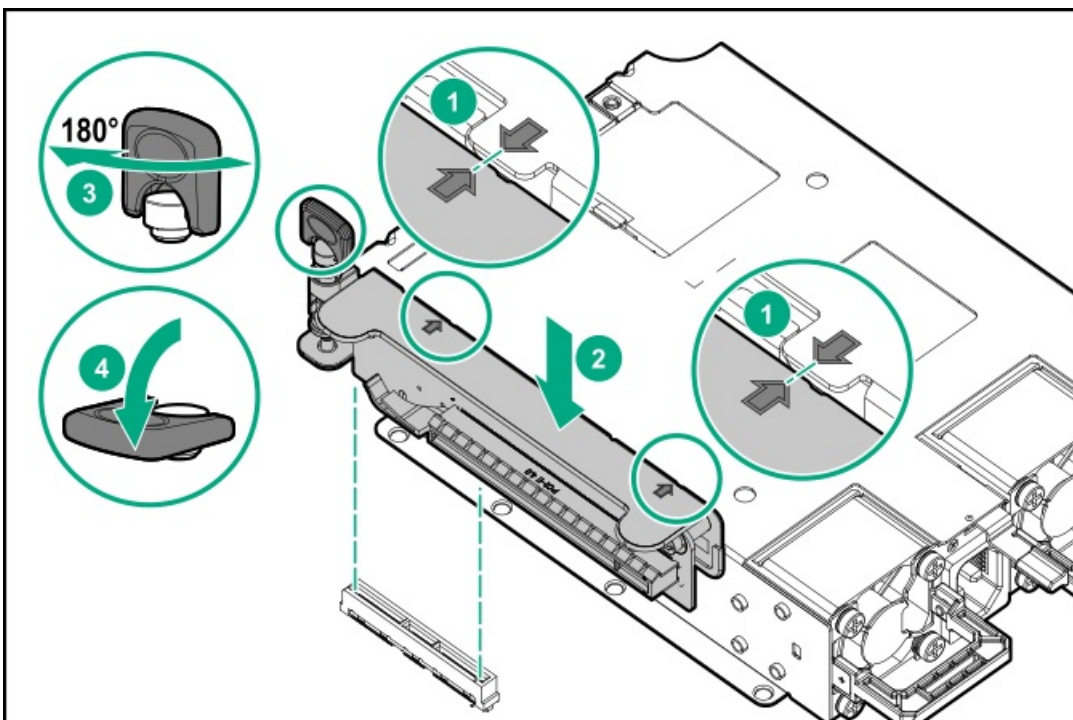
## Install the riser cage

### Procedure

1. If an expansion card or its internal cabling was removed, reinstall these components.
2. Install the primary riser cage:
  - a. Carefully press the riser down on its system board connector (callout 1).  
Make sure that the riser board is firmly seated.
  - b. Simultaneously push and rotate the half-turn spring latch to 180° (callout 2).
  - c. Close the spring latch (callout 3).



3. Install the secondary riser cage:
  - a. Align the arrows on the riser cage with the arrows on the power supply cage (callout 1).
  - b. Carefully press the riser down on its system board connector (callout 2).  
Make sure that the riser board is firmly seated.
  - c. Simultaneously push and rotate the half-turn spring latch to 180° (callout 3).
  - d. Close the spring latch (callout 4).

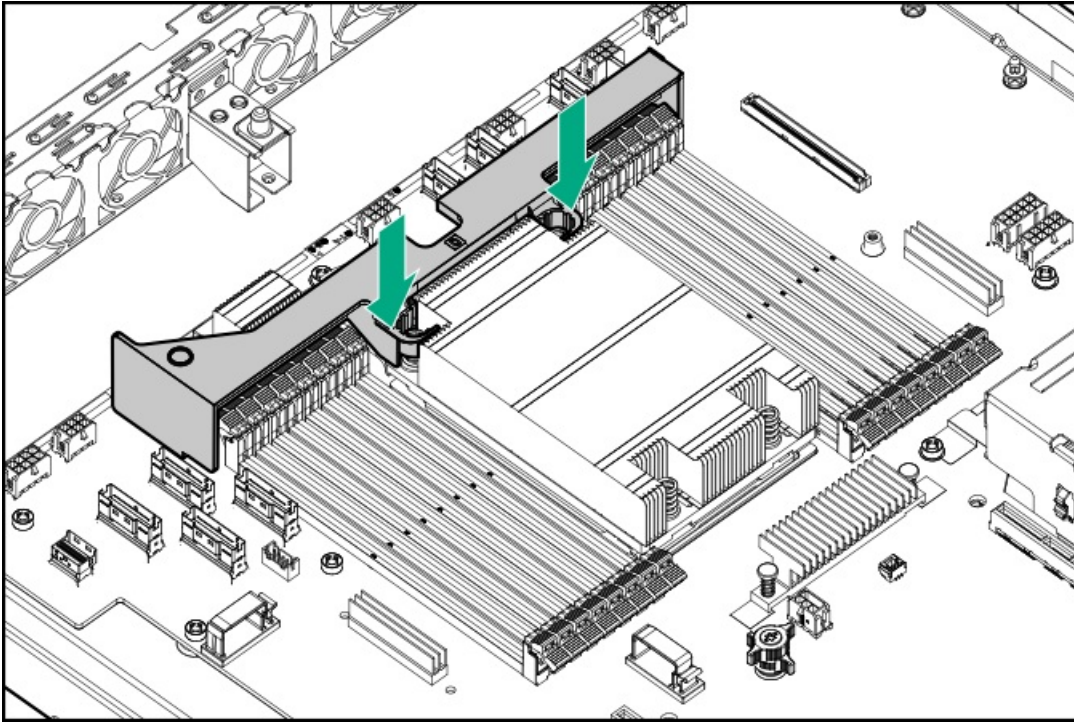




## Install the air baffle

### Procedure

Secure the air baffle hooks to the heatsink screws.



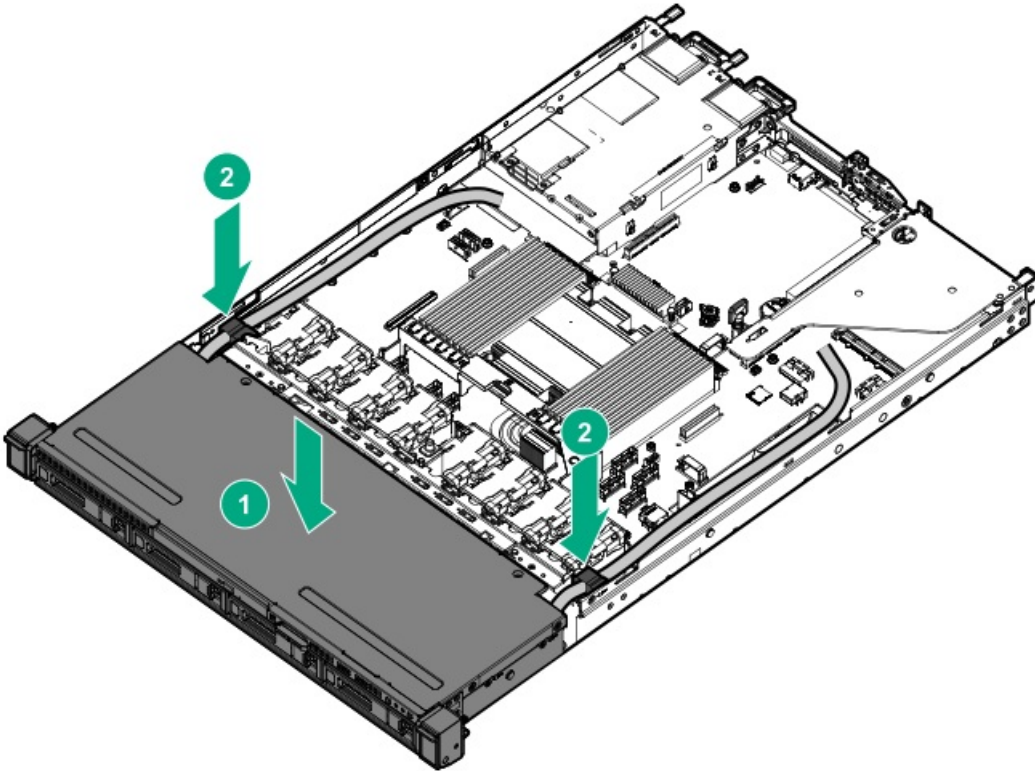
# Install the front drive cage

## Prerequisites

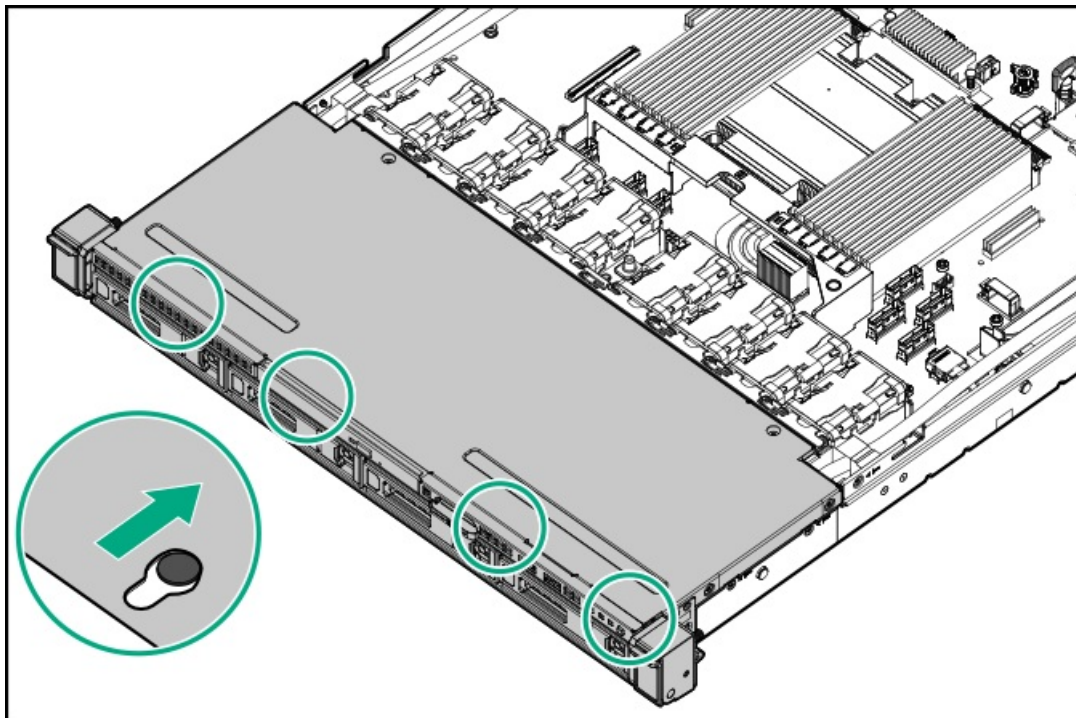
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

## Procedure

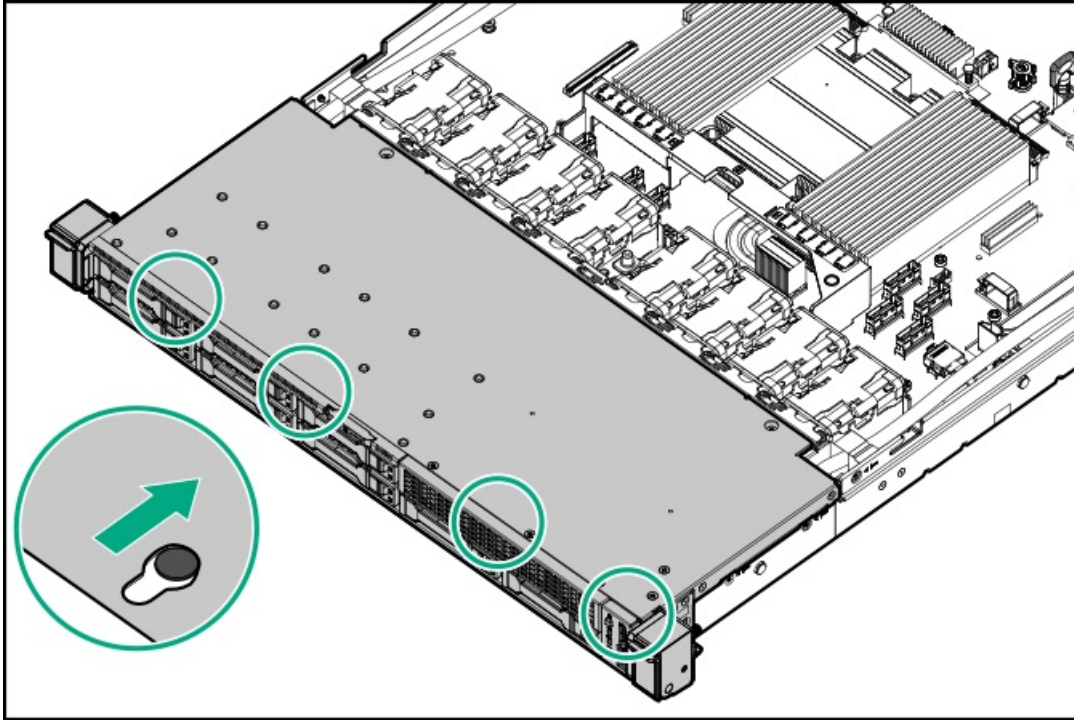
1. If the following cables were disconnected, connect them to the drive backplane:
  - Drive power cable
  - Storage controller cable
2. Position the drive cage (callout 1) and route the cables through the foams on both sides of the fan wall (callout 2).



3. Slide the drive cage to engage with the spools on the base pan of the chassis.
  - LFF drive cage

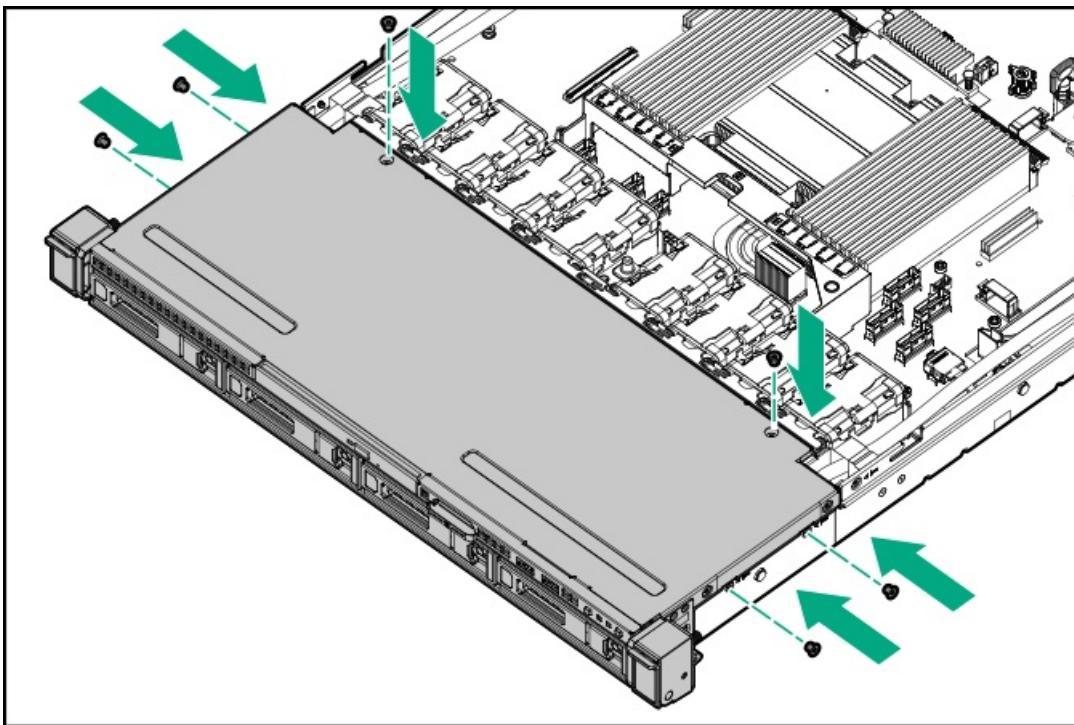


- SFF drive cage



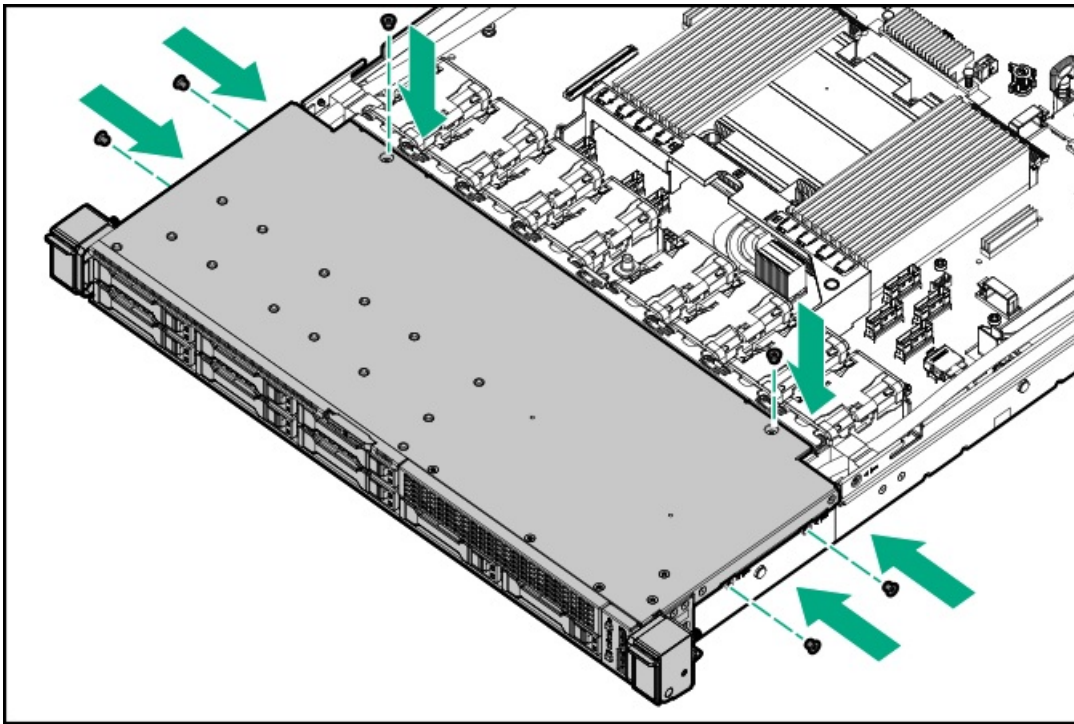
4. Install the drive cage screws.

- LFF drive cage



- SFF drive cage





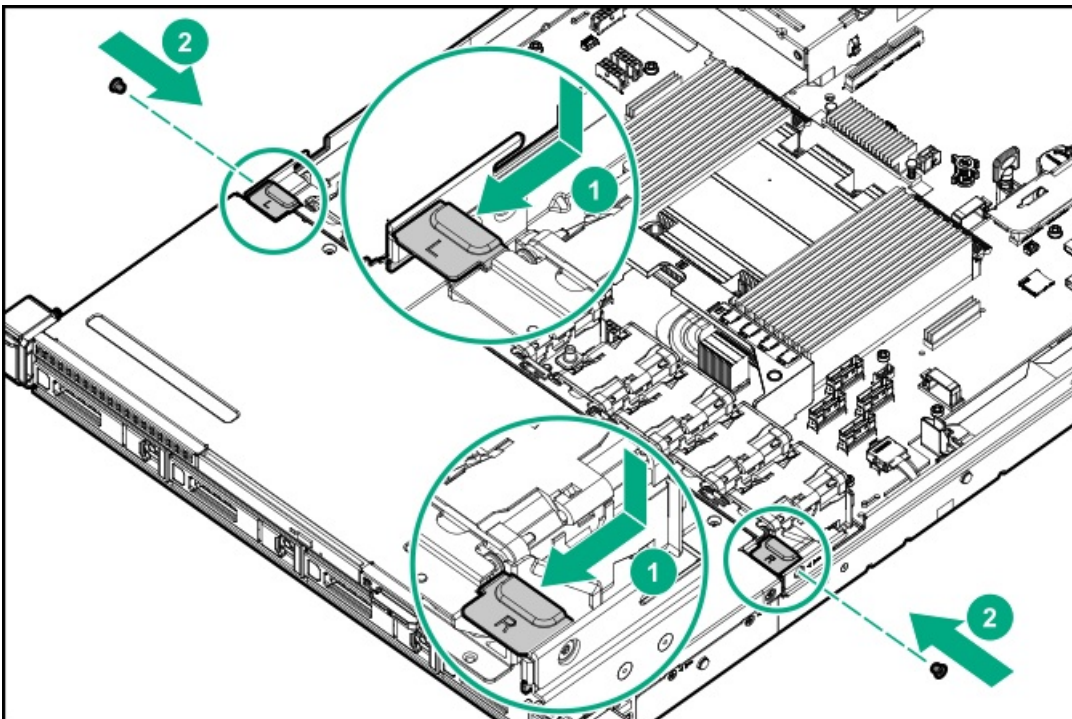
5. Connect following cables:

- Drive power cable
- Storage controller cable

Make sure that the controller cables are secured by the cable tie/clip highlighted in the cabling images.

- Front I/O cable

6. Install the fan wall brackets.



7. Install the access panel.

8. Install the rack sliding rails.



## Install the access panel

### Prerequisites

Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

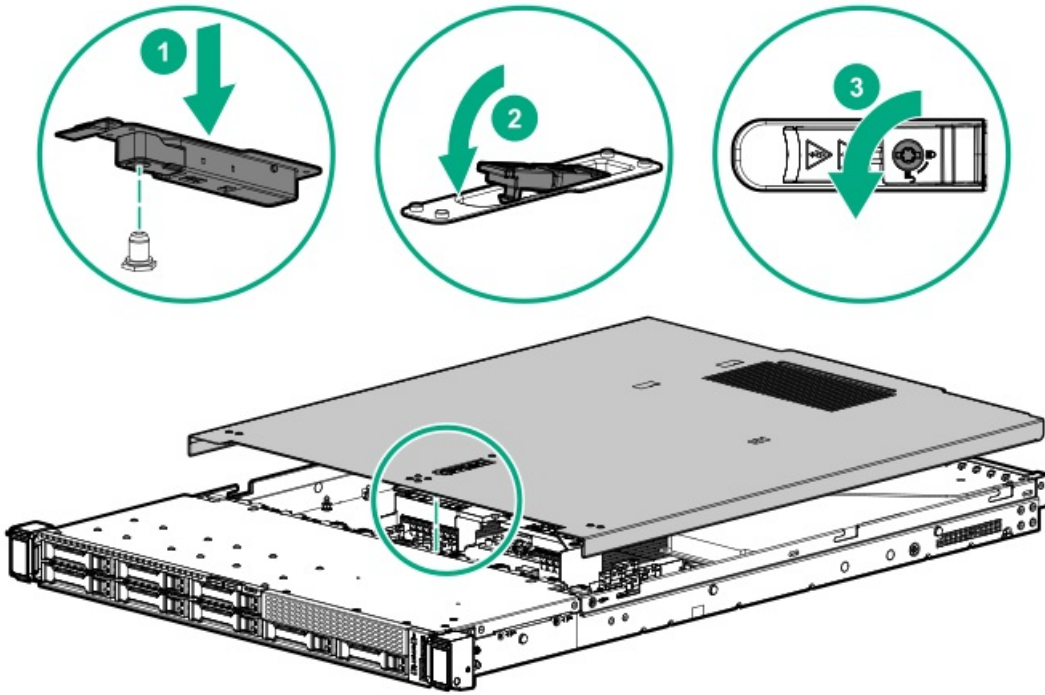
### Procedure

1. With the access panel latch open, insert the guide pin on the chassis through the hole on the bottom side of the latch.

2. Close the access panel latch.

The access panel slides to the closed position.

3. Lock the access panel latch.

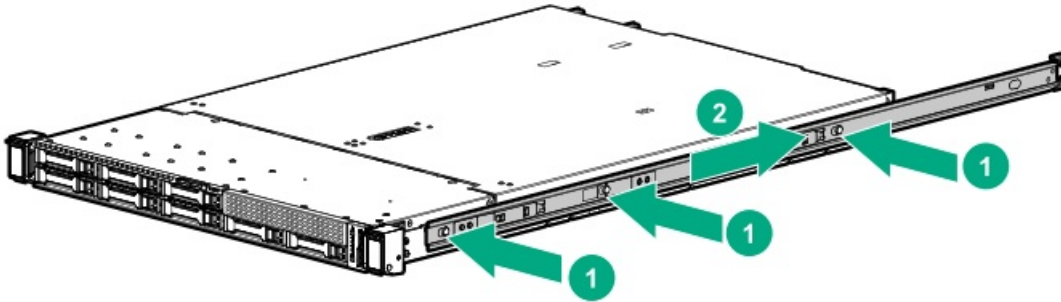


4. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the access panel.

## Install the rack sliding rails

### Procedure

1. Align the notches on the rail with the spools on the side of the server.
2. Slide the rail towards the rear panel to lock it into place.



3. Repeat steps 1 and 2 to install the other rail.



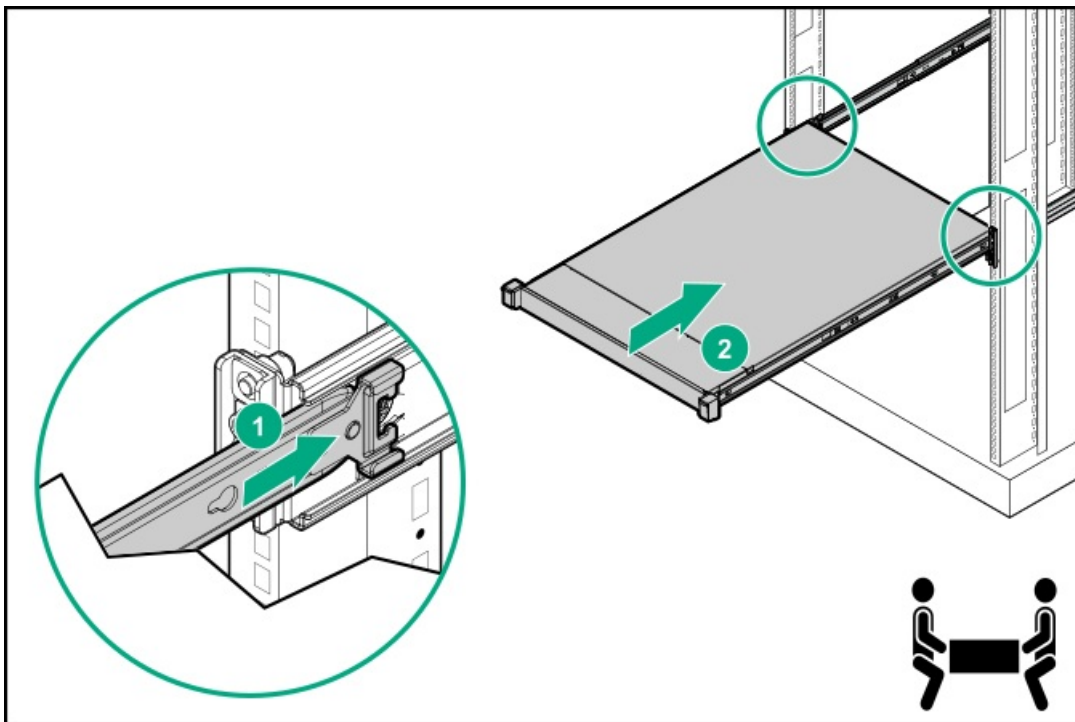
# Install the server into the rack

## Prerequisites

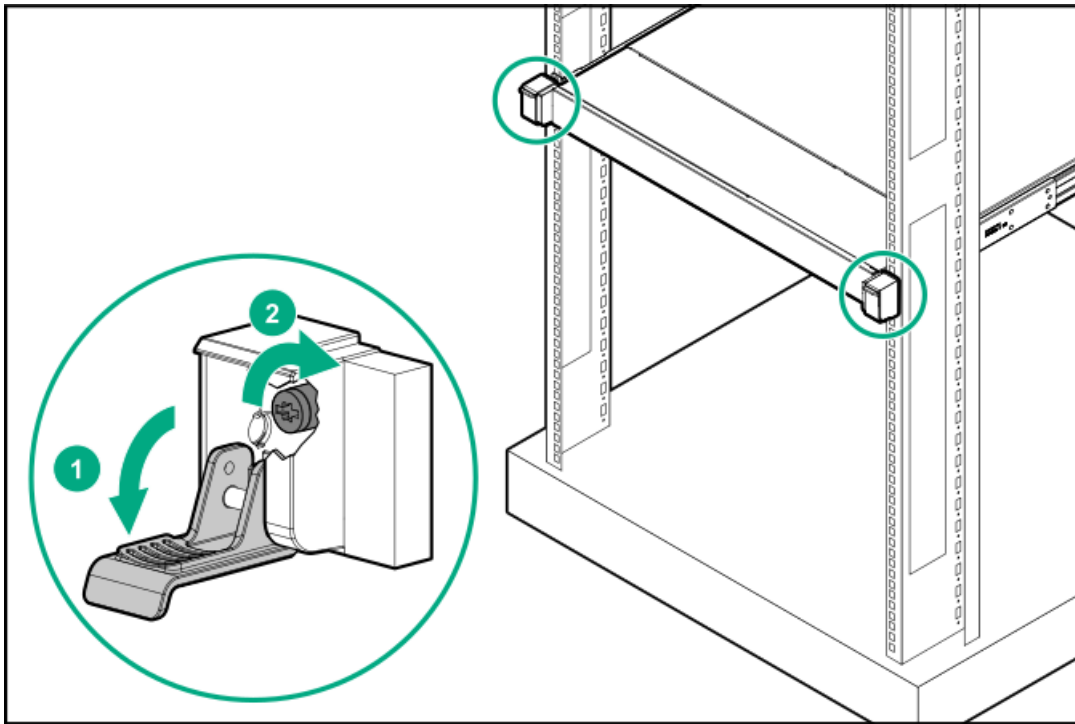
- Before you perform this procedure, review the:
  - [Rack warnings and cautions](#)
  - [Server warnings and cautions](#)
- Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

## Procedure

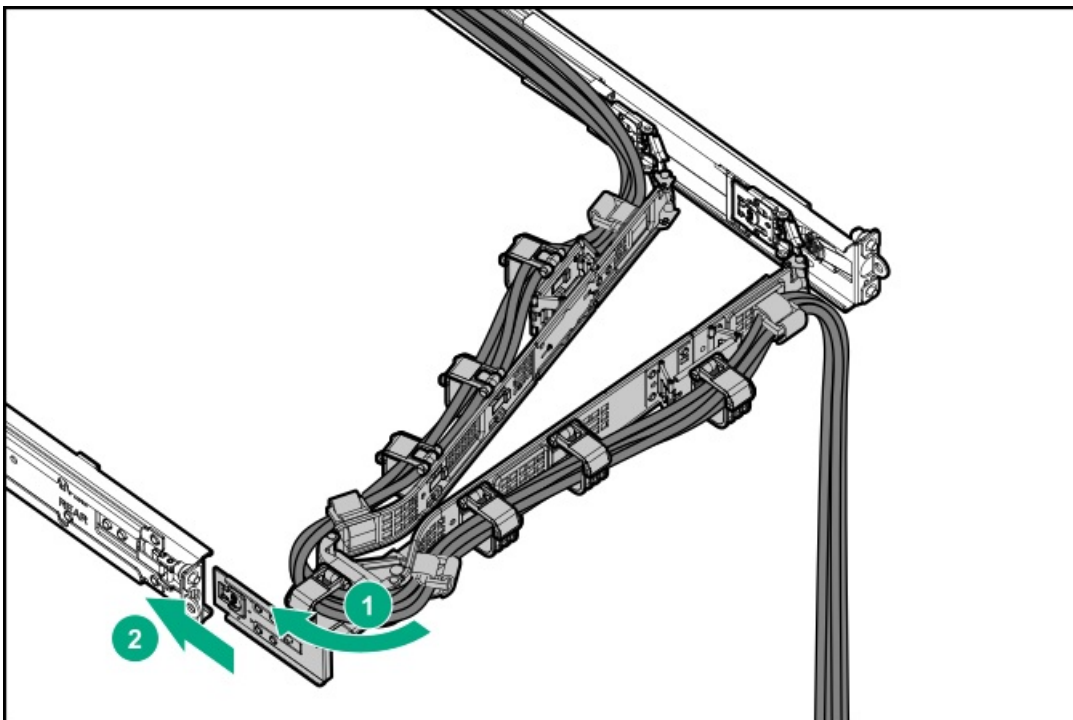
1. Install the server into the rack:
  - a. Insert the sliding rails into the mounting rails (callout 1).
  - b. Slide the server until the chassis ears are flushed against the columns (callout 2).



- c. Open the chassis ears (callout 1), and then tighten the shipping screws (callout 2).



2. Connect all peripheral cables to the server.
3. Connect each power cord to the server.
4. Connect each power cord to the power source.
5. If installed, close the cable management arm.



# Setup

This chapter describes the initial setup procedure for the server. As well as general operational requirements and safety reminders.



## Initial system installation

Depending on your technical expertise and the complexity of the product, for the initial system installation, select one of the following options:

- [Ordering the HPE Installation Service](#)
- [Setting up the server](#)

## HPE Installation Service

HPE Installation Service provides basic installation of Hewlett Packard Enterprise branded equipment, software products, as well as HPE-supported products from other vendors that are sold by HPE or by HPE authorized resellers. The Installation Service is part of a suite of HPE deployment services that are designed to give users the peace of mind that comes from knowing that their HPE and HPE-supported products have been installed by an HPE specialist.

The HPE Installation Service provides the following benefits:

- Installation by an HPE authorized technical specialist.
- Verification prior to installation that all service prerequisites are met.
- Delivery of the service at a mutually scheduled time convenient to your organization.
- Allows your IT resources to stay focused on their core tasks and priorities.
- Full coverage during the warranty period for products that require installation by an HPE authorized technical specialist.

For more information on the features, limitations, provisions, and ordering information of the HPE Installation Service, see this Hewlett Packard Enterprise website:

<https://www.hpe.com/support/installation-service>



# Setting up the server

## Prerequisites

Before setting up the server:

- Download the latest SPP:  
<https://www.hpe.com/servers/spp>  
HPE might prompt you for your HPE Passport credentials.
- Verify that your OS or virtualization software is supported:  
<https://www.hpe.com/support/Servers-Certification-Matrices>
- Review the UEFI Deployment Guide for HPE ProLiant Gen10 Servers and HPE Synergy:  
<https://www.hpe.com/support/UEFIGen10-DG-en>

If the UEFI requirements are not met, you might experience boot failures or other errors when installing the operating system.

- If needed, do one of the following to download the storage driver:
  - Download it from the Hewlett Packard Enterprise Support Center website:  
<https://www.hpe.com/support/hpesc>
  - Extract it from the SPP.
- Read the [operational requirements](#) for the server.
- Read the safety and compliance information:  
<https://www.hpe.com/support/safety-compliance-enterpriseproducts>

## Procedure

1. Unbox the server and verify the contents:

- Server
- Power cord
- Rack-mounting hardware (optional)
- Documentation

The server does not ship with OS media. All system software and firmware is preloaded on the server.

2. (Optional) [Install the hardware options](#).

3. [Install the server into the rack](#).

4. Decide how to manage the server:

- Locally: Use a KVM switch or connect a keyboard, monitor, and mouse.
- Remotely: Connect to the iLO web interface and run a remote console:

a. Verify the following:

- iLO is licensed to use the remote console feature.  
If iLO is not licensed, visit the HPE website:

<https://www.hpe.com/info/ilo>

- The iLO management port is connected to a secure network.

b. Using a browser, navigate to the iLO web interface, and then log in at

```
https://<iLO hostname or IP address>
```

Note the following:

- The iLO hostname is on the serial number/ iLO information pull tab.
- If a DHCP server assigns the IP address, the IP address appears on the boot screen.
- If a static IP address is assigned, use that IP address.

- o The default login credentials are on the serial number/ iLO information pull tab.
  - c. Enter the iLO login name and password, and then click Log In.
  - d. In the navigation tree, click the Remote Console & Media link, and then launch a remote console.
5. Configure the initial server setup.
  6. Set up the storage.
  7. Deploy an OS or virtualization software.
  8. After the OS is installed, update the drivers.
  9. To experience quicker service and more efficient support, register the server at the HPE website:  
<https://myenterpriselicense.hpe.com>



## Operational requirements

When preparing the site and planning the installation for the HPE ProLiant DL325 Gen10 Plus v2 Server , be sure to observe the following general operational requirements:

- [Space and airflow requirements](#)
- [Temperature requirements](#)
- [Power requirements](#)
- [Electrical grounding requirements](#)

For server-specific environmental requirements, see [Environmental specifications](#).



## Space and airflow requirements

To allow for servicing and adequate airflow, observe the following space and airflow requirements when deciding where to install a rack:

- Leave a minimum clearance of 63.5 cm (25 in) in front of the rack.
- Leave a minimum clearance of 76.2 cm (30 in) behind the rack.
- Leave a minimum clearance of 121.9 cm (48 in) from the back of the rack to the back of another rack or row of racks.

Hewlett Packard Enterprise servers draw in cool air through the front door and expel warm air through the rear door. Therefore, the front and rear rack doors must be adequately ventilated to allow ambient room air to enter the cabinet, and the rear door must be adequately ventilated to allow the warm air to escape from the cabinet.

---

**△ CAUTION:** To prevent improper cooling and damage to the equipment, do not block the ventilation openings.

---

When vertical space in the rack is not filled by a server or rack component, the gaps between the components cause changes in airflow through the rack and across the servers. Cover all gaps with blanking panels to maintain proper airflow.

---

**△ CAUTION:** Always use blanking panels to fill empty vertical spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

---

The 9000 and 10000 Series Racks provide proper server cooling from flow-through perforations in the front and rear doors that provide 64 percent open area for ventilation.

---

**△ CAUTION:**

If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment:

- Front and rear doors—If the 42U rack includes closing front and rear doors, you must allow 5,350 sq cm (830 sq in) of holes evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation).
  - Side—The clearance between the installed rack component and the side panels of the rack must be a minimum of 7 cm (2.75 in).
-

## Temperature requirements

To ensure continued safe and reliable equipment operation, install or position the system in a well-ventilated, climate-controlled environment.

The maximum recommended ambient operating temperature (TMRA) for most server products is 35°C (95°F). The temperature in the room where the rack is located must not exceed 35°C (95°F).

---

**△ CAUTION:** To reduce the risk of damage to the equipment when installing third-party options:

- Do not permit optional equipment to impede airflow around the server or to increase the internal rack temperature beyond the maximum allowable limits.
  - Do not exceed the manufacturer's TMRA.
-

## Power requirements

Installation of this equipment must comply with local and regional electrical regulations governing the installation of information technology equipment by licensed electricians. This equipment is designed to operate in installations covered by NFPA 70, 1999 Edition (National Electric Code) and NFPA-75, 1992 (code for Protection of Electronic Computer/Data Processing Equipment). For electrical power ratings on options, refer to the product rating label or the user documentation supplied with that option.

---

**⚠ WARNING:** To reduce the risk of personal injury, fire, or damage to the equipment, do not overload the AC supply branch circuit that provides power to the rack. Consult the electrical authority having jurisdiction over wiring and installation requirements of your facility.

---

**⚠ CAUTION:** Protect the server from power fluctuations and temporary interruptions with a regulating uninterruptible power supply. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the system in operation during a power failure.

---

## Electrical grounding requirements

The server must be grounded properly for proper operation and safety. In the United States, you must install the equipment in accordance with NFPA 70, National Electric Code Article 250, as well as any local and regional building codes. In Canada, you must install the equipment in accordance with Canadian Standards Association, CSA C22.1, Canadian Electrical Code. In all other countries, you must install the equipment in accordance with any regional or national electrical wiring codes, such as the International Electrotechnical Commission (IEC) Code 364, parts 1 through 7. Furthermore, you must be sure that all power distribution devices used in the installation, such as branch wiring and receptacles, are listed or certified grounding-type devices.

Because of the high ground-leakage currents associated with multiple servers connected to the same power source, Hewlett Packard Enterprise recommends the use of a PDU that is either permanently wired to the building's branch circuit or includes a nondetachable cord that is wired to an industrial-style plug. NEMA locking-style plugs or those complying with IEC 60309 are considered suitable for this purpose. Using common power outlet strips for the server is not recommended.

## Rack warnings and cautions

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### **WARNING:**

When all components are removed, the server weighs 12 kg (26.46 lb). When all components are installed, the server can weigh up to 18 kg (39.68 lb).

Before configuring your rack solution, be sure to check the rack manufacturer weight limits and specifications. Failure to do so can result in physical injury or damage to the equipment and the facility.

---

### **WARNING:**

The server is heavy. To reduce the risk of personal injury or damage to the equipment, do the following:

- Observe local occupational health and safety requirements and guidelines for manual material handling.
  - Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. The server weighs more than 12 kg (26.46 lb), so at least two people must lift the server into the rack together. An additional person may be required to help align the server if the server is installed higher than chest level.
  - Use caution when installing the server in or removing the server from the rack.
  - Adequately stabilize the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended.
  - Do not stack anything on top of rail-mounted component or use it as a work surface when extended from the rack.
- 

### **WARNING:**

To reduce the risk of personal injury or damage to the equipment, be sure that:

- The rack has anti-tip measures in place. Such measures include floor-bolting, anti-tip feet, ballast, or a combination as specified by the rack manufacturer and applicable codes.
  - The leveling jacks (feet) are extended to the floor.
  - The full weight of the rack rests on the leveling jacks (feet).
  - The stabilizing feet are attached to the rack if it is a single-rack installation.
  - The racks are coupled together in multiple rack installations.
- 

### **WARNING:**

To reduce the risk of personal injury or equipment damage when unloading a rack:

- At least two people are needed to safely unload the rack from the pallet. An empty 42U rack can weigh as much as 115 kg (253 lb), can stand more than 2.1 m (7 ft) tall, and might become unstable when being moved on its casters.
  - Never stand in front of the rack when it is rolling down the ramp from the pallet. Always handle the rack from both sides.
- 

### **CAUTION:**

Always plan the rack installation so that the heaviest item is on the bottom of the rack. Install the heaviest item first, and continue to populate the rack from the bottom to the top.

---

### **CAUTION:**

Before installing the server in a rack, be sure to properly scope the limitations of the rack. Before proceeding with the installation, consider the following:

- You must fully understand the static and dynamic load carrying capacity of the rack and be sure that it can accommodate the weight of the server.

- Be sure sufficient clearance exists for cabling, installation and removal of the server, and movement of the rack doors.
-

## Server warnings and cautions

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### **WARNING:**

To reduce the risk of personal injury, electric shock, or damage to the equipment, disconnect the power cord to remove power from the server. Pressing the Power On/Standby button does not shut off system power completely. Portions of the power supply and some internal circuitry remain active until AC power is removed.

---

 **WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

---

### **WARNING:**

To reduce the risk of fire or burns after removing the energy pack:

- Do not disassemble, crush, or puncture the energy pack.
- Do not short external contacts.
- Do not dispose of the energy pack in fire or water.
- Do not expose the energy pack to low air pressure as it might lead to explosion or leakage of flammable liquid or gas.
- Do not expose the energy pack to temperatures higher than 60°C (140°F).

After power is disconnected, battery voltage might still be present for 1s to 160s.

---

### **CAUTION:**

Protect the server from power fluctuations and temporary interruptions with a regulating UPS. This device protects the hardware from damage caused by power surges and voltage spikes and keeps the server in operation during a power failure.

---

### **CAUTION:**


To prevent damage to electrical components, properly ground the server before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

---

### **CAUTION:**

To avoid data loss, Hewlett Packard Enterprise recommends that you back up all server data before installing or removing a hardware option, or performing a server maintenance or troubleshooting procedure.

---

 **CAUTION:** Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

---

## Electrostatic discharge

Be aware of the precautions you must follow when setting up the system or handling components. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the system or component.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:
  - Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm  $\pm$ 10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
  - Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
  - Use conductive field service tools.
  - Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.





## Hardware options installation

This chapter provides instructions for installing supported hardware options. To ensure proper server deployment and operation, Hewlett Packard Enterprise recommends installing only HPE-validated hardware options. To see the list of validated options for this server, see the product QuickSpecs on the HPE ProLiant DL325 Gen10 Plus v2 Server website:

<https://www.hpe.com/servers/dl325-gen10-plus-v2>

To view the warranty for your server and supported options, see [Warranty information](#).

## Hardware option installation guidelines

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**⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

---

**⚠ CAUTION:** To prevent damage to electrical components, properly ground the server before beginning any installation procedure. Improper grounding can cause [Electrostatic discharge](#).

---

- Install any hardware options before initializing the server.
- If multiple options are being installed, read the installation instructions for all the hardware options to identify similar steps and streamline the installation process.
- If the hardware option installation involves internal cabling, review the [Cabling guidelines](#).

## Rack rail option

The rack rail option can be installed in round-hole, square-hole, or threaded-hole racks. For installation instructions, see the Hewlett Packard Enterprise website:

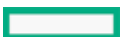
<https://www.hpe.com/support/DL325Gen10Plus-rack>



## Cable management arm option

Install the cable management arm (CMA) option to manage the cables connected to the back of the server. The CMA also allows extending the server from the rack without powering down the server or disconnecting the rear cables. For installation instructions, see the Hewlett Packard Enterprise website:

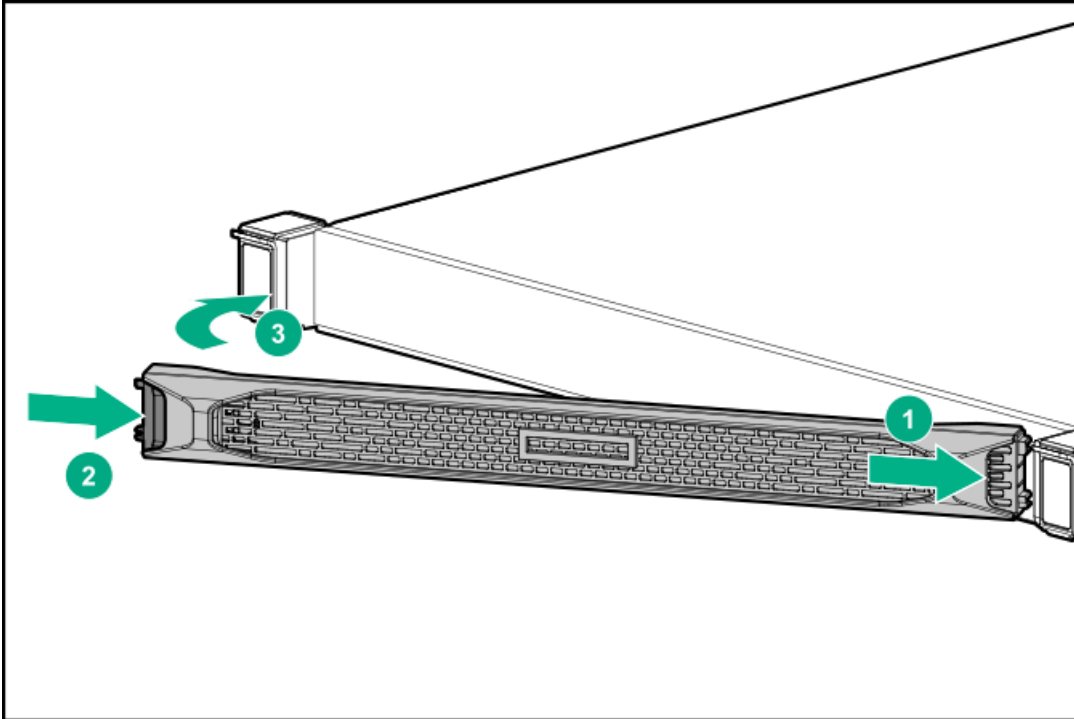
<https://www.hpe.com/support/DL325Gen10Plus-cma>



## Installing the front bezel option

### Procedure

1. Attach the front bezel to the right chassis ear.
2. Press and hold the front bezel release latch.
3. Close the front bezel.



4. Install the Kensington security lock.

For more information, see the lock documentation.

The installation is complete.

## Power supply options

Depending on the installed options and the regional location where the server was purchased, the server can be configured with one of the supported [power supplies](#).

## Hot-plug power supply calculations

For hot-plug power supply specifications and calculators to determine electrical and heat loading for the server, see the Hewlett Packard Enterprise Power Advisor website (<https://www.hpe.com/info/poweradvisor/online>).

## Power supply warnings and cautions

---

### **WARNING:**

To reduce the risk of electric shock or damage to the equipment:

- Do not disable the power cord grounding plug. The grounding plug is an important safety feature.
  - Plug the power cord into a grounded (earthed) electrical outlet that is easily accessible at all times.
  - Unplug the power cord from the power supply to disconnect power to the equipment.
  - Do not route the power cord where it can be walked on or pinched by items placed against it. Pay particular attention to the plug, electrical outlet, and the point where the cord extends from the server.
- 

 **WARNING:** To reduce the risk of injury from electric shock hazards, do not open power supplies. Refer all maintenance, upgrades, and servicing to qualified personnel

---

### **CAUTION:** Mixing different types of power supplies in the same server might:

- Limit or disable some power supply features including support for power redundancy.
- Cause the system to become unstable and might shut down.

To ensure access to all available features, all power supplies in the same server should have the same output and efficiency ratings. Verify that all power supplies have the same part number and label color.

---



## DC power supply warnings and cautions

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**⚠ WARNING:** To reduce the risk of electric shock or energy hazards:

- This equipment must be installed by trained service personnel.
  - Connect the equipment to a reliably grounded secondary circuit source. A secondary circuit has no direct connection to a primary circuit and derives its power from a transformer, converter, or equivalent isolation device.
  - The branch circuit overcurrent protection must be rated 27 A.
- 

**⚠ WARNING:** To reduce the risk of electric shock, be sure that the cable grounding kit is properly installed and connected to a suitable protective earth terminal before connecting the power source to the rack.

---

**⚠ CAUTION:** This equipment is designed to permit the connection of the earthed conductor of the DC supply circuit to the earthing conductor at the equipment. If this connection is made, all the following must be met:

- This equipment must be connected directly to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode conductor is connected.
  - This equipment must be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system must be earthed elsewhere.
  - The DC supply source is to be located within the same premises as the equipment.
  - Switching or disconnecting devices must not be in the earthed circuit conductor between the DC source and the point of connection of the earthing electrode conductor.
-

## Installing an AC power supply

**⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.

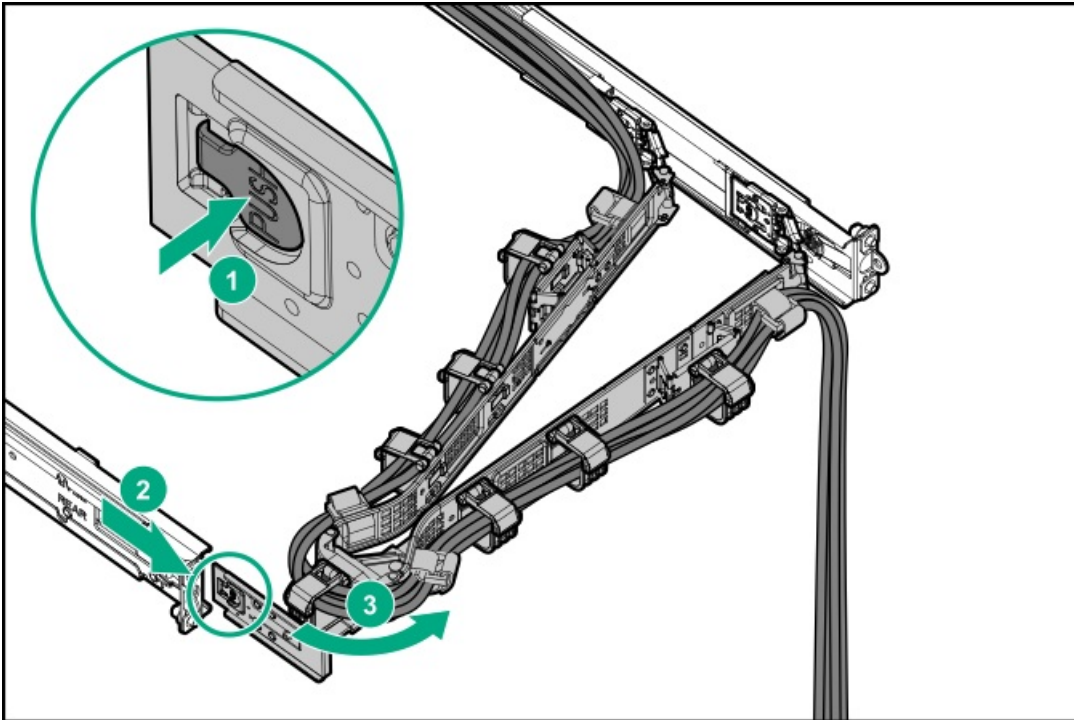
**⚠ CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

### Prerequisites

Before installing a power supply option, review the [Power supply warnings and cautions](#).

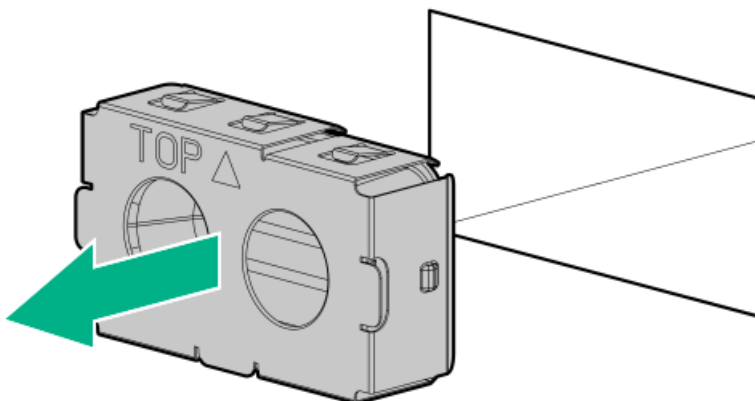
### Procedure

1. If installed, release the cable management arm and then swing the arm away from the rack.

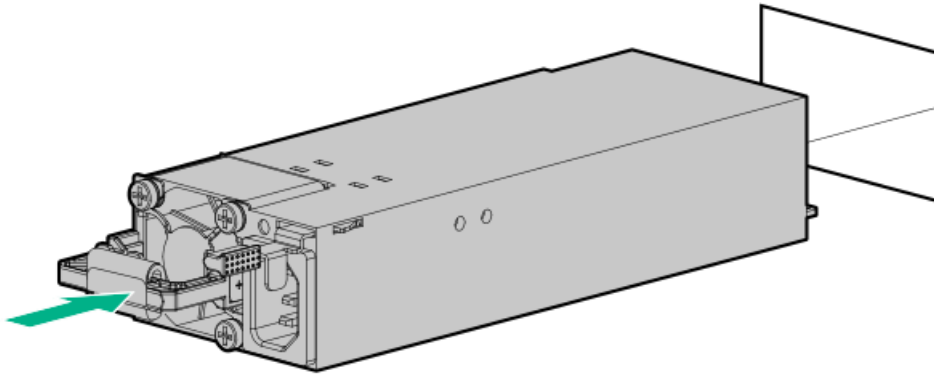


2. If you are installing a power supply in the power supply bay 2, remove the power supply blank.

Retain the blank for future use.



3. Immediately slide the power supply into the bay until it clicks into place.



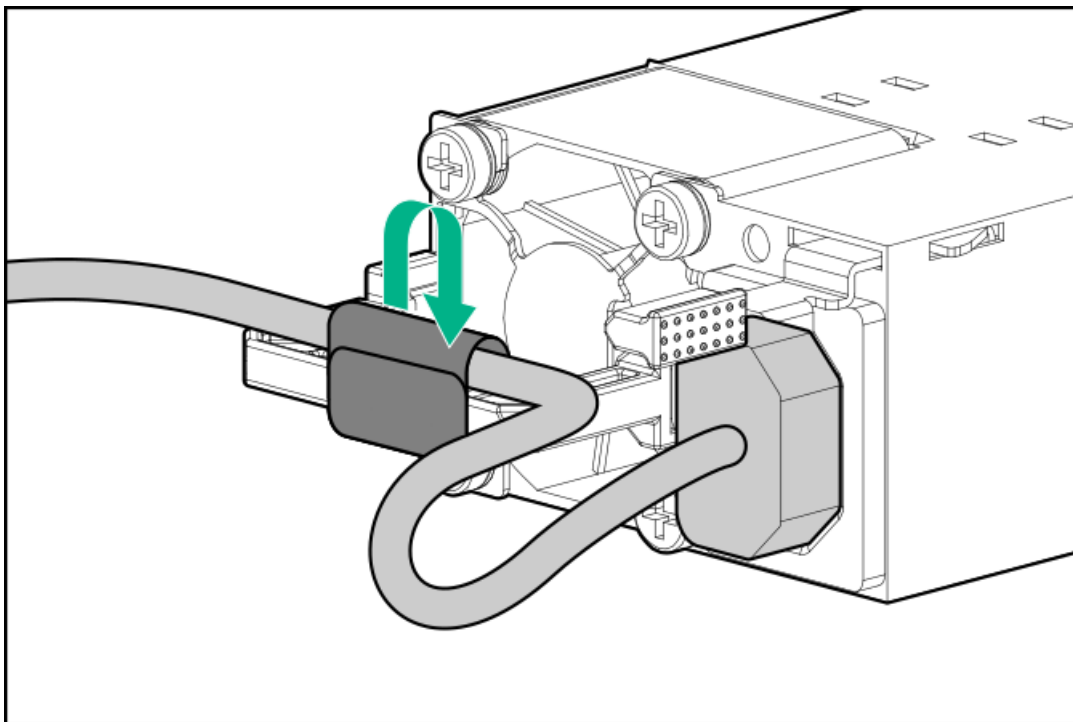
4. Connect the power cord to the power supply.
5. Secure the power cord in the strain relief strap attached to the power supply handle:
  - a. Unwrap the strain relief strap from the power supply handle.

---

**CAUTION:** Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.

---

- b. Secure the power cord with the strain relief strap. Roll the extra length of the strap around the power supply handle.



6. Connect the power cords:
  - a. Connect each power cord to the server.
  - b. Connect each power cord to the power source.
7. Make sure that the power supply LED is green.

The installation is complete.

## Installing a DC power supply

**⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.

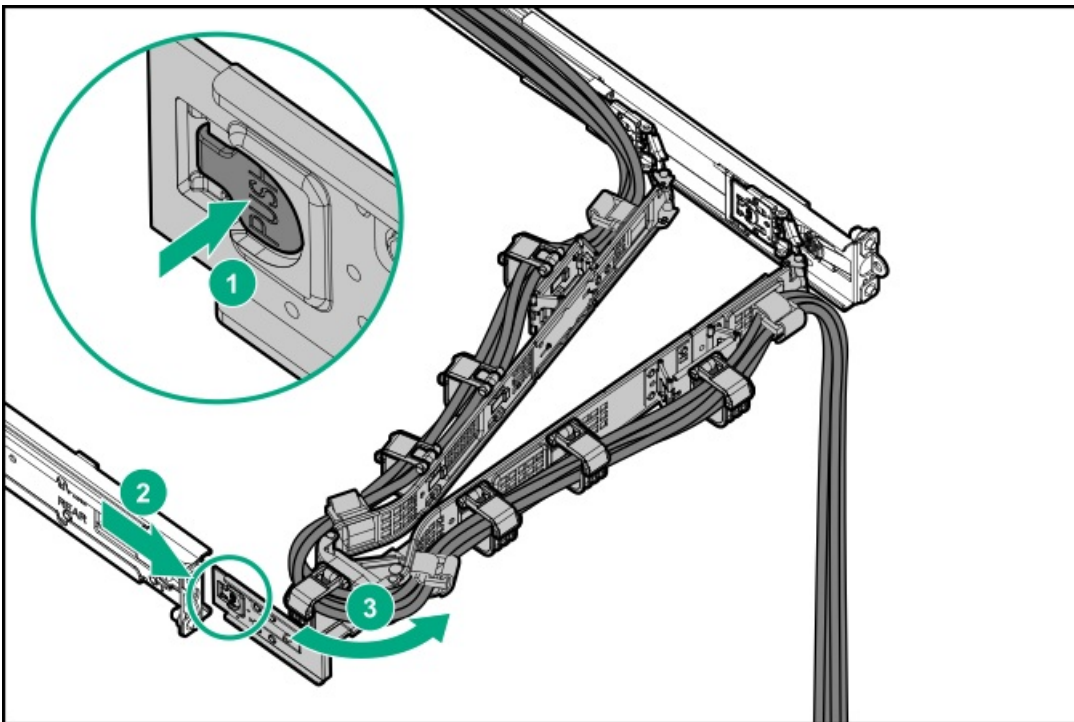
**⚠ CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

### Prerequisites

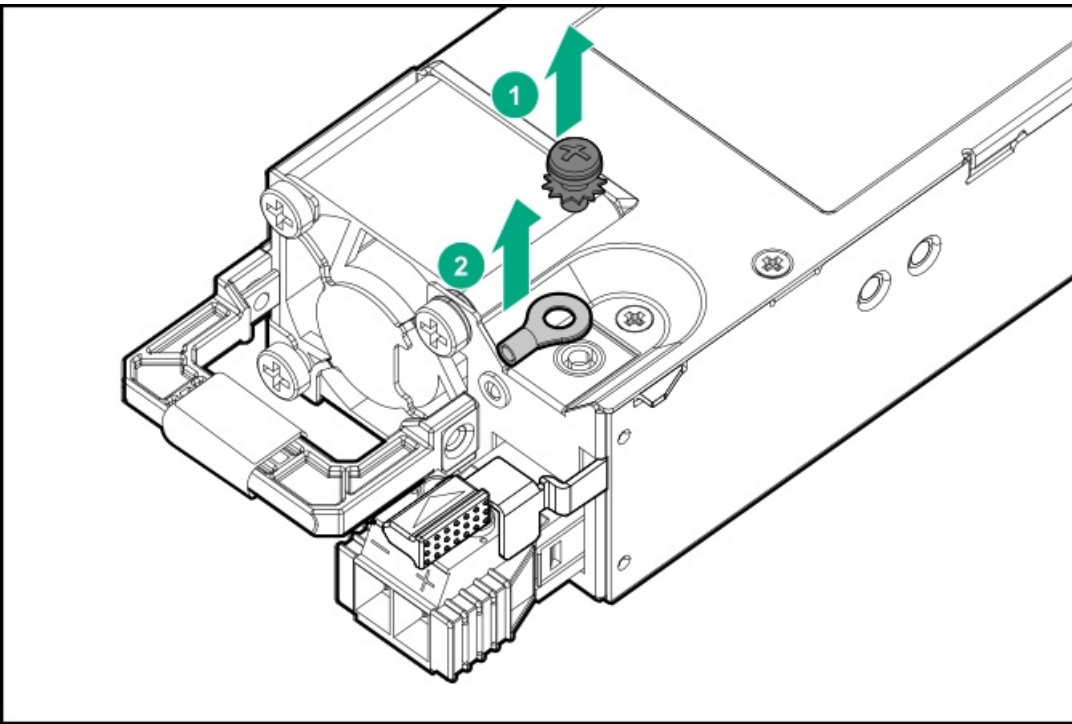
- Power cord requirement: The HPE 12 AWG 48 V DC 3.0 m Power Cord Kit (J6X43A) can be purchased from an authorized Hewlett Packard Enterprise reseller. If an HPE power cord option is not utilized, appropriate cabling must be implemented to ensure product reliability. The power cord connection must be made in consultation with a licensed electrician and be compliant with local code.
- If you are replacing the factory installed ground lug, use the KST RNB5-5 crimp terminal ring or equivalent. Use an M5-0.80 x 8 screw to attach the ground lug to the power supply.
- Before installing a power supply option, review the following:
  - [Power supply warnings and cautions](#)
  - [DC power supply warnings and cautions](#)
- Before you perform this procedure, make sure that you have the following items available:
  - Phillips No. 1 screwdriver
  - Crimping tool

### Procedure

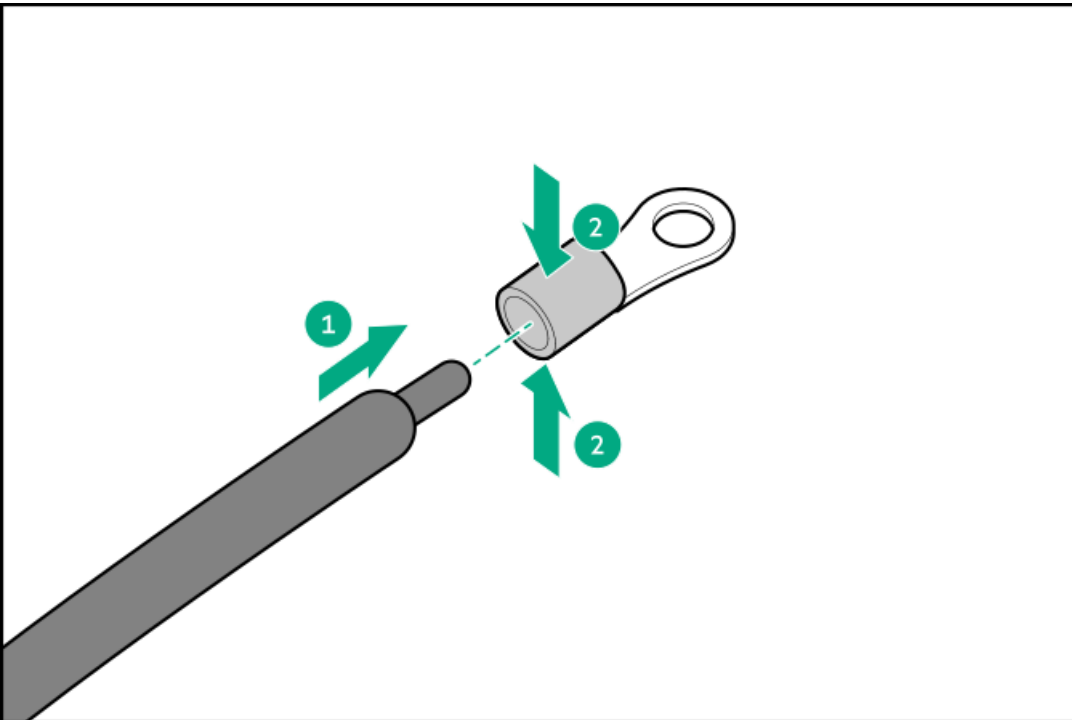
1. If installed, release the cable management arm and then swing the arm away from the rack.



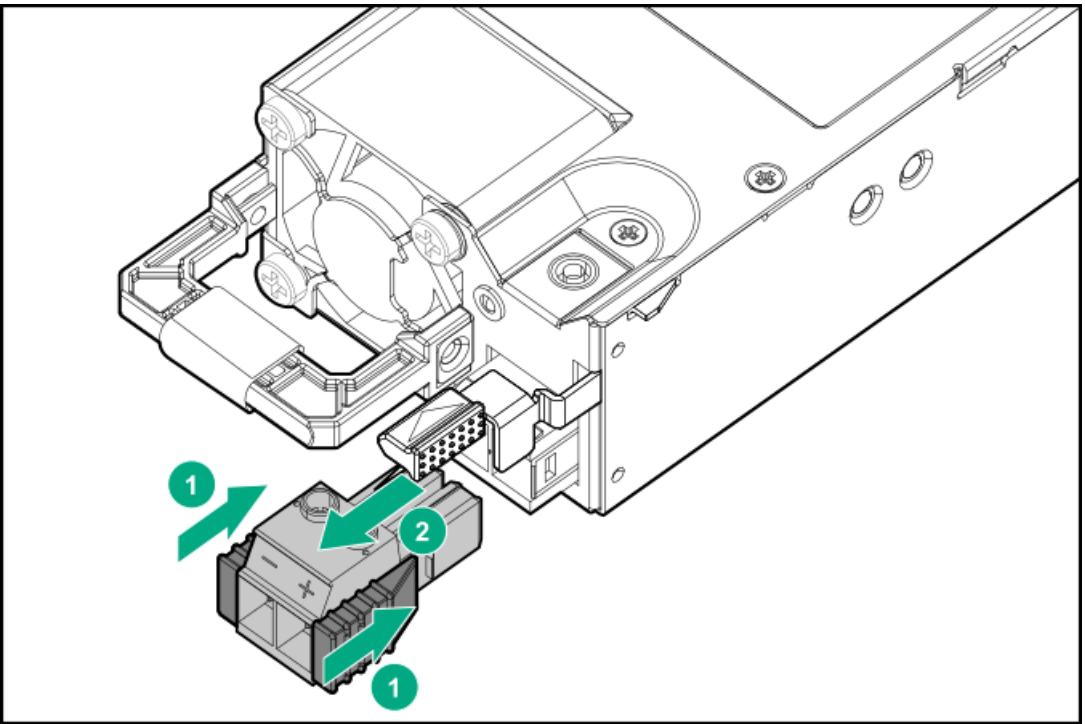
2. Remove the ring tongue.



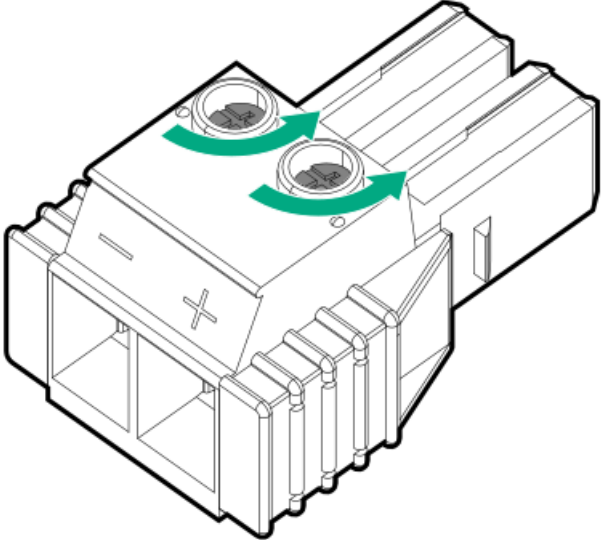
3. Crimp the ring tongue to the ground cable from the -48 V DC power source.



4. Remove the terminal block connector.

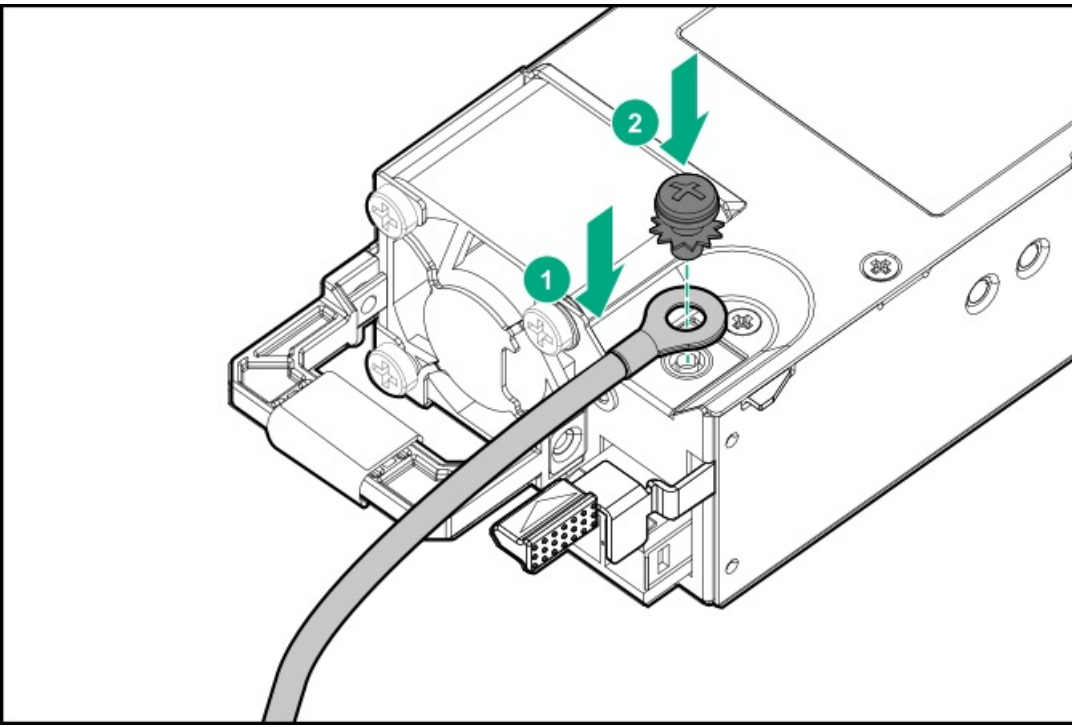


5. Loosen the screws on the terminal block connector.

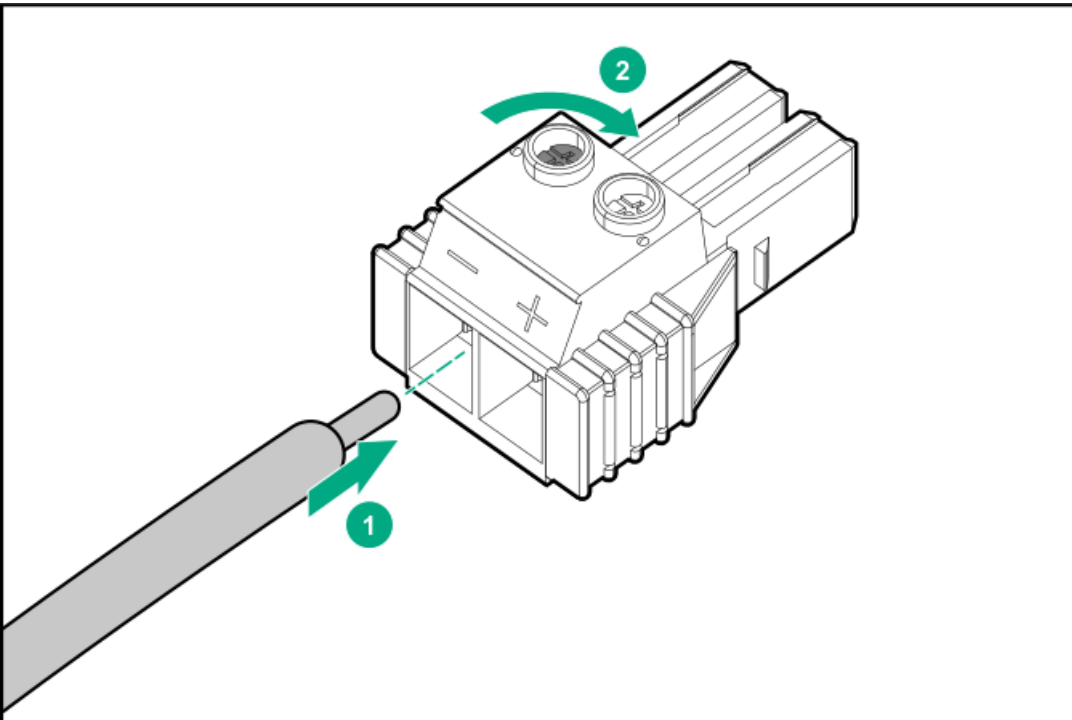


6. Attach the ground (earthed) wire to the ground screw and washer and tighten to 1.47 N m (13 lb-in) of torque. The ground wire must be connected before the -48 V wire and the return wire.

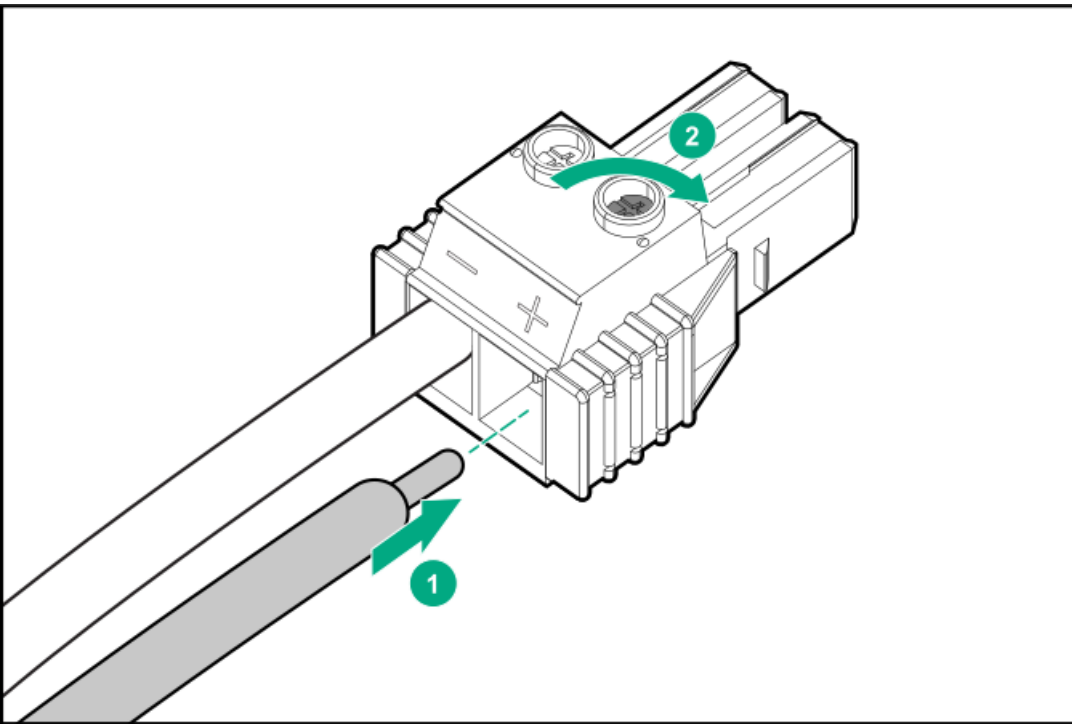




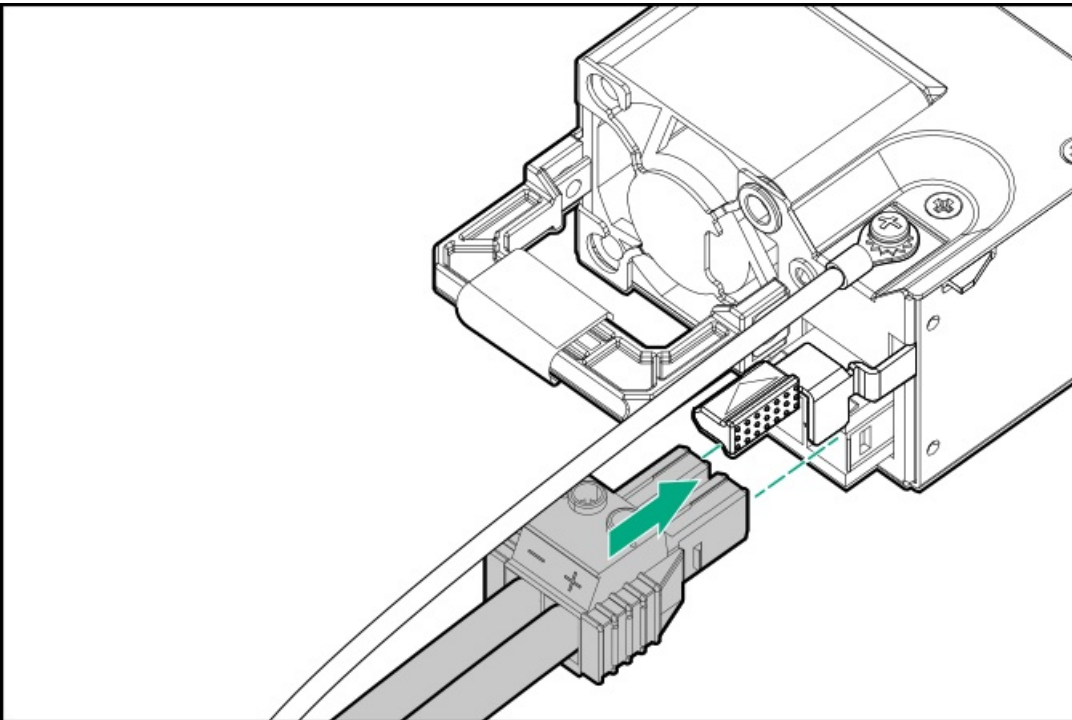
7. Insert the -48 V wire into the left side of the terminal block connector, and then tighten the screw to 1.3 N m (10 lb-in) of torque.



8. Insert the return wire into the right side of the connector, and then tighten the screw to 1.3 N m (10 lb-in) of torque.



9. Install the terminal block connector in the power supply.



10. Secure the power cord, wires, and cables in the strain relief strap attached to the power supply handle:

- a. Unwrap the strain relief strap from the power supply handle.

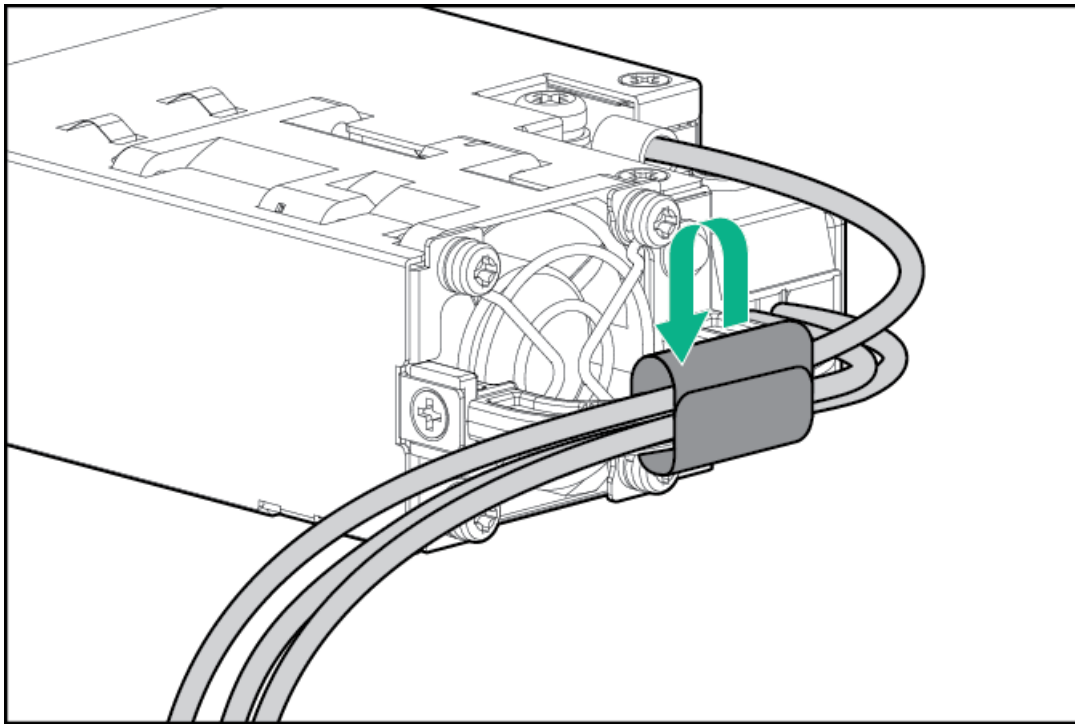
---

**△ CAUTION:** Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.

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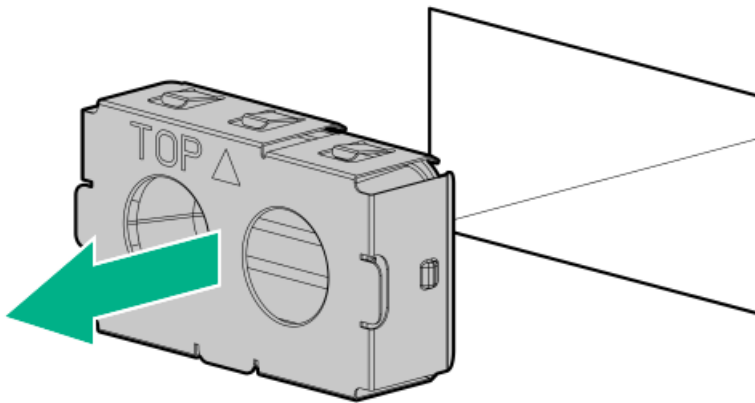
- b. Secure the power cord, wires, and cables with the strain relief strap. Roll the extra length of the strap around the power supply handle.



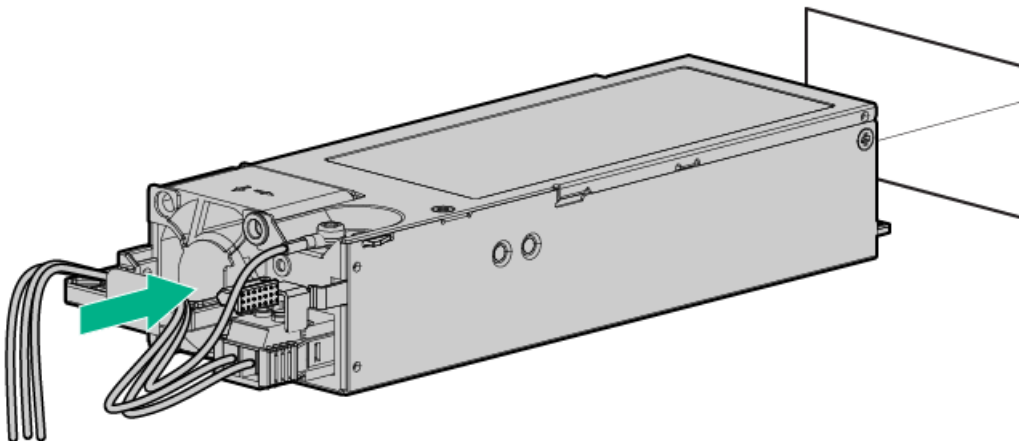


11. If you are installing a power supply in the power supply bay 2, remove the power supply blank.

Retain the blank for future use.



12. Immediately slide the power supply into the bay until it clicks into place.



13. Make sure the -48 V DC power source is off or the PDU breaker is in the off position, and then connect the power cord to the -48 V DC power source or PDU.

14. Turn on the -48 V power source or switch the PDU breaker to the on position to supply -48 V to the power supply.



15. Make sure that the power supply LED is green.

The installation is complete.



## Transceiver option

Transceivers serve as the connection between the adapter and the network cable for maintaining high-speed performance.

## Transceiver warnings and cautions

---

**⚠ WARNING:**

Fiber-optic transceivers and fiber-optic cables connected to transceivers emit laser light that can damage your eyes. To avoid eye injuries, avoid direct eye exposure to the beam from the fiber-optic transceiver or into the ends of fiber-optic cables when they are powered-up.

---

**⚠ CAUTION:**

The presence of dust in transceiver ports can cause poor cable connectivity. To prevent dust from entering, install a dust plug in an unused transceiver port.

---

**⚠ CAUTION:**

Supported transceivers can be hot-swapped—removed and installed while the server is powered-on. However, to prevent potential damage to the transceiver or the fiber-optic cable, disconnect the cable from the transceiver before hot-swapping it.

---

**⚠ CAUTION:**

Do not remove and install transceivers more often than is necessary. Doing so can shorten the useful life of the transceiver.

---

**ⓘ IMPORTANT:**

When you replace a transceiver with another of a different type, the server might retain selected port-specific configuration settings that were configured for the replaced transceiver. Be sure to validate or reconfigure port settings as required.

---

# Installing a transceiver

## Prerequisites

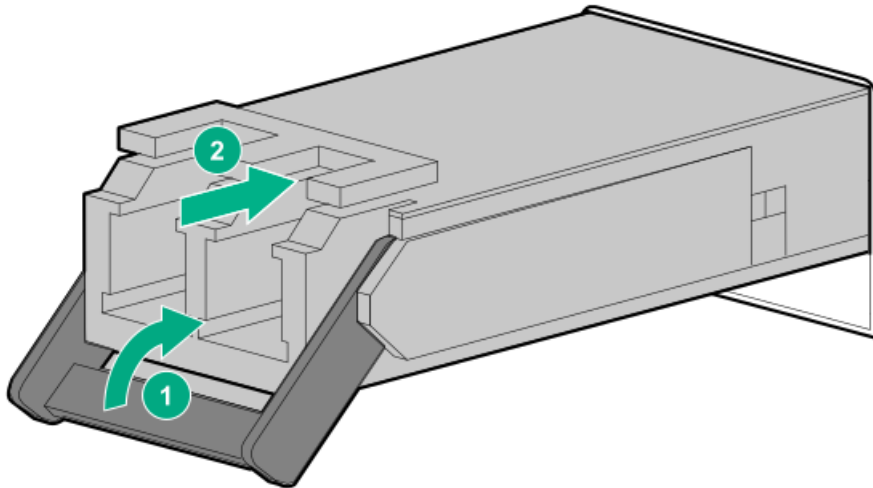
Before installing a transceiver option, review the following:

- [Transceiver warnings and cautions](#)
- Transceiver documentation for specific operational and cabling requirements

## Procedure

1. Hold the transceiver by its sides and gently insert it into the network adapter port until it clicks into place.

Transceivers are keyed so that they can only be inserted in the correct orientation. If the transceiver does not fit easily into the port, you might have positioned it incorrectly. Reverse the orientation of the transceiver and insert it again.



2. Remove the dust plug or protective cover from the transceiver.
3. Connect a compatible LAN segment cable to the transceiver.
4. Make sure that the NIC link LED on the port is solid green.

For more information on the port LED behavior, see the documentation that ships with the transceiver.

5. If needed, see the transceiver documentation for the model-specific fastening mechanism applicable to the transceiver.

The installation is complete.

## Drive options

Depending on the drive backplane installed, the server supports the following drive types:

- SAS and SATA drives
- SAS, SATA, and U.2/U.3 NVMe drives

The embedded HPE SR100i Gen10 Plus Software RAID Controller supports direct attached SATA and NVMe drives. Software RAID is supported in specific drive bays. To identify these drive bays, see [Drive bay numbering](#).

Install an HPE type-a modular (AROC) or type-p PCIe plug-in storage controller option to support SAS drives and hardware RAID.

## Drive installation guidelines

Observe the following general guidelines:

- The system automatically sets all drive numbers.

---

**△ CAUTION:**

When a server is purchased without any drive installed, some drive bays might be empty while other drive bays might be populated with drive blanks. To maintain proper system cooling, do not operate the server without a drive or a drive blank installed.

---

- If only one drive is used, install it in the bay with the lowest drive number.  
For drive numbering, see [Drive bay numbering](#).
- This server does not support mixed drive types in the same drive box.
- When installing NVMe drives, install either all U.2 or all U.3 drives. Mixed NVMe type installation is not supported.
- All drives grouped into the same drive array must meet the following criteria:
  - They must be either all hard drives or all solid-state drives.
  - Drives must be the same capacity to provide the greatest storage space efficiency.

## Installing a hot-plug SAS, SATA or NVMe drive

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### ⚠ CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

### Prerequisites

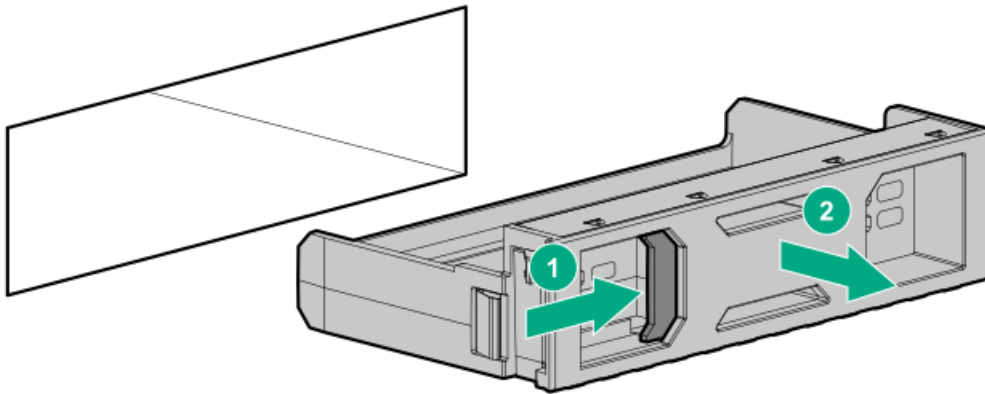
- Installing SAS/SATA drives with specific hardware options require the presence of high-performance (dual-rotor) fans. For more information, see the [Fan population](#).
- Installing NVMe drives requires the presence of [Installing the high-performance fans](#).

### Procedure

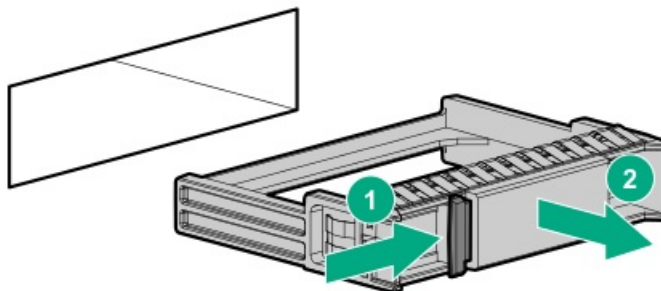
1. If installed, [remove the front bezel](#).
2. Remove the drive blank.

Retain the blank for future use.

- LFF drive blank



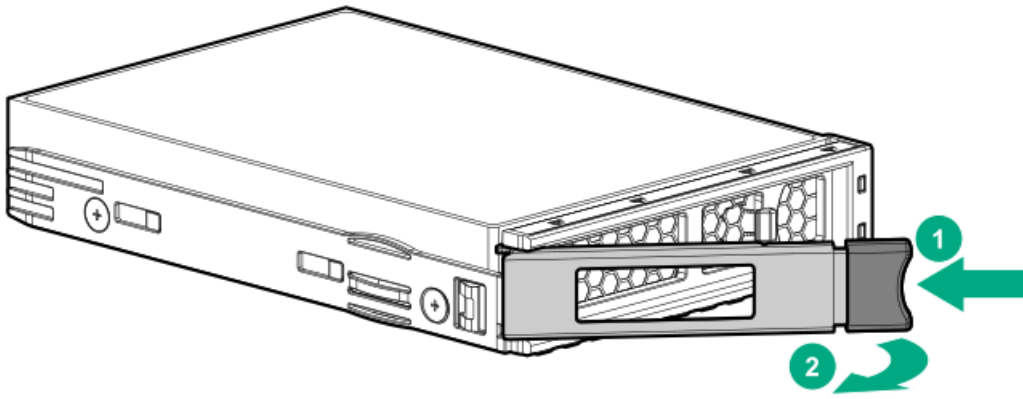
- SFF drive blank



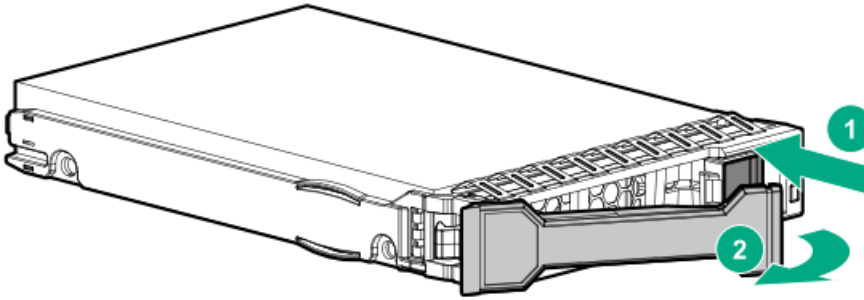
3. Prepare the drive.

- LFF drive



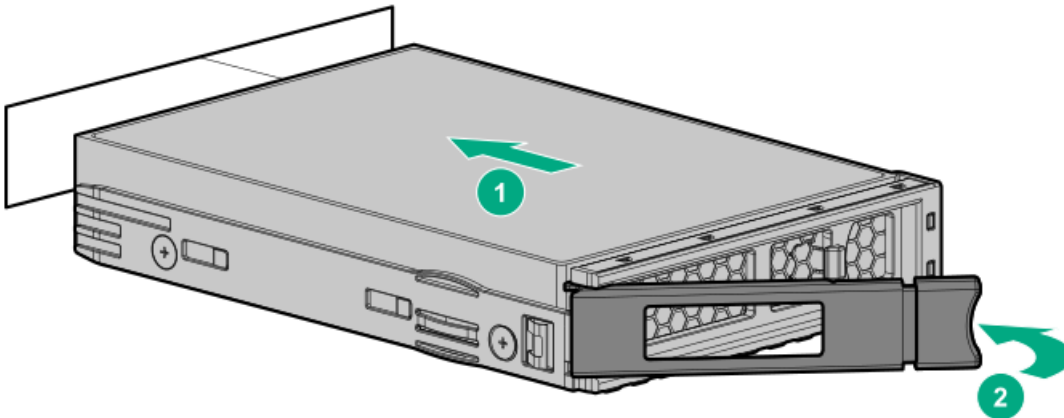


- SFF drive

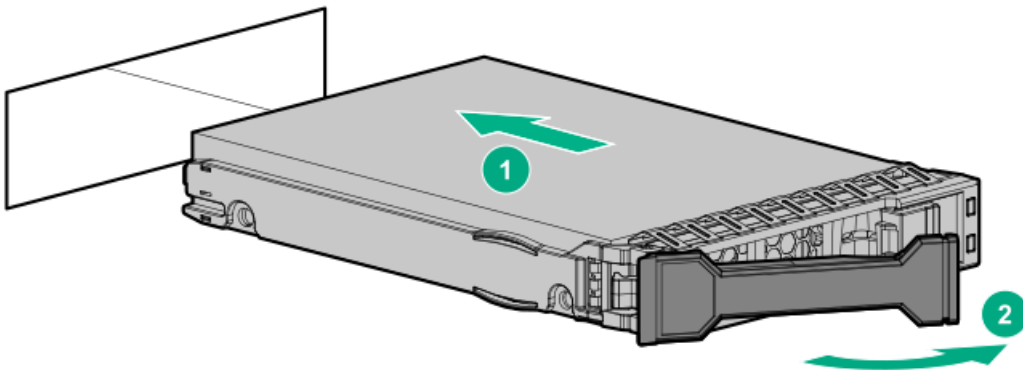


4. Install the drive.

- LFF drive



- SFF drive



5. Determine the status of the drive from the drive LED definitions.

6. If removed, install the front bezel.

7. To configure drive arrays, see the following documentation for detailed instructions:

- HPE SR Gen10 Plus Software RAID User Guide at <https://www.hpe.com/support/SSC-SRGen10Plus-ug>



- HPE SR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/SR-Gen10Plus-UG>
- HPE MR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/MR-Gen10Plus-UG>

The installation is complete.



## Installing the 2 SFF drive cage option

This server supports two 2 SFF drive cage options. The following drive types are supported:

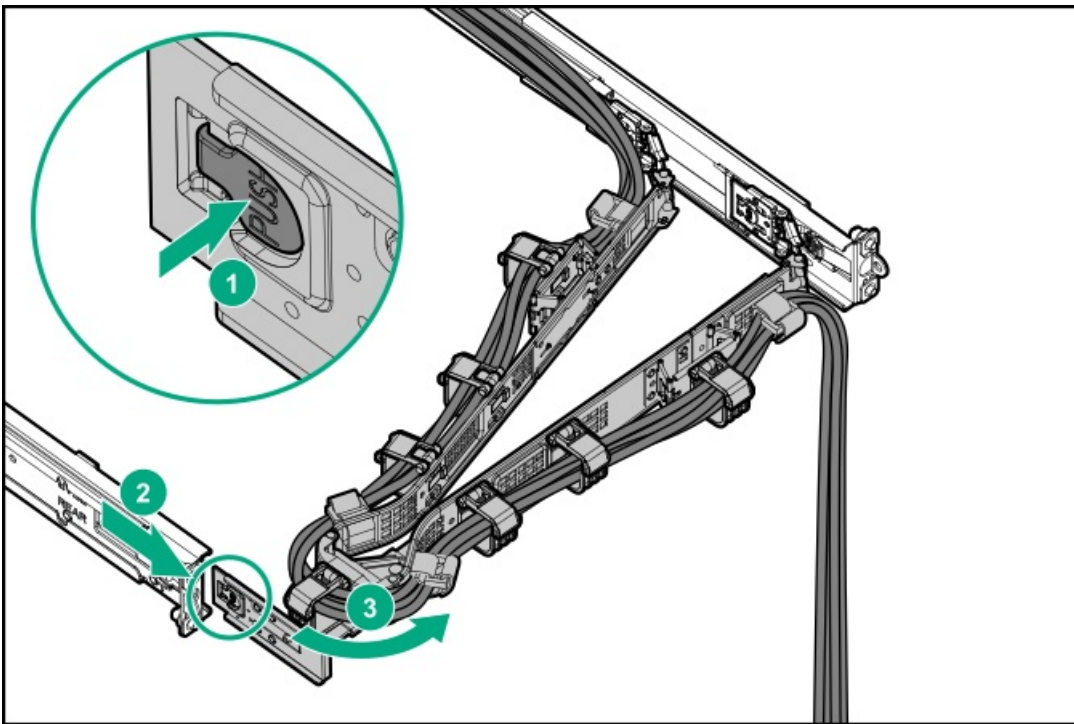
- SATA, SAS, and U.3 NVMe drives
- U.2 NVMe drives

### Prerequisites

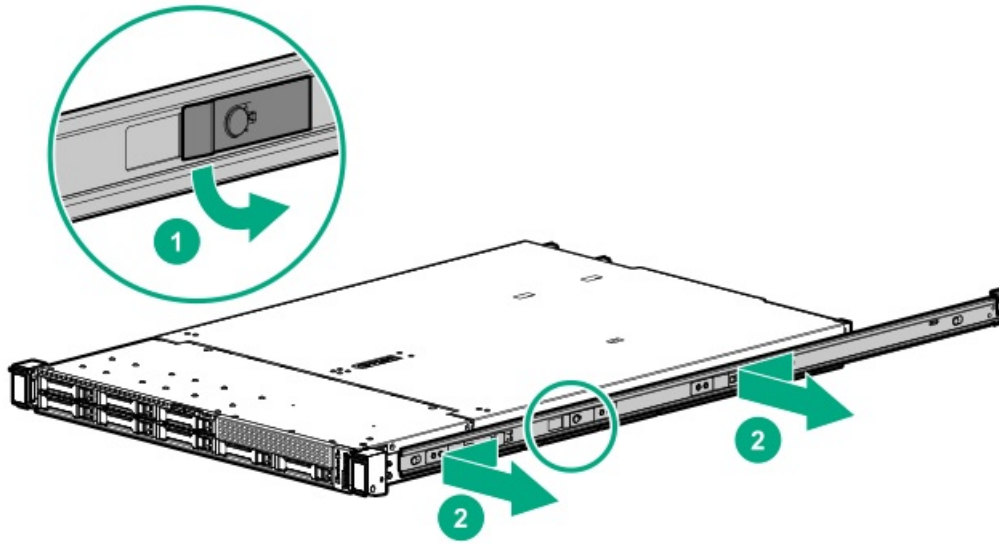
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.

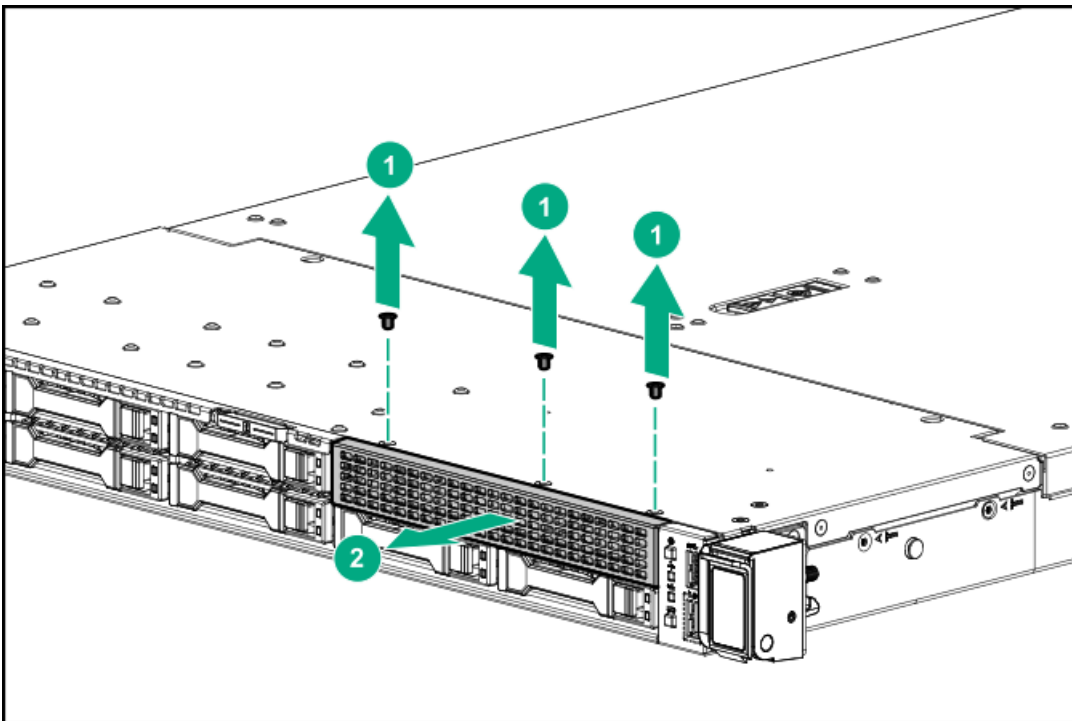


4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the rack sliding rails.



9. Remove the universal media bay blank.

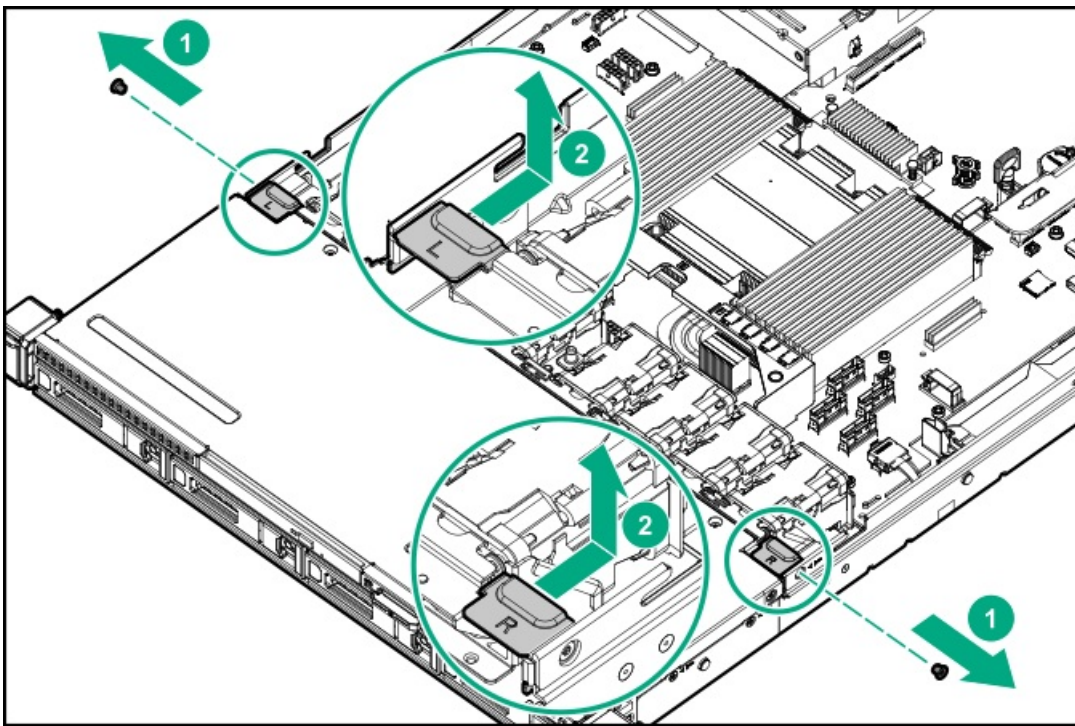
Retain the blank for future use.



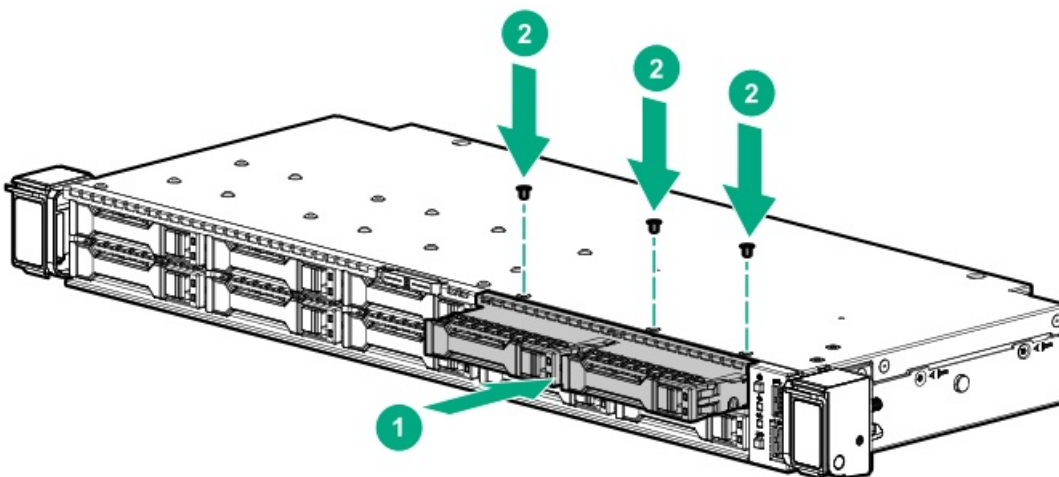
10. Remove the access panel.

11. Remove the fan wall brackets.



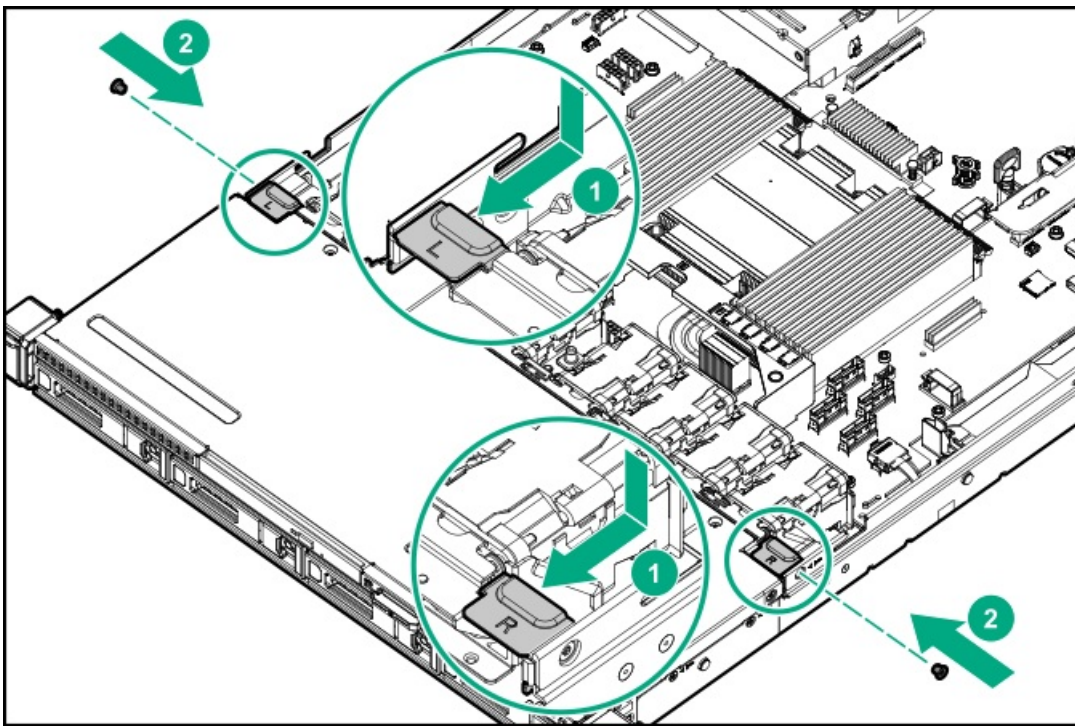


12. Remove the front drive cage.
13. Install the drives in the 2 SFF drive cage .
14. Install the 2 SFF drive cage.

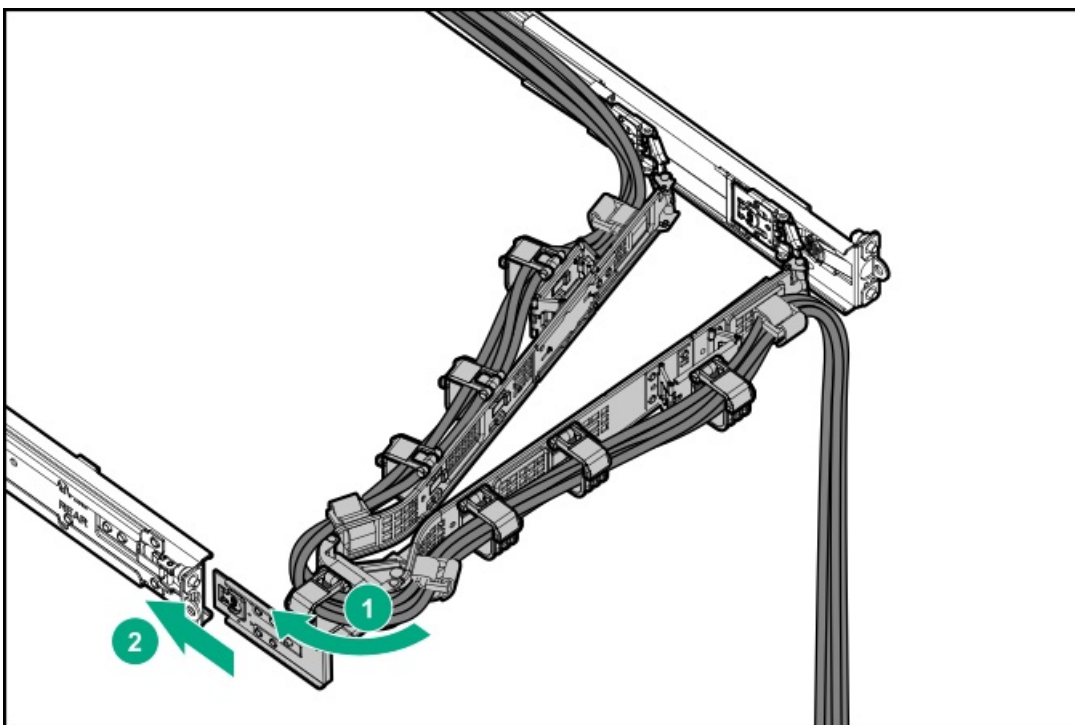


15. If you intend to connect the 2 SFF drive backplane to a storage controller option, install it now:
  - Type-a modular controller
  - Type-p PCIe plug-in controller
16. Connect the following cables to 2 SFF drive backplane:
  - Drive power cable
  - Storage controller cable
17. Install the front drive cage.
18. Install the fan wall brackets.





19. Install the access panel.
20. Install the rack sliding rails.
21. Install the server into the rack.
22. Connect all peripheral cables to the server.
23. Connect each power cord to the server.
24. Connect each power cord to the power source.
25. If installed, close the cable management arm.



26. Power up the server.
27. If removed, install the front bezel.

The installation is complete.



## Optical drive option

The server supports a slim-type SATA optical drive.



# Installing an optical drive in the LFF drive chassis

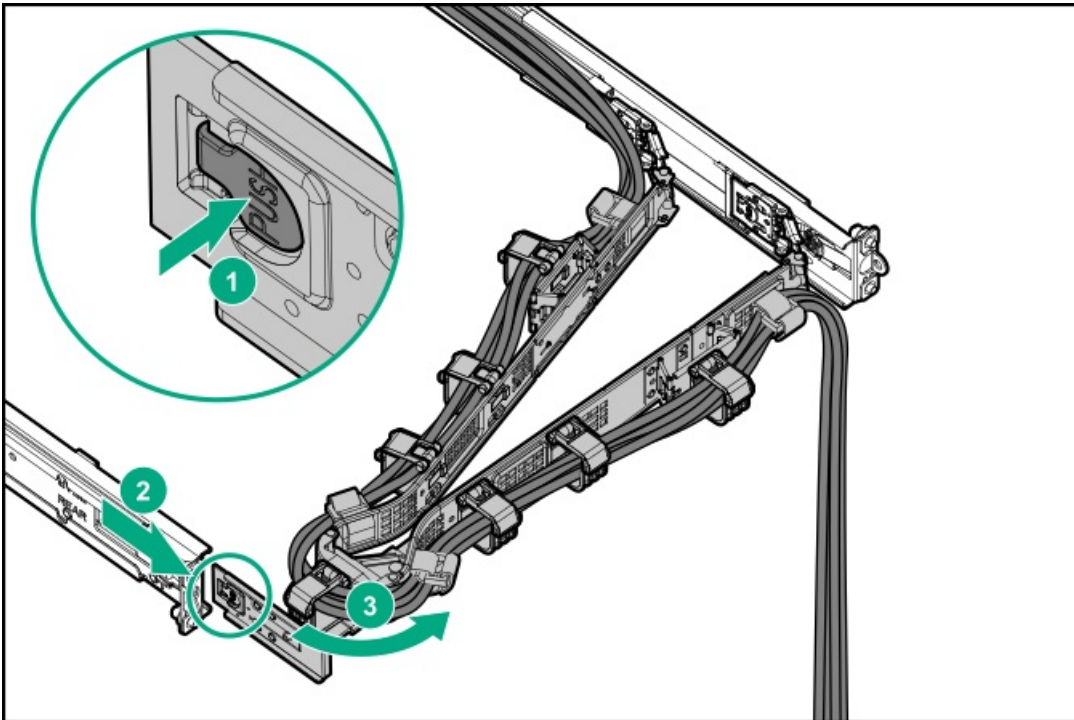
## Prerequisites

Before you perform this procedure, make sure that you have the following items available:

- T-10 Torx screwdriver
- Phillips No. 1 screwdriver

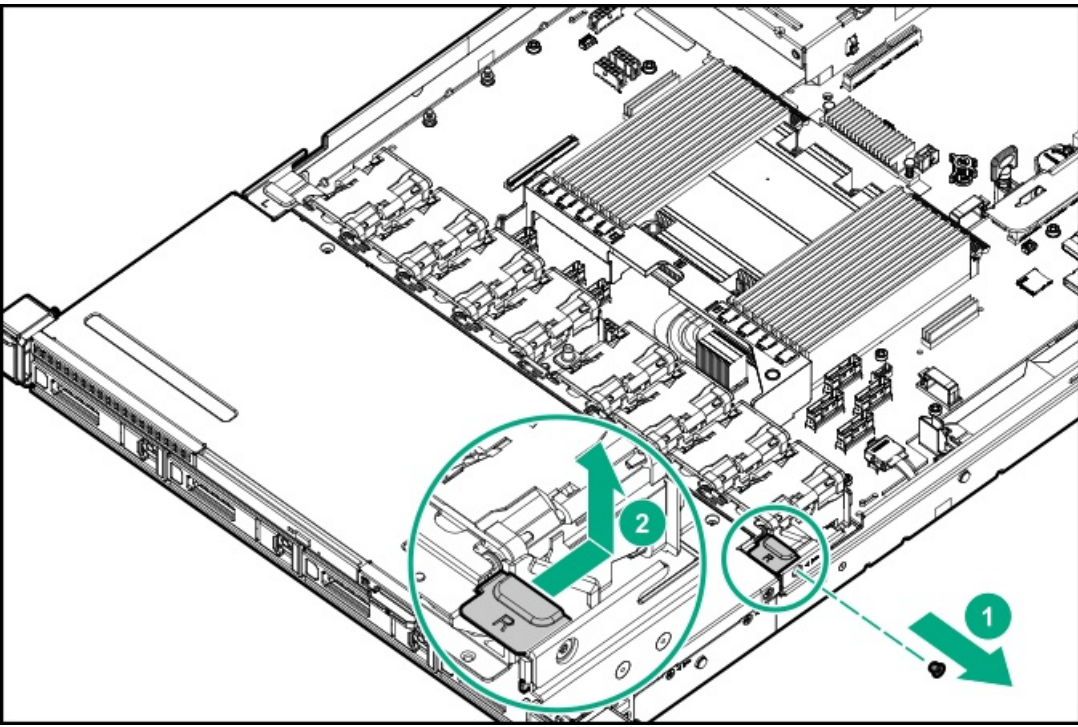
## Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.

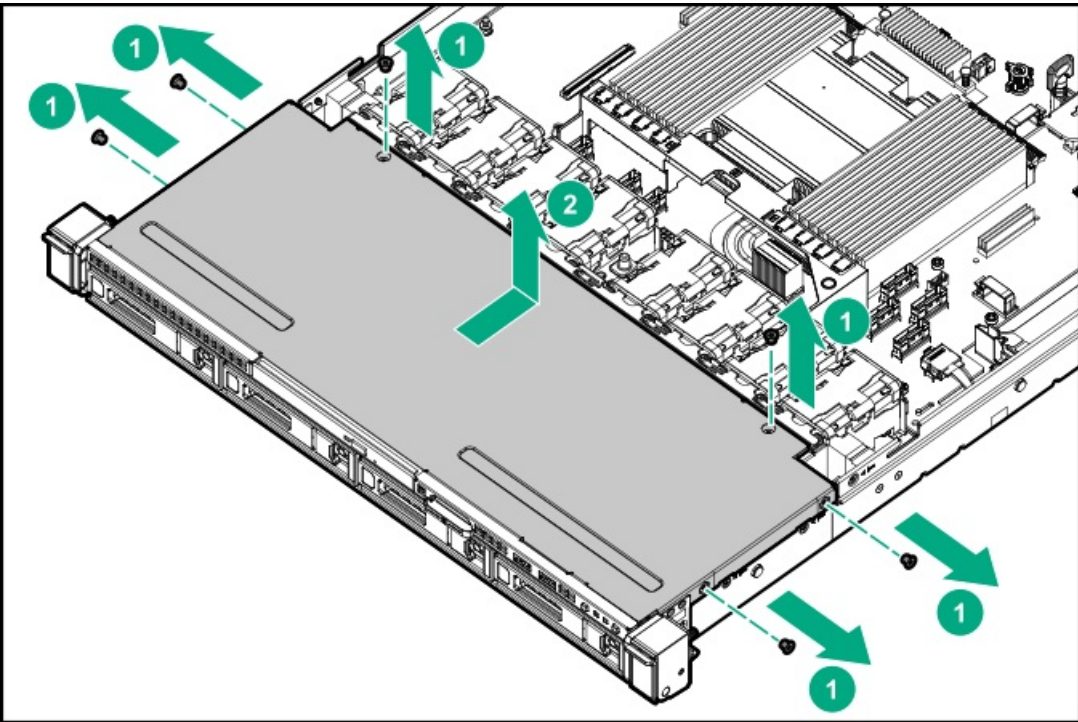


4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the rack sliding rails.
9. Remove the access panel.
10. Remove the right fan wall bracket.



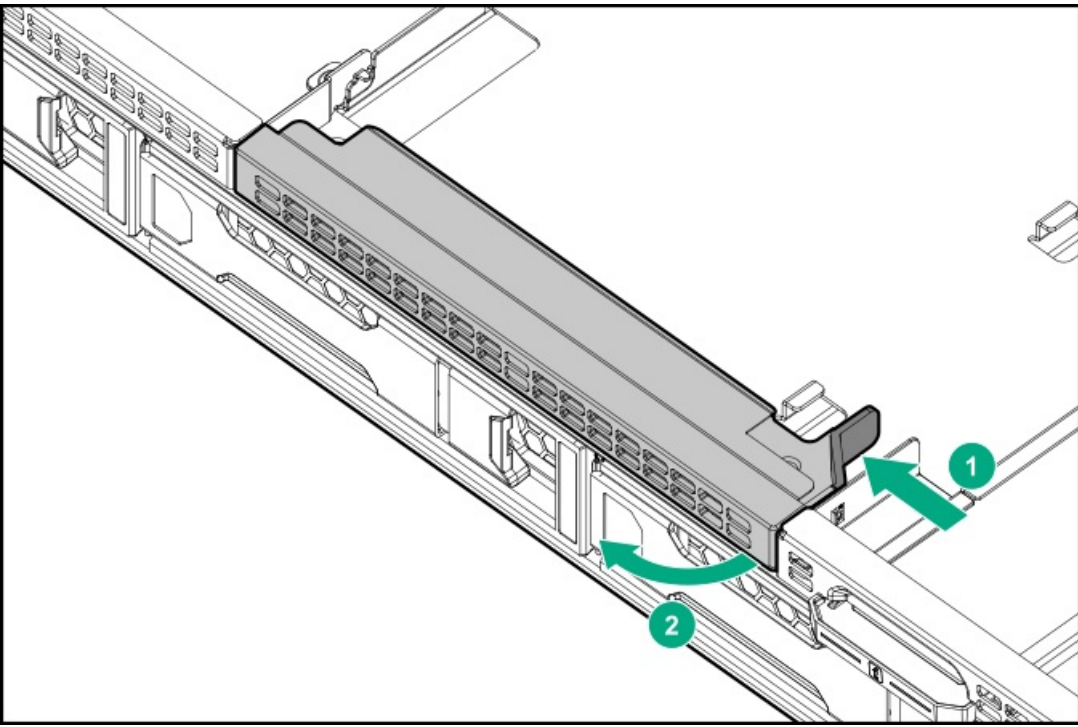


11. Remove the front drive cage cover.

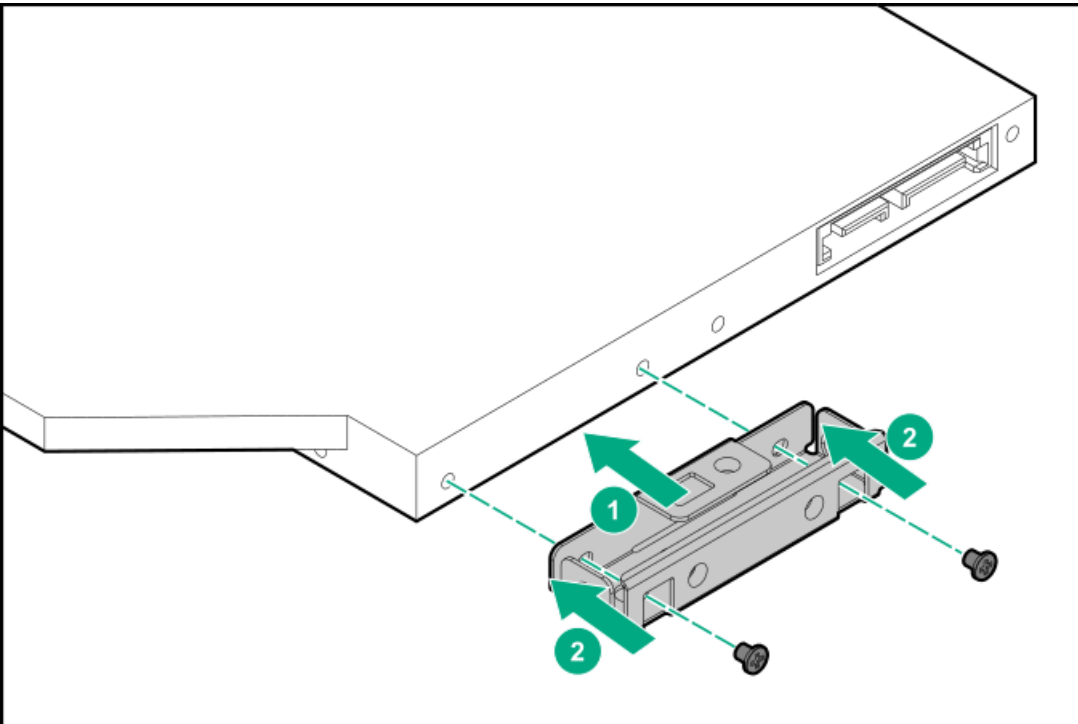


12. Remove the optical drive bay blank.



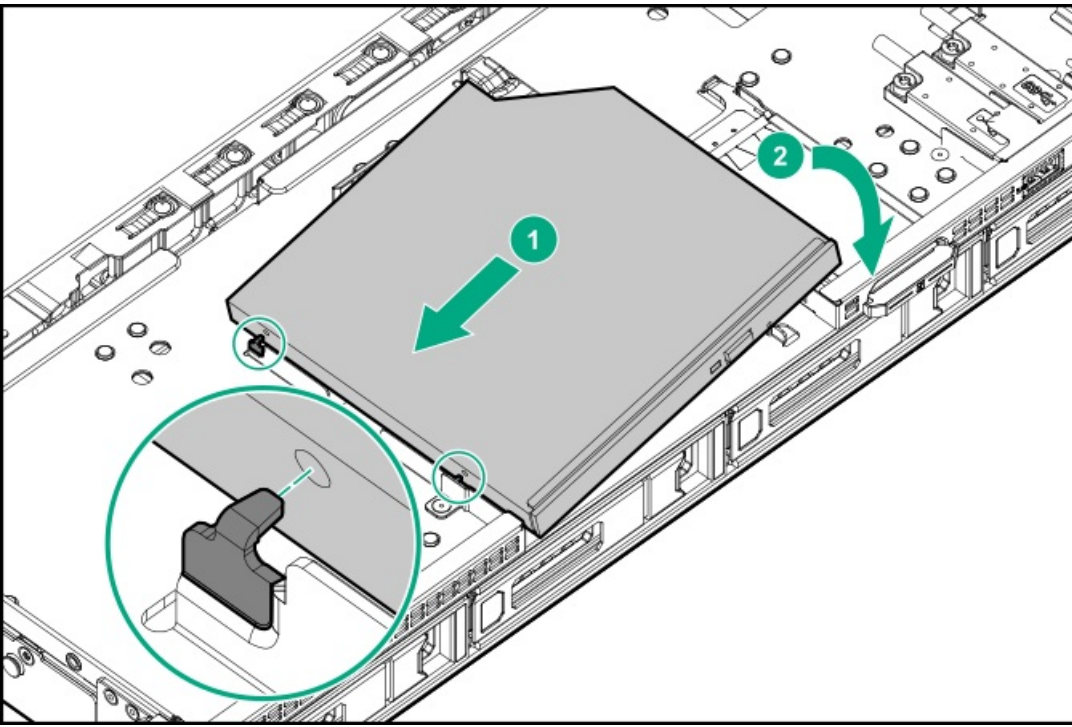


13. Install the optical drive support bracket.

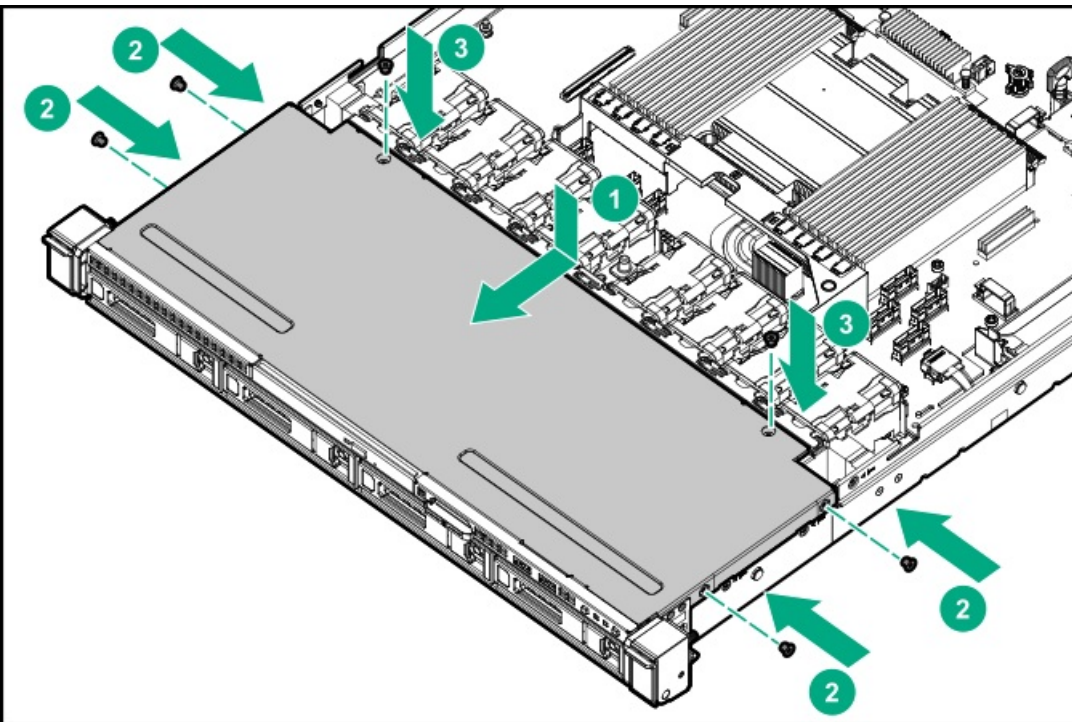


14. Install the optical drive.



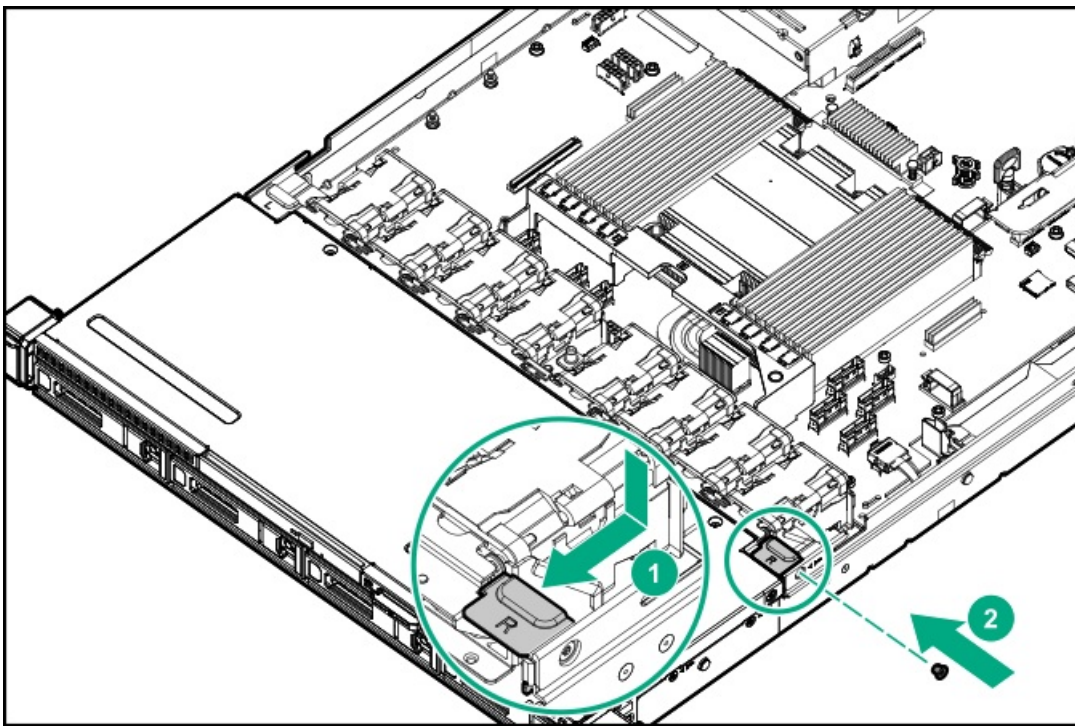


15. Connect the optical drive-M.2 SSD SATA splitter cable.
16. If the SSD connectors of the splitter cable will not be used, secure them in the cable clip.
17. Install the front drive cage cover.

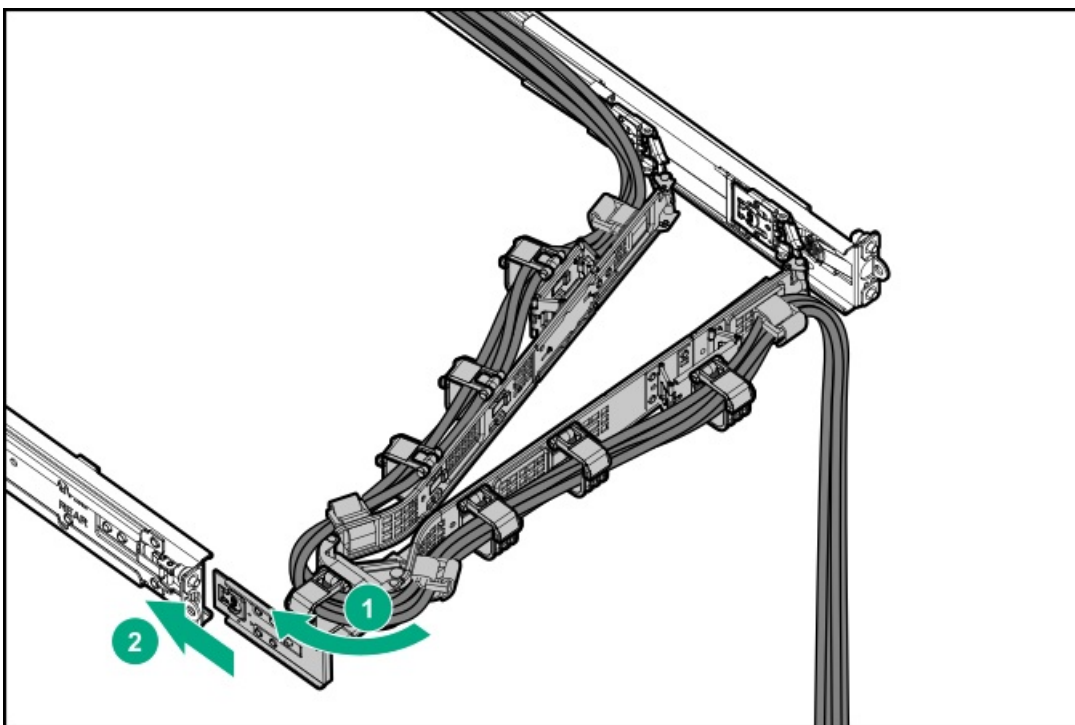


18. Install the right fan wall bracket.





19. Install the access panel.
20. Install the rack sliding rails.
21. Install the server into the rack.
22. Connect all peripheral cables to the server.
23. Connect each power cord to the server.
24. Connect each power cord to the power source.
25. If installed, close the cable management arm.



26. Power up the server.
27. If removed, install the front bezel.

The installation is complete.



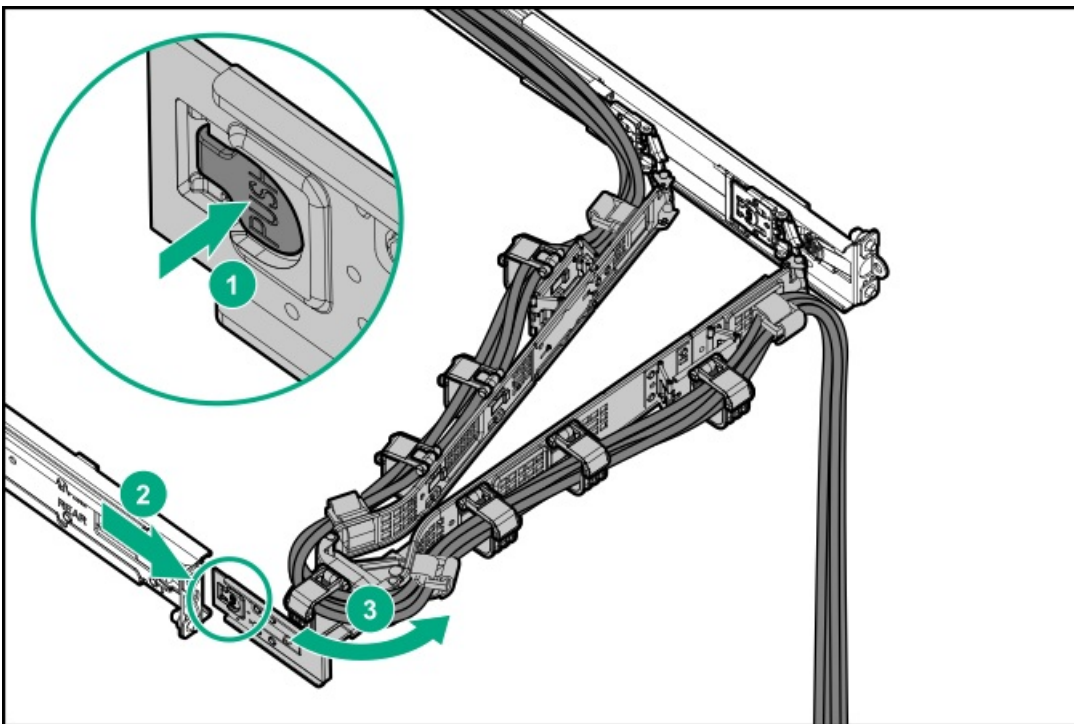
# Installing an optical drive in the SFF drive chassis

## Prerequisites

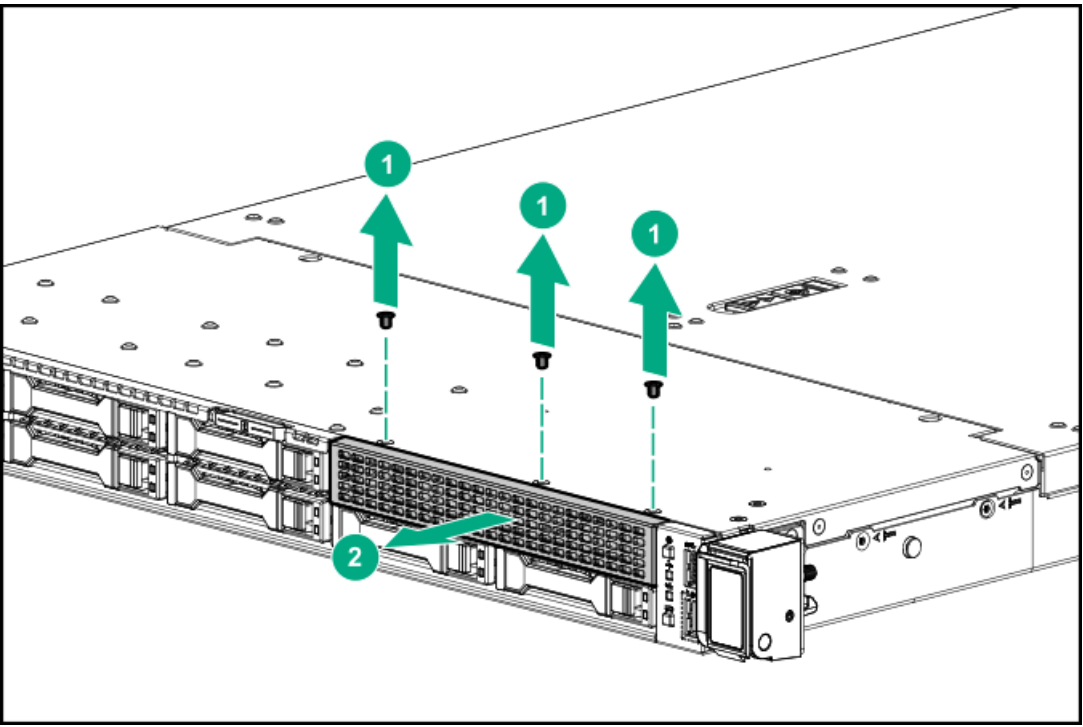
- In the SFF drive chassis, the optical drive installation requires the optical drive enablement option kit (P39144-B21).
- Before you perform this procedure, make sure that you have the following items available:
  - T-10 Torx screwdriver
  - T-15 Torx screwdriver
  - Phillips No. 1 screwdriver

## Procedure

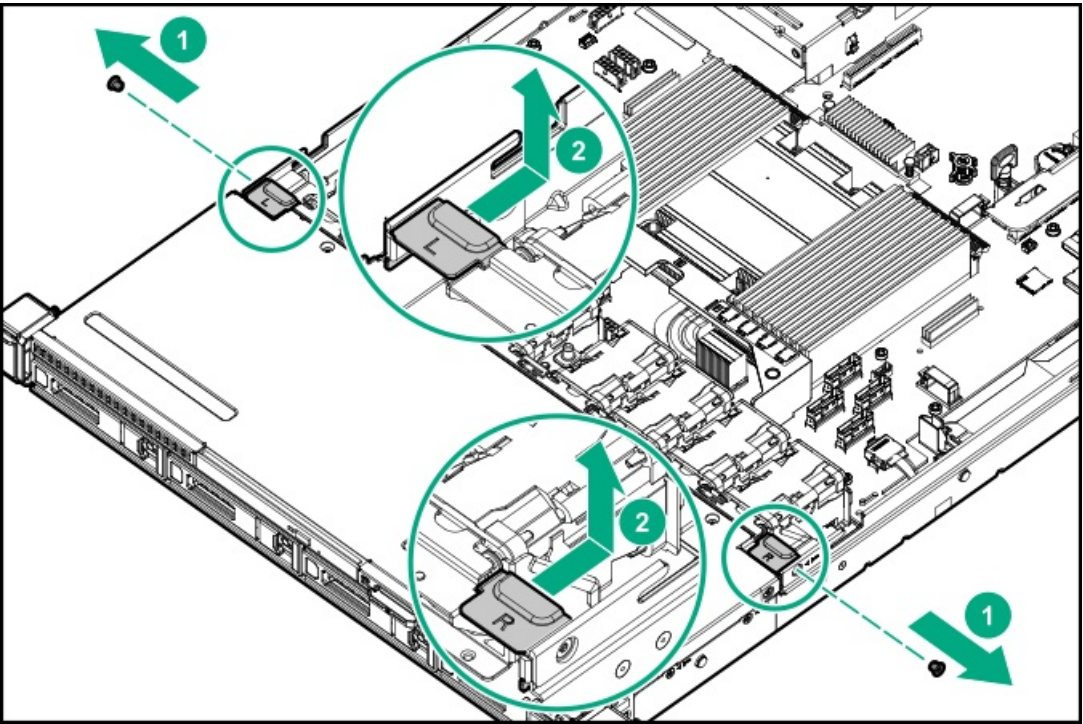
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



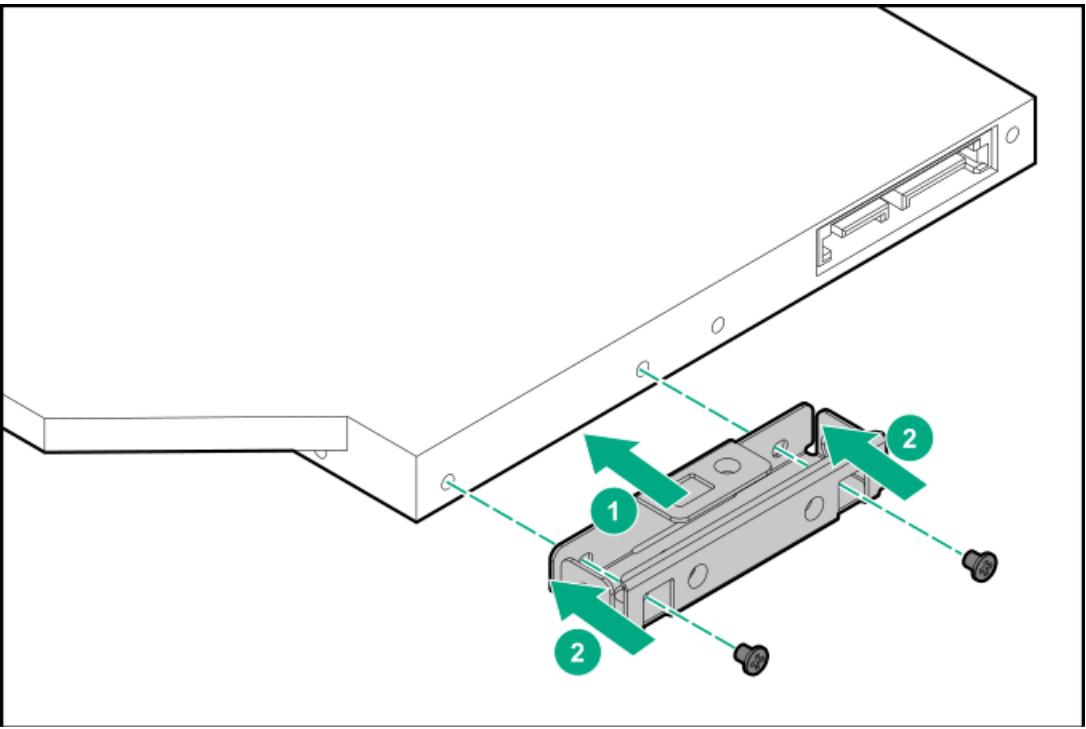
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the rack sliding rails.
9. Remove the universal media bay blank.  
Retain the blank for future use.



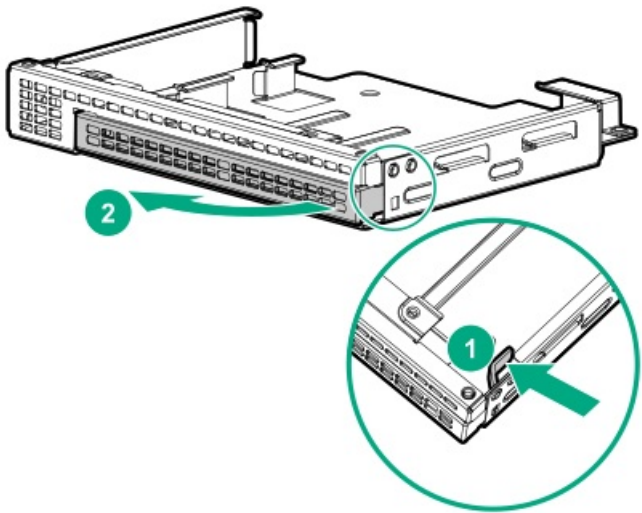
10. Remove the access panel.
11. Remove the fan wall brackets.



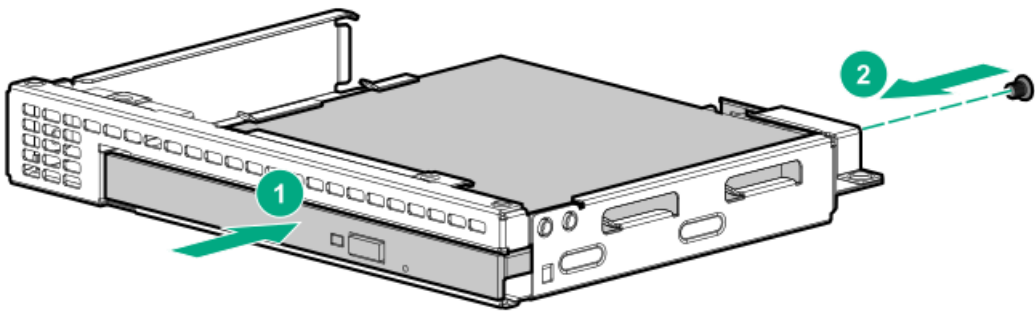
12. Remove the front drive cage.
13. Install the optical drive bracket.



14. Remove the optical drive blank.



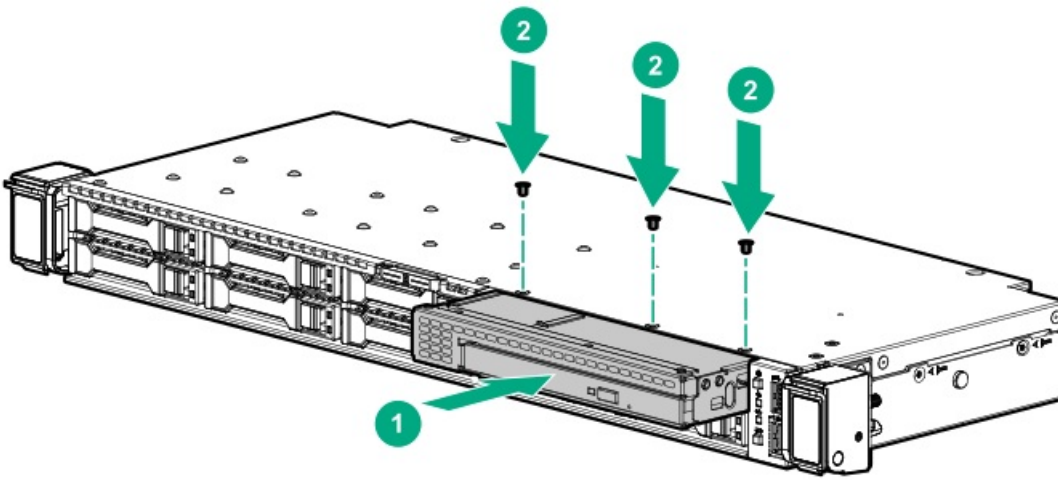
15. Install the optical drive into the cage.



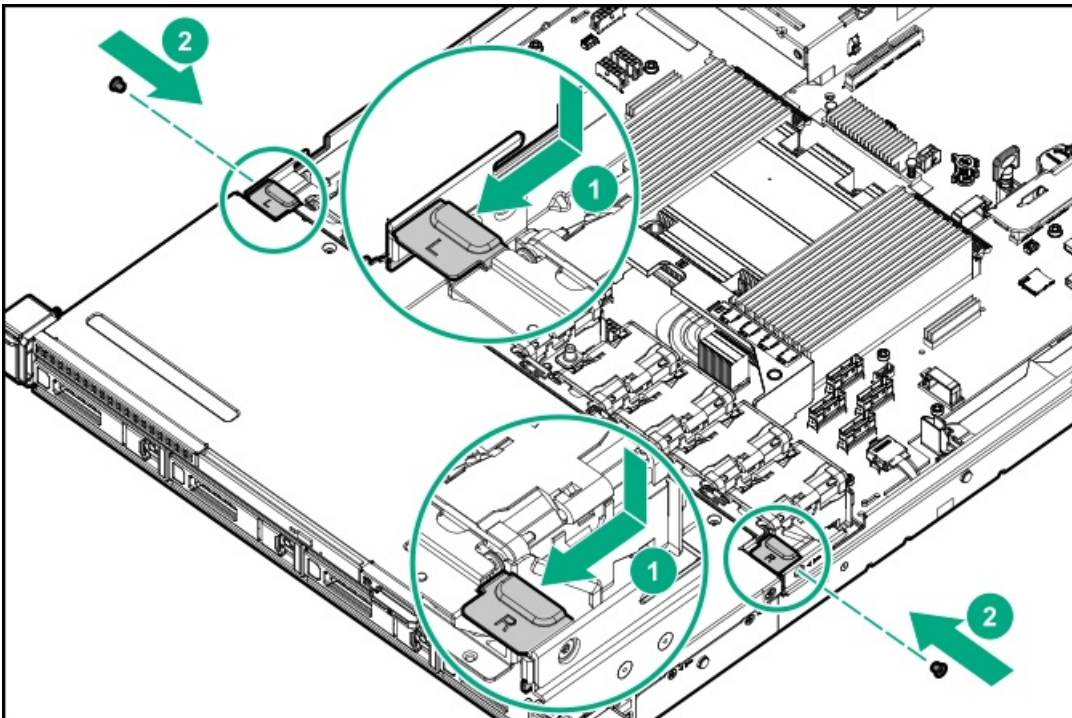
16. Connect the optical drive connector of the optical drive-M.2 SSD SATA splitter cable to the optical drive.

17. Install the optical drive cage assembly.



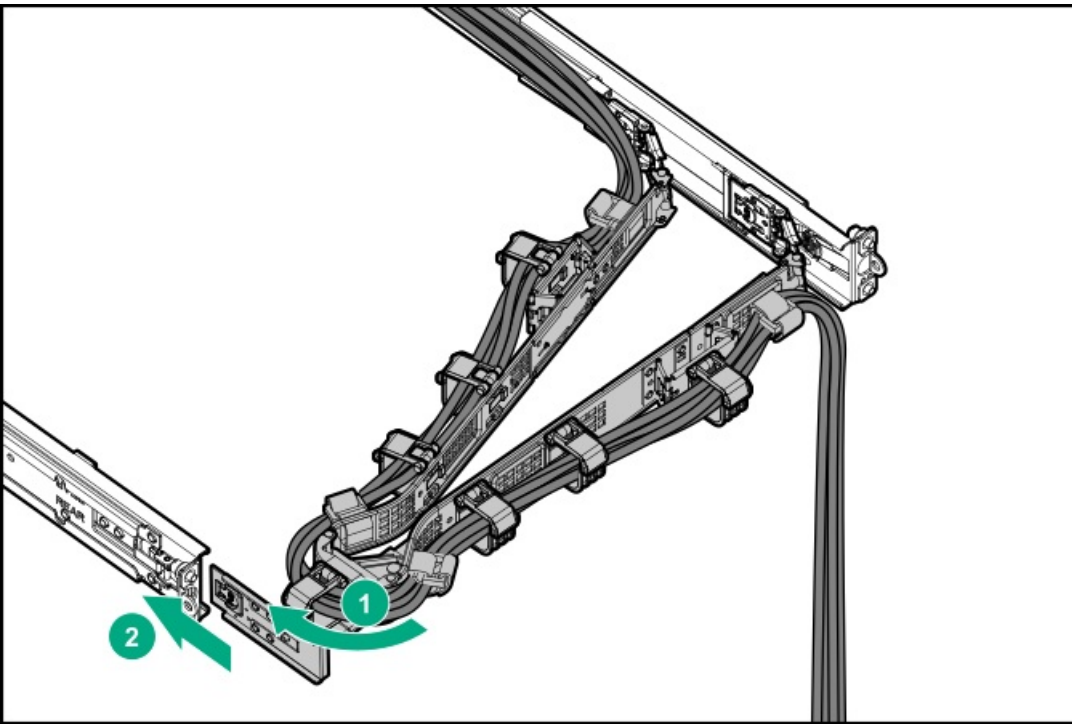


18. Connect the optical drive-M.2 SSD SATA splitter cable to the system board .
19. If the SSD connectors of the splitter cable will not be used, secure them in the cable clip.
20. Install the front drive cage.
21. Install the fan wall brackets.



22. Install the access panel.
23. Install the rack sliding rails.
24. Install the server into the rack.
25. Connect all peripheral cables to the server.
26. Connect each power cord to the server.
27. Connect each power cord to the power source.
28. If installed, close the cable management arm.





29. Power up the server.

30. If removed, install the front bezel.

The installation is complete.

## Fan option

To provide sufficient airflow to the system, the server is by default populated by eight fans. The fans can either be standard, single-rotor fans or high-performance, dual-rotor fans. Mixed fan configuration is not supported.



The arrow points to the front of the server.

## Fan population

The following drive configurations require standard, single-rotor fans:

- 4 LFF configuration
- 8 SFF SAS/SATA drive configuration

The presence of the following hardware components require high-performance, dual-rotor fans:

- 8 SFF U.2/U.3 NVMe drive configuration
- Processor with a thermal design power (TDP) value of 280 W or higher
- 256 GB or higher capacity DIMM
- Ethernet adapter with 100 Gb or faster speed
- InfiniBand adapter with 200 Gb or faster speed
- OCP NIC 3.0 adapter with 100 Gb or faster speed

## Fan mode behavior

The eight fan setup provides redundant fan support. In redundant fan mode, if a fan rotor failure occurs:

- The system switches to nonredundant fan mode. The system continues to operate in this mode.
- The system Health LED flashes amber.

If a second fan rotor failure or a missing fan occurs, the operating system gracefully shuts down.

## Installing the high-performance fans

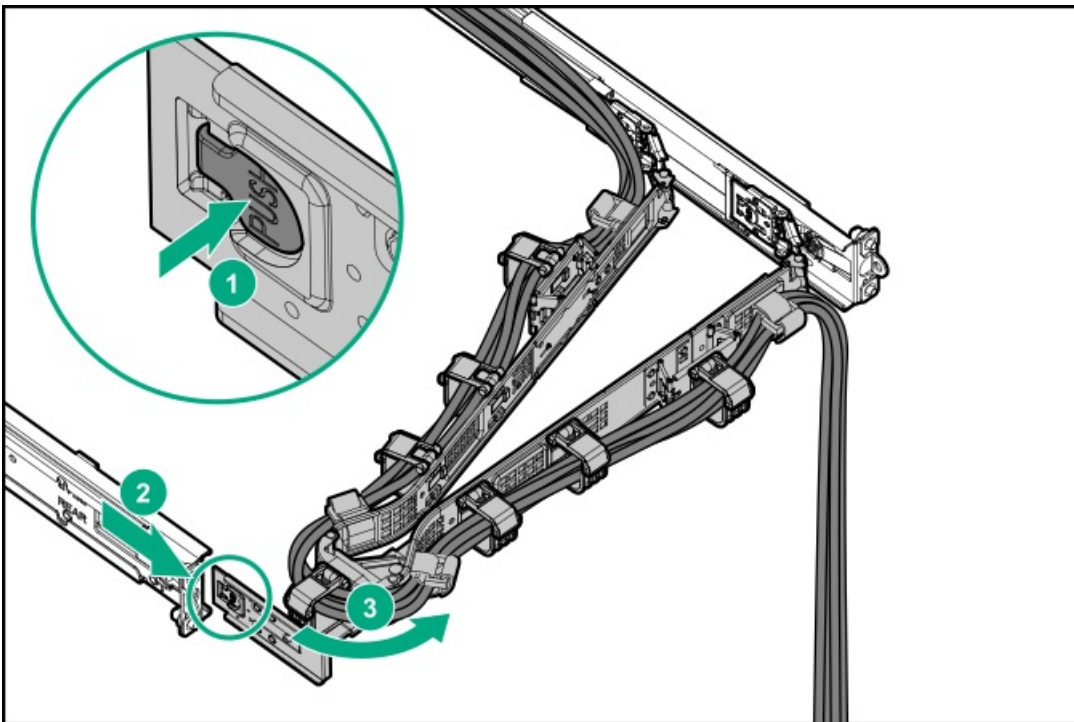
**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

**IMPORTANT:**

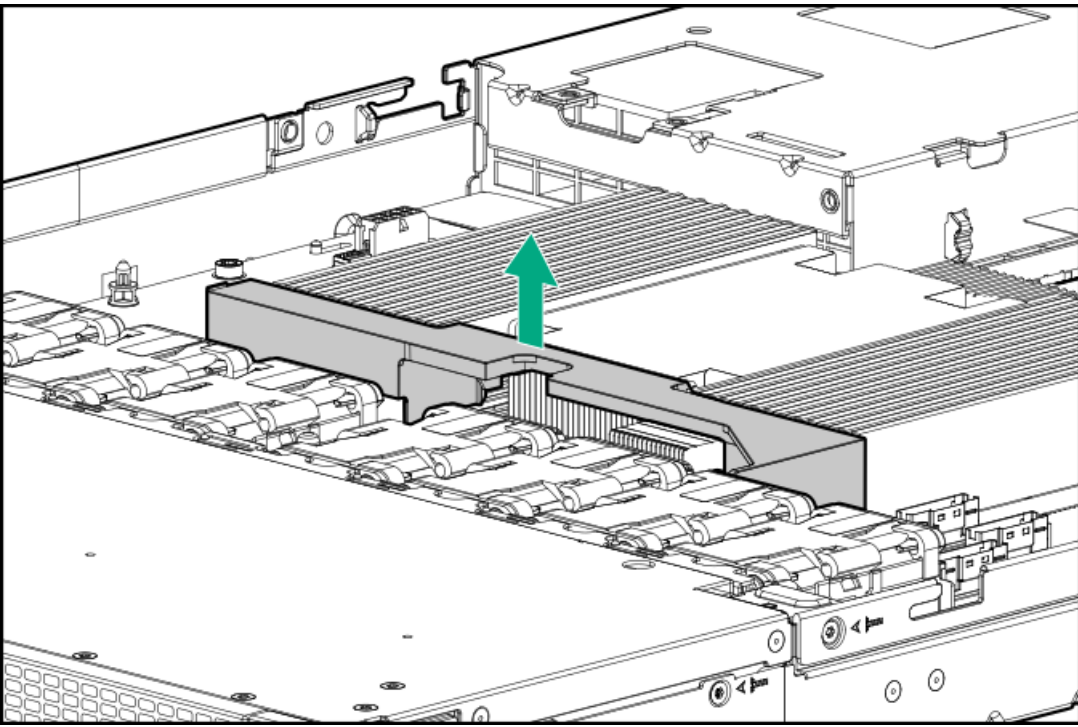
The fan setup can either be standard, single-rotor fans or high-performance, dual-rotor fans. Do not mix fan types in the same server.

### Procedure

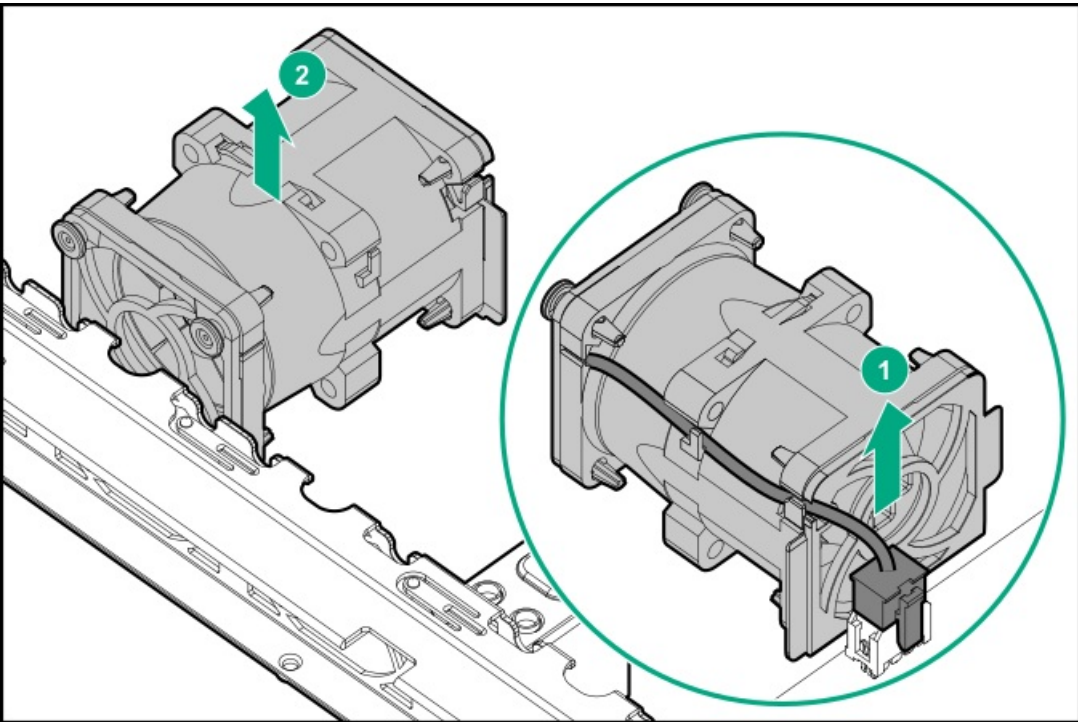
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the air baffle.

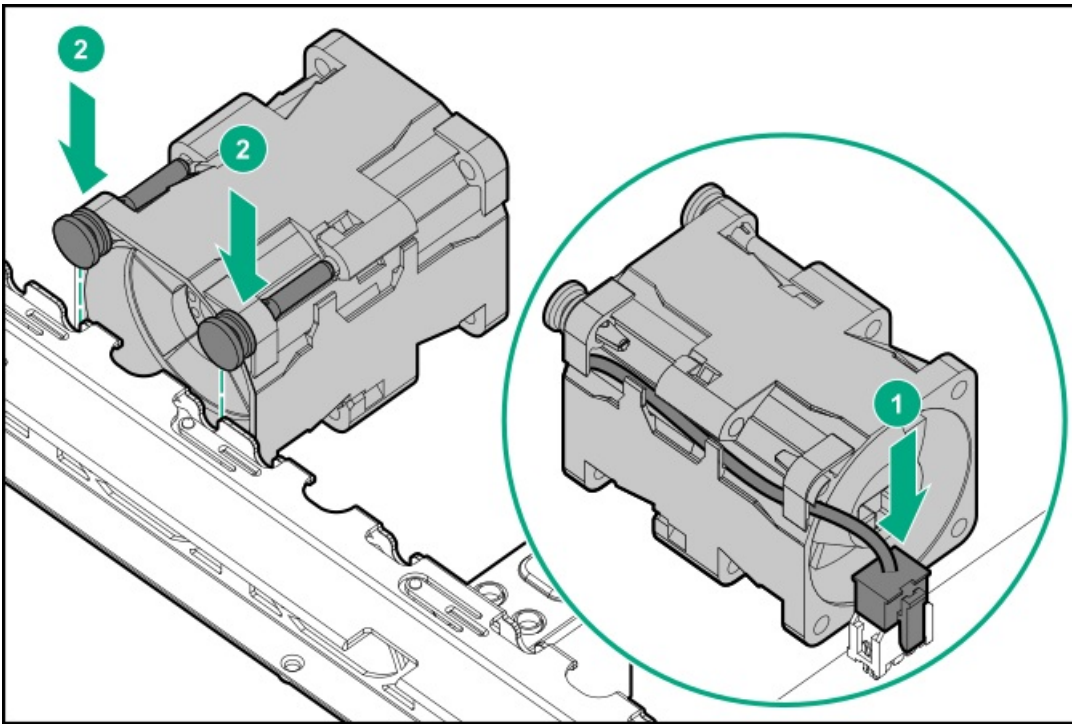


10. Remove all standard fans.

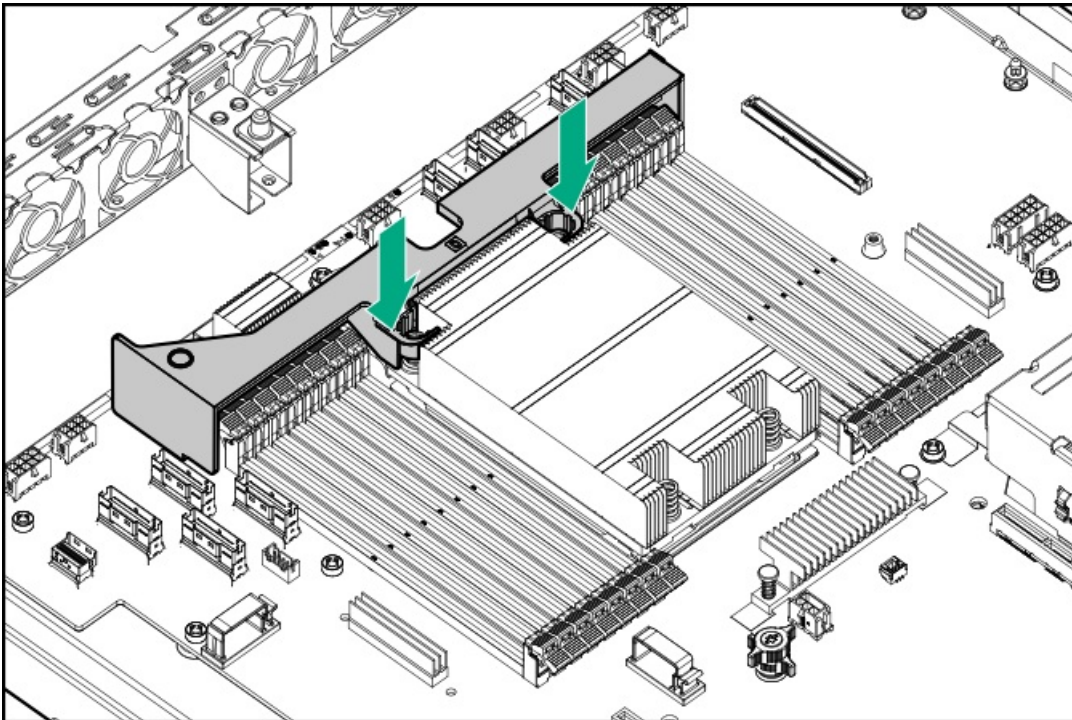


11. Install the high-performance fans.



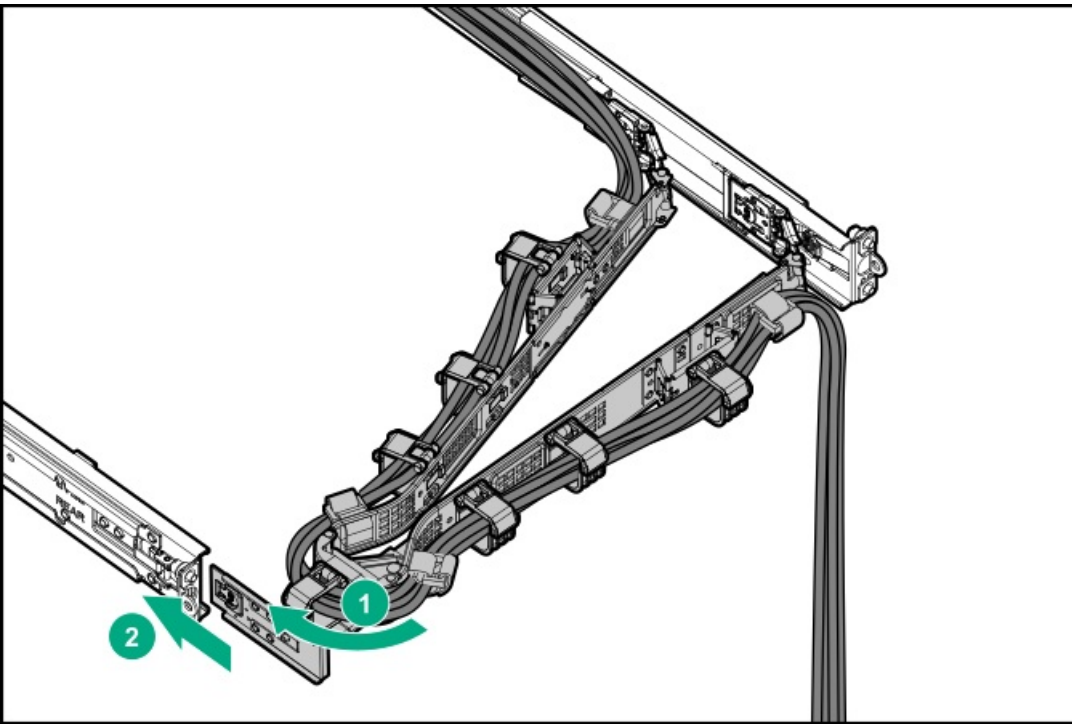


12. Secure the air baffle hooks to the heatsink screws.



13. Install the access panel.
14. Install the server into the rack.
15. Connect all peripheral cables to the server.
16. Connect each power cord to the server.
17. Connect each power cord to the power source.
18. If installed, close the cable management arm.





19. Power up the server.

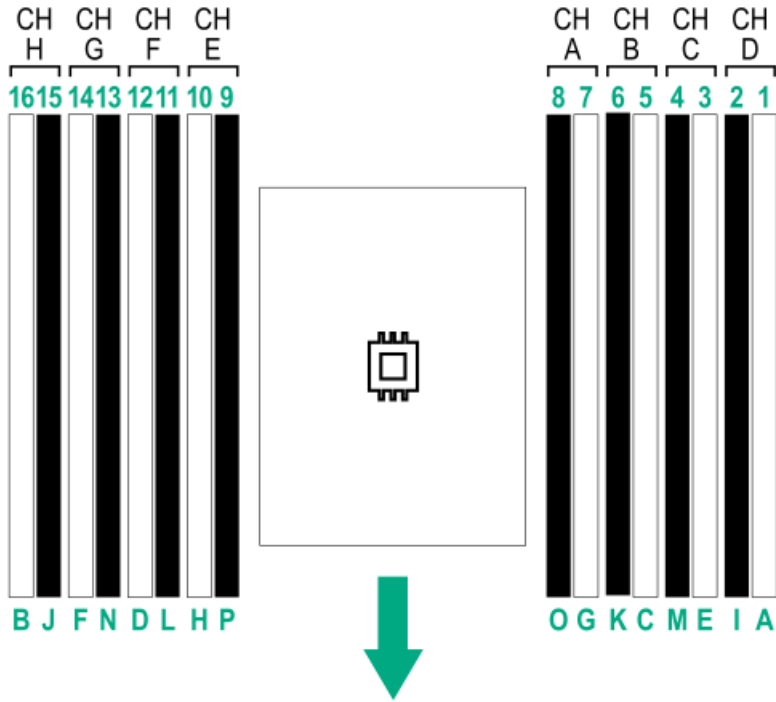
20. If removed, install the front bezel.

The installation is complete.



## Memory options

The server has 16 DIMM slots supporting HPE DDR4 SmartMemory (RDIMM or LRDIMM).



The arrow points to the front of the server.

## DIMM population information

For specific DIMM population information, see the DIMM population guidelines on the Hewlett Packard Enterprise website (<https://www.hpe.com/docs/amd-population-rules-Gen10Plus>).



## HPE SmartMemory speed information

For more information about memory speed information in HPE servers using AMD processors, see the Hewlett Packard Enterprise website (<https://www.hpe.com/docs/amd-speed-table-Gen10Plus>).



## Installing a DIMM

### ⚠ CAUTION:

- Do not install RDIMMs and LRDIMMs in the same server.
- Do not install ×4 and ×8 DRAM widths in the same server.

Attempting to mix any combination of these DIMMs can cause the server to halt during BIOS initialization. All memory installed in the server must be of the same type.

### ⚠ CAUTION:

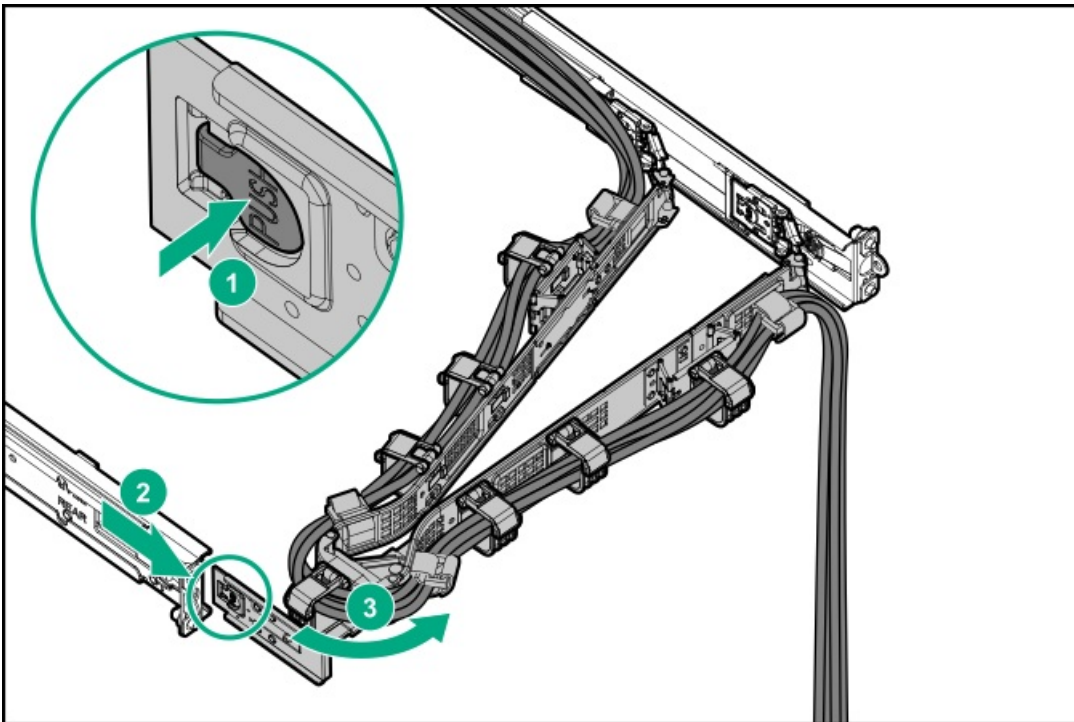
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### Prerequisites

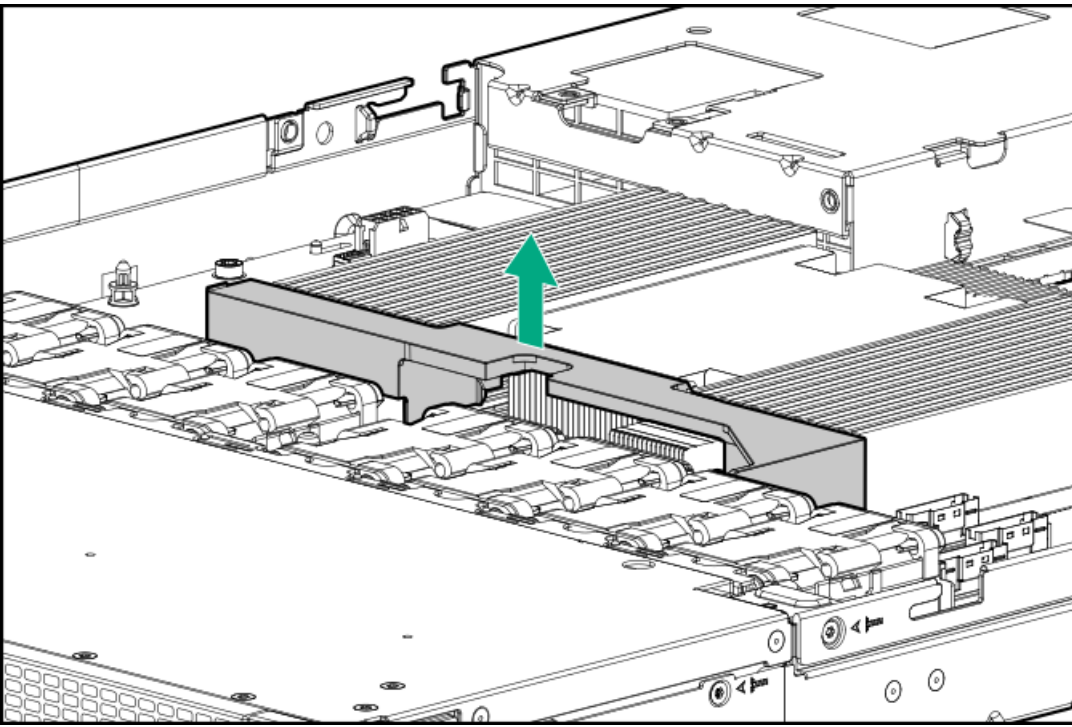
If you install a 256 GB or higher capacity DIMM, [the high-performance, dual-rotor fans are required](#).

### Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.



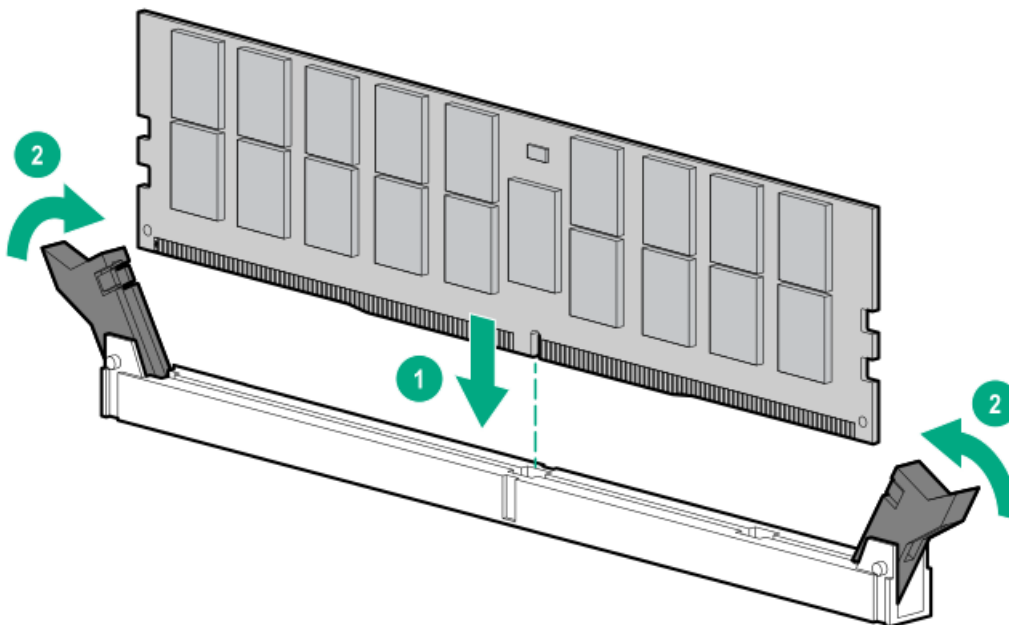
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. Remove the air baffle.



10. Install the DIMM:

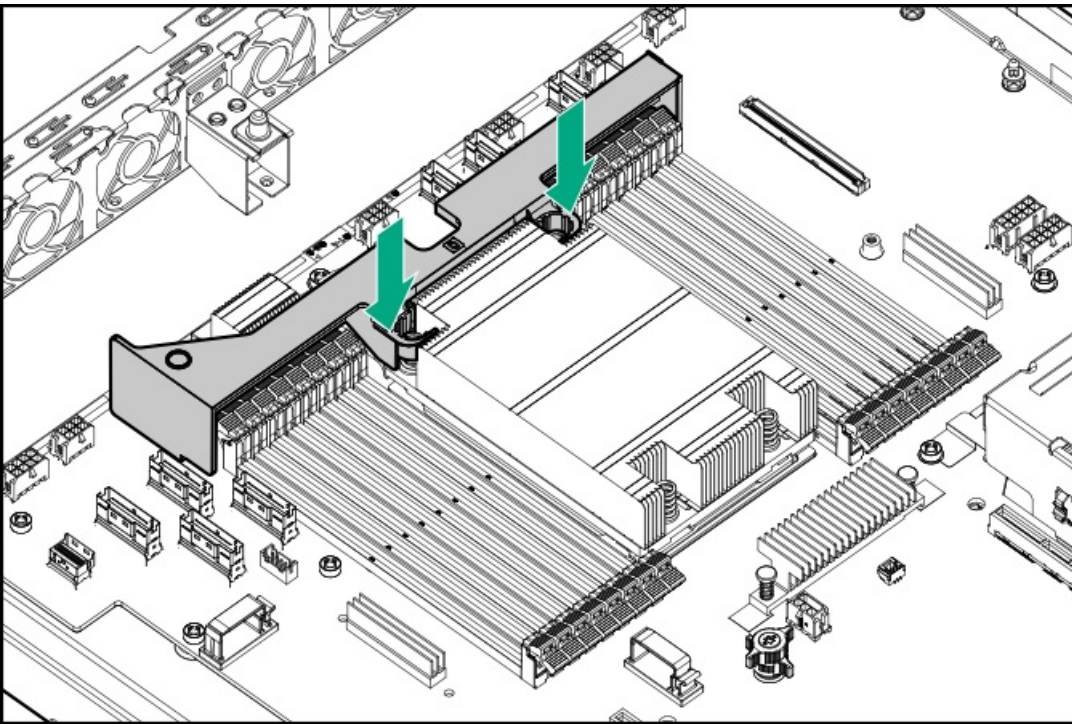
- a. Open the DIMM slot latches (callout 1).
- b. Align the notch on the bottom edge of the DIMM with the keyed surface of the DIMM slot, and then fully press the DIMM into the slot until the latches snap back into place (callout 2).

The DIMM slots are structured to ensure proper installation. If you try to insert a DIMM but it does not fit easily into the slot, you might have positioned it incorrectly. Reverse the orientation of the DIMM and insert it again.

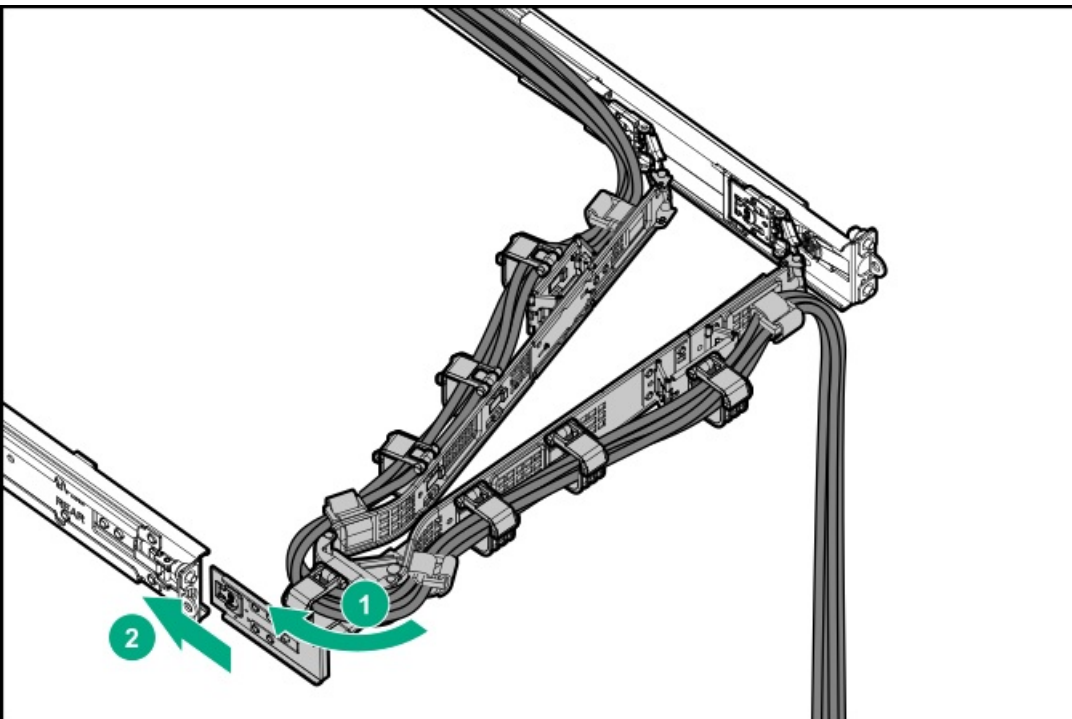


11. Secure the air baffle hooks to the heatsink screws.





12. Install the access panel.
13. Install the server into the rack.
14. Connect all peripheral cables to the server.
15. Connect each power cord to the server.
16. Connect each power cord to the power source.
17. If installed, close the cable management arm.



18. Power up the server.
19. If removed, install the front bezel.
20. To configure the memory settings:
  - a. From the boot screen, press **F9** to access the UEFI System Utilities.
  - b. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Memory Options.

The installation is complete.



## Secondary riser cage options

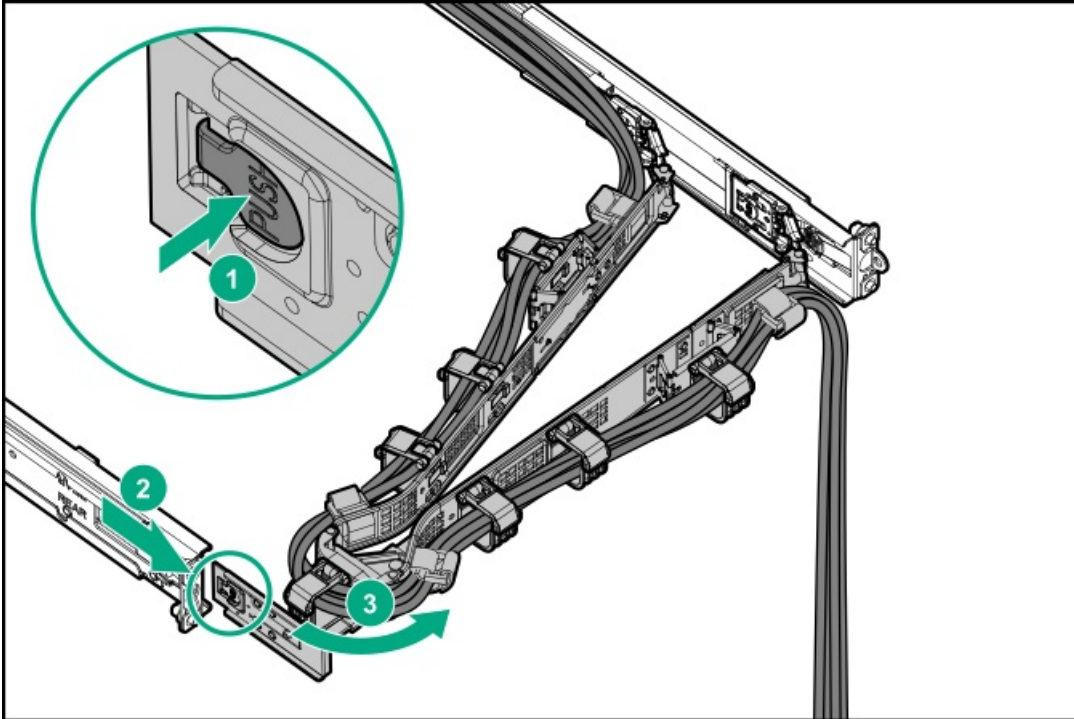
The primary riser cage is default in the server. The server supports two secondary riser cage options. These options use the same PCIe4 x16 riser board but have different retainer brackets for either full-height, half-length or half-height, half-length (low-profile) expansion cards.



## Installing the secondary riser option for half-height expansion cards

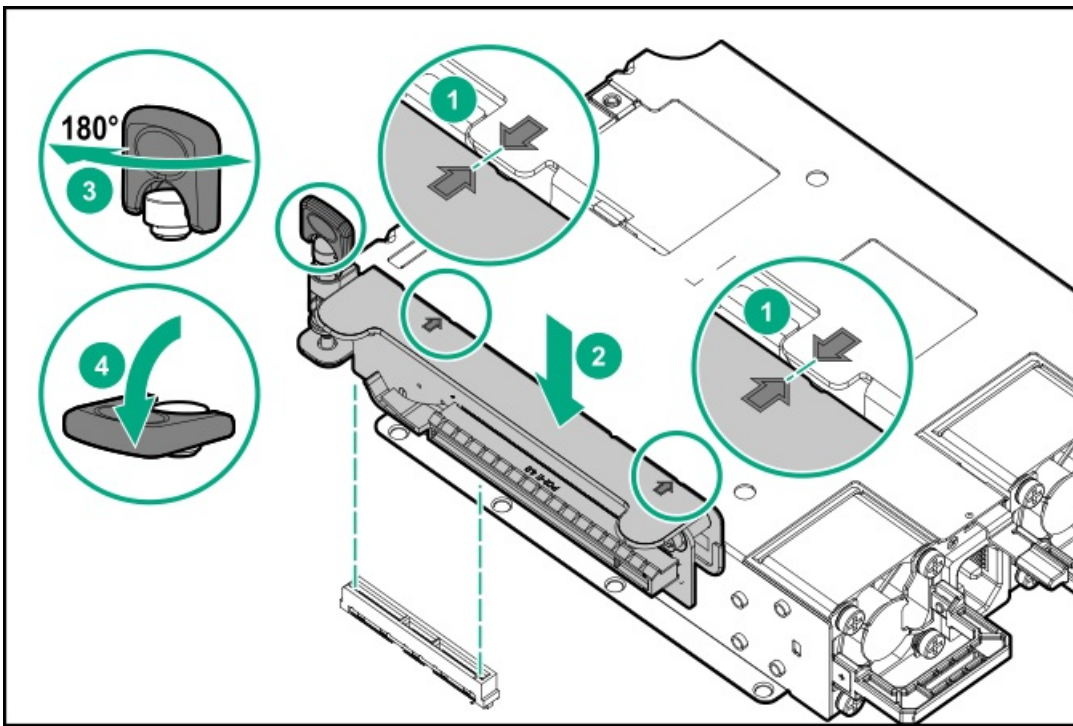
### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.

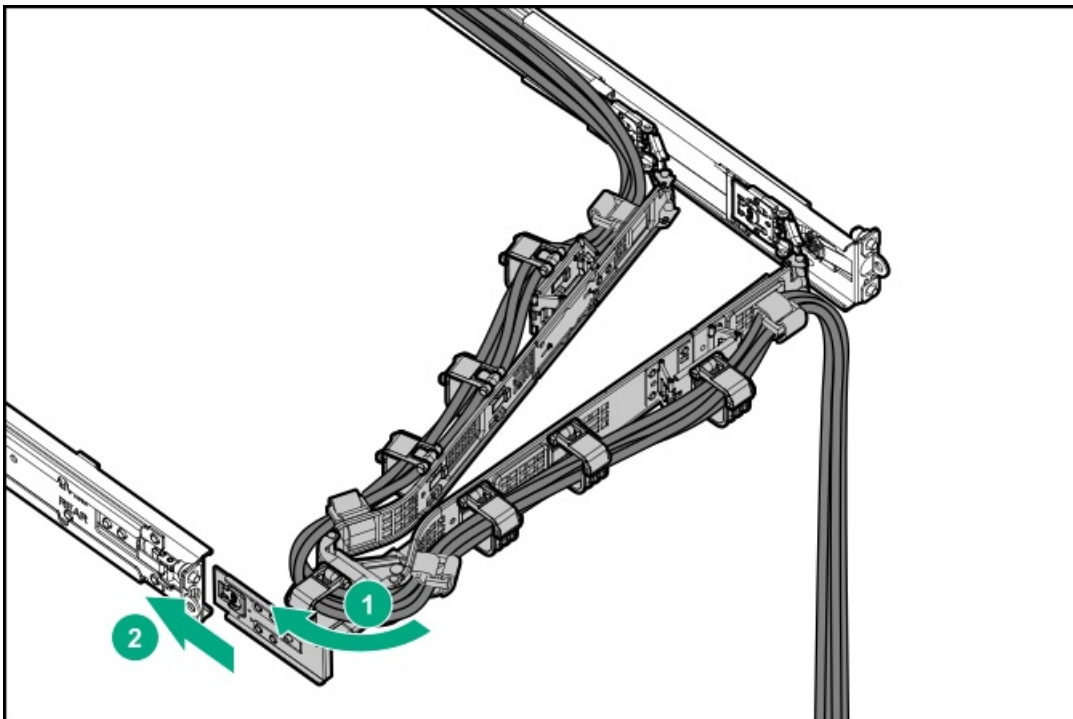


4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Install the secondary riser cage:
  - a. Align the arrows on the riser cage with the arrows on the power supply cage (callout 1).
  - b. Carefully press the riser down on its system board connector (callout 2).

Make sure that the riser board is firmly seated.
  - c. Simultaneously push and rotate the half-turn spring latch to 180° (callout 3).
  - d. Close the spring latch (callout 4).



10. Install the access panel.
11. Install the server into the rack.
12. Connect all peripheral cables to the server.
13. Connect each power cord to the server.
14. Connect each power cord to the power source.
15. If installed, close the cable management arm.



16. Power up the server.
17. If removed, install the front bezel.

The installation is complete.

## Installing the secondary riser option for full-height expansion cards

When a full-height expansion card is installed in the secondary riser slot 3, the primary riser slot 2 will no longer support card installation.

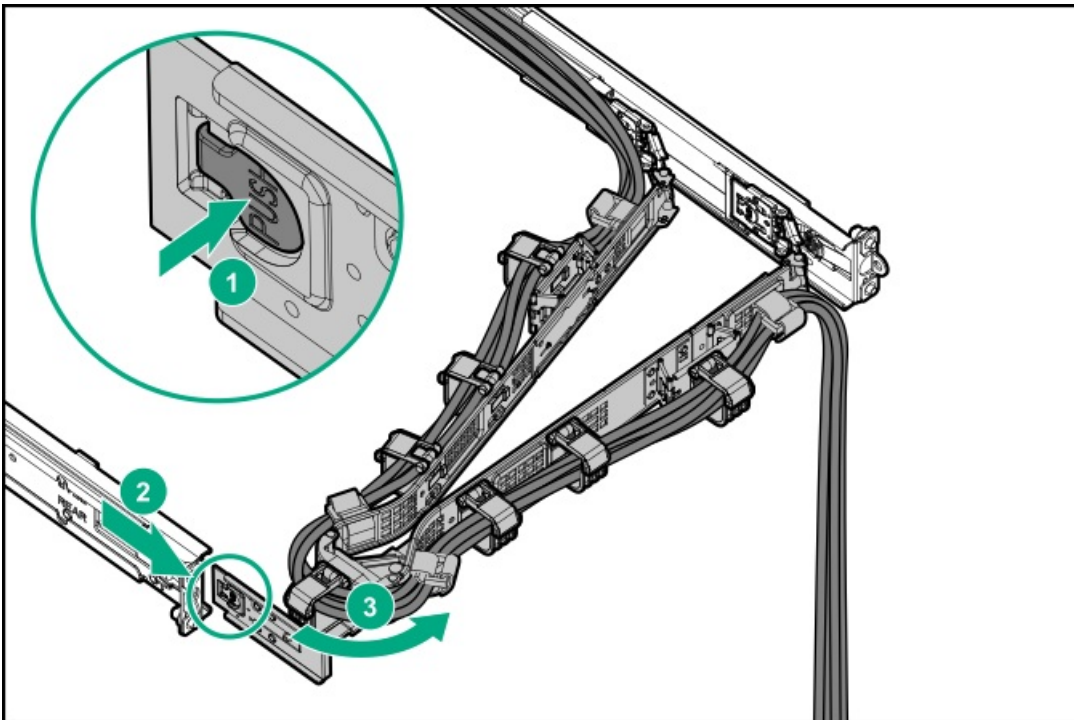
### Prerequisites

Before you perform this procedure, make sure that you have the following items available:

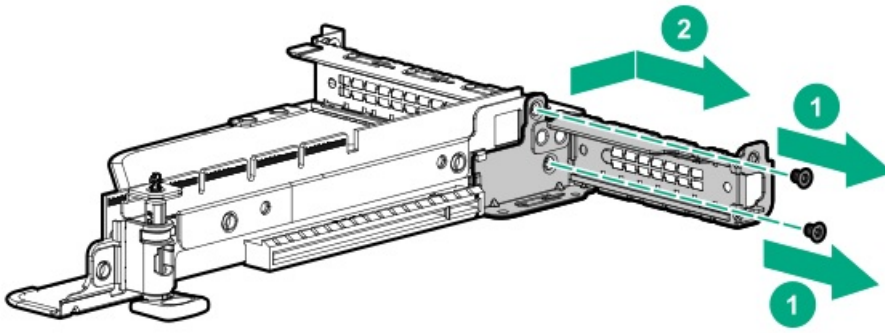
- T-15 Torx screwdriver
- T-10 Torx screwdriver

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Remove the primary riser cage.
10. Remove the retainer bracket for the primary riser slot 2.



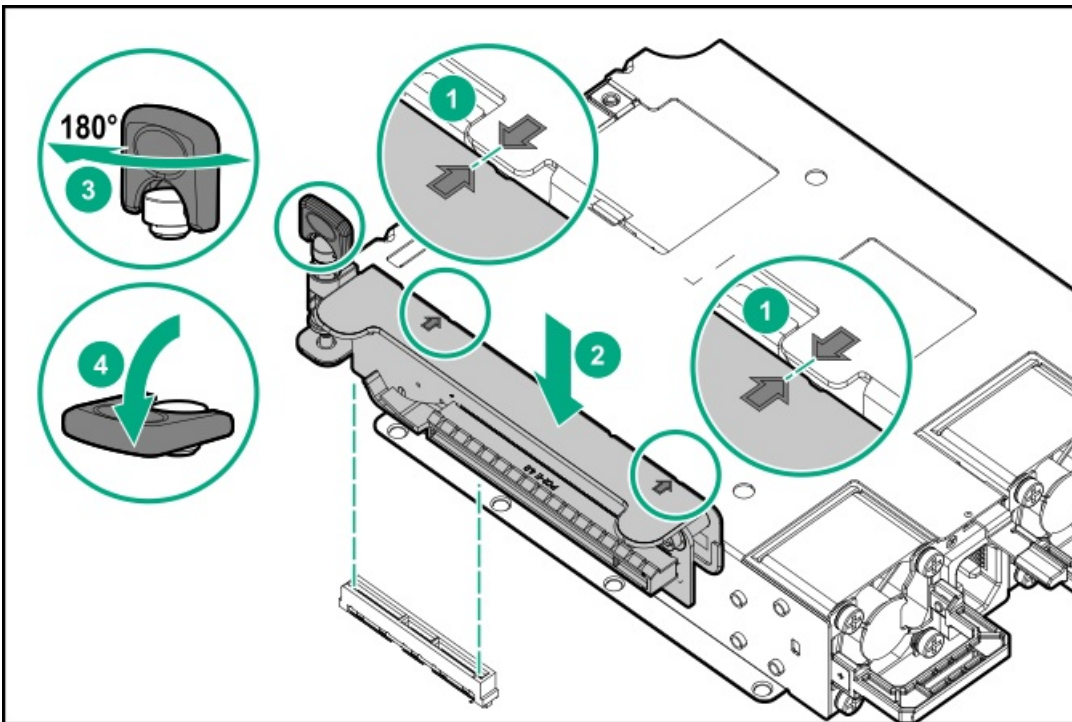
11. Install the primary riser cage.

12. Install the secondary riser cage:

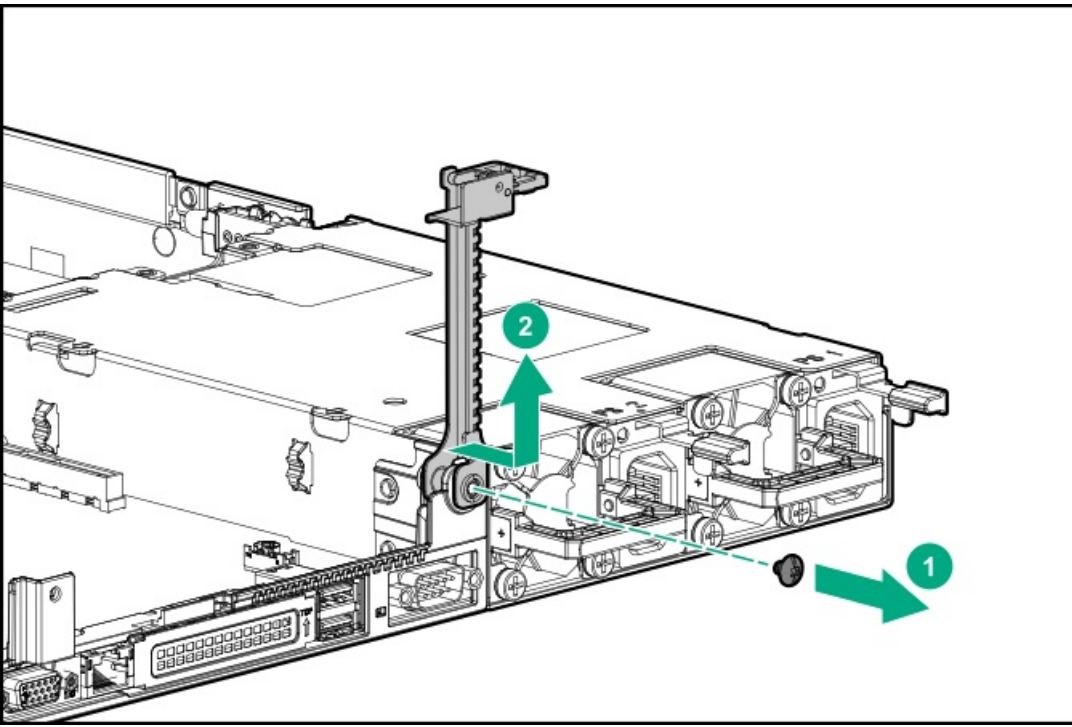
- a. Align the arrows on the riser cage with the arrows on the power supply cage (callout 1).
- b. Carefully press the riser down on its system board connector (callout 2).

Make sure that the riser board is firmly seated.

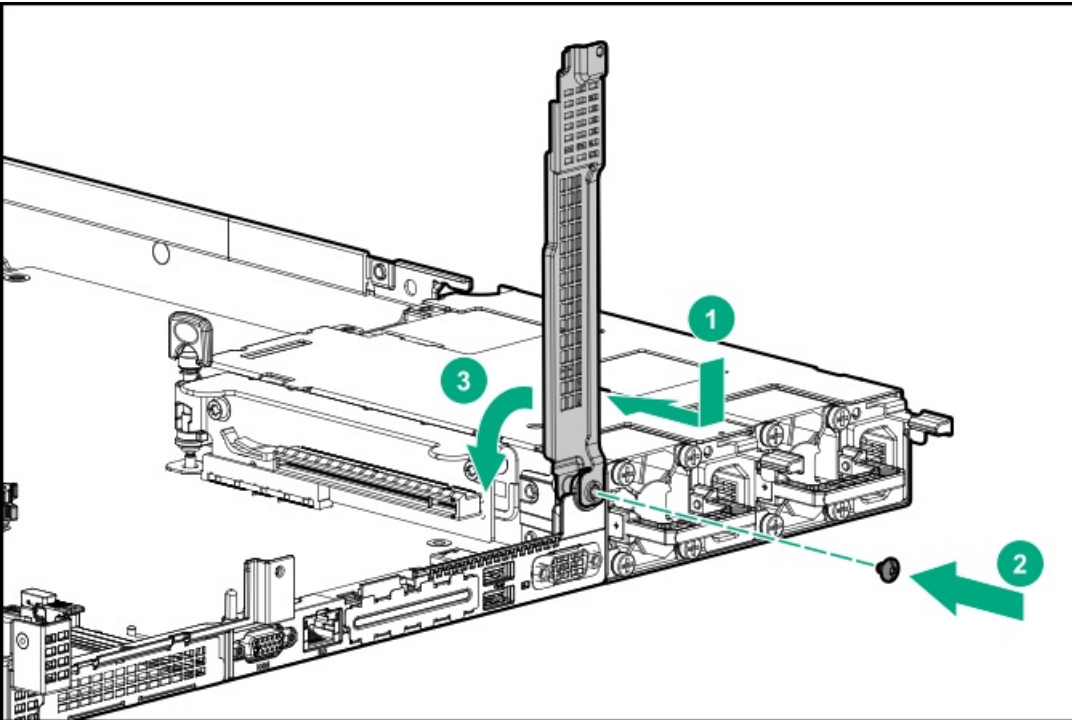
- c. Simultaneously push and rotate the half-turn spring latch to 180° (callout 3).
- d. Close the spring latch (callout 4).



13. Remove the low-profile retainer bracket for the secondary riser.



14. Install the full-height card retainer bracket for the secondary riser.



15. Install the access panel.

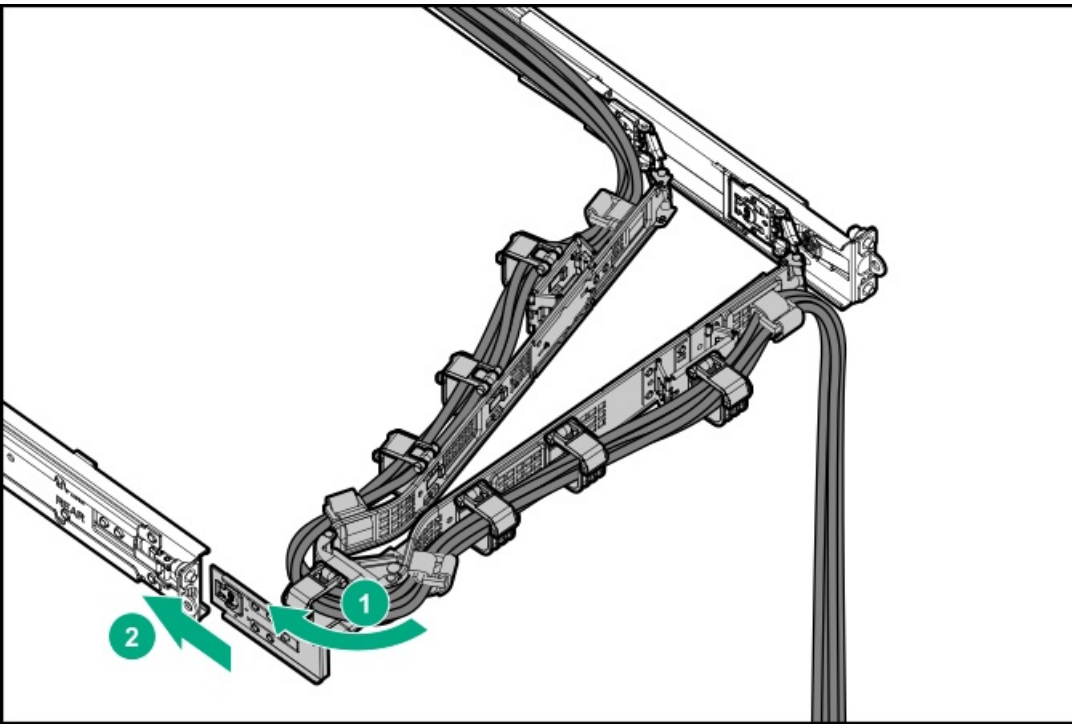
16. Install the server into the rack.

17. Connect all peripheral cables to the server.

18. Connect each power cord to the server.

19. Connect each power cord to the power source.

20. If installed, close the cable management arm.



21. Power up the server.
  22. If removed, install the front bezel.
- The installation is complete.

## Storage controller options

This server supports the following storage controllers:

- Embedded HPE SR100i Gen10 Plus Software RAID controller:
  - Supports direct attached SATA and NVMe drives.  
Software RAID is supported in specific drive bays. To identify these drive bays, see [Drive bay numbering](#).
  - Supports SATA and NVMe software RAID.  
For more information on software RAID configuration, see the HPE SR Gen10 Plus Software RAID User Guide at <https://www.hpe.com/support/SSC-SRGen10Plus-ug>.
- Type-a modular (AROC) and type-p PCIe plug-in Gen10 and Gen10 Plus storage controller options:
  - Supports NVMe, SAS, and SATA drives.
  - Supports hardware RAID.
  - When a Gen10 Plus tri-mode controller is used together with a U.3 drive backplane, the system will support mixed drive configuration.

# Preparing the server for storage controller installation

## Prerequisites

Before beginning this procedure, download the Service Pack for ProLiant (SPP) from the Hewlett Packard Enterprise website (<https://www.hpe.com/servers/spp/download>).

## Procedure

1. If the server was previously configured:
  - a. Back up data on the system.
  - b. Close all applications.
  - c. Ensure that users are logged off and that all tasks are completed on the server.

---

**△ CAUTION:** In systems that use external data storage, be sure that the server is the first unit to be powered down and the last to be powered back up. Taking this precaution ensures that the system does not erroneously mark the drives as failed when the server is powered up.

---

2. If server firmware is not the latest revision, update the firmware.
3. If the new controller is the new boot device, configure the controller.



## Installing a type-a modular controller option

### CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

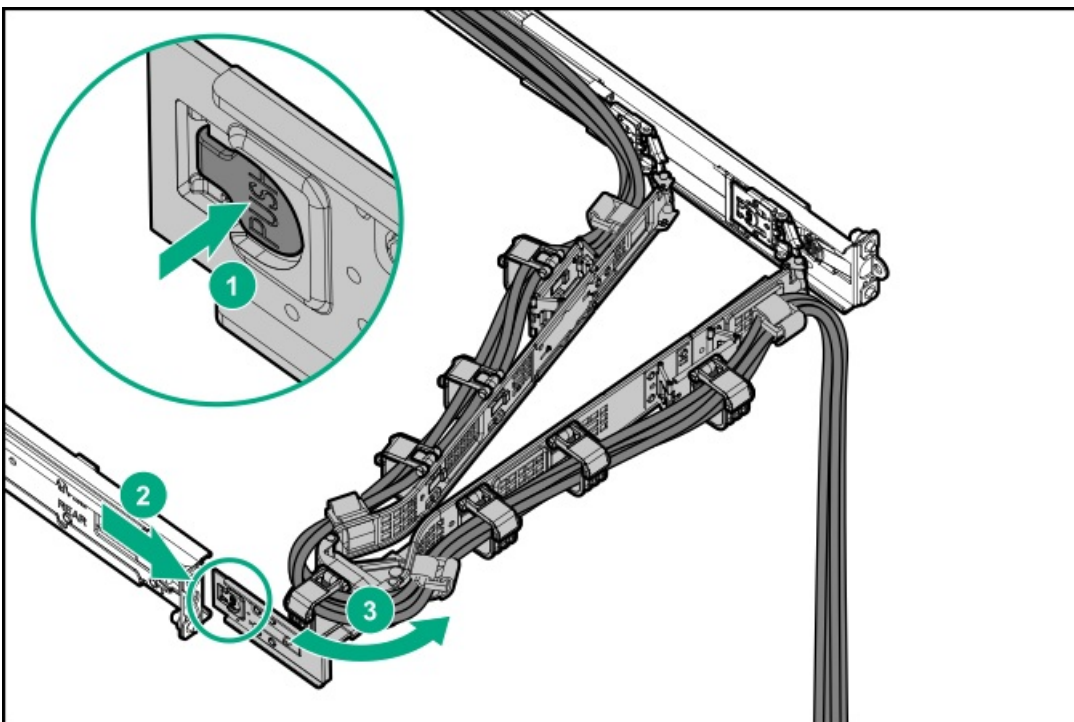
### Prerequisites

Before you perform this procedure, make sure that you have the following items available:

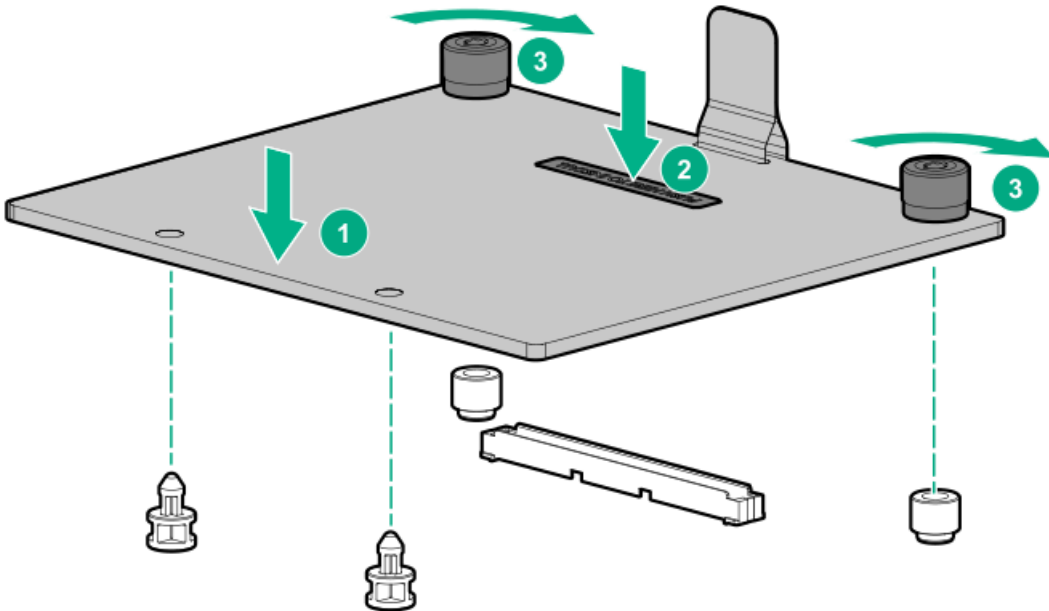
- Compatible controller cable option
- T-15 Torx screwdriver

### Procedure

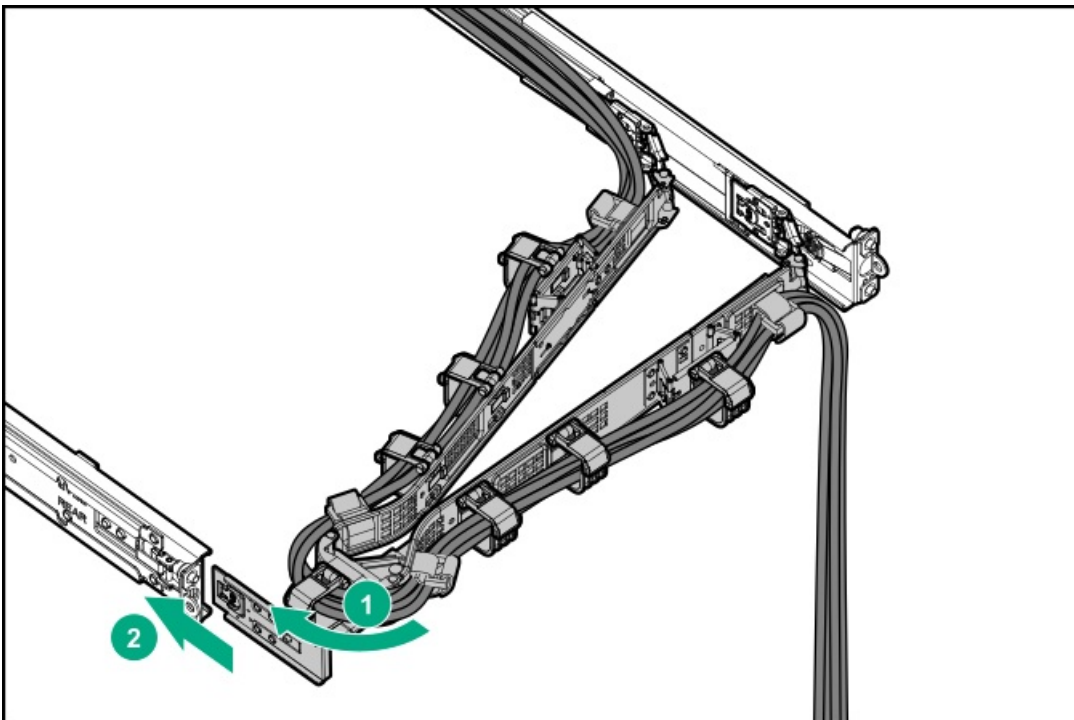
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Install the type-a storage controller:
  - a. Insert the alignment pins on the system board through the holes on the card (callout 1).
  - b. Press the area of the card marked as PRESS TO INSTALL to ensure that the card is firmly seated on the slot.
  - c. Tighten the card thumbscrews.



10. If the controller cable is not yet connected to the drive backplane, remove the front drive cage to facilitate the cabling.
11. Cable the controller.
12. If removed, install the front drive cage.
13. Install the access panel.
14. Install the server into the rack.
15. Connect all peripheral cables to the server.
16. Connect each power cord to the server.
17. Connect each power cord to the power source.
18. If installed, close the cable management arm.



19. Power up the server.
20. If removed, install the front bezel.
21. To configure drive arrays, see the following documentation for detailed instructions:



- HPE SR Gen10 Plus Software RAID User Guide at <https://www.hpe.com/support/SSC-SRGen10Plus-ug>
- HPE SR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/SR-Gen10Plus-UG>
- HPE MR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/MR-Gen10Plus-UG>

The installation is complete.



## Installing a type-p PCIe plug-in controller option

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).



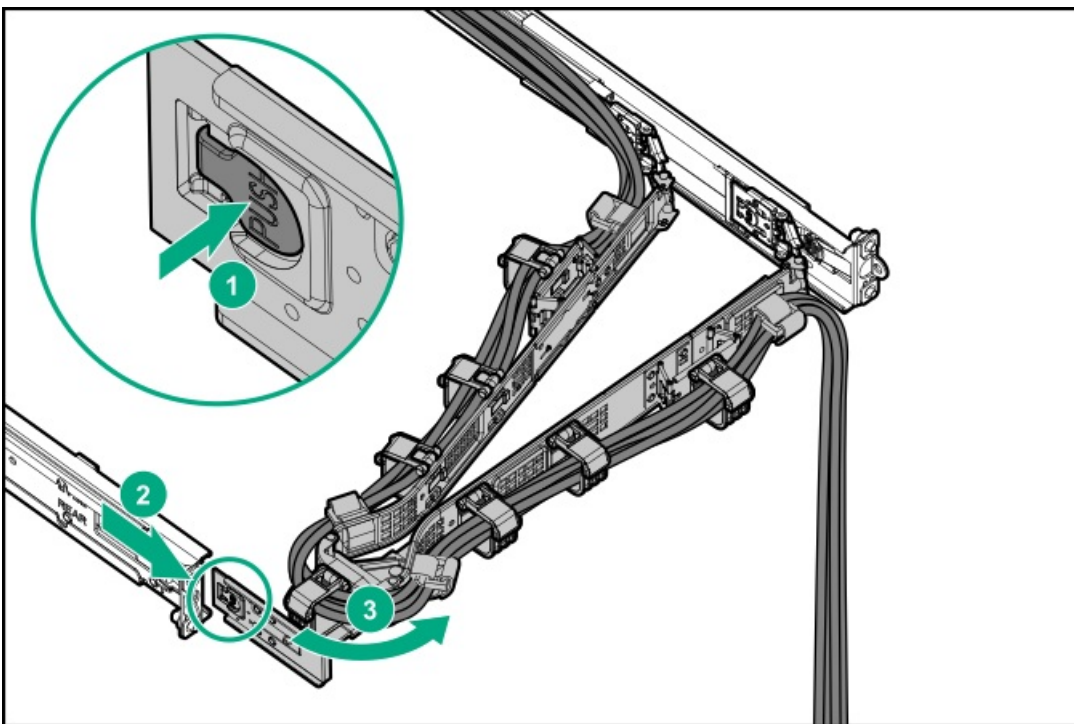
**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

### Prerequisites

- Before you perform this procedure, make sure that you have the following items available:
  - Compatible controller cable option
  - T-15 Torx screwdriver
  - Phillips No. 1 screwdriver
- The flash-backed write cache (FBWC) feature of some storage controllers requires the [energy pack option](#). For more information, see the controller QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>).

### Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.



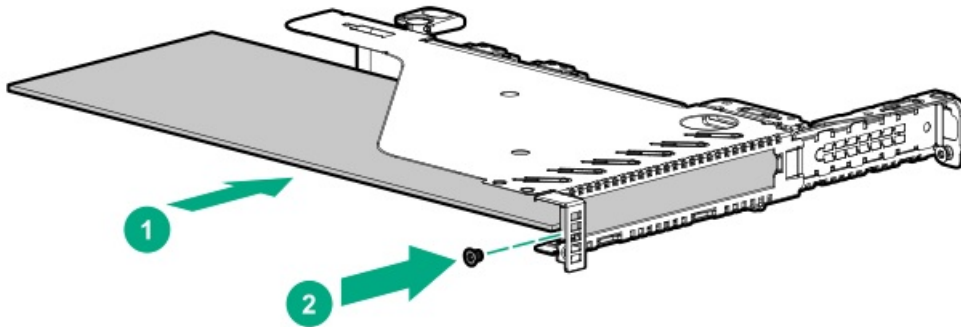
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. [Identify the riser slot compatible with the storage controller](#).

10. To install the storage controller in the primary riser, do the following:

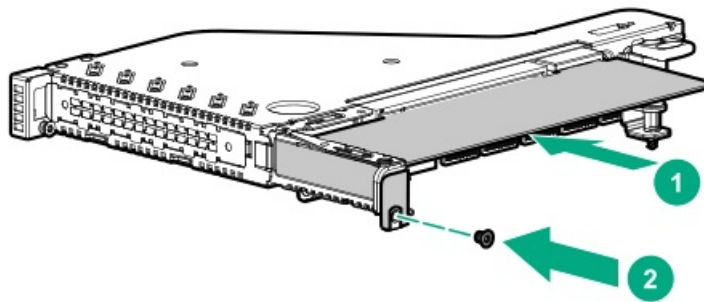
- a. Remove the primary riser cage.
- b. Remove the riser slot blank.
- c. Install the type-p storage controller.

Make sure that the controller is seated firmly in the slot.

- Primary riser slot 1



- Primary riser slot 2

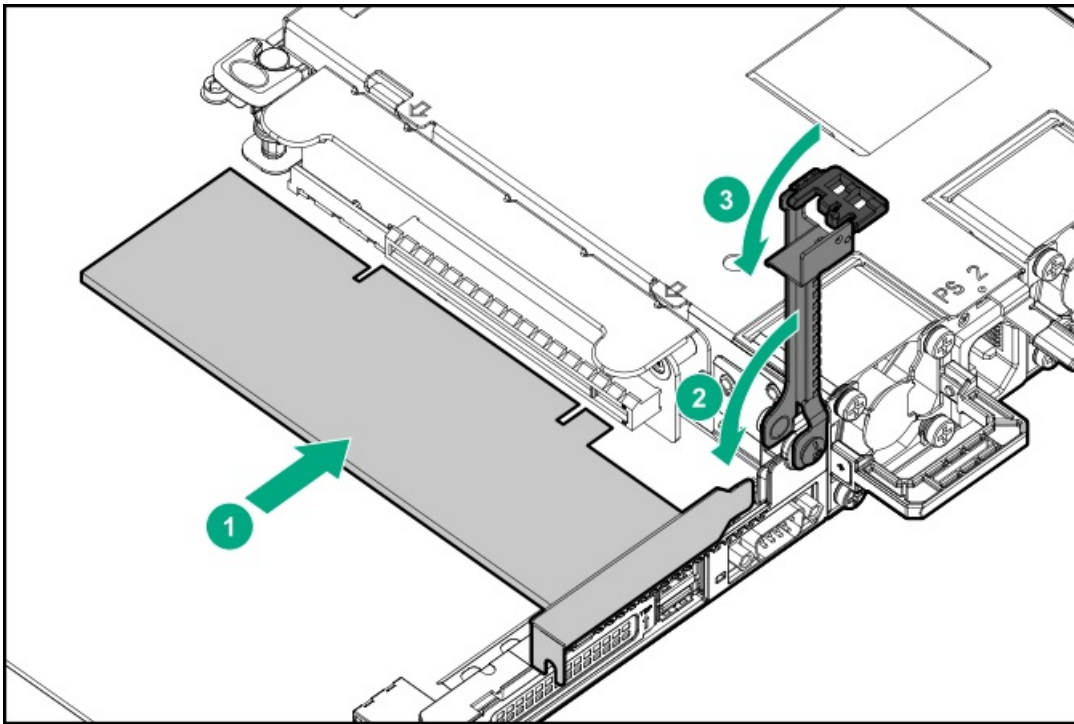


- d. Install the primary riser cage.

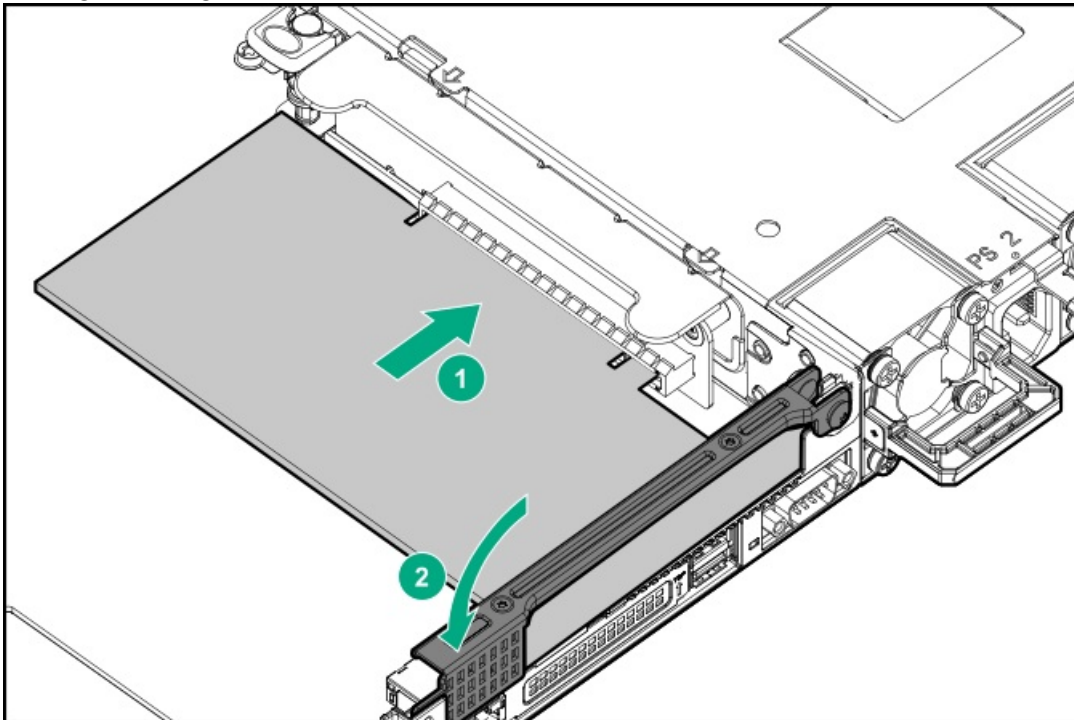
11. To install the storage controller in the secondary riser, do the following:

If you are installing a full-height controller in the secondary riser, make sure that the riser is equipped with the full-height retainer bracket.

- a. Remove the riser slot blank.
- b. Install the type-p storage controller.
  - Half-height, half-length controller



- Full-height, half-length controller



12. To enable HPE the SR SmartCache or MR CacheCade feature, [install the energy pack](#).

SmartCache and CacheCade enable solid-state drives to be used as caching devices for hard drive media. These features accelerate access to frequently used data by caching hot data from the hard drives onto the solid-state drives.

13. If the controller cable is not yet connected to the drive backplane, [remove the front drive cage to facilitate the cabling](#).

14. [Cable the controller](#).

15. If removed, [install the front drive cage](#).

16. [Install the access panel](#).

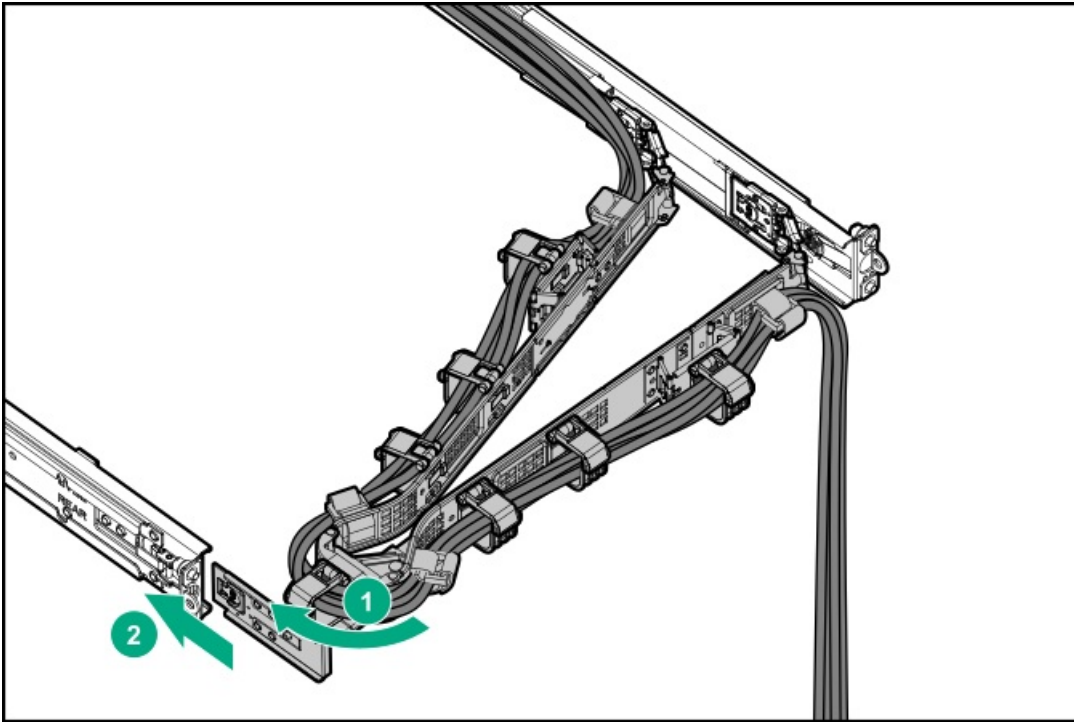
17. [Install the server into the rack](#).

18. Connect all peripheral cables to the server.

19. Connect each power cord to the server.

20. Connect each power cord to the power source.

21. If installed, close the cable management arm.



22. Power up the server.
23. If removed, install the front bezel.
24. To configure drive arrays, see the following documentation for detailed instructions:
- HPE SR Gen10 Plus Software RAID User Guide at <https://www.hpe.com/support/SSC-SRGen10Plus-ug>
  - HPE SR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/SR-Gen10Plus-UG>
  - HPE MR Gen10 Plus Controller User Guide at <https://www.hpe.com/info/MR-Gen10Plus-UG>

The installation is complete.

## Energy pack options

Hewlett Packard Enterprise offers the HPE Smart Storage Battery as a centralized backup power source options to back up write cache content on the controllers in case of an unplanned server power outage.

Once installed, the status of the energy pack displays in HPE iLO. For more information, see the iLO user guide on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/ilo-docs>).



## HPE Smart Storage Battery

The HPE Smart Storage Battery supports the following type-p controllers:

- P-class SR Gen10 controllers
- SR 900 series Gen10 Plus controllers
- MR 400 and 900 series Gen10 Plus controllers

This server supports the 12 W HPE Smart Storage Battery with the 230 mm cable. A single 12 W battery can support up to three devices.

After the battery is installed, it might take up to two hours to charge. Controller features requiring backup power are not re-enabled until the battery is capable of supporting the backup power.

## Energy pack specifications

Feature	Description
Time required to recharge Smart Storage Battery	12 W: 1 hour (For maximum load of 3 devices)
Duration of Smart Storage Battery backup	150 seconds (maximum support)  The Smart Storage Battery provides a sufficient duration to transfer the cached data from DDR memory to flash memory, where the data remains indefinitely or until a controller retrieves the data.

For more information, see the [QuickSpecs document](#) for the Smart Storage Battery.



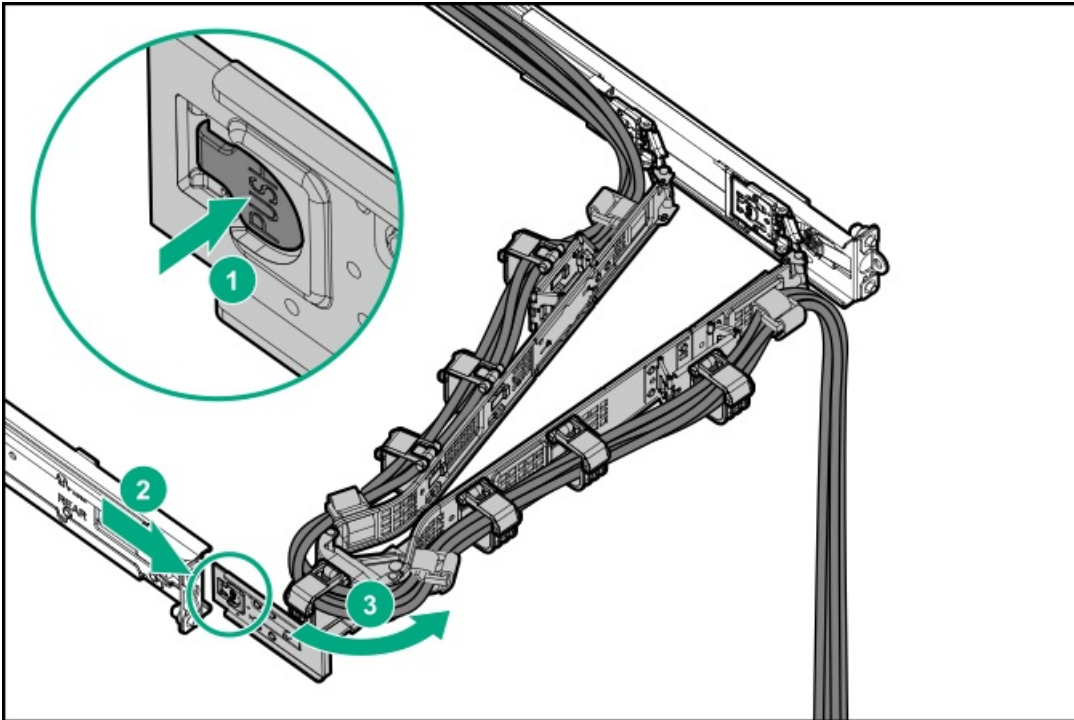
# Installing an energy pack

## Prerequisites

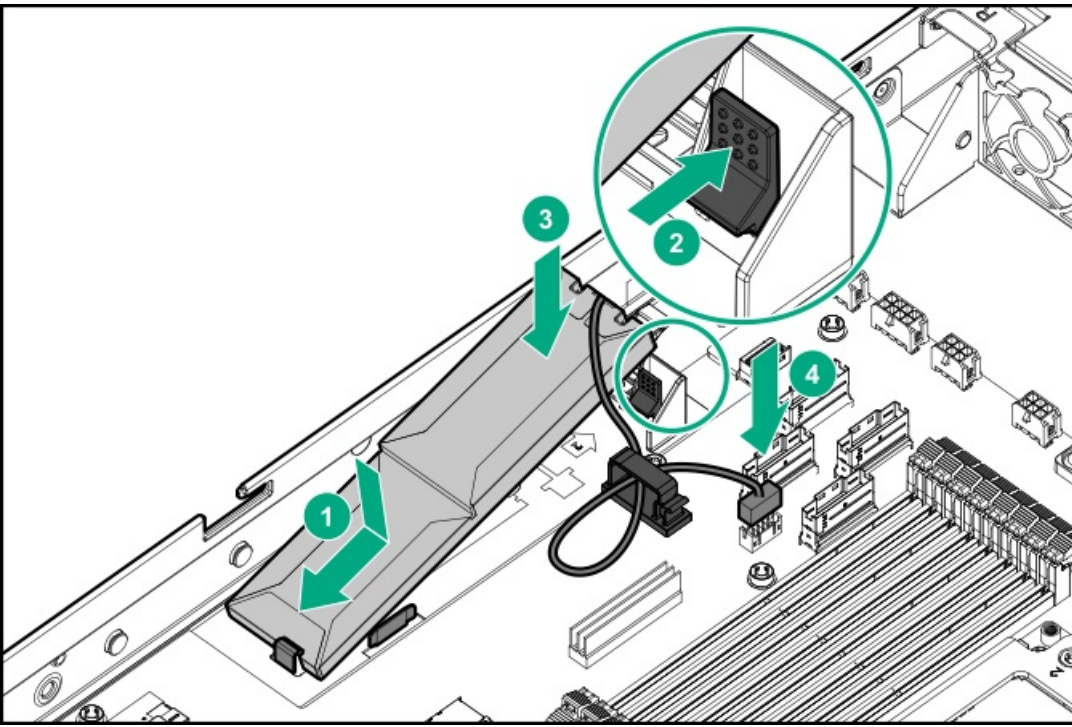
- Make sure that a compatible type-p storage controller is installed.
- Make sure that you have the storage controller backup power cable that ships with the storage controller.

## Procedure

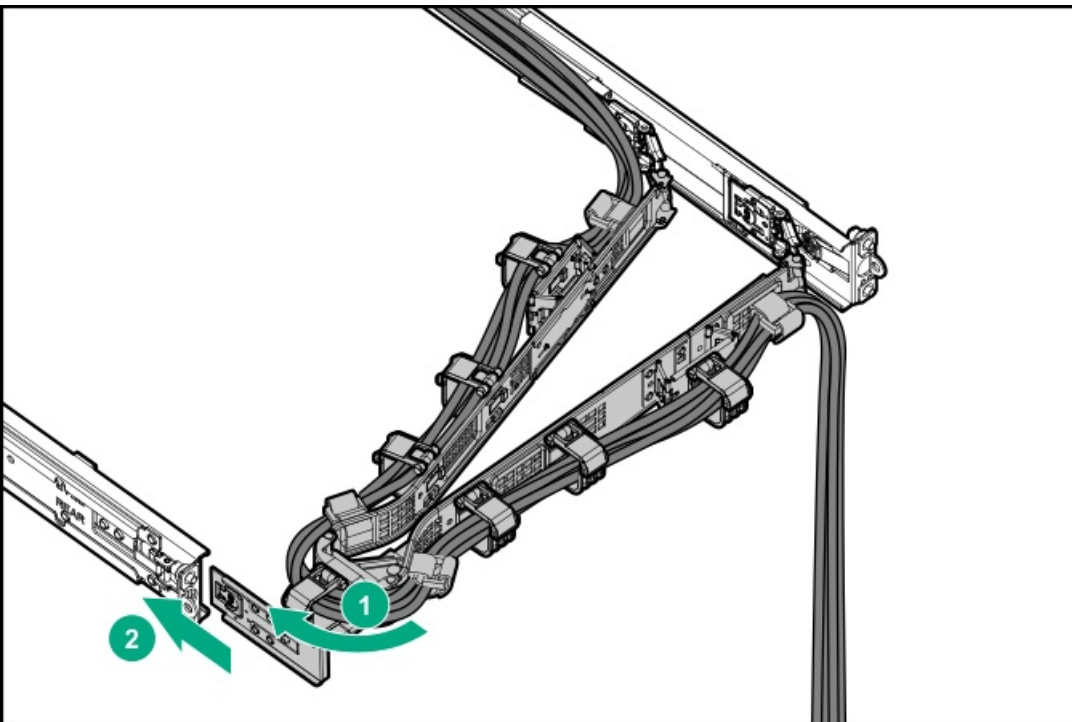
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Install the energy pack:
  - a. Insert the energy pack at an angle (callout 1).
  - b. Push and hold the latch (callout 2), and then press the cable end of the energy pack down (callout 3).
  - c. Connect the energy pack cable, and then secure the extra length of the cable in the clip (callout 4).



10. Connect the storage backup power cable.
11. Install the access panel.
12. Install the server into the rack.
13. Connect all peripheral cables to the server.
14. Connect each power cord to the server.
15. Connect each power cord to the power source.
16. If installed, close the cable management arm.



17. Power up the server.
18. If removed, install the front bezel.

The installation is complete.



## Expansion card options

The server supports the installation of full-height, half-length and half-height, half-length (low-profile) PCIe expansion / add-in (AIC) cards such as:

- HPE type-p storage controller
- Ethernet adapter
- HDR InfiniBand adapter
- Fibre channel host bus adapter (FC HBA)
- Accelerator (workload, computational, or graphics accelerator)

For more information on the expansion options validated for this server, see the server QuickSpecs on the Hewlett Packard Enterprise website:

<https://www.hpe.com/servers/dl325-gen10-plus-v2>

## Installing an expansion card

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).



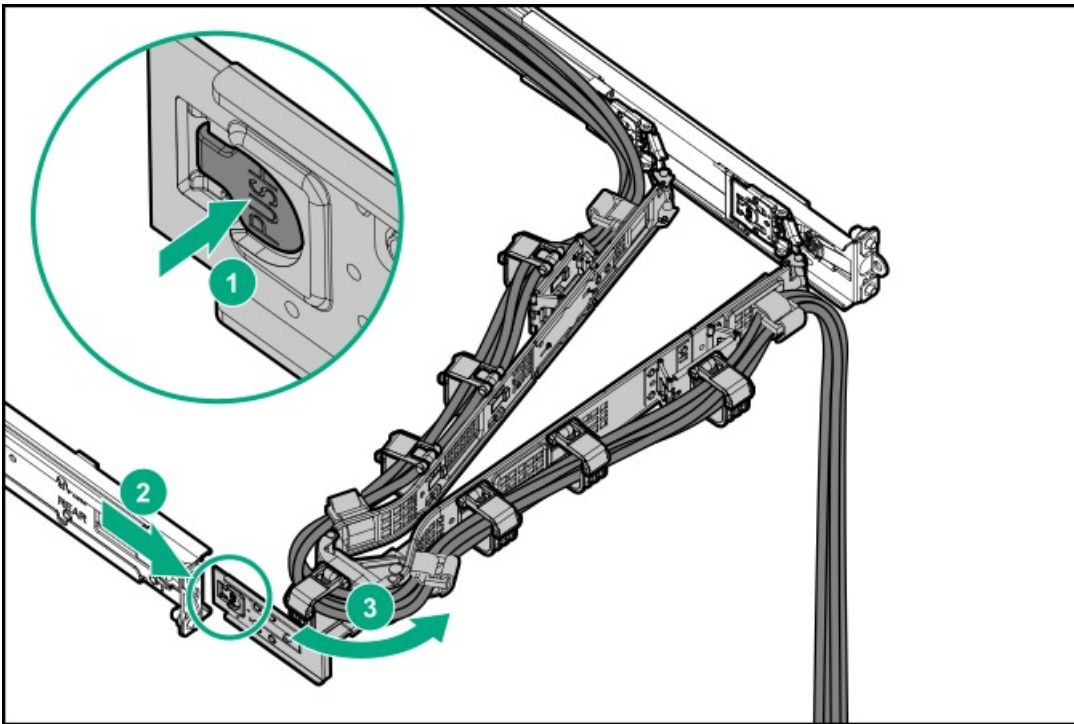
**CAUTION:** To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

### Prerequisites

- [Determine the fan requirement for the expansion option that you are installing](#) .
- Before you perform this procedure, make sure that you have the following items available:
  - T-10 Torx screwdriver
  - Phillips No. 1 screwdriver

### Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. [Identify the riser slot compatible with the expansion card option](#) .
10. Make sure that any switches or jumpers on the expansion card are set properly.

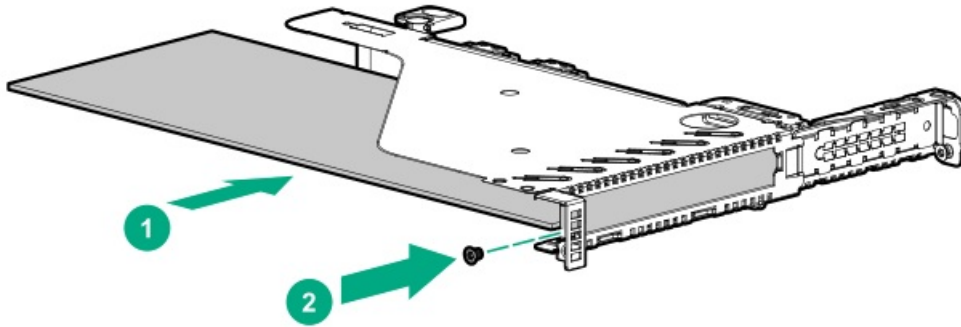
For more information, see the documentation that ships with the option.

11. To install the expansion card in the primary riser, do the following:

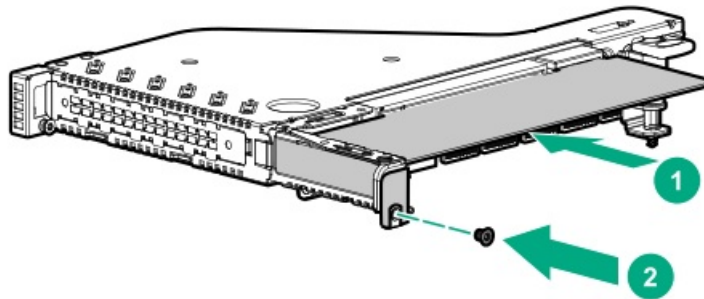
- a. Remove the primary riser cage.
- b. Remove the riser slot blank.
- c. Install the expansion card.

Make sure that the card is seated firmly in the slot.

- Primary riser slot 1



- Primary riser slot 2



- d. Install the primary riser cage.

12. To install the expansion card in the secondary riser, do the following:

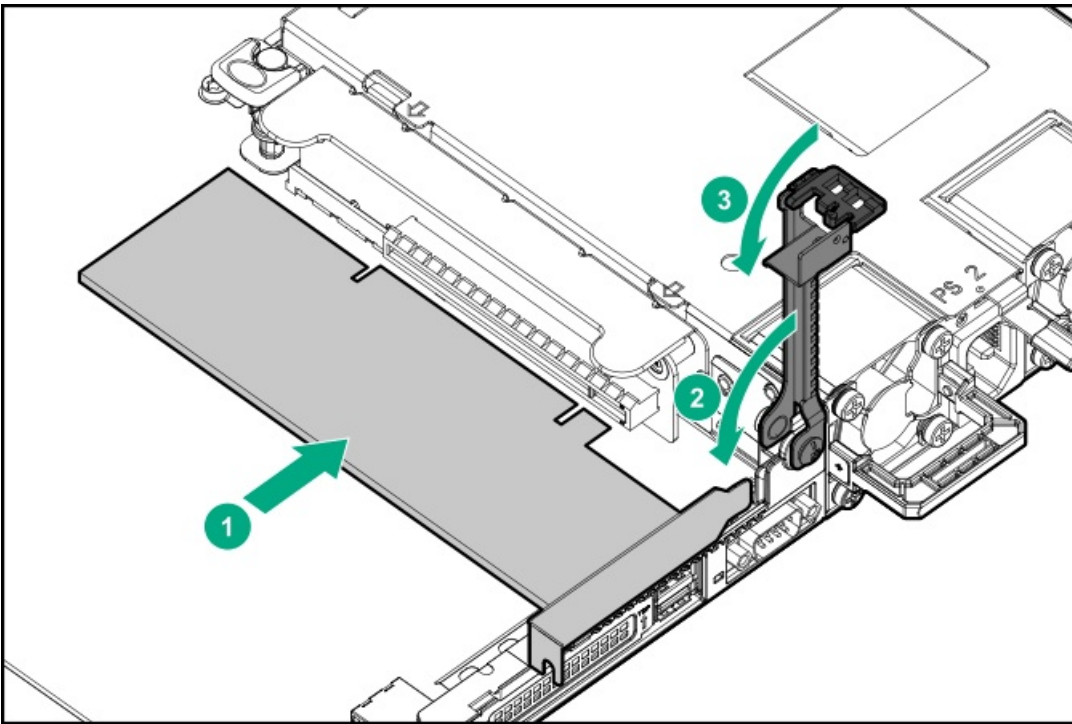
If you are installing a full-height expansion card in the secondary riser, make sure that the riser is equipped with the full-height retainer bracket.

- a. Remove the riser slot blank.
- b. Install the expansion card.

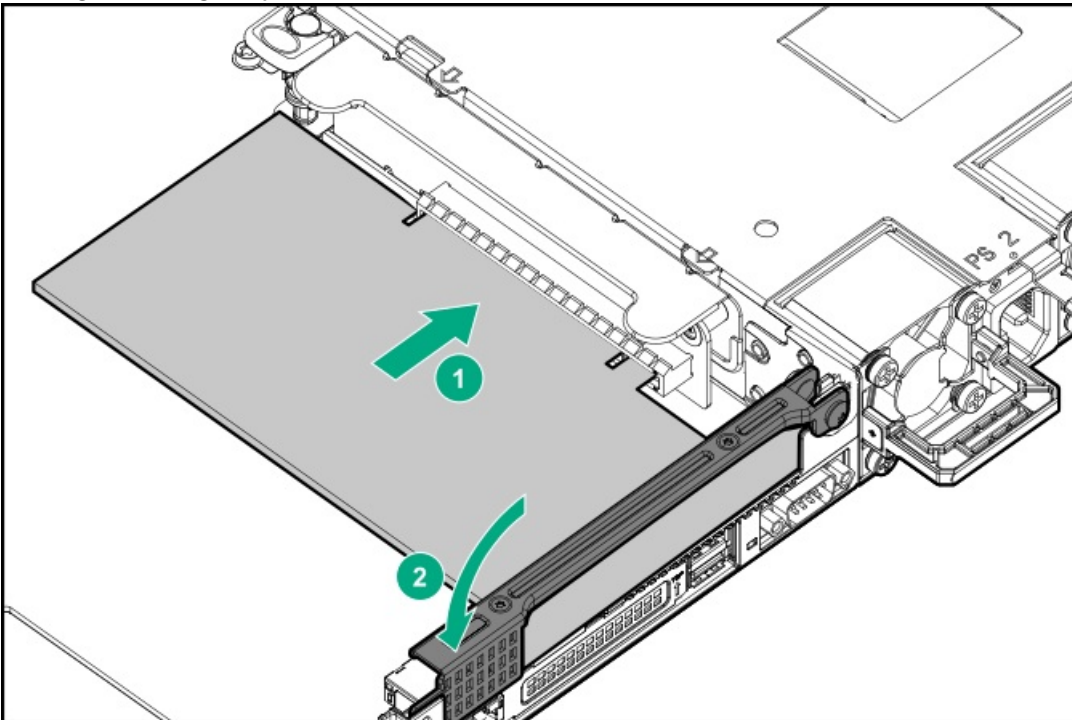
Make sure that the card is seated firmly in the slot.

- Half-height, half-length expansion card





- Full-height, half-length expansion card



13. Connect all necessary internal cabling to the expansion card.

For more information on these cabling requirements, see the documentation that ships with the option.

14. Install the access panel.

15. Install the server into the rack.

16. Connect all peripheral cables to the server.

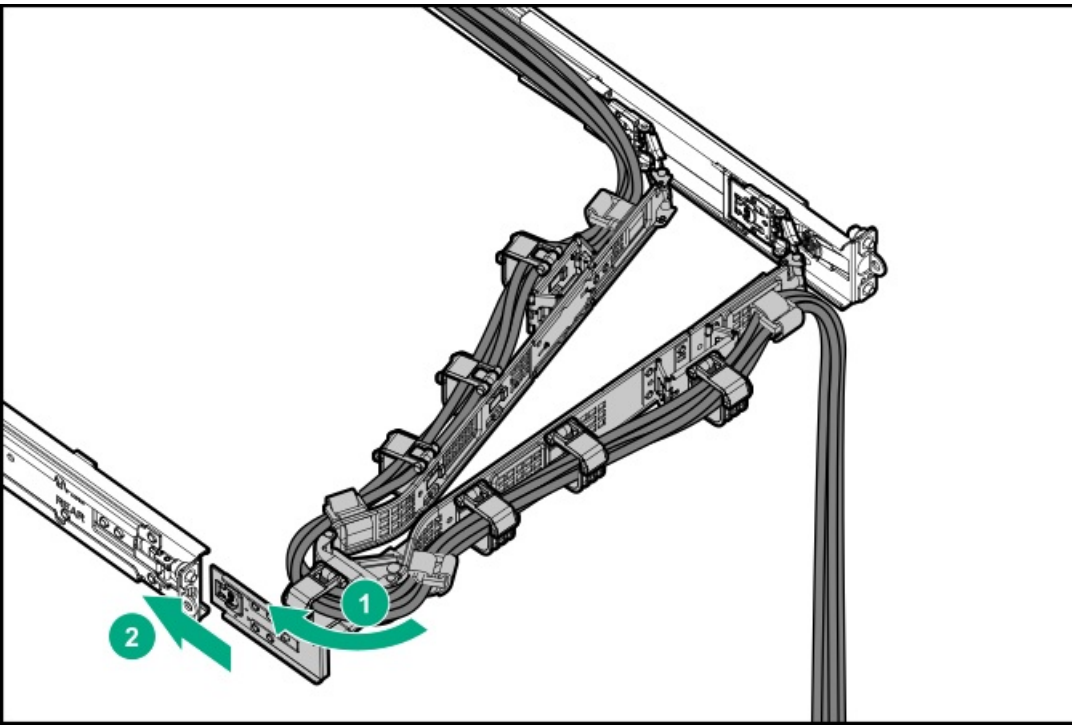
17. Connect each power cord to the server.

18. Connect each power cord to the power source.

19. If installed, close the cable management arm.







20. Power up the server.

21. If removed, install the front bezel.

The installation is complete.

## M.2 SSD options

In this server, M.2 SSD support is provided through the following options:

- [Installing the M.2 SATA SSD enablement option](#)
- [HPE NS204i-p NVMe OS Boot Device](#)

## Installing the M.2 SATA SSD enablement option

The M.2 SATA SSD enablement option includes a PCIe3 x8 add-in card (AIC) that supports two M.2 2280 SATA SSDs. This AIC is only compatible with Windows operating systems.

**⚠ CAUTION:**

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

**⚠ CAUTION:**

To prevent improper cooling and thermal damage, do not operate the server unless all PCIe slots have either an expansion slot cover or an expansion card installed.

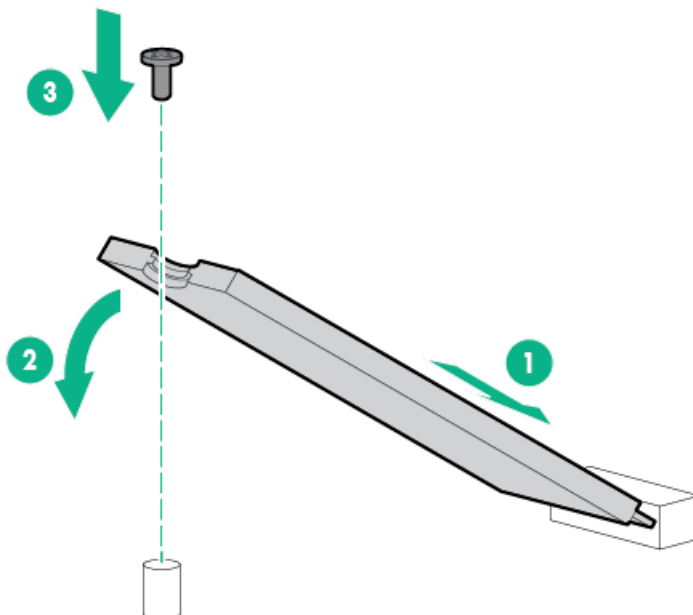
### Prerequisites

- To use the embedded HPE SR100i Gen10 Plus Software RAID controller to manage the M.2 SATA SSDs, set the server boot mode to UEFI.
- The SATA cable that ships with the M.2 SATA SSD AIC is not compatible with this server.
  - If an optical drive is already installed in the server, use the same optical drive-M.2 SSD SATA splitter cable to connect the M.2 SATA SSD AIC.
  - If an optical drive is not installed, order the optical drive-M.2 SSD SATA splitter cable option (P39141-B21).
- Before you perform this procedure, make sure that you have the following items available:
  - T-15 Torx screwdriver
  - Phillips No. 1 screwdriver—This tool is required only if the M.2 SSDs are not preinstalled on the AIC.

### Procedure

#### Installing the drives onto the M.2 SATA add-in card

1. Insert the SSD into the M.2 slot at a 45° angle.
2. Carefully press the SSD down to the horizontal position.
3. Install the SSD mounting screw.

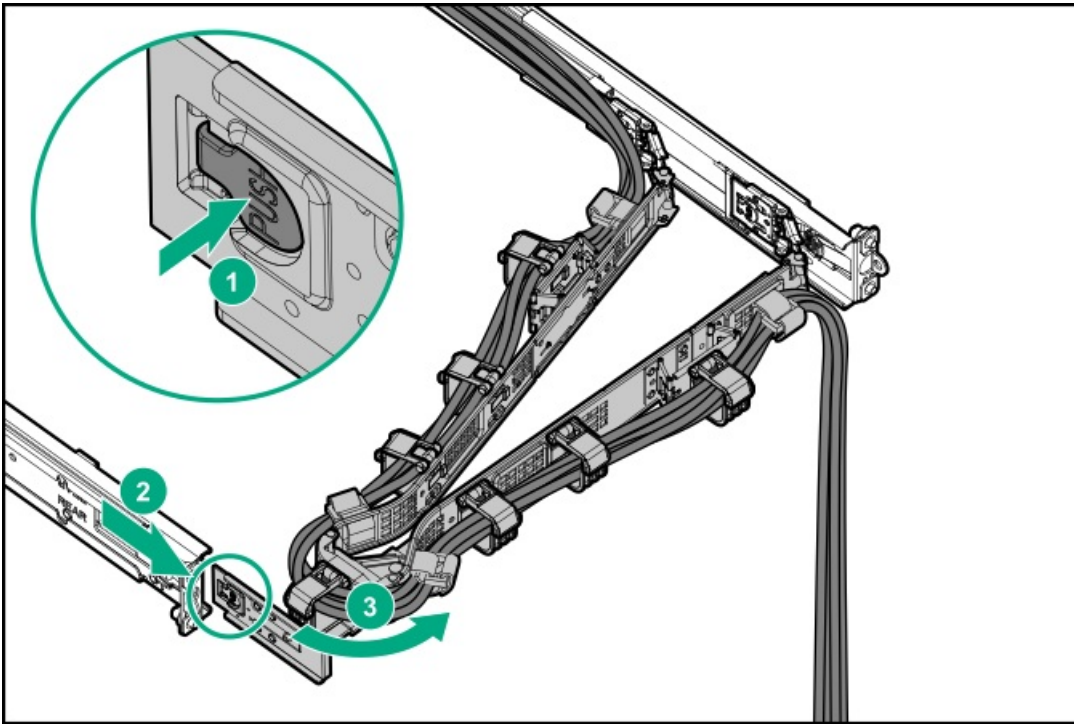


4. If you are installing a second SSD, repeat steps 1–3.

#### Installing the M.2 SATA SSD add-in card

5. If installed, [remove the front bezel](#).
6. [Power down the server](#).

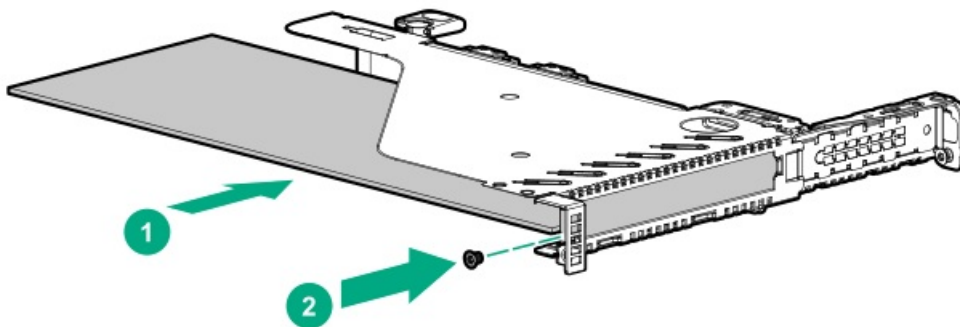
7. If installed, release the cable management arm.



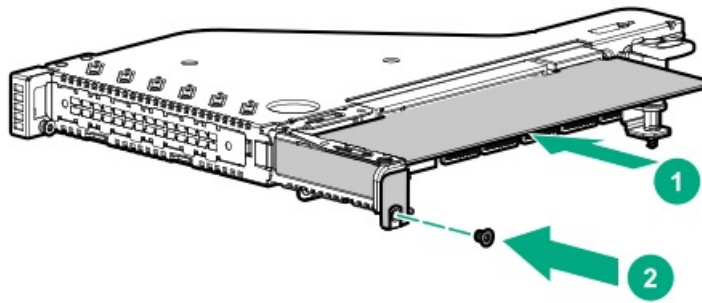
8. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
9. Disconnect all peripheral cables from the server.
10. Remove the server from the rack.
11. Place the server on a flat, level work surface.
12. Remove the access panel.
13. Identify the riser slot compatible with the add-in card.
14. To install the add-in card in the primary riser, do the following:
  - a. Remove the primary riser cage.
  - b. Remove the riser slot blank.
  - c. Install the add-in card.

Make sure that the card is seated firmly in the slot.

- Primary riser slot 1



- Primary riser slot 2



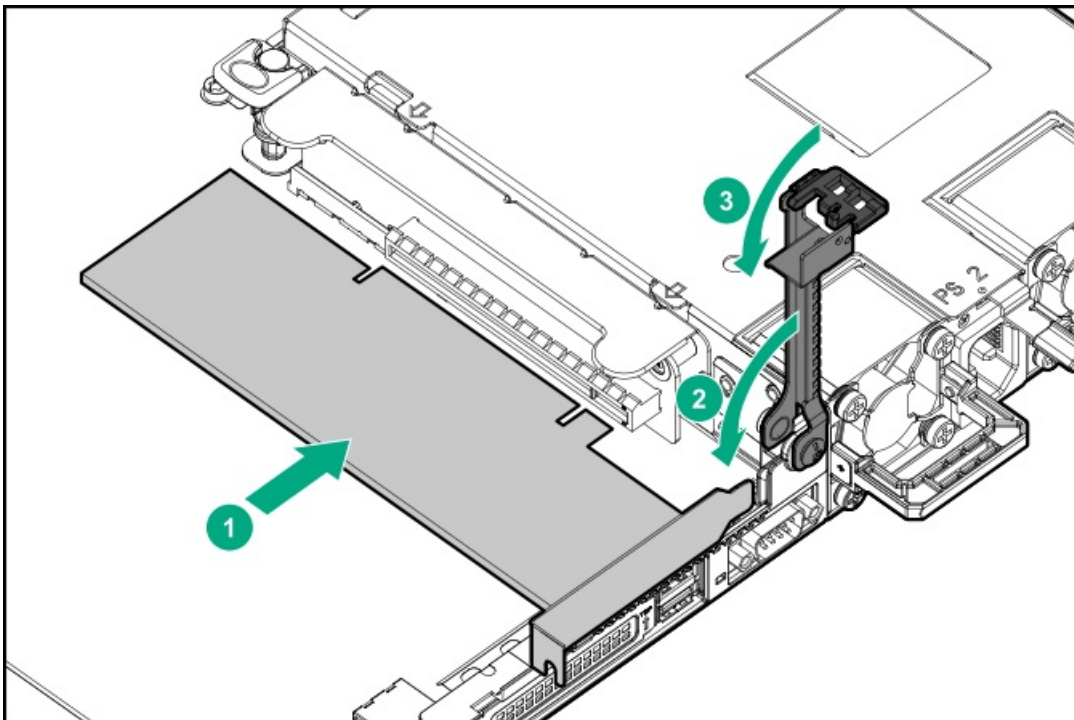
15. To install the add-in card in the secondary riser, do the following:

If you are installing the add-in card with the full-height bracket in the secondary riser, make sure that the riser is equipped with the full-height retainer bracket.

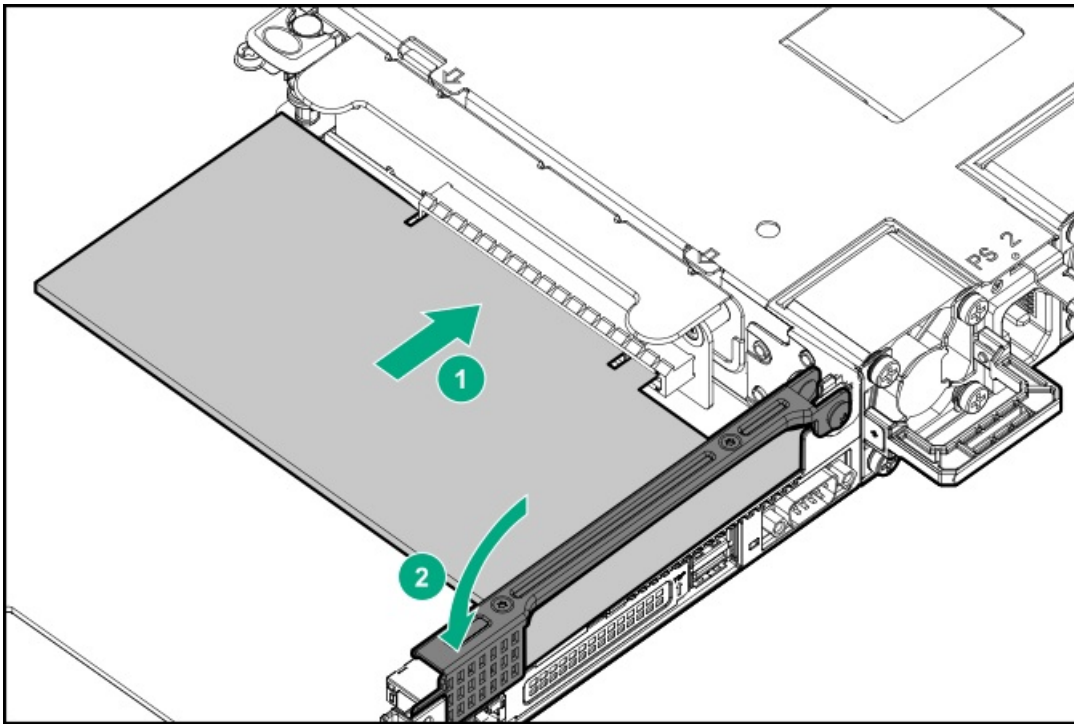
- a. Remove the riser slot blank.
- b. Install the add-in card.

Make sure that the card is seated firmly in the slot.

- Add-in card with low-profile bracket



- Add-in card with full-height bracket



**△ CAUTION:**

The optical drive-M.2 SSD SATA splitter cable is only compatible with the NVMe/SATA port 9A. To prevent port damage and/or server malfunction, do not connect the splitter cable to any other system board port.

16. Do one of the following:

- If an optical drive is already installed, release the SSD connectors of the optical drive-M.2 SSD SATA splitter cable, and then connect them to SSDs.
- If an optical drive is not installed, connect the optical drive-M.2 SSD SATA splitter cable to the system board and SSDs .

17. Install the access panel.

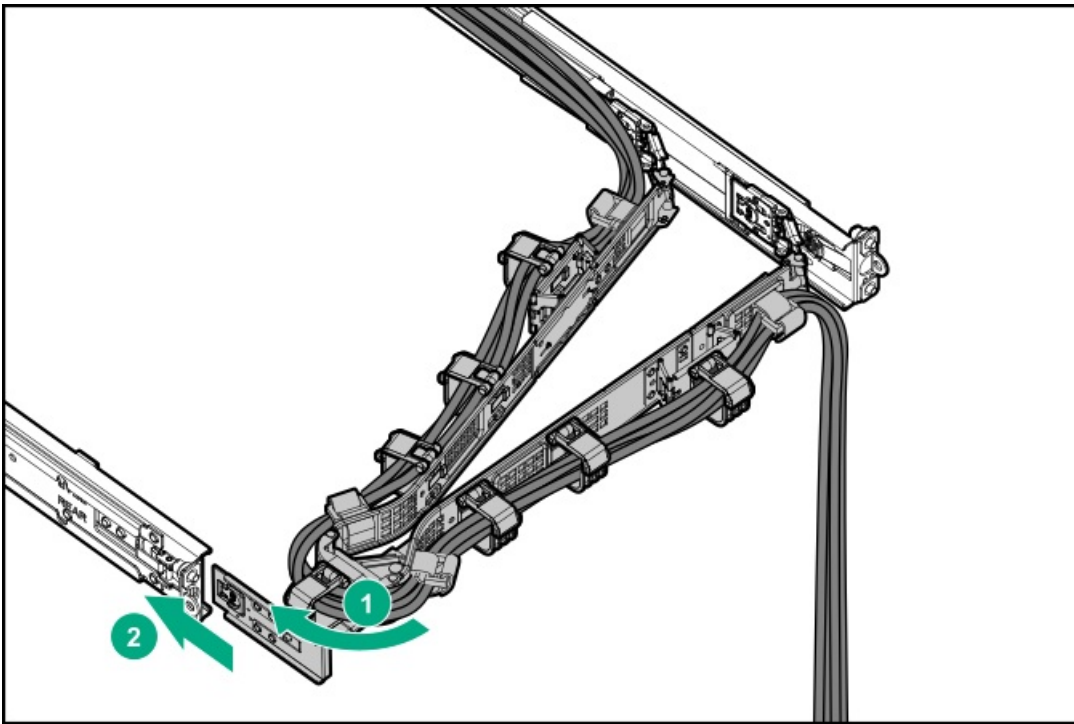
18. Install the server into the rack.

19. Connect all peripheral cables to the server.

20. Connect each power cord to the server.

21. Connect each power cord to the power source.

22. If installed, close the cable management arm.



23. Power up the server.
24. If removed, install the front bezel.
25. To configure the M.2 SSDs, see the HPE SR Gen10 Plus Software RAID User Guide at <https://www.hpe.com/support/SSC-SRGen10Plus-ug>.

The installation is complete.

## HPE NS204i-p NVMe OS Boot Device option

Note the following information about the HPE NS204i-p NVMe OS Boot Device option:

- The HPE NS204i-p NVMe OS Boot Device is a PCIe3 x8 add-in card (AIC) that includes two 480 GB M.2 NVMe SSDs.
- This boot device enables the deployed OS to be mirrored through a dedicated hardware RAID 1.
- This boot device is compatible with the following native operating systems:
  - Windows
  - Linux
  - VMware
- This boot device utilizes native inbox OS NVMe drivers.



## Installing the HPE NS204i-p NVMe OS Boot Device option

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### ⚠ CAUTION:

To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either a riser slot blank or an expansion card installed.

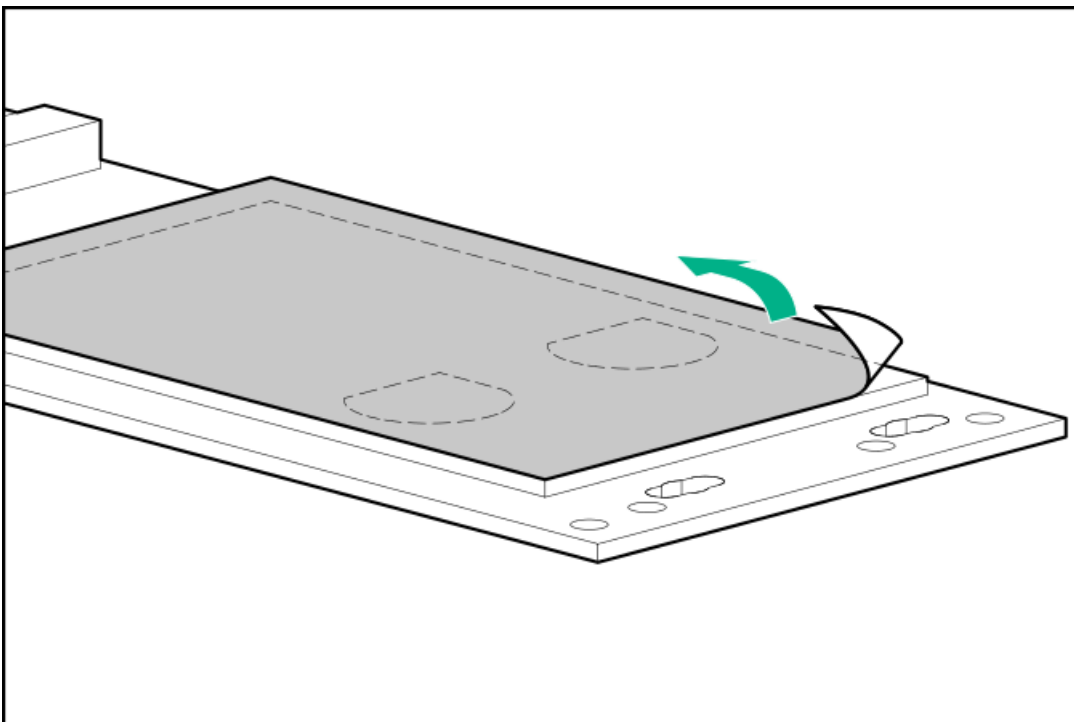
### Prerequisites

- Before beginning installation, make sure that the server is updated with the latest operating system firmware and drivers.
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

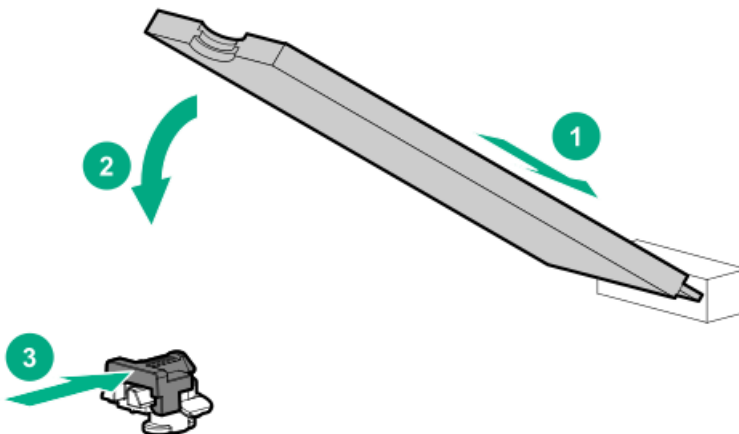
### Procedure

#### Installing drives onto the boot device

1. Remove the liner from the thermal interface pad.

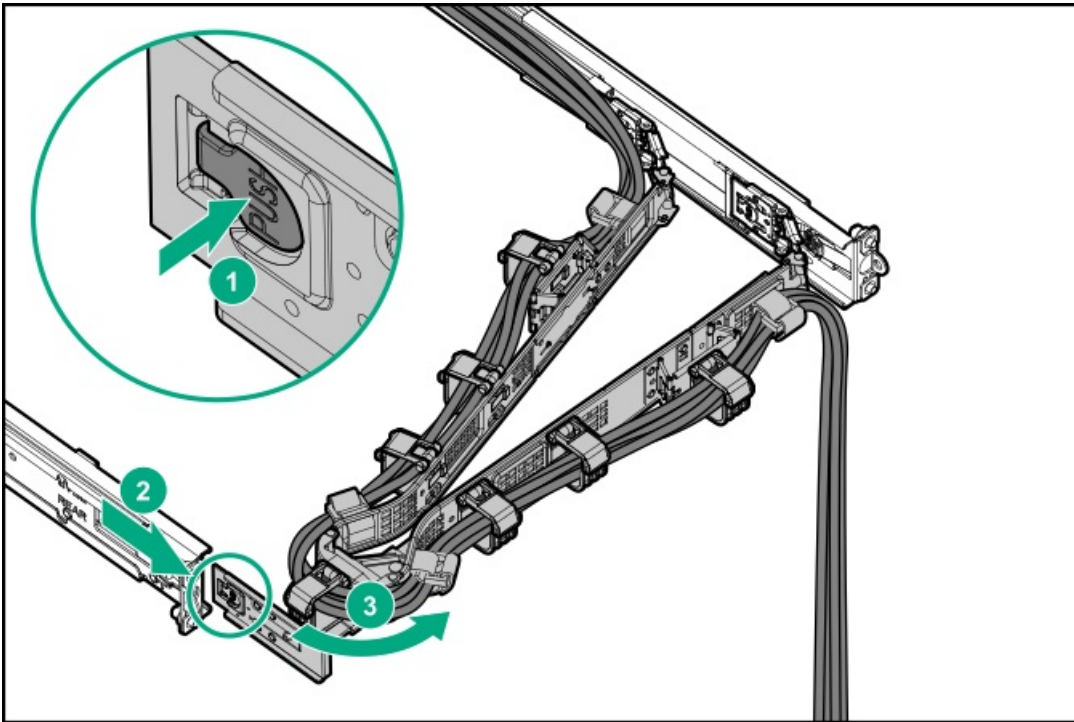


2. Install the drives.



#### Installing the boot device

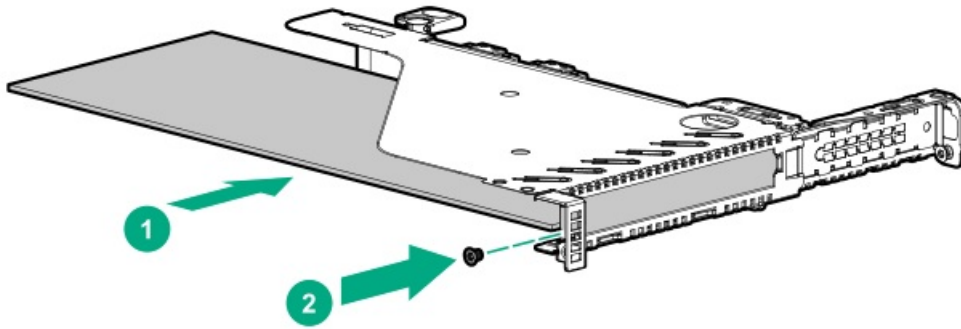
3. If installed, remove the front bezel.
4. Power down the server.
5. If installed, release the cable management arm.



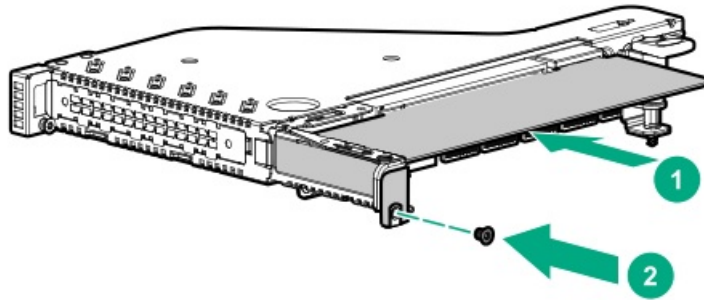
6. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Identify the riser slot compatible with the boot device.
12. To install the boot device in the primary riser, do the following:
  - a. Remove the primary riser cage.
  - b. Remove the riser slot blank.
  - c. Install the boot device.

Make sure that the device is seated firmly in the slot.

- Primary riser slot 1



- Primary riser slot 2



d. Install the primary riser cage.

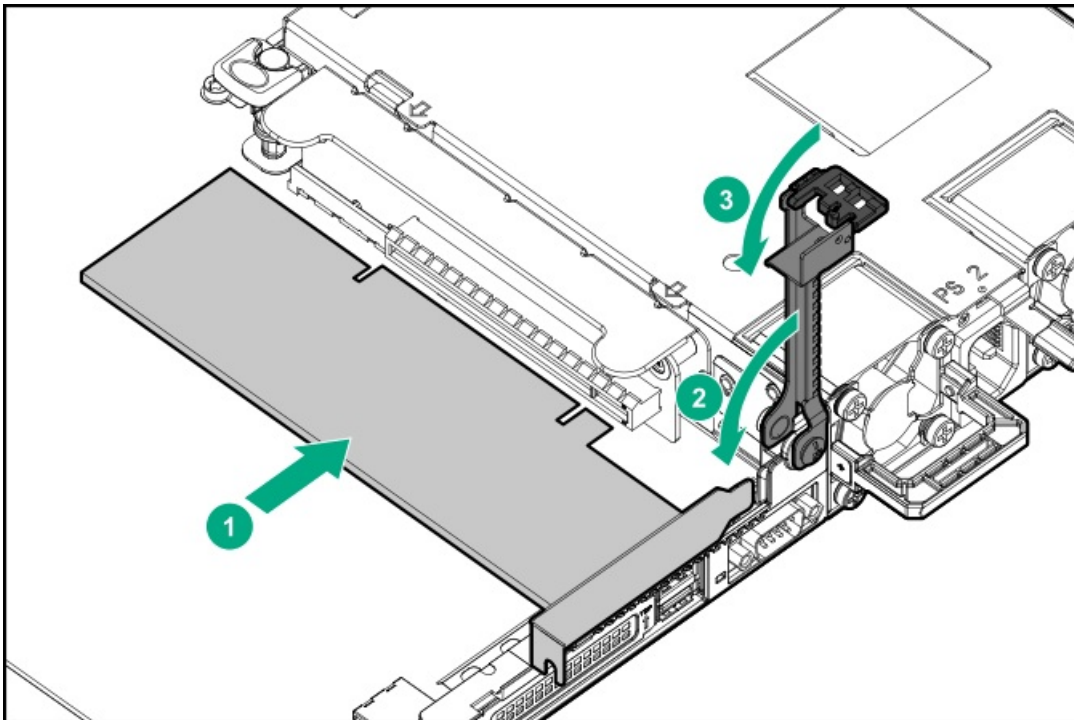
13. To install the boot device in the secondary riser, do the following:

If you are installing the boot device with the full-height bracket in the secondary riser, make sure that the riser is equipped with the full-height retainer bracket.

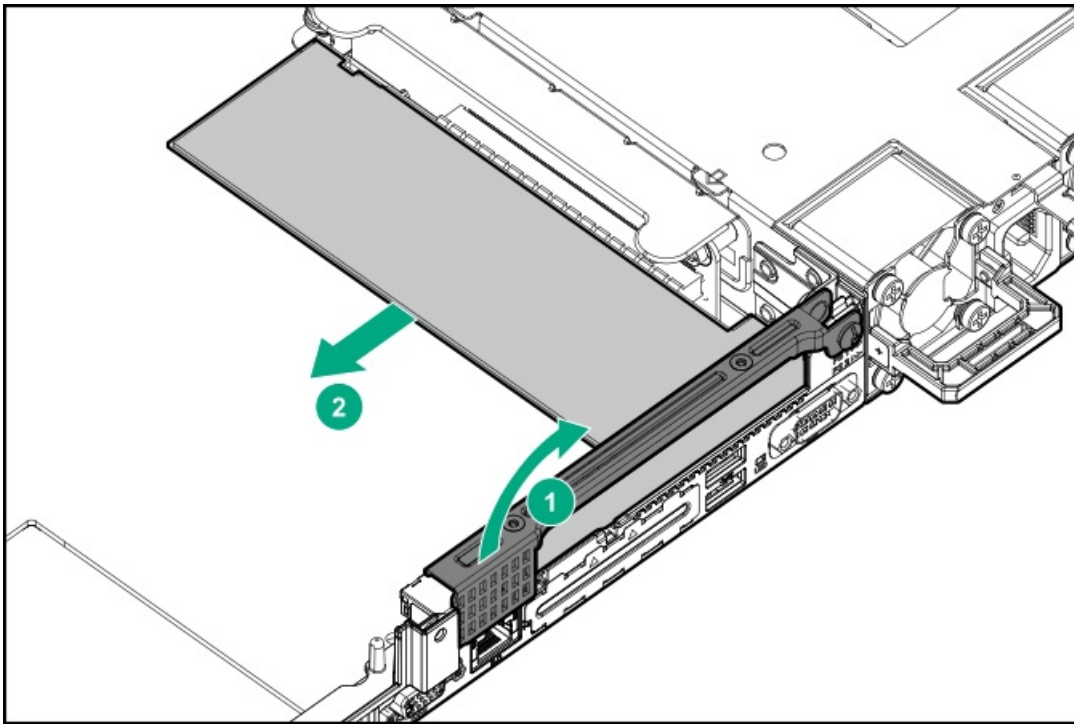
- Remove the riser slot blank.
- Install the boot device.

Make sure that the device is seated firmly in the slot.

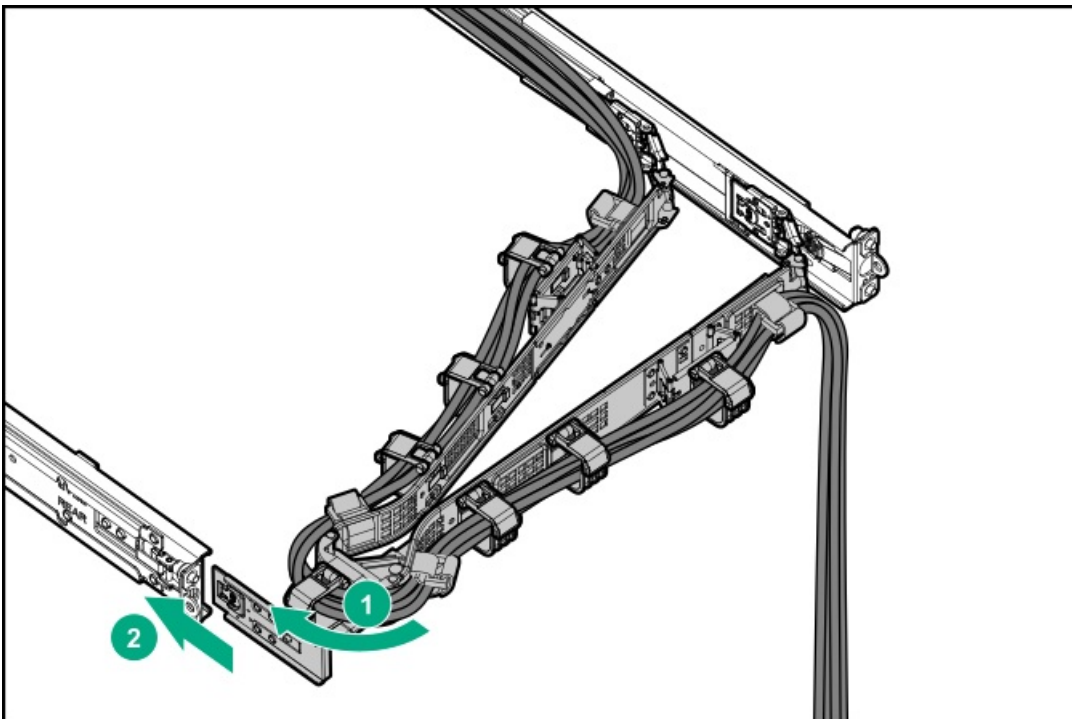
- Boot device with low-profile bracket



- Boot device with full-height bracket



14. Install the access panel.
15. Install the server into the rack.
16. Connect all peripheral cables to the server.
17. Connect each power cord to the server.
18. Connect each power cord to the power source.
19. If installed, close the cable management arm.



20. Power up the server.
21. If removed, install the front bezel.

#### Deploying an operating system

22. Deploy a supported operating system to the boot device drive.

For more information, see the server QuickSpecs on the Hewlett Packard Enterprise website:

<https://www.hpe.com/servers/dl325-gen10-plus-v2>

After the OS installation completes, the system automatically copies the operating system to the second, mirrored drive on the boot device.

23. Proceed with normal system setup and operation.



## OCP NIC 3.0 adapter option

The server supports SFF dual-port and quad-port OCP NIC 3.0 adapter options with various interfaces and advanced interconnect features for high-bandwidth applications.

## Installing an OCP NIC 3.0 adapter

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### ⚠ CAUTION:

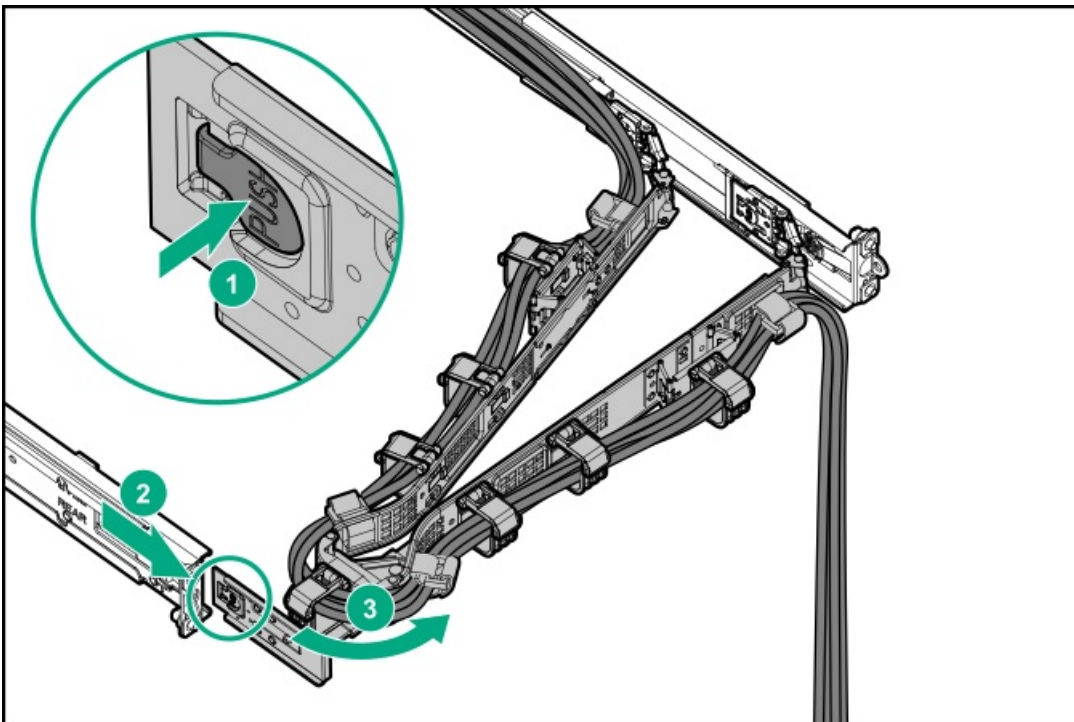
The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

### Prerequisites

- If you install a 100 Gb or faster OCP NIC 3.0 adapter, [the high-performance, dual-rotor fans are required](#).
- Before you perform this procedure, make sure that you have the following items available:
  - Phillips No. 1 screwdriver
  - OCP bandwidth upgrade cable (P39732-B21)—This cable is required only if you are installing an OCP NIC 3.0 x16 adapter.

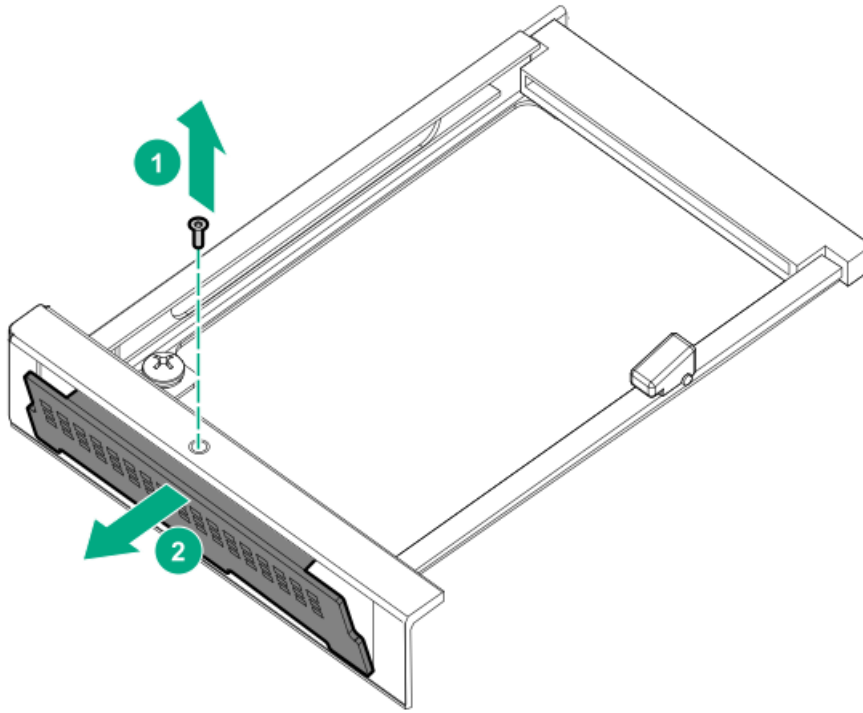
### Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. [Remove the primary riser cage](#).
10. Remove the OCP NIC 3.0 adapter blank.

Retain the blank for future use.

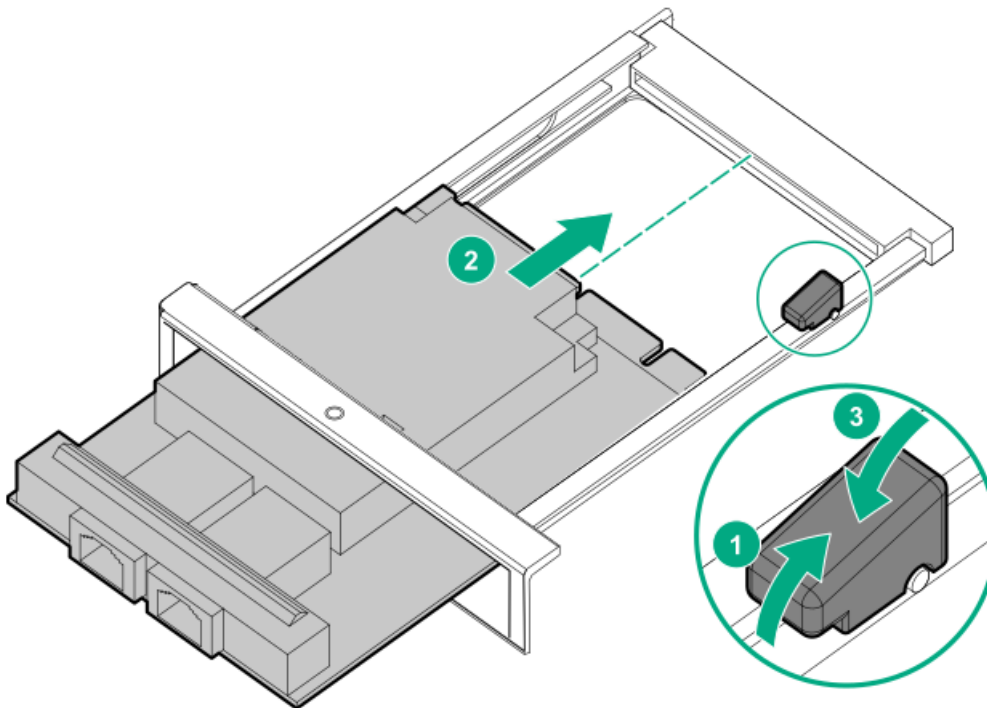


11. Install the OCP NIC 3.0 adapter:

- a. Rotate the locking pin to the open (vertical) position (callout 1).
- b. Slide the adapter into the bay until it clicks into place (callout 2).

Make sure that the card is seated firmly in the slot.

- c. Rotate the locking pin to the close (horizontal) position (callout 3).



12. If you are installing an OCP NIC 3.0 x16 adapter, connect the OCP bandwidth upgrade cable.

13. Install the primary riser cage.

14. Install the access panel.

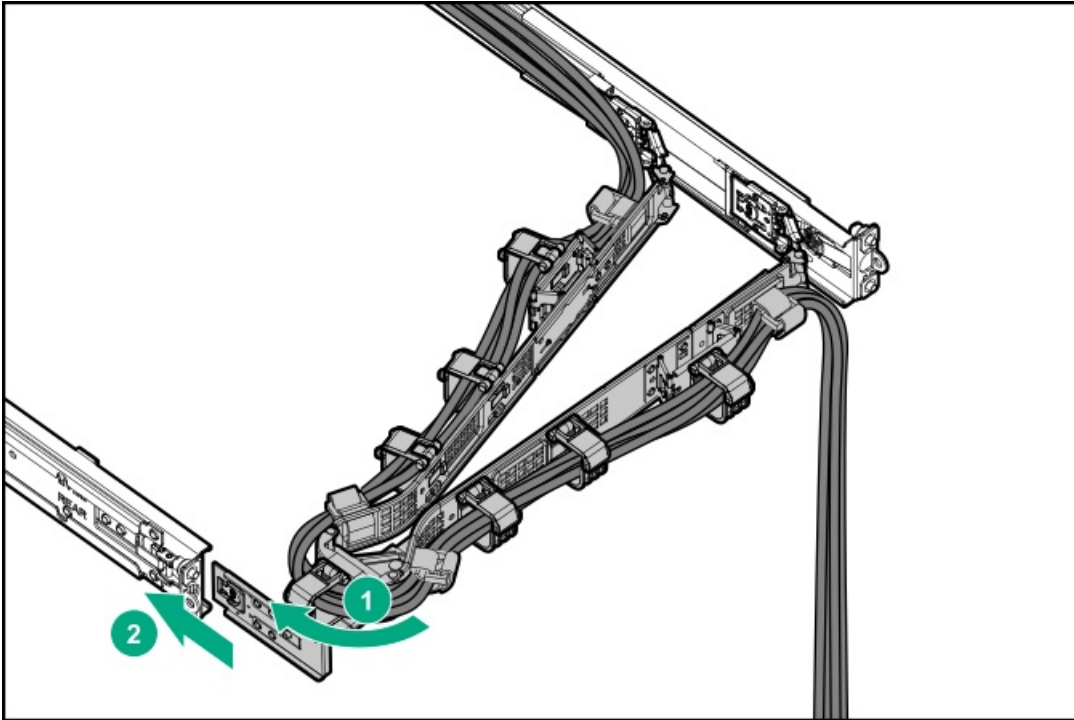
15. Install the server into the rack.

16. Connect all peripheral cables to the server.





17. Connect each power cord to the server.
18. Connect each power cord to the power source.
19. If installed, close the cable management arm.



20. Power up the server.
21. If removed, install the front bezel.

The installation is complete.

## Chassis intrusion detection switch option

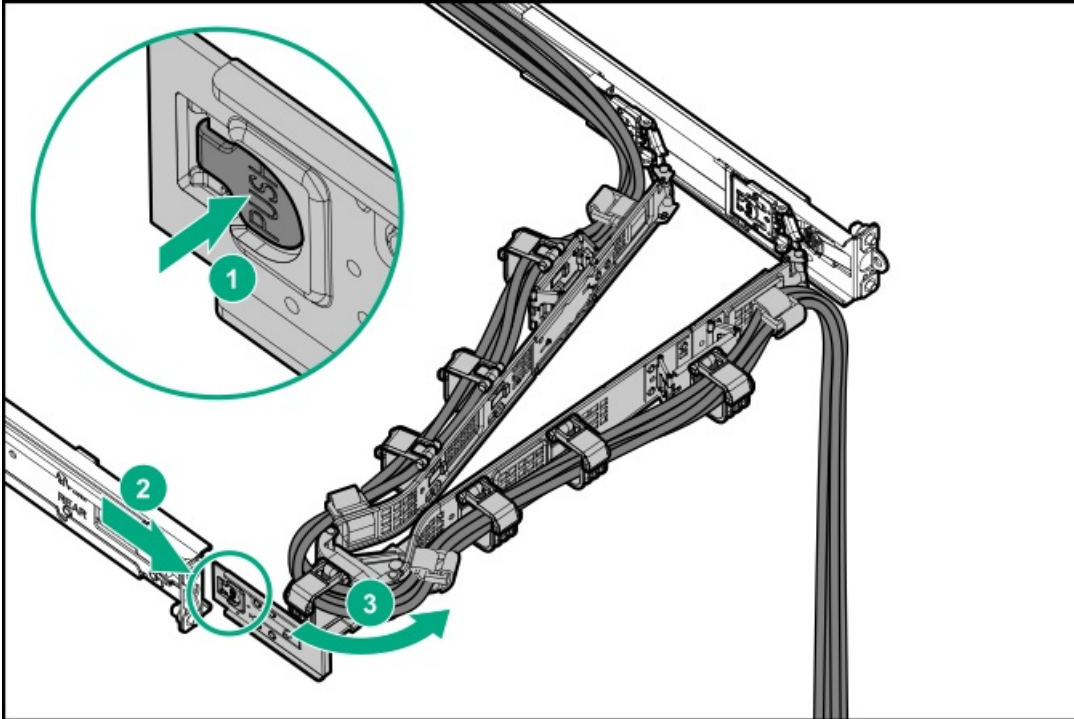
The chassis intrusion detection switch enables iLO to record an event in the Integrated Management Log (IML) whenever the access panel is physically opened or removed. An alert is also sent to the BIOS whenever a chassis intrusion is detected. The chassis intrusion detection occurs as long as the server is plugged in, regardless of whether the server is powered on or off.



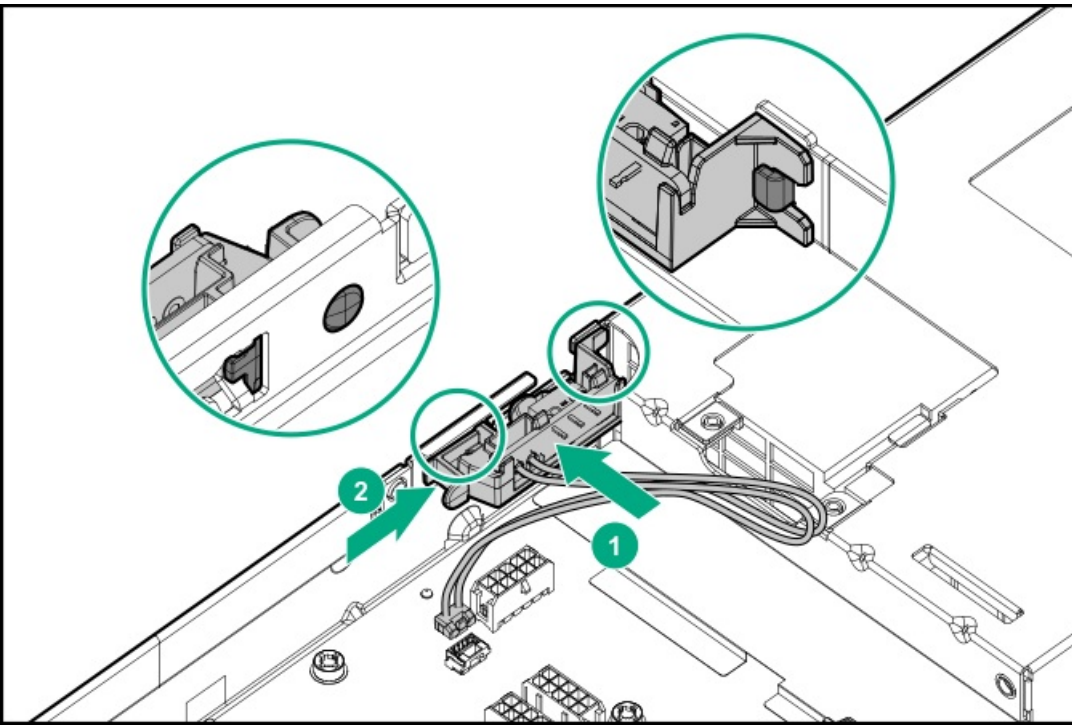
## Installing the chassis intrusion detection switch

### Procedure

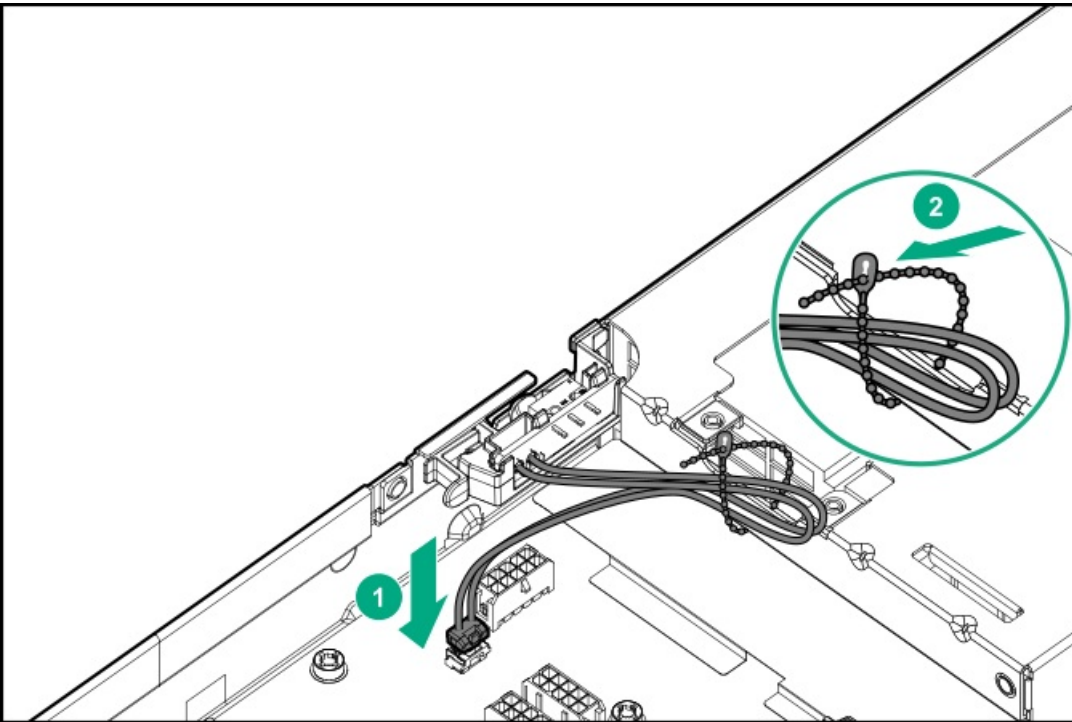
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Insert the switch holder tabs into the chassis slots until the holder clicks into place.

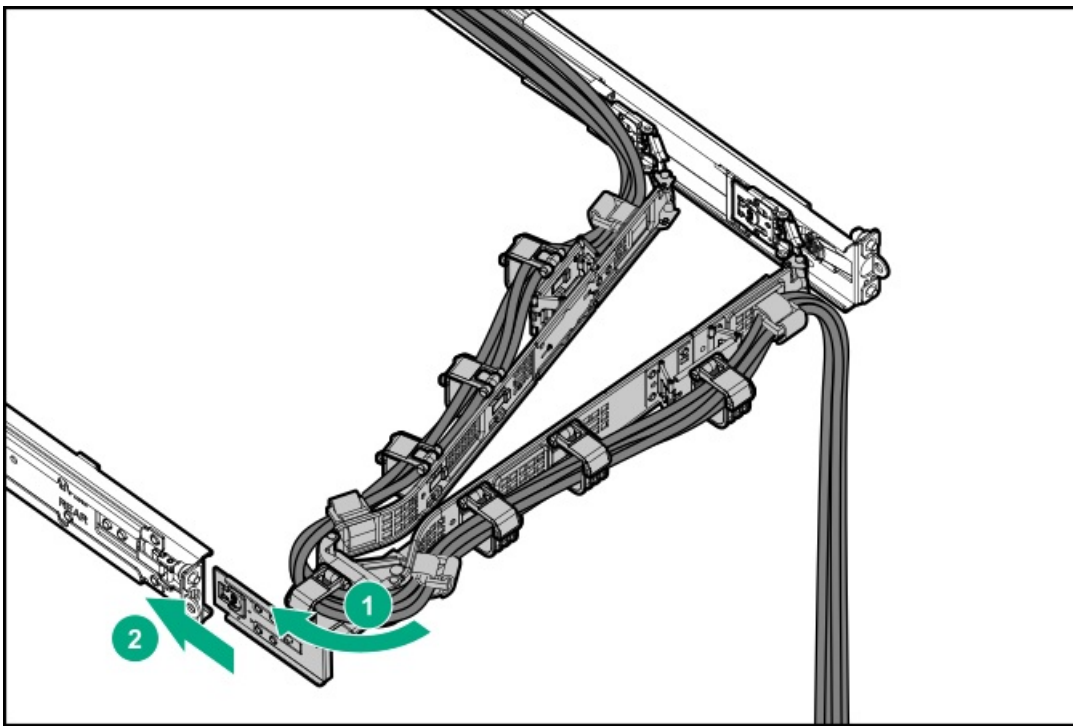


10. Connect the switch cable (callout 1), and then secure the extra length of the cable in the cable tie (callout 2).



11. Install the access panel.
12. Install the server into the rack.
13. Connect all peripheral cables to the server.
14. Connect each power cord to the server.
15. Connect each power cord to the power source.
16. If installed, close the cable management arm.





17. Power up the server.
18. If removed, install the front bezel.

The installation is complete.

The System Intrusion Detection setting in the UEFI System Utilities is automatically enabled after installing the chassis intrusion detection switch. To view a log of intrusion events, use the iLO web interface to access the IML or the iLO event log. For more information, see the iLO user guide on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/ilo-docs>).

## Serial port option

Install the serial port option to enable communication to physical serial devices. You can also use the serial connection to remotely access the system BIOS and view POST error messages.



## Installing the serial port option

### ⚠ CAUTION:

A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe [antistatic precautions](#).

### ⚠ CAUTION:

The port blank provides EMI shielding and helps maintain proper thermal status inside the server. Do not operate the server when a port blank is removed without the corresponding I/O port option installed.

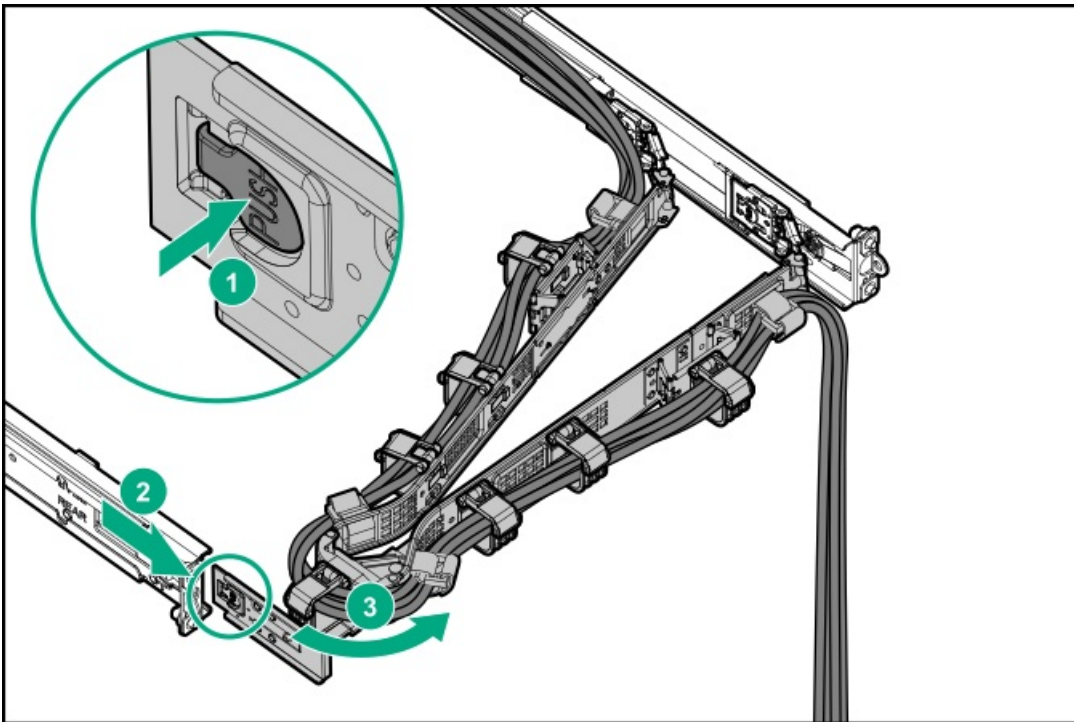
### Prerequisites

Before you perform this procedure, make sure that you have the following items available:

- Hex screwdriver
- Spudger or any small prying tool

### Procedure

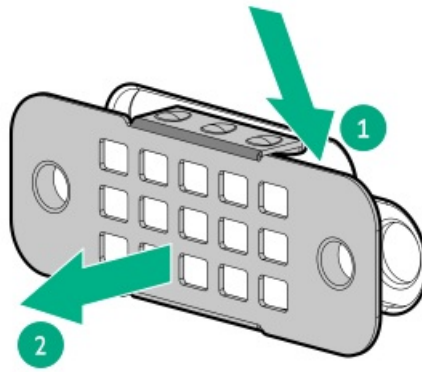
1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. If installed, release the cable management arm.



4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. [Remove the server from the rack](#).
7. Place the server on a flat, level work surface.
8. [Remove the access panel](#).
9. If installed, [remove the secondary riser cage](#).
10. Remove the serial port blank:
  - a. Detach the right side of the blank (callout 1).

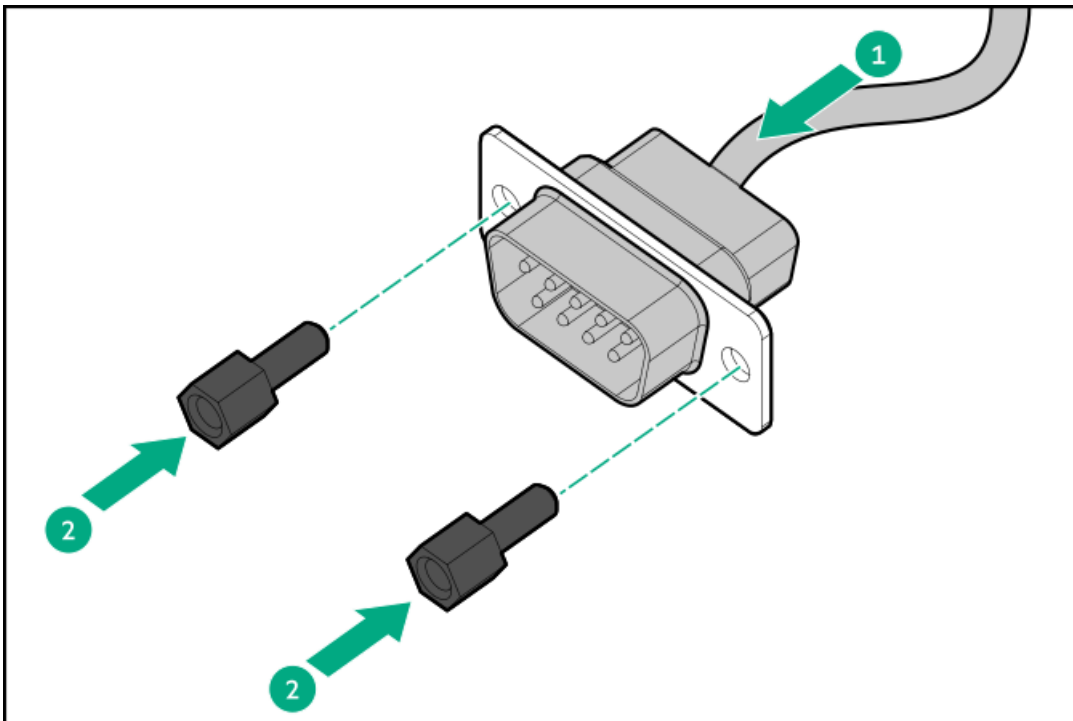
- b. Repeat step a on the left side to remove the blank (callout 2).

Retain the blank for future use.



11. Install the serial port:

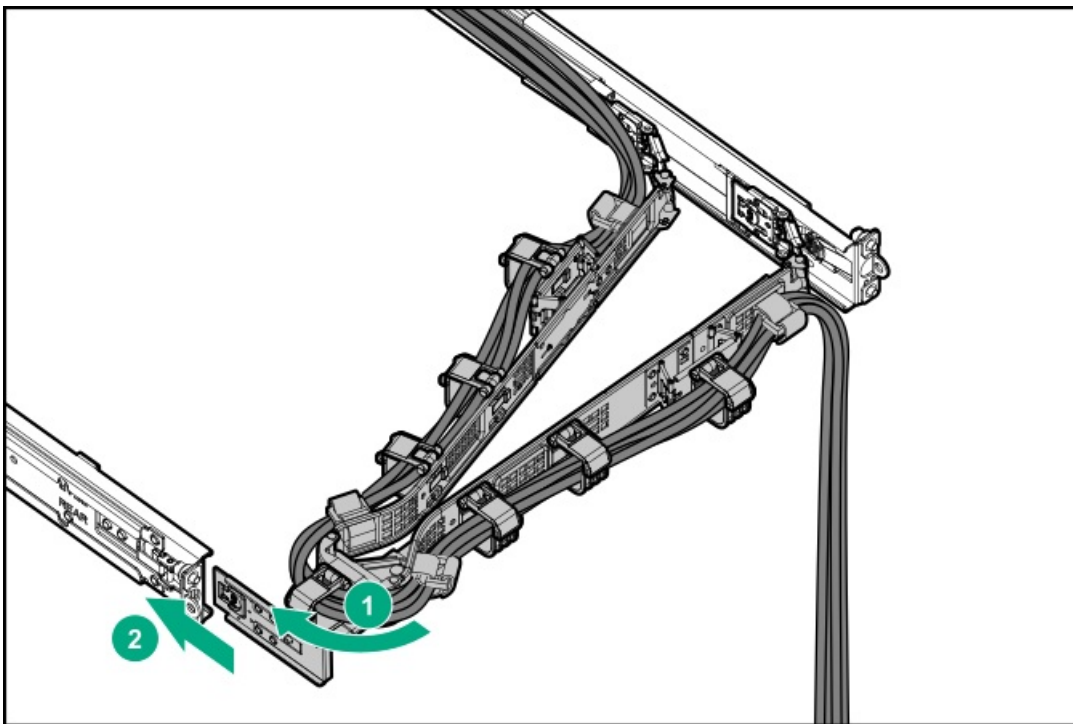
- a. Insert the serial port into the rear panel opening (callout 1).
- b. Install the hex screws (callout 2).



- 12. Connect the serial port cable.
- 13. If removed, install the secondary riser cage.
- 14. Install the access panel.
- 15. Install the server into the rack.
- 16. Connect all peripheral cables to the server.
- 17. Connect each power cord to the server.
- 18. Connect each power cord to the power source.
- 19. If installed, close the cable management arm.







20. Power up the server.
21. If removed, install the front bezel.
22. To configure the serial port setting:
  - a. From the boot screen, press **F9** to access the UEFI System Utilities.
  - b. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > System Options > Serial Port Options > Embedded Serial Port.
  - c. Select a setting.
  - d. Press **F12** key to save your selection.
  - e. Click Yes-Save Changes.
  - f. Click Reboot.

The installation is complete.

## Internal USB device option

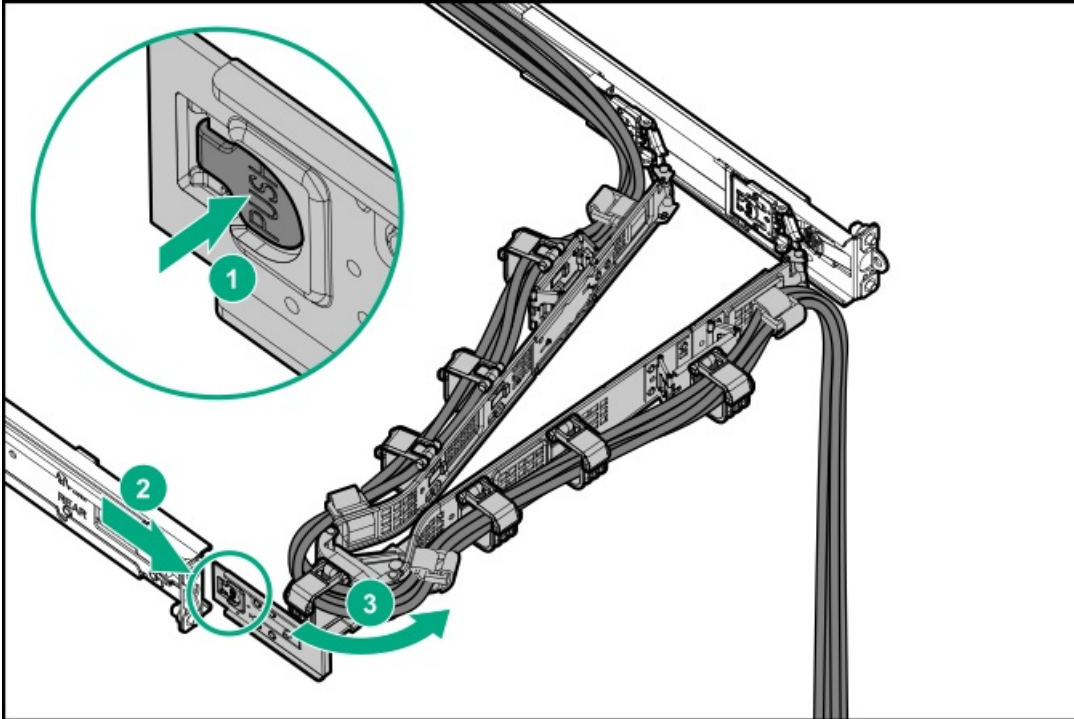
The server has an internal USB 3.0 port to install a USB device that can be used as a flash boot media or for data backup/redundancy.



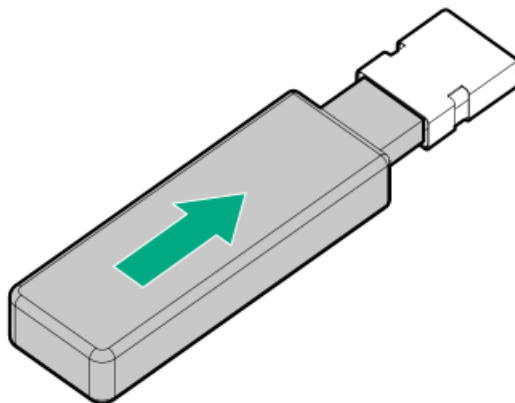
## Installing an internal USB device

### Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.

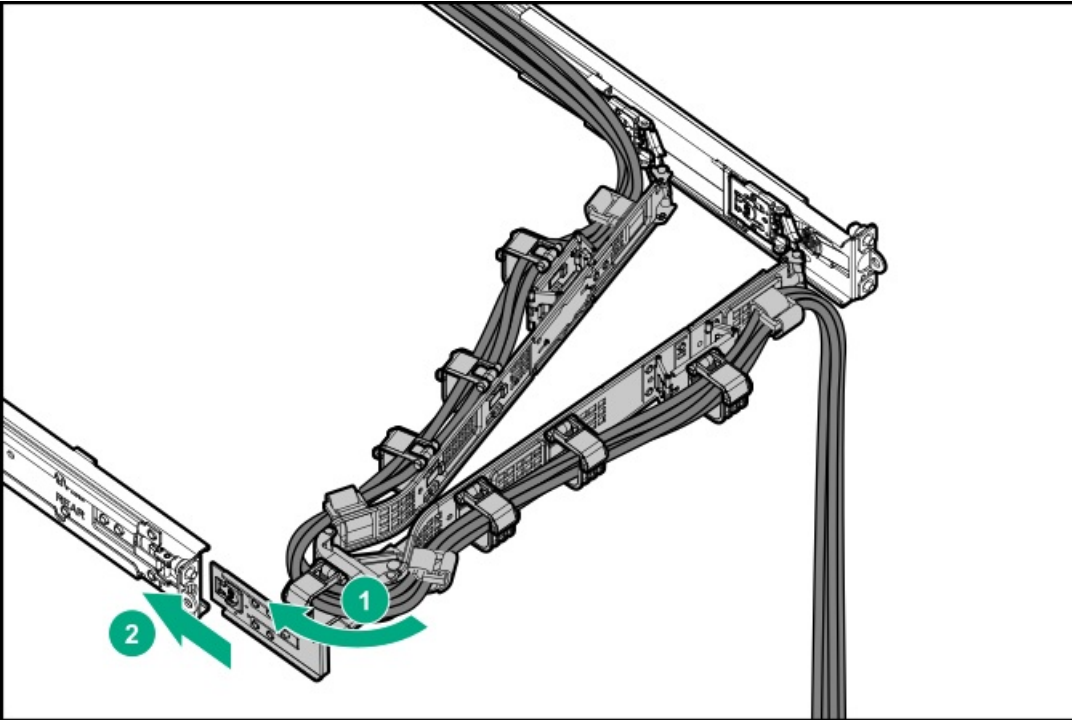


4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. Plug in the USB device into the USB port.



10. Install the access panel.
11. Install the server into the rack.
12. Connect all peripheral cables to the server.

13. Connect each power cord to the server.
14. Connect each power cord to the power source.
15. If installed, close the cable management arm.



16. Power up the server.
17. If removed, install the front bezel.

The installation is complete.


## HPE Trusted Platform Module 2.0 Gen10 Plus option

Use these instructions to install and enable the HPE TPM 2.0 Gen10 Plus Kit. This procedure includes three sections:


1. [Installing the Trusted Platform Module board](#)
2. [Enabling the Trusted Platform Module](#)
3. [Retaining the recovery key/password](#)

HPE TPM 2.0 installation is supported with specific operating system support such as Microsoft Windows Server 2012 R2 and later. For more information about operating system support, see the product QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>). For more information about Microsoft Windows BitLocker Drive Encryption feature, see the Microsoft website (<https://www.microsoft.com>).

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 **CAUTION:** If the TPM is removed from the original server and powered up on a different server, data stored in the TPM including keys will be erased.


---

 **IMPORTANT:** In UEFI Boot Mode, the HPE Trusted Platform Module 2.0 Gen10 Plus can be configured to operate as TPM 2.0 (default) or TPM 1.2 on a supported server. In Legacy Boot Mode, the configuration can be changed between TPM 1.2 and TPM 2.0, but only TPM 1.2 operation is supported.

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## HPE Trusted Platform Module 2.0 guidelines

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 **CAUTION:** Always observe the guidelines in this document. Failure to follow these guidelines can cause hardware damage or halt data access.

---

**Hewlett Packard Enterprise SPECIAL REMINDER:** Before enabling TPM functionality on this system, you must ensure that your intended use of TPM complies with relevant local laws, regulations and policies, and approvals or licenses must be obtained if applicable.

For any compliance issues arising from your operation/usage of TPM which violates the above mentioned requirement, you shall bear all the liabilities wholly and solely. Hewlett Packard Enterprise will not be responsible for any related liabilities.

慧与特别提醒：在您启用系统中的TPM功能前，请务必确认您对TPM的使用遵守当地相关法律、法规及政策，并已事先获得所需的一切批准及许可（如适用），因您未获得相应的操作/使用许可而导致的违规问题，皆由您自行承担全部责任，与慧与无涉。

When installing or replacing a TPM, observe the following guidelines:

- Do not remove an installed TPM. Once installed, the TPM becomes a permanent part of the system board.
- When installing or replacing hardware, Hewlett Packard Enterprise service providers cannot enable the TPM or the encryption technology. For security reasons, only the customer can enable these features.
- When returning a system board for service replacement, do not remove the TPM from the system board. When requested, Hewlett Packard Enterprise Service provides a TPM with the spare system board.
- Any attempt to remove the cover of an installed TPM from the system board can damage the TPM cover, the TPM, and the system board.
- If the TPM is removed from the original server and powered up on a different server, all data stored in the TPM including keys will be erased.
- When using BitLocker, always retain the recovery key/password. The recovery key/password is required to complete Recovery Mode after BitLocker detects a possible compromise of system integrity.
- Hewlett Packard Enterprise is not liable for blocked data access caused by improper TPM use. For operating instructions, see the TPM documentation or the encryption technology feature documentation provided by the operating system.

## Installing the Trusted Platform Module board



## Preparing the server for installation

### **⚠ WARNING:**

To reduce the risk of personal injury, electric shock, or damage to the equipment, disconnect the power cord to remove power from the server. Pressing the Power On/Standby button does not shut off system power completely. Portions of the power supply and some internal circuitry remain active until AC power is removed.

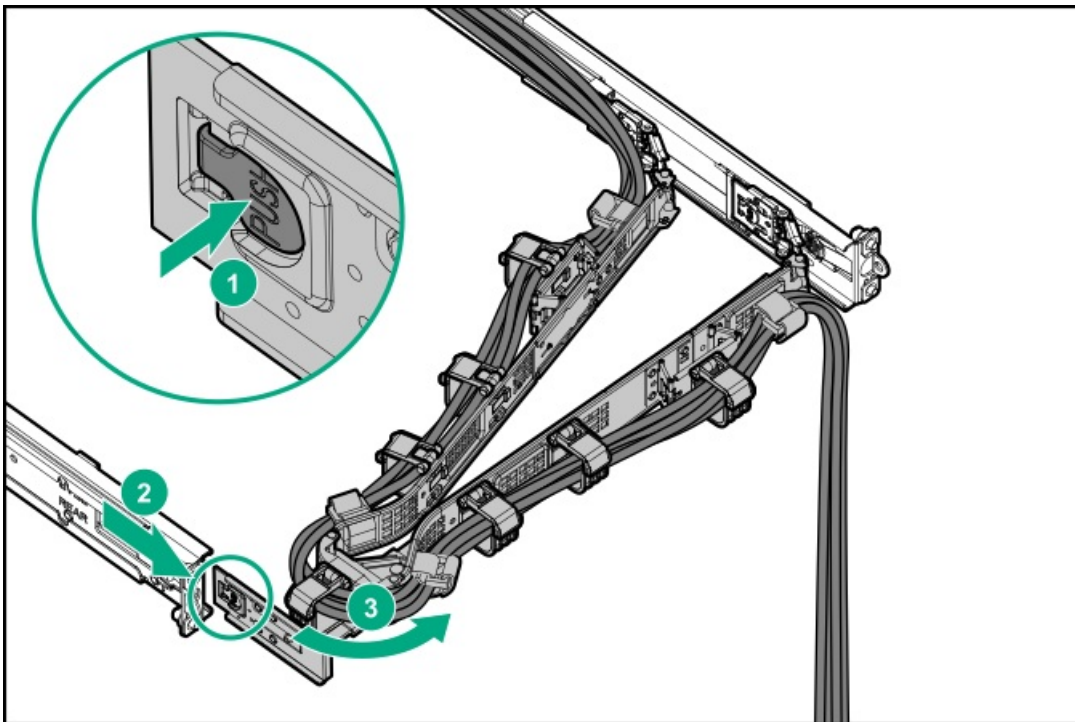
### **⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

#### Procedure

1. Update the system ROM.

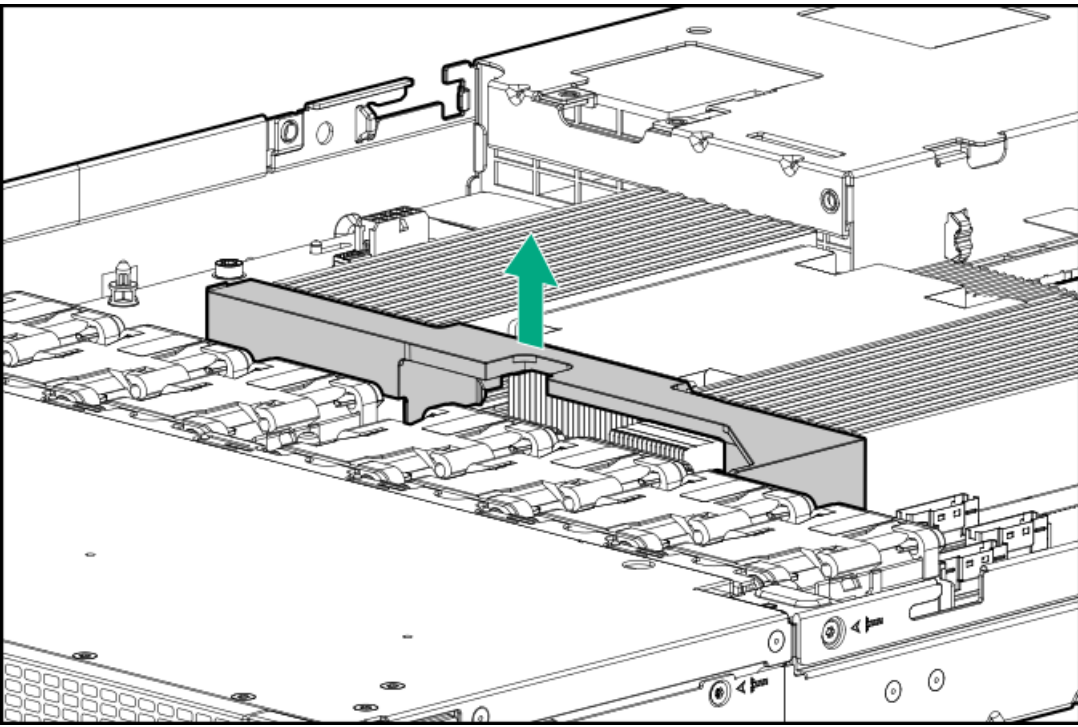
Locate and download the latest ROM version from the Hewlett Packard Enterprise Support Center website (<https://www.hpe.com/support/hpesc>). To update the system ROM, follow the instructions on the website.

2. Power down the server.
3. If installed, remove the front bezel.
4. Power down the server.
5. If installed, release the cable management arm.



6. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
7. Disconnect all peripheral cables from the server.
8. Remove the server from the rack.
9. Place the server on a flat, level work surface.
10. Remove the access panel.
11. Remove the air baffle.





12. Install the TPM board and cover.

# Installing the TPM board and cover

## Procedure

### 1. Observe the following alerts:

---

**CAUTION:** If the TPM is removed from the original server and powered up on a different server, data stored in the TPM including keys will be erased.

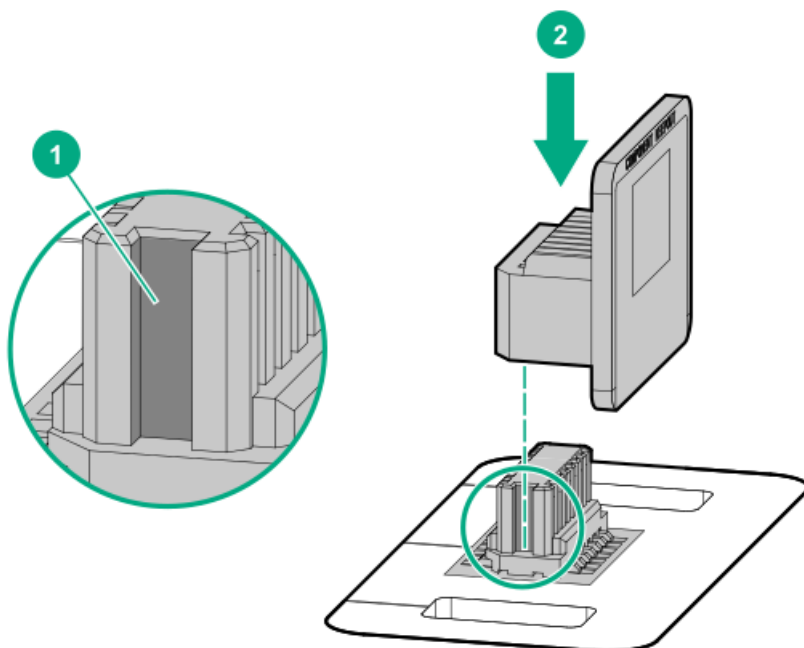
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**CAUTION:** The TPM is keyed to install only in the orientation shown. Any attempt to install the TPM in a different orientation might result in damage to the TPM or system board.

---

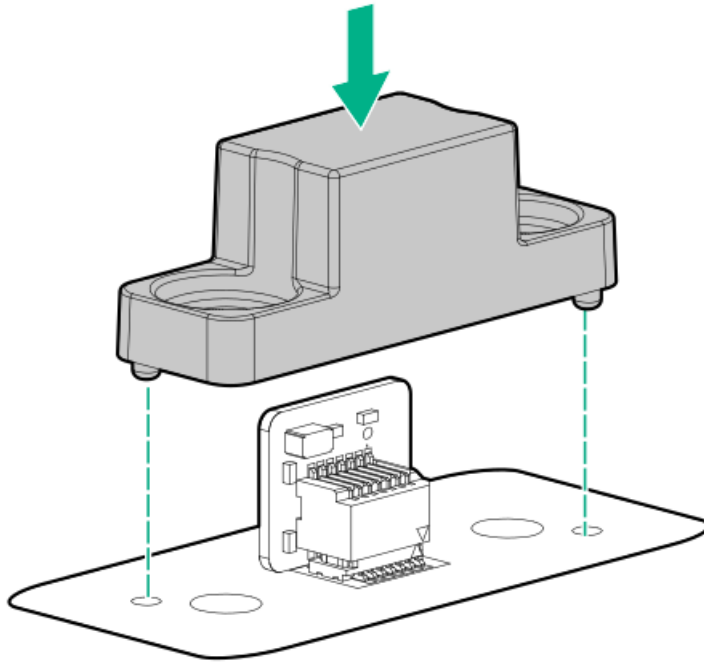
### 2. Install the TPM board:

- a. Locate the TPM connector on the system board. See the server hood label for the exact location.
- b. Align the TPM board with the key on the connector, and then install the TPM board. To seat the board, press the TPM board firmly into the connector.

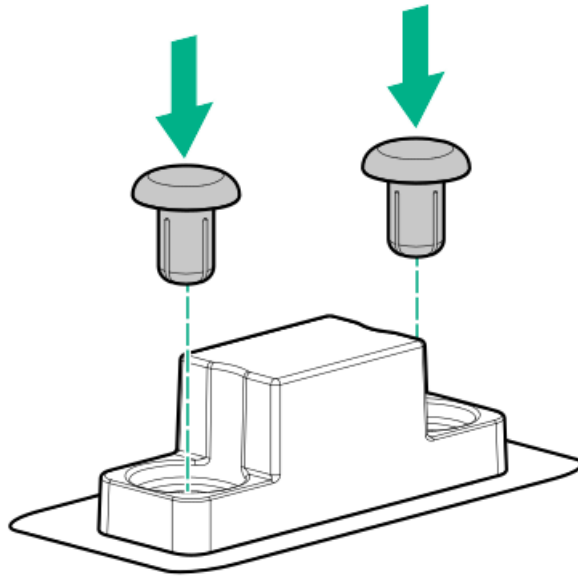


### 3. Install the TPM cover:

- a. Align the pins on the cover with the openings on the system board.
- b. Press straight down on the middle of the cover until the alignment pins are seated into the holes.



4. Secure the rivets into place by pushing them firmly through the holes in the TPM cover.



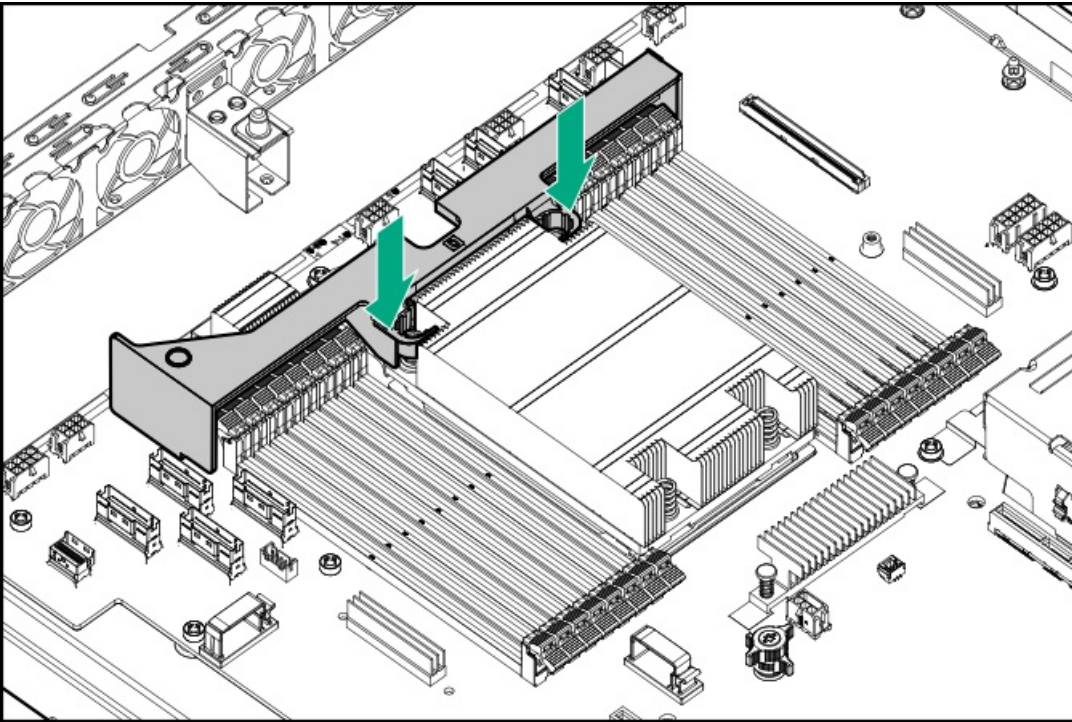
5. Preparing the server for operation.



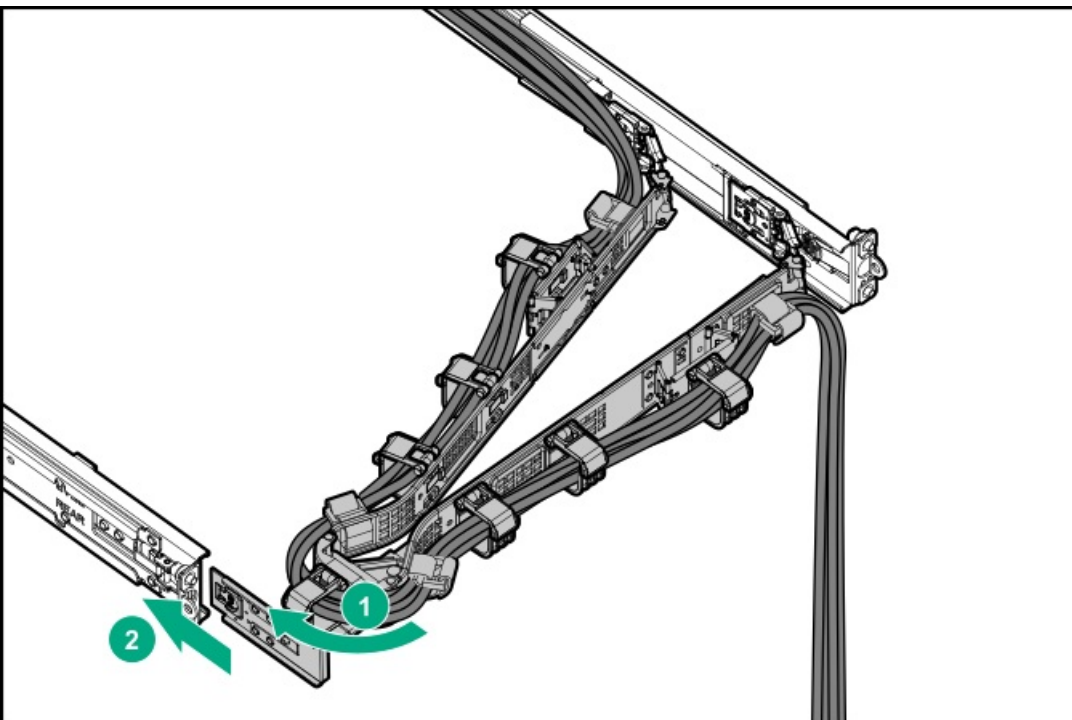
# Preparing the server for operation

## Procedure

1. Secure the air baffle hooks to the heatsink screws.



2. Install the access panel.
3. Install the server into the rack.
4. Connect all peripheral cables to the server.
5. Connect each power cord to the server.
6. Connect each power cord to the power source.
7. If installed, close the cable management arm.



8. Power up the server.
9. If removed, install the front bezel.



10. Enable the Trusted Platform Module.



## Enabling the Trusted Platform Module

When enabling the Trusted Platform module, observe the following guidelines:

- By default, the Trusted Platform Module is enabled as TPM 2.0 when the server is powered on after installing it.
- In UEFI Boot Mode, the Trusted Platform Module can be configured to operate as TPM 2.0 (default) or TPM 1.2.
- In Legacy Boot Mode, the Trusted Platform Module configuration can be changed between TPM 1.2 and TPM 2.0 (default), but only TPM 1.2 operation is supported.

# Enabling the Trusted Platform Module as TPM 2.0

## Procedure

1. From the boot screen, press **F9** to access the UEFI System Utilities.
2. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module options.
3. Verify the following:
  - "Current TPM Type" is set to TPM 2.0.
  - "Current TPM State" is set to Present and Enabled.
  - "TPM Visibility" is set to Visible.
4. If changes were made in the previous step, press **F10** to save your selection.
5. If **F10** was pressed in the previous step, do one of the following:
  - If in graphical mode, click Yes.
  - If in text mode, press the **Y** key.
6. Press **Esc** to exit System Utilities.
7. If changes were made and saved, the server prompts for reboot request. Press **Enter** to confirm reboot.

If the following actions were performed, the server reboots a second time without user input. During this reboot, the TPM setting becomes effective.

- Changing from TPM 1.2 and TPM 2.0
  - Changing TPM bus from FIFO to CRB
  - Enabling or disabling TPM
  - Clearing the TPM
8. Enable TPM functionality in the OS, such as Microsoft Windows BitLocker or measured boot.

For more information, see the [Microsoft website](#).

## Enabling the Trusted Platform Module as TPM 1.2

### Procedure

1. From the boot screen, press **F9** to access the UEFI System Utilities.
2. From the System Utilities screen, select System Configuration > BIOS/Platform Configuration (RBSU) > Server Security > Trusted Platform Module options.
3. Change the TPM Mode Switch Operation to TPM 1.2.
4. Verify that "TPM Visibility" is set to Visible.
5. Press **F10** to save your selection.
6. When prompted to save the change in System Utilities, do one of the following:
  - If in graphical mode, click Yes.
  - If in text mode, press the **Y** key.
7. Press **Esc** to exit System Utilities.

The server reboots a second time without user input. During this reboot, the TPM setting becomes effective.

8. Enable TPM functionality in the OS, such as Microsoft Windows BitLocker or measured boot.

For more information, see the [Microsoft website](#).



## Retaining the BitLocker recovery key/password

The recovery key/password is generated during BitLocker setup, and can be saved and printed after BitLocker is enabled. When using BitLocker, always retain the recovery key/password. The recovery key/password is required to enter Recovery Mode after BitLocker detects a possible compromise of system integrity.

To help ensure maximum security, observe the following guidelines when retaining the recovery key/password:

- Always store the recovery key/password in multiple locations.
- Always store copies of the recovery key/password away from the server.
- Do not save the recovery key/password on the encrypted hard drive.

# Cabling

This chapter includes cabling guidelines and diagrams for internal component cabling.



## Cabling guidelines

The cable colors in the cabling diagrams used in this chapter are for illustration purposes only. Most of the system cables are black.

Observe the following guidelines when working with system cables.

### Before connecting cables

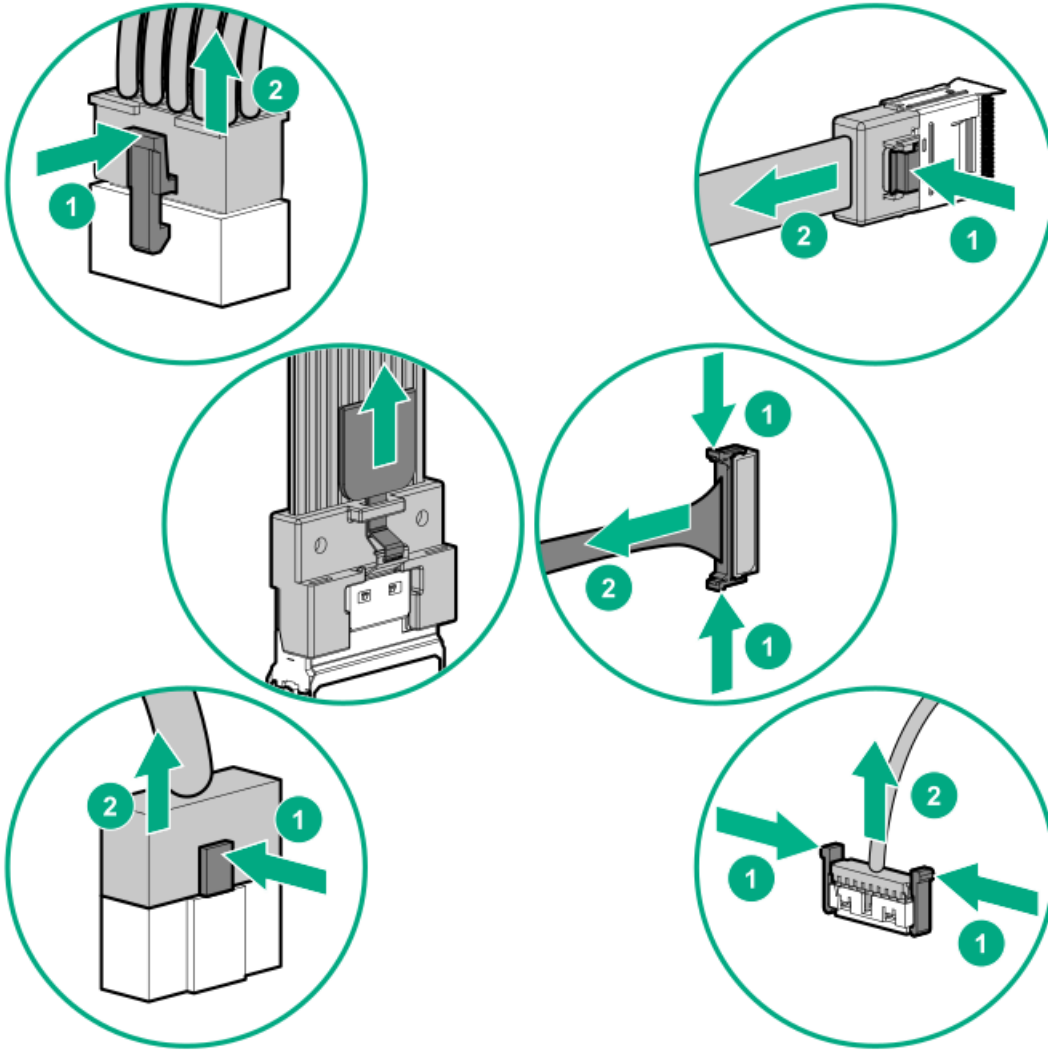
- Note the port labels on the PCA components. Not all of these components are used by all systems:
  - System board ports
  - Drive and power supply backplane ports
  - Expansion card ports (controllers, adapters, expanders, risers, and similar boards)
- Note the label near each cable connector. This label indicates the destination port for the cable connector.
- Some data cables are pre-bent. Do not unbend or manipulate the cables.
- To prevent mechanical damage or depositing oil that is present on your hands, and other contamination, do not touch the ends of the connectors.

### When connecting cables

- Before connecting a cable to a port, lay the cable in place to verify the length of the cable.
- Use the internal cable management features to properly route and secure the cables.
- When routing cables, be sure that the cables are not in a position where they can be pinched or crimped.
- Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.
- Make sure that the excess length of cables are properly secured to avoid excess bends, interference issues, and airflow restriction.
- To prevent component damage and potential signal interference, make sure that all cables are in their appropriate routing position before installing a new component and before closing up the system after hardware installation/maintenance.

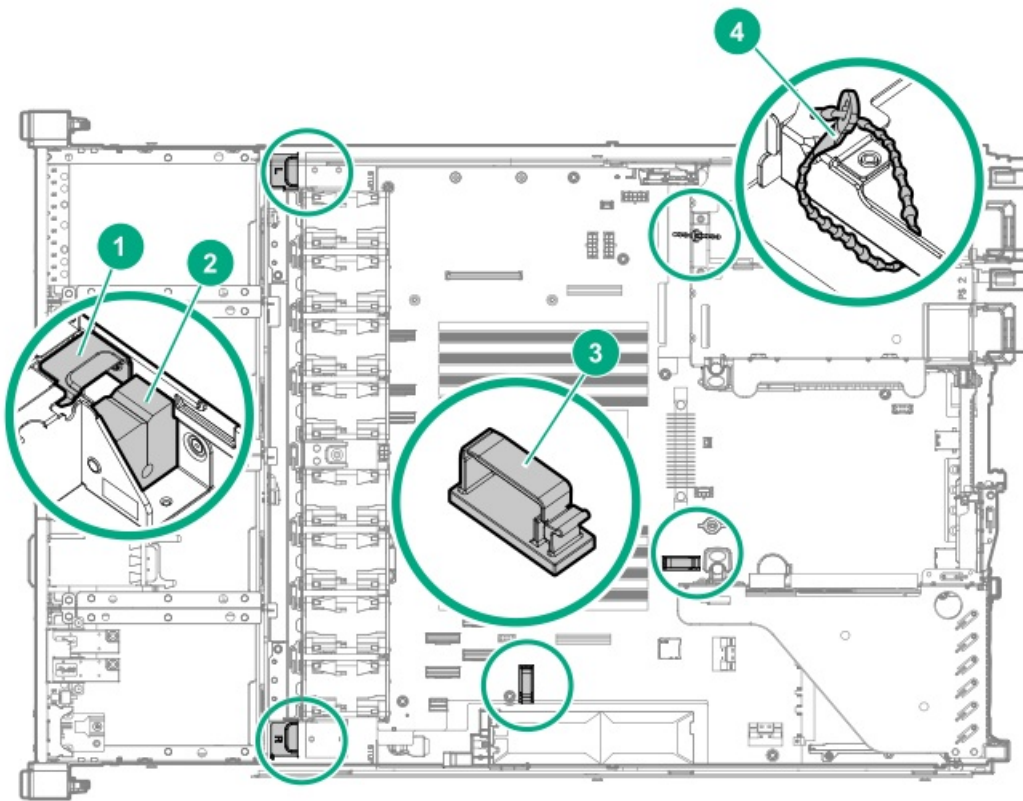
### When disconnecting cables

- Grip the body of the cable connector. Do not pull on the cable itself because this action can damage the internal wires of the cable or the pins on the port.
- If a cable does not disconnect easily, check for any release latch that must be pressed to disconnect the cable.



- Remove cables that are no longer being used. Retaining them inside the system can restrict airflow. If you intend to use the removed cables later, label and store them for future use.

## Internal cabling management



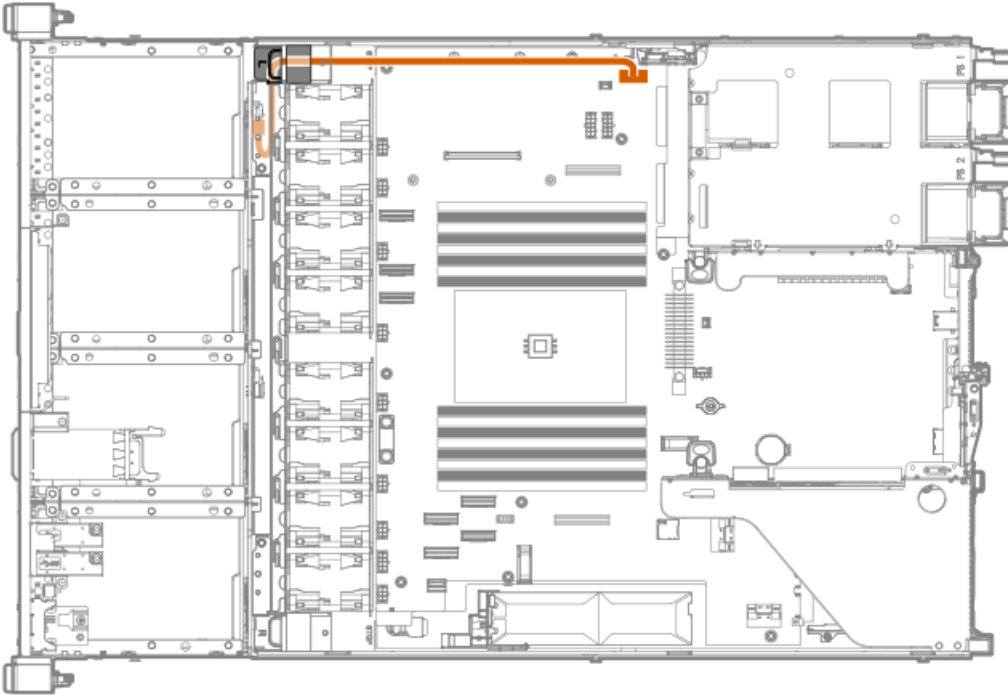
Item	Description
1	Fan wall brackets
2	Cable routing foams
3	Cable clips
4	Adjustable cable tie

## Storage cabling

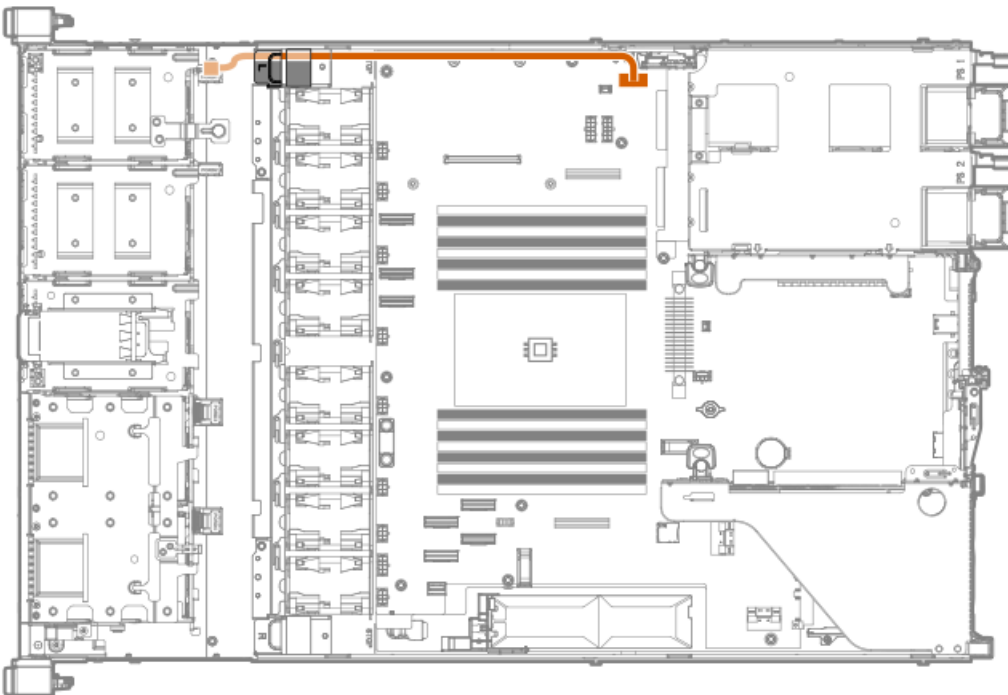
- [Drive power cabling](#)
- [Storage controller cabling](#)
- [Energy pack cabling](#)
- [Storage controller backup power cabling](#)

## Drive power cabling

### 4 LFF drive power cabling

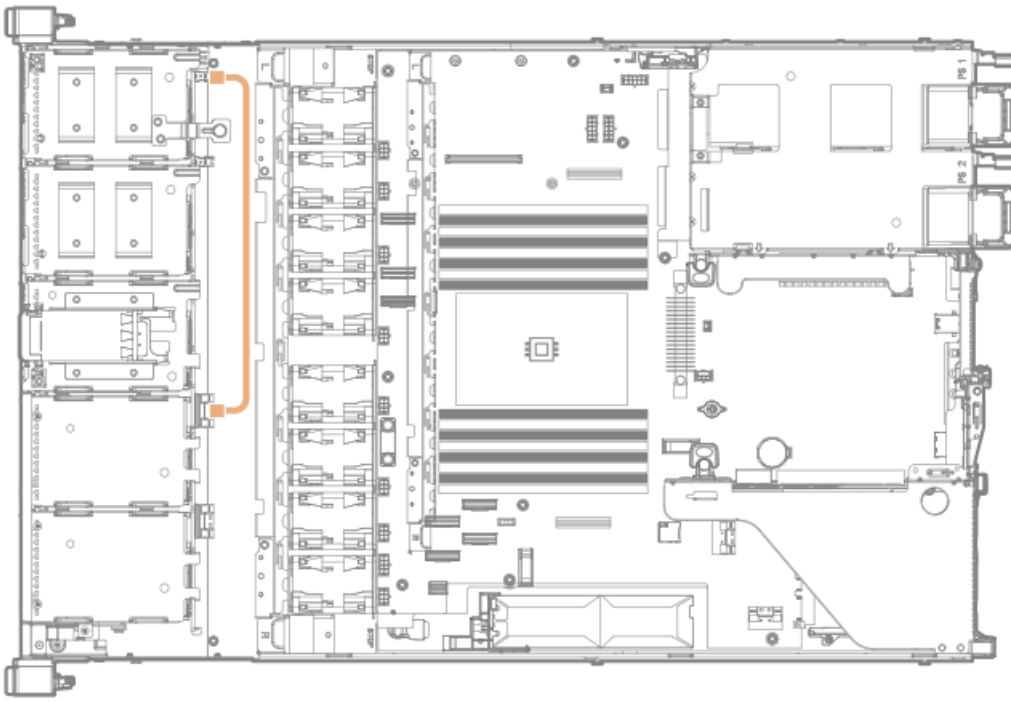


### 8 SFF drive power cabling



### 2 SFF drive power cabling





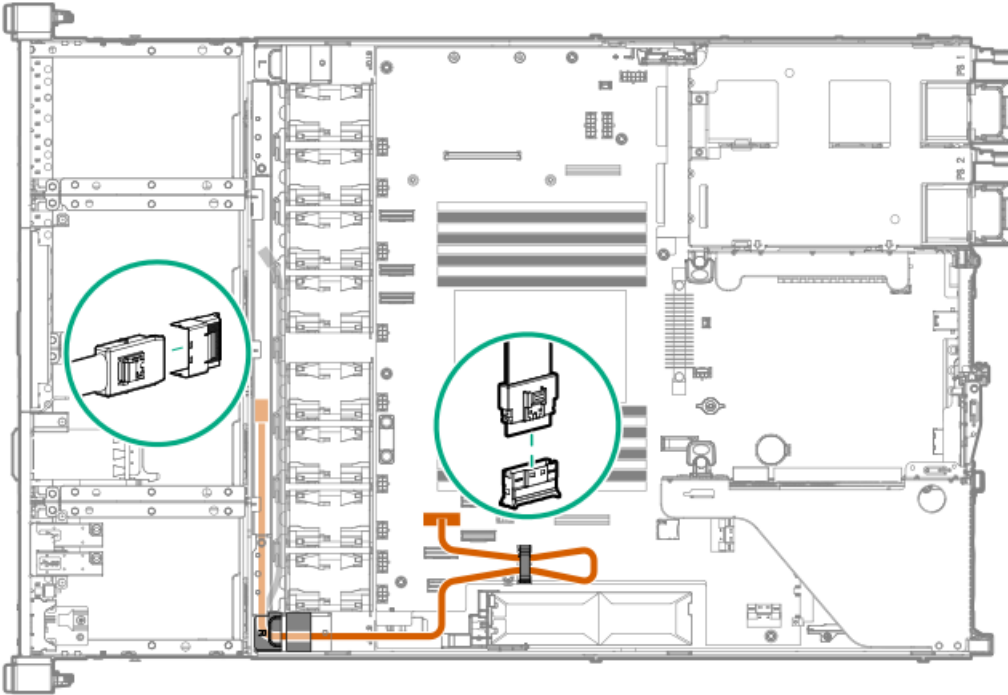


## Storage controller cabling

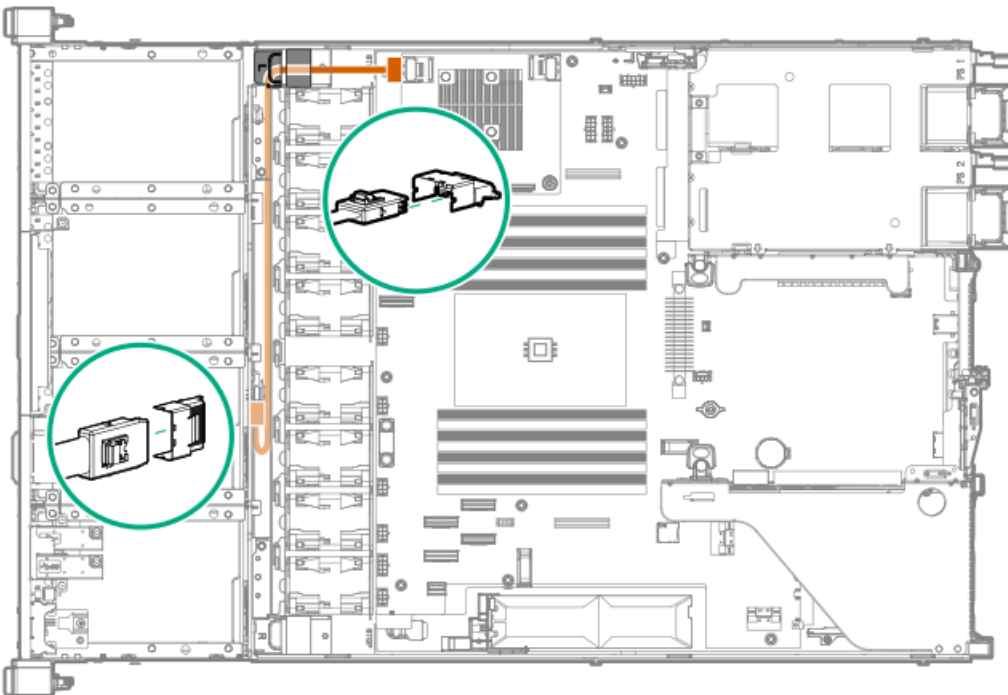
- [4 LFF SAS/SATA drive controller cabling](#)
- [8 SFF SAS/SATA drive controller cabling](#)
- [8 SFF NVMe drive controller cabling](#)
- [2 SFF NVMe drive controller cabling](#)
- [8 + 2 SFF drive controller cabling](#)

## 4 LFF SAS/SATA drive controller cabling

### 4 LFF drive: Onboard SATA cabling

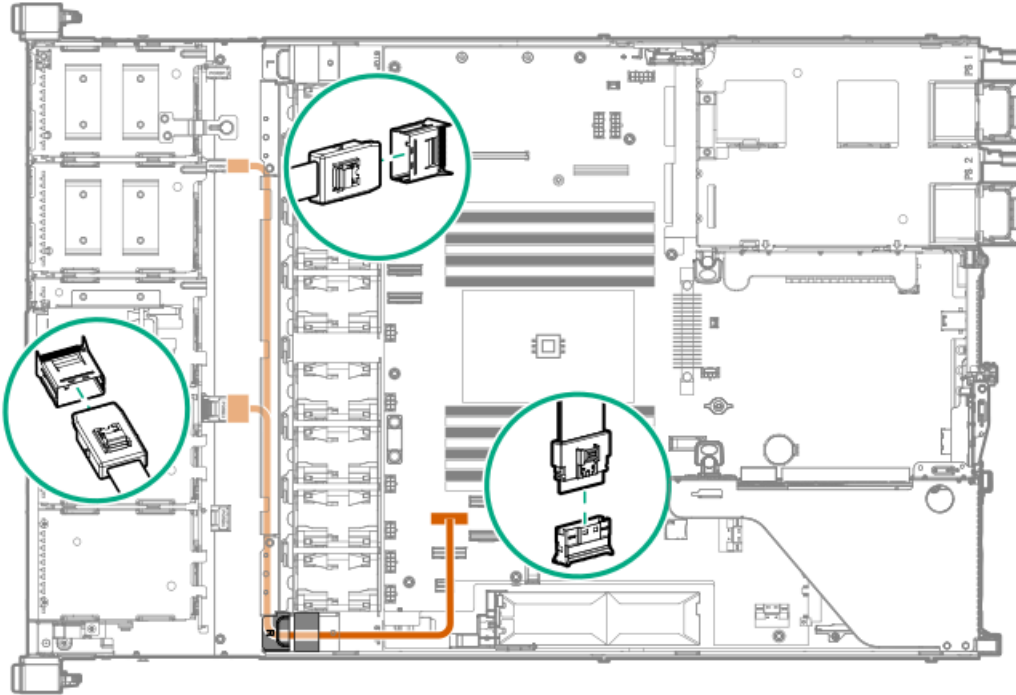


### 4 LFF drive: Type-a controller cabling

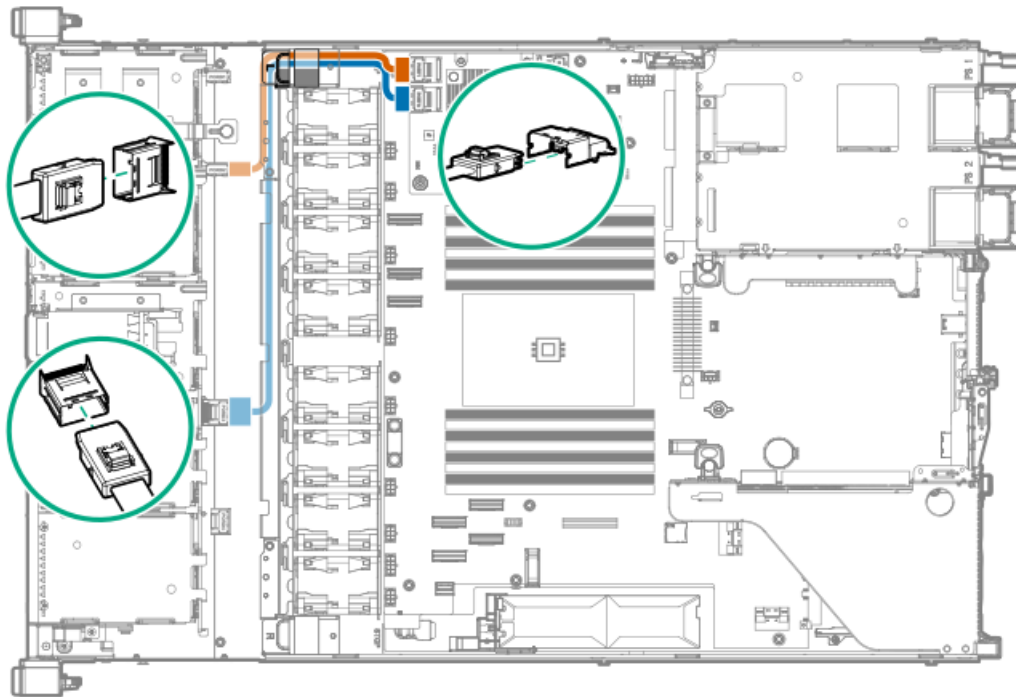


## 8 SFF SAS/SATA drive controller cabling

### 8 SFF drive: Onboard SATA cabling

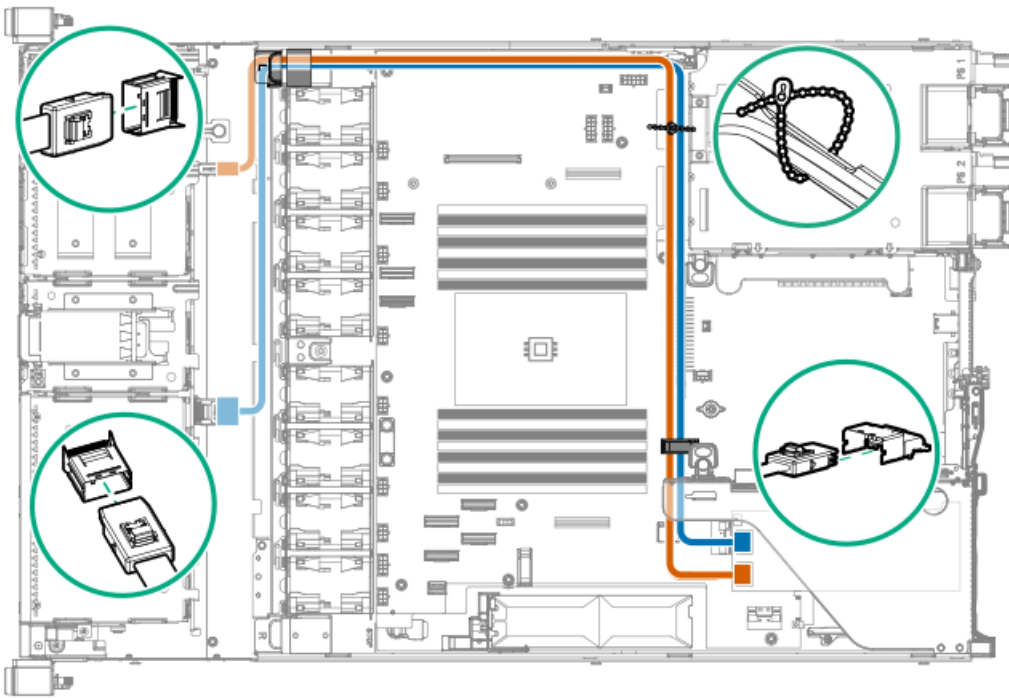


### 8 SFF drive: Type-a controller cabling



Color	Description
Orange	Port 1 Mini-SAS cable
Blue	Port 2 Mini-SAS cable

### 8 SFF drive: Type-p controller cabling from the primary riser



**Color Description**

Orange Port 1 Mini-SAS cable

Blue Port 2 Mini-SAS cable

**8 SFF drive: Type-p controller cabling from the secondary riser**



**Color Description**

Orange Port 1 Mini-SAS cable

Blue Port 2 Mini-SAS cable

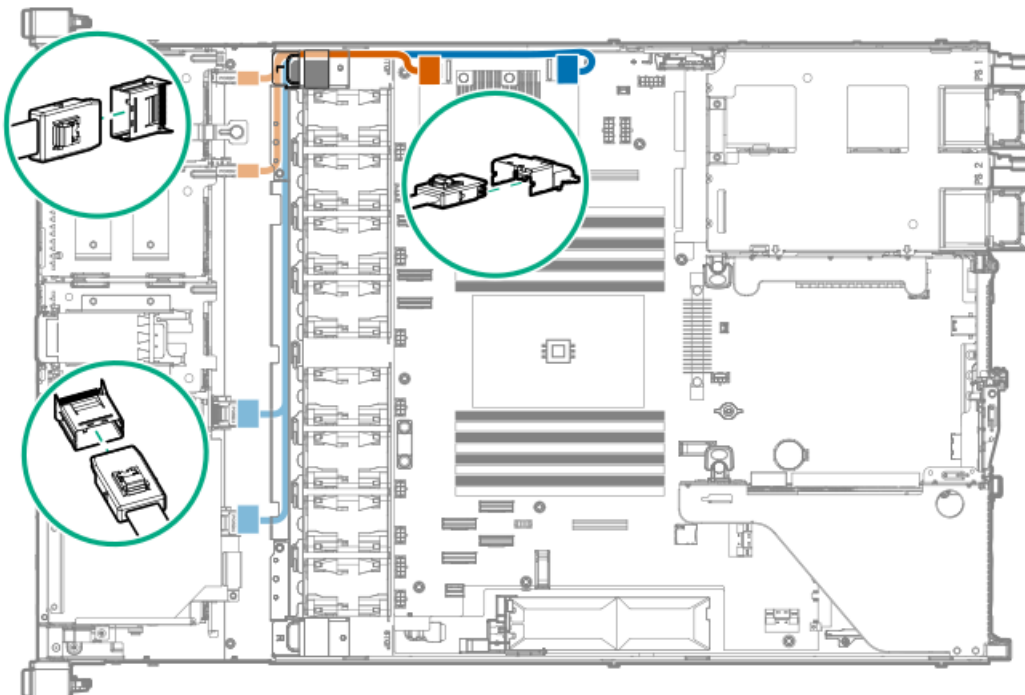
## 8 SFF NVMe drive controller cabling

### 8 SFF drive: Onboard NVMe cabling



Color	Description
Orange	NVMe port 3A SlimSAS cable
Blue	NVMe port 1A SlimSAS cable
Gold	NVMe port 5A SlimSAS cable
Pink	NVMe/SATA port 8A SlimSAS cable

### 8 SFF drive: Type-a controller cabling

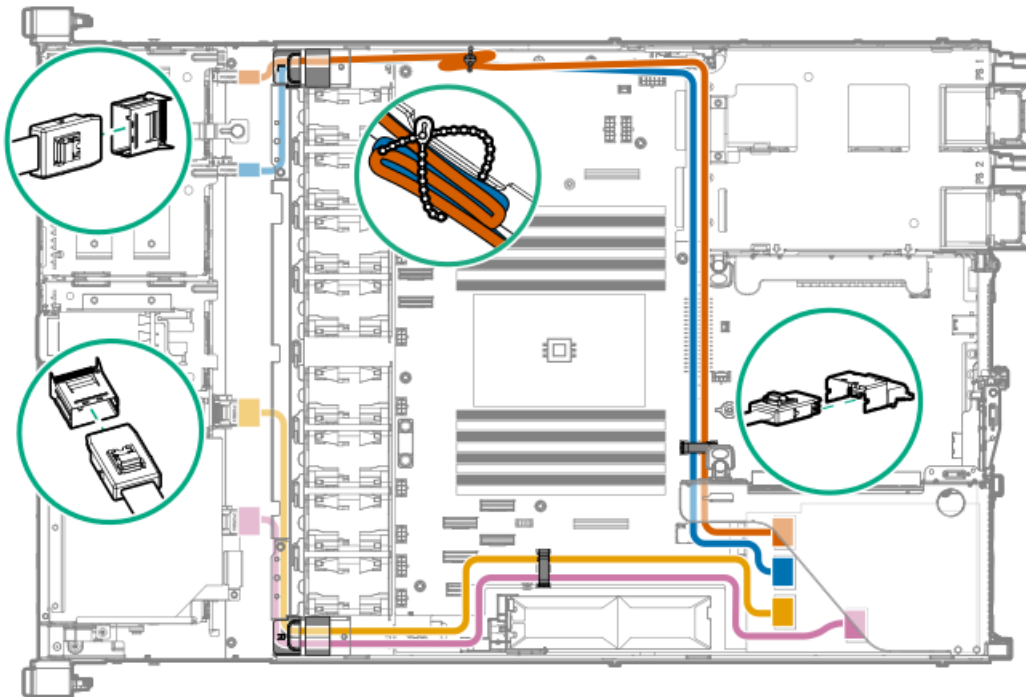


Color	Description
Orange	Port 1 SlimSAS Y-cable

Color	Description
Blue	Port 2 SlimSAS Y-cable

### 8 SFF drive: Type-p controller cabling from the primary riser

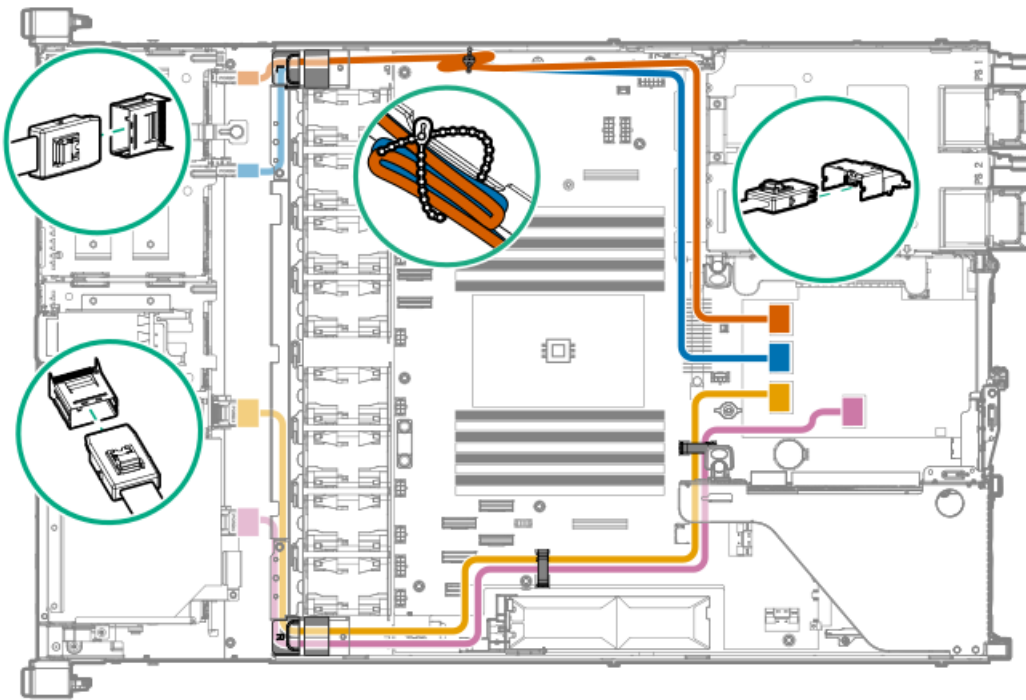
Use the cable tie that ships with cable kit to secure the cable on the side of the chassis wall.



Color	Description
Orange	Port 4 SlimSAS cable
Blue	Port 3 SlimSAS cable
Gold	Port 2 SlimSAS cable
Pink	Port 1 SlimSAS cable

### 8 SFF drive: Type-p controller cabling from the secondary riser

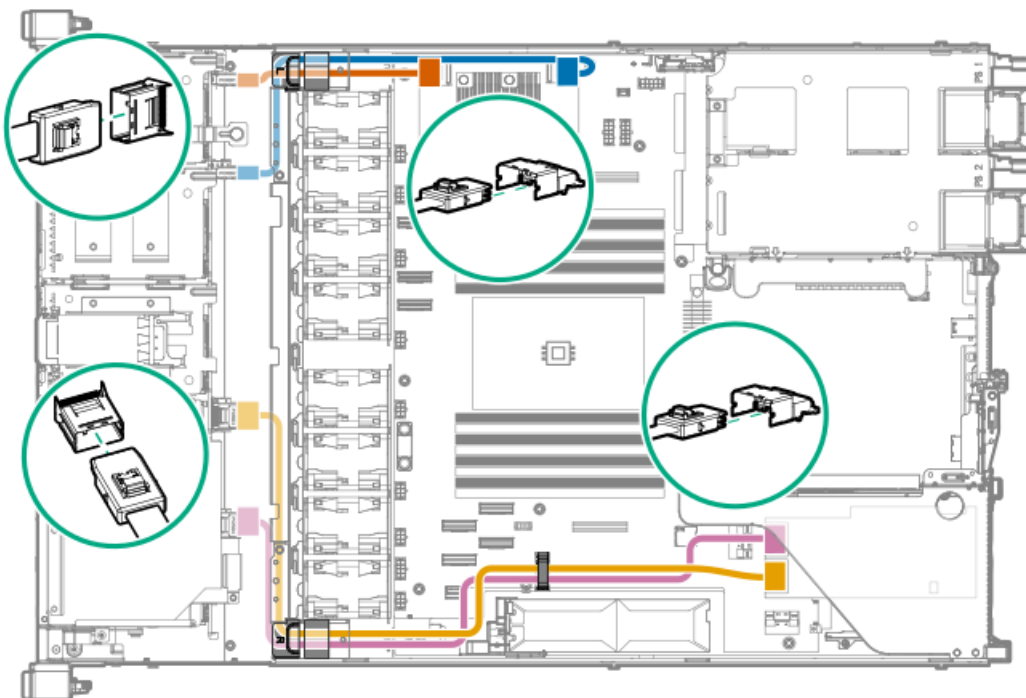
Use the cable tie that ships with cable kit to secure the cable on the side of the chassis wall.



**Color Description**

Orange	Port 4 SlimSAS cable
Blue	Port 3 SlimSAS cable
Gold	Port 2 SlimSAS cable
Pink	Port 1 SlimSAS cable

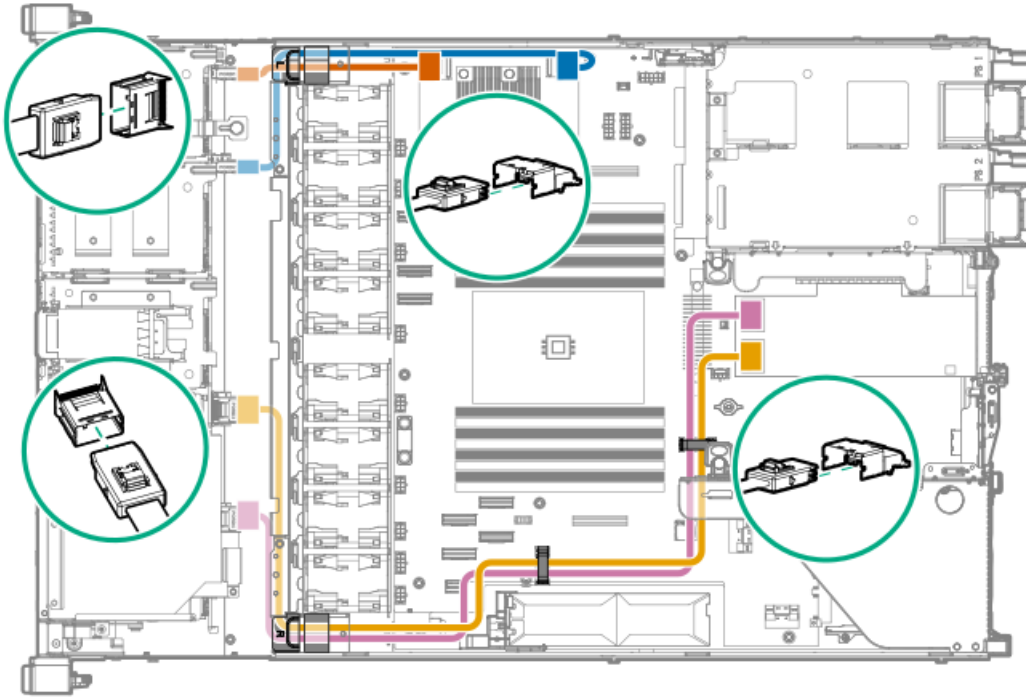
**8 SFF drive: Type-a and type-p controller cabling from the primary riser**



**Color Description**

Orange	Type-a controller port 1 SlimSAS cable
Blue	Type-a controller port 2 SlimSAS cable
Gold	Type-p controller port 1 SlimSAS cable
Pink	Type-p controller port 2 SlimSAS cable

## 8 SFF drive: Type-a and type-p controller cabling from the secondary riser

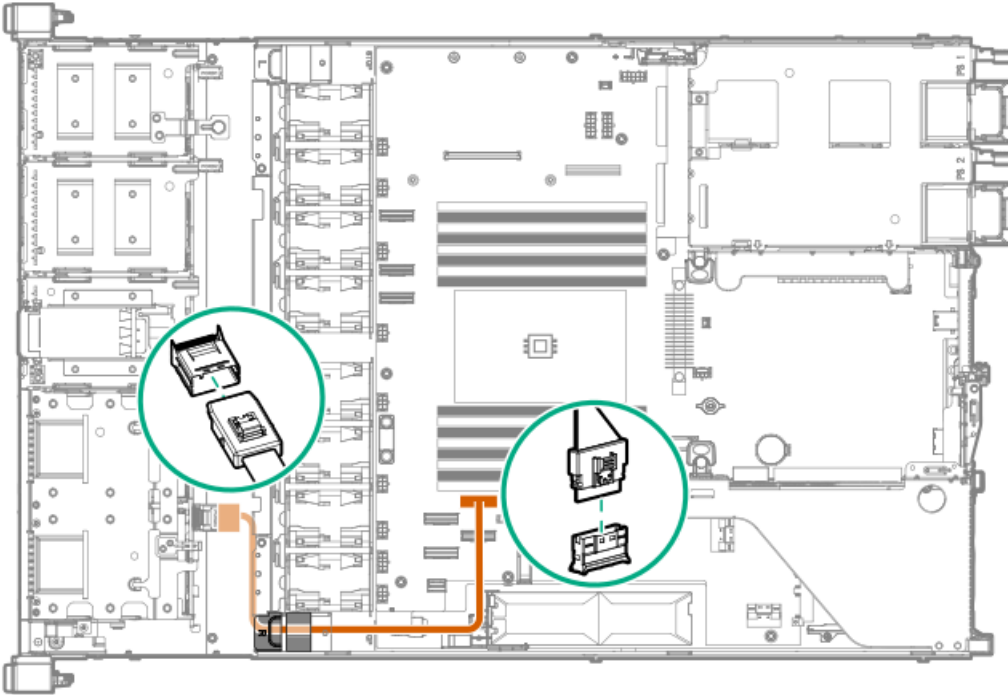


Color	Description
Orange	Type-a controller port 1 SlimSAS cable
Blue	Type-a controller port 2 SlimSAS cable
Gold	Type-p controller port 1 SlimSAS cable
Pink	Type-p controller port 2 SlimSAS cable

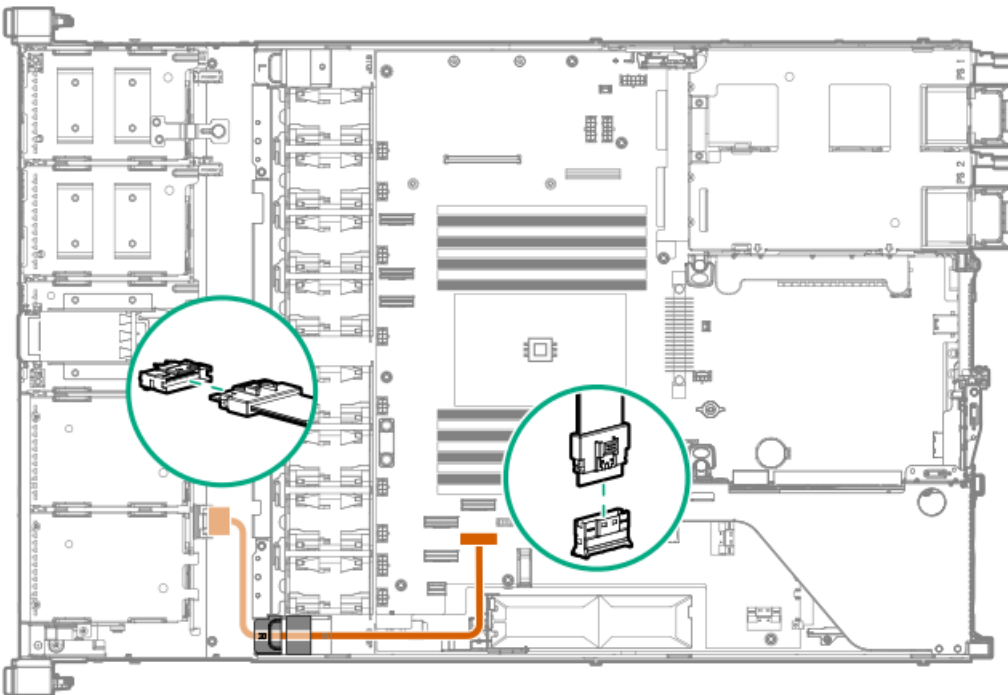


## 2 SFF NVMe drive controller cabling

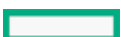
### 2 SFF drive: Onboard SATA cabling

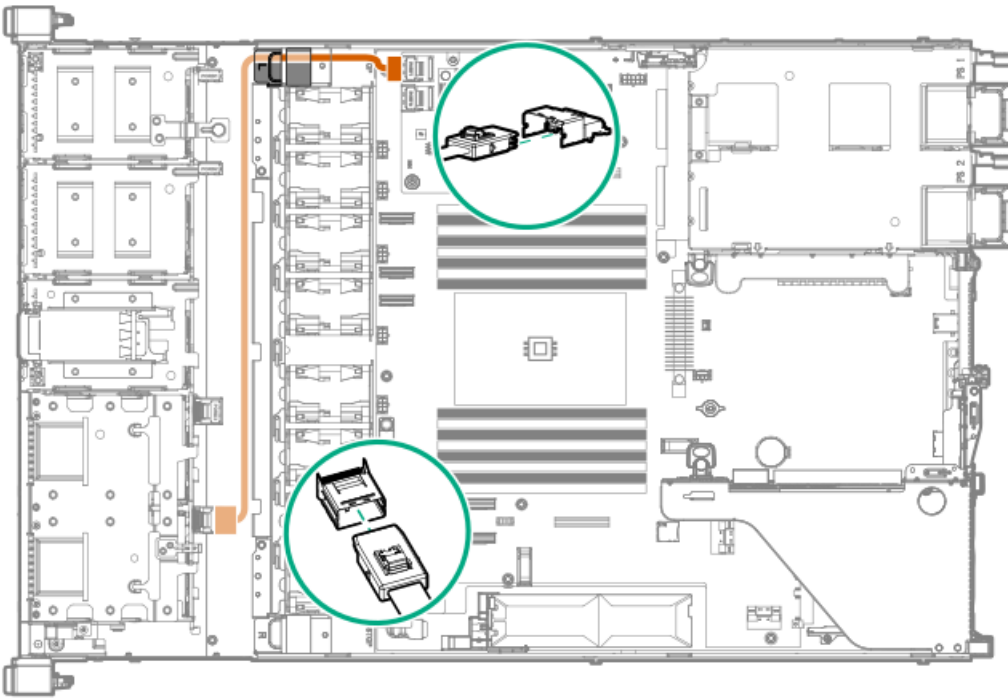


### 2 SFF drive: Onboard NVMe cabling

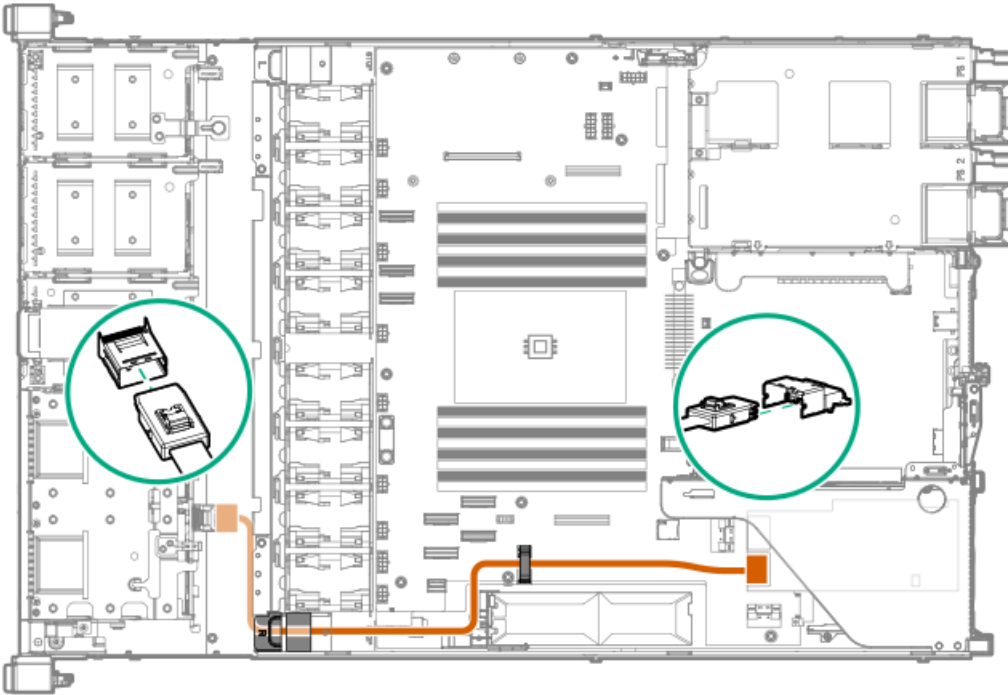


### 2 SFF drive: Type-a controller cabling



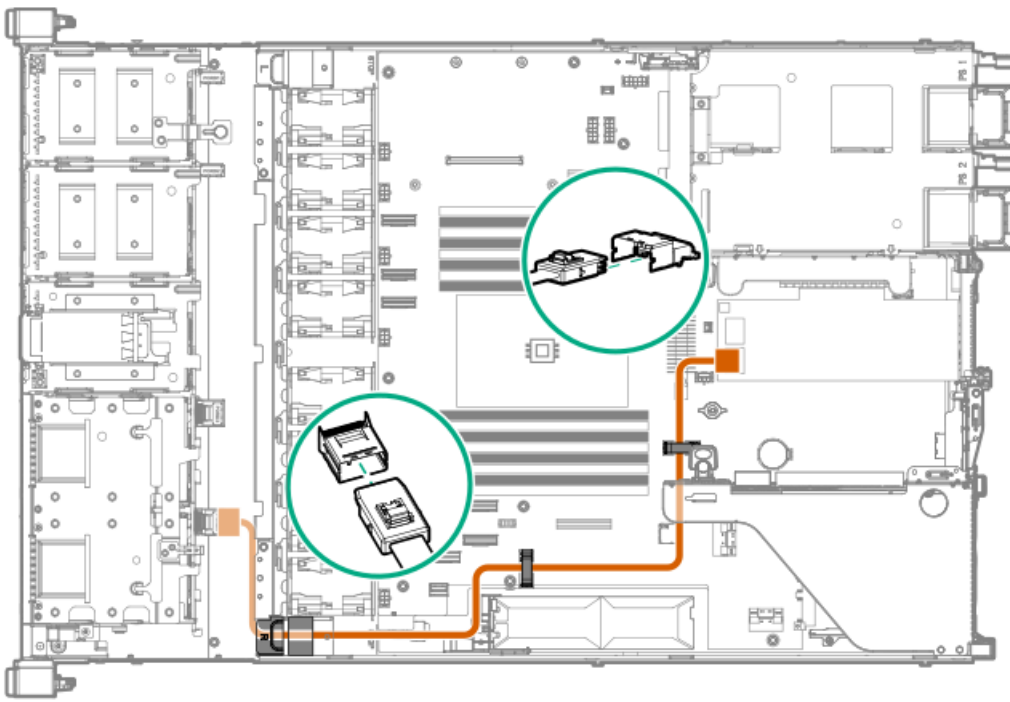


**2 SFF drive: Type-p controller cabling from the primary riser**



**2 SFF drive: Type-p controller cabling from the secondary riser**

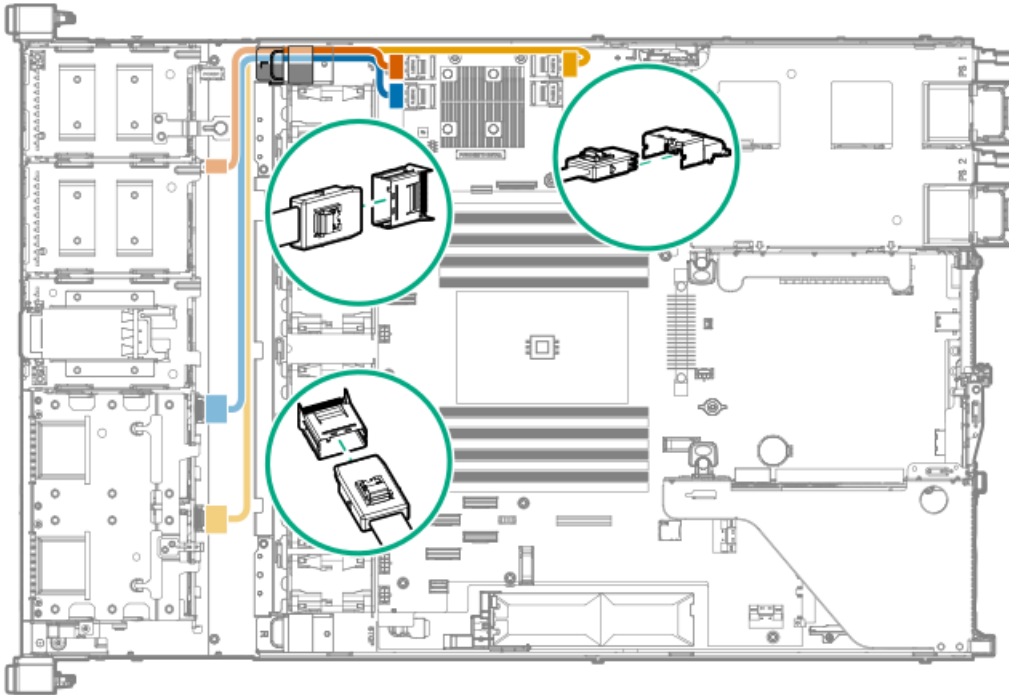




## 8 + 2 SFF drive controller cabling

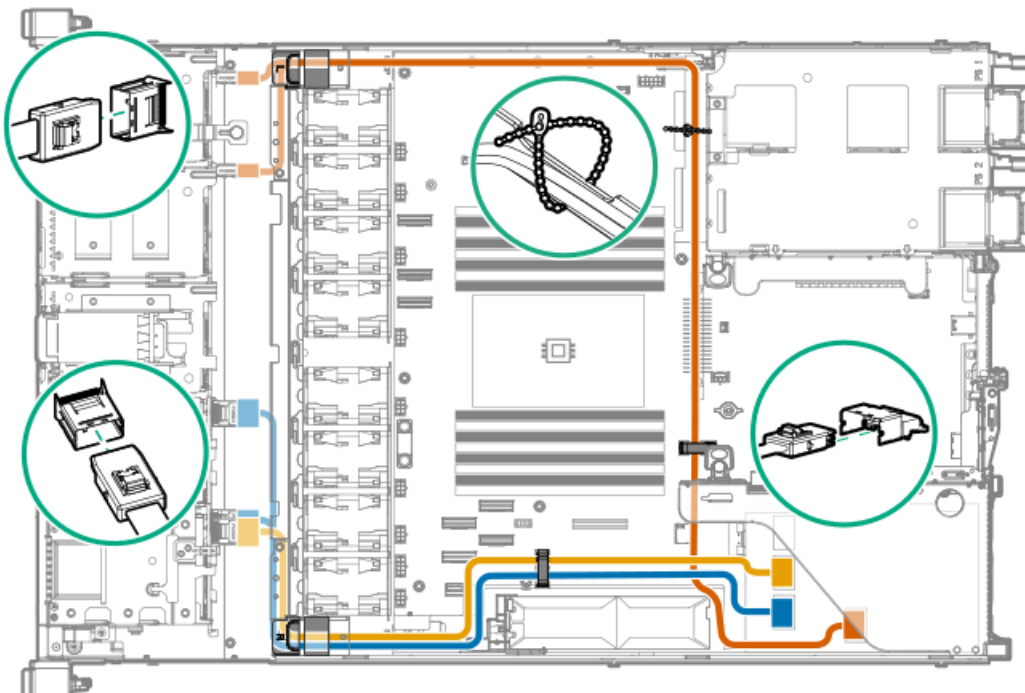
This drive configuration uses the 8 SFF SAS/SATA and 2 SFF U.2 or U.3 NVMe drive backplanes.

### 8 + 2 SFF drive: Type-a controller cabling



Color	Description
Orange	Port 1 SlimSAS cable
Blue	Port 2 SlimSAS cable
Gold	Port 3 SlimSAS cable

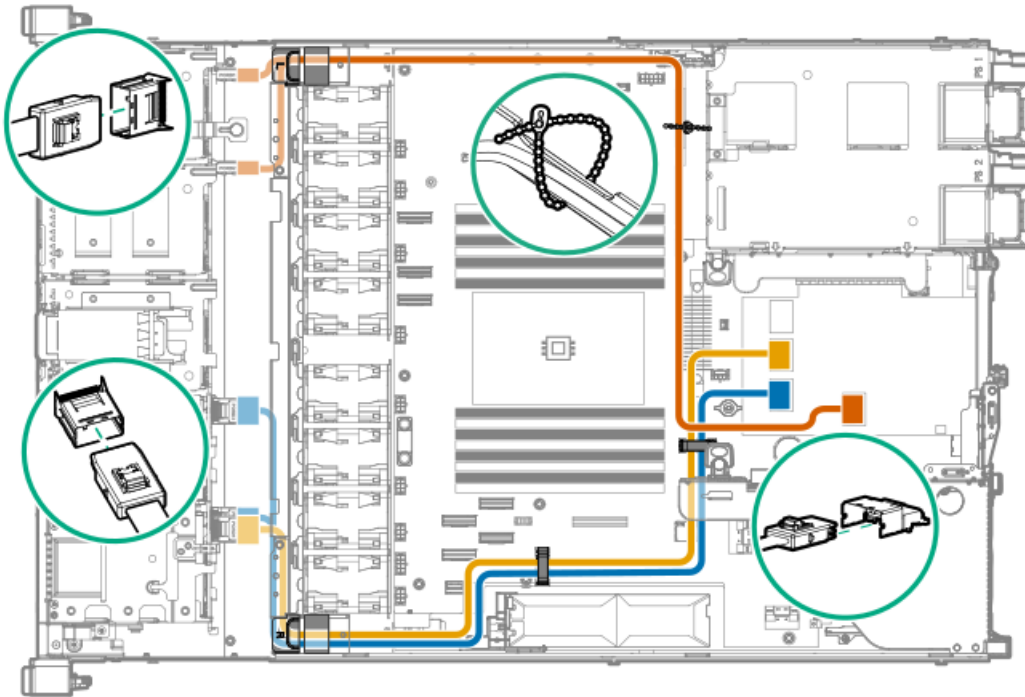
### 8 + 2 SFF drive: Type-p controller cabling from the primary riser



Color	Description
Orange	Port 1 SlimSAS Y-cable

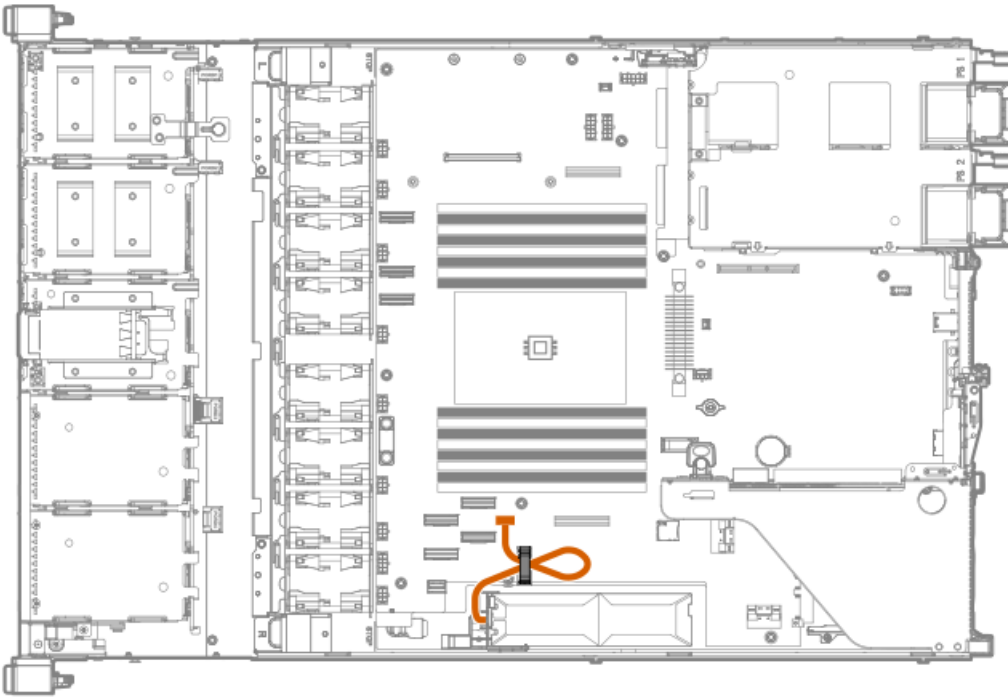
Color	Description
Blue	Port 2 SlimSAS Y-cable
Gold	Port 3 SlimSAS cable

### 8 + 2 SFF drive: Type-p controller cabling from the secondary riser



Color	Description
Orange	Port 1 SlimSAS Y-cable
Blue	Port 2 SlimSAS Y-cable
Gold	Port 3 SlimSAS cable

## Energy pack cabling



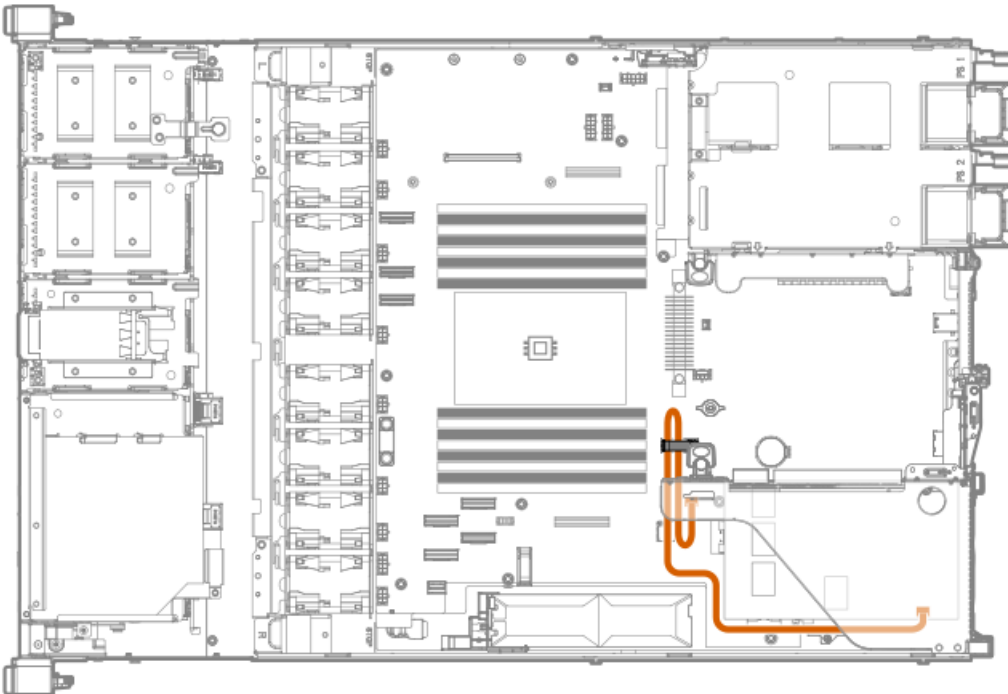
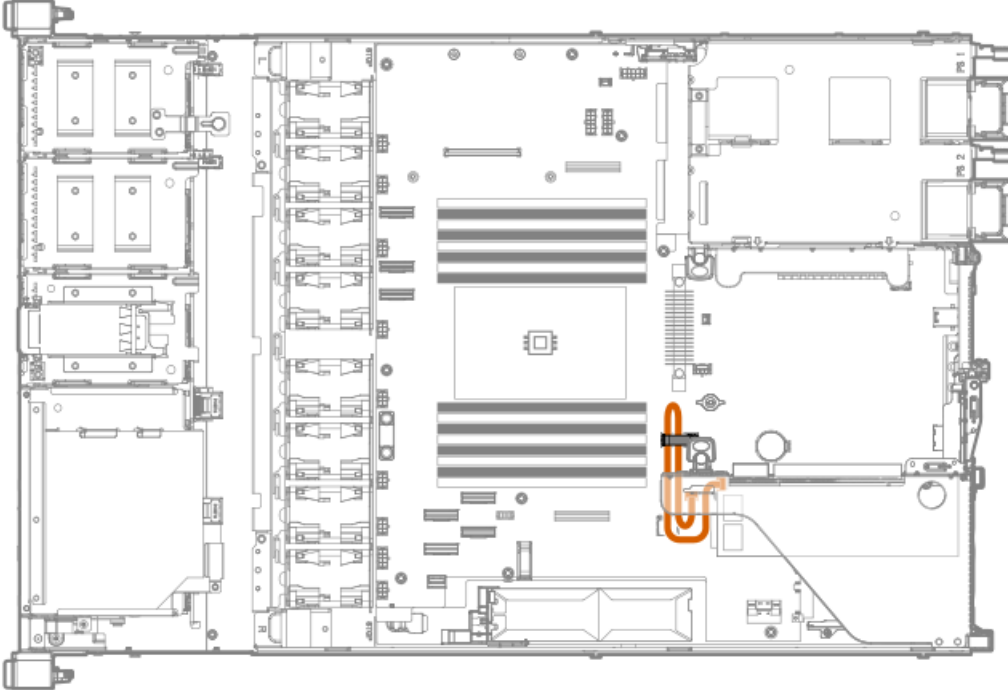
## Storage controller backup power cabling

The exact route of the storage controller backup power cabling will depend on:

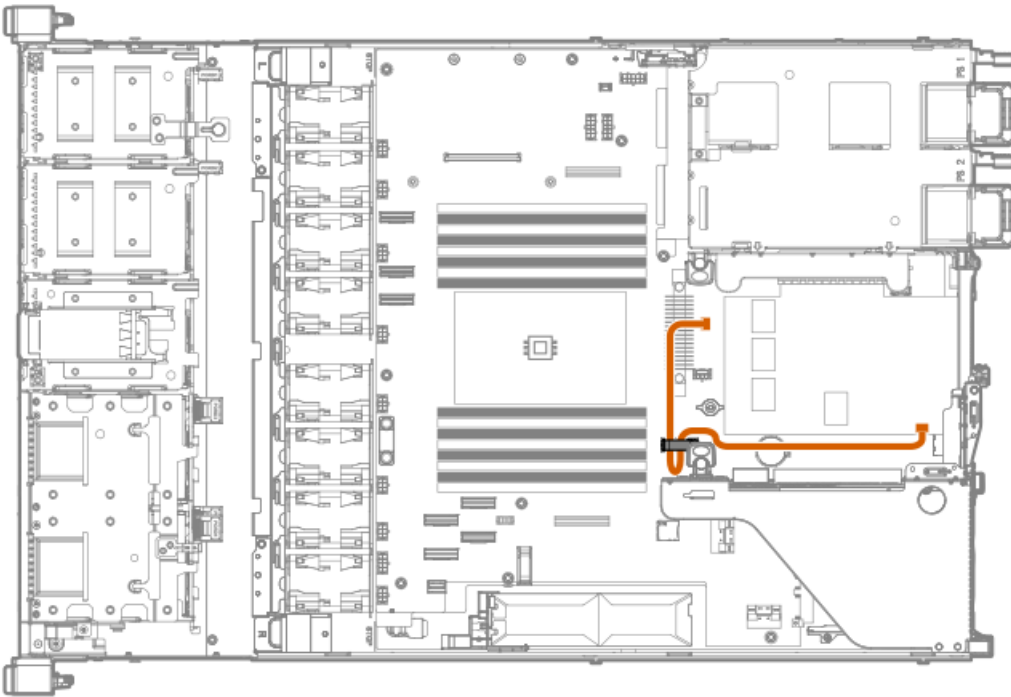
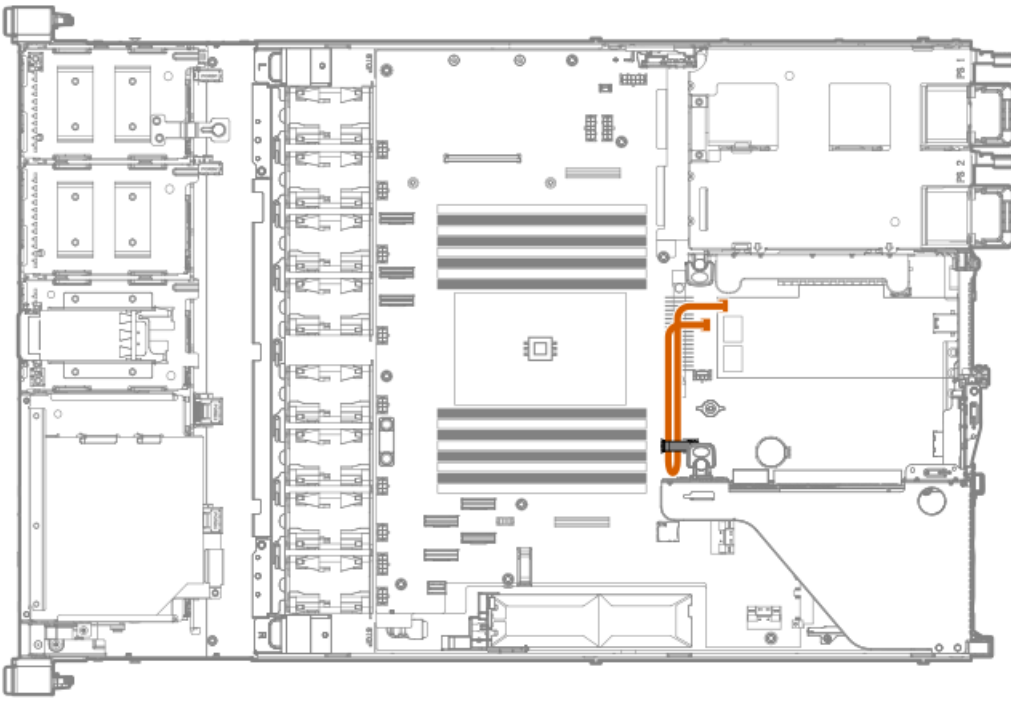
- The riser slot where the controller is installed
- The location of the storage controller backup power connector on the controller

Use the following diagrams for reference only.

### Storage controller backup power cabling from the primary riser



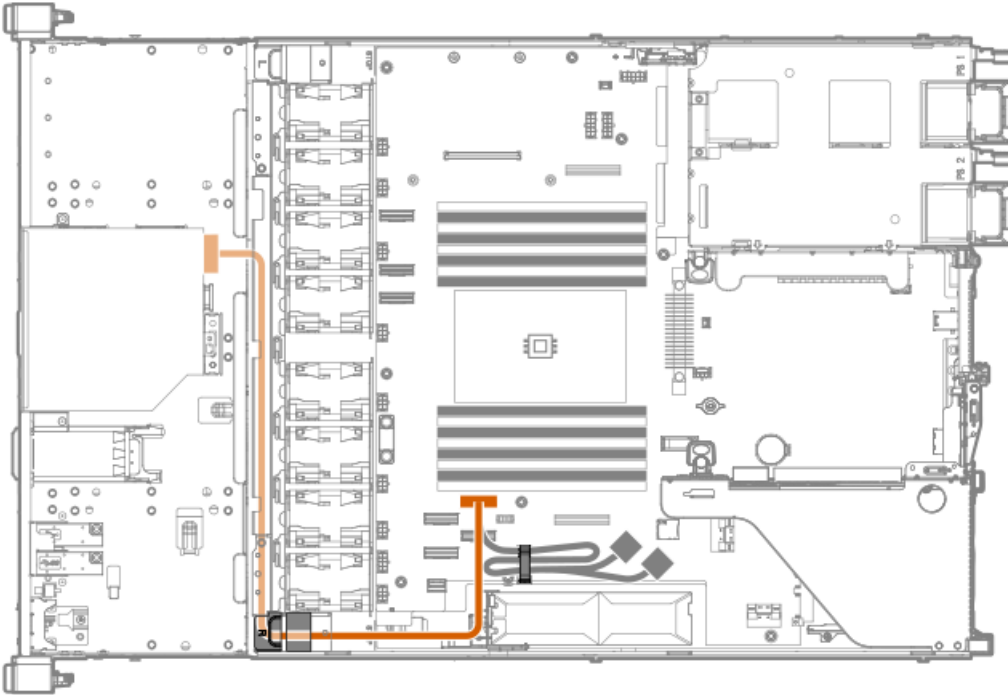
### Storage controller backup power cabling from the secondary riser



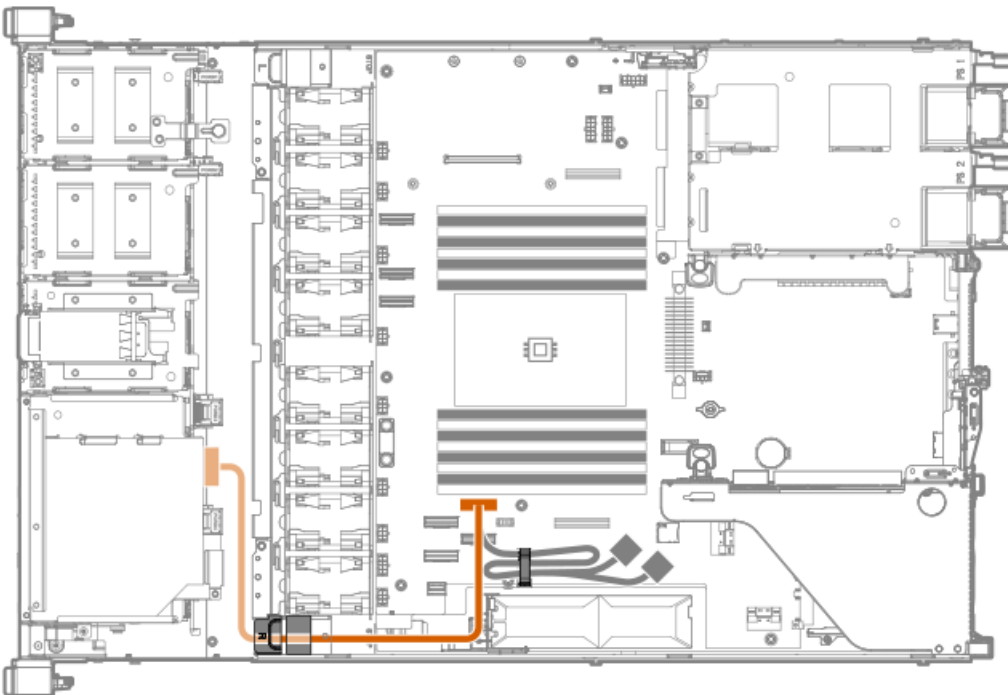


## Optical drive cabling

### Optical drive cabling in the LFF drive chassis

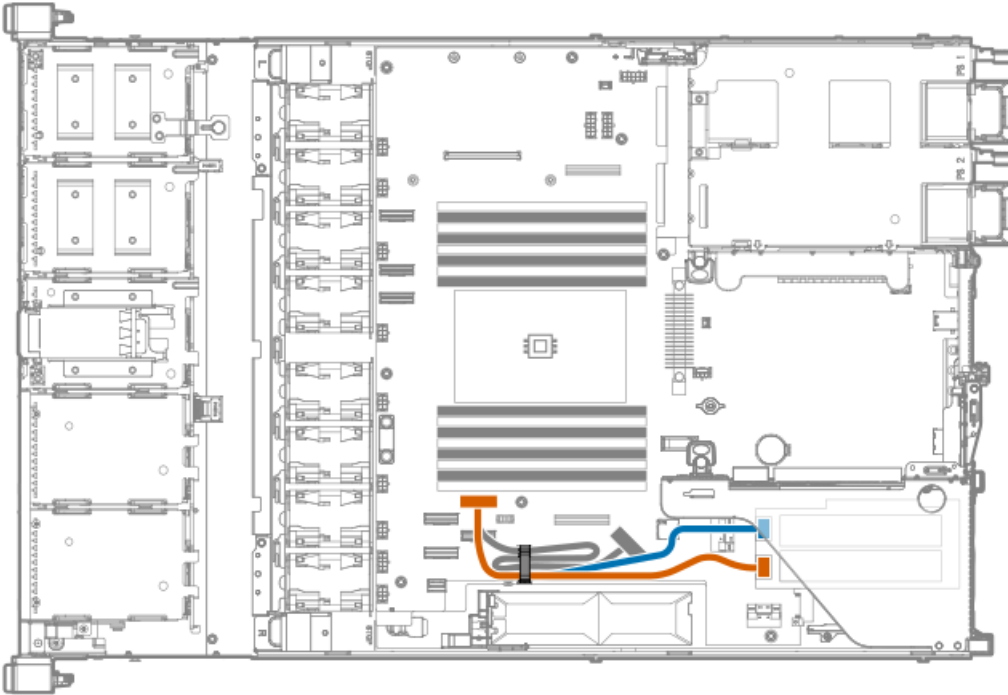


### Optical drive cabling in the SFF drive chassis



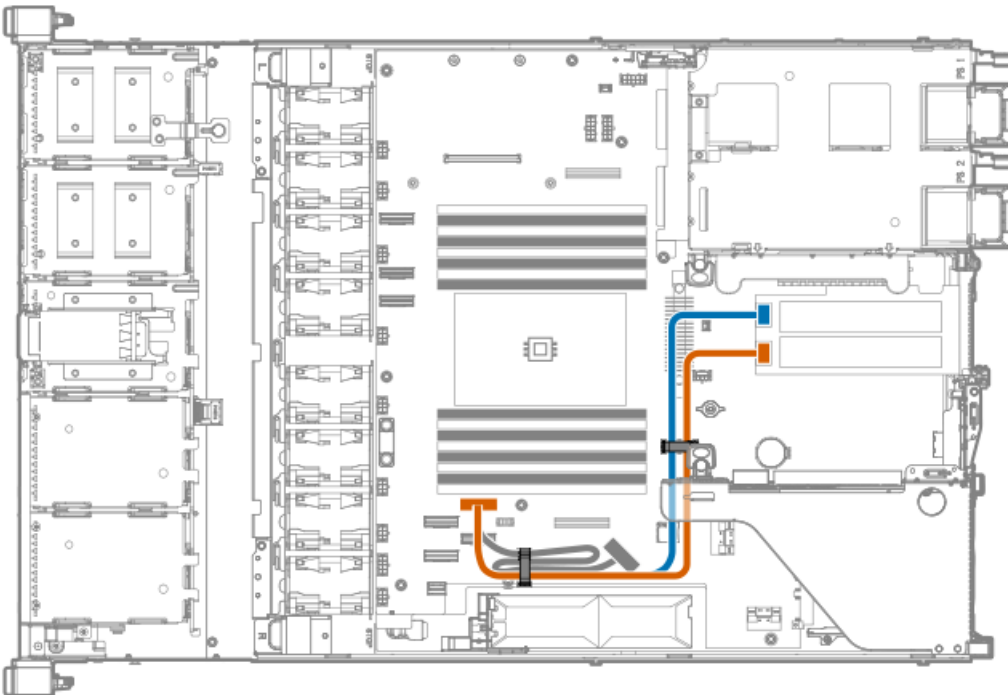
## M.2 SATA SSD add-in card cabling

### M.2 SATA SSD add-in card cabling from the primary riser



Color	Description
Orange	M.2 SATA SSD 1 cable
Blue	M.2 SATA SSD 2 cable

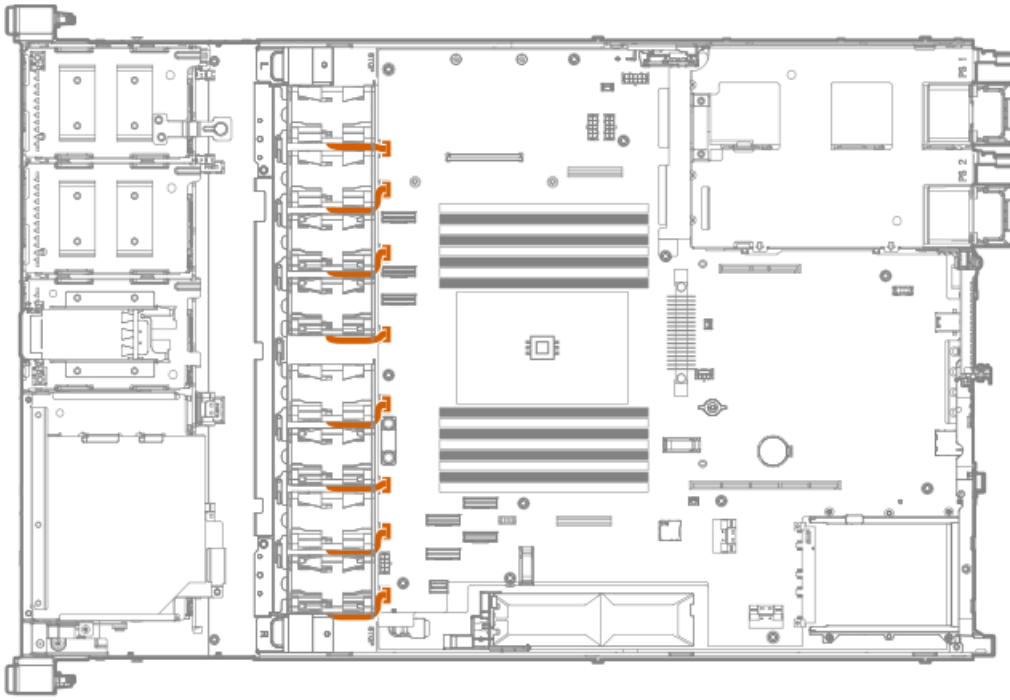
### M.2 SATA SSD add-in card cabling from the secondary riser



Color	Description
Orange	M.2 SATA SSD 1 cable
Blue	M.2 SATA SSD 2 cable

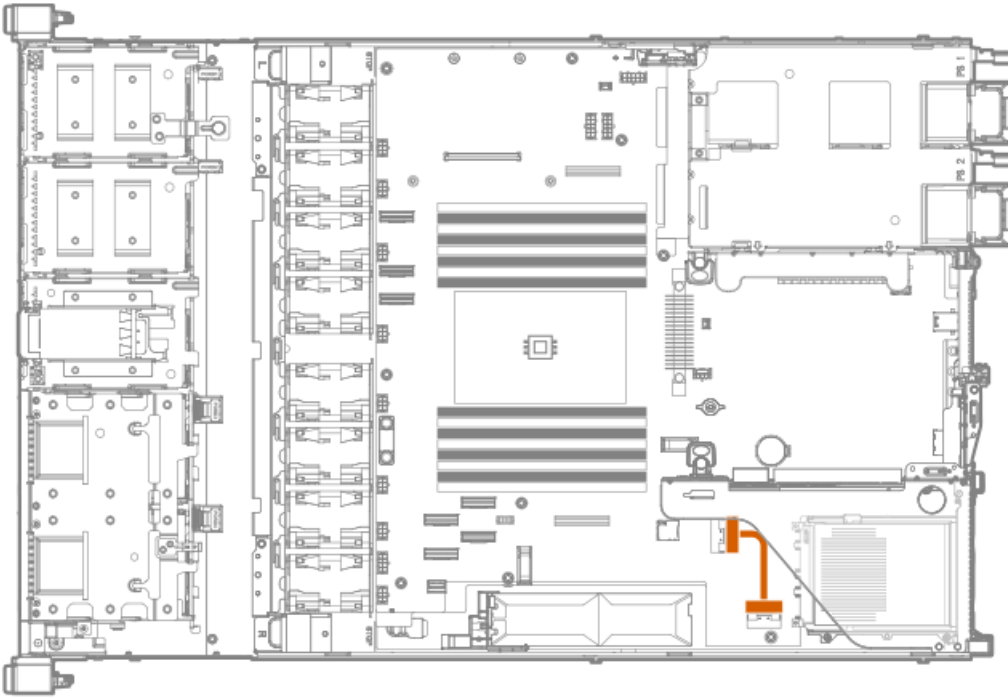


# Fan cabling



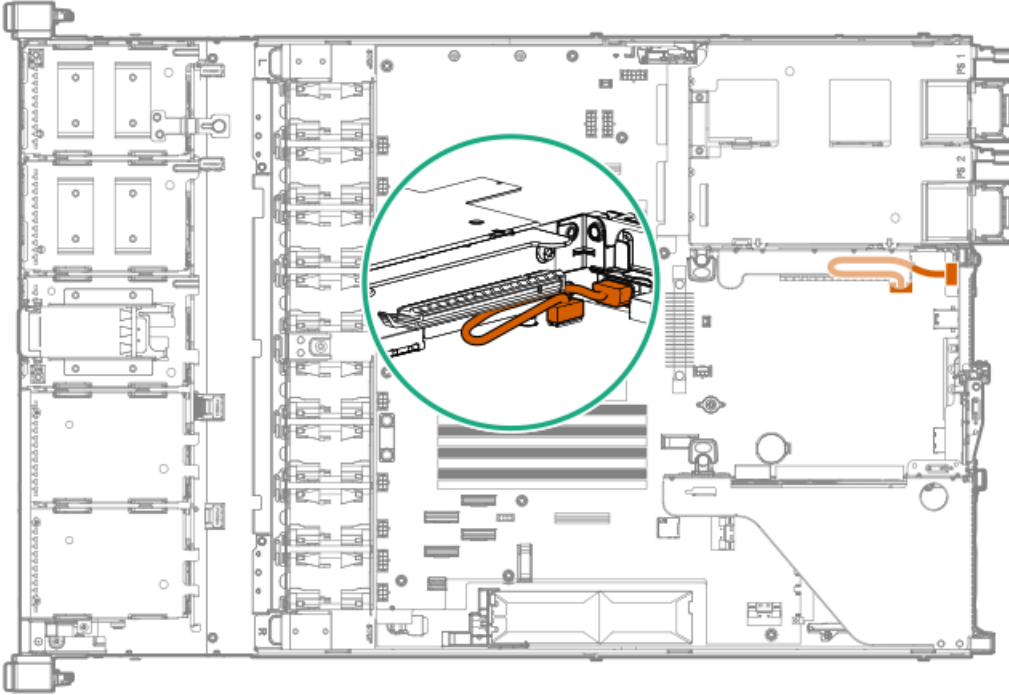
## OCP bandwidth upgrade cabling

The OCP bandwidth upgrade cable is only required when installing an OCP NIC 3.0 x16 adapter.

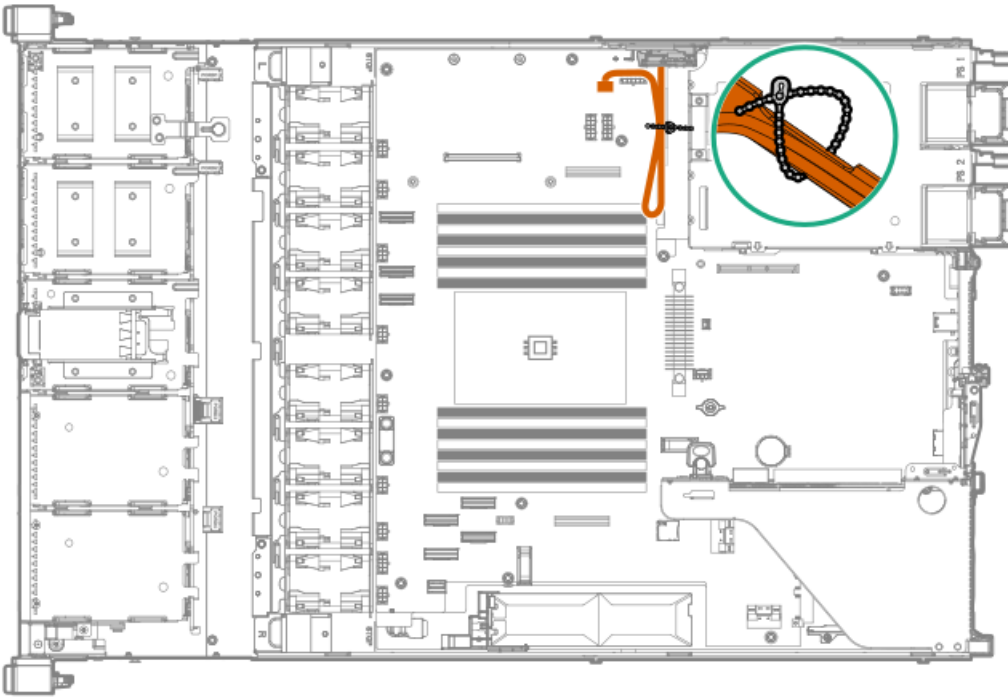


## Serial port cabling

If the secondary riser cage is installed, position the serial port cable underneath the riser.

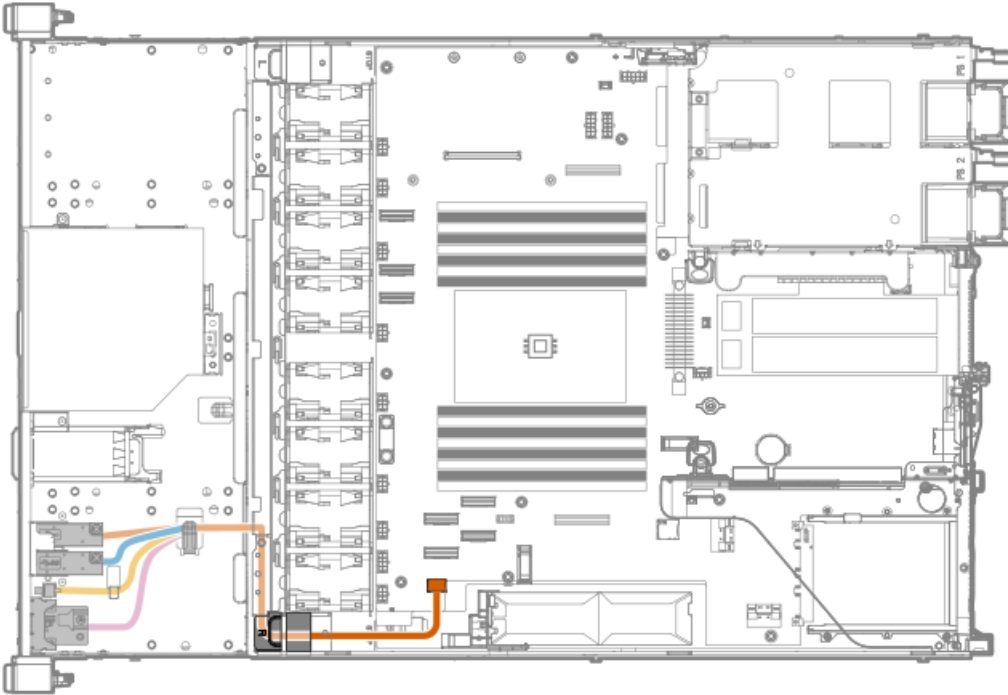


# Chassis intrusion detection switch cabling



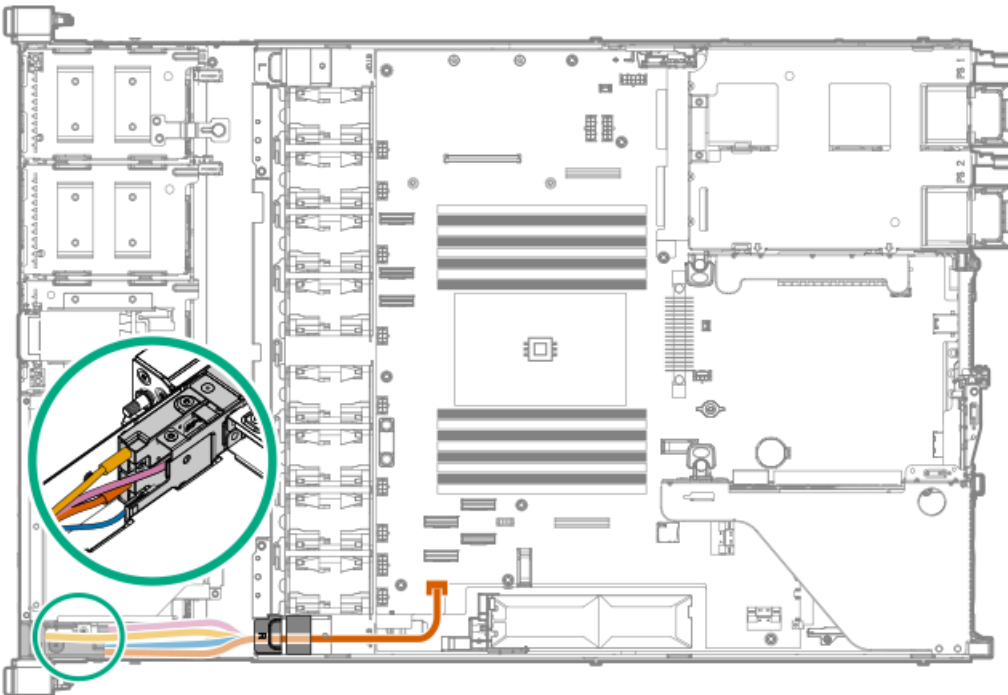
## Front I/O cabling

### Front I/O cabling in the LFF drive chassis



Color	Description
Orange	iLO service port cable
Blue	Ambient temperature sensor cable
Gold	USB 3.0 port cable
Pink	Front I/O LED/button cable

### Front I/O cabling in the SFF drive chassis



Color	Description
Orange	USB 3.0 port cable






<b>Color</b>	<b>Description</b>
Pink	Front I/O LED/button cable
Gold	Ambient temperature sensor cable
Blue	iLO service port cable



## Configuration and diagnostic utilities

This chapter provides information about common utilities that might not apply to your server. For information about server compatibility with the utilities listed in this chapter, see the product QuickSpecs at the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>).

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 **NOTE:** Servers ordered from HPE Factory Express might have already been configured with all or some of the steps provided in this chapter. Refer to your order from HPE Factory Express to determine if any additional steps are required for setup.

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### Installing an operating system

To install an operating system on a server, first use iLO Virtual Media to connect the OS installation media to the server. Information about iLO Virtual Media is in the iLO User Guide at [www.hpe.com/support/ilo-docs](http://www.hpe.com/support/ilo-docs). Then, use the Intelligent Provisioning Setup Wizard ([www.hpe.com/info/intelligentprovisioning/docs](http://www.hpe.com/info/intelligentprovisioning/docs)) to install the operating system.

For a list of supported operating systems, see the HPE Servers Support & Certification Matrices at [www.hpe.com/support/Servers-Certification-Matrices](http://www.hpe.com/support/Servers-Certification-Matrices).

### Configuring the initial setup of a server

To configure	Use
Single server (graphical user interface)	<ul style="list-style-type: none"><li>• <b>Guided process:</b> Intelligent Provisioning (<a href="http://www.hpe.com/info/intelligentprovisioning/docs">www.hpe.com/info/intelligentprovisioning/docs</a>)</li><li>• <b>Manual process:</b> HPE iLO web interface accessed by iLO remote console. Refer to the iLO online help for more information about iLO remote console.</li><li>• <b>Menu-based process:</b> UEFI System Utilities (<a href="https://www.hpe.com/info/UEFI-manual">https://www.hpe.com/info/UEFI-manual</a>)</li></ul>
Single server (scripting)	<ul style="list-style-type: none"><li>• <b>Using CLI for Windows and Linux to configure Redfish settings on a Gen10 or later server:</b> RESTful Interface Tool (<a href="http://www.hpe.com/support/restfulinterface/docs">www.hpe.com/support/restfulinterface/docs</a>)</li><li>• <b>Using Python:</b> Python iLO Redfish Library (python-ilo-rest-library) (<a href="https://github.com/HewlettPackard/python-ilo-rest-library">github.com/HewlettPackard/python-ilo-rest-library</a>)</li><li>• <b>Using PowerShell for Windows-based environments:</b> PowerShell cmdlets (<a href="https://www.hpe.com/info/powershell/docs">https://www.hpe.com/info/powershell/docs</a>)</li><li>• <b>Directly to the API using cURL or any other programming interface:</b> iLO RESTful API (<a href="https://hewlettpackard.github.io/ilo-rest-api-docs/">https://hewlettpackard.github.io/ilo-rest-api-docs/</a>)</li></ul>
Multiple servers (either UI or scripting)	HPE OneView ( <a href="https://www.hpe.com/support/oneview-docs">https://www.hpe.com/support/oneview-docs</a> ) <sup>1</sup>

<sup>1</sup> For servers running HPE OneView, do not use another tool, such as iLO, to delete or change certain settings. For more information about using HPE OneView and iLO to manage the same server, see the iLO User Guide at [www.hpe.com/support/ilo-docs](http://www.hpe.com/support/ilo-docs).

### Configuring storage controllers

To determine the storage controllers that are supported by your server, see the product QuickSpecs at the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>).

Controller type	Documentation
SR hardware RAID	—
Gen10 Plus	HPE SR Gen10 Plus Controller User Guide at <a href="https://www.hpe.com/info/SR-Gen10Plus-UG">https://www.hpe.com/info/SR-Gen10Plus-UG</a>

Controller type	Documentation
Gen10	HPE Smart Array SR Controller Gen10 User Guide at <a href="https://www.hpe.com/support/SSC-SRGen10-ug">https://www.hpe.com/support/SSC-SRGen10-ug</a>
<b>MR hardware RAID</b>	—
Gen10 Plus	HPE MR Gen10 Plus Controller User Guide at <a href="https://www.hpe.com/info/MR-Gen10Plus-UG">https://www.hpe.com/info/MR-Gen10Plus-UG</a>
Gen10	HPE Smart Array P824i-p MR Gen10 User Guide at <a href="https://www.hpe.com/info/p824ip-mr-gen10-contr-UG">https://www.hpe.com/info/p824ip-mr-gen10-contr-UG</a>
<b>Software RAID</b>	<ul style="list-style-type: none"> <li>HPE SR Gen10 Plus Software RAID User Guide at <a href="https://www.hpe.com/support/SSC-SRGen10Plus-ug">https://www.hpe.com/support/SSC-SRGen10Plus-ug</a></li> <li>User guides for the Intel Virtual RAID on CPU for HPE Gen10 Plus at <a href="https://www.hpe.com/support/IntelVROC-Gen10Plus-docs">https://www.hpe.com/support/IntelVROC-Gen10Plus-docs</a></li> </ul>

## Configuring NVMe OS boot devices

NVMe OS boot devices are plug and play as of Gen10. Device installation instructions are included in the packaging, server user guides, or server maintenance and service guides.

## Configuring network controllers

To determine the network controllers that are supported by your server, see the product QuickSpecs at the Hewlett Packard Enterprise website (<https://www.hpe.com/info/qs>).

Network controllers are plug and play. For installation instructions, see the server user guide, the documentation included with the controller, or on the Hewlett Packard Enterprise Support Center website (<https://www.hpe.com/support/hpesc>) see:

Controller	Type	Documentation
OPC NIC 3.0	Network adapter	HPE OCP NIC 3.0 Adapter Installation Instructions at <a href="http://www.hpe.com/support/OC3-NIC-Installation">www.hpe.com/support/OC3-NIC-Installation</a>
PCIe	Network adapter	HPE PCIe Network Adapter Installation Instructions at <a href="http://www.hpe.com/support/PCIe-Installation">www.hpe.com/support/PCIe-Installation</a>
Synergy Type C and D	Mezzanine adapter	HPE Synergy Type C and Type D Mezzanine Adapters Installation Instructions at <a href="https://www.hpe.com/support/Synergy-Mezz-Installation">https://www.hpe.com/support/Synergy-Mezz-Installation</a>
FlexibleLOM for Blades	Mezzanine card	HPE FlexibleLOM for Blades Installation Instructions at <a href="https://www.hpe.com/support/BLOM-Installation">https://www.hpe.com/support/BLOM-Installation</a>
FlexibleLOM for Racks	Network adapter	HPE FlexibleLOM for Racks Installation Instructions at <a href="https://www.hpe.com/support/ALOM-Installation">https://www.hpe.com/support/ALOM-Installation</a>
BladeSystem Type A and B	Mezzanine card	HPE BladeSystem Type A and B Mezzanine Card Installation Instructions at <a href="https://www.hpe.com/support/Blade-Mezz-Installation">https://www.hpe.com/support/Blade-Mezz-Installation</a>

## Monitoring servers

To monitor	Use	Supported notifications
Single server	HPE iLO ( <a href="http://www.hpe.com/support/ilo-docs">www.hpe.com/support/ilo-docs</a> )	<ul style="list-style-type: none"> <li>• SNMP</li> <li>• Redfish events</li> <li>• Email alerts</li> <li>• syslog</li> </ul>
Multiple servers	HPE OneView ( <a href="http://www.hpe.com/support/oneview-docs">www.hpe.com/support/oneview-docs</a> )	<ul style="list-style-type: none"> <li>• SNMP</li> <li>• Redfish change events for Gen10 or later servers: An example of a change event is adding a disk to a server.</li> <li>• Email alerts: HPE OneView provides email notifications based on alerts triggered from HPE iLO and other resources.</li> <li>• syslogs from iLO: HPE OneView can configure the iLO servers to forward their syslogs. HPE Oneview does not monitor the content of the forwarded syslogs.</li> </ul>

## Updating the server

- **HPE ProLiant servers:** HPE provides a comprehensive system software and firmware update solution through Service Packs for ProLiant (SPP).
- **HPE Synergy:** HPE provides updated firmware and software images through HPE Synergy Service Packs (SSPs).

To	Use
View supported operating systems and access operating system updates.	HPE Servers Support & Certification Matrices at <a href="http://www.hpe.com/support/Servers-Certification-Matrices">www.hpe.com/support/Servers-Certification-Matrices</a>
Determine and deploy which SSPs or SPPs to a single server.	Smart Update Manager (SUM) ( <a href="http://www.hpe.com/info/sum-docs">www.hpe.com/info/sum-docs</a> )
Deploy SSPs and SPPs to multiple servers.	HPE OneView ( <a href="http://www.hpe.com/support/oneview-docs">www.hpe.com/support/oneview-docs</a> )
Download the SSP.	HPE Synergy management combinations and HPE Synergy Service Packs (SSPs) ( <a href="http://www.hpe.com/info/synergy-sw-release-information">www.hpe.com/info/synergy-sw-release-information</a> )
Download the SPP.	HPE Service Pack for ProLiant (SPP) ( <a href="http://www.hpe.com/servers/spp">www.hpe.com/servers/spp</a> )

## Optimizing the server

To	Use
Optimize server performance through management and tuning features.	HPE Server Performance Management and Tuning Guide at <a href="http://www.hpe.com/info/server-performance-management-tuning-en">www.hpe.com/info/server-performance-management-tuning-en</a>
Obtain recommendations for resolving incorrect settings.	HPE InfoSight for Servers ( <a href="http://www.hpe.com/info/infosight-servers-docs">www.hpe.com/info/infosight-servers-docs</a> )

## Configuring security

To	See

To	See
Implement server security best practices.	<ul style="list-style-type: none"> <li>• HPE Gen10 and Gen10 Plus Security Reference Guide at <a href="http://www.hpe.com/info/server-security-reference-en">www.hpe.com/info/server-security-reference-en</a></li> <li>• HPE iLO 5 Security Technology Brief at <a href="http://www.hpe.com/support/ilo5-security-en">www.hpe.com/support/ilo5-security-en</a></li> </ul>
Configure and use the Server Configuration Lock feature on HPE Trusted Supply Chain servers and other servers that have the Server Configuration Lock feature enabled.	Server Configuration Lock User Guide for HPE ProLiant Gen10 and Gen10 Plus servers and HPE Synergy at <a href="http://www.hpe.com/info/server-config-lock-UG-en">www.hpe.com/info/server-config-lock-UG-en</a>

## Managing Linux-based high performance compute clusters

To	Use
Provision, manage, and monitor clusters.	HPE Performance Cluster Manager ( <a href="http://www.hpe.com/support/hpcm_manuals">www.hpe.com/support/hpcm_manuals</a> )
Optimize your applications.	HPE Performance Analysis Tools ( <a href="http://www.hpe.com/info/perftools">www.hpe.com/info/perftools</a> )
Optimize software library for low latency and high bandwidth, both on-node and off-node, for point-to-point and collective communications.	HPE Cray Message Passing Toolkit in the HPE Cray Programming Environment User Guide for your server OS at <a href="http://www.hpe.com/info/cray-pe-user-guides">www.hpe.com/info/cray-pe-user-guides</a>
Optimize software libraries, runtime tools, and a scalable development environment for tuning and accelerating compute-intensive applications.	HPE Message Passing Interface ( <a href="http://www.hpe.com/support/mpi-ug-038">www.hpe.com/support/mpi-ug-038</a> )

## Troubleshooting

- [NMI functionality](#)
- [Troubleshooting resources](#)

## NMI functionality

An NMI crash dump enables administrators to create crash dump files when a system is hung and not responding to traditional debugging methods.

An analysis of the crash dump log is an essential part of diagnosing reliability problems, such as hanging operating systems, device drivers, and applications. Many crashes freeze a system, and the only available action for administrators is to cycle the system power. Resetting the system erases any information that could support problem analysis, but the NMI feature preserves that information by performing a memory dump before a hard reset.

To force the OS to initiate the NMI handler and generate a crash dump log, the administrator can use the iLO Generate NMI feature.

## Troubleshooting resources

Troubleshooting resources are available for HPE Gen10 and Gen10 Plus server products in the following documents:

- Troubleshooting Guide for HPE ProLiant Gen10 and Gen10 Plus servers provides procedures for resolving common problems and comprehensive courses of action for fault isolation and identification, issue resolution, and software maintenance.
- Error Message Guide for HPE ProLiant Gen10 Plus servers and HPE Synergy provides a list of error messages and information to assist with interpreting and resolving error messages.
- Integrated Management Log Messages and Troubleshooting Guide for HPE ProLiant Gen10 and Gen10 Plus servers and HPE Synergy provides IML messages and associated troubleshooting information to resolve critical and cautionary IML events.

To access troubleshooting resources for your product, see the [Hewlett Packard Enterprise website](#).



## System battery replacement

If the server no longer automatically displays the correct date and time, then replace the battery that provides power to the real-time clock. Under normal use, battery life is 5–10 years.

## System battery information

The server contains an internal lithium manganese dioxide, a vanadium pentoxide, or an alkaline battery that provides power to the real-time clock.

---

 **WARNING:**

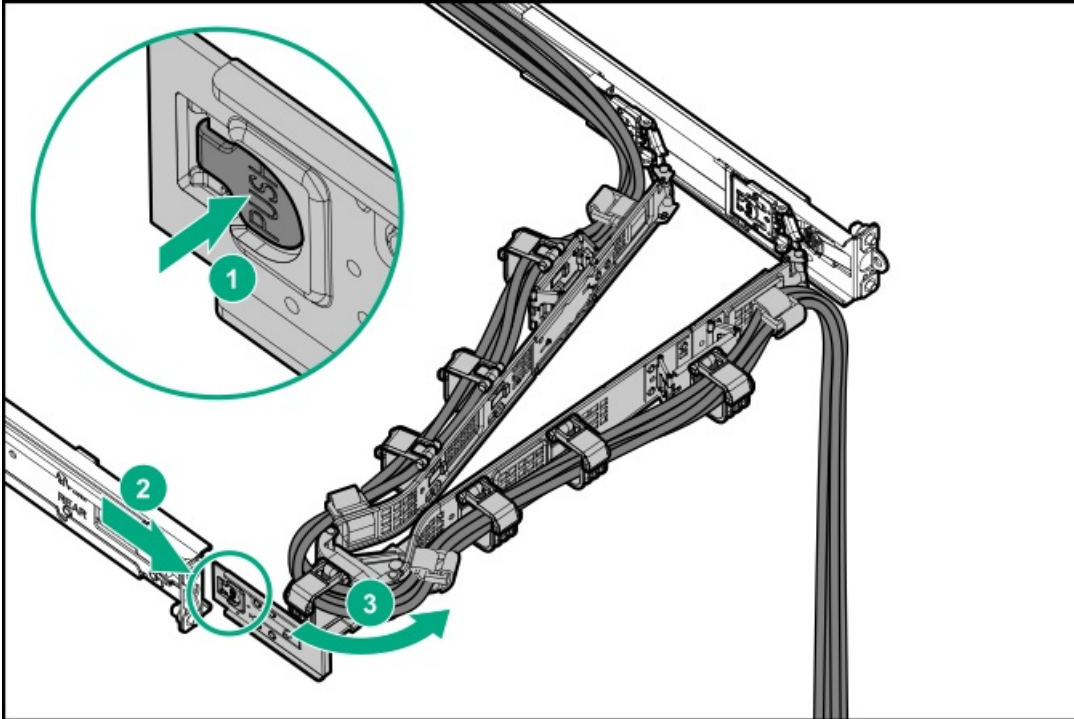
If this battery is not properly handled, a risk of the fire and burns exists. To reduce the risk of personal injury:

- Do not attempt to recharge the battery.
  - Do not expose the battery to temperatures higher than 60°C (140°F).
  - Do not expose the battery to extremely low air pressure as it might lead to explosion or leakage of flammable liquid or gas.
  - Do not disassemble, crush, puncture, short external contacts, or dispose the battery in fire or water.
-

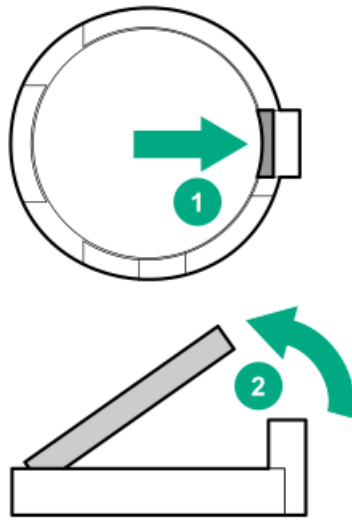
# Removing and replacing the system battery

## Procedure

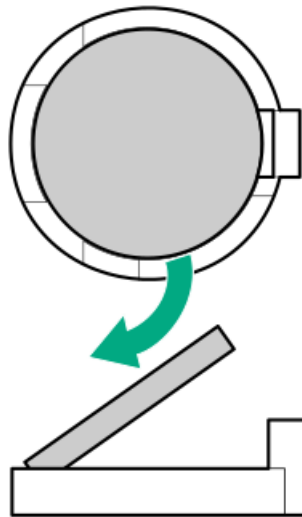
1. If installed, remove the front bezel.
2. Power down the server.
3. If installed, release the cable management arm.



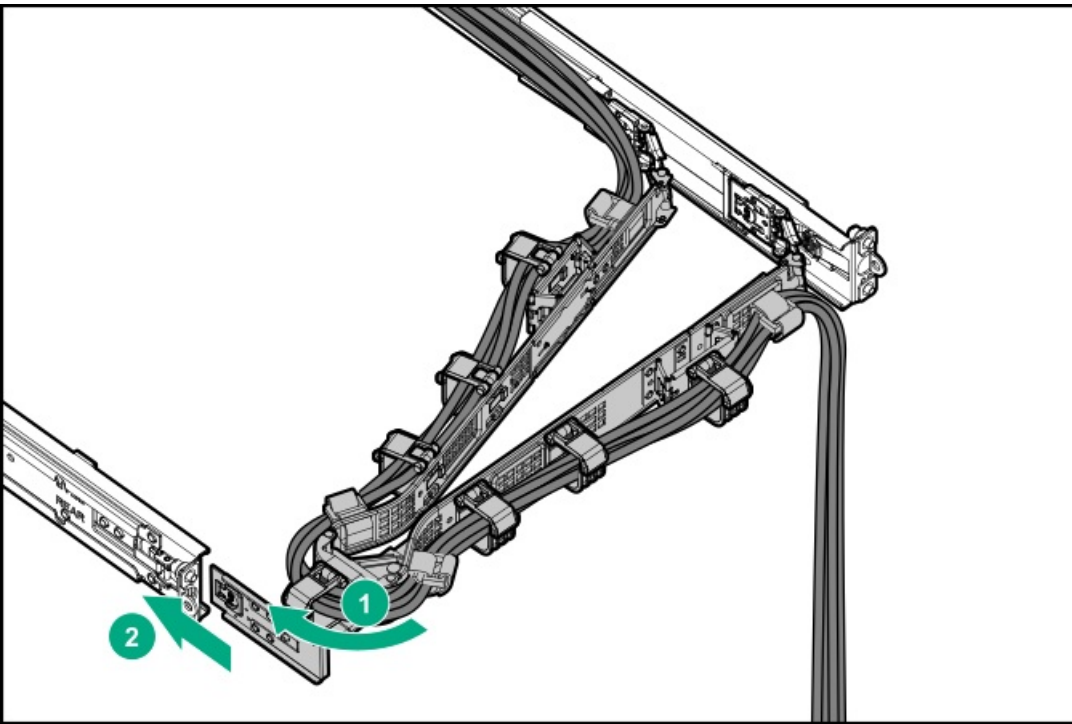
4. Remove all power:
  - a. Disconnect each power cord from the power source.
  - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Remove the server from the rack.
7. Place the server on a flat, level work surface.
8. Remove the access panel.
9. If an expansion card is installed in the riser slot 2, remove the primary riser cage.
10. Locate the battery on the system board.
11. Remove the system battery.



12. Insert the battery with the "+" side facing up on the socket, and then press the battery down to secure it in place.



13. If removed, install the primary riser cage.
14. Install the access panel.
15. Install the server into the rack.
16. Connect all peripheral cables to the server.
17. Connect each power cord to the server.
18. Connect each power cord to the power source.
19. If installed, close the cable management arm.



20. Power up the server.
21. If removed, install the front bezel.
22. Properly dispose of the old battery.

For more information about battery replacement or proper disposal, contact an authorized reseller or support specialist.

## Safety, warranty, and regulatory information

- [Regulatory information](#)
- [Warranty information](#)

## Regulatory information

To view the regulatory information for your product, view the Safety and Compliance Information for Server, Storage, Power, Networking, and Rack Products, available at the Hewlett Packard Enterprise Support Center:

<https://www.hpe.com/support/Safety-Compliance-EnterpriseProducts>

### Additional regulatory information

Hewlett Packard Enterprise is committed to providing our customers with information about the chemical substances in our products as needed to comply with legal requirements such as REACH (Regulation EC No 1907/2006 of the European Parliament and the Council). A chemical information report for this product can be found at:

<https://www.hpe.com/info/reach>

For Hewlett Packard Enterprise product environmental and safety information and compliance data, including RoHS and REACH, see:

<https://www.hpe.com/info/ecodata>

For Hewlett Packard Enterprise environmental information, including company programs, product recycling, and energy efficiency, see:

<https://www.hpe.com/info/environment>

## Notices for Eurasian Economic Union



### Manufacturer and Local Representative Information

#### Manufacturer information:

Hewlett Packard Enterprise, 6280 America Center Drive, San Jose, CA 95002 U.S.

#### Local representative information Russian:

- **Russia**  
ООО "Хьюлетт Паккард Энтерпрайз", Российская Федерация, 125171, г. Москва, Ленинградское шоссе, 16А, стр.3, Телефон: +7 499 403 4248 Факс: +7 499 403 4677
- **Kazakhstan**  
ТОО «Хьюлетт-Паккард (К)», Республика Казахстан, 050040, г. Алматы, Бостандыкский район, проспект Аль-Фараби, 77/7, Телефон/факс: + 7 727 355 35 50

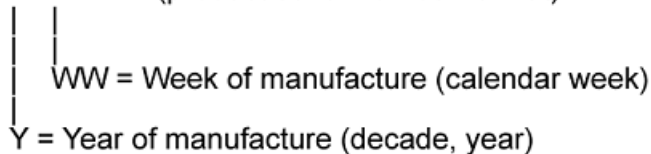
#### Local representative information Kazakh:

- **Russia**  
ЖШС "Хьюлетт Паккард Энтерпрайз", Ресей Федерациясы, 125171, Мәскеу, Ленинград тас жолы, 16А блок 3, Телефон: +7 499 403 4248 Факс: +7 499 403 4677
- **Kazakhstan**  
ЖШС «Хьюлетт-Паккард (К)», Қазақстан Республикасы, 050040, Алматы к., Бостандык ауданы, Әл-Фараби даңғ ылы, 77/7, Телефон/факс: +7 727 355 35 50

#### Manufacturing date:

The manufacturing date is defined by the serial number.

CCSYWWZZZZ (product serial number format)



If you need help identifying the manufacturing date, contact [tre@hpe.com](mailto:tre@hpe.com).



# Turkey RoHS material content declaration

Türkiye Cumhuriyeti: AEEE Yönetmeliğine Uygundur



## Ukraine RoHS material content declaration

Обладнання відповідає вимогам Технічного регламенту щодо обмеження використання деяких небезпечних речовин в електричному та електронному обладнанні, затвердженого постановою Кабінету Міністрів України від 3 грудня 2008 № 1057



## Warranty information

To view the warranty information for your product, see the links provided below:

HPE ProLiant and IA-32 Servers and Options

<https://www.hpe.com/support/ProLiantServers-Warranties>

HPE Enterprise and Cloudline Servers

<https://www.hpe.com/support/EnterpriseServers-Warranties>

HPE Storage Products

<https://www.hpe.com/support/Storage-Warranties>

HPE Networking Products

<https://www.hpe.com/support/Networking-Warranties>



# Specifications

This chapter lists the technical specifications for the server, including:

- [Environmental specifications](#)
- [Mechanical specifications](#)
- [Power supply specifications](#)

## Environmental specifications

Specifications	Value
<b>Temperature range*</b>	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
<b>Relative humidity (noncondensing)</b>	—
Operating	8% to 90% 28°C (82.4°F) maximum wet bulb temperature, noncondensing
Nonoperating	5% to 95% 38.7°C (101.7°F) maximum wet bulb temperature, noncondensing
<b>Altitude</b>	—
Operating	3050 m (10,000 ft) This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).
Nonoperating	9144 m (30,000 ft) Maximum allowable altitude change rate is 457 m/min (1,500 ft/min).

### Standard operating support

10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1,000 ft) above sea level to a maximum of 3,050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 20°C/hr (36°F/hr). The upper limit and rate of change may be limited by the type and number of options installed.

System performance during standard operating support might be reduced if operating above 30°C (86°F).

### Extended ambient operating support

For approved hardware configurations, the supported system inlet range is extended to be: 5° to 10°C (41° to 50°F) and 35° to 40°C (95° to 104°F) at sea level with an altitude derating of 1.0°C per every 175 m (1.8°F per every 574 ft) above 900 m (2,953 ft) to a maximum of 3050 m (10,000 ft). The approved hardware configurations for this system are listed at the [Hewlett Packard Enterprise website](#).

40°C to 45°C (104°F to 113°F) at sea level with an altitude derating of 1.0°C per every 125 m (1.8°F per every 410 ft) above 900 m (2953 ft) to a maximum of 3,050 m (10,000 ft). The approved hardware configurations for this system are listed on the [Hewlett Packard Enterprise website](#).

## Mechanical specifications

Specification	Value
<b>Dimensions</b>	—
Height	4.29 cm (1.69 in)
Depth	64.43 cm (25.37 in)
Width	43.46 cm (17.11 in)
<b>Weight, approximate values</b>	—
Minimum	12.00 kg (26.46 lb)
Maximum	18.00 kg (39.68 lb)



## Power supply specifications

Depending on the installed options and the regional location where the server was purchased, the server can be configured with one of the following power supplies:

- [HPE 500 W Flex Slot Platinum Hot-plug Low Halogen Power Supply \(94% efficiency\)](#)
- [HPE 800 W Flex Slot Platinum Hot-plug Low Halogen Power Supply](#)
- [HPE 800 W Flex Slot Titanium Hot-plug Low Halogen Power Supply](#)
- [HPE 800 W Flex Slot Universal Hot-plug Low Halogen Power Supply](#)
- [HPE 800 W Flex Slot -48 VDC Hot-plug Low Halogen Power Supply](#)
- [HPE 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply](#)

For detailed power supply specifications, see the QuickSpecs on the [Hewlett Packard Enterprise website](#).



## HPE 500 W Flex Slot Platinum Hot-plug Low Halogen Power Supply (94% efficiency)

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	100 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	5.8 A at 100 VAC 2.8 A at 200 VAC 2.4 A at 240 VDC for China only
Maximum rated input power	580 W at 100 VAC 560 W at 200 VAC 558 W at 240 VDC for China only
BTUs per hour	1999 at 100 VAC 1912 at 200 VAC 1904 at 240 VDC for China only
<b>Power supply output</b>	—
Rated steady-state power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 127 VAC input 500 W at 100 VAC to 240 VAC input 500 W at 240 VDC input for China only





## HPE 800 W Flex Slot Platinum Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	100 VAC to 127 VAC 200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	9.1 A at 100 VAC 4.4 A at 200 VAC 3.6 A at 240 VDC for China only
Maximum rated input power	899 W at 100 VAC 867 W at 200 VAC 864 W at 240 VDC for China only
BTUs per hour	3067 at 100 VAC 2958 at 200 VAC 2949 at 240 VAC for China only
<b>Power supply output</b>	—
Rated steady-state power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only

## HPE 800 W Flex Slot Titanium Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	4.3 A at 200 VAC 3.6 A at 240 VAC 3.6 A at 240 VDC for China only
Maximum rated input power	851 W at 200 VAC 848 W at 240 VAC 848 W at 240 VDC for China only
BTUs per hour	2905 at 200 VAC 2893 at 240 VAC 2893 at 240 VDC for China only
<b>Power supply output</b>	—
Rated steady-state power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only

## HPE 800 W Flex Slot Universal Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	200 VAC to 277 VAC 380 VDC
Rated input frequency	50 Hz to 60 Hz
Rated input current	4.4 A at 200 VAC 3.8 A at 230 VAC 2.3 A at 380 VDC
Maximum rated input power	869 W at 200 VAC 865 W at 230 VAC 861 W at 277 VAC 863 W at 380 VDC
BTUs per hour	2964 at 200 VAC 2951 at 230 VAC 2936 at 277 VAC 2943 at 380 VDC
<b>Power supply output</b>	—
Rated steady-state power	800 W at 200 VAC to 277 VAC input
Maximum peak power	800 W at 200 VAC to 277 VAC input

# HPE 800 W Flex Slot -48 VDC Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	-40 VDC to -72 VDC -48 VDC nominal input
Rated input current	22.1 A at -40 VDC input 18.2 A at -48 VDC input, nominal input 12.0 A at -72 VDC input
Rated input power	874 W at -40 VDC input 865 W at -48 VDC input, nominal input 854 W at -72 VDC input
Rated input power (BTUs per hour)	2983 at -40 VDC input 2951 at -48 VDC input, nominal input 2912 at -72 VDC input
<b>Power supply output</b>	—
Rated steady-state power	800 W at -40 VDC to -72 VDC
Maximum peak power	800 W at -40 VDC to -72 VDC
Maximum peak power	800 W at -40 VDC to -72 VDC input

**⚠ WARNING: To reduce the risk of electric shock or energy hazards:**

- This equipment must be installed by trained service personnel.
- Connect the equipment to a reliably grounded secondary circuit source. A secondary circuit has no direct connection to a primary circuit and derives its power from a transformer, converter, or equivalent isolation device.
- The branch circuit overcurrent protection must be rated 27 A.

**⚠ CAUTION:** This equipment is designed to permit the connection of the earthed conductor of the DC supply circuit to the earthing conductor at the equipment.

If this connection is made, all of the following must be met:

- This equipment must be connected directly to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode conductor is connected.
- This equipment must be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system must be earthed elsewhere.
- The DC supply source is to be located within the same premises as the equipment.
- Switching or disconnecting devices must not be in the earthed circuit conductor between the DC source and the point of connection of the earthing electrode conductor.

## HPE 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply

Specification	Value
<b>Input requirements</b>	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
Rated input current	8.7 A at 200 VAC 7.5 A at 230 VAC
Maximum rated input power	1734 W at 200 VAC 1727 W at 230 VAC
BTUs per hour	5918 at 200 VAC 5891 at 230 VAC
<b>Power supply output</b>	—
Rated steady-state power	1600 W at 200 VAC to 240 VAC input 1600 W at 240 VDC input
Maximum peak power	2200 W for 1 ms (turbo mode) at 200 VAC to 240 VAC input

## Websites

### General websites

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

<https://www.hpe.com/storage/spock>

Storage white papers and analyst reports

<https://www.hpe.com/storage/whitepapers>

For additional websites, see [Support and other resources](#).

### Product websites

HPE ProLiant DL325 Gen10 Plus v2 Server product page

<https://www.hpe.com/servers/dl325-gen10-plus-v2>

HPE ProLiant DL325 Gen10 Plus v2 Server user documents

<https://www.hpe.com/info/dl325gen10plusv2-docs>



## Support and other resources

- [Accessing Hewlett Packard Enterprise Support](#)
- [Accessing updates](#)
- [Customer self repair](#)
- [Remote support](#)
- [Documentation feedback](#)



## Accessing Hewlett Packard Enterprise Support

- For live assistance, go to the Contact Hewlett Packard Enterprise Worldwide website:

<https://www.hpe.com/info/assistance>

- To access documentation and support services, go to the Hewlett Packard Enterprise Support Center website:

<https://www.hpe.com/support/hpesc>

### Information to collect

- Technical support registration number (if applicable)
- Product name, model or version, and serial number
- Operating system name and version
- Firmware version
- Error messages
- Product-specific reports and logs
- Add-on products or components
- Third-party products or components





## Accessing updates

- Some software products provide a mechanism for accessing software updates through the product interface. Review your product documentation to identify the recommended software update method.

- To download product updates:

Hewlett Packard Enterprise Support Center

<https://www.hpe.com/support/hpesc>

Hewlett Packard Enterprise Support Center: Software downloads

<https://www.hpe.com/support/downloads>

My HPE Software Center

<https://www.hpe.com/software/hpesoftwarecenter>

- To subscribe to eNewsletters and alerts:

<https://www.hpe.com/support/e-updates>

- To view and update your entitlements, and to link your contracts and warranties with your profile, go to the Hewlett Packard Enterprise Support Center More Information on Access to Support Materials page:

<https://www.hpe.com/support/AccessToSupportMaterials>

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**ⓘ IMPORTANT:**

Access to some updates might require product entitlement when accessed through the Hewlett Packard Enterprise Support Center. You must have an HPE Passport set up with relevant entitlements.

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## Customer self repair

Hewlett Packard Enterprise customer self repair (CSR) programs allow you to repair your product. If a CSR part needs to be replaced, it will be shipped directly to you so that you can install it at your convenience. Some parts do not qualify for CSR. Your Hewlett Packard Enterprise authorized service provider will determine whether a repair can be accomplished by CSR.

For more information about CSR, contact your local service provider.



## Remote support

Remote support is available with supported devices as part of your warranty or contractual support agreement. It provides intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which initiates a fast and accurate resolution based on the service level of your product. Hewlett Packard Enterprise strongly recommends that you register your device for remote support.

If your product includes additional remote support details, use search to locate that information.

HPE Get Connected

<https://www.hpe.com/services/getconnected>

HPE Pointnext Tech Care

<https://www.hpe.com/services/techcare>

HPE Complete Care

<https://www.hpe.com/services/completecure>



## Documentation feedback

Hewlett Packard Enterprise is committed to providing documentation that meets your needs. To help us improve the documentation, use the Feedback button and icons (located at the bottom of an opened document) on the Hewlett Packard Enterprise Support Center portal (<https://www.hpe.com/support/hpesc>) to send any errors, suggestions, or comments. All document information is captured by the process.

