



HPE ProLiant Compute DL340 Gen12 User Guide

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HPE ProLiant Compute DL340 Gen12 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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Component identification

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

Subtopics

Front panel components

Front panel LEDs and buttons

Rear panel components

Rear panel LEDs

Component touchpoints

System board and power distribution board components

GPU riser slot numbering

Drive bay numbering

HPE Basic Drive LED definitions

EDSFF SSD LED definitions

Drive backplane naming

HPE NS204i-u Boot Device V2 components

HPE NS204i-u Boot Device V2 LED definitions

Systems Insight Display LEDs

System Insight Display combined LED descriptions

Fan numbering

Direct liquid cooling module components

Datacenter Secure Control Module components

Riser board components

Heatsink and processor socket components

Front panel components

Subtopics

LFF drive configurations

SFF drive configurations

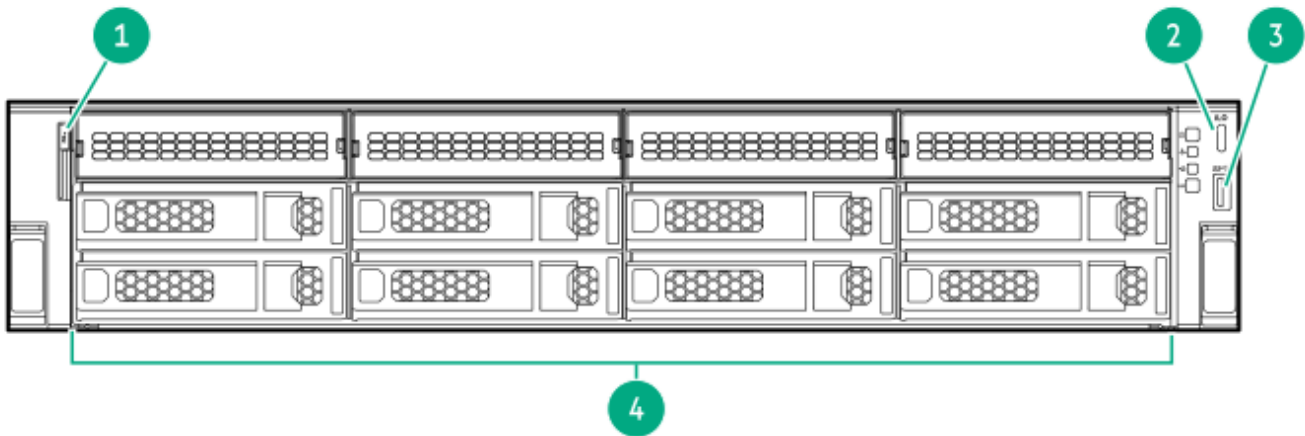
E3.S drive configurations

GPU-optimized configurations

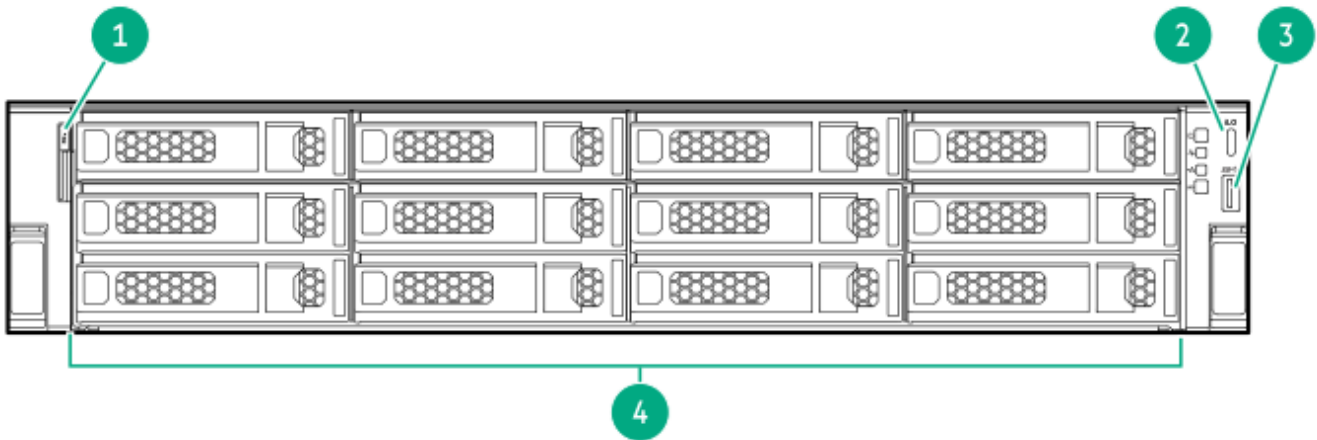
Mixed drive configurations

LFF drive configurations

8 LFF drives



12 LFF drives



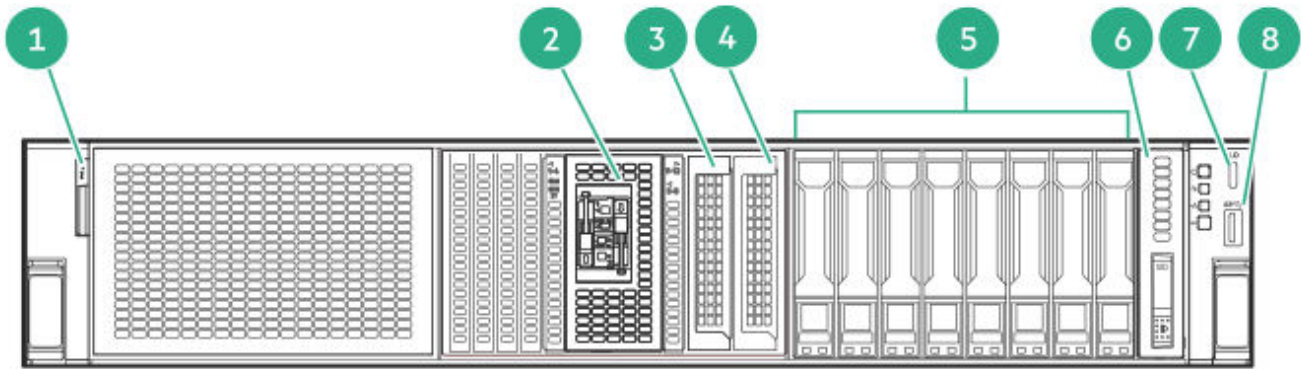
Item	Description
1	Serial number / iLO information pull tab ¹
2	iLO service port
3	USB 3.2 Gen 1 port
4	LFF drives ²

¹ 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.

² The server supports LFF SAS or SATA drives.

SFF drive configurations

8 SFF drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	HPE NS204i-u Boot Device V2 ^{2, 3}
3	Box 2, Bay 9 OCP slot PCIe5 x16 ²
4	Box 2, Bay 11 OCP slot PCIe5 x16 ²
5	SFF drives ⁴
6	System Insight Display ²
7	iLO service port
8	USB 3.2 Gen 1 port

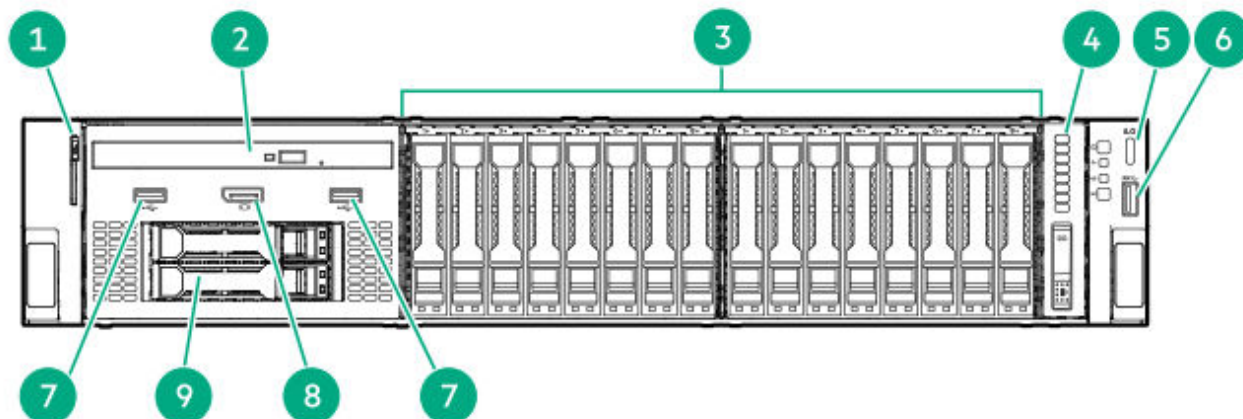
¹ The serial number / iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

² These are component options.

³ The NS204i-u boot device is supported in multipurpose cage bays 5–8 or 9–12.

⁴ The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe drives.

16 SFF drives with the universal media bay



Item	Description
1	Serial number / iLO information pull tab ¹
2	Optical drive ²
3	SFF drives ³
4	System Insight Display ²
5	iLO service port
6	USB 3.2 Gen 1 port
7	USB 2.0 ports ²
8	DisplayPort 1.1a ²
9	2 SFF stacked drives ^{2, 4}

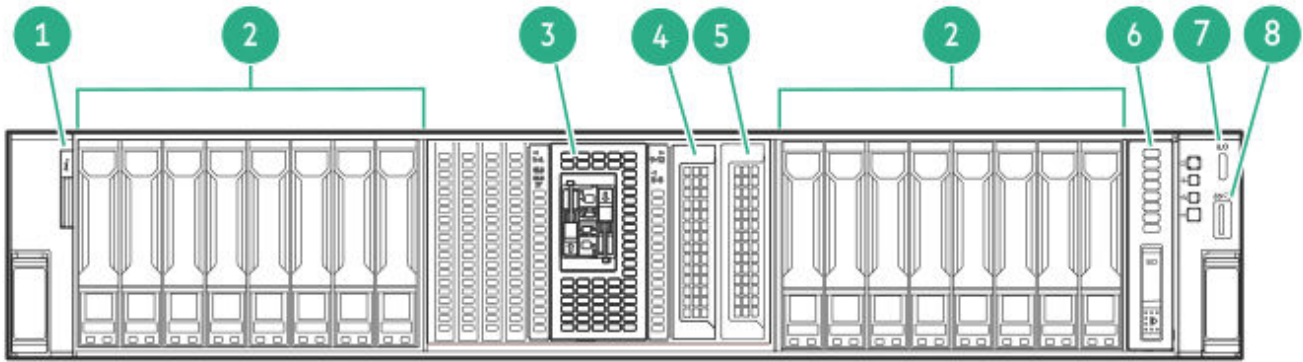
¹ The serial number / iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

² These are component options.

³ The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe drives.

⁴ The 2 SFF stacked drive cage option supports SAS, SATA, or U.3 NVMe drives.

16 SFF drives with the boot device and the OCP NIC



Item	Description
1	Serial number / iLO information pull tab ¹
2	SFF drives ²
3	HPE NS204i-u Boot Device V2 ^{3, 4}
4	Box 2, Bay 9 OCP slot PCIe5 x16 ⁴
5	Box 2, Bay 11 OCP slot PCIe5 x16 ⁴
6	System Insight Display ⁴
7	iLO service port
8	USB 3.2 Gen 1 port

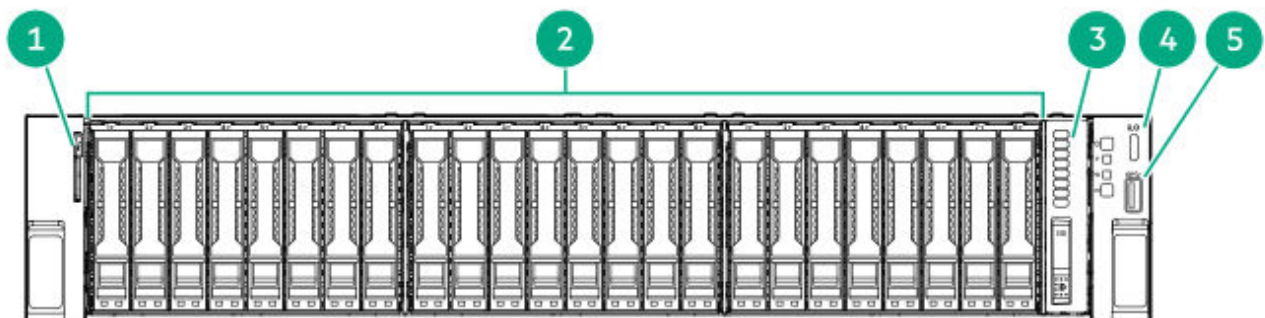
¹ The serial number / iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

² The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe drives.

³ The NS204i-u boot device is supported in multipurpose cage bays 5–8 or 9–12.

⁴ These are component options.

24 SFF drives



Item	Description
1	Serial number / iLO information pull tab
2	SFF drives ²
3	System Insight Display ³
4	iLO service port
5	USB 3.2 Gen 1 port

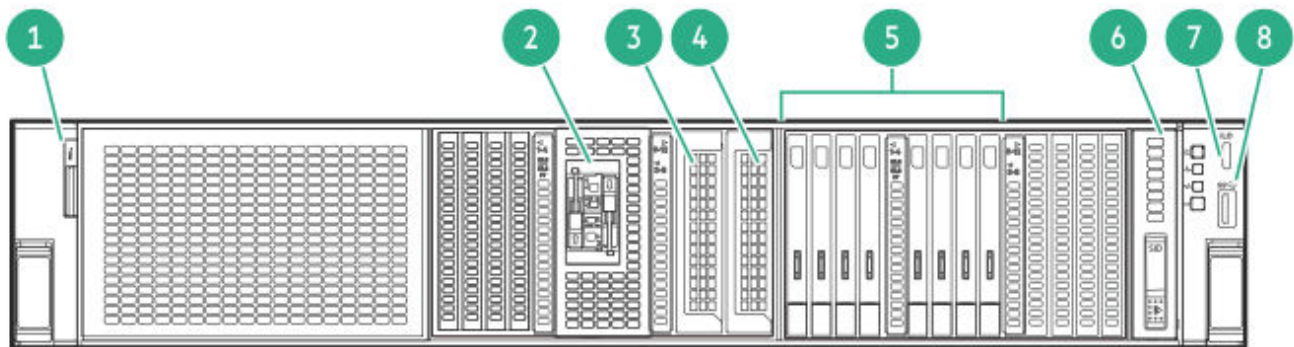
¹ The serial number / iLO information pull tab is double-sided. One side shows the server serial number and the customer asset tag label. The other side shows the default iLO account information.

² The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe drives.

³ These are component options.

E3.S drive configurations

8 E3.S drives

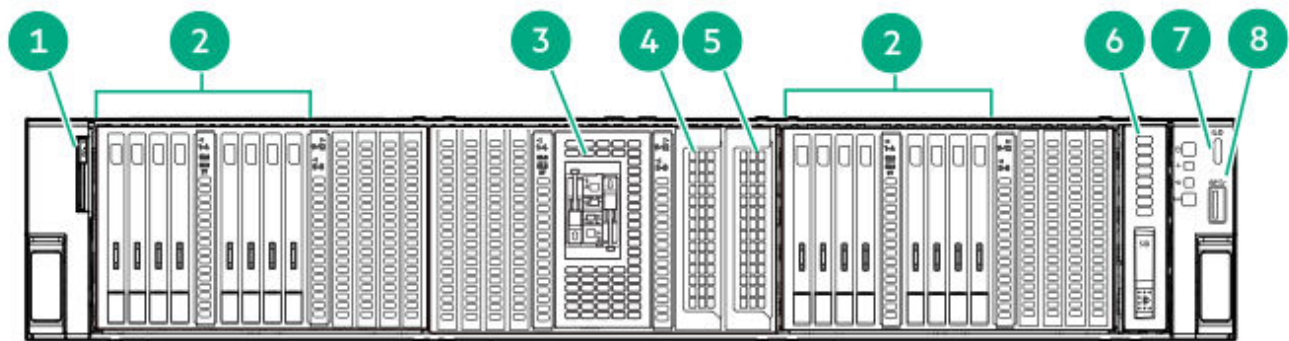


Item	Description
1	Serial number / iLO information pull tab ¹
2	HPE NS204i-u Boot Device V2 ^{2, 3}
3	Box 2, Bay 9 OCP slot PCIe5 x16 ²
4	Box 2, Bay 11 OCP slot PCIe5 x16 ²
5	E3.S drives
6	System Insight Display

Item	Description
7	iLO service port
8	USB 3.2 Gen 1 port

- 1 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.
- 2 These are component options.
- 3 The NS204i-u boot device is supported in multipurpose cage bays 5–8 or 9–12. If the front OCP is installed, the NS204i-u boot device is supported only in bays 5–8.

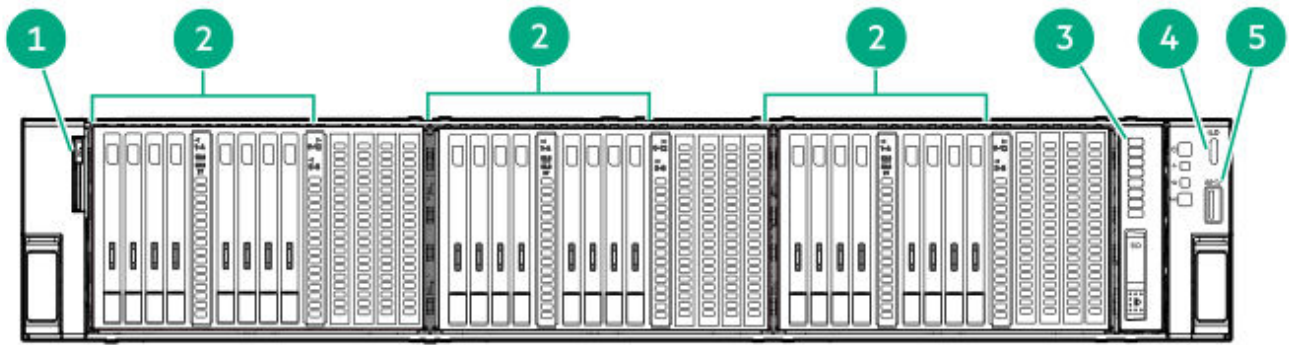
16 E3.S drives



Item	Description
1	Serial number / iLO information pull tab <u>1</u>
2	E3.S drives
3	HPE NS204i-u Boot Device V2 <u>2</u> , <u>3</u>
4	Box 2, Bay 9 OCP slot PCIe5 x16 <u>2</u>
5	Box 2, Bay 11 OCP slot PCIe5 x16 <u>2</u>
6	System Insight Display <u>2</u>
7	iLO service port
8	USB 3.2 Gen 1 port

- 1 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.
- 2 These are component options.
- 3 The NS204i-u boot device is supported in multipurpose cage bays 5–8 or 9–12. If the front OCP is installed, the NS204i-u boot device is supported only in bays 5–8.

24 E3.S drives

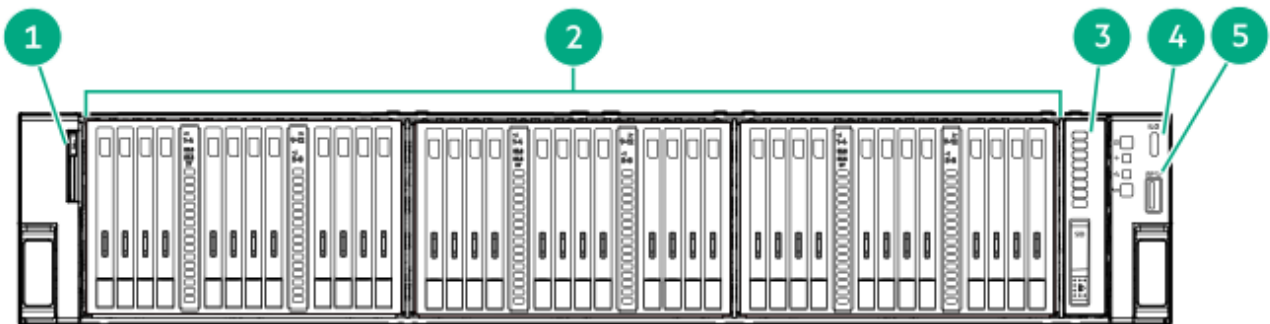


Item	Description
1	Serial number / iLO information pull tab ¹
2	E3.S drives
3	System Insight Display ²
4	iLO service port
5	USB 3.2 Gen 1 port

¹ 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.

² These are component options.

36 E3.S drive



Item	Description
1	Serial number / iLO information pull tab ¹

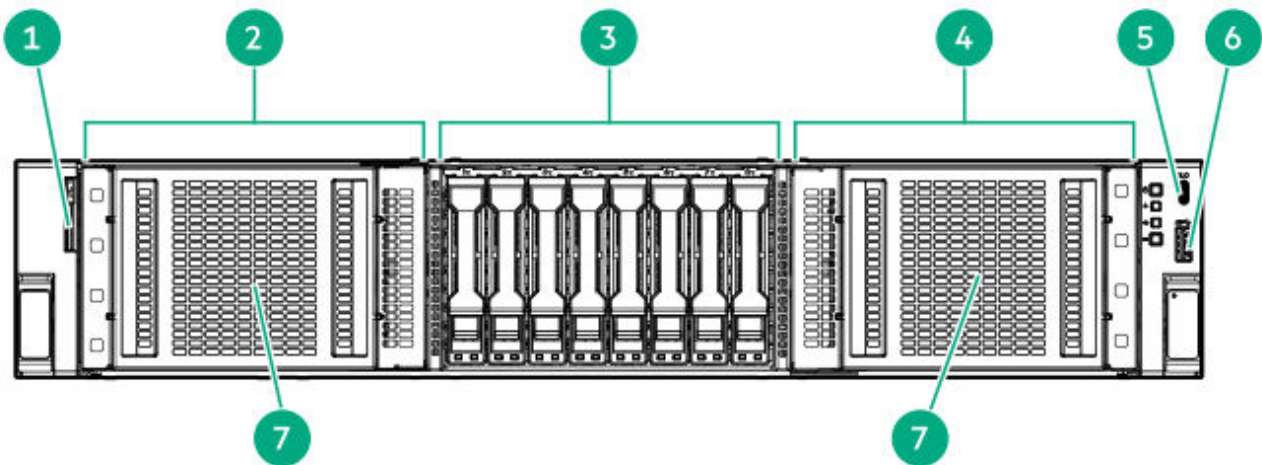
Item	Description
2	E3.S drives
3	System Insight Display ²
4	iLO service port
5	USB 3.2 Gen 1 port

¹ 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.

² These are component options.

GPU-optimized configurations

8 SFF drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	GPU cage 1 ²
3	SFF drives ³
4	GPU cage 2 ⁴
5	iLO service port
6	USB 3.2 Gen 1 port
7	GPU cage bezel

¹ 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.

² The following options are supported in the slots 10 and 12:

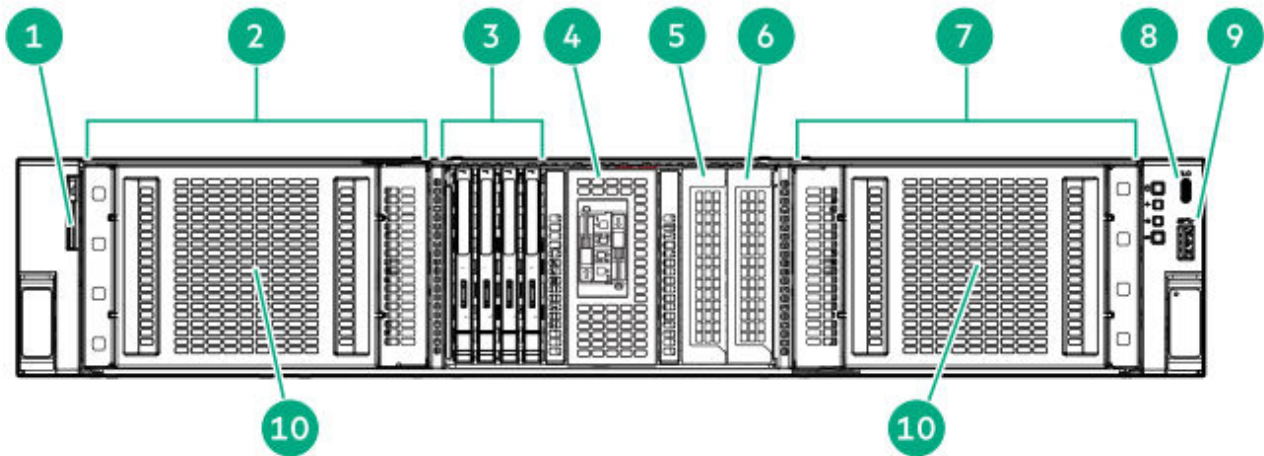
- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NIC adapters
- One double-width/single-width GPU, and one PCIe NIC adapter

³ The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe.

⁴ The following options are supported in the slots 15 and 17:

- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NICs
- One double-width/single-width GPU, and one PCIe NIC

4 E3.S drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	GPU cage 1 ²
3	E3.S drives
4	HPE NS204i-u Boot Device V2 ^{3, 4}
5	Box 2, Bay 9 OCP slot PCIe5 x16 ³
6	Box 2, Bay 11 OCP slot PCIe5 x16 ³

Item	Description
7	GPU cage 2 ⁵
8	iLO service port
9	USB 3.2 Gen 1 port
10	GPU cage bezel

¹ 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.

² The following options are supported in the slots 10 and 12:

- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NICs
- One double-width/single-width GPU, and one PCIe NIC

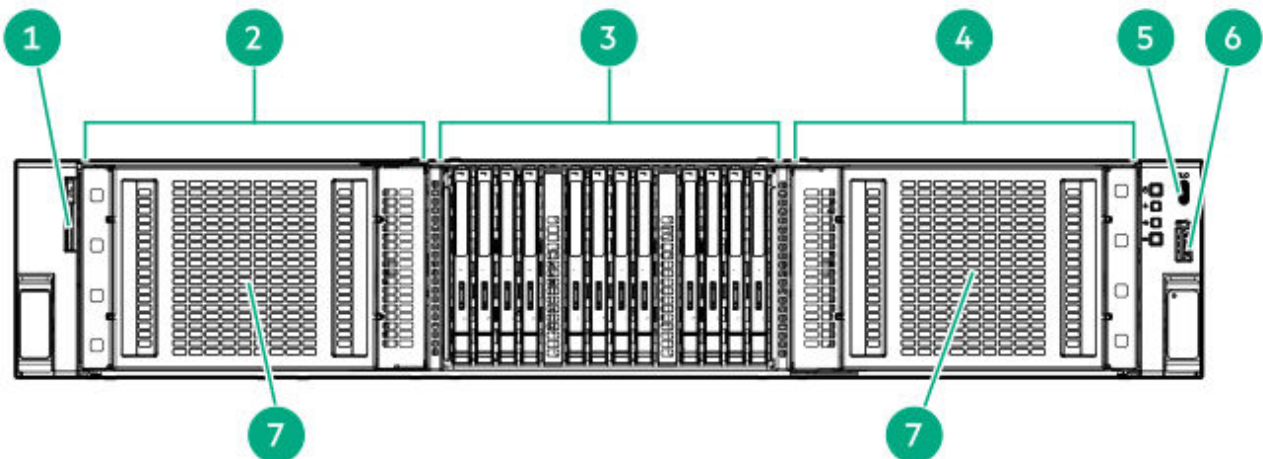
³ These are component options.

⁴ The NS204i-u boot device can be supported in the multipurpose cage bays 9-12.

⁵ The following options are supported in the slots 15 and 17:

- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NICs
- One double-width/single-width GPU, and one PCIe NIC

12 E3.S drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	GPU cage 1 ²
3	E3.S drives
4	GPU cage 2 ³
5	iLO service port
6	USB 3.2 Gen 1 port
7	GPU cage bezel

¹ 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.

² The following options are supported in the slots 10 and 12:

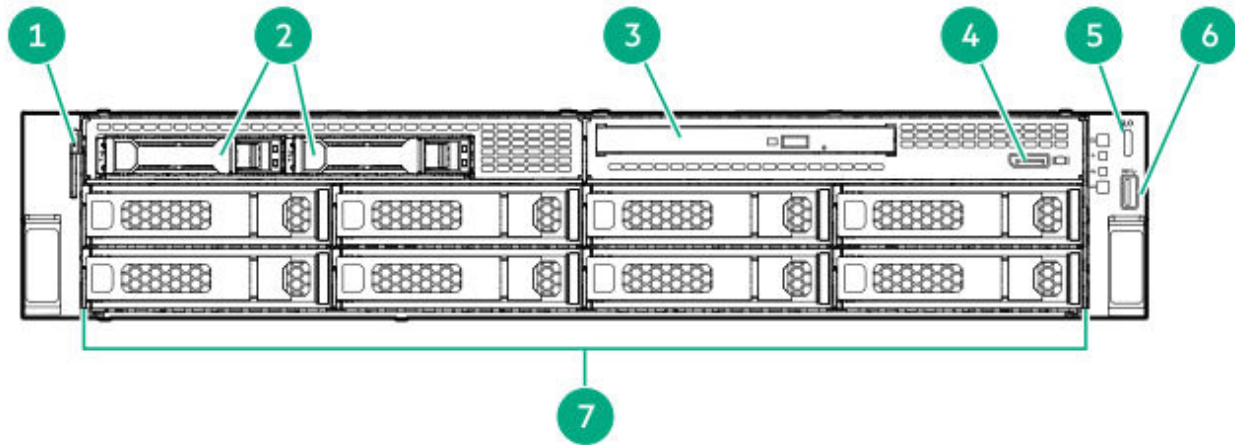
- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NICs
- One double-width/single-width GPU, and one PCIe NIC

³ The following options are supported in the slots 15 and 17:

- Up to 2 double-width GPUs
- Up to 2 single-width GPUs
- Up to 2 PCIe NICs
- One double-width/single-width GPU, and one PCIe NIC

Mixed drive configurations

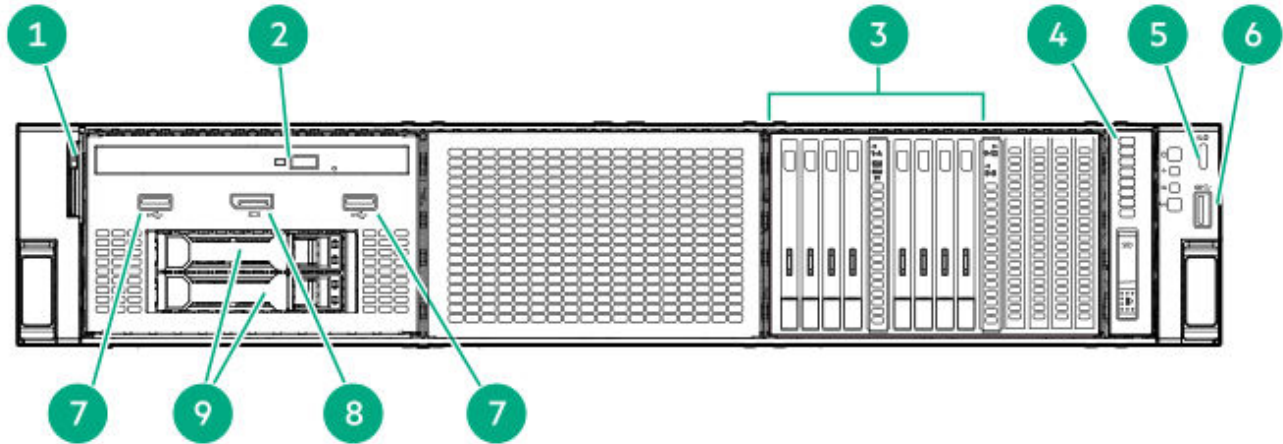
2 SFF side-by-side + 8 LFF drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	2 SFF side-by-side drives ³ , ²
3	Optical drive ³
4	DisplayPort 1.1a ³
5	iLO service port
6	USB 3.2 Gen 1 port
7	LFF drives ⁴

- ¹ 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.
- ² The 2 SFF side-by-side drive cage option supports the SAS, SATA, or U.3 NVMe drives
- ³ These are component options.
- ⁴ The server supports LFF SAS or SATA drives.

2 SFF stacked + 8 E3.S drives



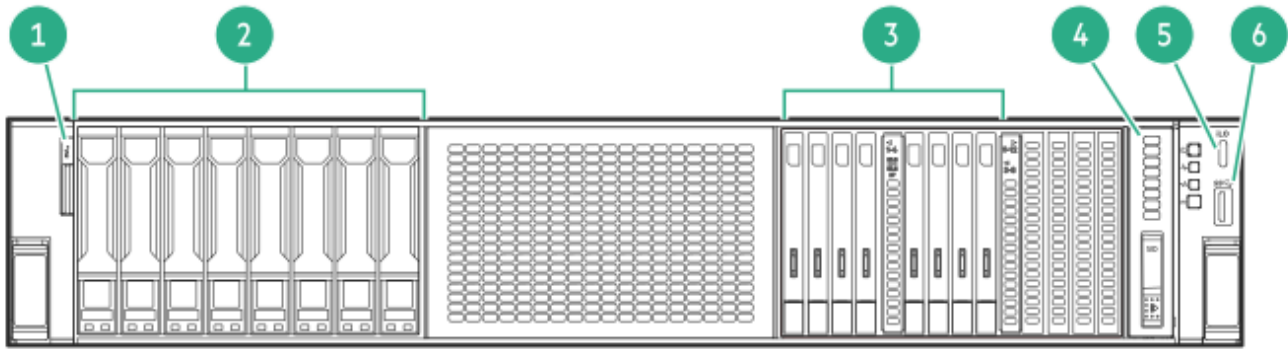
Item	Description
1	Serial number / iLO information pull tab ¹
2	Optical drive ²
3	E3.S drives
4	System Insight Display ²
5	iLO service port
6	USB 3.2 Gen 1 port
7	USB 2.0 ports ²
8	DisplayPort 1.1a ²
9	2 SFF stacked drives ^{2, 3}

¹ 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.

² These are component options.

³ The 2 SFF stacked drive cage option supports SAS, SATA, or U.3 NVMe drives.

8 SFF + 8 E3.S drives



Item	Description
1	Serial number / iLO information pull tab ¹
2	SFF drives ²
3	E3.S drives
4	System Insight Display ³
5	iLO service port
6	USB 3.2 Gen 1 port

¹ 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.

² The front-end SFF drive boxes support SAS, SATA, or U.3 NVMe

³ These are component options.

Subtopics

Monitor setup

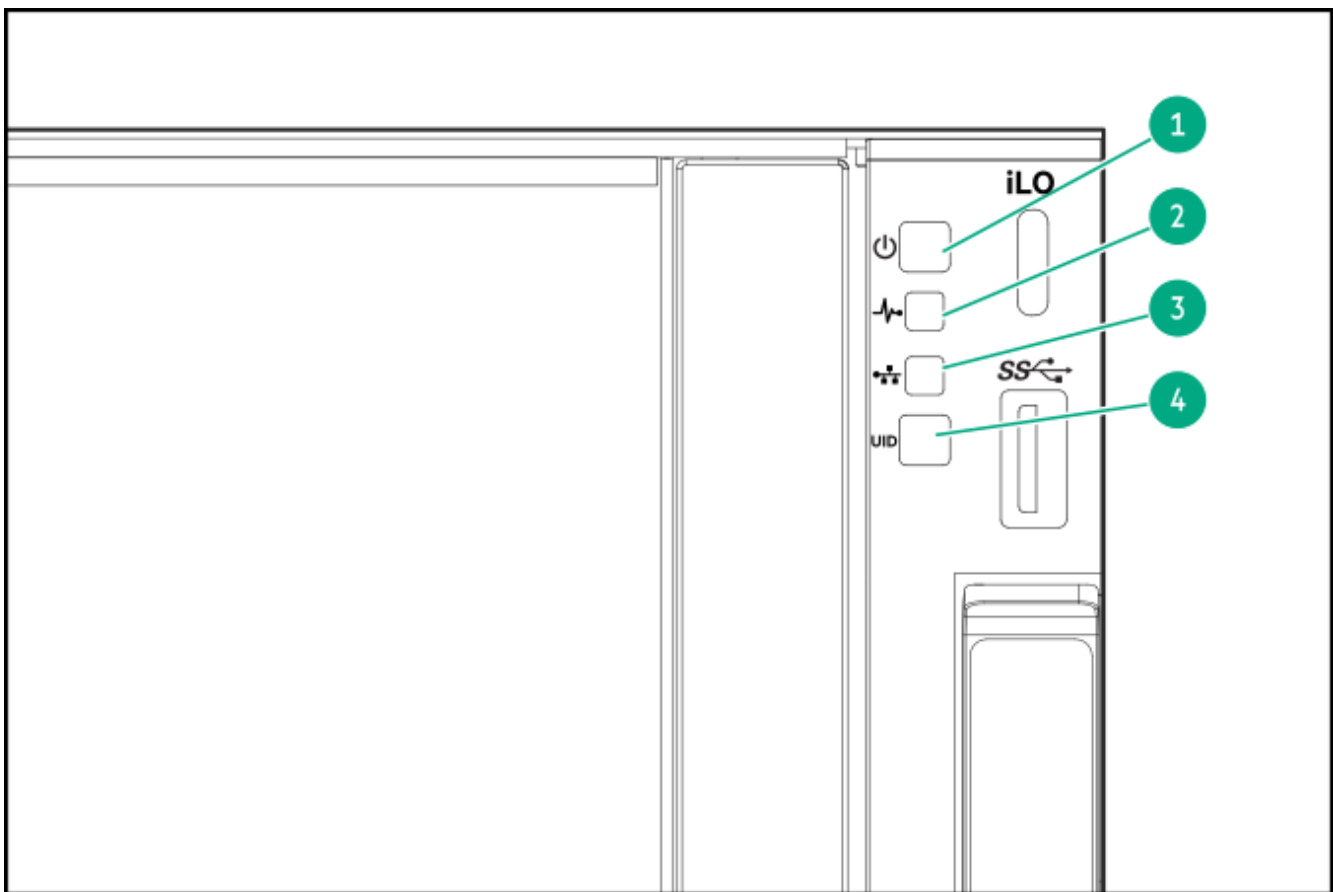
Monitor setup

Before connecting a monitor, observe the following:

- The server supports both VGA port and DisplayPort 1.1a.
- If you connect two display devices to the server using both the VGA port and DisplayPort, the same image is mirrored on both devices.

- The embedded video controller in the iLO chipset does not support dual display or screen extension mode. To enable dual display, install a compatible graphics card.
- When using HDMI or DVI adapters for the DisplayPort, use an active-type adapter. Passive-type adapters marked with the DP++ symbol are not supported.
- Whenever possible, use the same display connection type. For example, if your monitor only has a VGA port, use the VGA port on the server. Using other adapters or converter cables or dongles might lead to decreased display quality or a lag over the connection.

Front panel LEDs and buttons



Item	Description	Status	Definition
1	Power On/Standby button/LED	Solid green	System on and normal operation
		Flashing green	Performing power-on sequence
		Solid amber	Power button initialized

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

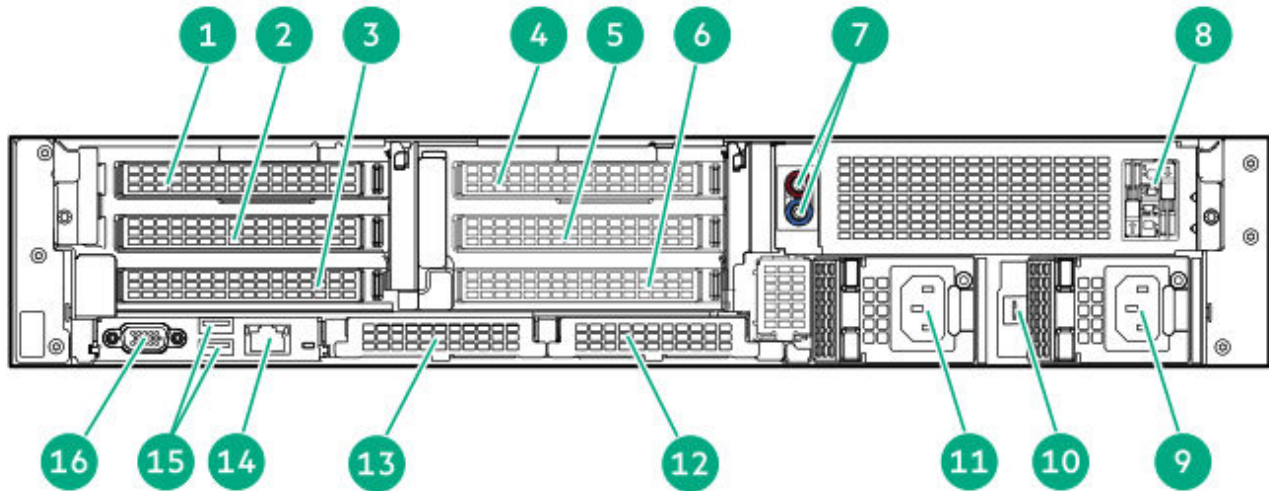
¹ When all LEDs flash simultaneously, a power fault has occurred. For more information, see [Front panel LED power fault codes](#).

² Facility power is not present, the power cord is not attached, no power supplies are installed, power supply failure has occurred, or the front I/O cable is disconnected.

³ 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.

Rear panel components

60-mm M-CRPS configuration



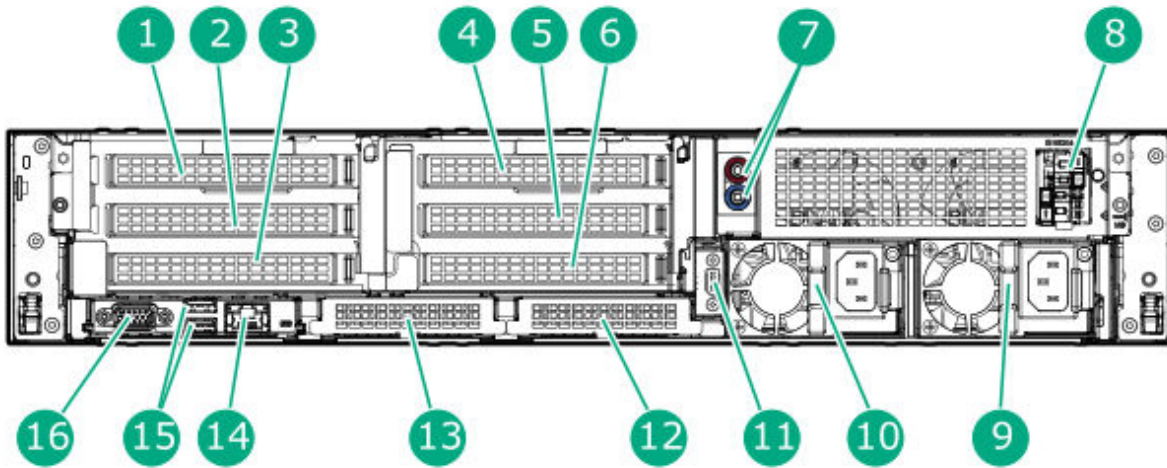
Item	Description
1	Slot 1 PCIe5 x16 ¹ _—
2	Slot 2 PCIe5 x16 ¹ _—
3	Slot 3 PCIe5 x16 ¹ _—
4	Slot 4 PCIe5 x16 ¹ _—
5	Slot 5 PCIe5 x16 ¹ _—
6	Slot 6 PCIe5 x16 ¹ _—
7	Direct liquid cooling quick connectors ¹ _—
8	HPE NS204i-u Boot Device V2 ¹ _—
9	M-CRPS ² _— 1
10	ix port ^{1, 3} _{—, —}
11	M-CRPS ² _— 1
12	Slot 21 OCP B PCIe5 x16 ¹ _—
13	Slot 20 OCP A PCIe5 x16
14	iLO dedicated network port ⁴ _—
15	USB 3.2 Gen 1 ports ⁴ _—
16	VGA port ⁴ _—

¹ These are component options.

² Modular hardware system common redundant power supply

- ³ The ix port connects to an external serial port dongle.
- ₄ These components are on the HPE ProLiant Compute iLO 7 DC-SCM option.

73.5-mm M-CRPS configuration



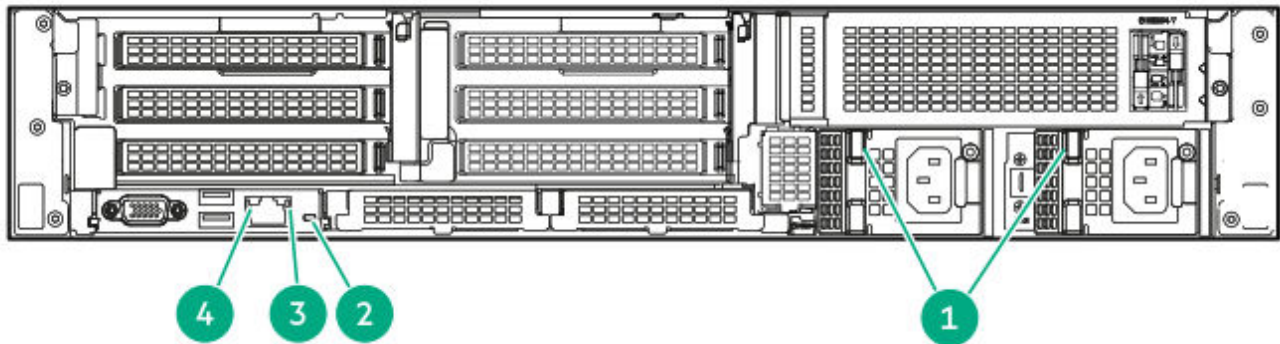
Item	Description
1	Slot 1 PCIe5 x16 ¹ _—
2	Slot 2 PCIe5 x16 ¹ _—
3	Slot 3 PCIe5 x16 ¹ _—
4	Slot 4 PCIe5 x16 ¹ _—
5	Slot 5 PCIe5 x16 ¹ _—
6	Slot 6 PCIe5 x16 ¹ _—
7	Direct liquid cooling quick connectors ¹ _—
8	HPE NS204i-u Boot Device V2 ¹ _—
9	M-CRPS 1
10	M-CRPS 2 ¹ _—
11	ix port ^{1, 2} _—
12	Slot 21 OCP B PCIe5 x16 ¹ _—
13	Slot 20 OCP A PCIe5 x16
14	iLO dedicated network port ³ _—
15	USB 3.2 Gen 1 ports ³ _—
16	VGA port ³ _—

- ¹ These are component options.
- ² The ix port connects to an external serial port dongle.

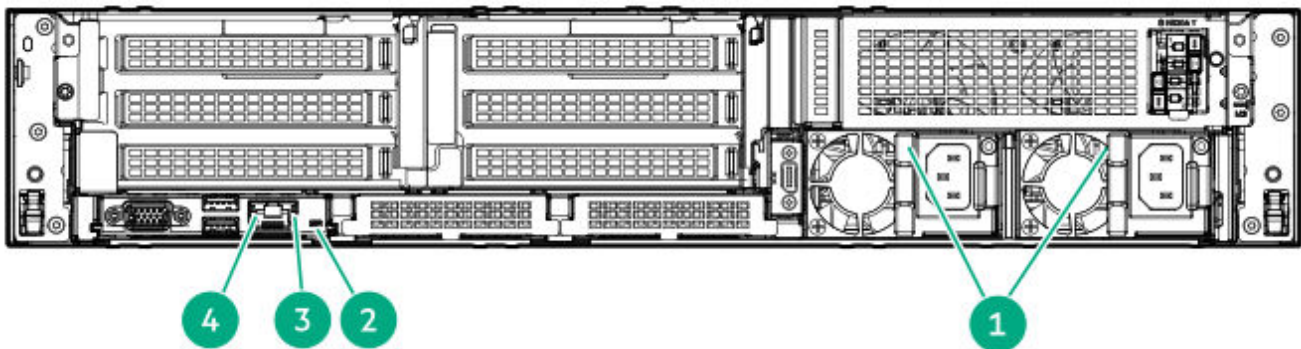
³ These components are on the HPE ProLiant Compute iLO 7 DC-SCM option.

Rear panel LEDs

Rear panel with 60-mm M-CRPS



Rear panel with 73.5-mm M-CRPS



Item	LED	Status	Definition
1	Power supply	Solid green	The power supply is operating normally.
		Flashing green	<ul style="list-style-type: none"> 1 flash per sec—Power supply is in standby mode 2 flashes per sec—Power supply firmware is updating

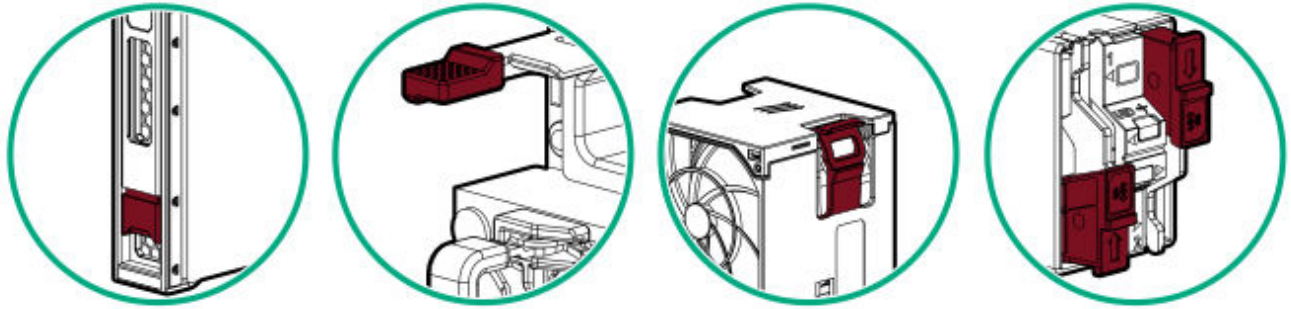
Item	LED	Status	Definition
		Solid amber	One or more of the following conditions exists: <ul style="list-style-type: none"> • Power supply failure • Power supply error
		Off	One or more of the following conditions exists: <ul style="list-style-type: none"> • Power is unavailable • The power cord is disconnected.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

Component touchpoints

Certain components are color-coded. These colors represent the recommended touch areas for a removal process and indicate whether components require a system shutdown before removal.

The following diagrams are examples only.

HPE hot-plug red

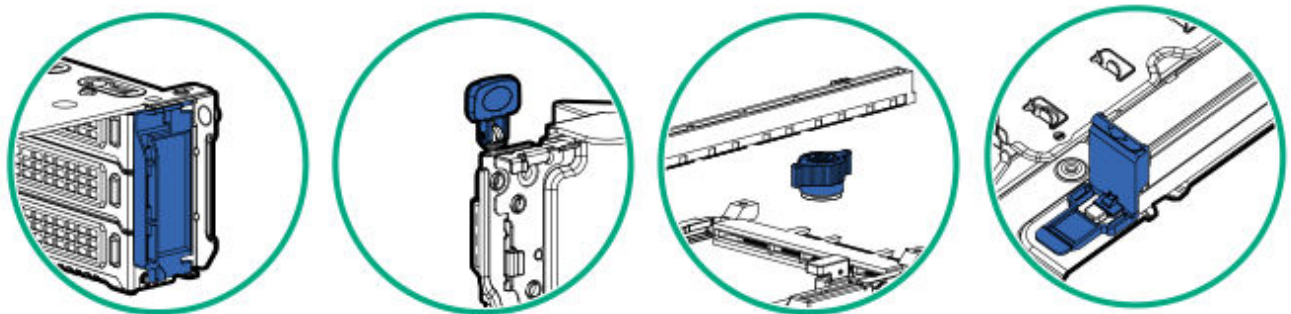


Hot-plug red indicates hot-pluggable components. These components can be removed and installed while the system is running, and doing so will not result in a system shutdown.

Component examples:

- Power supplies in a redundant power configuration
- Hot-plug fans
- Hot-plug drives
- M.2 SSDs in a hot-plug boot device

HPE touchpoint blue



Touchpoint blue indicates cold-pluggable components. These components require a system shutdown. Failure to do so might result in system failure or data loss. Cold-pluggable components might also indicate touchpoints on non-electrical components.

Component examples:

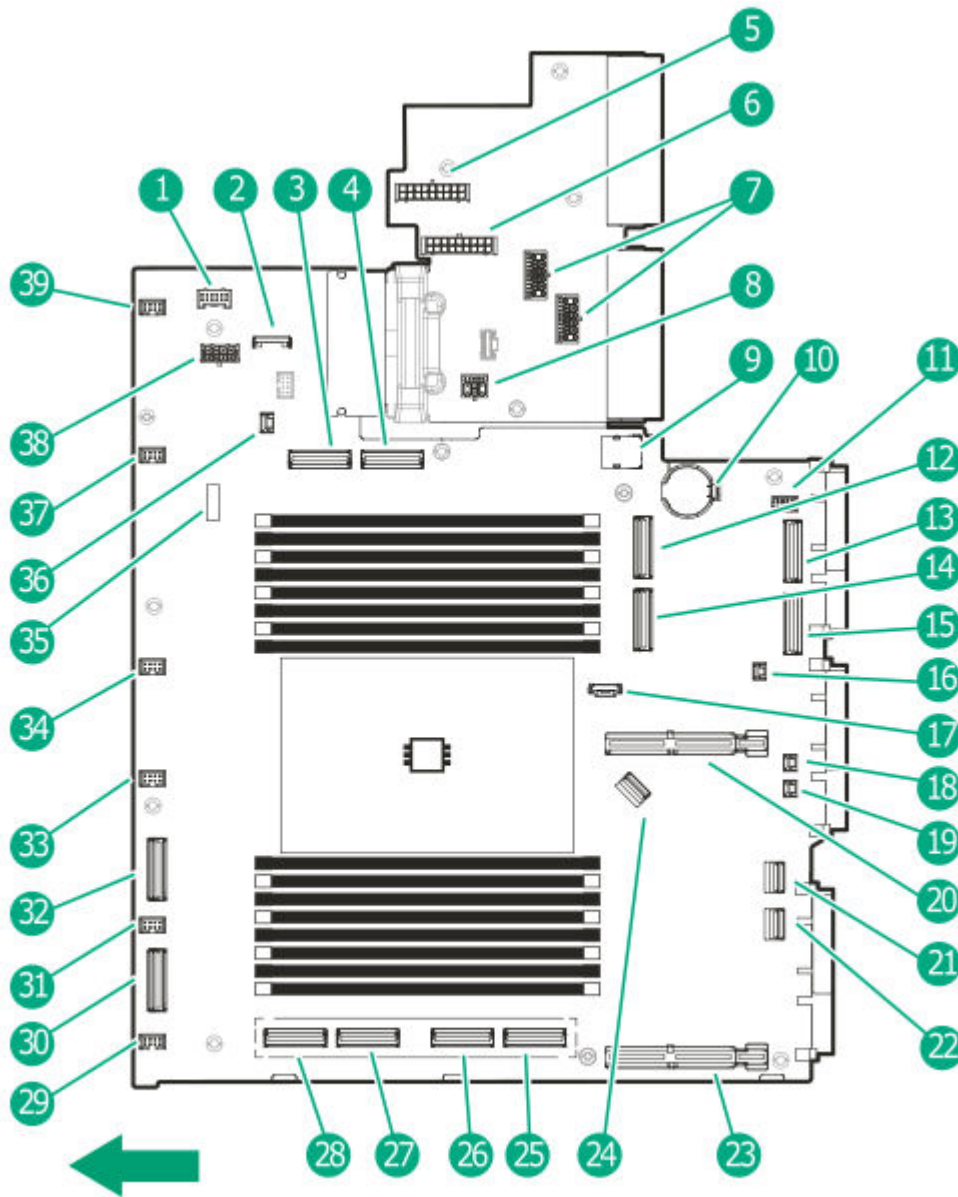
- Storage devices
- Fan cages
- System boards

- Energy packs

System board and power distribution board components

The grayed out components in the system board and the PDB images are not for use in this server.

The arrow points to the front of the server.



Item	Description
1	Energy pack connector
2	SID connector
3	M-XIO port 6
4	M-XIO port 4
5	Box 1-2 drive backplane power connector
6	Box 3 drive backplane power connector
7	2 x 6 M-PIC power connectors
8	2 x 3 M-PIC power connector
9	USB 3.2 Gen 1 port
10	System battery
11	NS204i-u power connector
12	M-XIO port 17
13	MCIO OCP B-1 input port
14	M-XIO port 13
15	MCIO OCP B-2 input port
16	Storage controller backup power connector 1
17	Liquid cooling module signal and power connector
18	Storage controller backup power connector 2
19	Storage controller backup power connector 3
20	Secondary riser connector
21	Front I/O connector
22	USB 2.0 / DisplayPort cable connector
23	Primary riser connector
24	NS204i-u signal connector
25	M-XIO port 3
26	M-XIO port 1
27	M-XIO port 5
28	M-XIO port 7
29	Fan connector 6
30	M-XIO port 0
31	Fan connector 5
32	M-XIO port 2

Item	Description
33	Fan connector 4
34	Fan connector 3
35	<u>System maintenance switch</u>
36	Chassis intrusion detection switch connector
37	Fan connector 2
38	Universal media bay power connector
39	Fan connector 1

Subtopics

System maintenance switch descriptions

DIMM label identification

DIMM slot numbering

System maintenance switch descriptions

Position	Default	Function
S1	Off	<ul style="list-style-type: none"> Off—iLO 7 security is enabled. On—iLO 7 security is disabled.
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5	Off	<ul style="list-style-type: none"> Off—Power-on password is enabled. On—Power-on password is disabled.
S6 <u>1, 2</u>	Off	<ul style="list-style-type: none"> Off—No function On—Restore default manufacturing settings
S7	Off	Reserved
S8	Off	Reserved
S9	Off	Reserved

Position	Default	Function
S10	Off	Reserved
S11	Off	Reserved
S12	Off	Reserved

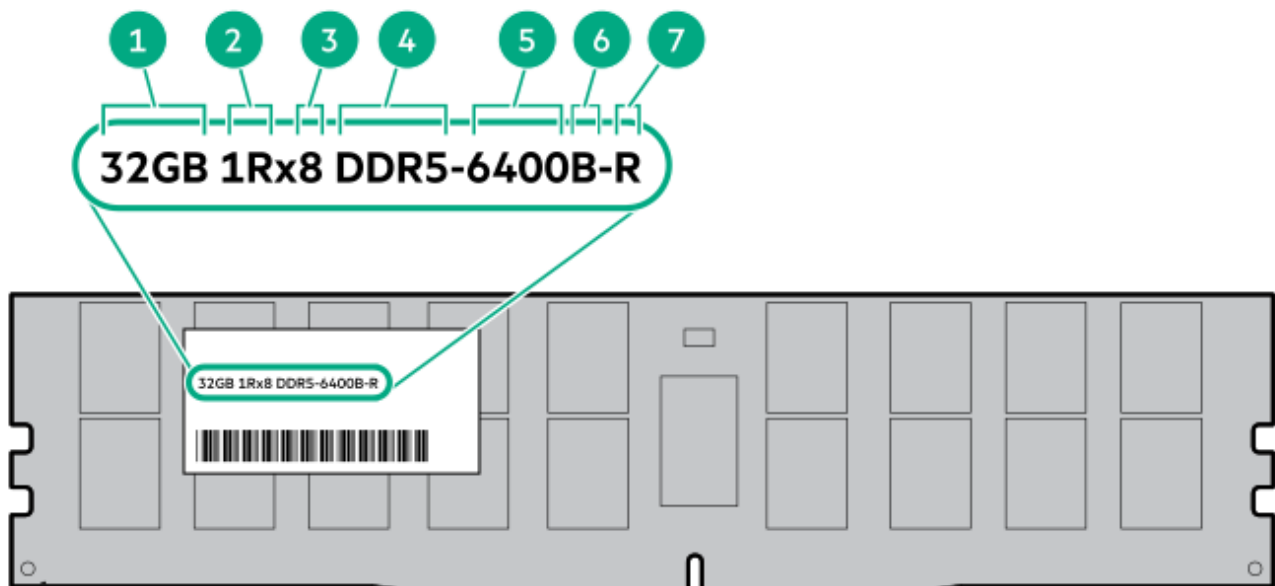
- ¹ When the system maintenance switch position 6 is set to the On position, the system is prepared to restore all configuration settings to their manufacturing defaults.
- ² When the system maintenance switch position 6 is set to the On position and Secure Boot is enabled, some configurations cannot be restored. For more information, see [Configuring 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 DDR5 SmartMemory QuickSpecs:

<https://www.hpe.com/docs/server-memory>



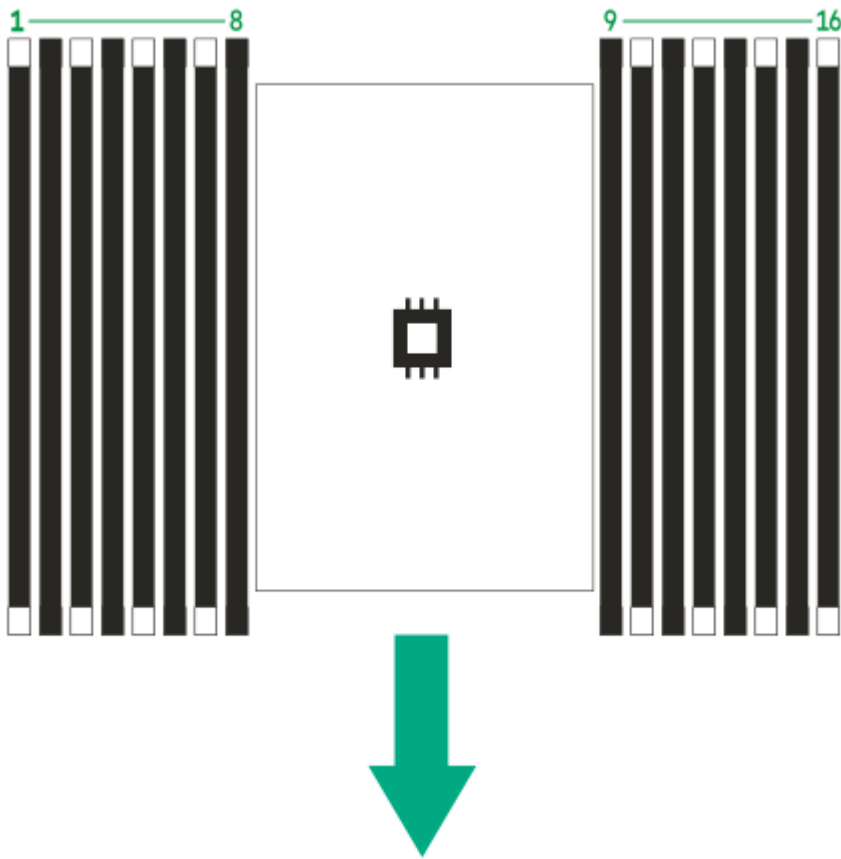
Item	Description	Example
1	Capacity*	16 GB

Item	Description	Example
		32 GB
		64 GB
		96 GB
		128 GB
		256 GB
2	Rank	1R—Single rank 2R—Dual rank 4R—Quad rank
3	Data width on DRAM	x4—4-bit x8—8-bit
4	Memory generation	PC5—DDR5
5	Maximum memory speed*	6400 MT/s
6	CAS latency	B—42-42-42
7	DIMM type	R—RDIMM (registered)

* The maximum memory speed and capacity is a function of the memory type, memory configuration, and processor model.

DIMM slot numbering

The arrow points to the front of the server.



GPU riser slot numbering

All riser slots are PCIe5 x16 (16, 8, 4, 2) and are rated for a maximum power draw of 75 W each. To support high power GPUs (> TDP 75 W), an auxiliary power cable is required.

2 GPU configuration

- The 2 GPU configuration uses single-slot PCIe x16 captive risers. The GPUs are installed in slots 12 and 17.
- 2 double-width GPUs



- 2 single-width GPUs



4 GPU configuration

- The 4 GPU configuration uses single-slot PCIe x16 captive risers. The GPUs are installed in slots 10, 12, 15, and 17.
- 4 double-width GPUs



- 4 single-width GPUs



Drive bay numbering



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.

Subtopics

LFF drive bay numbering

SFF drive bay numbering

E3.S drive bay numbering

Mixed drive bay numbering

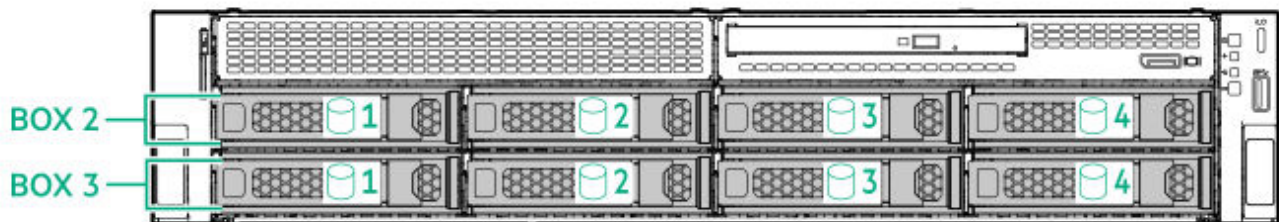
LFF drive bay numbering

The following drive backplane options are supported in LFF drive configurations:

- 4 LFF 12G x1 SAS/SATA UBM2 LP
- 4 LFF 12G x1 SAS/SATA UBM6 LP

For more information on the drive backplane description, see [Drive backplane naming](#).

8 LFF drive bay numbering



12 LFF drive bay numbering



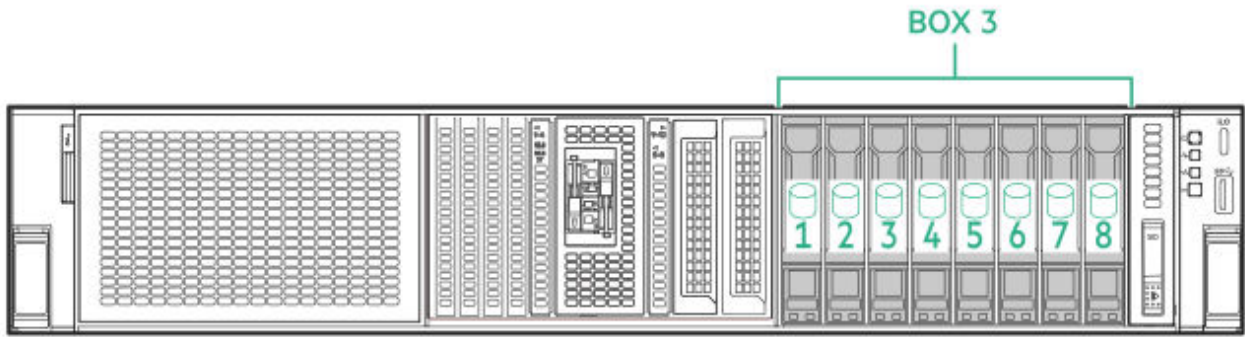
SFF drive bay numbering

The following drive backplane options are supported in SFF drive configurations:

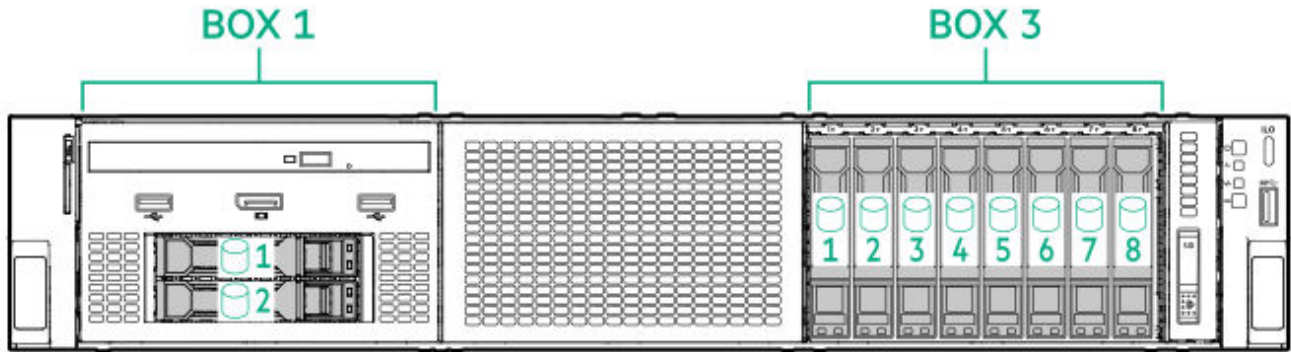
- 2 SFF stacked drives:
 - 24G x4 U.3 NVMe / SAS / SATA UBM3 BC
 - 24G x4 U.3 NVMe / SAS / SATA UBM6 BC
- 8 SFF drives:
 - 8 SFF 16G x4 U.2 NVMe / SAS / SATA UBM4 BC
 - 8 SFF 16G x4 U.2 NVMe / SAS / SATA UBM6 BC
 - 8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM3 BC
 - 8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM6 BC
 - 8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC
 - 8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC

For more information on the drive backplane description, see [Drive backplane naming](#).

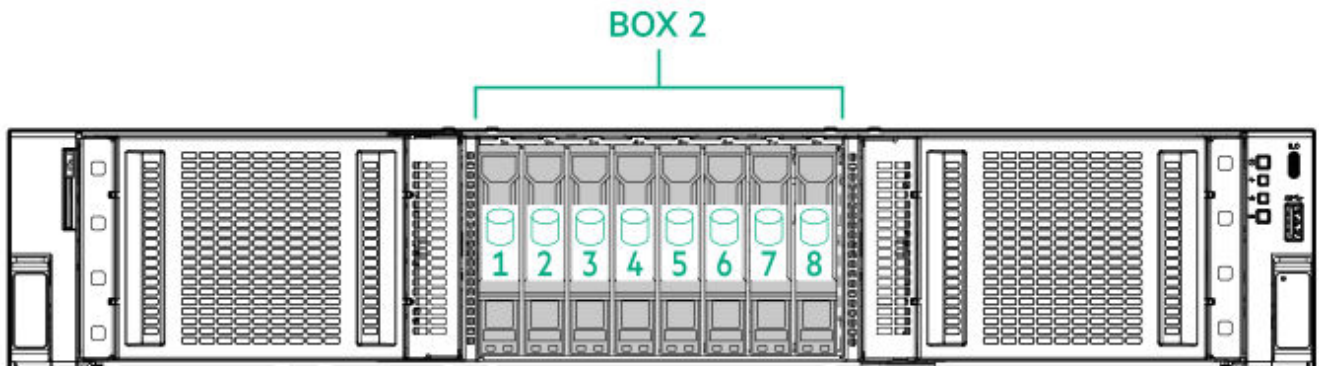
8 SFF drive bay numbering



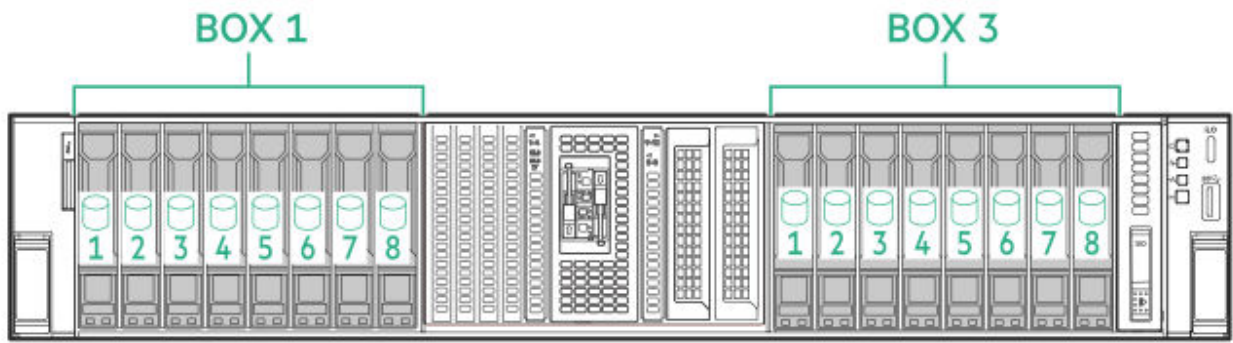
8 SFF drive bay numbering: Universal media bay configuration



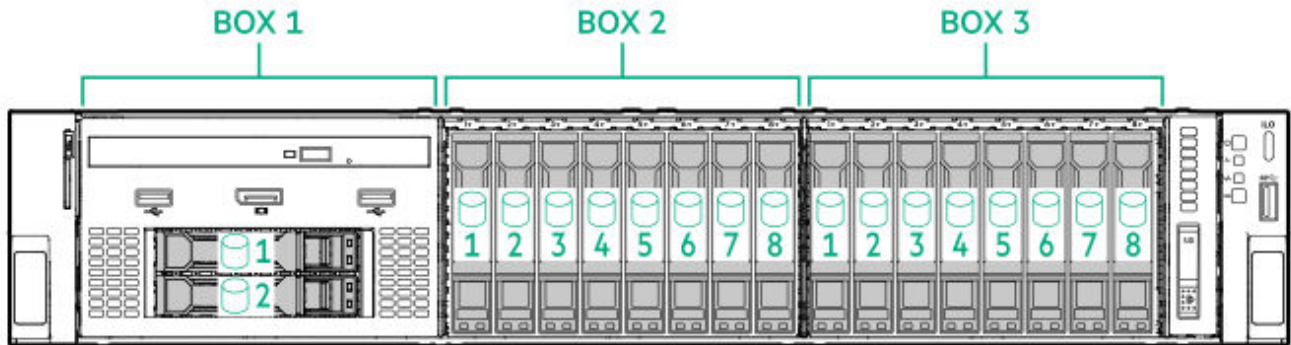
8 SFF drive bay numbering: GPU-optimized configuration



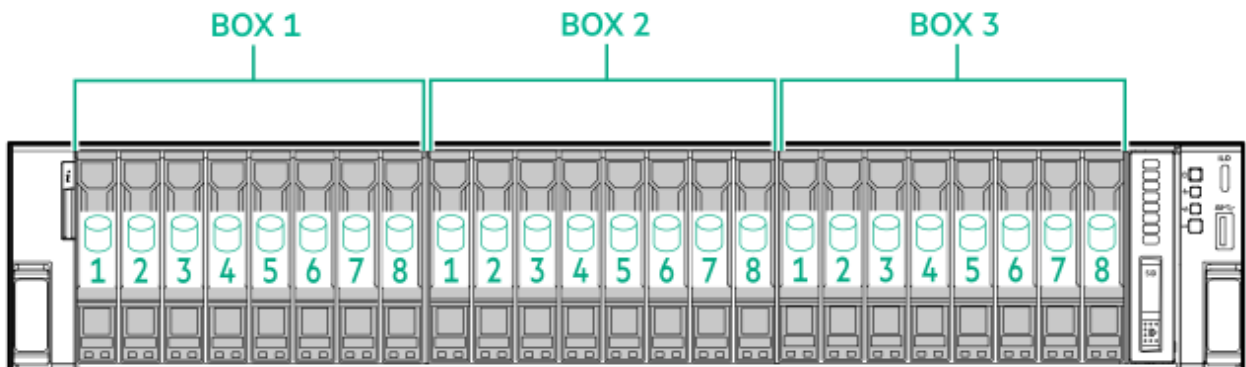
16 SFF drive numbering



16 SFF drive numbering: Universal media bay configuration



24 SFF drive numbering

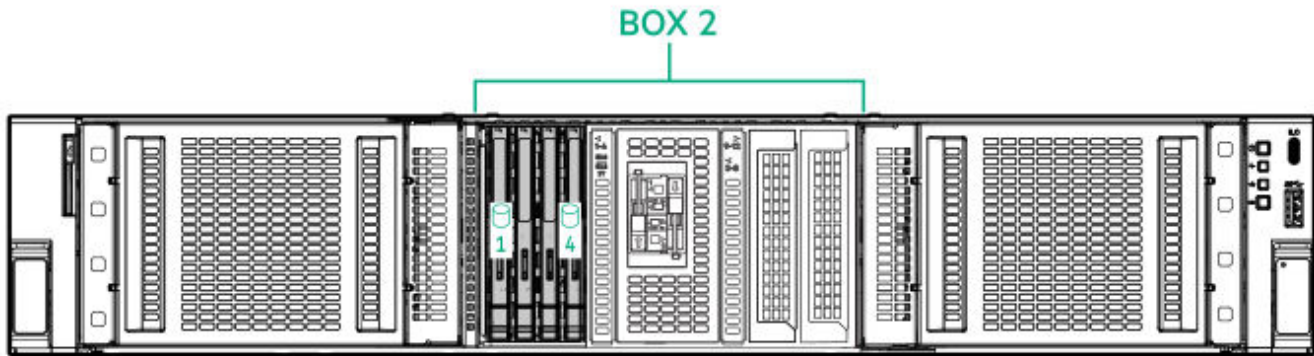


E3.S drive bay numbering

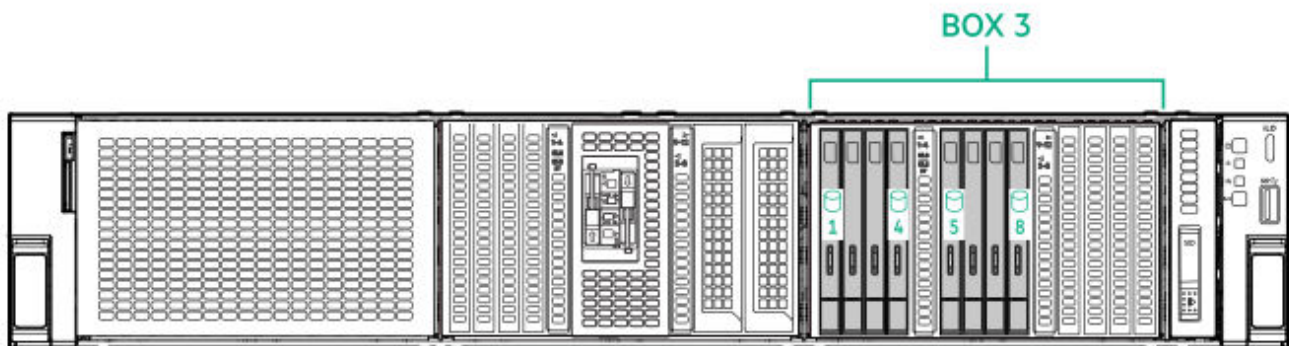
The 4 E3.S 32G x4 NVMe UBM10 EC is supported in E3.S drive configurations.

For more information on the drive backplane description, see [Drive backplane naming](#).

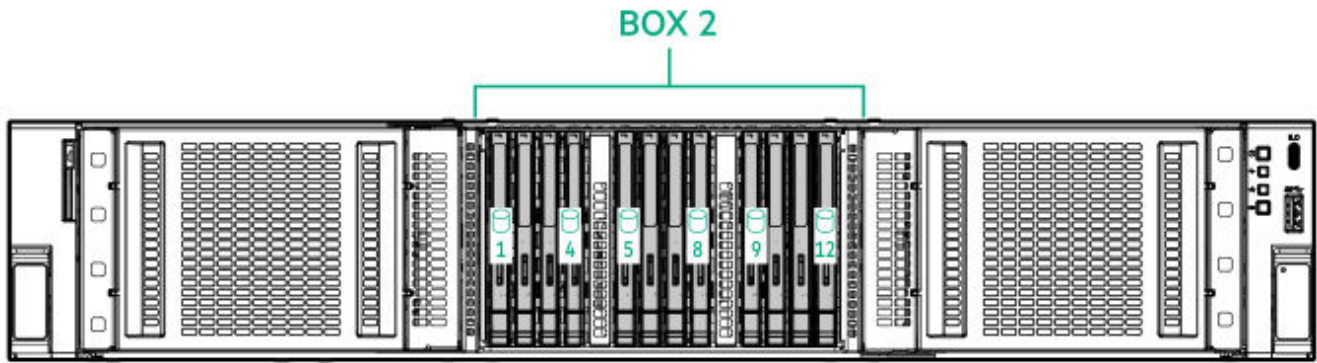
4 E3.S drive bay numbering: GPU-optimized configuration



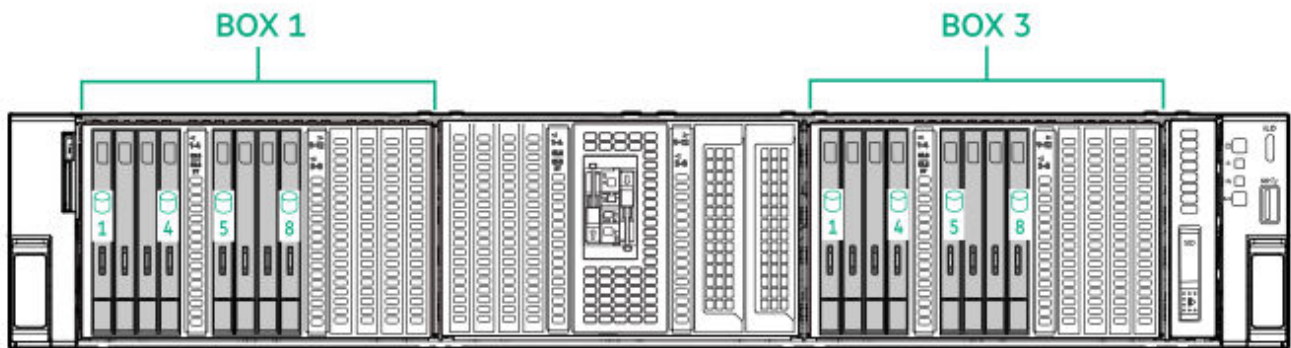
8 E3.S drive bay numbering



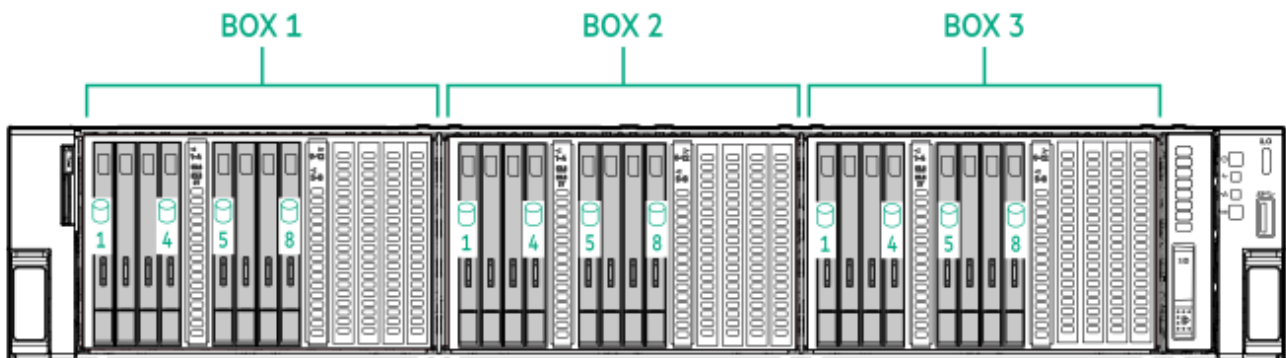
12 E3.S drive bay numbering: GPU-optimized configuration



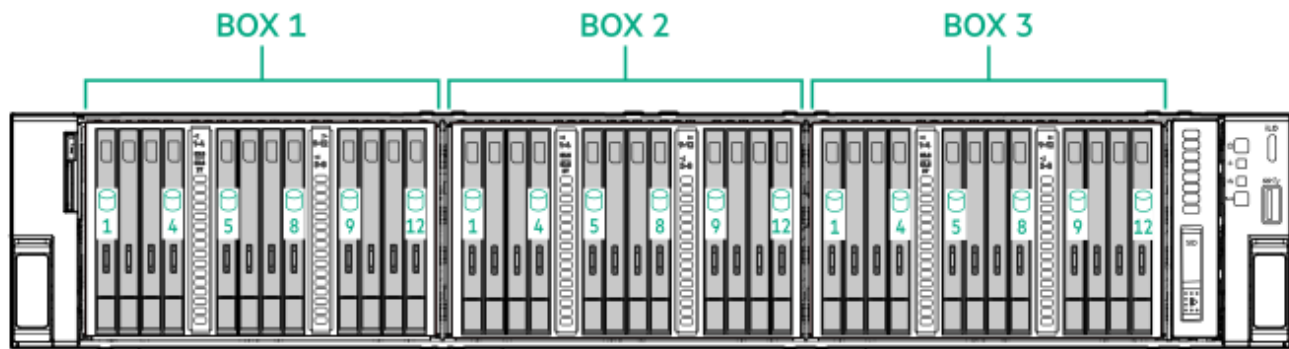
16 E3.S drive bay numbering



24 E3.S drive bay numbering



36 E3.S drive bay numbering



Mixed drive bay numbering

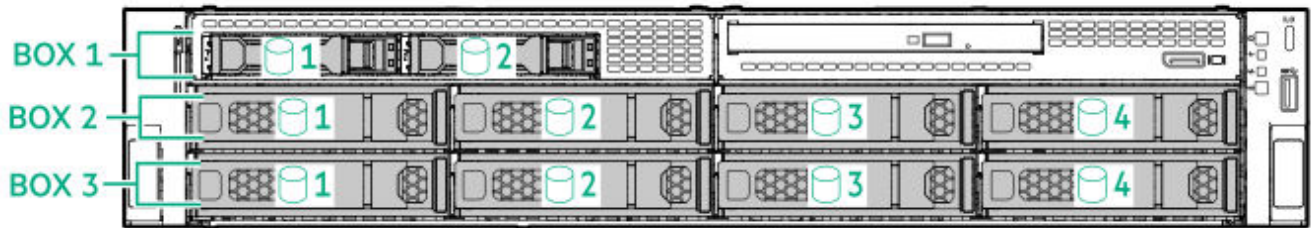
The following drive backplane options are supported in mixed drive configurations:

- LFF drives:
 - 4 LFF 12G x1 SAS/SATA UBM2 LP
 - 4 LFF 12G x1 SAS/SATA UBM6 LP
- 2 SFF side-by-side drives (LFF chassis only):
 - 2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC
 - 2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC
- 2 SFF stacked drives:
 - 2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM4 BC
 - 2 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC
- 8 SFF drives:
 - 8 SFF 16G x4 U.2 NVMe / SAS / SATA UBM4 BC
 - 8 SFF 16G x4 U.2 NVMe / SAS / SATA UBM6 BC
 - 8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM3 BC
 - 8 SFF 24G x1 U.3 NVMe / SAS / SATA UBM6 BC

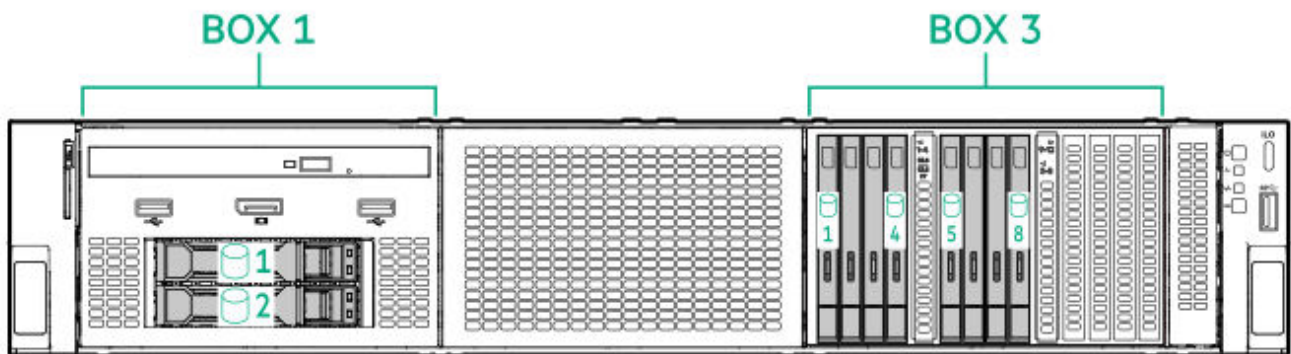
- 8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM3 BC
- 8 SFF 24G x4 U.3 NVMe / SAS / SATA UBM6 BC
- 8 E3.S drives: 4 E3.S 32G x4 NVMe UBM10 EC

For more information on the drive backplane description, see [Drive backplane naming](#).

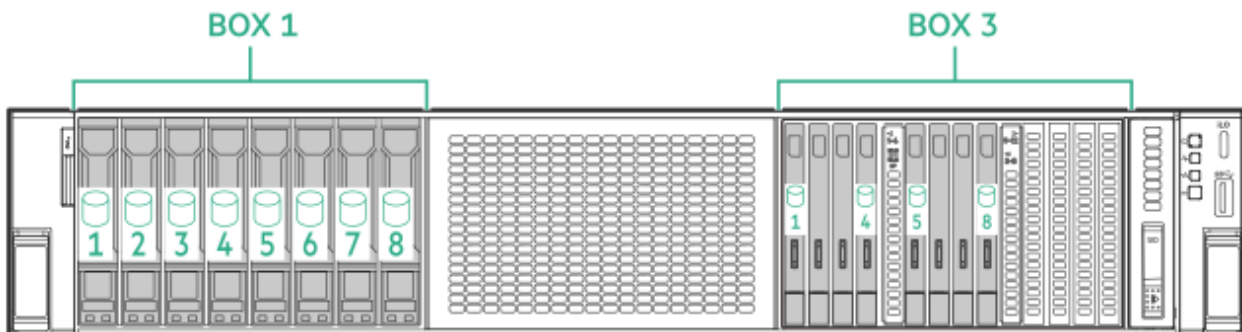
2 SFF side-by-side + 8 LFF drive bay numbering



2 stacked + 8 E3.S drive bay numbering



8 SFF + 8 E3.S drive bay numbering



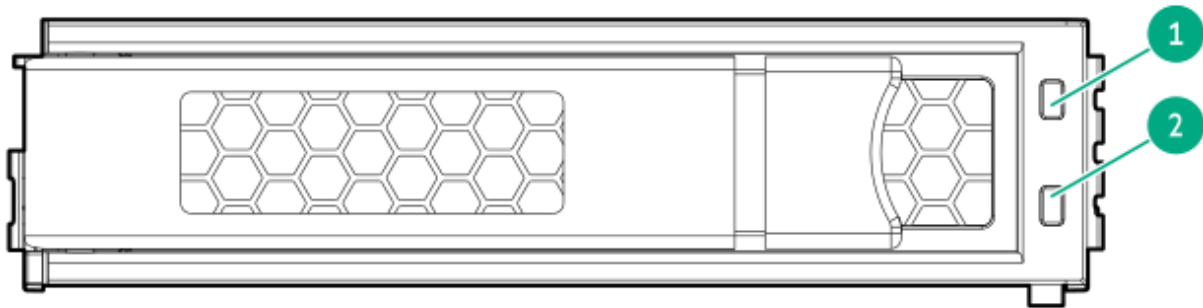
HPE Basic Drive LED definitions

The HPE Basic drive carrier has the following LEDs:

- Amber/blue LED—Managed by the drive backplane in conjunction with the storage controller and is used to indicate drive status.
- Green LED—Managed by the drive itself and indicates the drive activity.

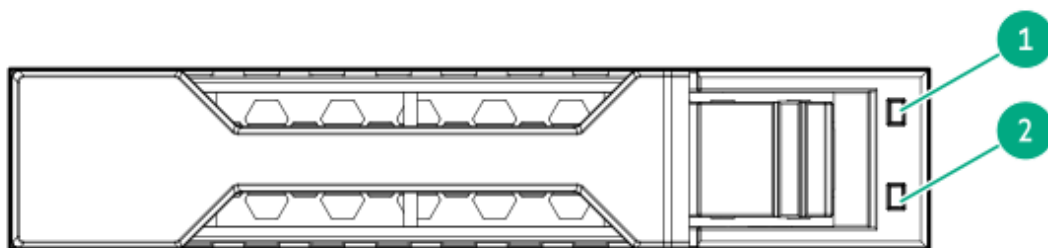
LFF low-profile drive carrier

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



SFF basic drive carrier

The SFF basic drive carrier supports hot-plug U.3 NVMe drives.



Item	LED	State	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 (1 flash per second)	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 (1 flash per second)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
		Off	The drive is operating normally and not being identified by a management application.
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"> • Rebuilding or performing a RAID • Performing a stripe size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.
		Off	The drive is not configured by a RAID controller or is a spare drive.

EDSFF SSD LED definitions

The EDSFF drive carrier has two LEDs:

- Amber/blue LED—Managed by the drive backplane in conjunction with the storage controller and is used to indicate drive status.
- Green LED—Managed by the drive itself and indicates the drive activity.



Item	LED	State	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 (1 flash per second)	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 (1 flash per second)	A predictive failure alert has been received for this drive. Replace the drive as soon as possible.
		Off	The drive is operating normally and not being identified by a management application.
2	Online/Activity	Solid green	The drive is online and has no activity.
		Flashing green (4 flashes per second)	The drive is operating normally and has activity.
		Off	No power present.

Drive backplane naming

This topic explains the features represented in the drive backplane naming. This naming convention was adopted starting in the HPE Gen11 server release. Your server might not support all the features listed in this topic. For server-specific support information, see the server guides:

- Drive backplane support, see [Drive bay numbering](#).
- Drive backplane cabling, see [Storage cabling](#).



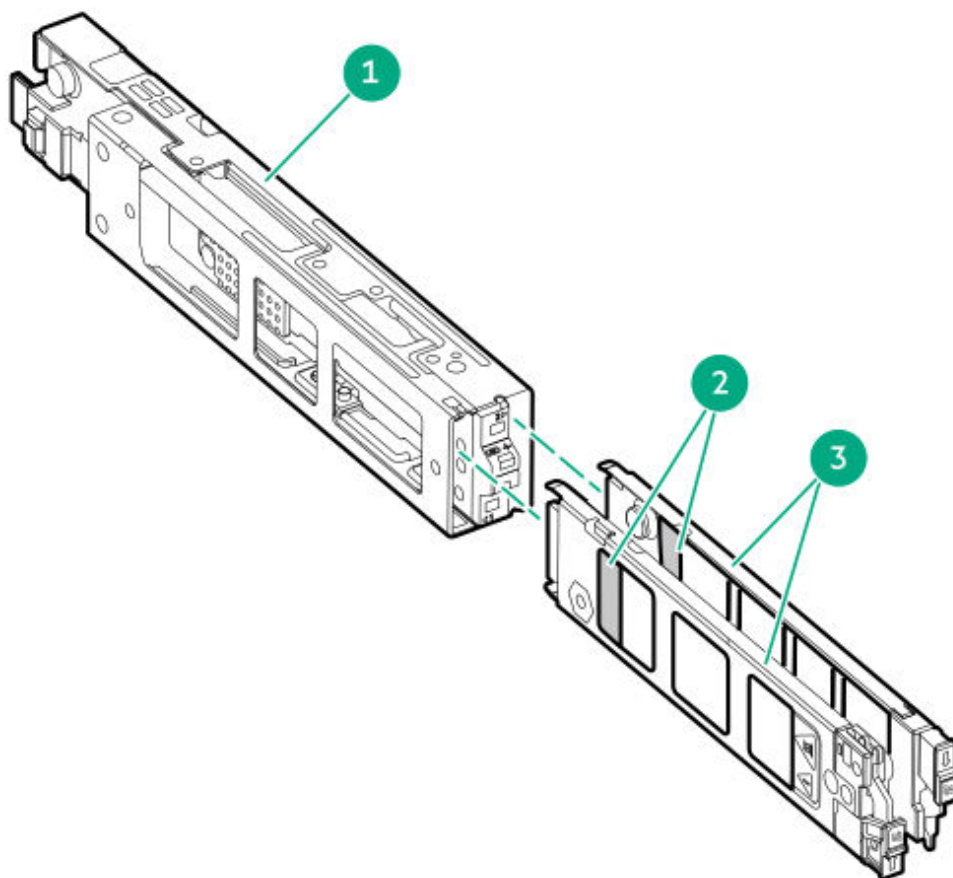
Item	Description	Values
1	Drive bay count	Number of drive bays supported by the backplane.
2	Drive form factor	LFF—Large Form Factor
		SFF—Small Form Factor
		E3S—Enterprise and Datacenter Standard Form Factor (EDSFF E3.S)
3	Maximum link rate per lane (GT/s)	12G
		16G
		24G
		32G
4	Port link width and interface	x1 NVMe/SAS—U.3 NVMe, SAS, or SATA ¹
		x4 NVMe/SAS—U.3 NVMe, SAS, or SATA ²
		x4 NVMe—NVMe ³
		x4 NVMe—E3.S
5	Universal backplane manager (UBM) model	The UBM model defines the UBM firmware used by the backplane. Examples of UBM models: UBM2, UBM3, and etc.
6	Drive carrier type	BC—Basic carrier (SFF)
		LP—Low-profile carrier (LFF)
		EC—E3.S carrier

¹ Tri-mode controller support for x1 U.3 NVMe, SAS, and SATA drives. System board connection supports SATA drives only.

² CPU direct attach or tri-mode controller support for x4 U.3 NVMe, x2 (via a splitter cable) U.3 NVMe, or x1 SAS and SATA drives.

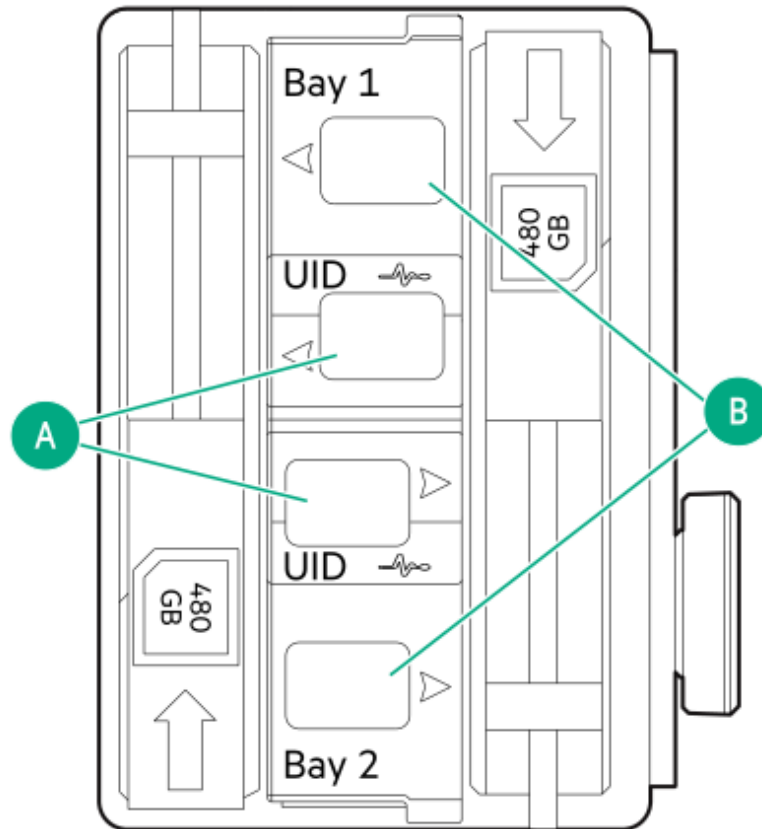
³ CPU direct attach or tri-mode controller support for x4 NVMe drives.

HPE NS204i-u Boot Device V2 components



Item	Description
1	Boot device cage
2	M.2 slots
3	Boot device carriers

HPE NS204i-u Boot Device V2 LED definitions



NOTE

The bay number can be found on the SSD carrier handle.

Item	LED	Status	Definition
A	Fault or Locate	Solid amber	Drive has failed, unsupported, or invalid.
		Solid blue	Drive is operating normally.
		Flashing amber or blue (one flash per second)	Drive has failed, or a predictive failure alert is received for the drive.
		Flashing amber (one flash per second)	Drive predictive failure alert is received. Replace the drive as soon as possible.
		Off	Drive is operating normally and is not identified by any application.
B	Online/Activity	Solid green	Drive is online and has no activity.

Item	LED	Status	Definition
		Flashing green (one flash per second)	Drive is doing one of the following: <ul style="list-style-type: none"> • Rebuilding or performing a RAID • Erasing
		Flashing green (4 flashes per second)	Drive is operating normally and has activity.
		Off	Drive is not configured by a RAID controller.

Systems Insight Display LEDs

The Systems Insight Display (SID) LEDs represent components on the system board. The display enables components issue diagnosis even with the access panel installed.

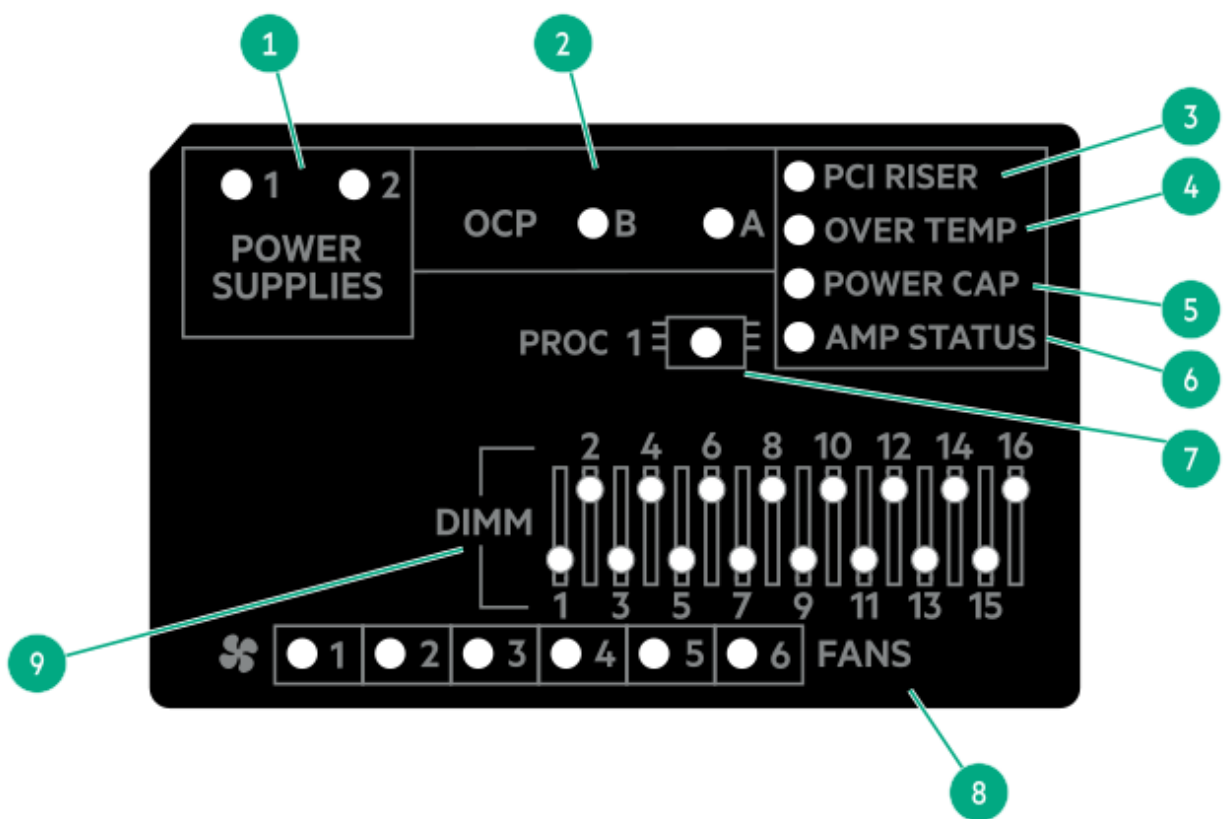


IMPORTANT

If more than one DIMM slot LED is illuminated, further troubleshooting is required. Test each bank of DIMMs by removing all other DIMMs. Isolate the failed DIMM by replacing each DIMM in a bank with a known working DIMM.

For information about memory population rules, see the relevant memory technical paper in:

<https://www.hpe.com/docs/server-memory>



Item	LED	Status	Description
1	Power supply LEDs	Off	Normal
		Solid amber	One or more of the following conditions exit: <ul style="list-style-type: none"> Power subsystem degraded Power supply failure Input power lost
2	OCP LEDs	Solid green	Network link
		Flashing green	Network active
		Off	No network link
3	PCI riser LED	Off	Normal
		Solid amber	Incorrectly installed PCI riser cage
4	Over temp LED	Off	Normal
		Solid amber	High system temperature detected

Item	LED	Status	Description
5	Power cap LED	Solid green	Power cap applied
		Off	One or more of the following conditions exit: <ul style="list-style-type: none"> • System is in standby • No cap is set
6	AMP ¹	Solid green	AMP mode enabled
		Solid amber	Failover
		Flashing amber	Invalid configuration
		Off	AMP modes disabled
7	Processor LED	Off	Normal
		Solid amber	Failed processor
8	Fan LEDs	Off	Normal
		Solid amber	Failed fan or missing fan
9	DIMM LEDs	Off	Normal
		Solid amber	Failed DIMM or configuration issue

¹ To enable Advanced Memory Protection (AMP), see the UEFI user guide (<https://www.hpe.com/support/hpeuefisystemutilities-quicklinks>).

When the health LED on the front panel illuminates either amber or red, the server is experiencing a health event. For more information on the combination of these LEDs, see [Systems Insight Display combined LED descriptions](#).

System Insight Display combined LED descriptions

The combined illumination of the following LEDs indicates a system condition:

- SID LEDs
- System power LED
- Health LED

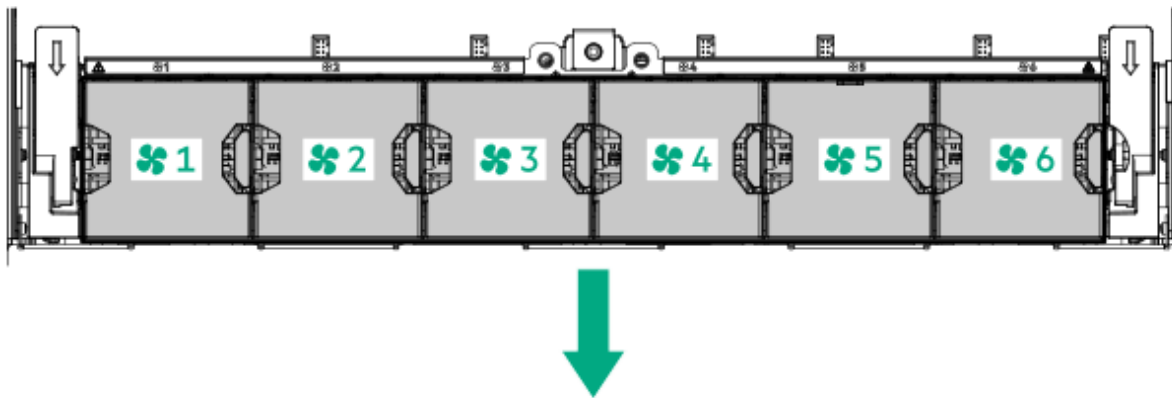
SID LED status	Health LED status	System power LED status	LED Definition
Power supply (solid amber)	Flashing red	Solid amber	One or more of the following conditions exist: <ul style="list-style-type: none"> Only one power supply is installed and that power supply is in standby. Power supply fault. System board fault.
	Flashing amber	Solid green	One or more of the following conditions exist: <ul style="list-style-type: none"> Redundant power supply is installed and only one power supply is functional. AC power cord is not plugged into redundant power supply. Redundant power supply fault. Power supply mismatch at POST or power supply mismatch through hot-plug addition.
PCI riser (solid amber)	Flashing red	Solid green	The PCI riser cage is not seated properly.
Over temp (solid amber)	Flashing amber	Solid green	The Health Driver has detected a cautionary temperature level.
	Flashing red	Solid amber	The server has detected a hardware critical temperature level.
Power cap (solid green)	—	Solid green	Power is available.
Power cap (solid green)	—	Flashing green	Waiting for power
Power cap (flashing amber)	—	Solid amber	Power is not available.
Power cap (off)	—	Solid amber	Standby
Processor (solid amber)	Flashing red	Solid amber	One or more of the following conditions might exist: <ul style="list-style-type: none"> Processor in socket X has failed. Processor X is not installed in the socket. Processor X is unsupported. ROM detects a failed processor during POST.
	Flashing amber	Solid green	Processor in socket X is in a pre-failure condition.

SID LED status	Health LED status	System power LED status	Definition
Fan (solid amber)	Flashing amber	Solid green	One fan has failed or has been removed.
	Flashing red	Solid green	Two or more fans have failed or been removed.
DIMM (solid amber)	Flashing red	Solid green	One or more DIMMs have failed.
	Flashing amber	Solid green	DIMM in slot X is in a pre-failure condition.

Fan numbering

To provide sufficient airflow to the system, the server is by default populated by 6 fans. The fans can either be standard, single-rotor fans (P51153-001) or high performance, dual-rotor fans (P49977-001). Mixed fan configuration is not supported.

The arrow points to the front of the server.



Subtopics

Fan and heatsink requirements

Fan and heatsink requirements

LFF drive configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
8/12 LFF drive	≤ 350 W	Standard fans	High performance heatsink

SFF drive configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
8/16 SFF drives	≤ 250 W	Standard fans	Standard heatsink
8/16 SFF drives and the front OCP NIC	> 250 W	Standard fans	High performance heatsink
24 SFF drives	≤ 350 W	Standard fans	High performance heatsink

E3.S drive configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
24/36 E3.S drive	≤ 350 W	Standard fans	High performance heatsink

GPU-optimized configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
Single-width GPU	≤ 350 W	High performance fans	High performance heatsink
Double-width GPU			

Mixed drive configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
2 SFF side-by-side + 8 LFF drives	≤ 250 W	Standard fans	Standard heatsink
2 SFF stacked + 8 SFF drives	> 250 W	Standard fans	High performance heatsink

Hardware configuration	Processors TDP	Fan type	Heatsink type
8 E3.S + 8 SFF drives			

NEBS configuration

Hardware configuration	Processors TDP	Fan type	Heatsink type
NEBS	≤ 350 W	High performance fans	High performance heatsink

PCIe and OCP NIC configuration

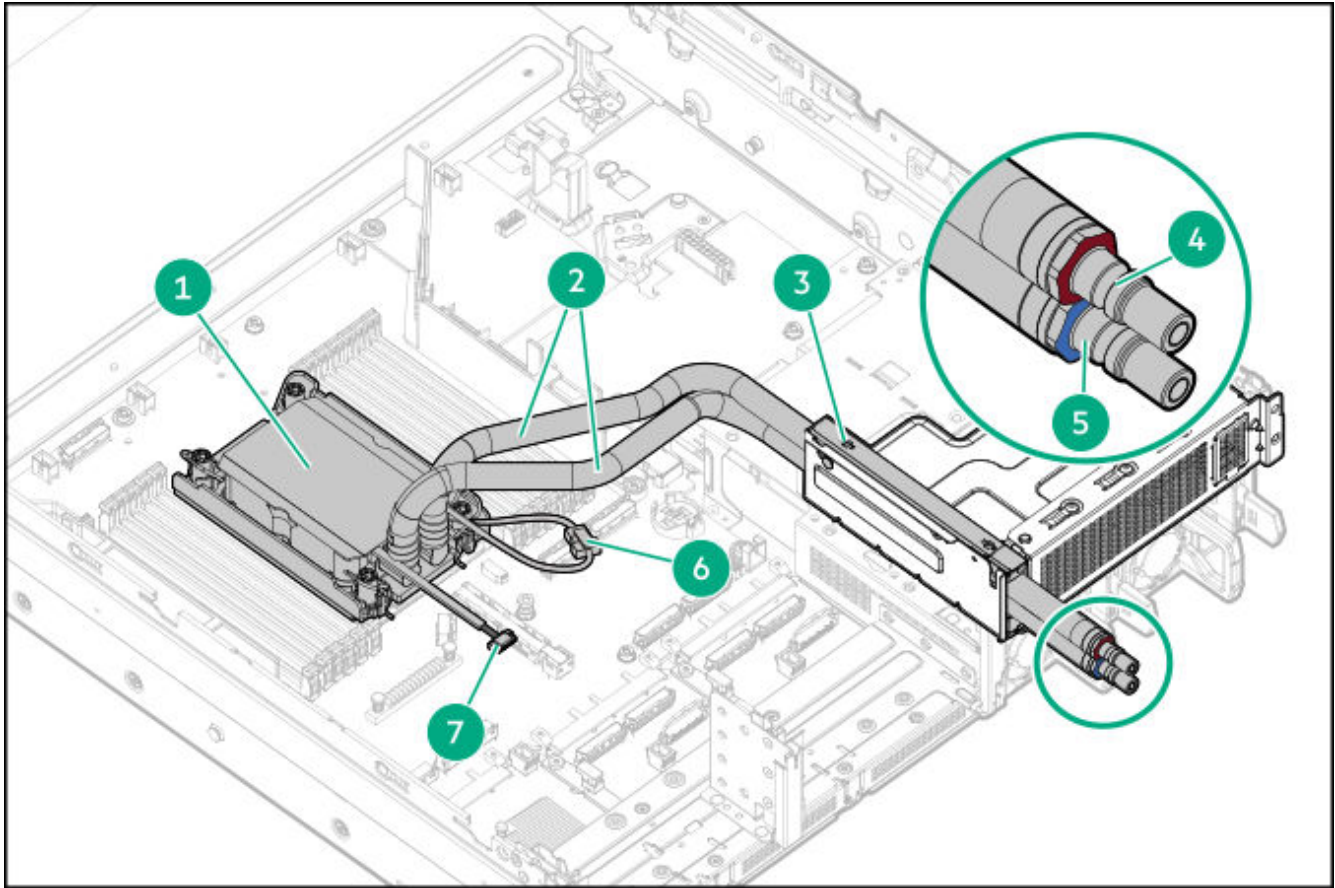
Hardware configuration	Fan type	Heatsink type
Type-p Ethernet/InfiniBand/NVME-oF adapters with 100 Gb or faster speed and the following adapters: <ul style="list-style-type: none"> • BCM 57504 10/25GbE 4p SFP28 adapter • INT E810 10/25GbE 4p SFP28 adapter 	High performance fans	Standard heatsink
Type-o Ethernet/InfiniBand/NVME-oF adapters with 100 Gb or faster speed and the following adapters: <ul style="list-style-type: none"> • BCM 57504 10/25GbE 4p SFP28 OCP3 adapter • INT E810 10/25GbE 4p SFP28 OCP3 adapter 		

DIMM configuration

Hardware configuration	Fan type	Heatsink type
96 GB or higher capacity DIMMs	High performance fans	Standard heatsink

Direct liquid cooling module components

For more information, see the [Direct liquid cooling guidelines](#).



Item	Description
1	Cold plate
2	Coolant hoses
3	DLC hose holder
4	Coolant return quick plug connector
5	Coolant supply quick plug connector
6	Coolant leakage detection cables
7	Power and signal cable

Subtopics

Direct liquid cooling guidelines

Direct liquid cooling guidelines

The direct liquid cooling (DLC) module is a preinstalled option.

Coolant leakage detection

The DLC module coolant is fed into the hoses through the rack manifolds. If a coolant leakage occurs, the system events occur:

- iLO automatically detects the leakage and:
 - Sends an iLO REST alert and Simple Network Management Protocol (SNMP) trap
 - Record the event in the Integrated Management Log (IML)
- The system initiates an immediate shutdown. The system will not power on until the leakage event is cleared, and a REST API operation for system recovery is performed.
- Follow the recommended procedure in Appendix I: Server coolant spill response of the server maintenance guide (<https://www.hpe.com/info/dl340gen12-msg>).

Storage temperature

When storing a server with a DLC module, maintain a temperature of -10°C to 60°C (14°F to 140°F). Allowing the DLC module coolant to freeze can damage its metallic microstructures.

Facility water supply temperature

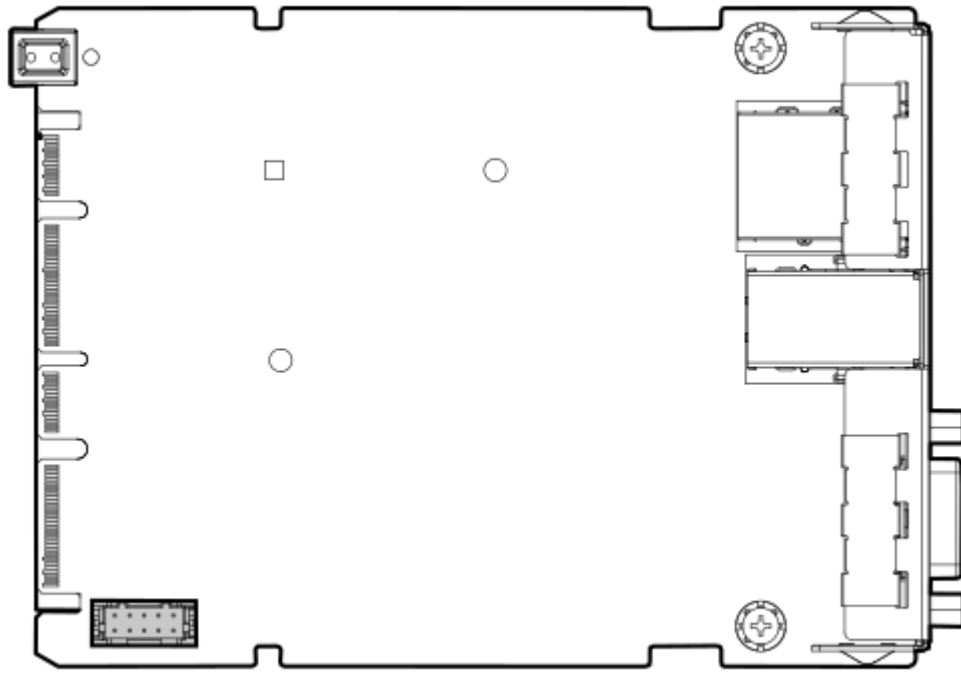
To maintain optimal cooling performance and prevent equipment damage from overheating:

- Do not allow the facility water supply temperature to exceed 40°C (104°F).
- Monitor environmental conditions year-round to anticipate temperature fluctuations.
- Install insulated plumbing as needed to ensure the water supply remains at or below 40°C (104°F).

Datacenter Secure Control Module components

This server is a Datacenter Modular Hardware System (DC-MHS)-based product.

- The processors and DIMMs on the system board provide the compute function. The system board serves as the Host Processor Module (HPM).
- The iLO and the Trusted Platform Module 2.0 (TPM 2.0) chipsets embedded on the Datacenter Secure Control Module (DC-SCM) provide this server's manageability and security functions. This module also has the connector for the serial port option.



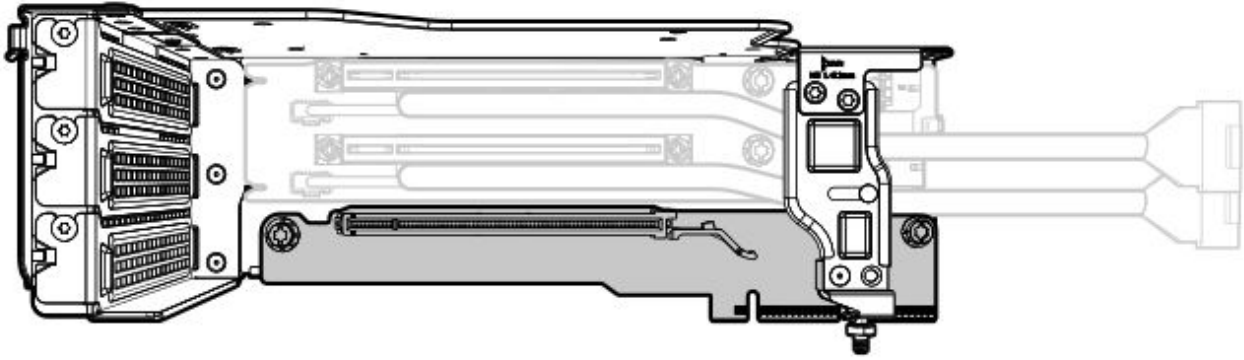
Riser board components

This server supports two general types of PCIe risers:

- One-slot PCIe x16 base riser—This riser is a board-only riser that is directly installed on the riser connector on the system board. This riser type is used as the base riser in the riser cage as primary riser slot 3 and secondary riser slot 6.
- Two-slot PCIe x16 captive riser—This riser type has its signal cable option that attaches a PCIe slot and supported in the slots 1, 2, 4, 5, 10, 12, 15, and 17. Each riser supports up to two slots.

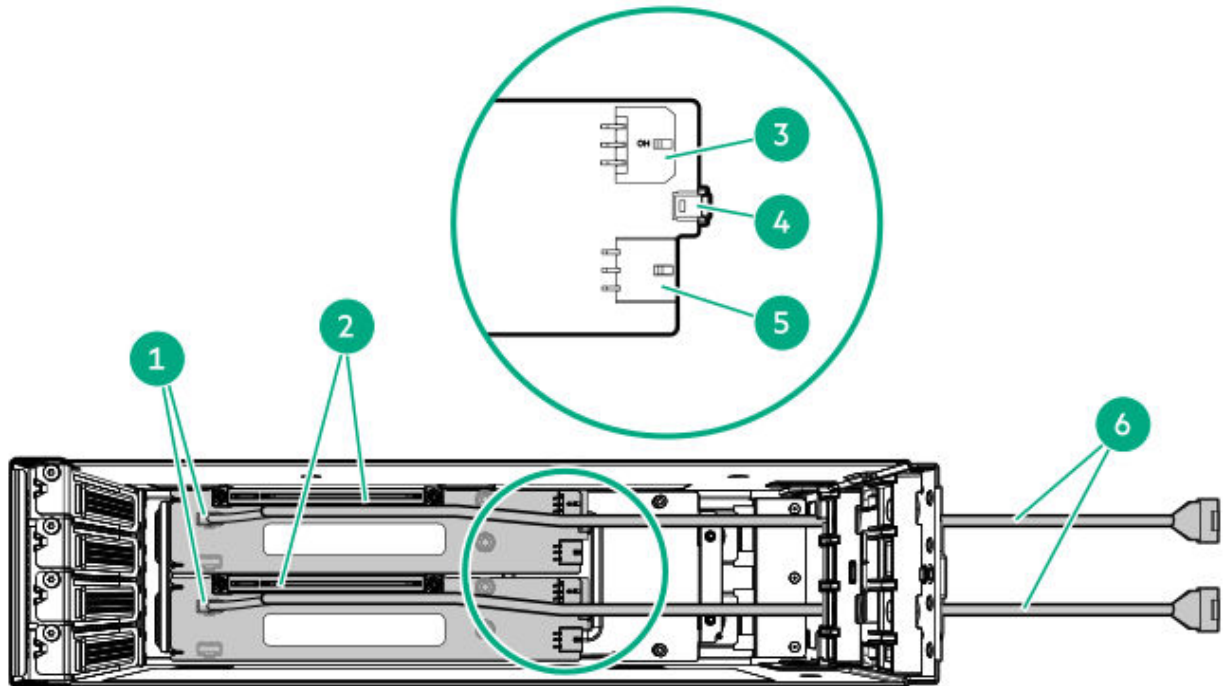
One-slot PCIe x16 base riser component

This single PCIe 5 x16 (16, 8, 4, 2) slot supports the full-height, half-length, or half-height, half-length (low-profile) expansion cards.

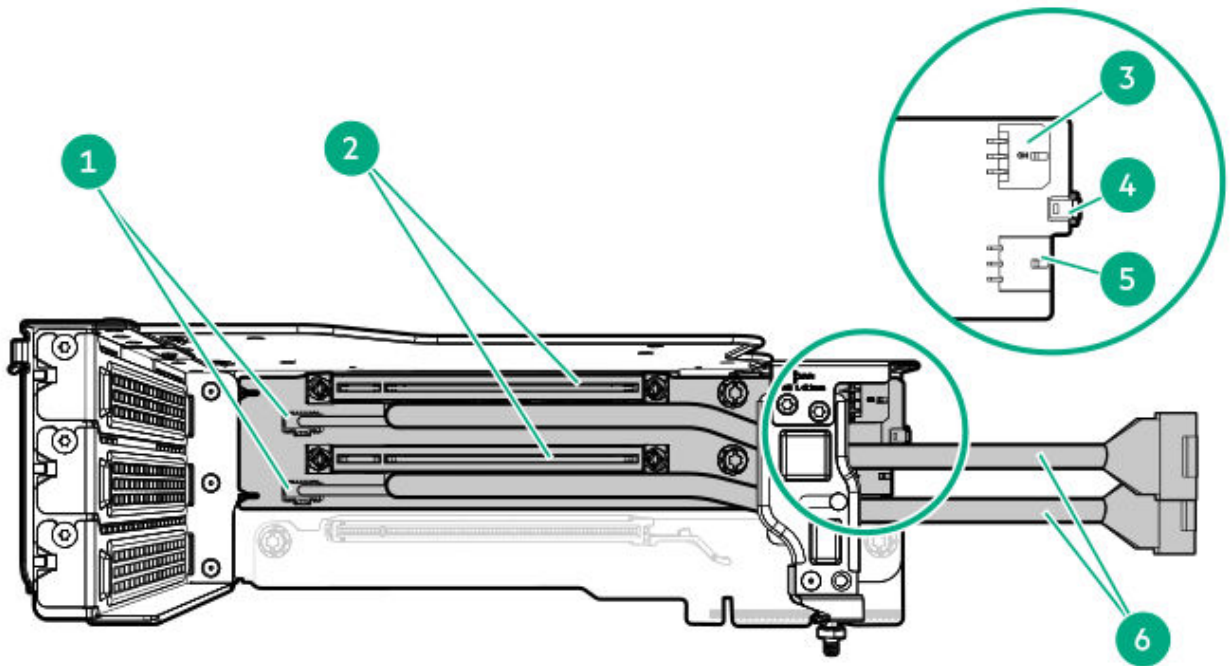


Two-slot PCIe x16 captive riser components

- GPU cage



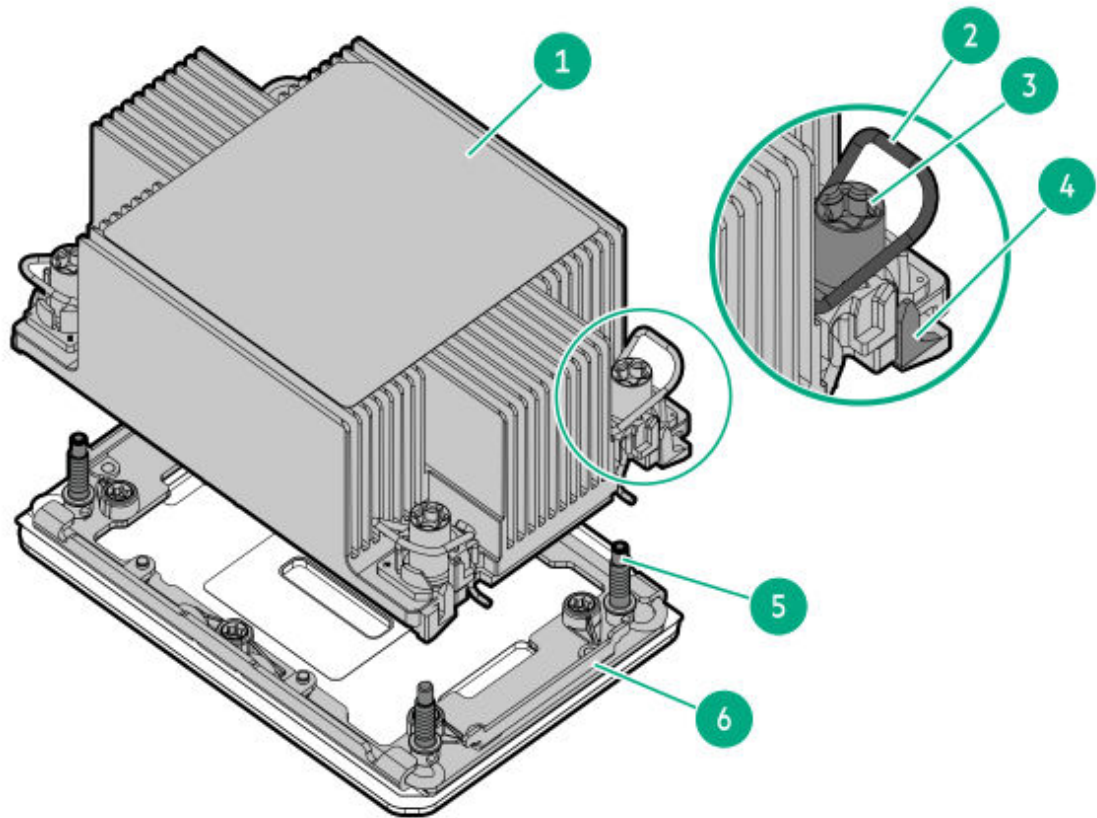
- PCIe riser cage



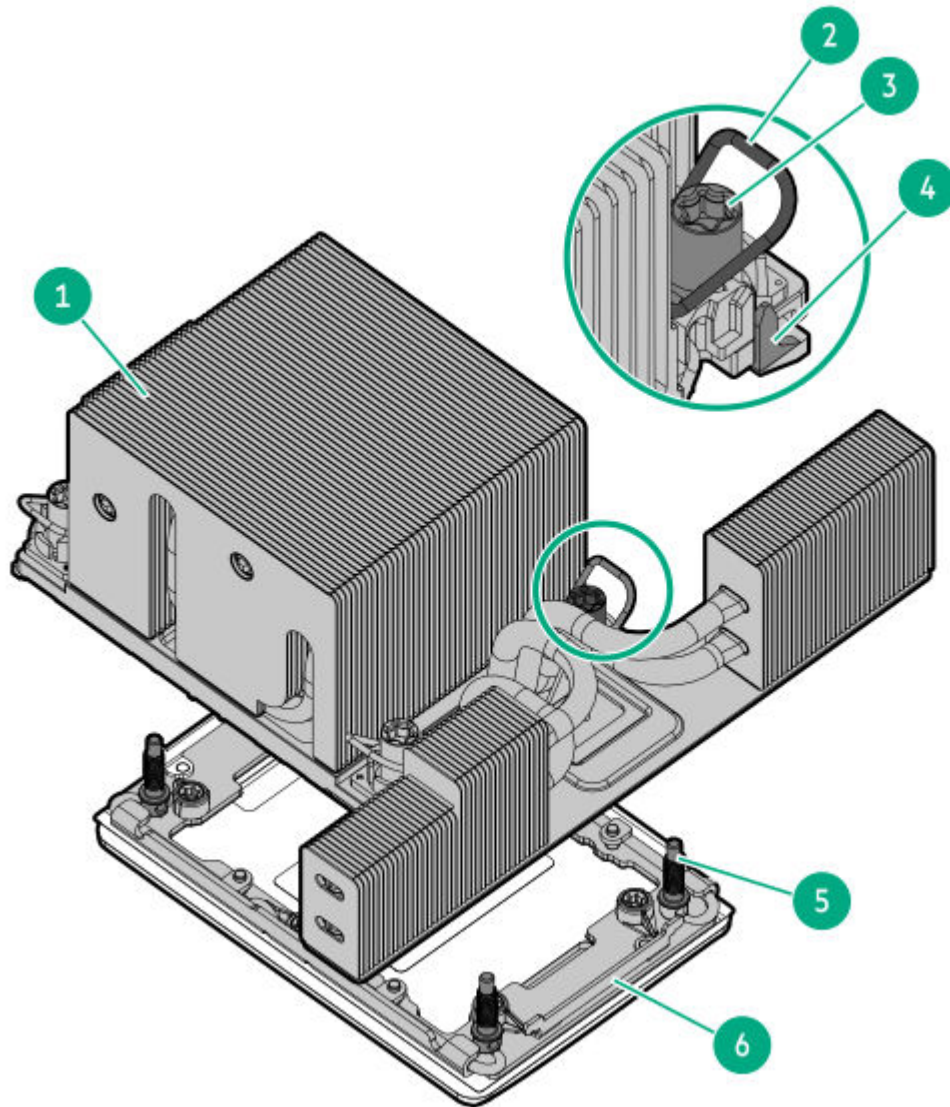
Item	Description	Supported form factors
1	PCIe slots sideband signal connector	—
2	PCIe5 x16 (16, 8, 4, 2) slot	<ul style="list-style-type: none"> • Full-height, half-length • Half-height, half-length (low-profile)
3	GPU auxiliary power connectors	—
4	GPU sideband connector	—
5	Captive riser power connectors	—
6	Captive riser signal cable	—

Heatsink and processor socket components

Standard heatsink



High performance heatsink



Item	Description
1	Processor-heatsink module*
2	Anti-tilt wire
3	Heatsink screw
4	Processor carrier release tab
5	Bolster plate guide post
6	Bolster plate

* This module consists of the heatsink attached to the processor that is already secured in its carrier.

Setup

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

Subtopics

HPE Installation Service

Setting up the server

Operational requirements

Rack warnings and cautions

Server warnings and cautions

Electrostatic discharge

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

- As a best practice, Hewlett Packard Enterprise recommends installing the latest firmware, drivers, and system software before using the server for the first time. You have these options:
 - HPE Compute Ops Management is an advanced software-as-a-service platform that securely streamlines operations from edge-to-cloud and automates key life cycle tasks through a unified single browser-based interface. For more information on using HPE Compute Ops Management, see <https://www.hpe.com/info/com-docs>.
 - Use the **Firmware Update** option in Intelligent Provisioning—Intelligent Provisioning is a server deployment tool embedded in HPE ProLiant servers. To access Intelligent Provisioning, during the server boot process, press **F10**. For more information, see the Intelligent Provisioning user guide at <https://www.hpe.com/support/hpeintelligentprovisioning-quicklinks>.
 - Download the Service Pack for HPE ProLiant—SPP is a comprehensive system software and firmware update solution that is delivered as a single ISO image. This solution uses Smart Update Manager as the deployment tool.
 - The preferred method for downloading an SPP is by creating an SPP custom download at <https://www.hpe.com/servers/spp/custom>.

This option reduces the size of the SPP by excluding firmware and drivers for OS and server models that are not needed.
 - The SPP is also available for download from the SPP download page at <https://www.hpe.com/servers/spp/download>.
- Verify that your OS or virtualization software is supported:
<https://www.hpe.com/support/Servers-Certification-Matrices>
- This server supports type-o and type-p storage controller options. For storage configuration, use Intel Virtual RAID on CPU (Intel VROC). If you plan to use Intel VROC, [review this important information before setting up the server](#).
- 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
- Rackmounting 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. If the DLC is preinstalled, connect the DLC module.
 5. Decide how to manage the server:
 - Locally: Use a KVM switch or a 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.
`https://<iLO hostname or IP address>`

Note the following:

 - 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.
 - c. Enter the iLO login name and password, and then click **Log In**.
 - d. In the navigation tree:
 - For iLO 6: Click the **Remote Console & Media** link, and then launch a remote console.
 - For iLO 6: Click the **Remote Console** link, and then launch a remote console.
6. Press the Power On/Standby button.

For remote management, use the iLO virtual power button.
7. Configure the initial server setup.
8. Set up the storage.

9. [Deploy an OS or virtualization software.](#)
- .0. After the OS is installed, [update the drivers.](#)
- .1. [Register the server.](#)

Operational requirements

When preparing and planning the installation, observe the following operational requirements:

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

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

Subtopics

[Space and airflow requirements](#)

[Temperature requirements](#)

[Power requirements](#)

[Electrical grounding requirements](#)

Space and airflow requirements

To allow for servicing and adequate airflow, observe the following space and airflow requirements when installing the server in an indoor commercial rack:

- 63.50 cm (25.00 in) in front of the rack
- 76.20 cm (30.00 in) behind the rack
- 121.90 cm (48.00 in) from the back of the rack to the back of another rack or row of racks

Observe the following:

- Servers draw in cool air through the front of the rack and expel warm air through the rear. The front and rear rack doors must be adequately ventilated to allow ambient air to enter the cabinet. 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.

**CAUTION**

When the vertical space in the rack is not filled by a server or rack component, the gaps between the components can cause changes in airflow through the rack and around the servers. Cover all gaps with blanking panels to maintain proper airflow. Using a rack without blanking panels results in improper cooling which can lead to thermal damage.

- If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and 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 7.00 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



WARNING

When all components are removed, the server weighs 17.40 kg (38.36 lb). When all components are installed, the server can weigh up to 36.30 kg (80.03 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 17.40 kg (38.36 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).

Server warnings and cautions



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

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.

Operations

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

- [Rack warnings and cautions](#)

- [Server warnings and cautions](#)

Subtopics

[**iLO service port**](#)

[**Intel VROC support**](#)

[**Server UID LED**](#)

[**Trusted Platform Module 2.0**](#)

[**Trusted Platform Module 2.0 guidelines**](#)

[**Accessing the Systems Insight Display**](#)

[**System battery information**](#)

iLO service port

The iLO service port is a USB port with the label **iLO** on the front of the server.

When you have physical access to a server, you can use the iLO service port to:

- 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 OS.

- Connect a host system (Windows/Mac/Linux laptop or desktop) using either a standard USB Type A-to-Type C cable or USB Type C-to-Type C cable to access the:
 - iLO web interface
 - Remote console
 - iLO RESTful API
 - CLI

When you use the iLO service port:

- Actions are logged in the iLO event log.
- The server UID flashes to indicate the iLO service port status.

You can also retrieve the iLO service port status by using a REST client and the iLO RESTful API.

- You cannot use the iLO service port to boot any device within the server, or the server itself.
- You cannot access the server by connecting to the iLO service port.
- You cannot access the connected device from the server.

For more information about the iLO service port, see the iLO user guide:

Intel VROC support

Intel Virtual RAID on CPU (Intel VROC) provides enterprise-level hybrid RAID support. Note the following information:

- Intel VROC provides RAID support for direct attached NVMe SSD.
- The Intel VROC driver is required. For the OS-specific driver download, see the following page:

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

- If you plan to enable Intel VROC for NVMe devices, secure an Intel VROC Hybrid RAID License. For more information on Intel VROC licenses, see the server QuickSpecs:

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

- Intel VROC requires the server boot mode to be set to **UEFI Mode**.
- Intel VROC RAID support is disabled by default. In the pre-OS environment, use UEFI System Utilities to enable Intel VROC and create a VROC RAID volume. These tasks are not supported in Intelligent Provisioning.
- The VROC RAID volume must use drives of the same interface and form factor.
- Intel VROC supports RAID management through the following tools:
 - Non-OS specific: UEFI System Utilities
 - Windows: Intel VROC GUI, Intel VROC CLI
 - Linux: `mdadm` CLI

For more information on Intel VROC features and configuration, see [Configuring storage controllers](#).

Server UID LED

The UID LED can be used to help an on-site technician quickly identify or locate a particular server when it is deployed in a dense rack with other equipment. It can also be used to identify if a remote management, firmware upgrade, or reboot sequence is in progress.

Subtopics

[Viewing the Server Health Summary](#)

Viewing the Server Health Summary

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.

About this task

If the server does not power on, use the UID button to display the iLO **Server Health Summary** screen on an external monitor. This function works when the server is powered on or off.

For more information, see the iLO troubleshooting guide on the [Hewlett Packard Enterprise website](#).

Procedure

1. Press and release the UID button.



CAUTION

Be sure to press and release the UID button. Pressing the UID button at any time for more than five seconds will initiate a graceful iLO reboot or a hardware iLO reboot. Data loss or NVRAM corruption might occur during a hardware iLO reboot.

The **Server Health Summary** screen displays on the external monitor.

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

Trusted Platform Module 2.0

The Trusted Platform Module 2.0 (TPM) is a hardware-based system security feature that securely stores artifacts used to authenticate the platform. These artifacts can include passwords, certificates, and encryption keys.

The TPM 2.0 is embedded on the DC-SCM.

The TPM 2.0 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/quickspecs>). For more information

about Microsoft Windows BitLocker Drive Encryption feature, see the Microsoft website (<https://www.microsoft.com>).

Trusted Platform Module 2.0 guidelines



CAUTION

- Always observe the TPM guidelines in this section. Failure to follow these guidelines can cause hardware damage or halt data access.
- If you do not follow procedures for modifying the server and suspending or disabling the TPM in the OS, an OS that is using TPM might lock all data access. This includes updating system or option firmware, replacing hardware such as the system board and drives, and modifying TPM OS settings.
- Changing the TPM mode after installing an OS might cause problems, including loss of data.

- Use the UEFI System Utilities to configure the TPM. From the **System Utilities** screen, select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **Server Security** > **Trusted Platform Module options**. For more information, see the UEFI user guide:

<https://www.hpe.com/support/hpeuefisystemutilities-quicklinks>

- When using the Microsoft Windows BitLocker Drive Encryption feature, always retain the recovery key or password. The recovery key or password is required to enter Recovery Mode after BitLocker detects a possible compromise of system integrity.
- HPE is not liable for blocked data access caused by improper TPM use. For operating instructions, see the documentation for the encryption technology feature provided by the operating system.

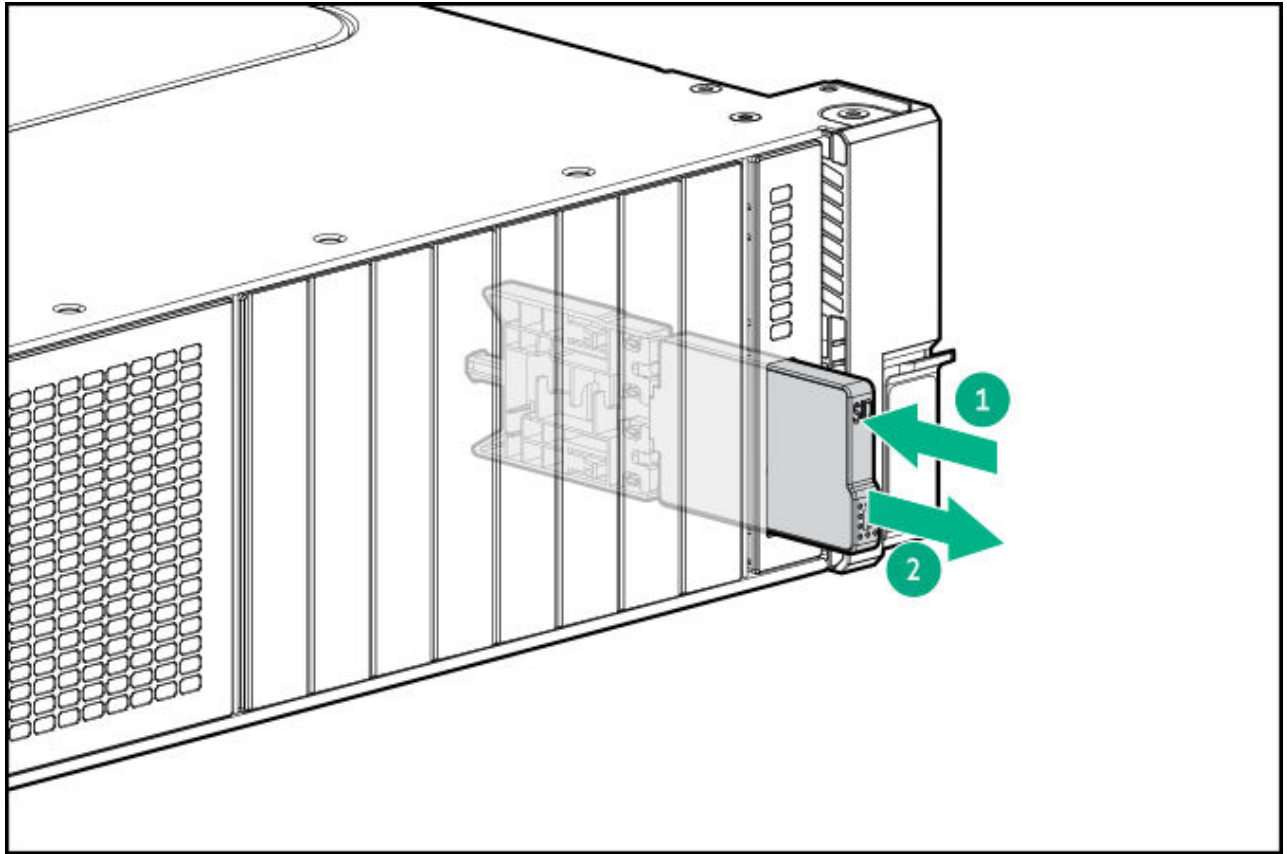
Accessing the Systems Insight Display

About this task

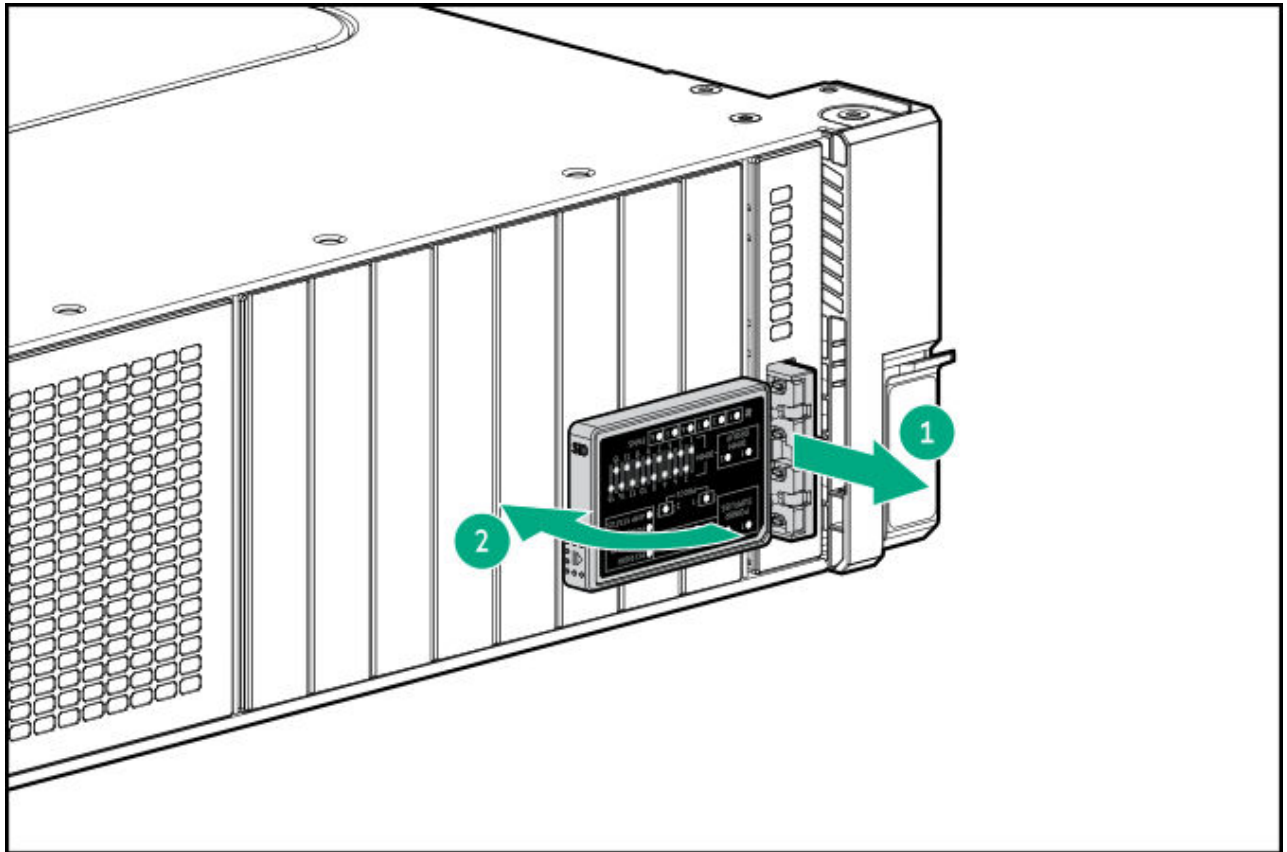
The Systems Insight Display is supported in the SFF/E3.S drive configuration.

Procedure

1. Press and release the panel.



2. After the display ejects, rotate the display to view the LEDs.



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 fire or burning 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 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 of the battery in fire or water.

Hardware options

Provides instructions for installing supported hardware options and required configuration information.

Subtopics

[Hewlett Packard Enterprise product QuickSpecs](#)

[Hardware option installation guidelines](#)

[Pre-installation procedures](#)

[Post-installation procedures](#)

[Cooling](#)

[Drives](#)

[Drive backplanes](#)

[Drive cages](#)

[Energy packs](#)

[GPUs](#)

[Management](#)

Media devices

Memory

Networking

OS boot device

Power supplies

Processors and heatsinks

Rack rail and CMA

Risers and riser cages

Security

Storage controllers

Hewlett Packard Enterprise product QuickSpecs

To learn more about your product, search the Hewlett Packard Enterprise website (<https://www.hpe.com/info/quickspecs>) for the product QuickSpecs:

- Supported options
- Supported configurations
- Component compatibility
- New features
- Specifications
- Part numbers

Hardware option installation guidelines



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 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

To prevent damage to electrical components, properly ground the server before beginning any installation, removal, or replacement 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.

Pre-installation procedures

Subtopics

Server data backup

Power down the server

Remove the front bezel

Open the cable management arm

Disconnect the DLC extension hose

Extend the server out of the rack

Remove the server from the rack

Remove the access panel

Remove the air baffle

Remove the fan cage

Remove the midwall bracket

Remove the LFF drive backplane bracket

Remove the middle cover

Remove the riser cage

Remove the secondary riser cage blank

Remove the rear boot device holder

Server data backup

To avoid data loss, make sure to back up all server data before installing or removing a hardware option, performing a server maintenance, or a troubleshooting procedure.

Server data in this context refers to information that may be required to return the system to a normal operating environment after completing a hardware maintenance or troubleshooting procedure. This information may include:

- User data files
- User account names and passwords
- Application settings and passwords
- Component drivers and firmware
- TPM recovery key/password
- BIOS configuration settings—Use the backup and restore function in UEFI System Utilities. For more information, see the UEFI user guide (<https://www.hpe.com/support/hpeuefisystemutilities-quicklinks>).
 - Custom default system settings
 - Security passwords including those required for power-on and BIOS admin access, persistent memory, and Server Configuration Lock (for HPE Trusted Supply Chain servers)
 - Server serial number and the product ID
- iLO-related data—Use the iLO backup and restore function. For more information, see the iLO user guide (<https://www.hpe.com/support/hpeilodocs-quicklinks>).
 - iLO license
 - Customer iLO user name, password, and DNS name
 - iLO configuration settings

Power down the server

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



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 activates a controlled shutdown of applications and the OS before the server enters standby mode. It can also activate a shutdown behavior governed by an OS configuration or policy.
- 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 7.
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.

Remove the front bezel

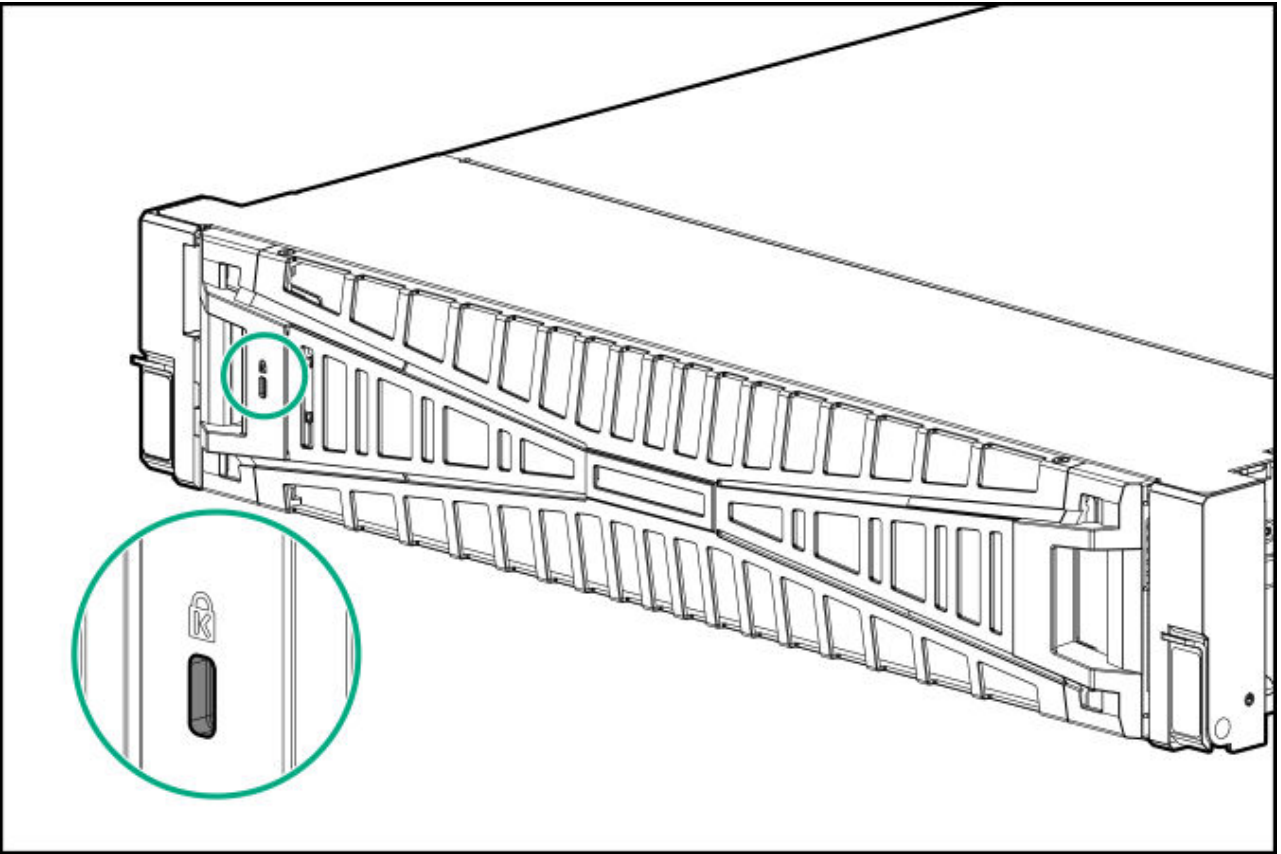
About this task

If you are using the iLO virtual power button 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.

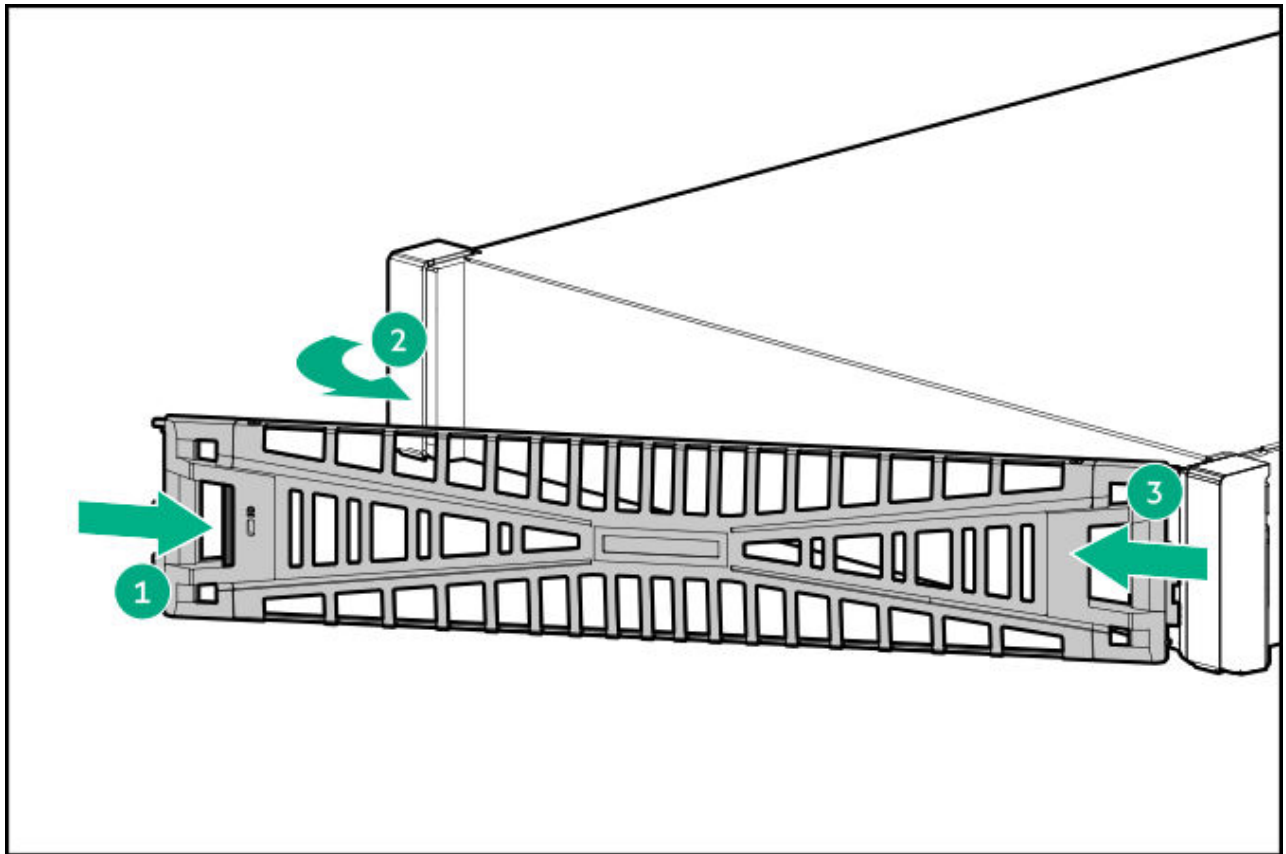
Procedure

1. If installed, remove the Kensington security lock.

For more information, see the lock documentation.



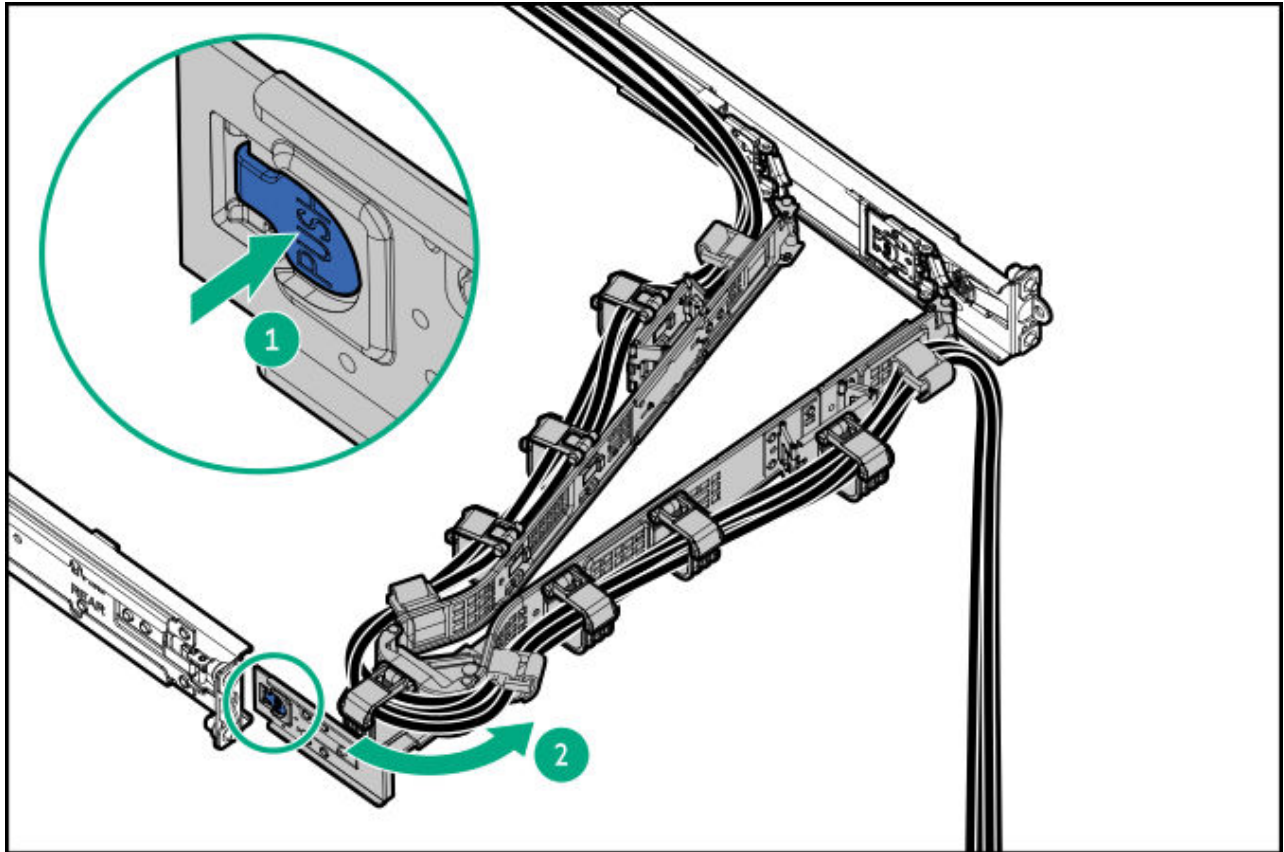
2. Press the bezel release latch, and then pivot the bezel open.
3. Release the right side of the bezel from the front panel.



Open the cable management arm

Procedure

1. Press and hold the blue **PUSH** button on the retention bracket.
2. Swing the arm away from the rear panel.



Disconnect the DLC extension hose

Prerequisites

- Review the [Direct liquid cooling module components](#).

Before you perform this procedure, make sure that you have a small hand towel or container to catch any coolant from the DLC system.

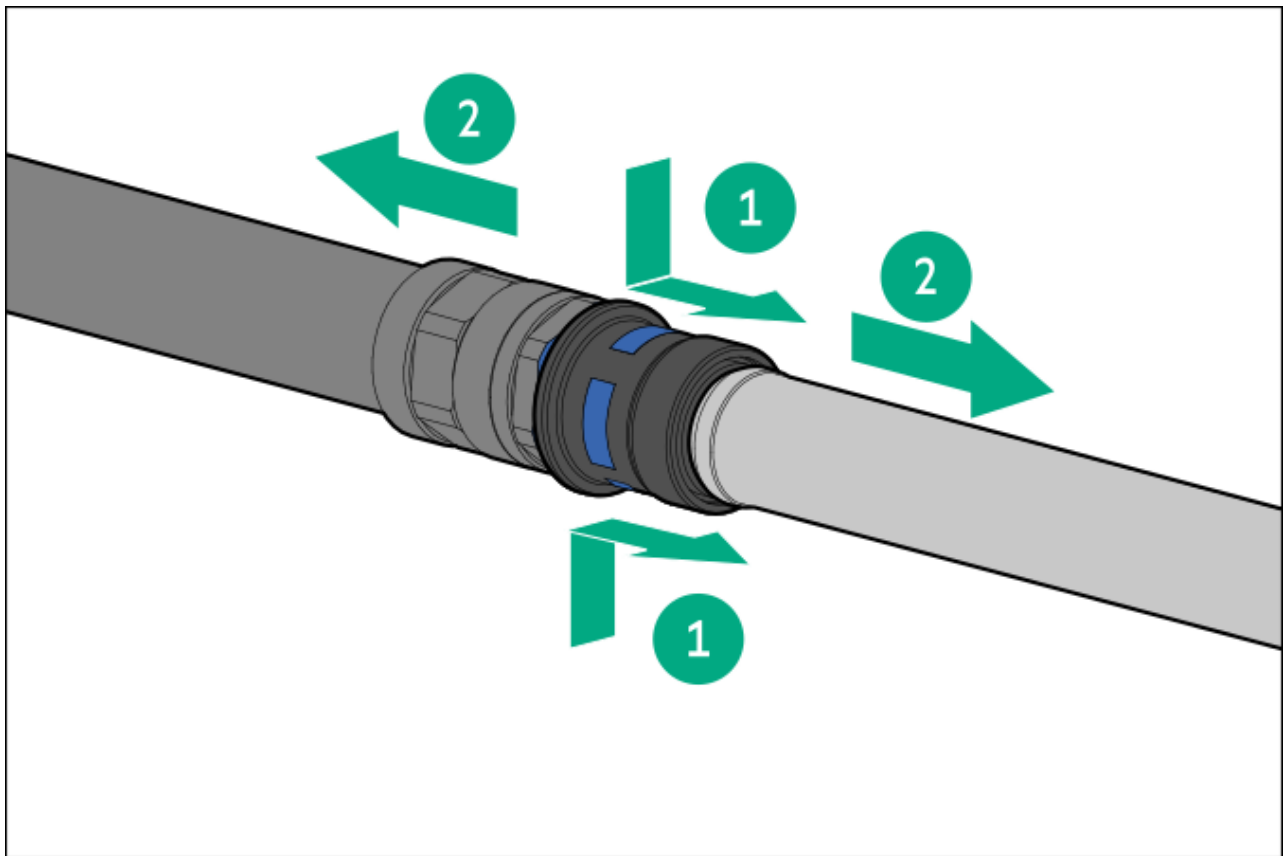
About this task

For more information, see the HPE Cray XD Direct Liquid Cooling System Site Preparation, User, and Maintenance Guide at <https://www.hpe.com/info/xdDLCguide>.

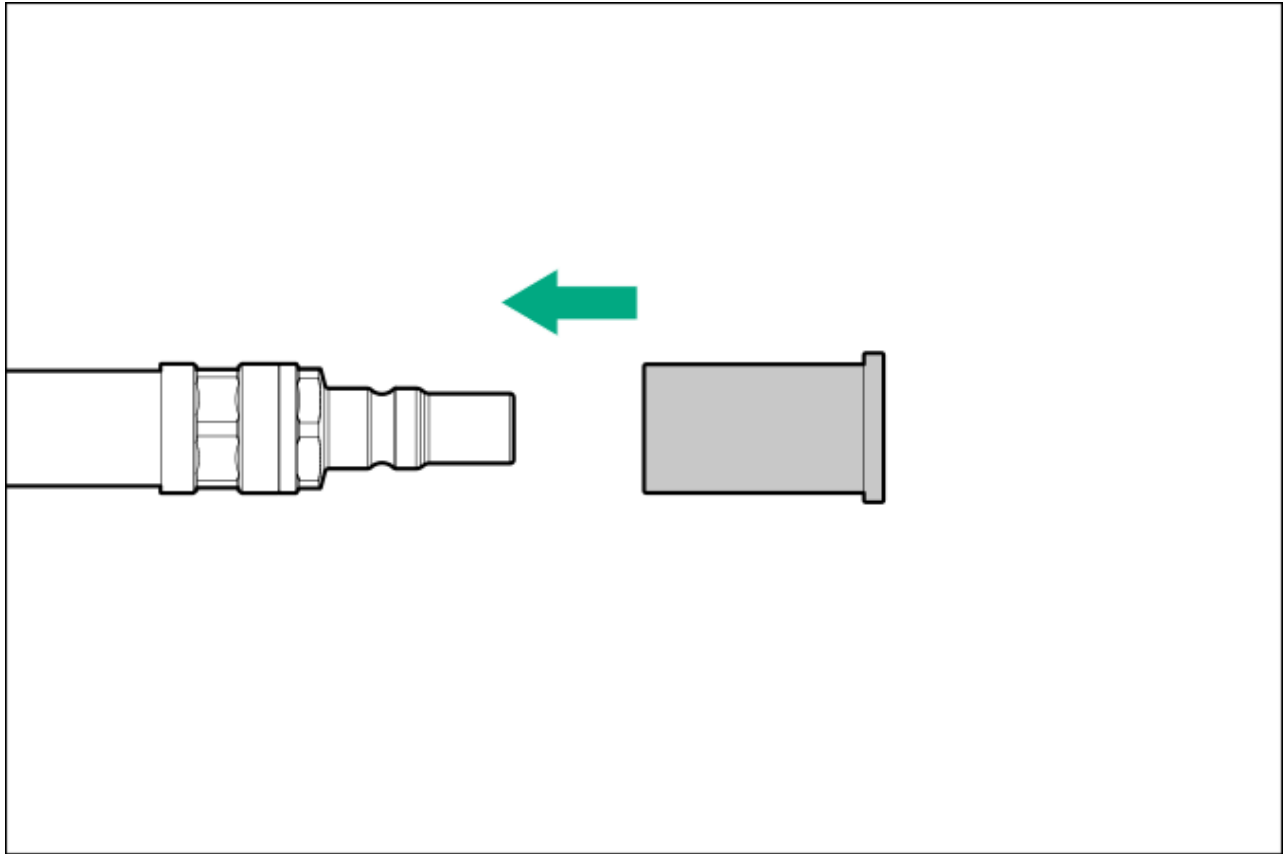
Procedure

1. [Power down the server](#).
2. [Locate the DLC module](#) from the rear of the server.
3. Position some towels or a container under the extension hoses to catch any spilled coolant.

4. Press and pull the extension hose quick socket connector to disengage it from the DLC module coolant hose.



5. Install the coolant quick connector caps.



Extend the server out of the rack

Prerequisites

- Before you perform this procedure, review the [Rack warnings and cautions](#).
- T-25 Torx screwdriver—This tool is required if the shipping screws located inside the chassis ears are secured.

About this task



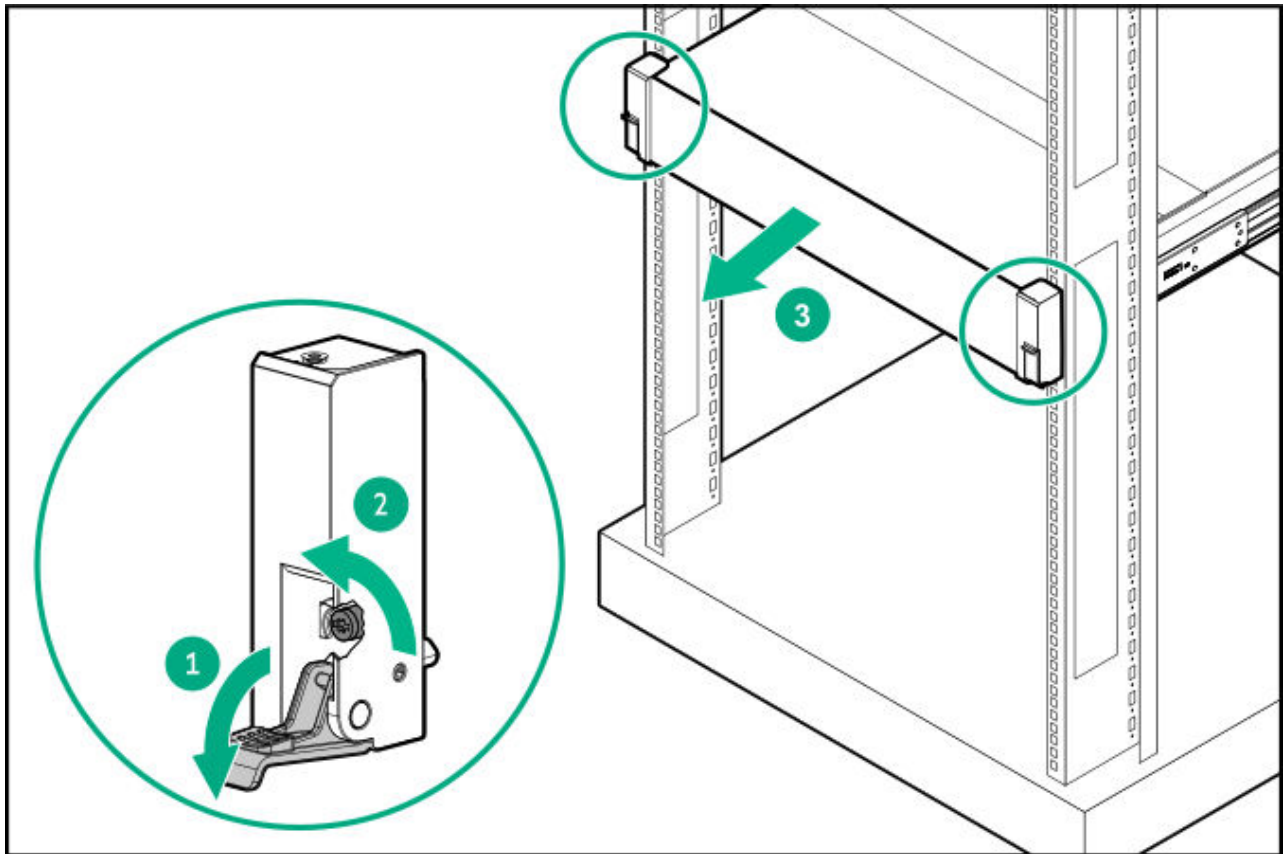
WARNING

To reduce the risk of personal injury, be careful when pressing the server rail-release latches. The inner rails could pinch your fingers.

Procedure

1. [Power down the server](#).

2. If installed, disconnect the DLC extension hoses from the DLC module.
3. If needed, loosen the shipping screws, and then use the chassis ear latches to slide the server out of the rack until the rail-release latches are engaged.



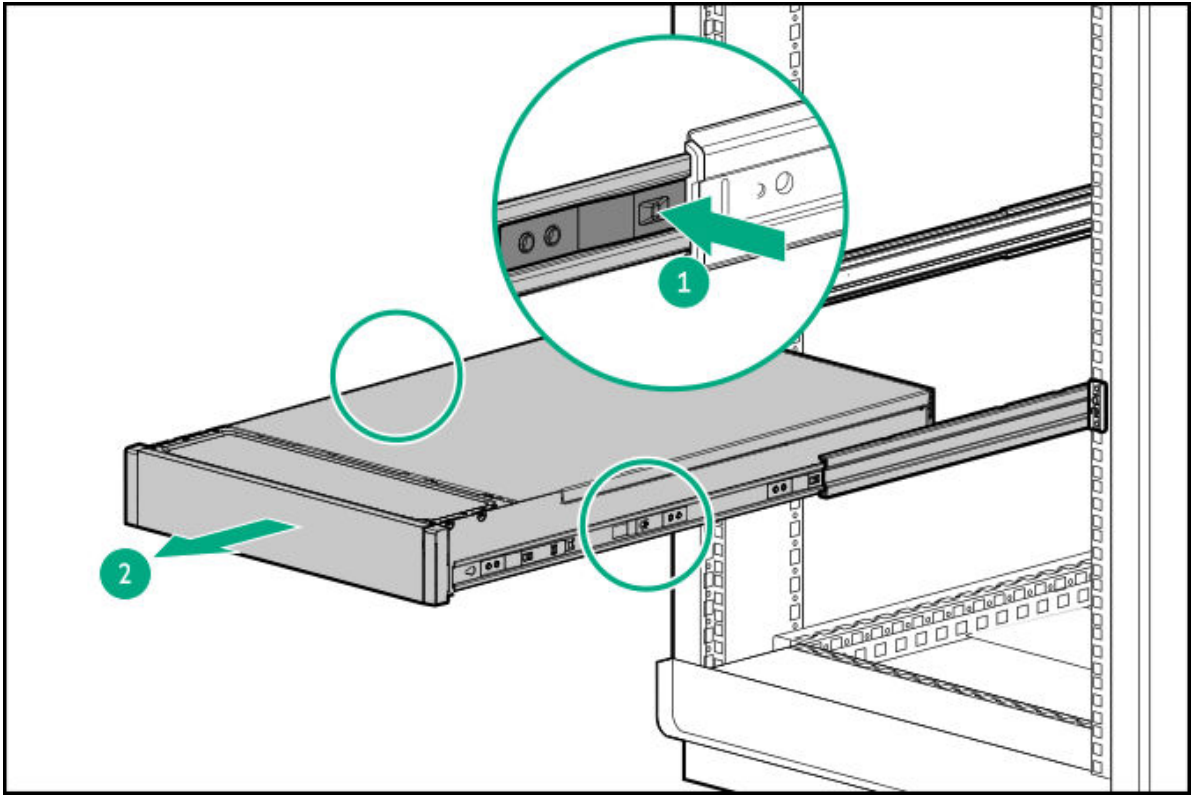
4. Extend the server from the rack:



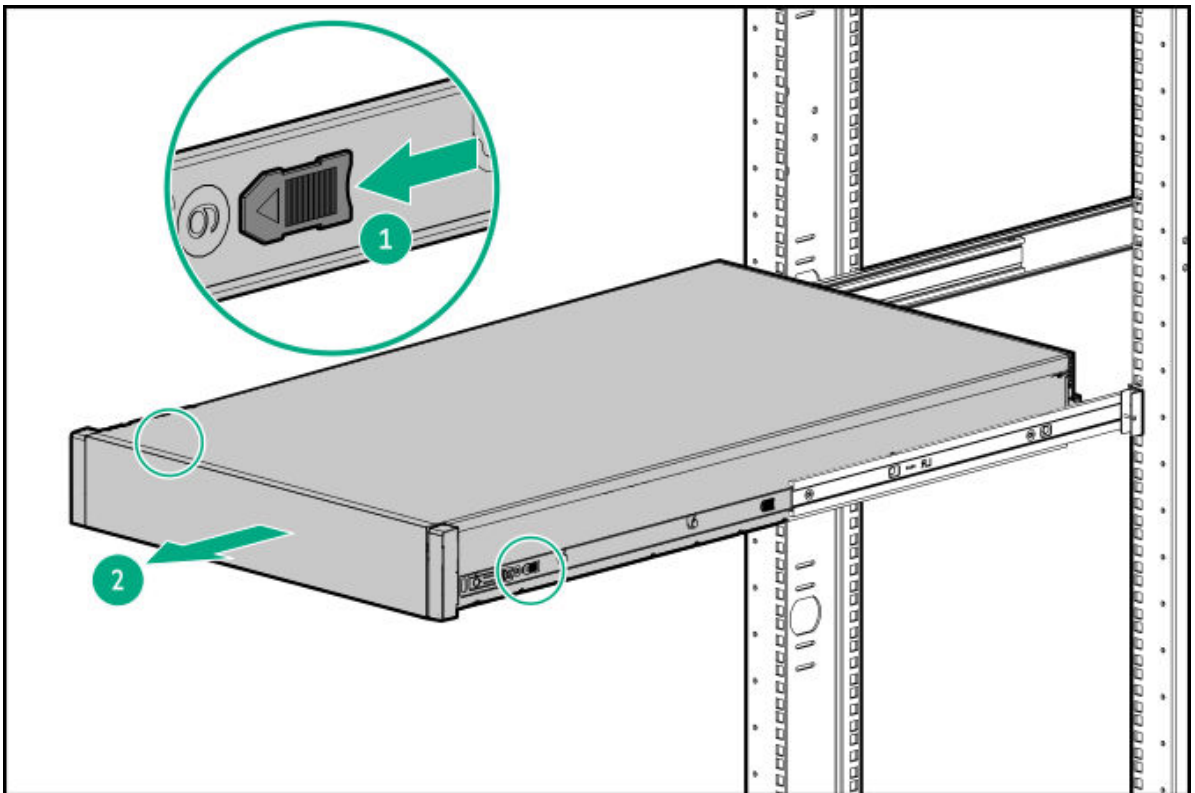
WARNING

To reduce the risk of personal injury, be careful when pressing the server rail-release latches. The inner rails could pinch your fingers.

- a. Press and hold the rail-release latches.
- b. Slide the server out of the rack until it is fully extended.
 - Friction rack rail



- Ball-bearing rack rail



Remove the server from the rack

Prerequisites

- Get help to lift and stabilize the server during removal from the rack. **If the server is installed higher than chest level, additional two people might be required to help remove the server:** One person to support the server weight, and the other two to slide the server out of the rack.
- 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 server components before removing the server from the rack.
- Before you perform this procedure, make sure that you have a T-25 Torx screwdriver available.

About this task

https://sketchfab.com/models/2c19c0bf754041f6adc5beef8e87b43d/embed?ui_infos=0&ui_watermark=0&ui_help=0&ui_vr=0&ui_settings=0&ui_inspector=0&ui_hint=2&ui_color=01a982&ui_theme=dark&autostart=1&camera=0

Procedure

1. [Power down the server.](#)
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. If installed, [disconnect the DLC extension hoses from the DLC module.](#)
4. Disconnect all peripheral cables from the server.
5. Extend the server from the rack:

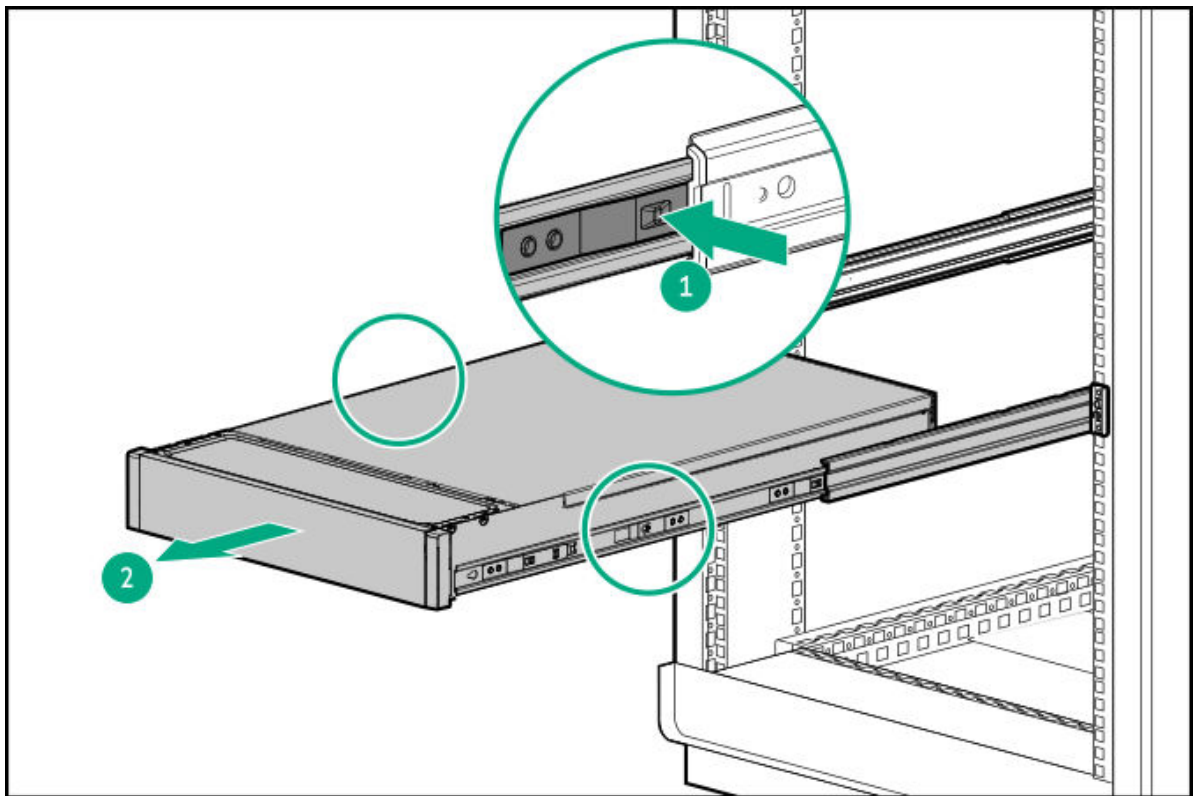


WARNING

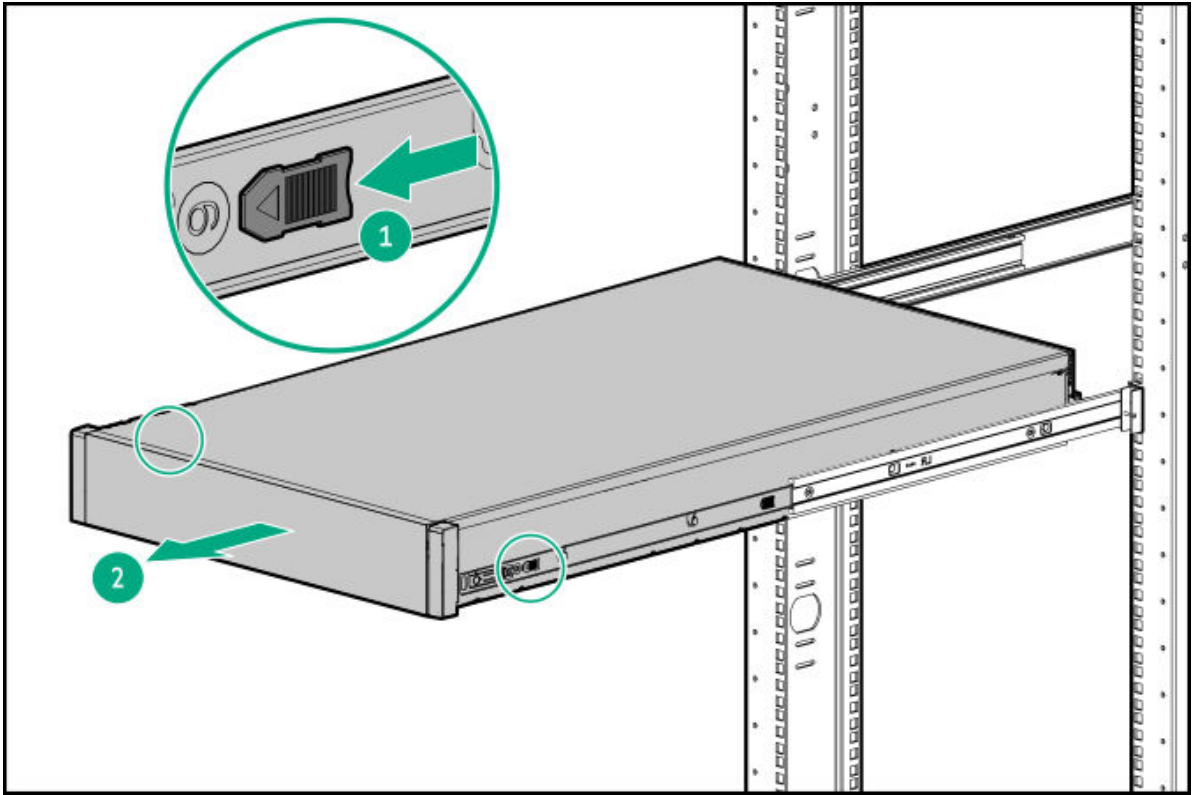
To reduce the risk of personal injury, be careful when pressing the server rail-release latches. The inner rails could pinch your fingers.

- a. Press and hold the rail-release latches.
- b. Slide the server out of the rack until it is fully extended.

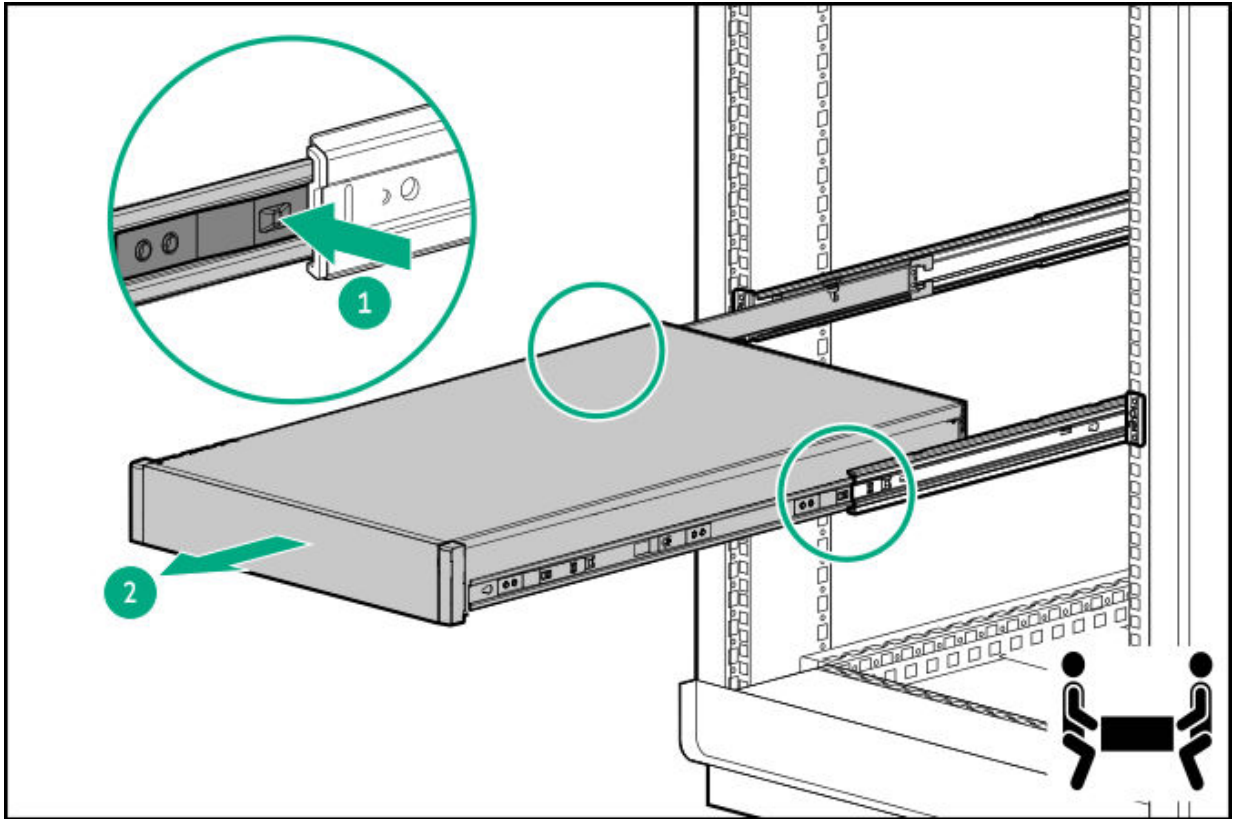
- Friction rack rail



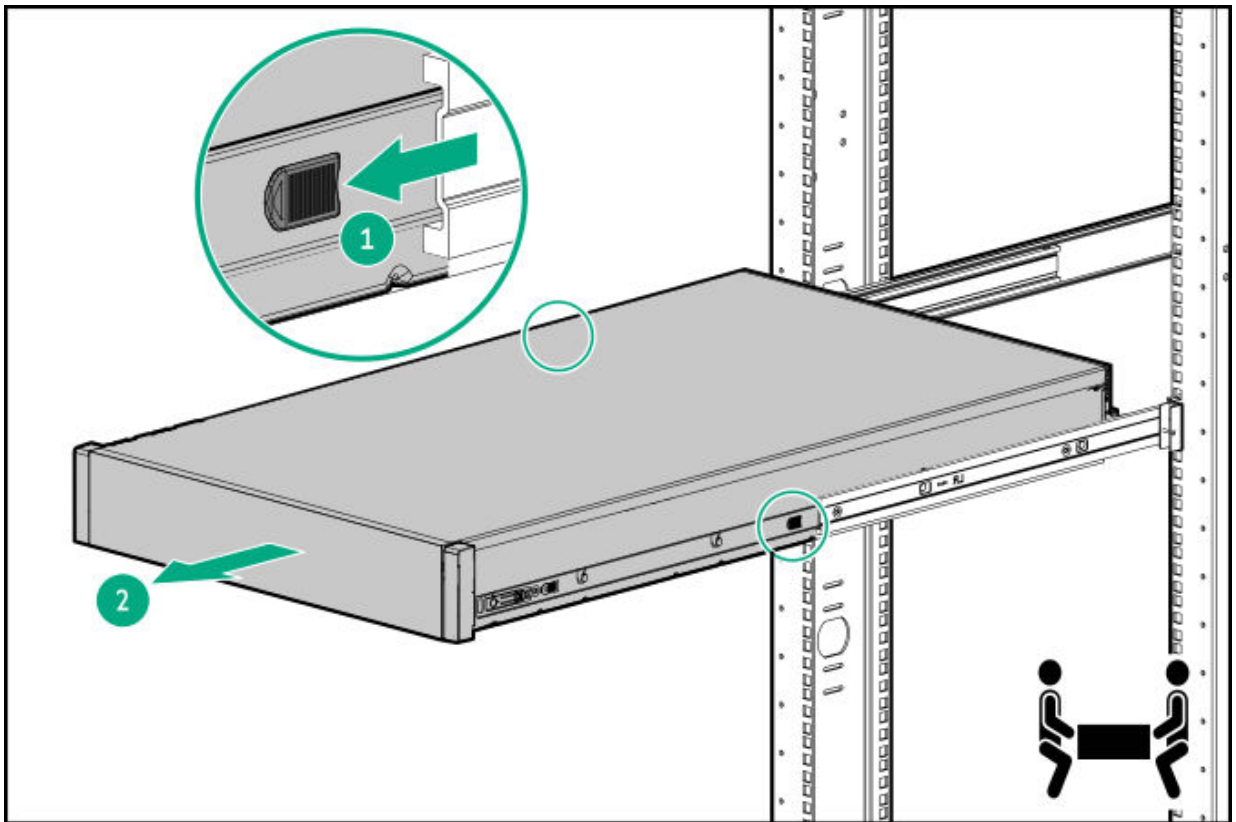
- Ball-bearing rack rail



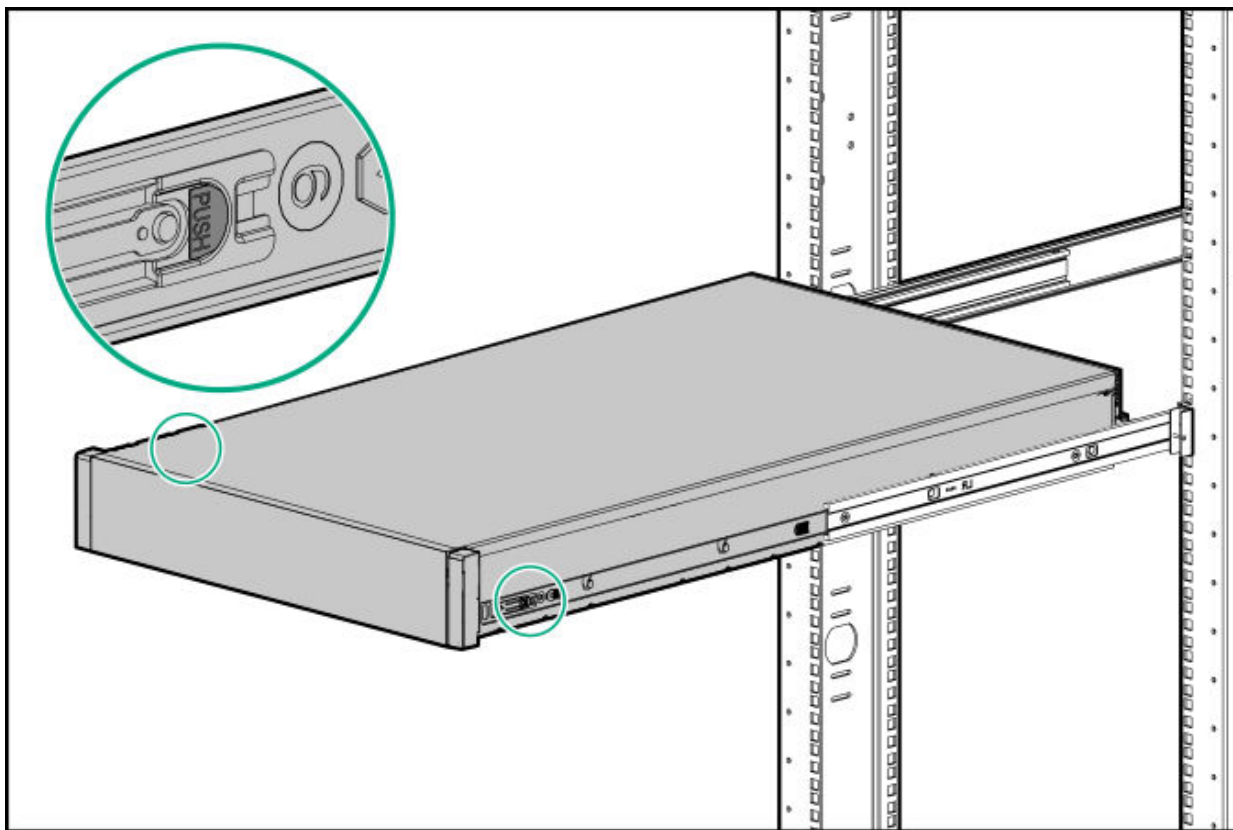
6. To remove the server from the friction / ball-bearing rack rail:
 - a. Press and hold the rear-end server-release latches.
 - b. Slide the server completely out of the rack.
 - Friction rack rail



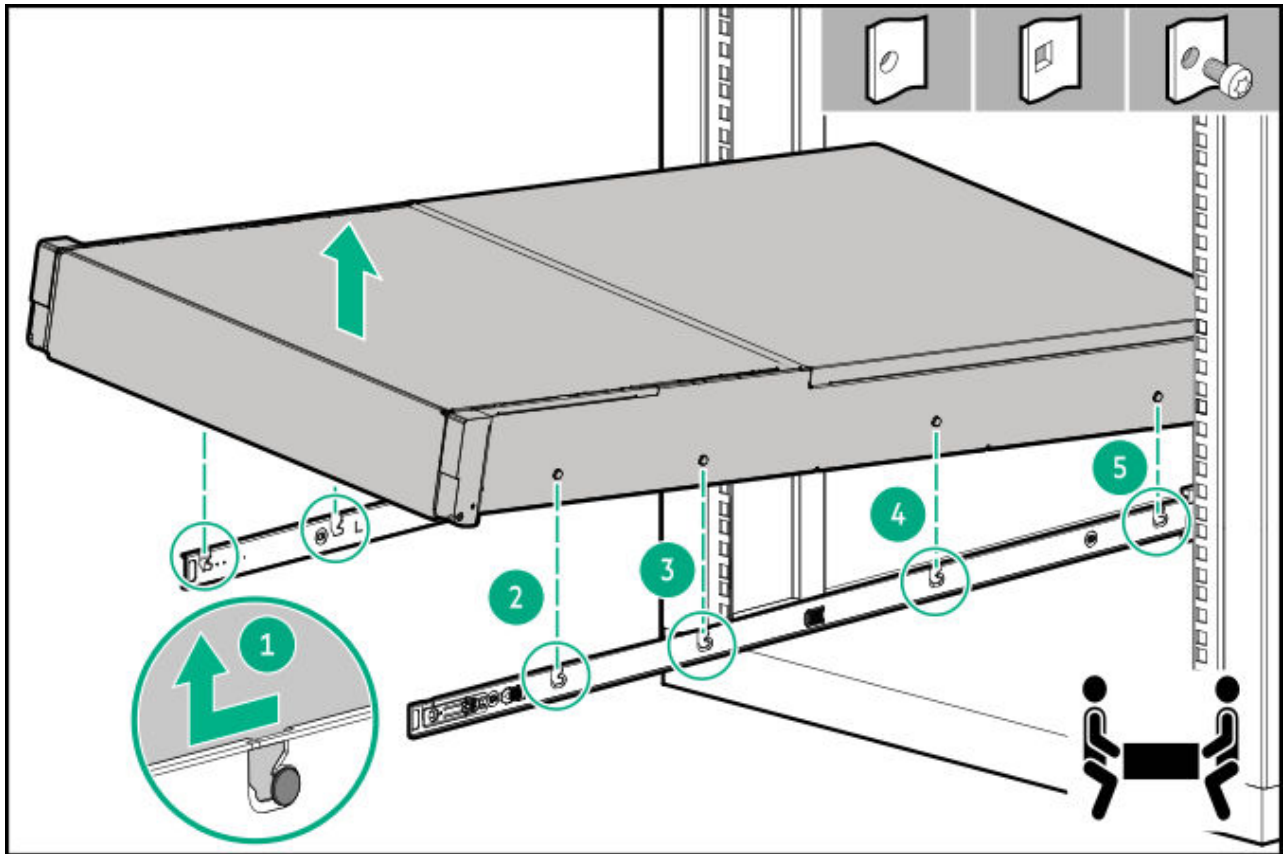
- Ball-bearing rack rail



7. To remove the server from the ball-bearing rack rail:
 - a. Press and hold the server-release latches.



- b. Slide the server to disengage from the notches on the sliding rails.
 - c. Lift the server from the rack rail.



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

Remove the access panel

Prerequisites

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

About this task



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.



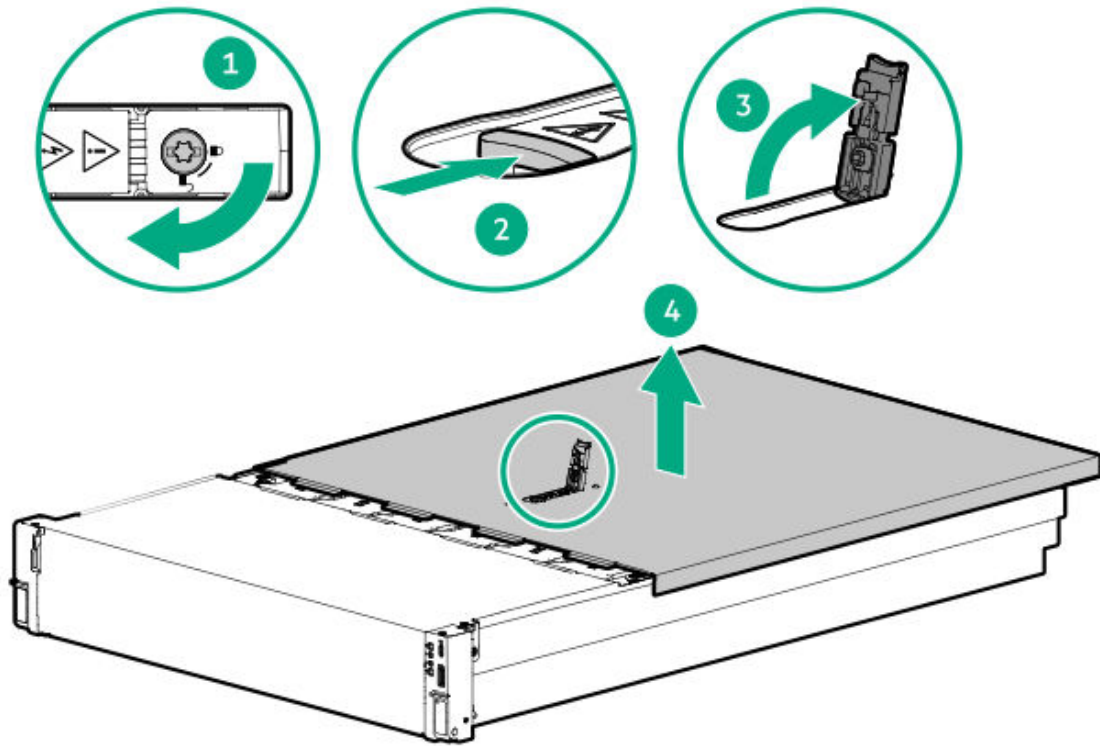
CAUTION

To maintain proper system cooling, do not operate the server for long period with the access panel open or removed. Operating the server in this manner results in an improper system airflow. For internal hot-plug component procedures, complete the procedure within 60 seconds. Failure to do so can cause the system temperature to increase and trip the safety threshold. When this happens:

- The health LED flashes amber.
- The operating system gracefully shuts down.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel:
 - a. If necessary, unlock the access panel latch.
 - b. To disengage the access panel from the chassis, press the release button and pull up the latch.
 - c. Lift the access panel.



Remove the air baffle

About this task

https://sketchfab.com/models/418fc3a8f6564e4b843617bec977fa32/embed?ui_infos=0&ui_watermark=0&ui_help=0&ui_vr=0&ui_settings=0&ui_inspector=0&ui_hint=2&ui_color=01a982&ui_theme=dark&autostart=1&camera=0



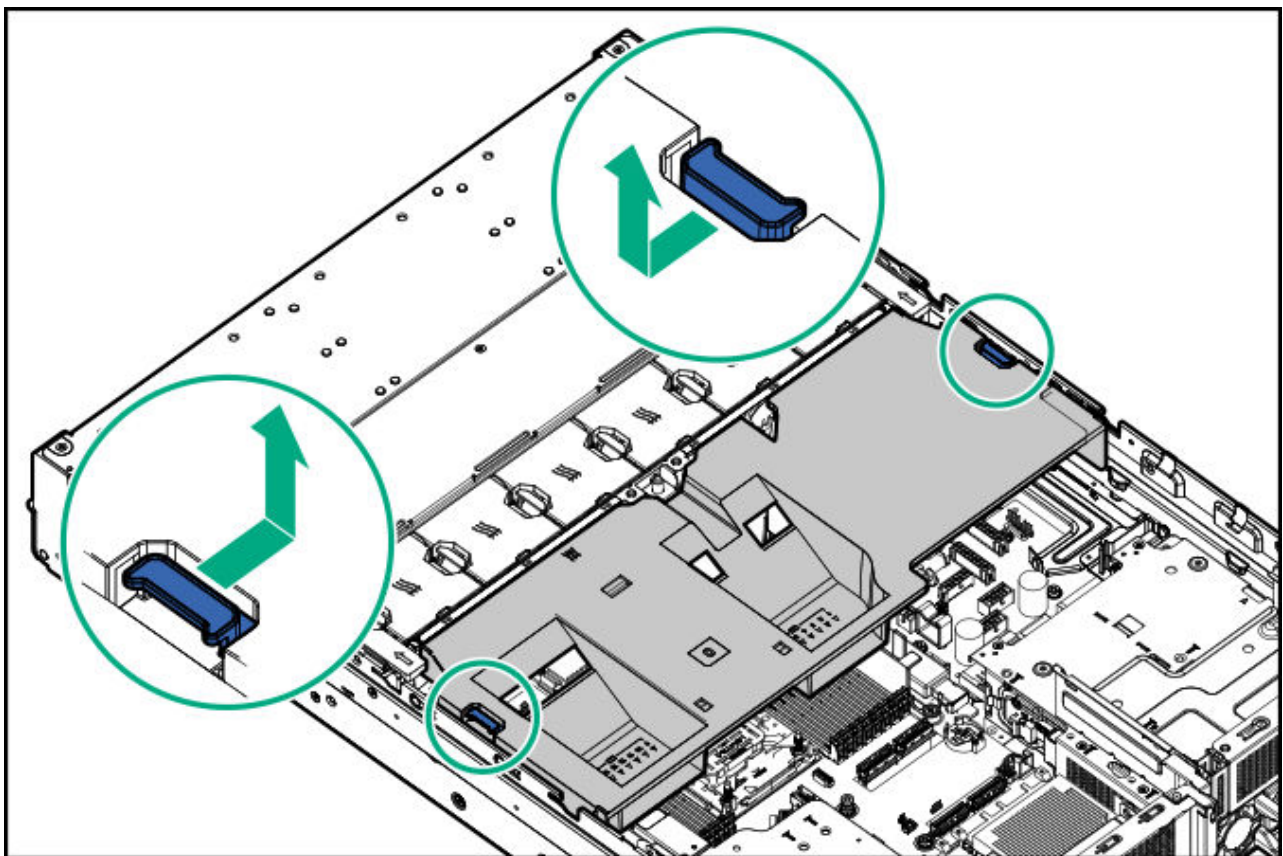
CAUTION

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. Power down the server.
2. Remove all power:

- a. Disconnect each power cord from the power source.
- b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Press and hold the latches, and then lift the air baffle.

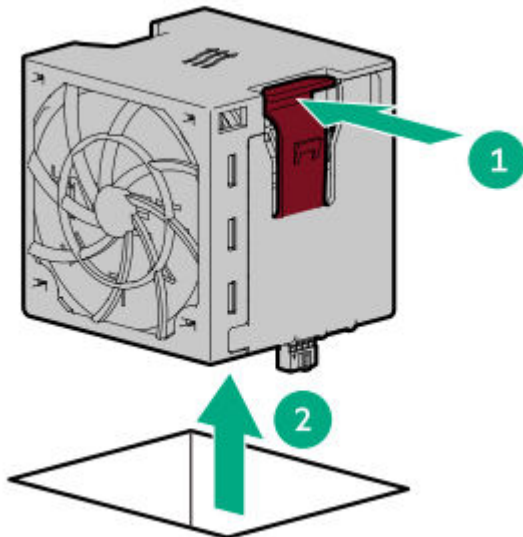


Remove the fan cage

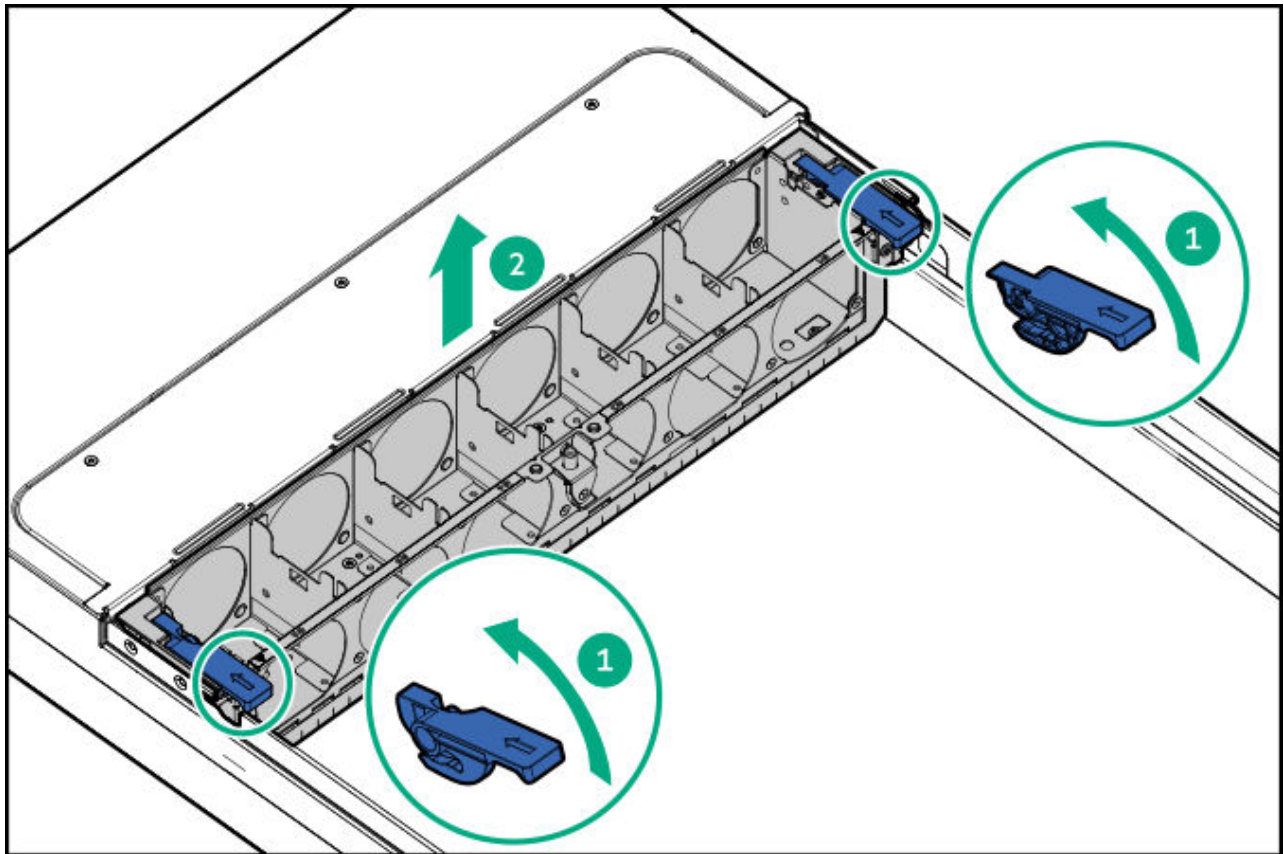
Procedure

1. Power down the server.

2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove all fans.



8. Open the fan cage latches, and then lift the fan cage from the server.



Remove the midwall bracket

Prerequisites

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

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.

- Remove the server from the rack.

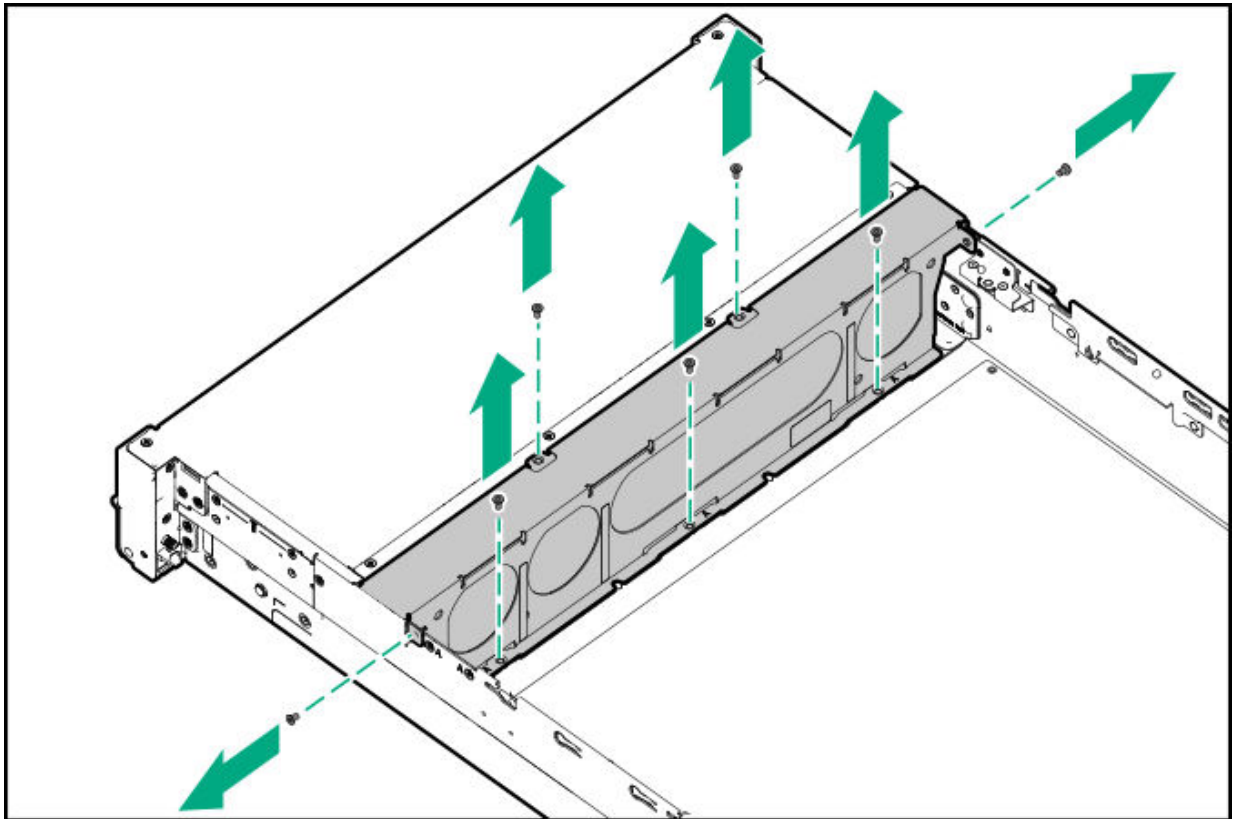
5. Remove the access panel.

6. Remove the air baffle.

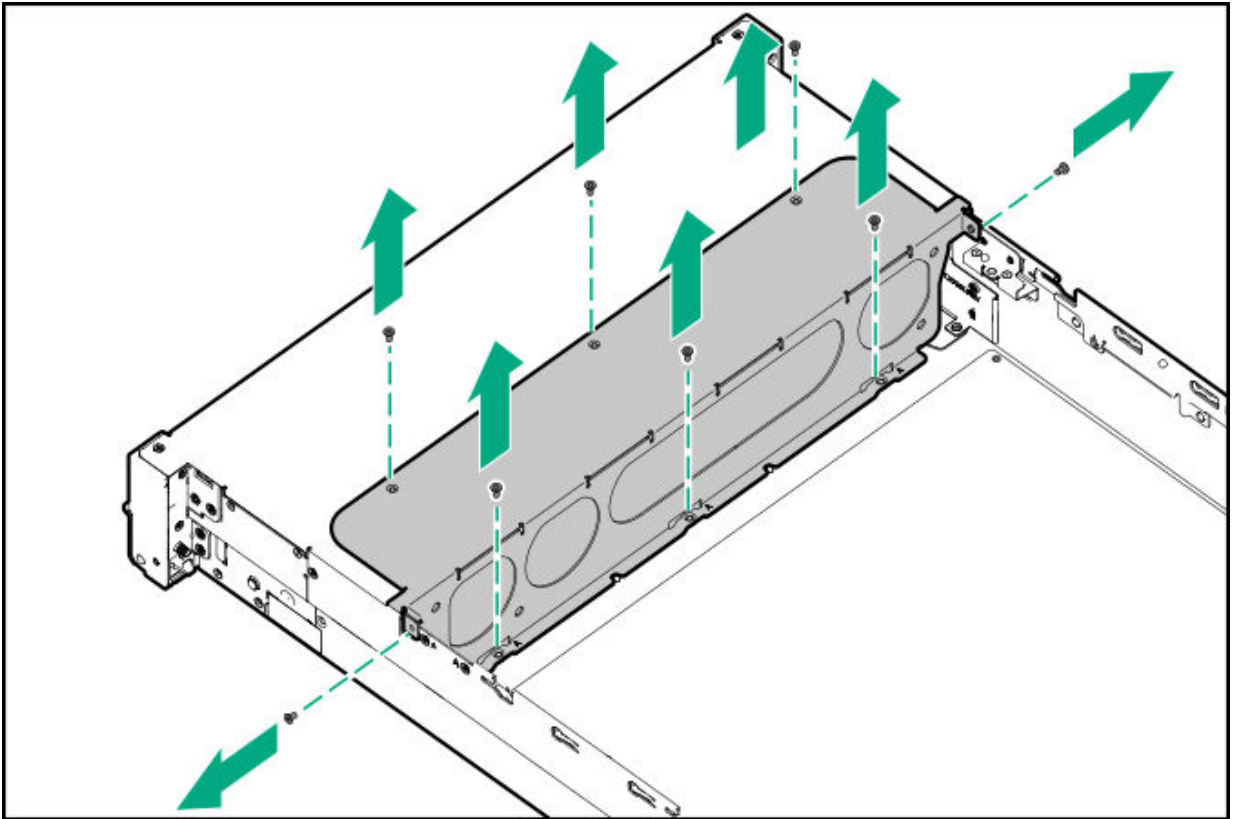
7. Remove the fan cage.

8. Remove the midwall bracket screws.

- LFF chassis

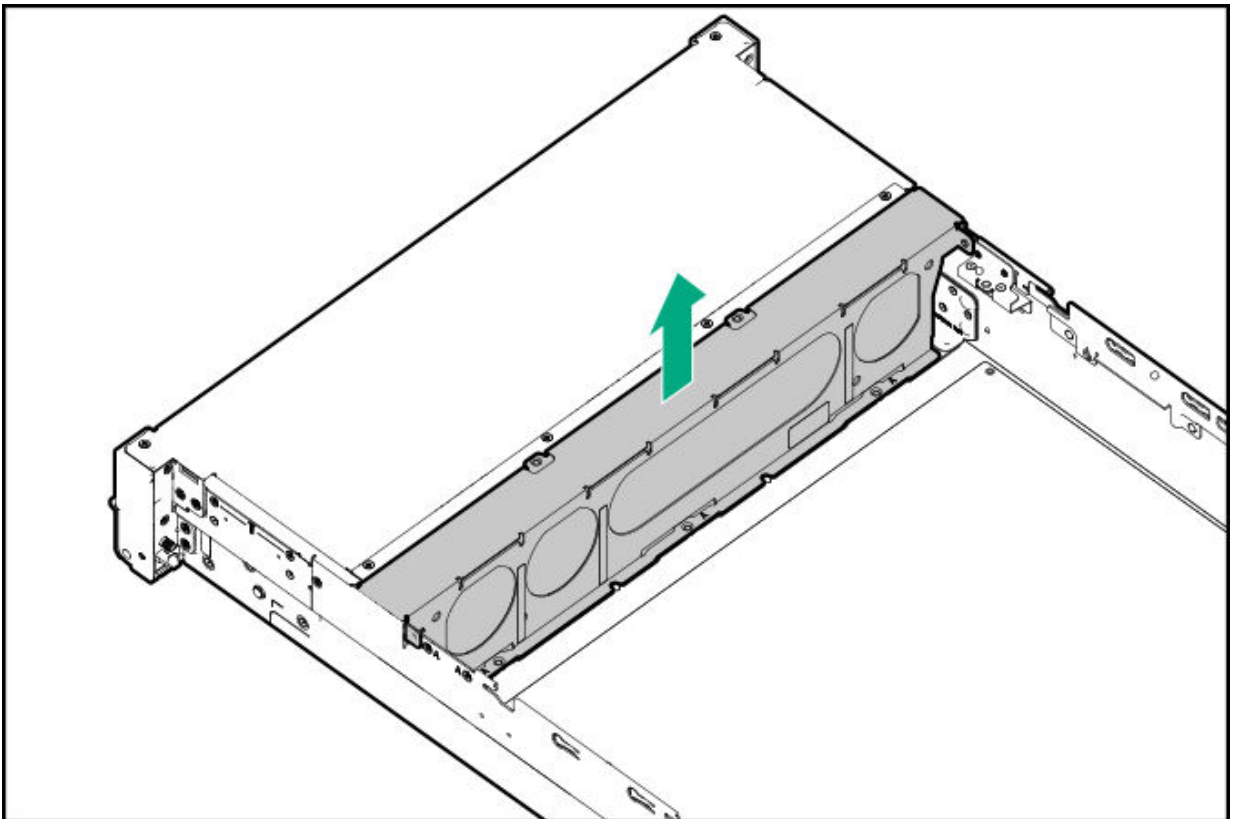


- SFF chassis

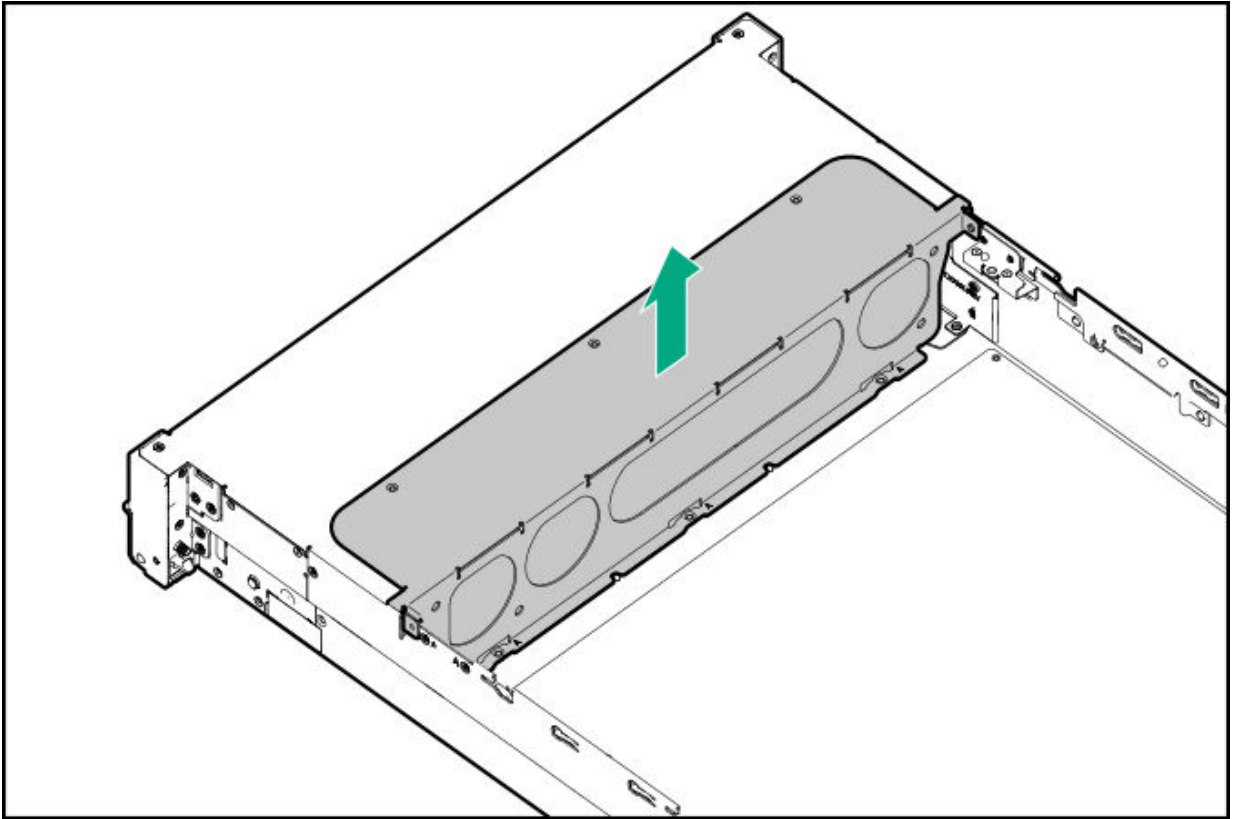


9. Lift the midwall bracket away from the chassis.

- LFF chassis



- SFF chassis



Remove the LFF drive backplane bracket

Prerequisites

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

About this task

The drive backplane bracket is only present in LFF drive configurations.

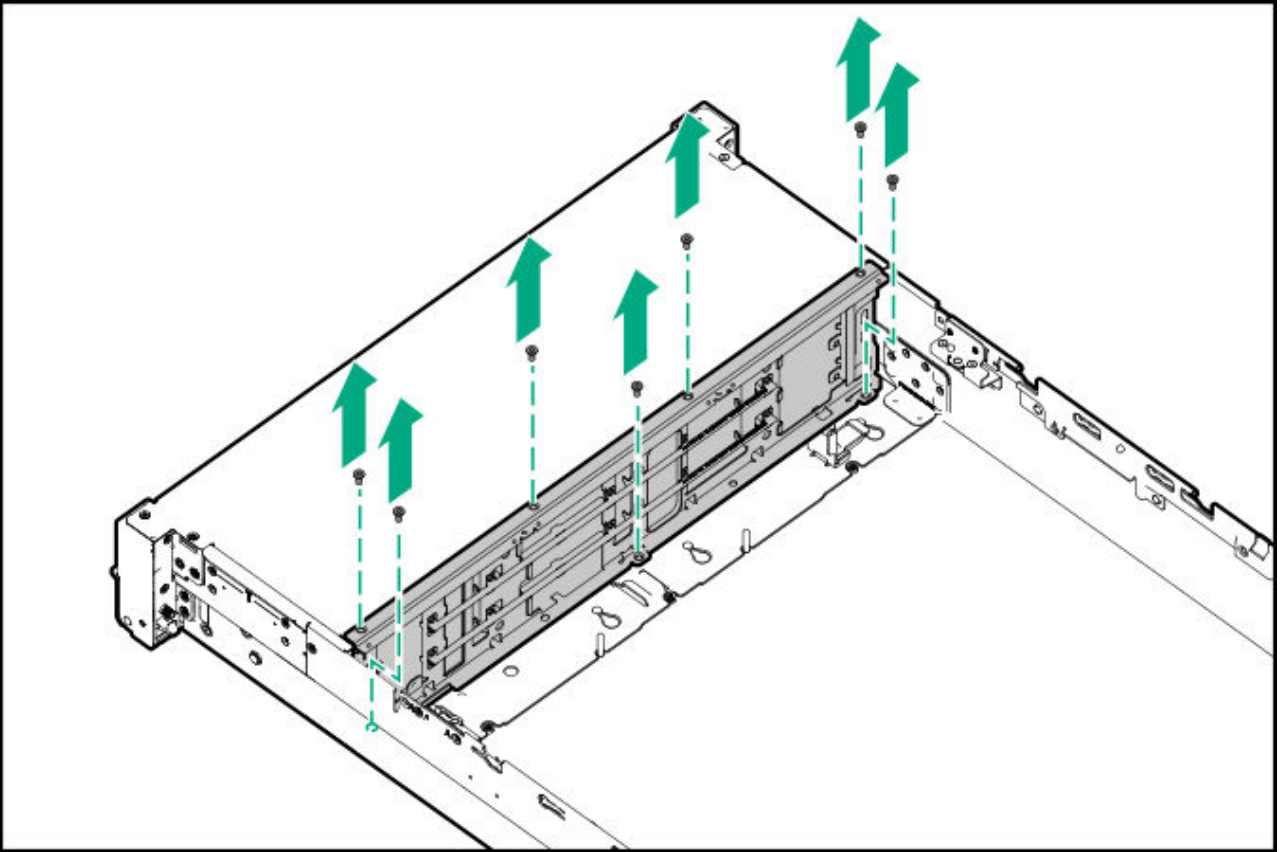


CAUTION

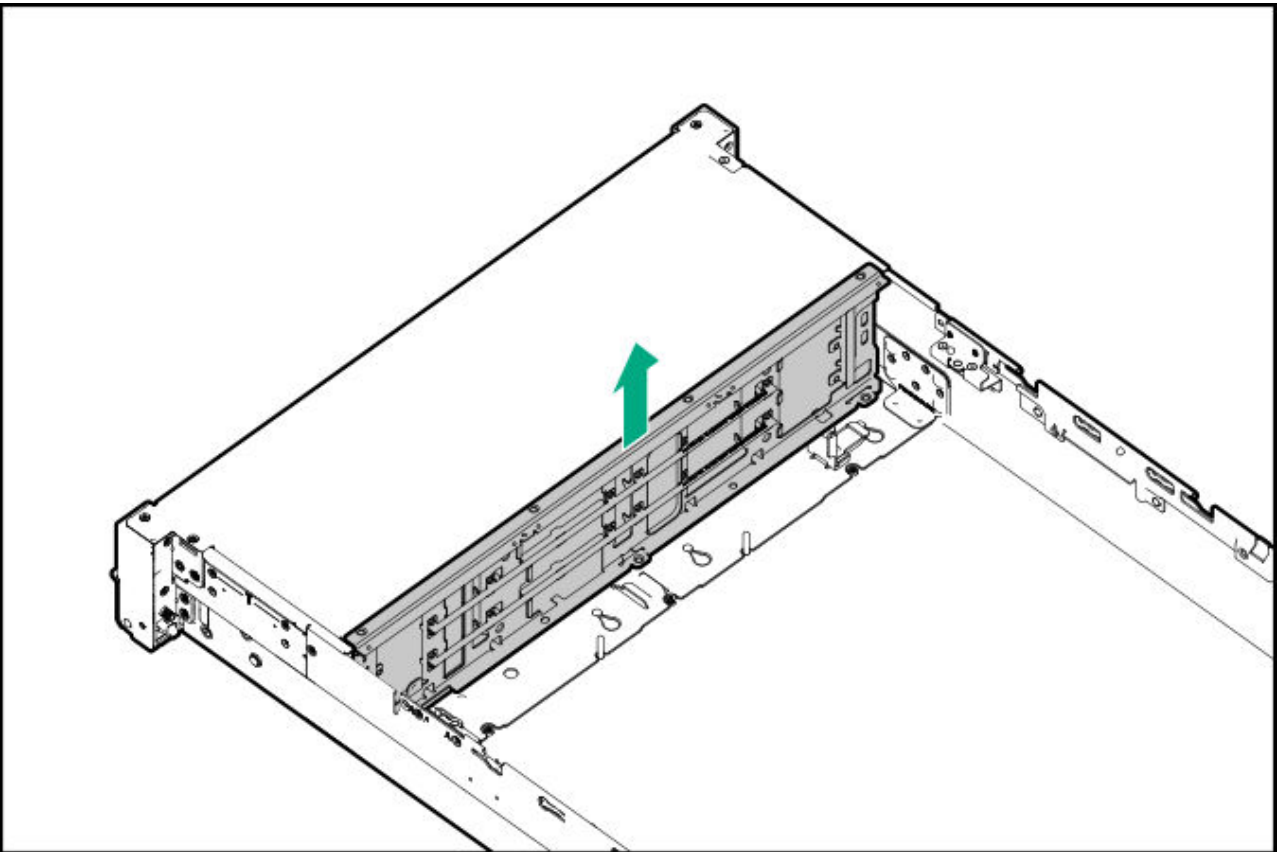
To prevent damage to electrical components, properly ground the server before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the fan cage.
8. Remove the midwall bracket.
9. Disconnect all cables from the drive backplanes.
10. Remove the drive backplane bracket screws.



.1. Remove the drive backplane bracket from the server.



Remove the middle cover

About this task



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.

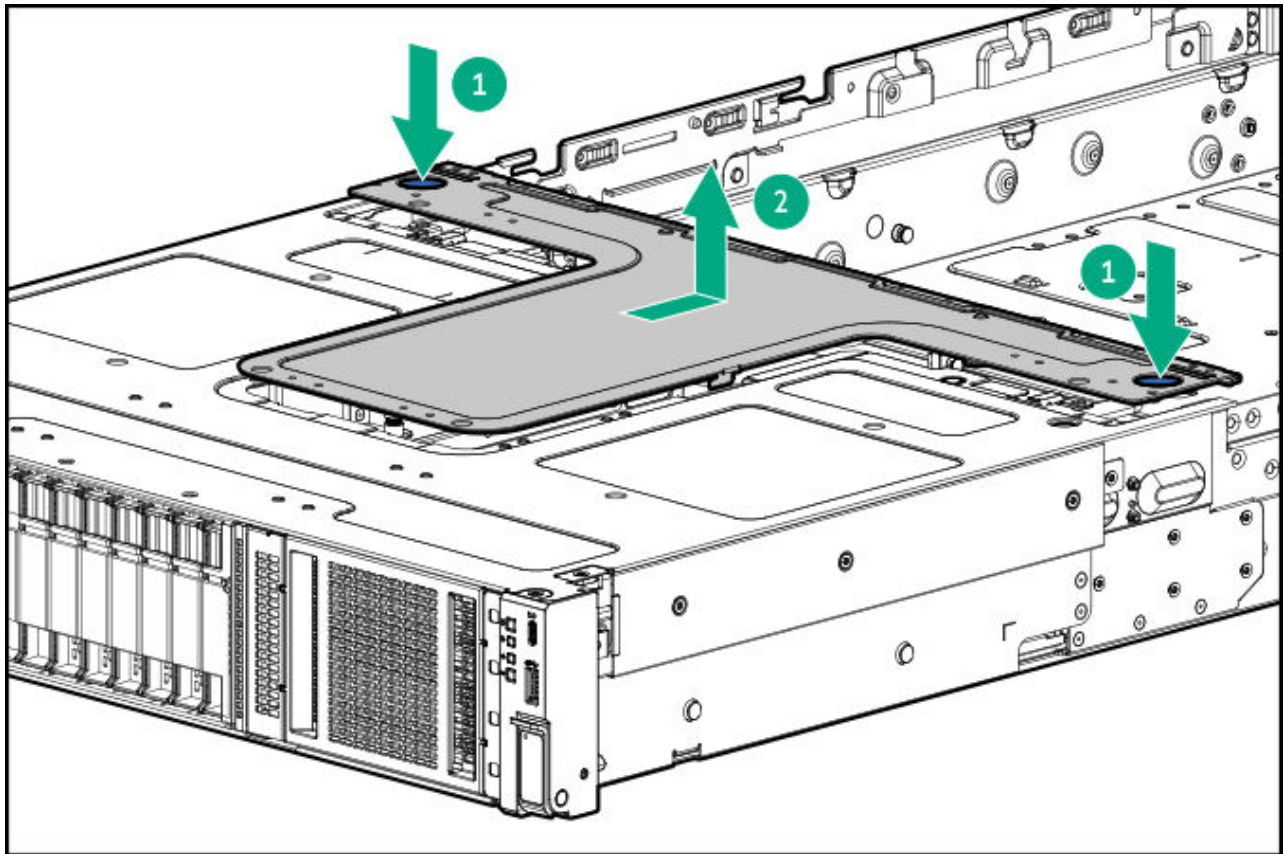


CAUTION

For proper cooling, do not operate the server without the access panel, baffles, expansion slot covers, or blanks installed.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the fan cage.
8. Remove the middle cover.



Remove the riser cage

About this task

https://sketchfab.com/models/1657ac68f7044eca94f1b1b5837f95b6/embed?ui_infos=0&ui_watermark=0&ui_help=0&ui_vr=0&ui_settings=0&ui_inspector=0&ui_hint=2&ui_color=01a982&ui_theme=dark&autostart=1&camera=0



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.

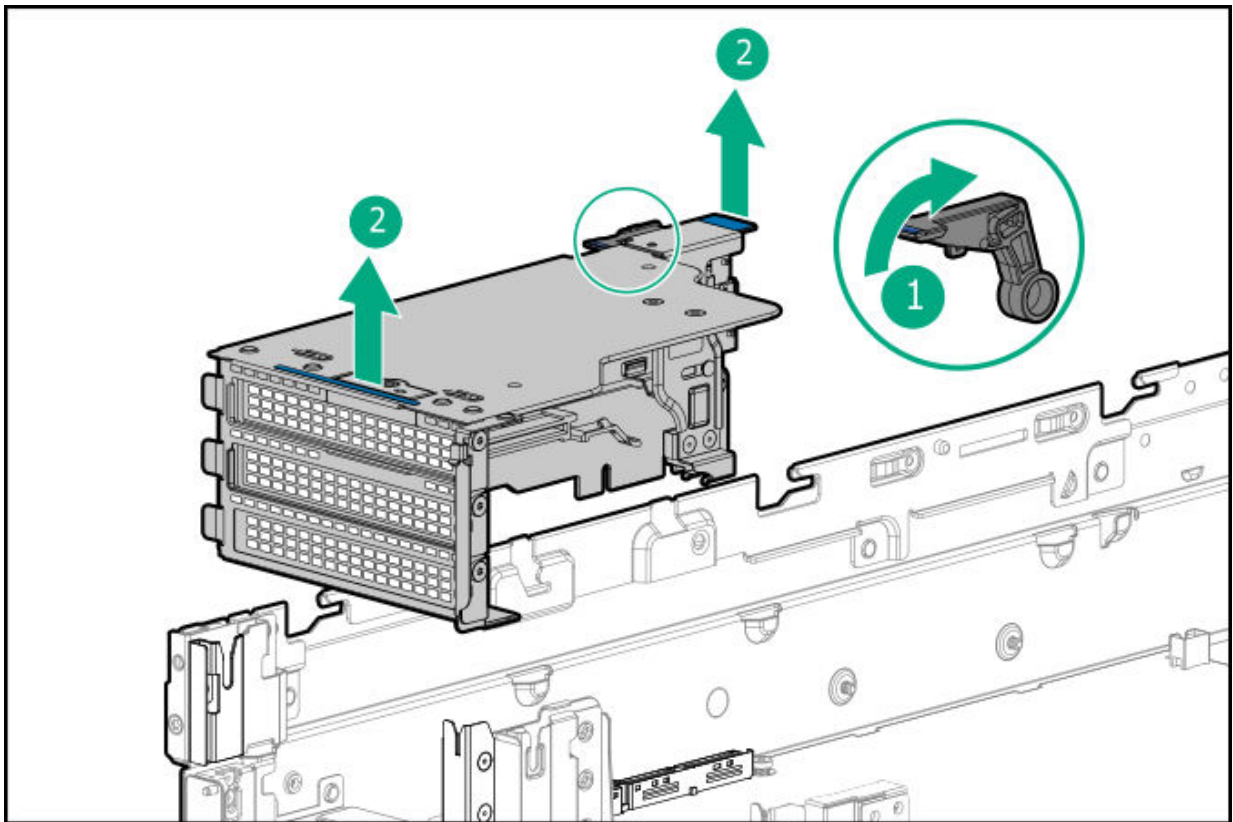


CAUTION

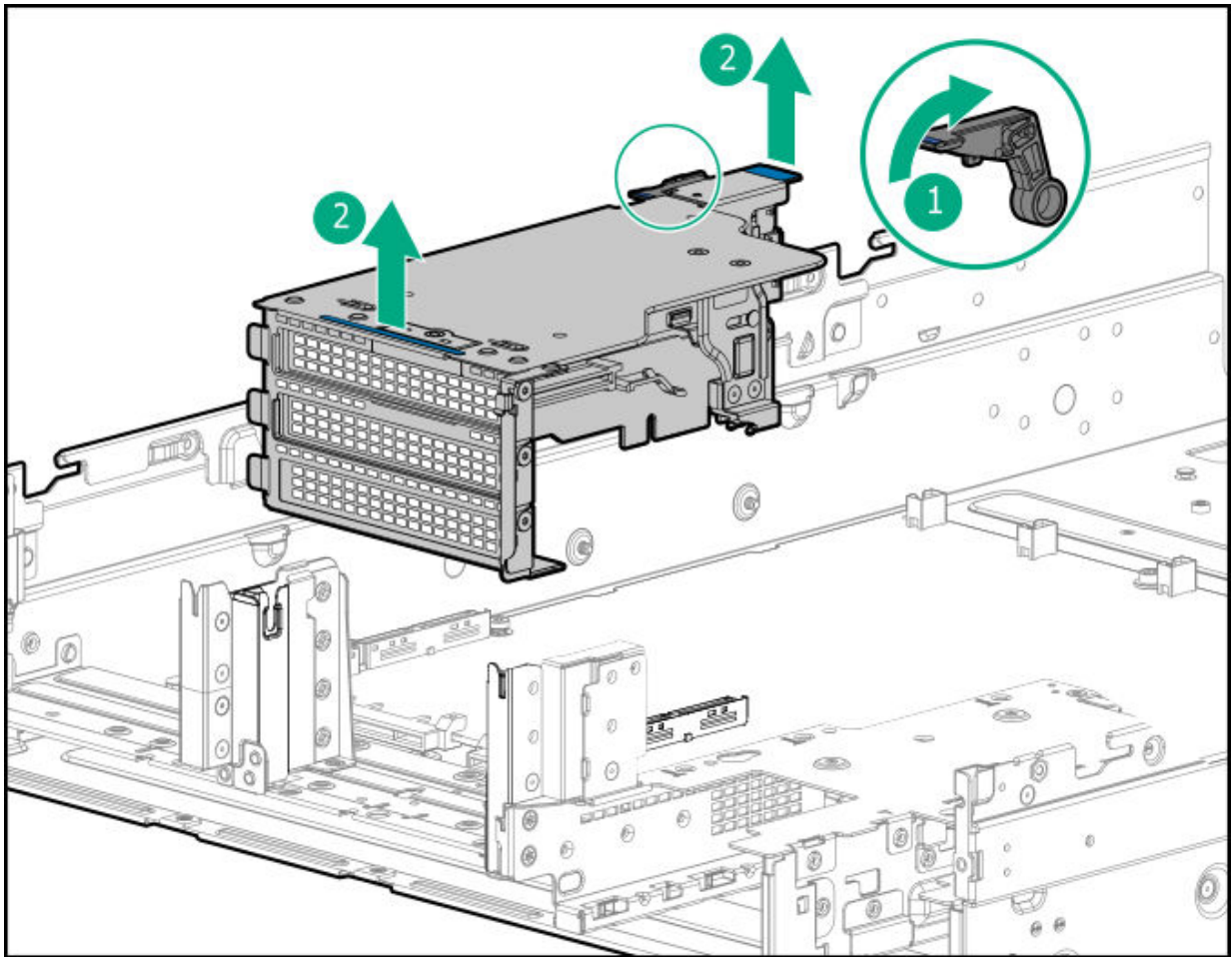
To prevent improper cooling and thermal damage, do not operate the server unless either riser blank or riser cage is installed.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. If an expansion card with internal cables is installed on the riser, disconnect the cables from the card.
8. Open the latch, and then lift the riser cage.
 - Primary riser cage



- Secondary riser cage



Remove the secondary riser cage blank

Prerequisites

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

About this task



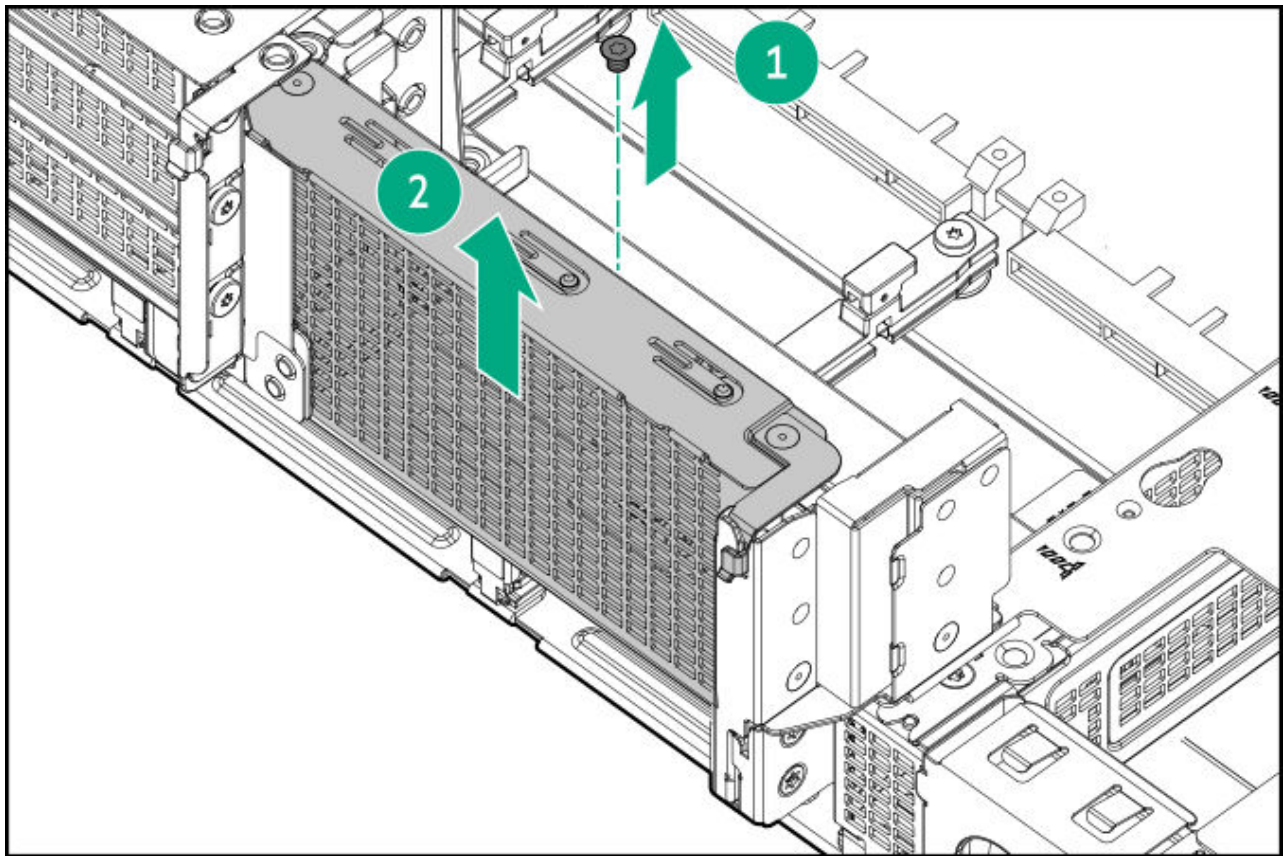
CAUTION

To prevent improper cooling and thermal damage, do not operate the server unless either riser blank or riser cage is installed.

Procedure

1. [Power down the server.](#)

2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the secondary riser cage blank.



Remove the rear boot device holder

Prerequisites

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

About this task

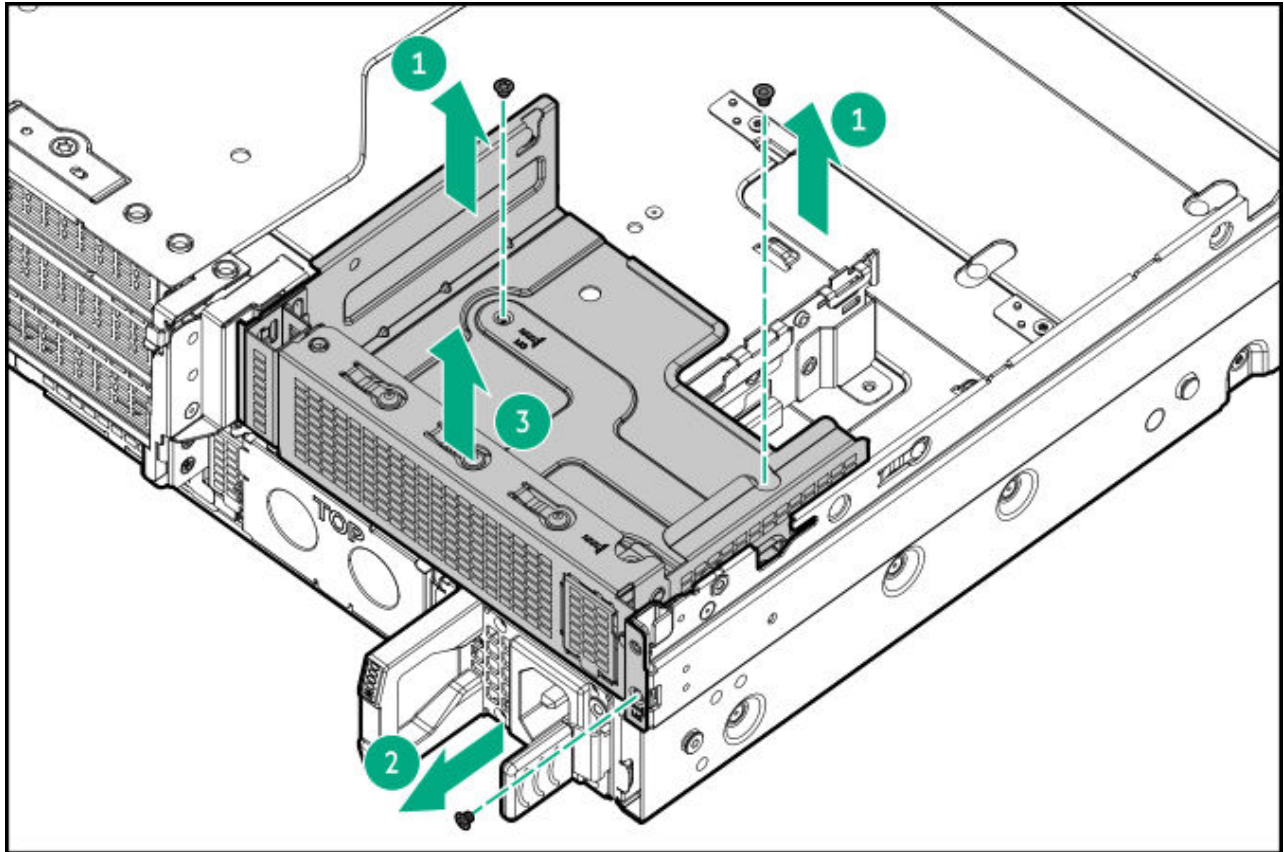


WARNING

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. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the rear boot device holder.



Post-installation procedures

Subtopics

- [Install the rear boot device holder](#)
- [Install the secondary riser cage blank](#)
- [Install the riser cage](#)
- [Install the LFF drive backplane bracket](#)
- [Install the middle cover](#)
- [Install the midwall bracket](#)
- [Install the fan cage](#)
- [Install the air baffle](#)
- [Install the access panel](#)
- [Install the server into the rack](#)
- [Connect the DLC extension hose](#)
- [Install the front bezel](#)
- [Power up the server](#)

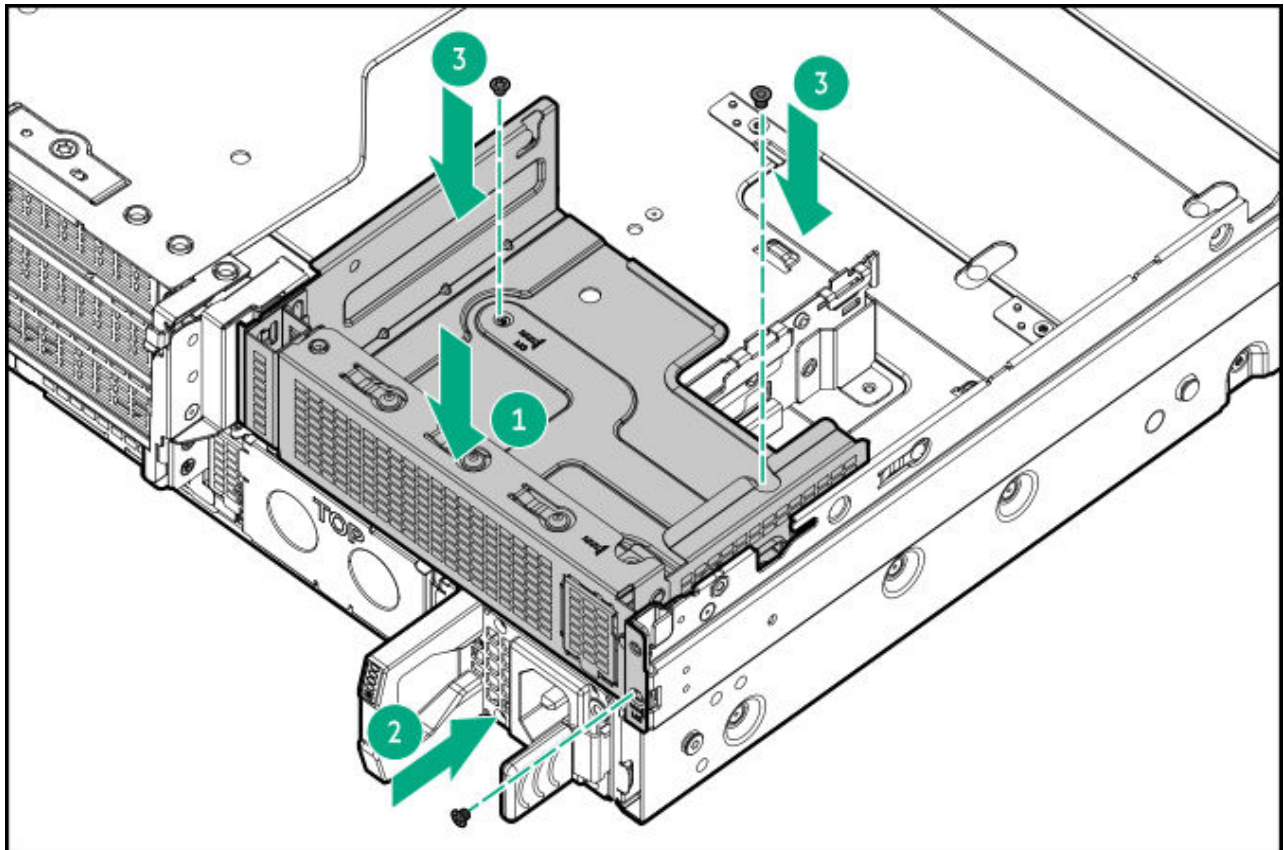
Install the rear boot device holder

Prerequisites

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

Procedure

1. Install the rear boot device holder.



2. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the rear boot device holder.

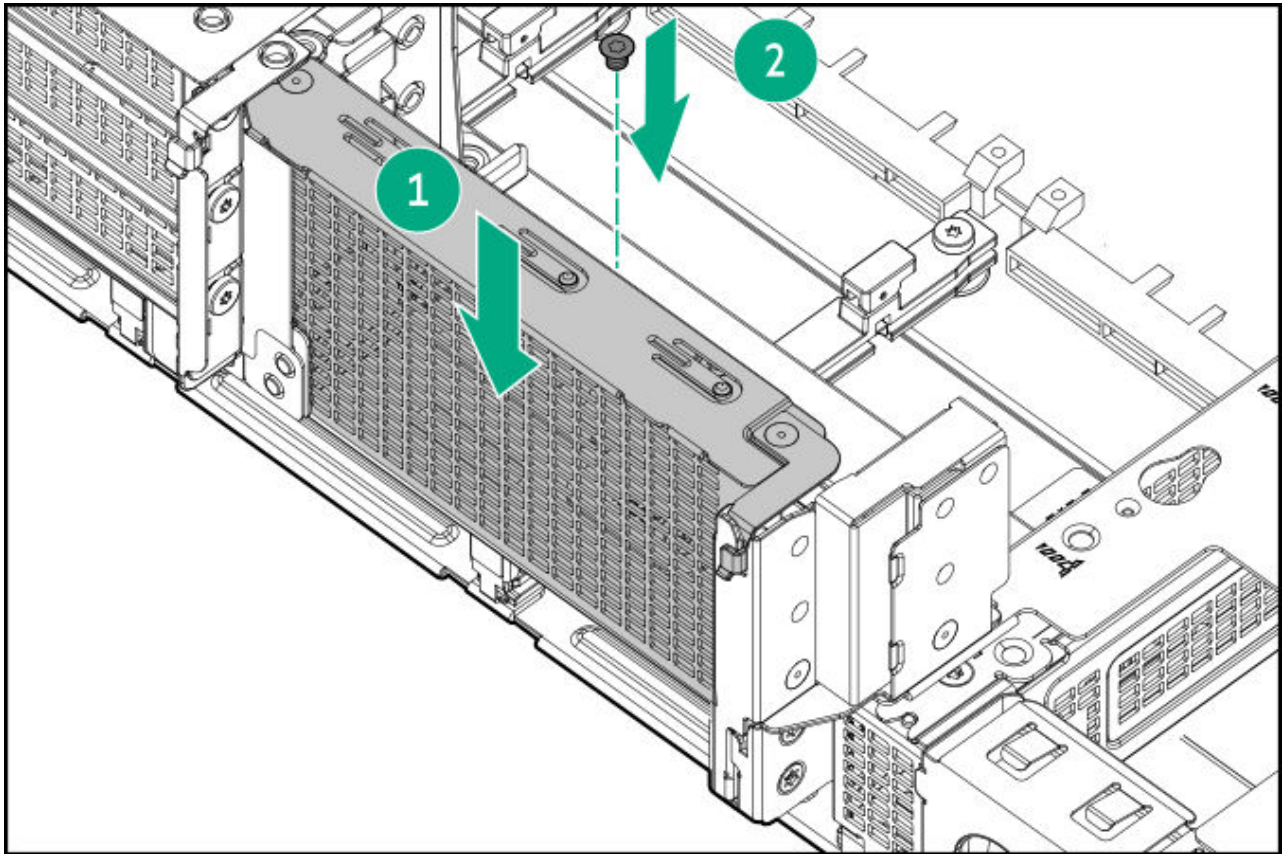
Install the secondary riser cage blank

Prerequisites

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

Procedure

1. Install the secondary riser cage blank.



2. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the secondary riser cage blank.

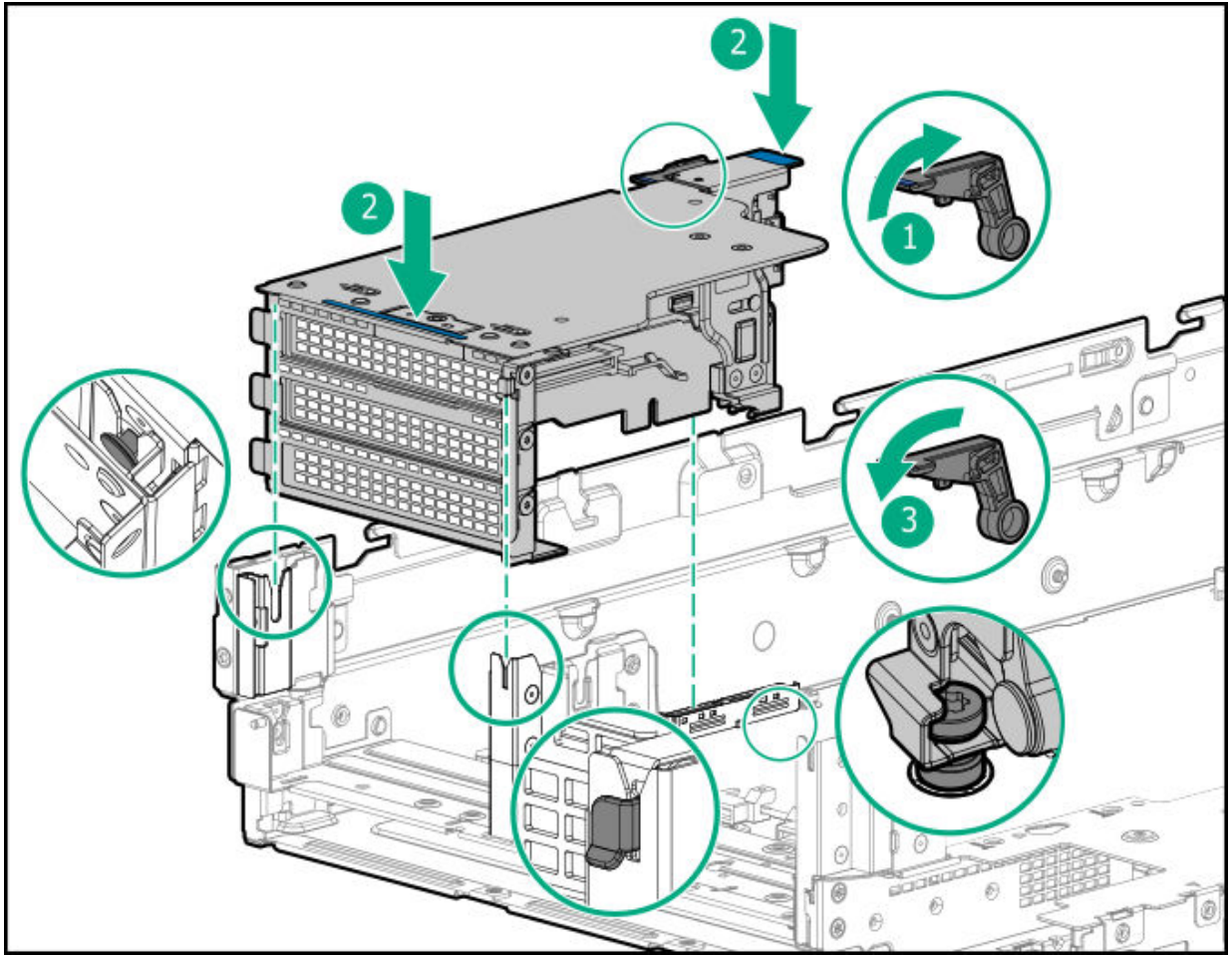
Install the riser cage

Procedure

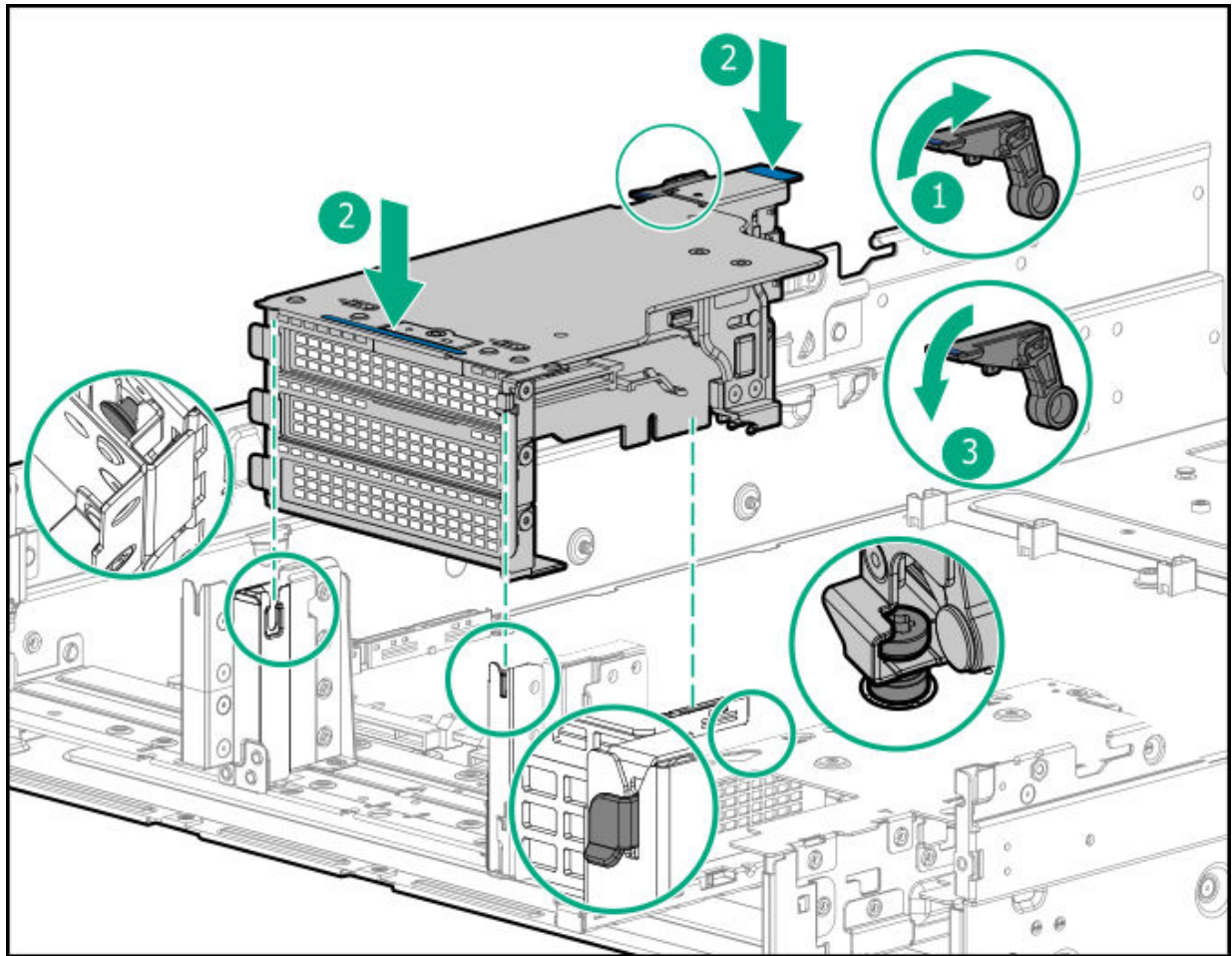
1. If an expansion card or its internal cabling was removed, reinstall these components.
2. Install the riser on the system board, and then close the latch.

Make sure that the riser cage is secured with the screw spool on the system board.

- Primary riser cage



- Secondary riser cage



3. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the riser cage.

Install the LFF drive backplane bracket

Prerequisites

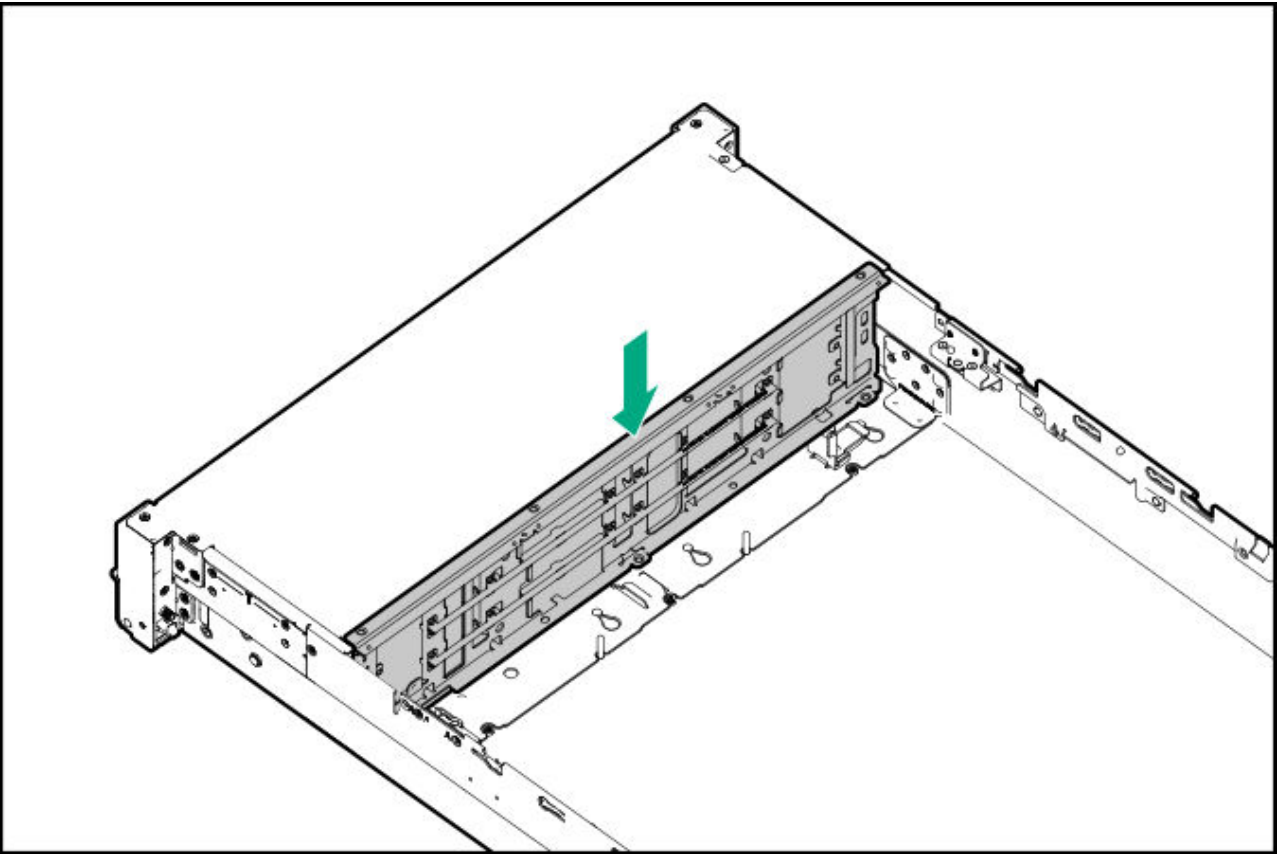
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task

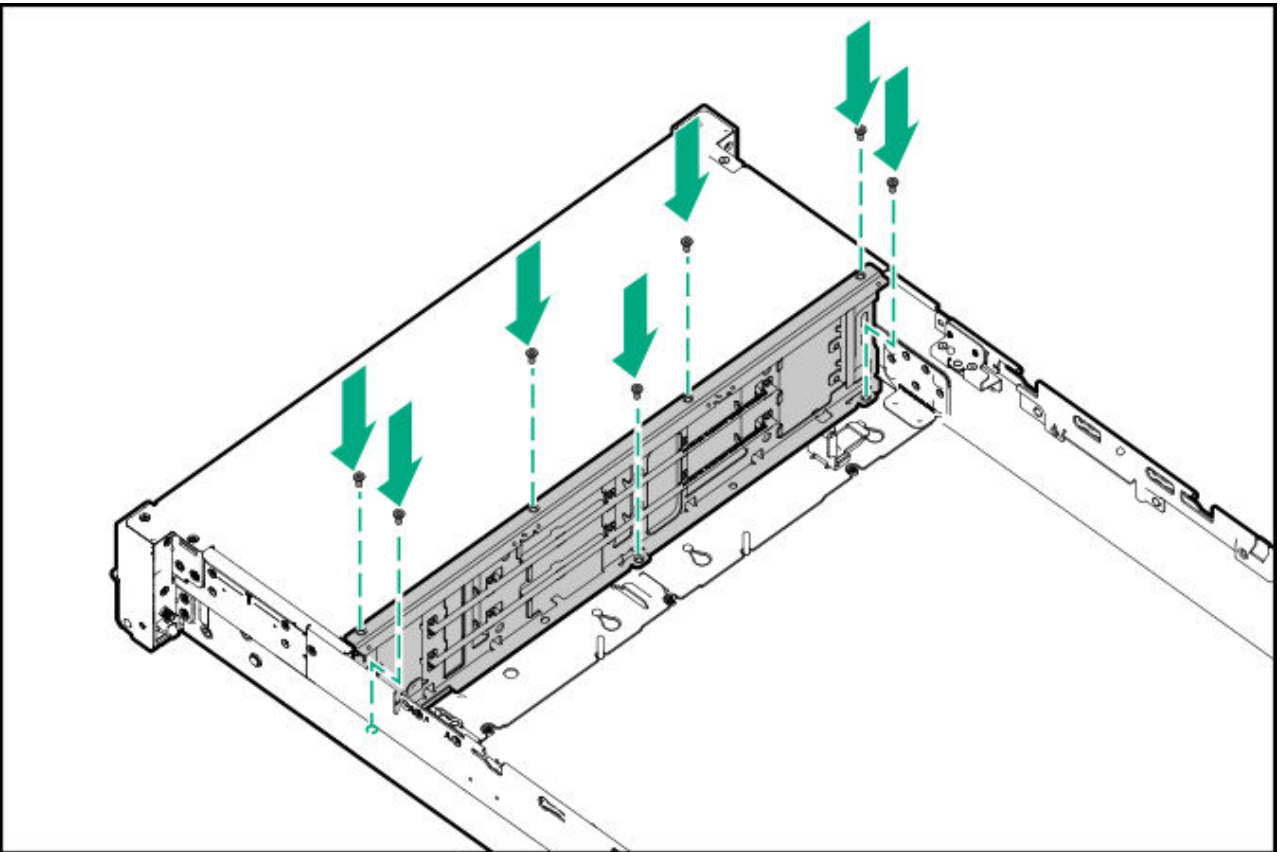
The drive backplane bracket is only present in LFF drive configurations.

Procedure

1. Fit the drive backplane bracket behind the drive cage.



2. Install the drive backplane bracket screws.



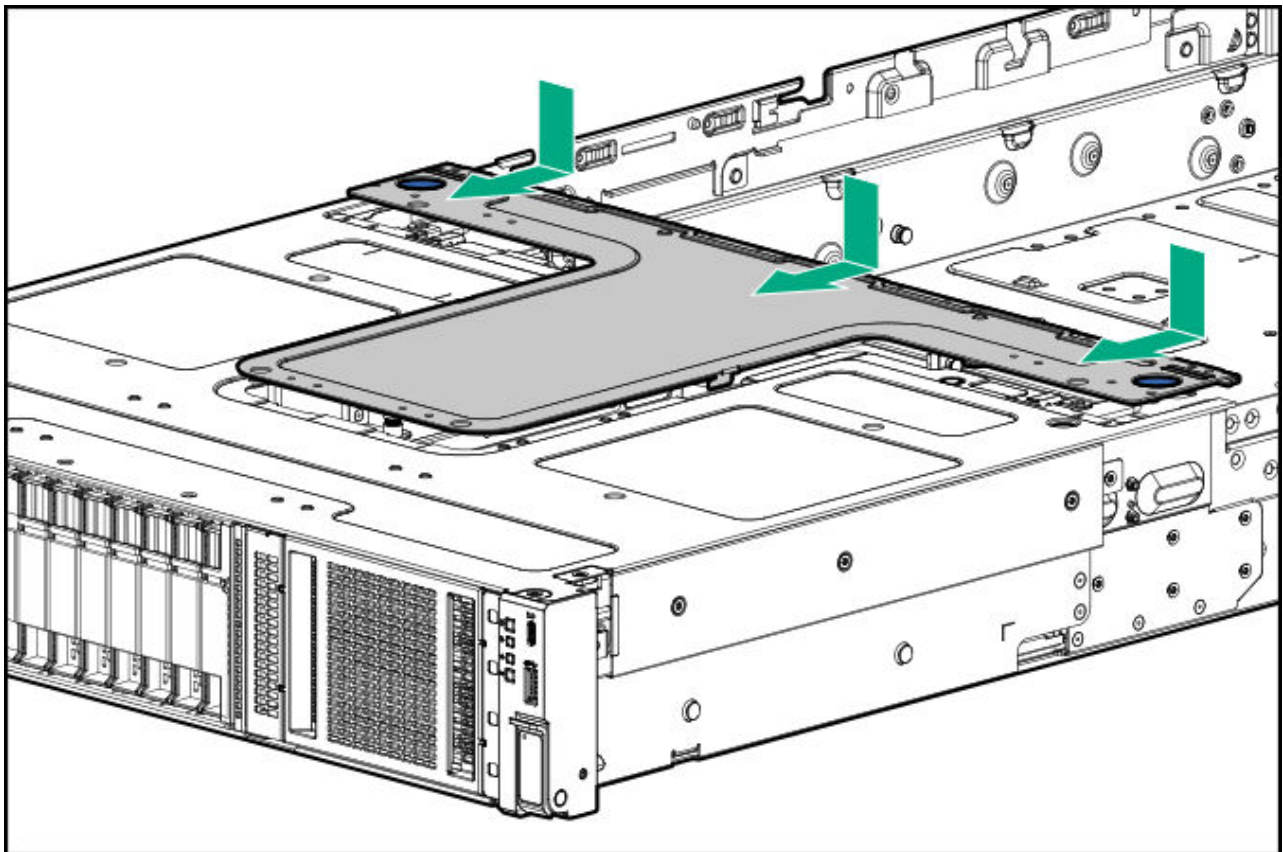
3. Connect all drive backplane cables.
4. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the drive backplane bracket.

Install the middle cover

Procedure

1. Install the middle cover.

A click sound indicates that the cover is properly engaged with the front cage.



2. Install the access panel.
3. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the middle cover.

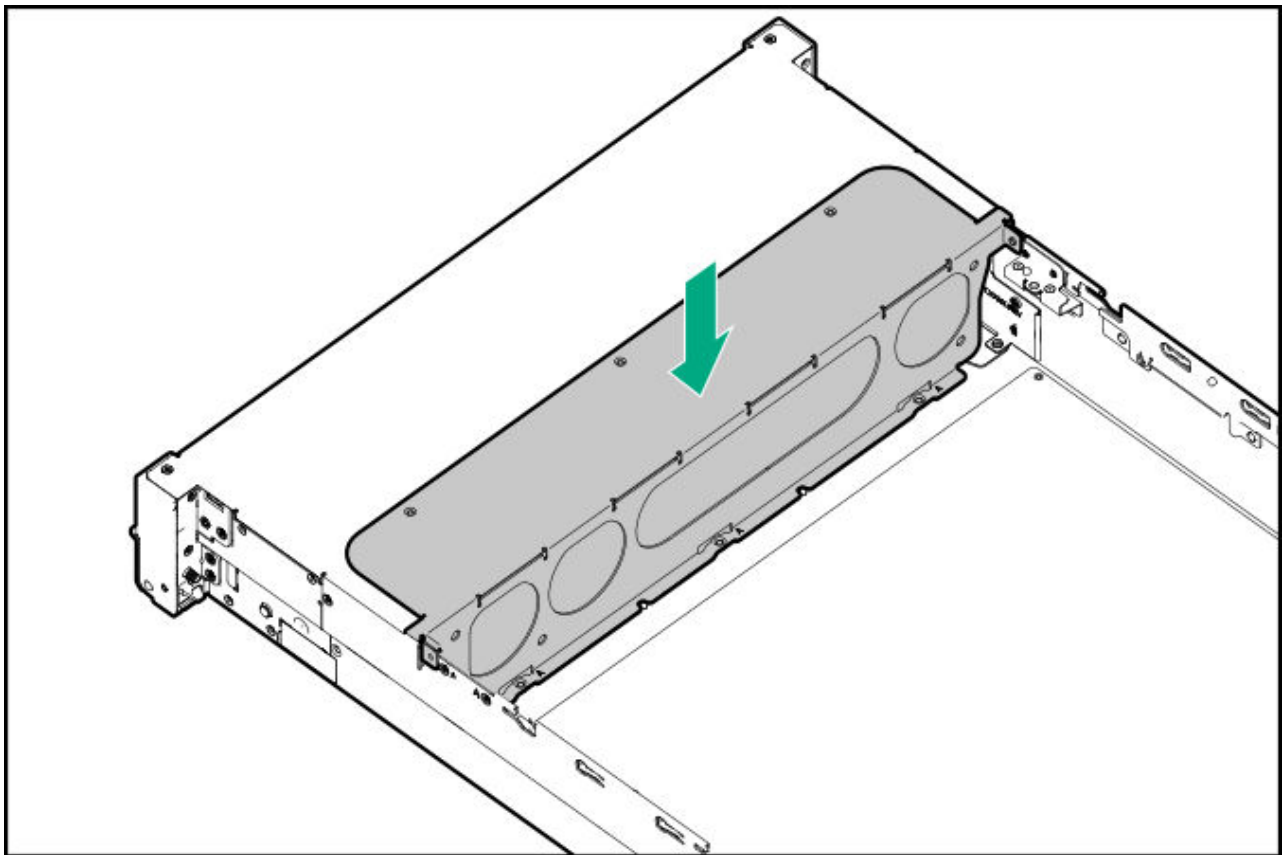
Install the midwall bracket

Prerequisites

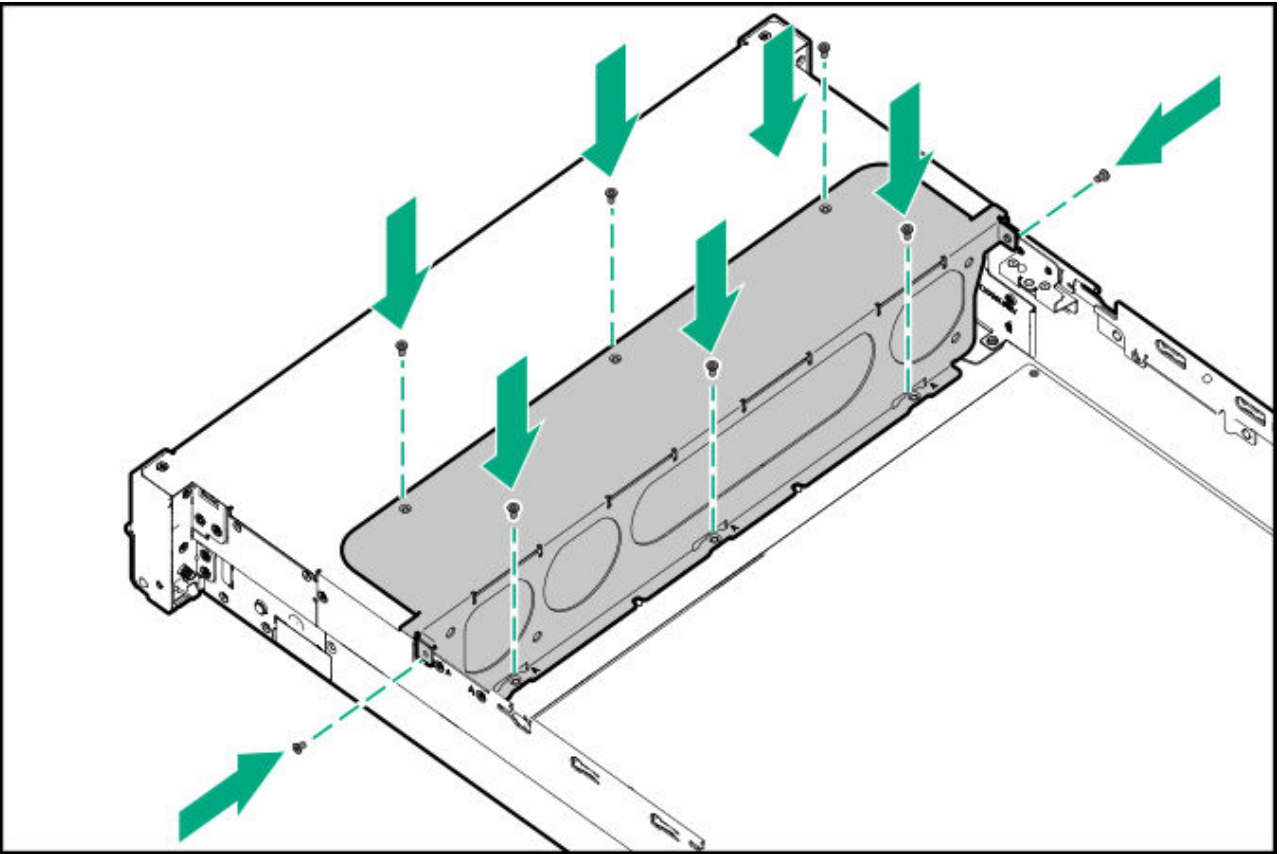
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

1. Make sure that all cables have been properly routed and will not interfere with the midwall bracket installation.
2. Lower the midwall bracket into the chassis.



3. Install the midwall bracket screws.

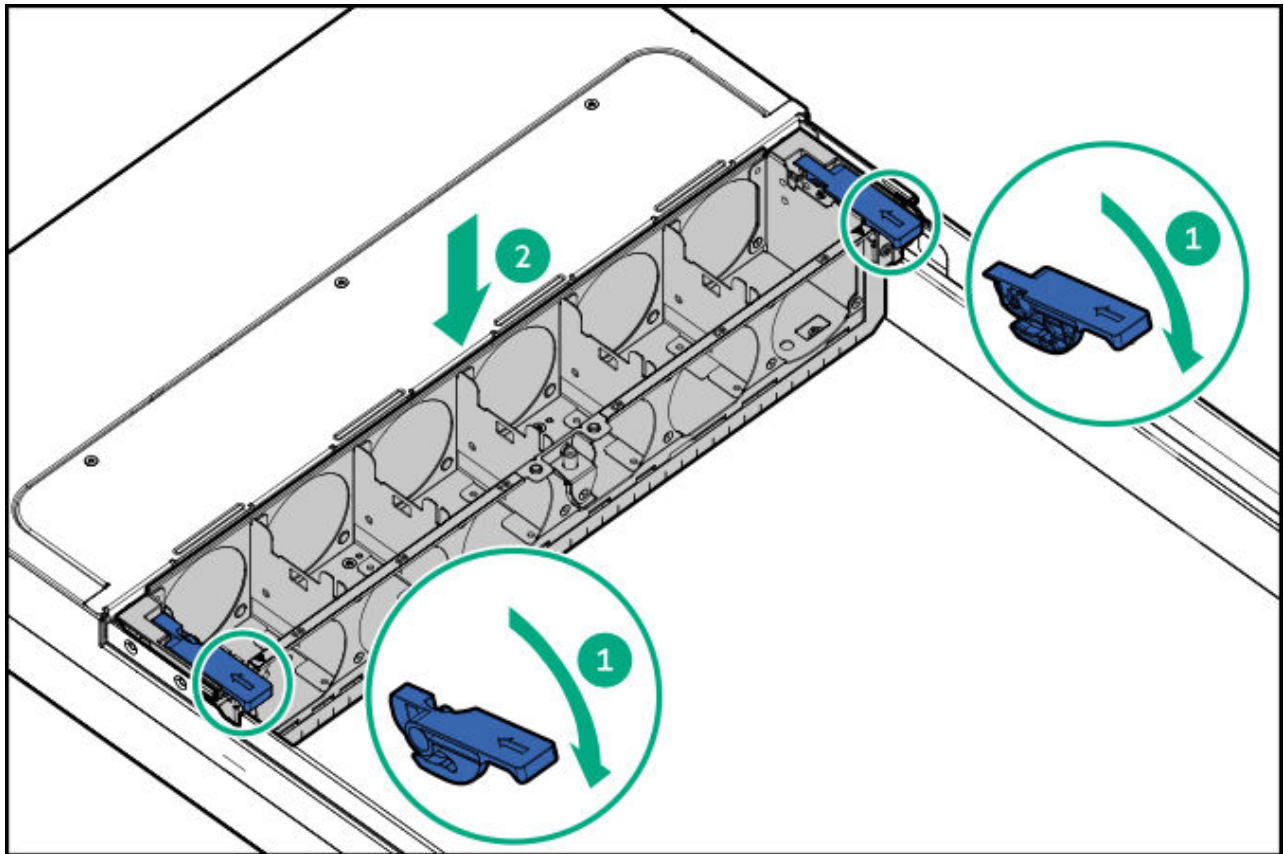


4. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the midwall bracket.

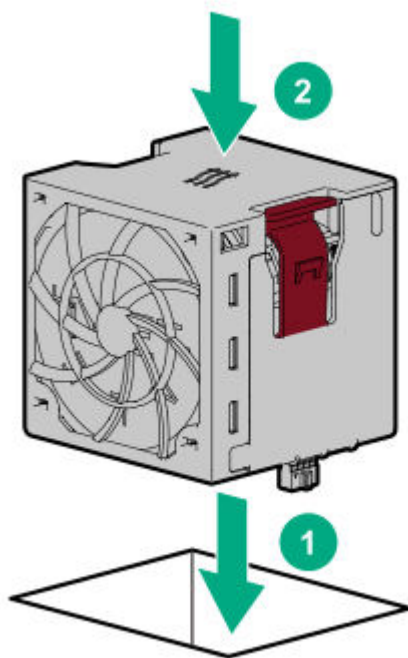
Install the fan cage

Procedure

1. Make sure that all cables have been properly routed and will not interfere with the fan cage installation.
2. Lower the fan cage in the server, and then close the latches.



3. Install all fans.

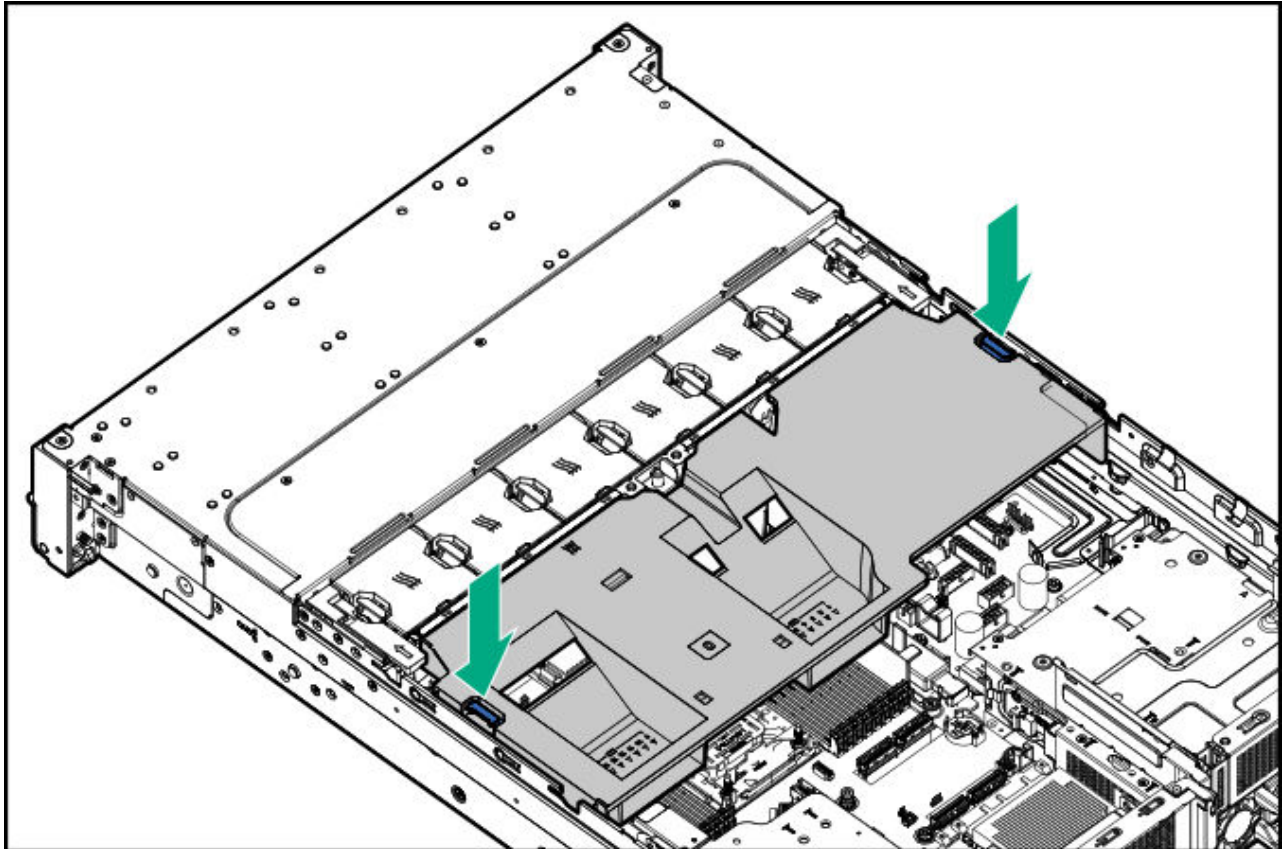


4. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the fan cage.

Install the air baffle

Procedure

1. Make sure that all internal cables have been properly routed and will not interfere with the air baffle installation.
2. Lower the air baffle into the chassis and make sure that it fits properly into place.



3. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the air baffle.

Install the access panel

Prerequisites

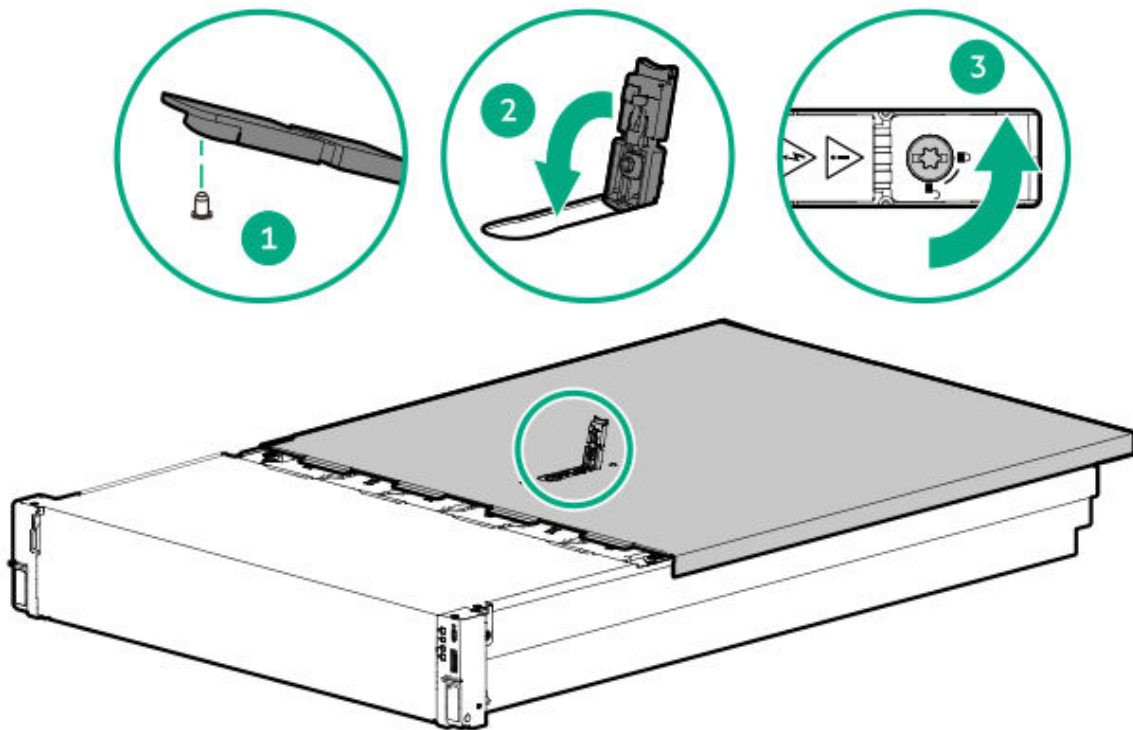
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

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 server into the rack

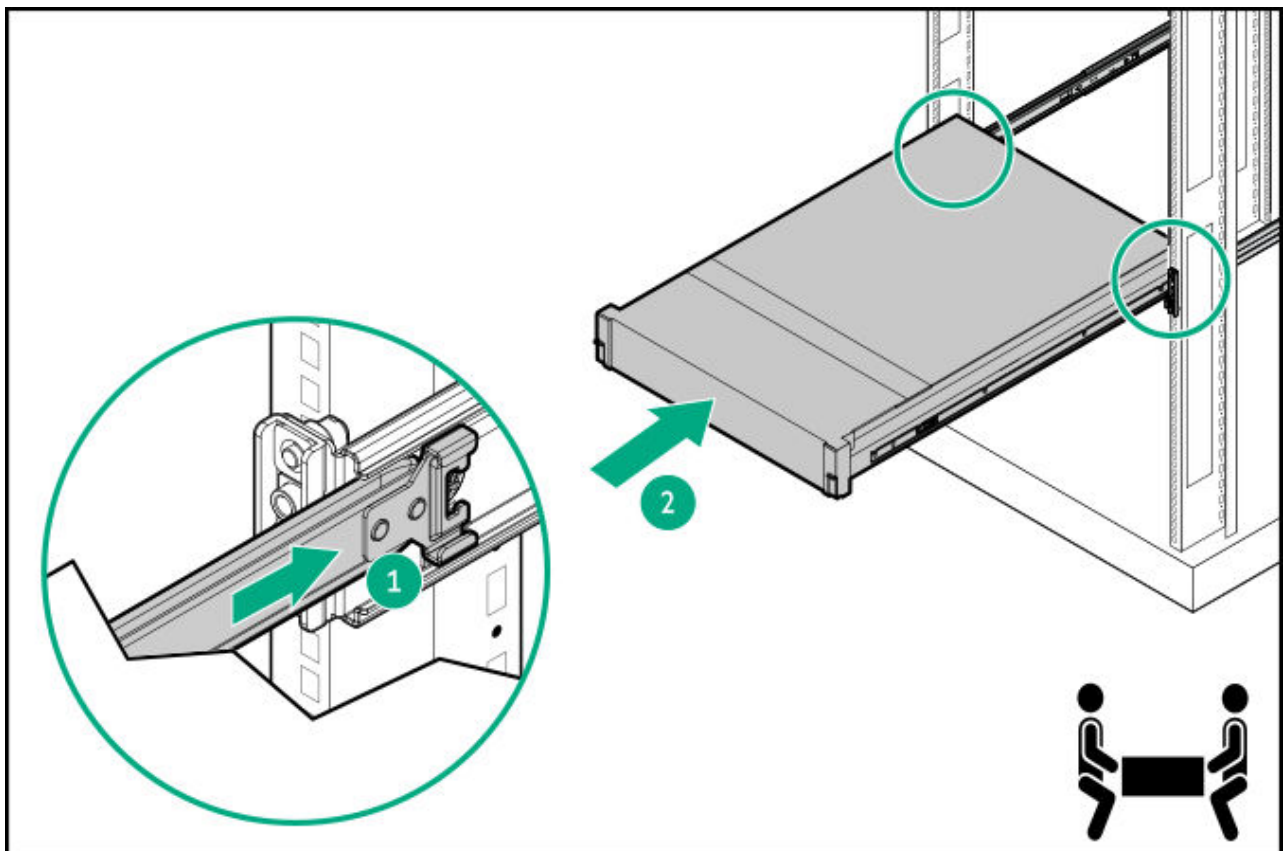
Prerequisites

- Get help to lift and stabilize the server during rack installation. **If the server is installed higher than chest level, additional two people might be required to help install the server:** One person to support the server weight, and the other two to slide the server into the rack.
- 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.
- T-25 Torx screwdriver—This tool is required if you intend to lock the shipping screws located inside the chassis ears.

Procedure

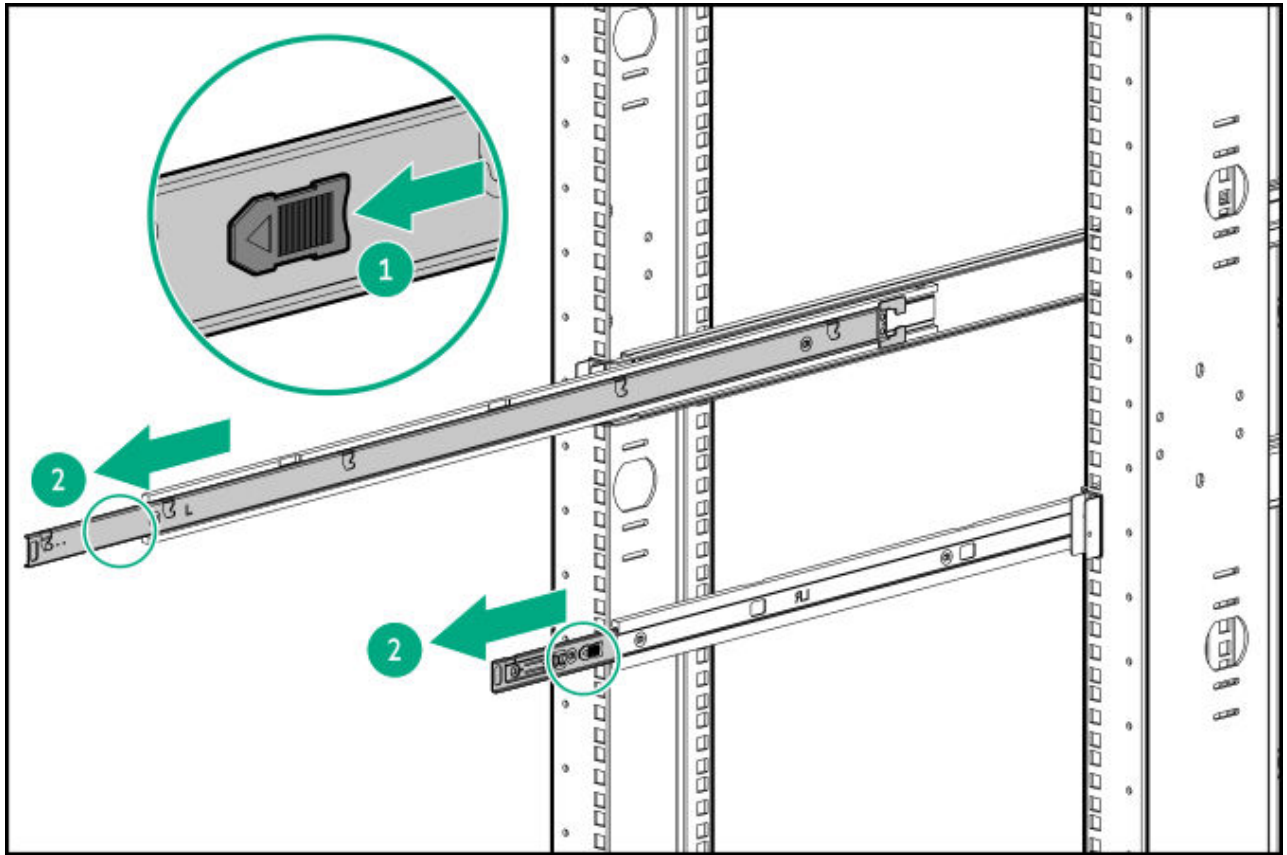
Friction rack rails

1. Insert the sliding rails into the mounting rails, and then slide the server into the rack until the chassis ears are flush against the rack posts.

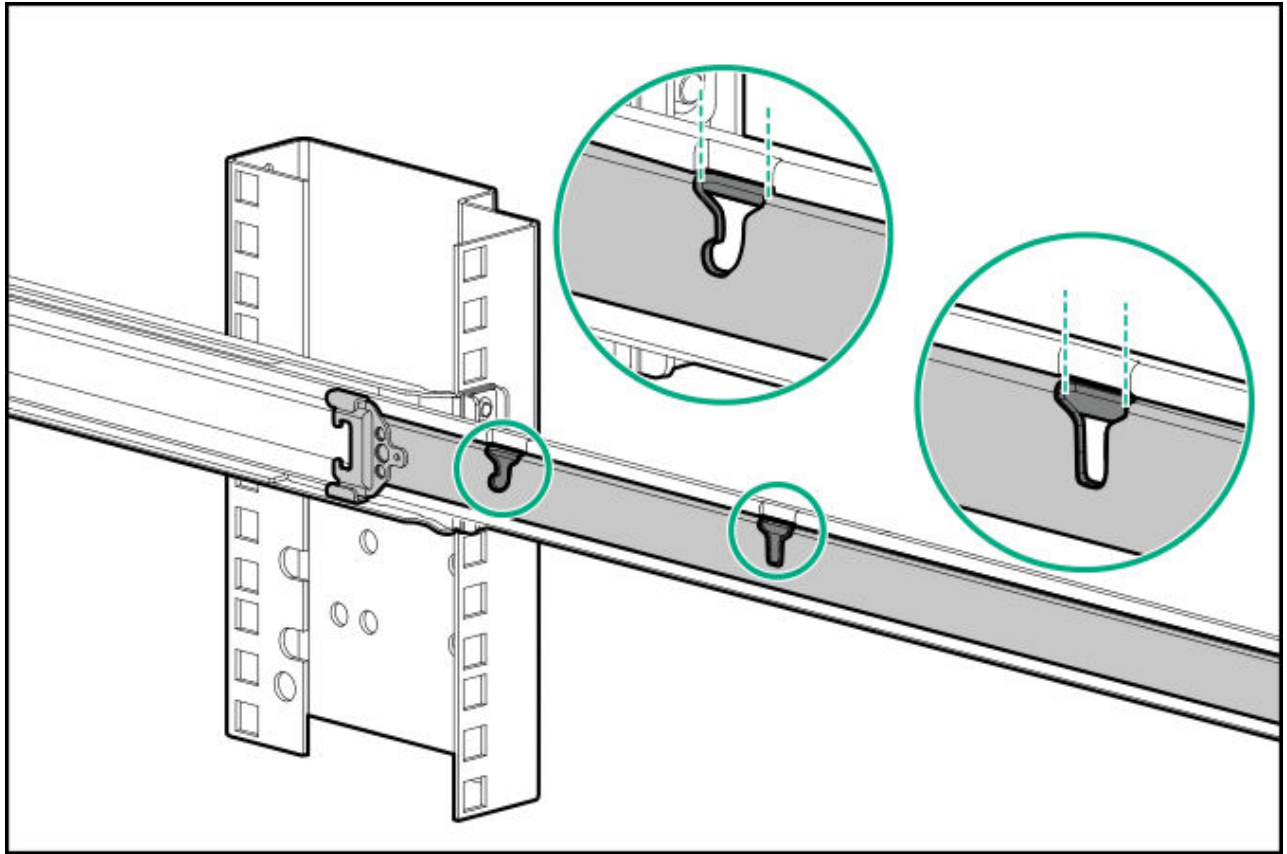


Ball-bearing rack rails: Drop-in

2. Fully extend the rails to the locked position.



3. Verify that the rails are fully extended and the slots are aligned.

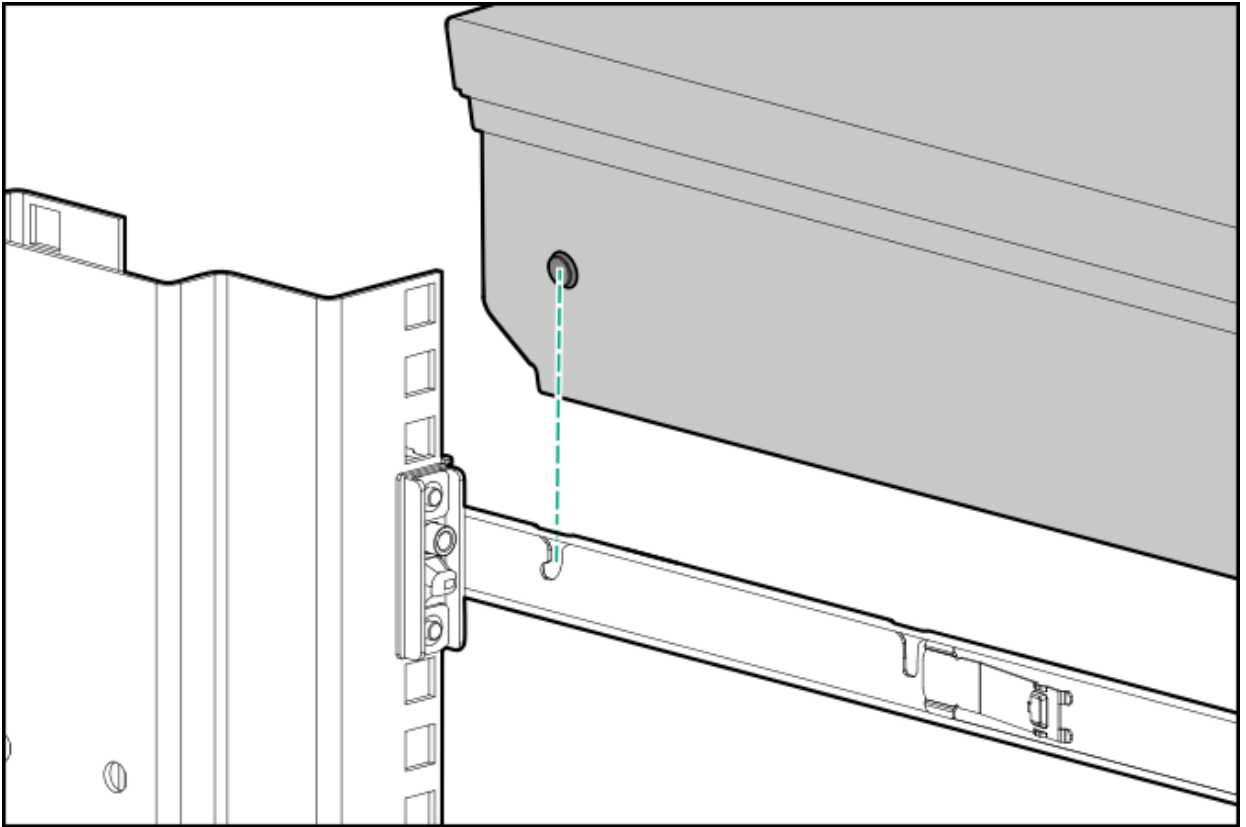


4. Install the server into the rails.
 - a. Install the rear of the server into the J-slots.

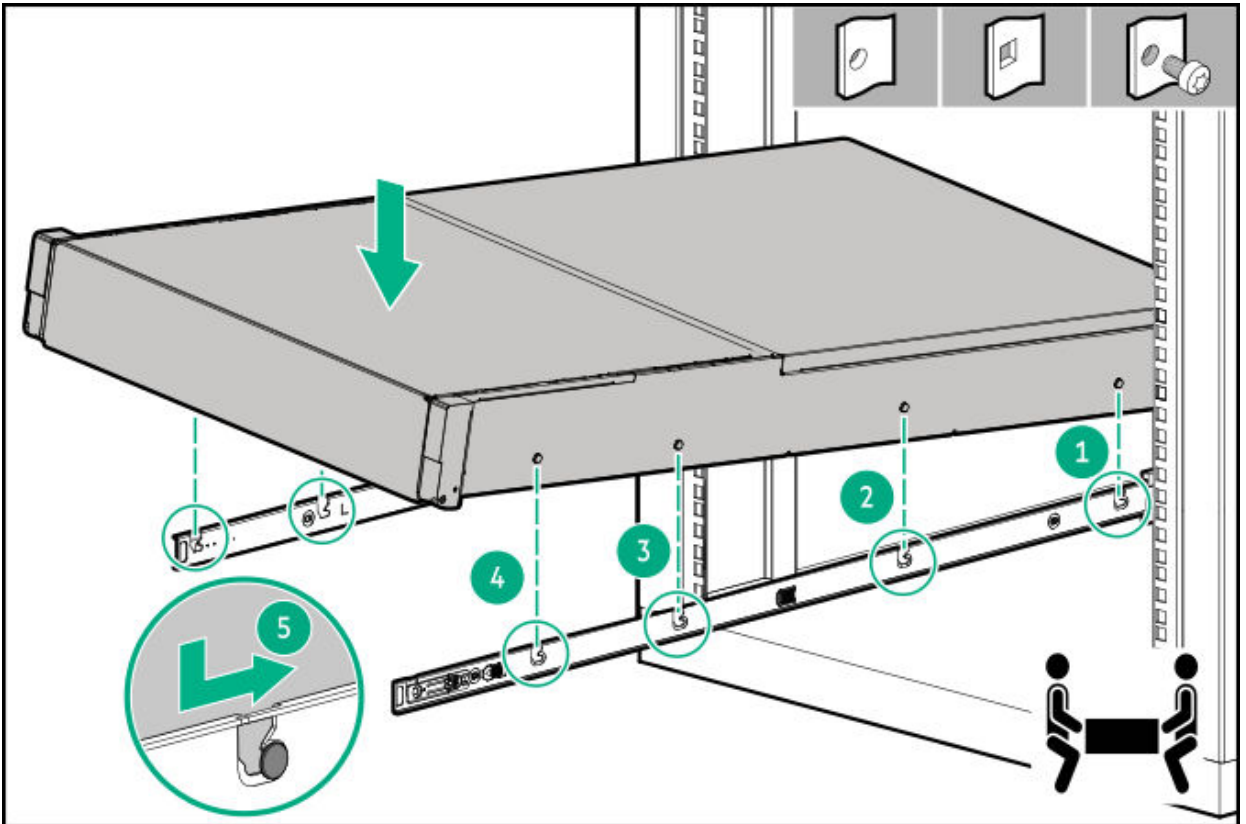


CAUTION

To prevent damage to the rack rails when installing the server into the rack, make sure that all spools on the server are firmly seated on the notches on the rails.

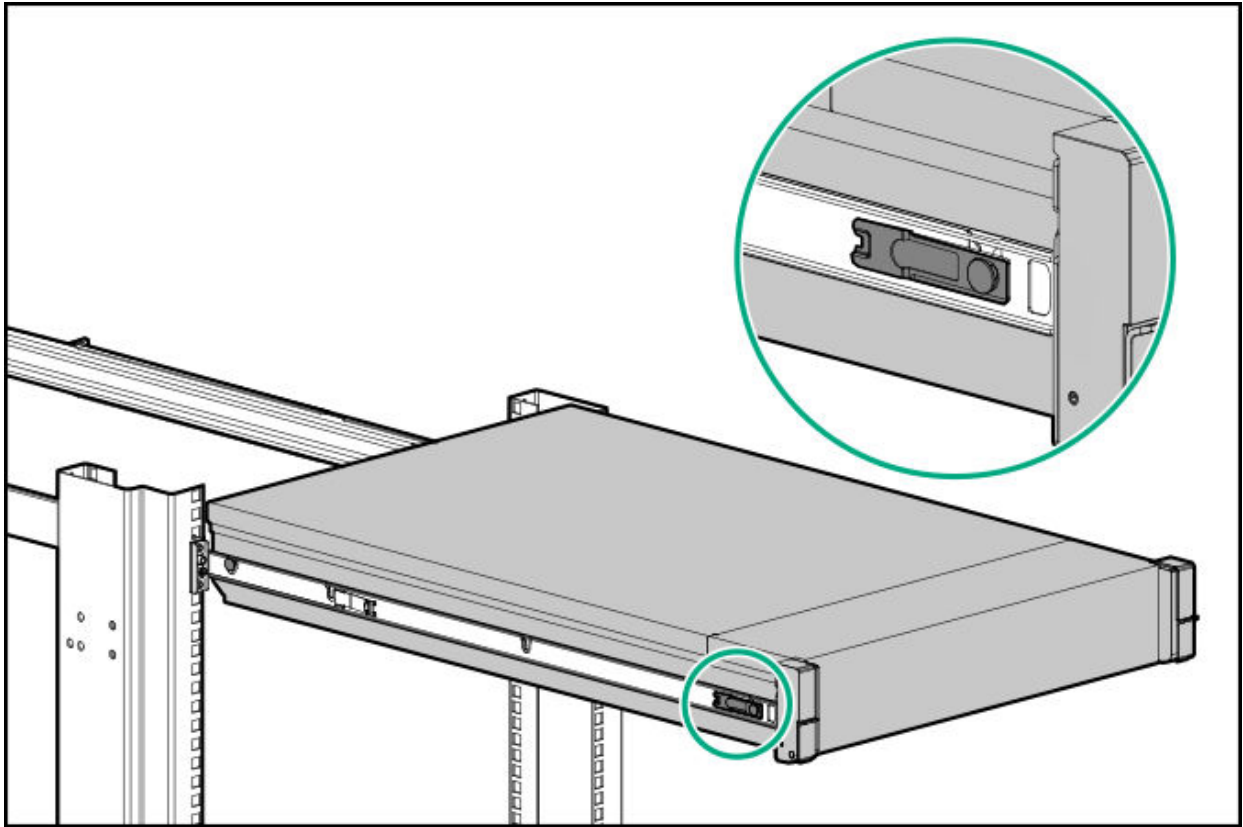


b. Install each spool to the rail.



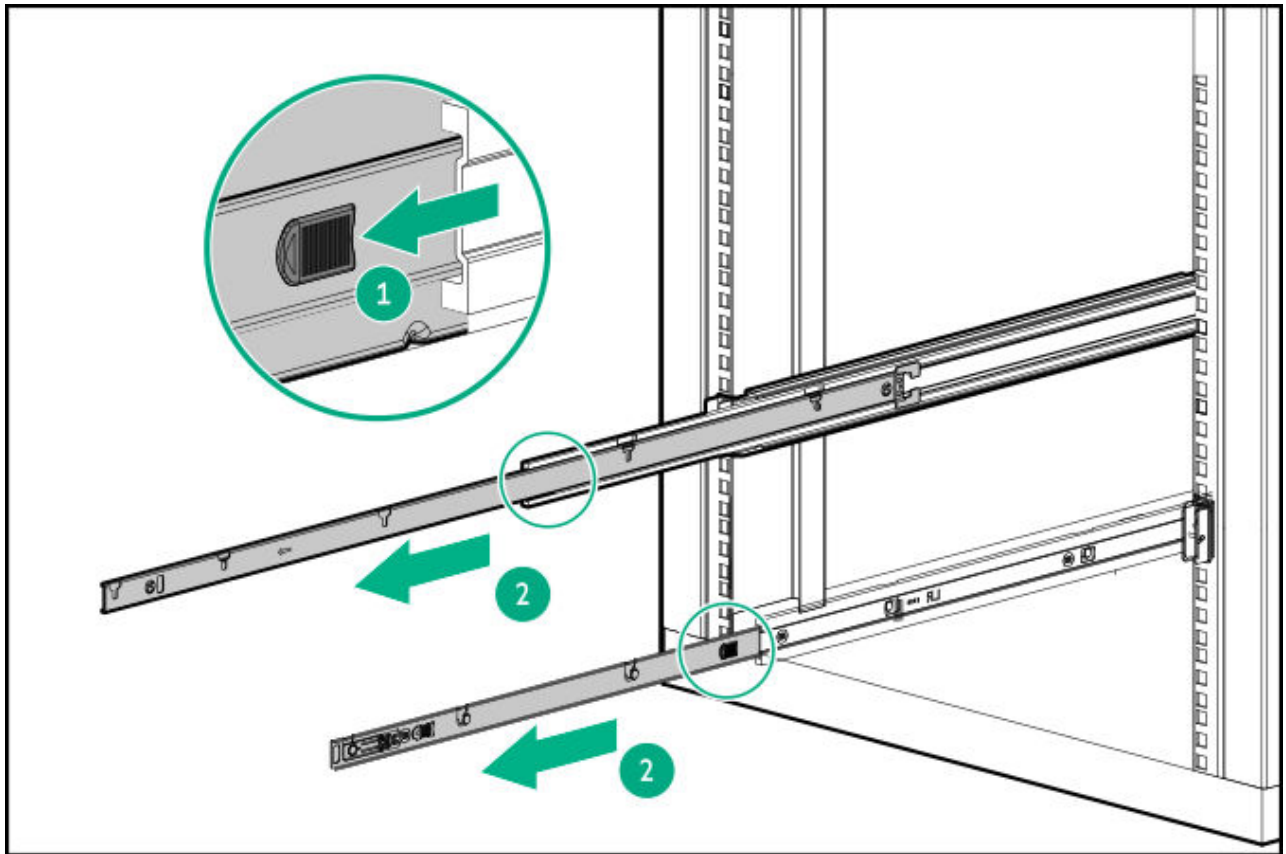
c. Install the front of the server.

Make sure that the front spool engages with the locking tab.

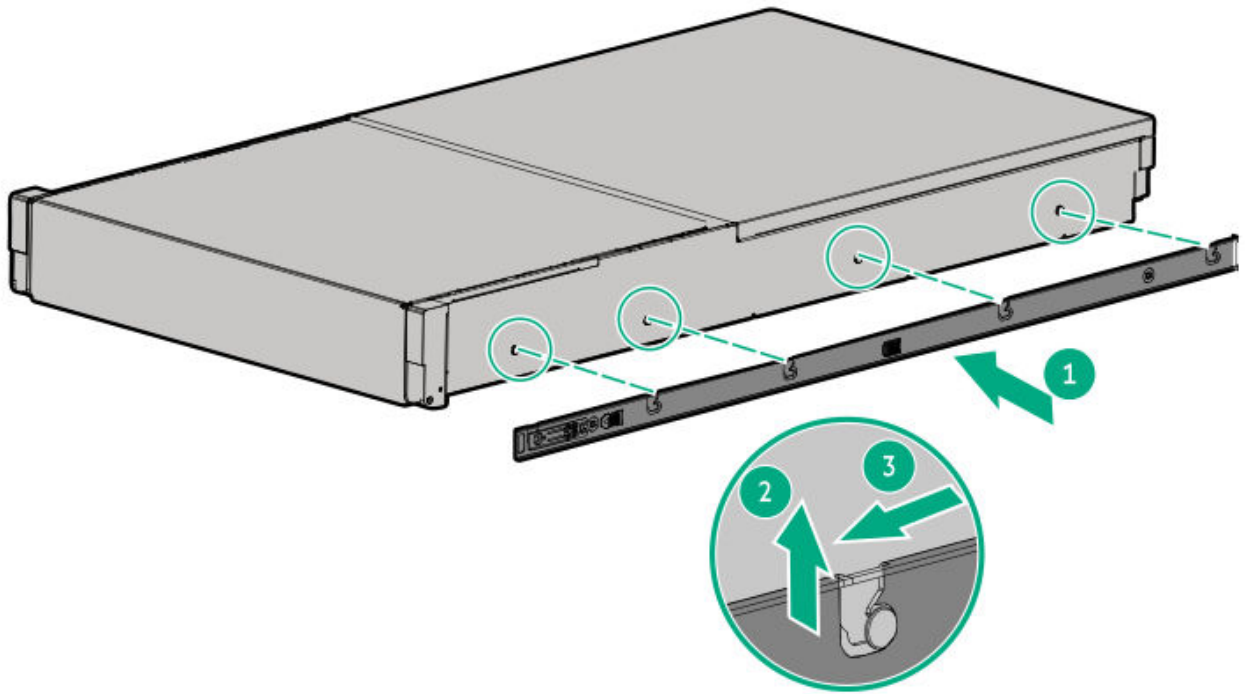


Ball-bearing rack rails: Stab-in

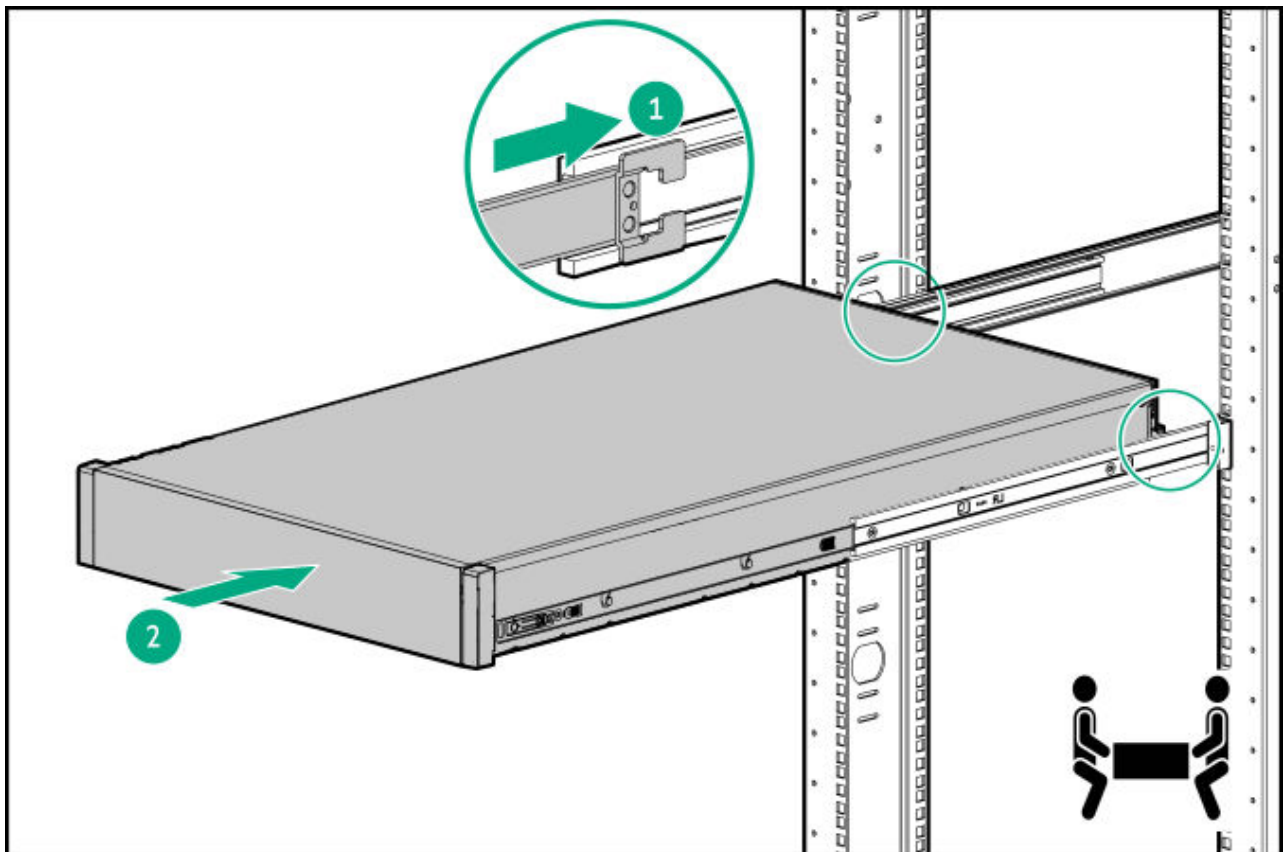
5. Press the rail-release latches on the sliding rails, and then pull the sliding rails to separate from the mounting rails.



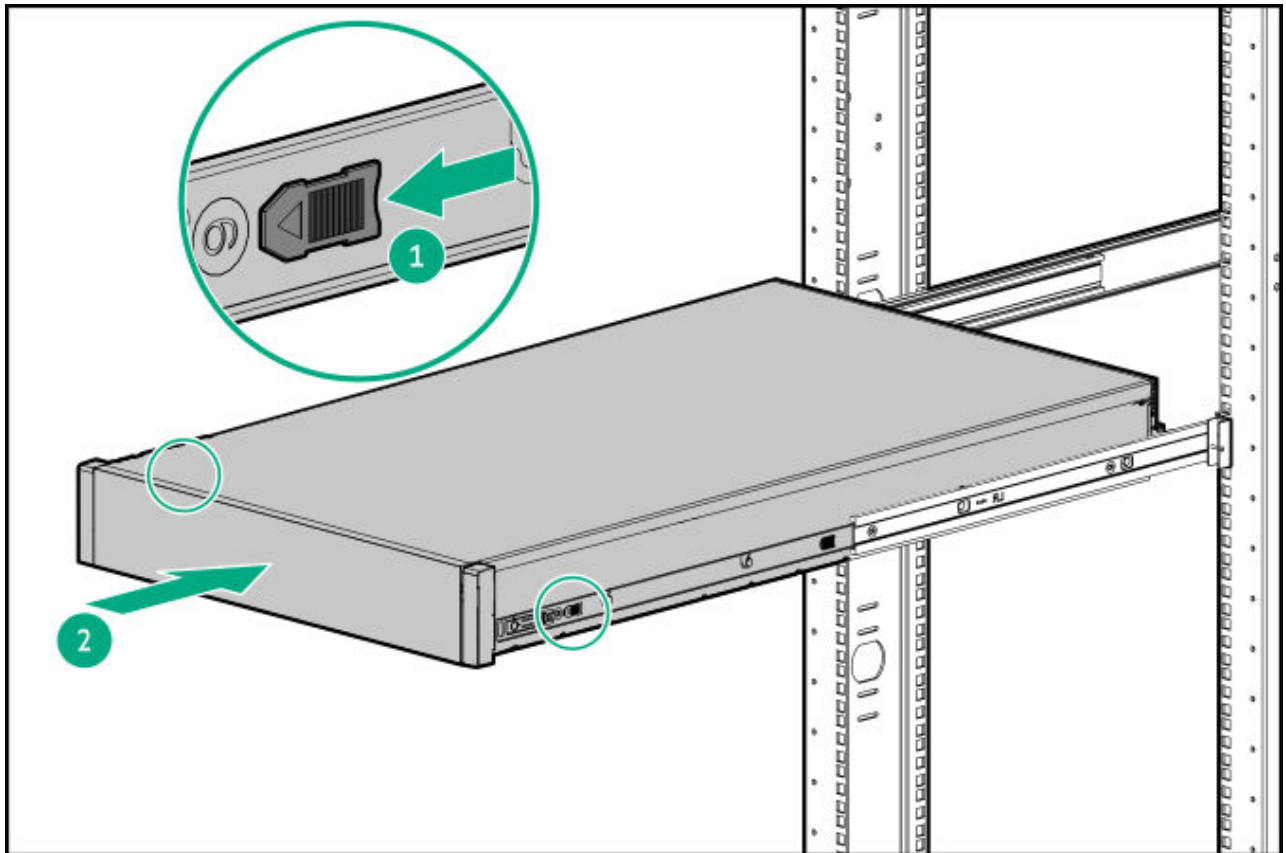
6. Install the sliding rails to the chassis:
 - a. Align the chassis spools to the J-slots on the sliding rail.
 - b. Slightly lift the sliding rail, and then push the sliding rail to the rear to lock the spool in the J-slot.



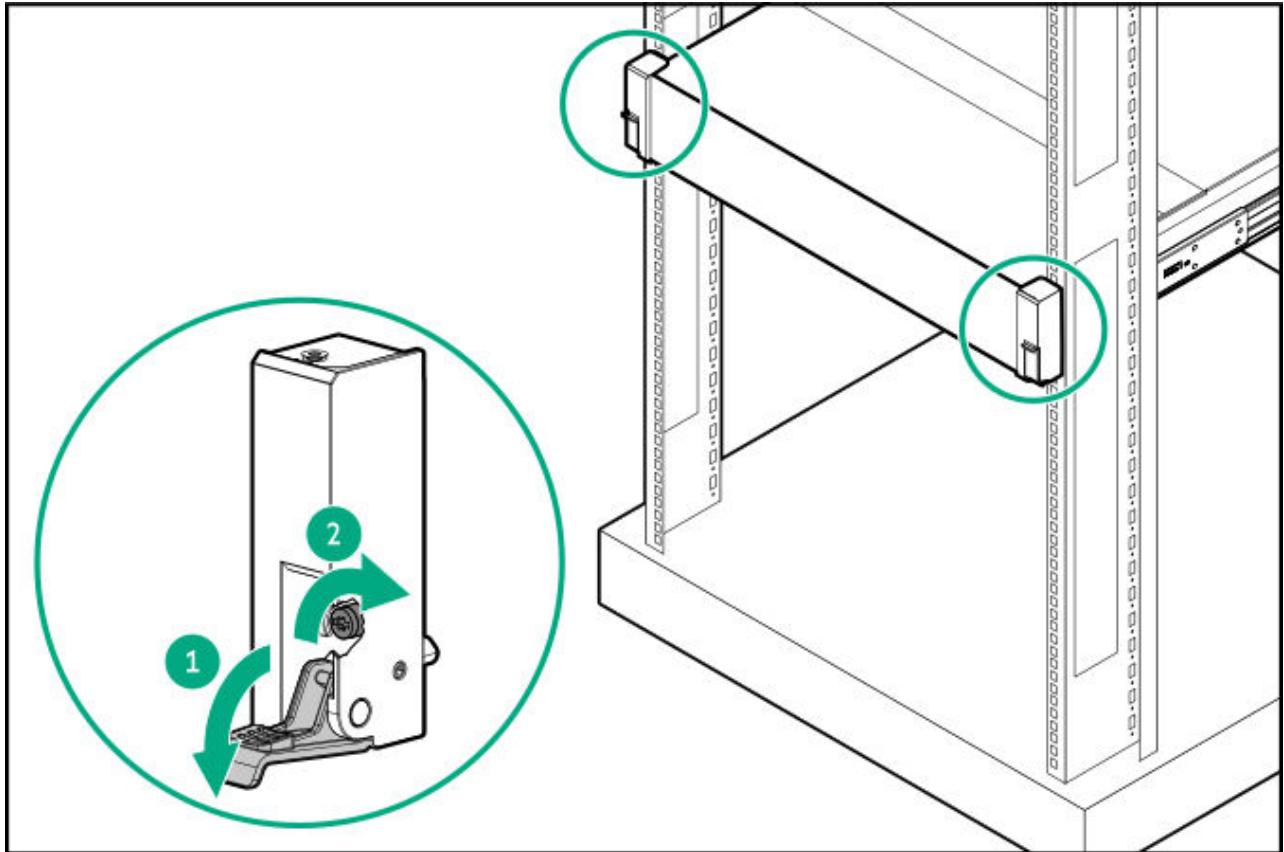
7. Insert the sliding rails into the mounting rails, and then slide the server into the rack until the server stop.



8. Install the server into the rack.

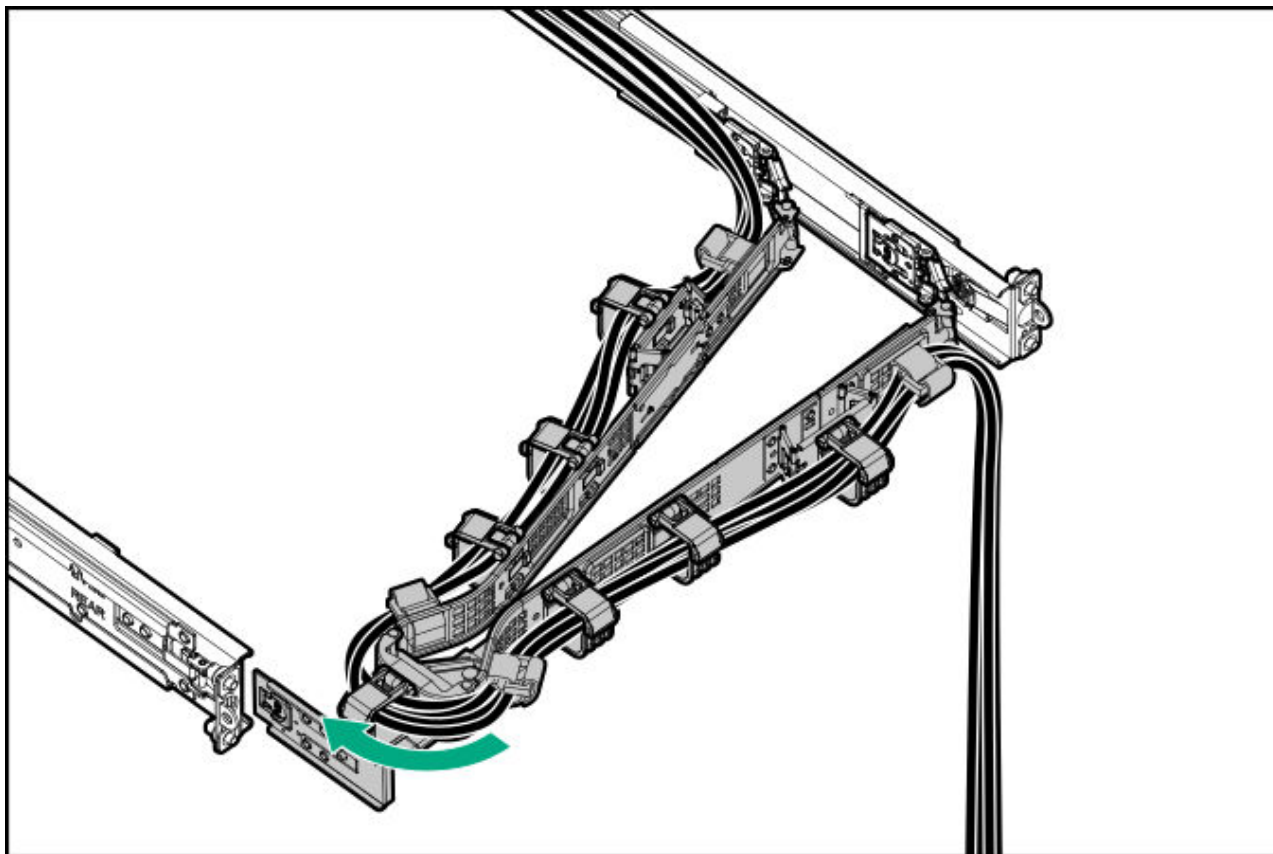


9. Open the chassis ears, and then tighten the shipping screws.



- .0. Connect all peripheral cables to the server.
- .1. Connect each power cord to the server.
- .2. Connect each power cord to the power source.
- .3. If the DLC module is installed, connect the DLC extension hoses.
- .4. If the cable management arm was opened, swing the arm back into the closed position and insert the CMA retention bracket into the mounting rail.

There will be an audible click to indicate that the bracket is locked into place.



Connect the DLC extension hose

Prerequisites

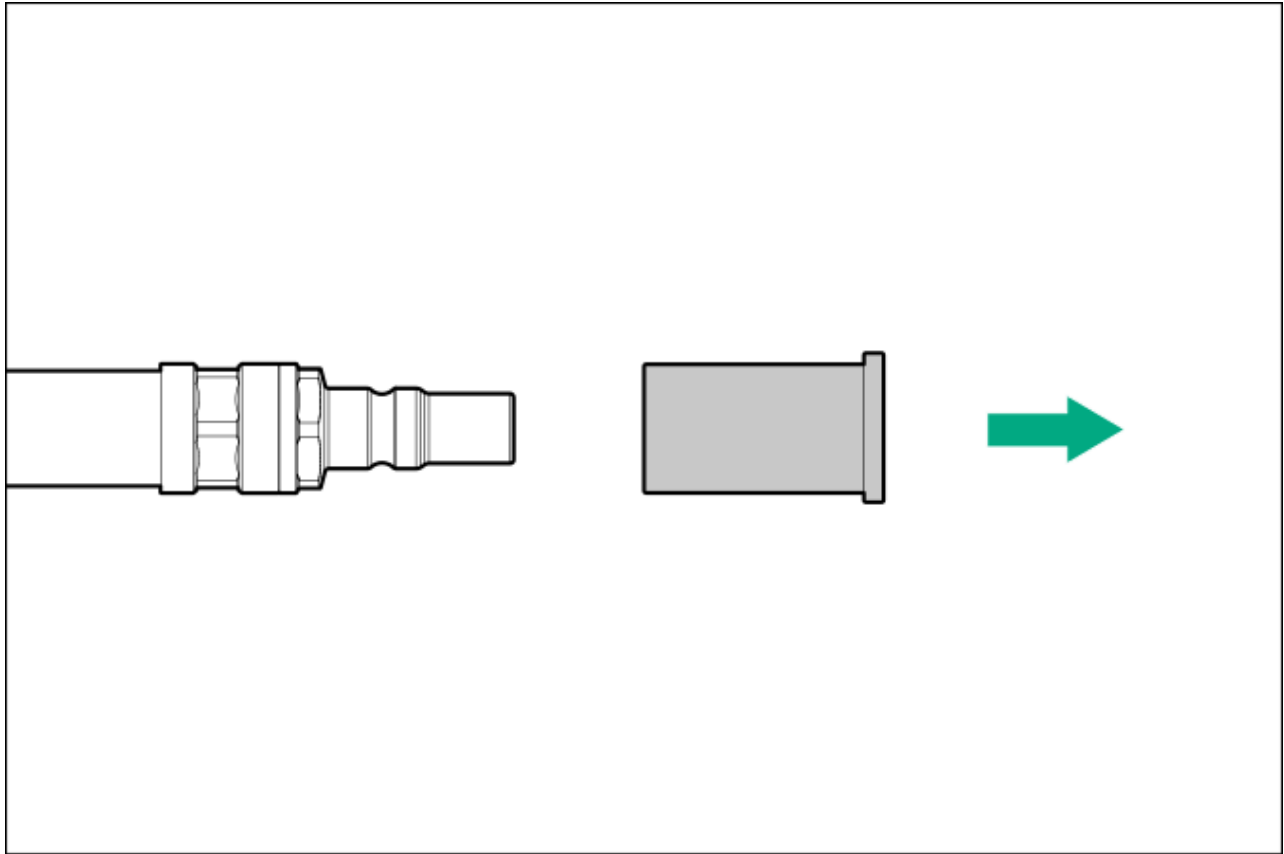
- Review the [Direct liquid cooling module components](#).
- Make sure that the DLC extension hose set (P62038-B21/P62046-B21) is installed on the manifold rack.

About this task

For more information, see the HPE Cray XD Direct Liquid Cooling System Site Preparation, User, and Maintenance Guide at <https://www.hpe.com/info/xdDLCguide>.

Procedure

1. [Locate the DLC module](#) from the rear of the server.
2. Remove the coolant quick connector caps.



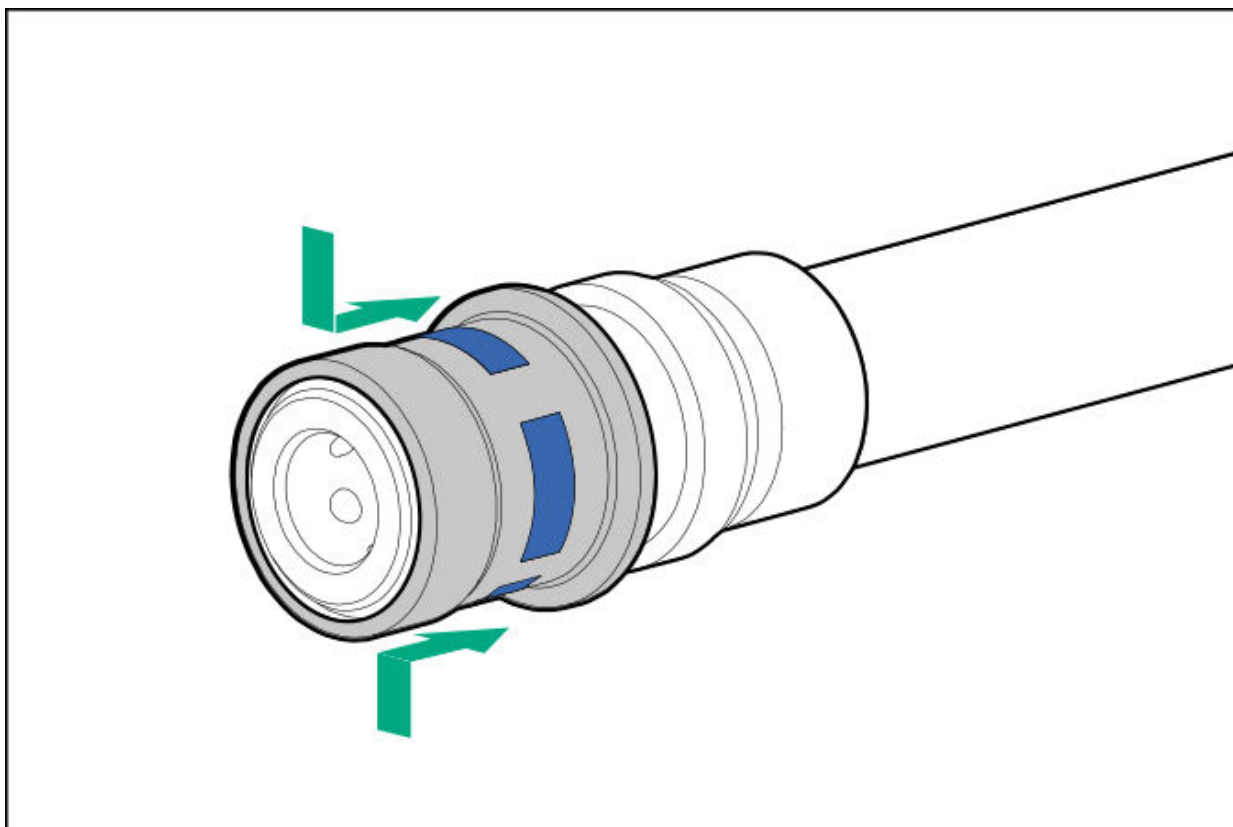
3. Connect the DLC module from the DLC manifold to the server:



WARNING

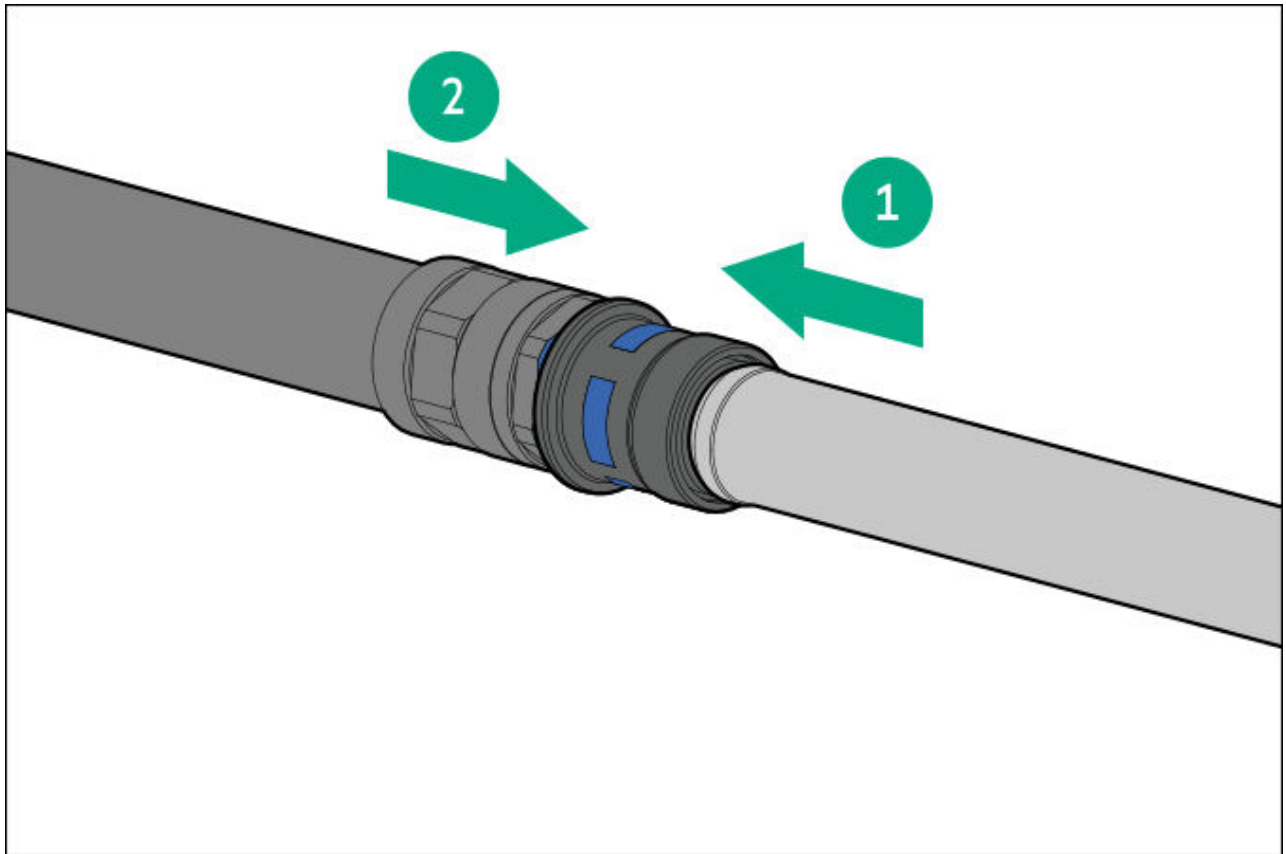
To prevent improper system cooling, connect each same-colored pair of coolant quick connectors and extension hoses.

- a. Align the DLC extension hose quick socket connector to the DLC module coolant hose quick plug connector.
- b. Press and pull the DLC extension hose quick socket connector.



- c. Connect the DLC module coolant hose plug connector to the extension hose quick socket connector, and then release the quick socket connector.

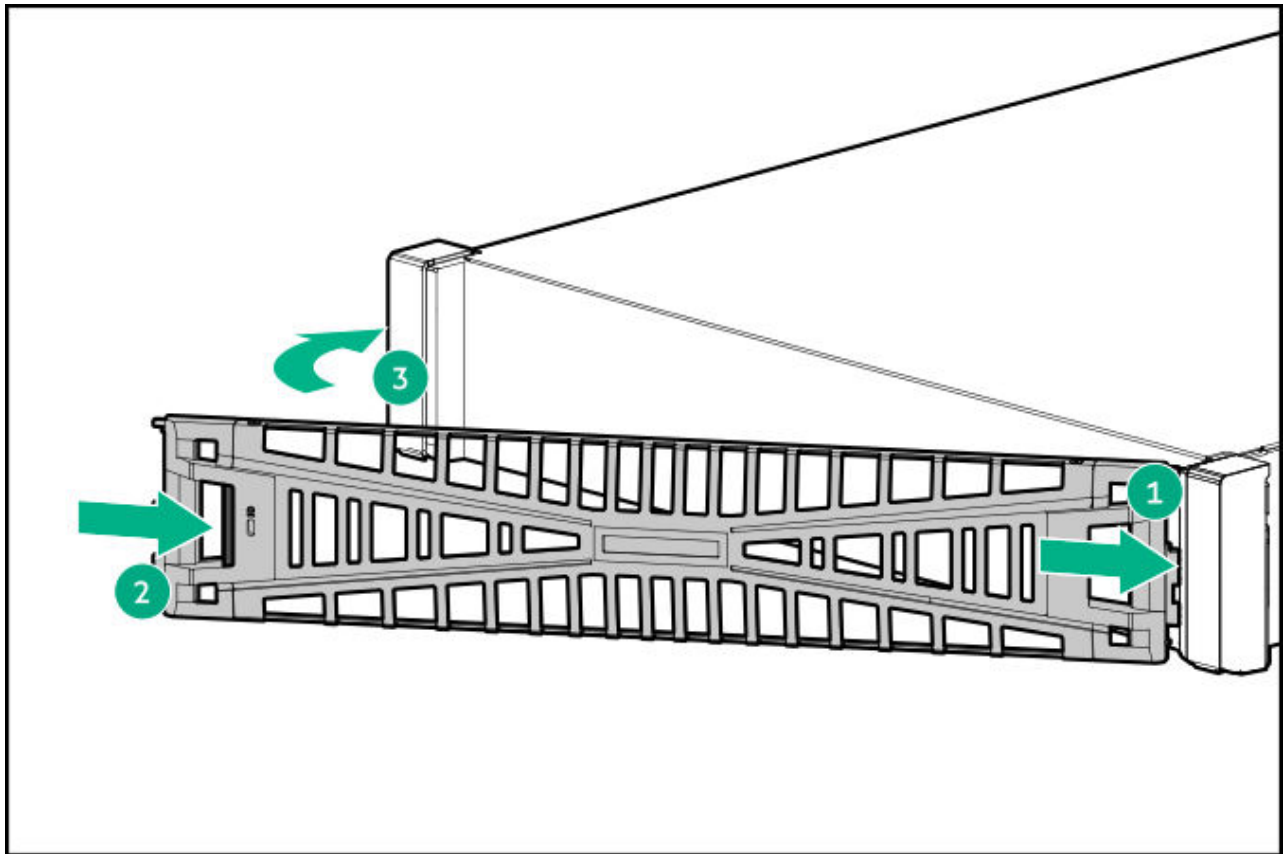
A click sound indicates that the quick connectors are properly engaged.



Install the front bezel

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. (Optional) Install the Kensington security lock.

For more information, see the lock documentation.

5. Perform the post-installation or maintenance steps required by the procedure that necessitates the removal of the front bezel.

Power up the server

Procedure

- Press the Power On/Standby button.
- Use the virtual power button through iLO 7.

Cooling

Subtopics

Fan mode behavior

Installing the fans

Fan mode behavior

The default 6 fan configuration provides redundant fan support. In redundant fan mode, if a fan rotor fails or is missing:

- 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 fans

Prerequisites

Review the [fan and heatsink requirements](#) for specific hardware configurations.

About this task

The installation and removal procedures for the standard and high performance fans are the same.



IMPORTANT

Do not mix standard and high performance fans in the same server.

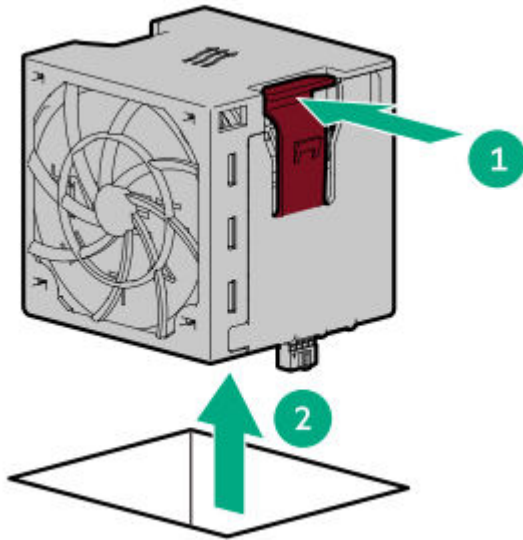
Procedure

1. [Power down the server.](#)
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - [Extend the server out of the rack.](#)

- Remove the server from the rack.

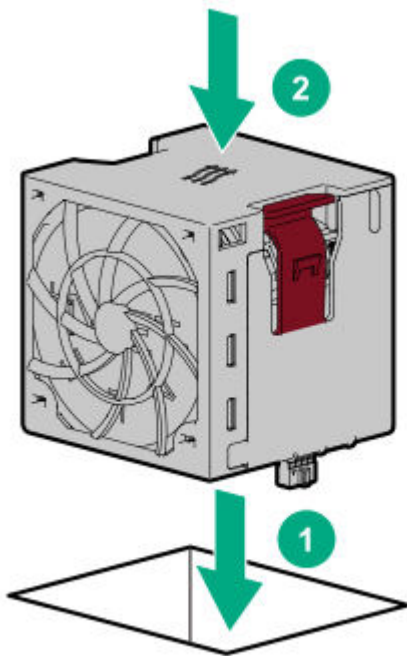
5. Remove the access panel.

6. Remove all existing fans.



7. Install new fans.

There will be an audible click to indicate that the fan is properly engaged.



8. Install the access panel.

9. Install the server into the rack.
- .0. Connect all peripheral cables to the server.
- .1. Connect each power cord to the server.
- .2. Connect each power cord to the power source.
- .3. Power up the server.

Results

The installation procedure is complete.

Drives

Subtopics

[Drive installation guidelines](#)

[Installing a hot-plug drive](#)

[Installing an E3.S drive](#)

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.
- When installing NVMe drives, install the same drive type. Mixed NVMe drives are 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 drive

Prerequisites

Review the [Fan and heatsink requirements](#).

About this task



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](#).

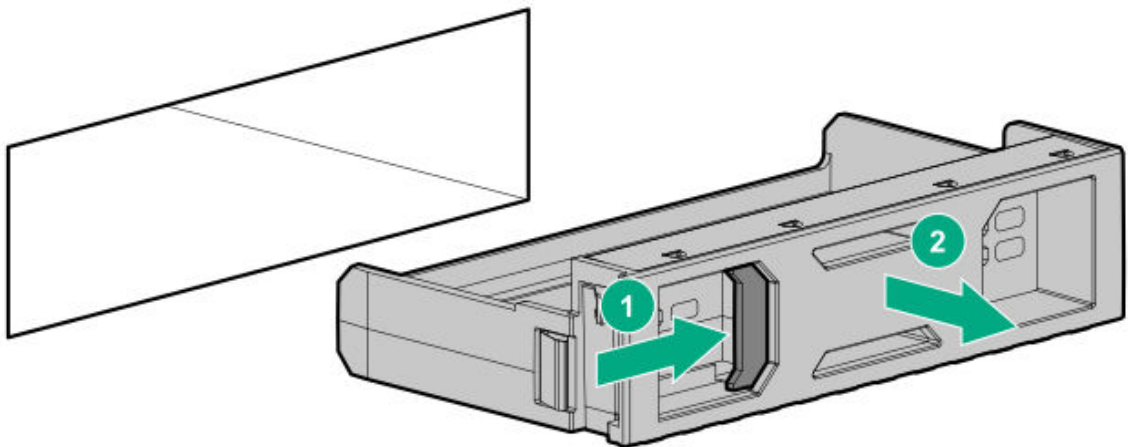


CAUTION

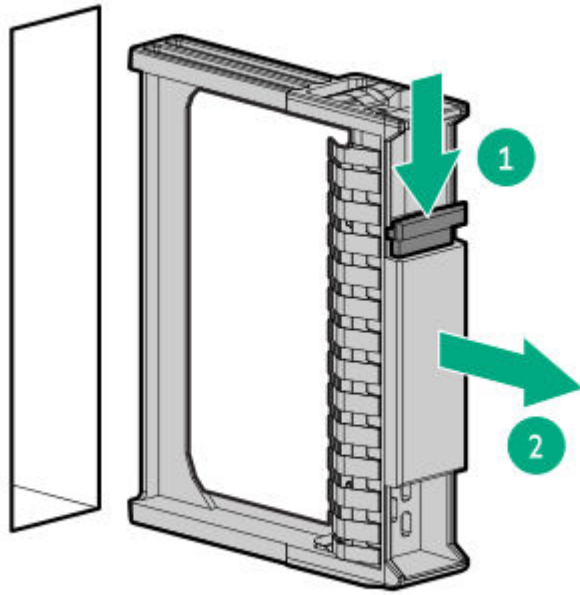
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

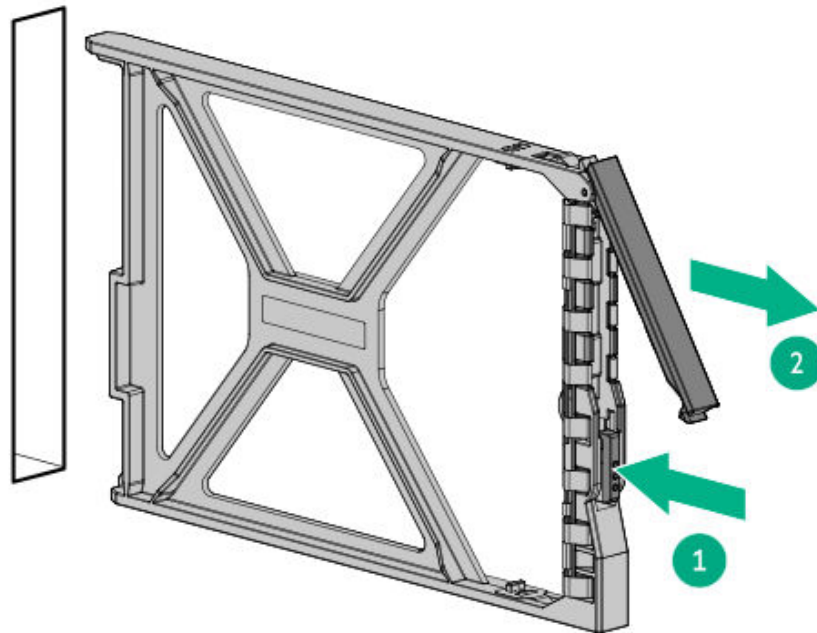
1. If installed, [remove the front bezel](#).
2. Remove the drive blank.
 - LFF drive blank



- SFF drive blank

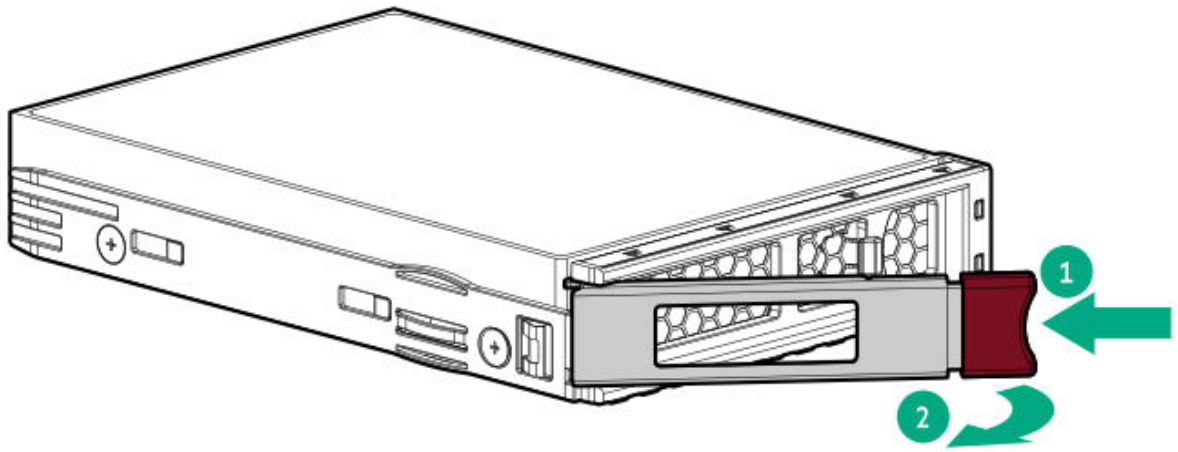


- E3.S drive blank

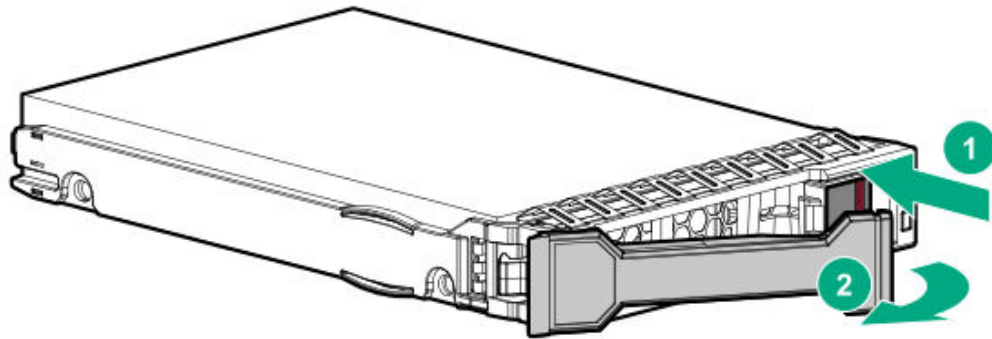


3. Prepare the drive.

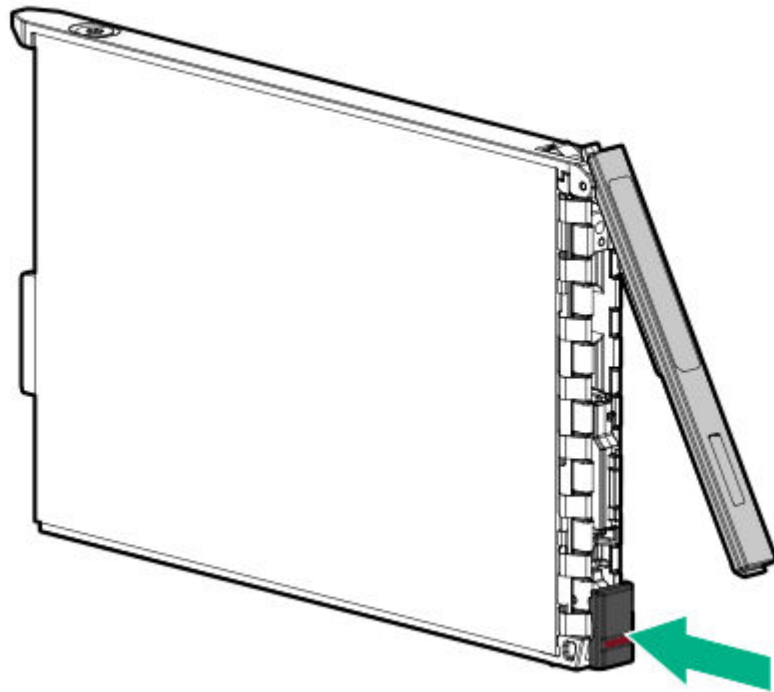
- LFF drive



- SFF drive

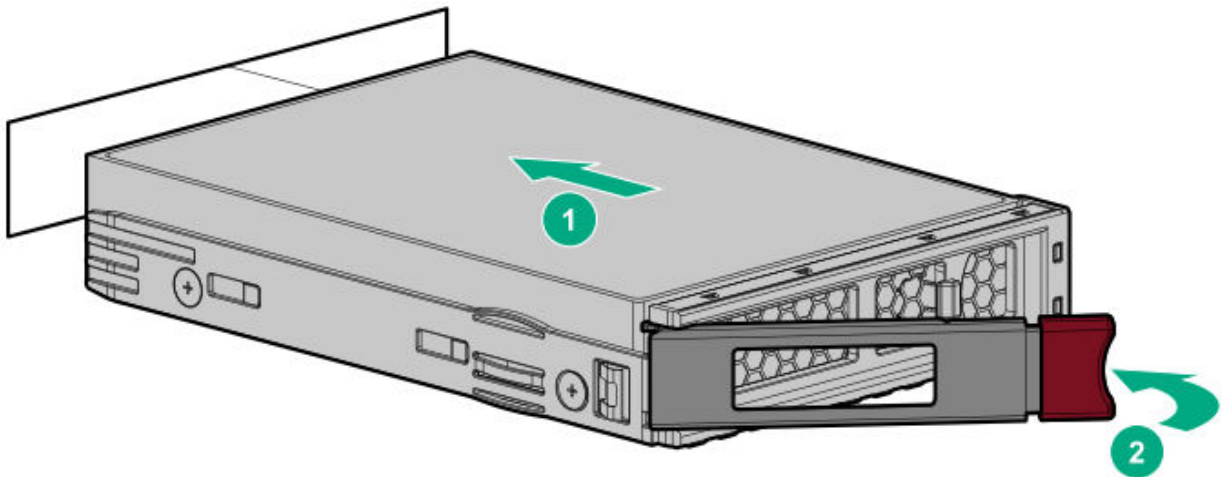


- E3.S drive

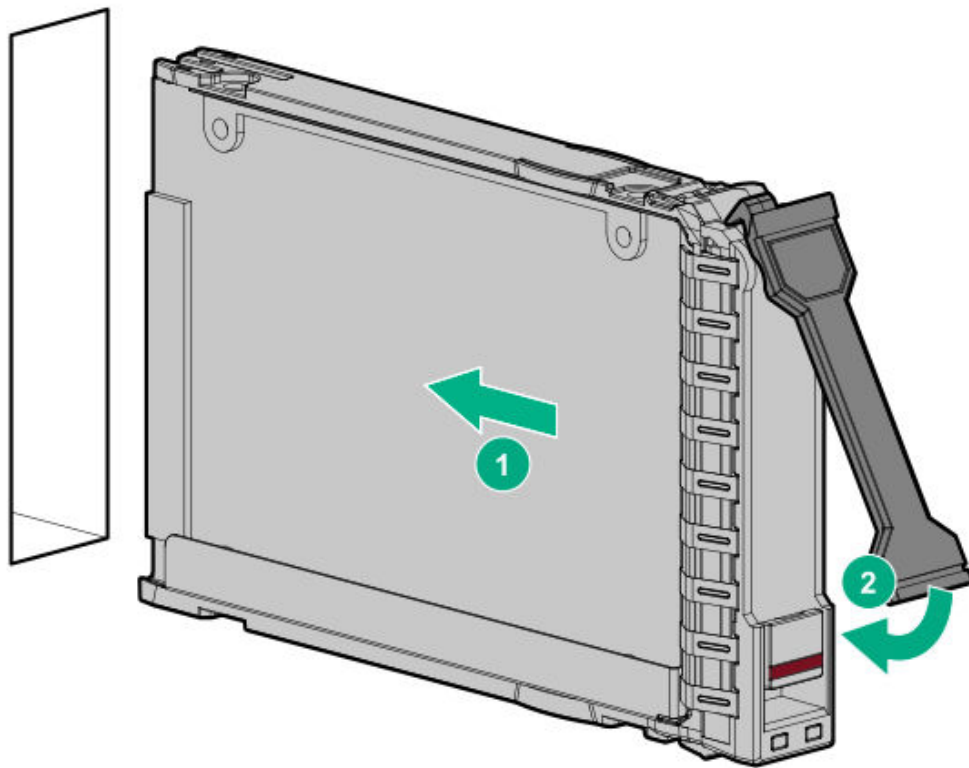


4. Install the drive.

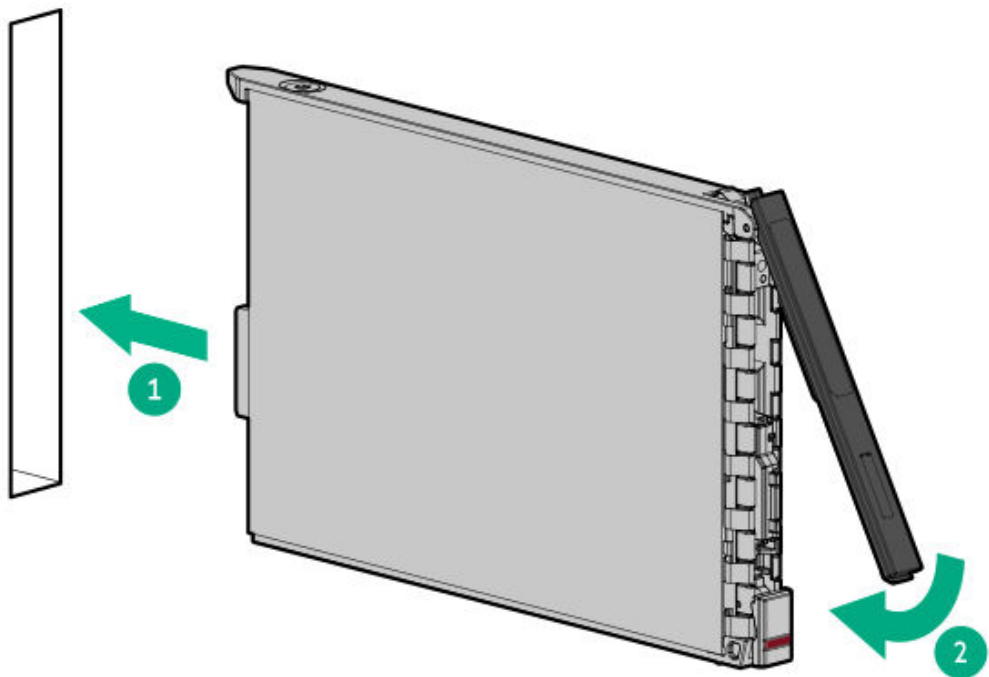
- LFF drive



- SFF drive



- E3.S 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 relevant storage controller guide.

Results

The installation procedure is complete.

Installing an E3.S drive

Prerequisites

Before the installation, review the Fan and heatsink requirements.

About this task



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.

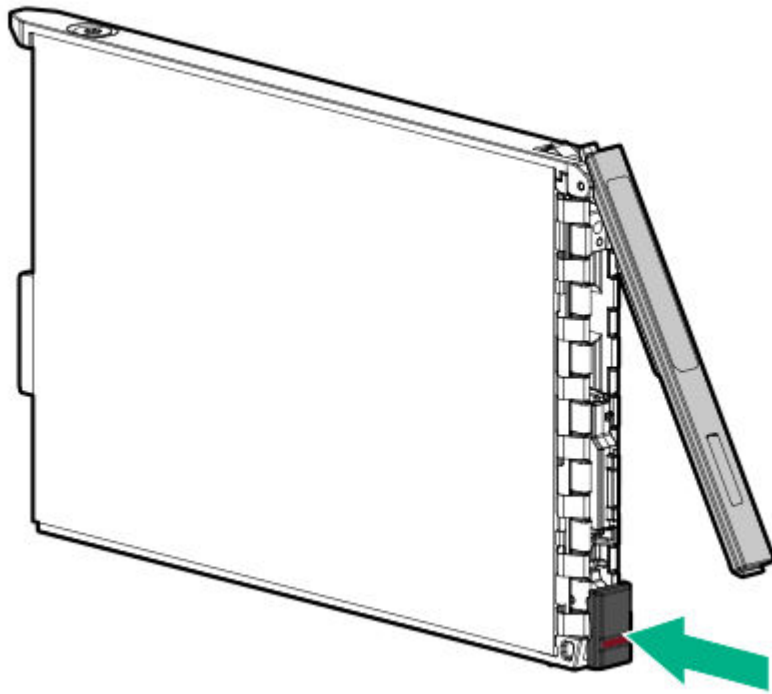


CAUTION

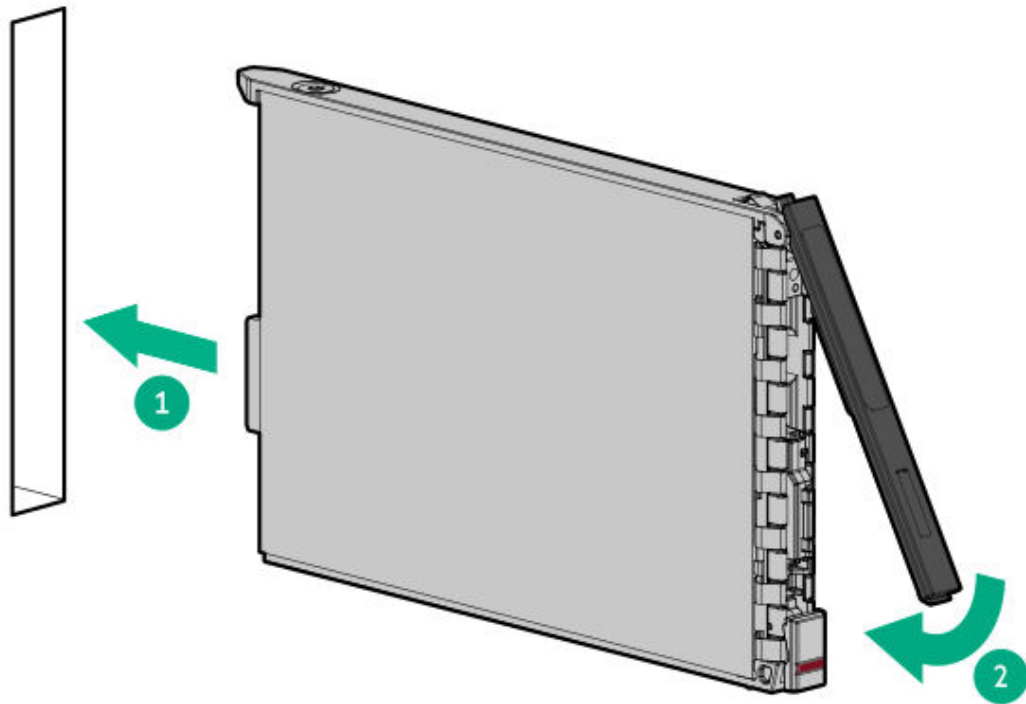
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Prepare the drive.



3. Install the drive.



4. [Determine the status of the drive from the drive LED definitions.](#)
5. If removed, [install the front bezel.](#)
6. To configure drive arrays, see the [relevant storage controller guide.](#)

Results

The installation procedure is complete.

Drive backplanes

Subtopics

[**Upgrading from the 8 to 12 LFF drive configuration**](#)

[**Installing the 4 E3.S drive backplane**](#)

Upgrading from the 8 to 12 LFF drive configuration

Prerequisites

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

- 12 LFF upgrade backplane option kit (P75760-B21)
- T-15 Torx screwdriver
- Spudger or any small prying tool

About this task



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](#).

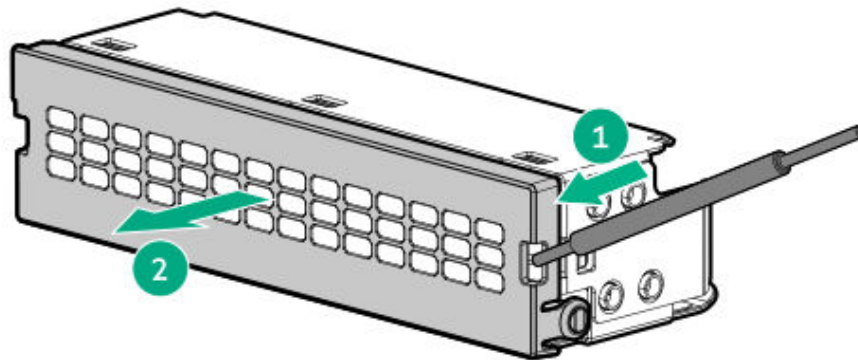


CAUTION

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

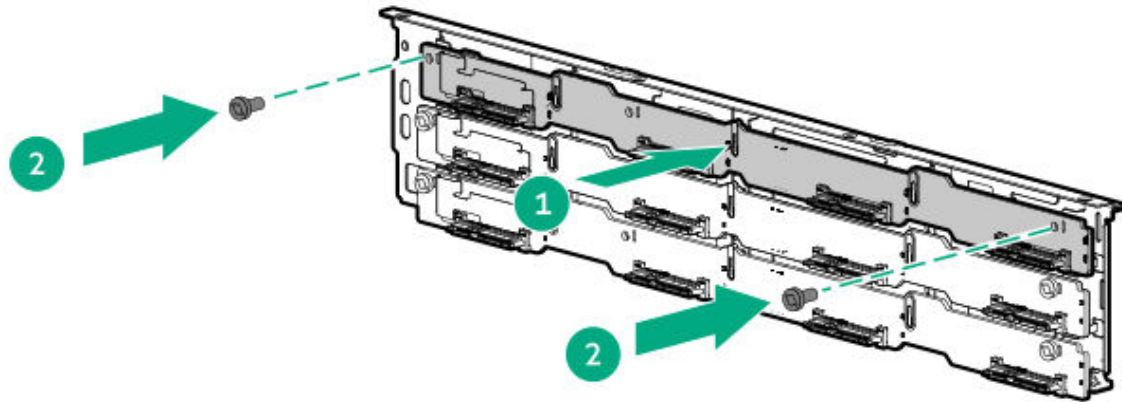
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Use a plastic spudger to pry one side of the blank from the chassis.



1. Disconnect the drive cables from the drive backplanes.
2. Remove the LFF drive backplane bracket.
3. Install the 4 LFF drive backplane:
 - a. Install the drive backplane on the drive backplane bracket.

b. Install the backplane screws.



- .4. Install the LFF drive backplane bracket.
- .5. Connect the drive cables to the drive backplanes:
 - Storage controller cable
 - Drive power cable
- .6. Install the midwall bracket.
- .7. Install the fan cage.
- .8. Install the air baffle.
- .9. Install the access panel.
- !0. Install the server into the rack.
- !1. Connect all peripheral cables to the server.
- !2. Connect each power cord to the server.
- !3. Connect each power cord to the power source.
- !4. Power up the server.
- !5. Install the LFF drives in the box 1.
- !6. Determine the status of the drive from the drive LED definitions.
- !7. If removed, install the front bezel.
- !8. To configure drive arrays, see the relevant storage controller guide.

Results

The installation procedure is complete.

Installing the 4 E3.S drive backplane

Prerequisites

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

- Multipurpose cage option (P76449-B21)
- T-15 Torx screwdriver
- Spudger or any small prying tool—This tool is only used to remove the E3.S drive filler from the multipurpose cage.

About this task



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](#).



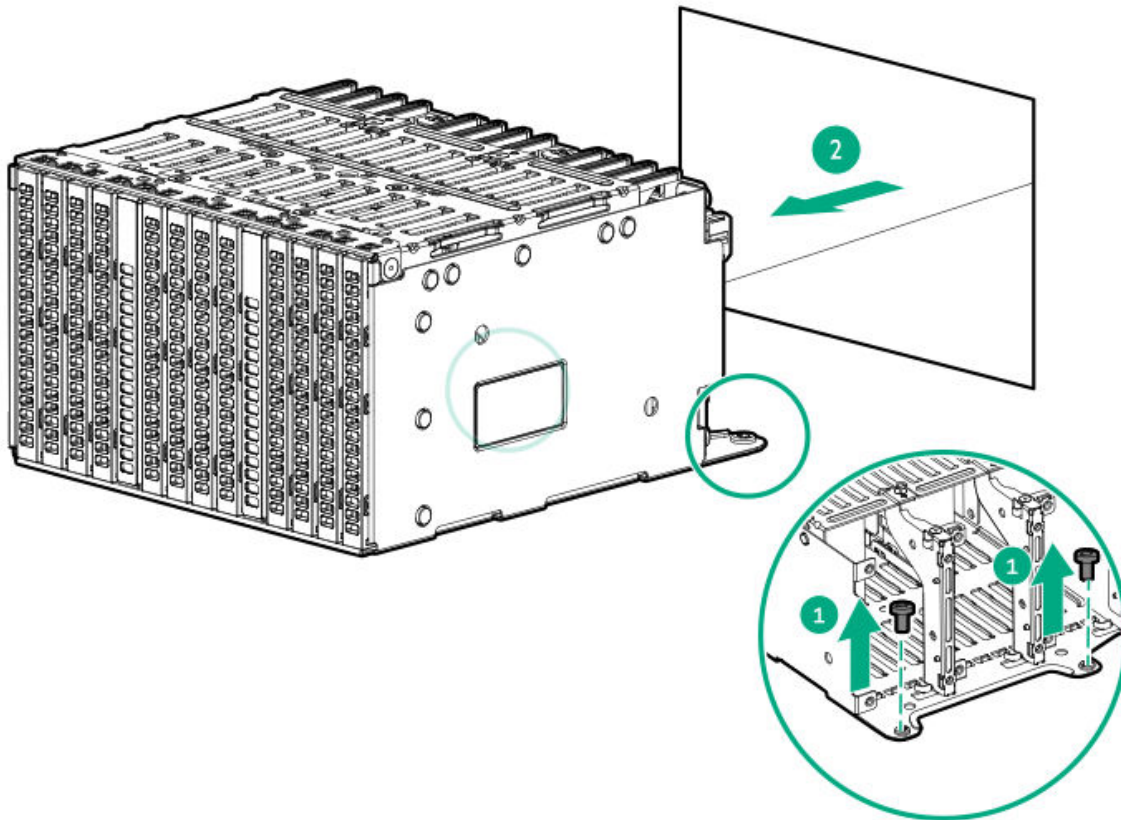
CAUTION

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

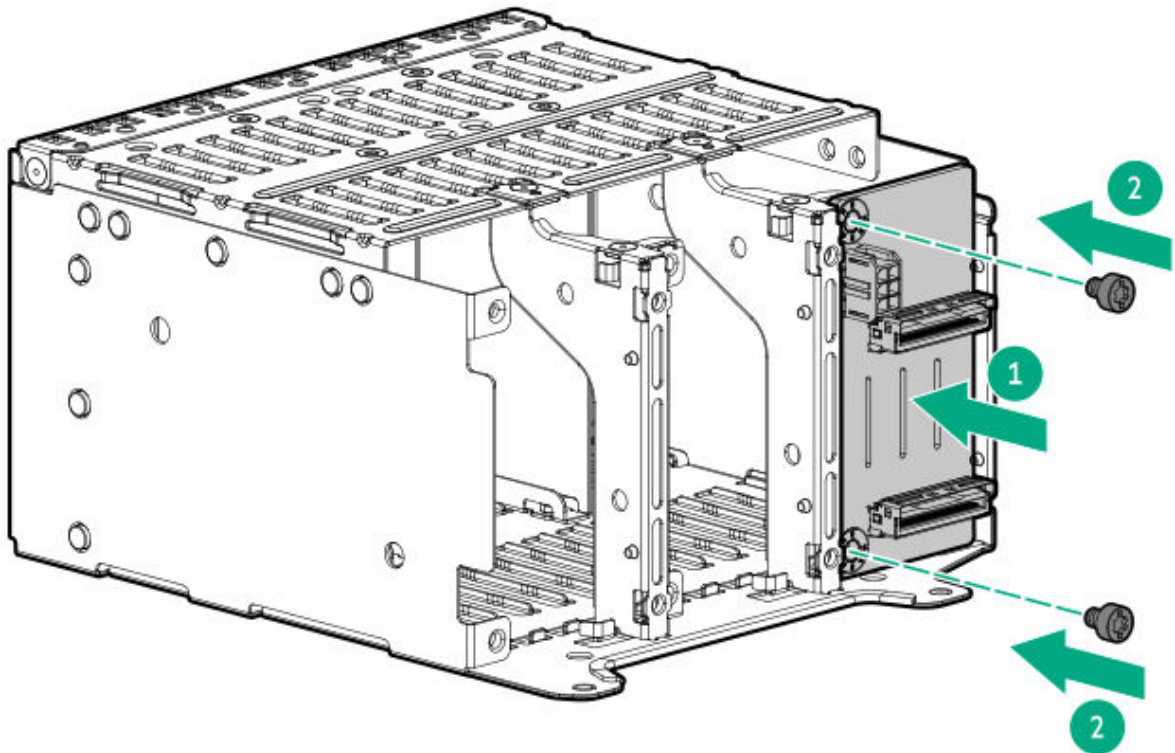
Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - [Extend the server out of the rack](#).
 - [Remove the server from the rack](#).
6. [Remove the access panel](#).

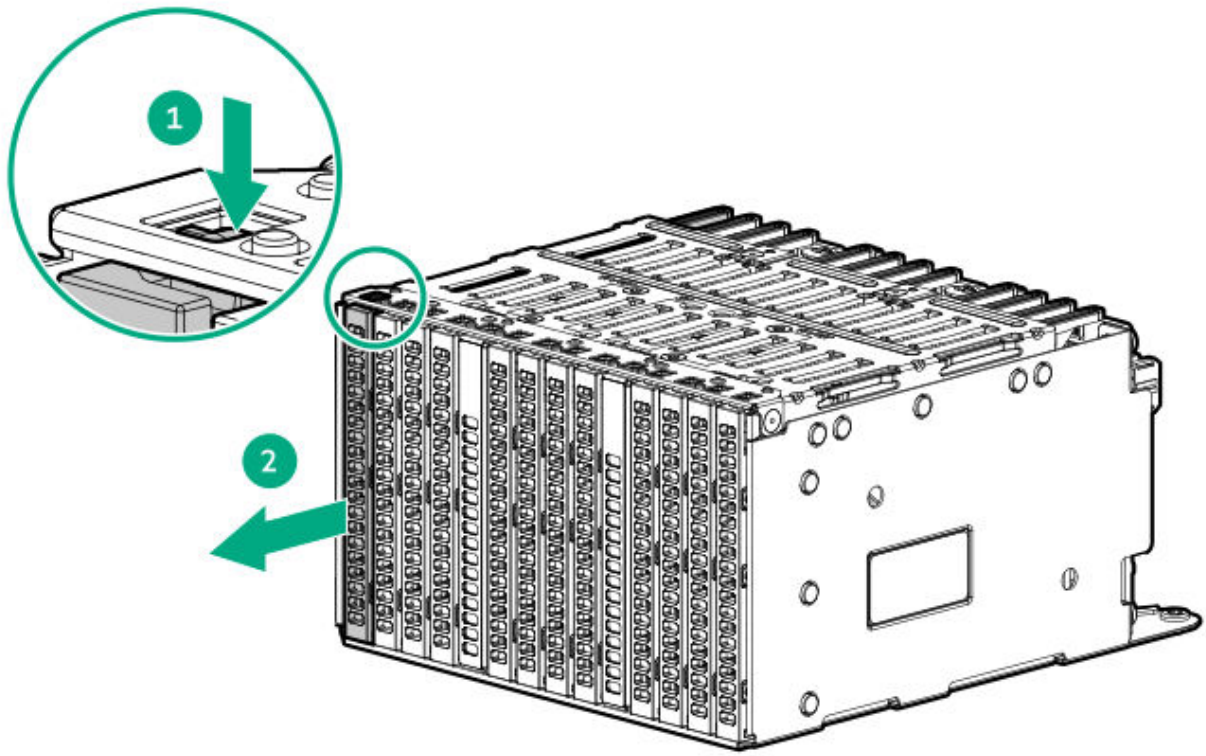
7. Remove the air baffle.
8. Remove the fan cage.
9. Do one of the following:
 - In the non-GPU-optimized configuration, remove the midwall bracket.
 - In the GPU-optimized configuration, remove the middle cover.
- .0. If installed, remove the multipurpose cage.



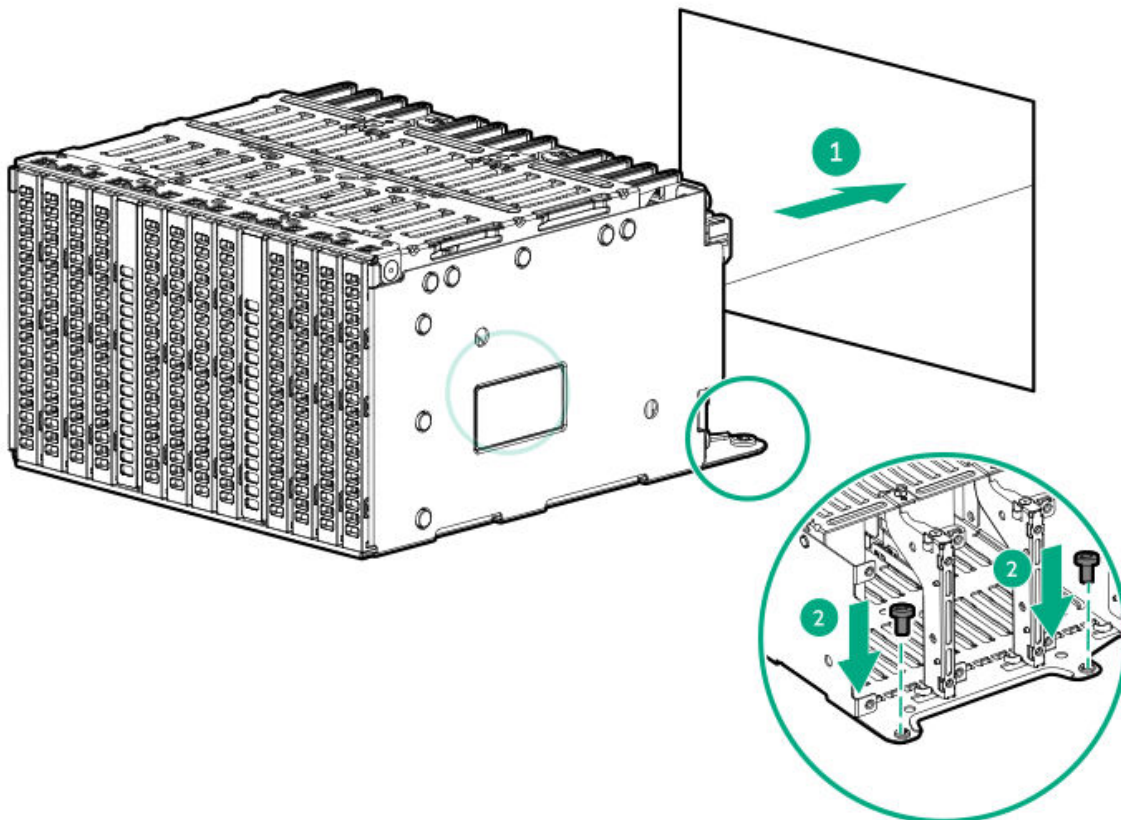
- .1. Install the 4 E3.S drive backplane.



- .2. If installing the E3.S drive, use a plastic spudger to press the release latch, and then slide the E3.S drive fillers out of the cage.



.3. Install the multipurpose cage.



- .4. Connect the following cables to the E3.S drive backplane:
 - [Storage controller cable: Non-GPU-optimized](#)
 - [Storage controller cable: GPU-optimized](#)
 - [Drive power cable](#)
- .5. Do one of the following:
 - [Install the midwall bracket.](#)
 - [Install the middle cover.](#)
- .6. [Install the fan cage.](#)
- .7. [Install the air baffle.](#)
- .8. [Install the access panel.](#)
- .9. [Install the server into the rack.](#)
- !0. Connect all peripheral cables to the server.
- !1. Connect each power cord to the server.
- !2. Connect each power cord to the power source.
- !3. [Power up the server.](#)
- !4. [Install the E3.S 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 [relevant storage controller guide.](#)

Results

The installation procedure is complete.

Drive cages

Subtopics

[**Installing the front 2 SFF side-by-side drive cage**](#)

Installing the front 2 SFF side-by-side drive cage

Prerequisites

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

About this task

The LFF chassis supports the front 2 SFF side-by-side drive cage option. This drive cage supports U.3 NVMe drives.



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](#).



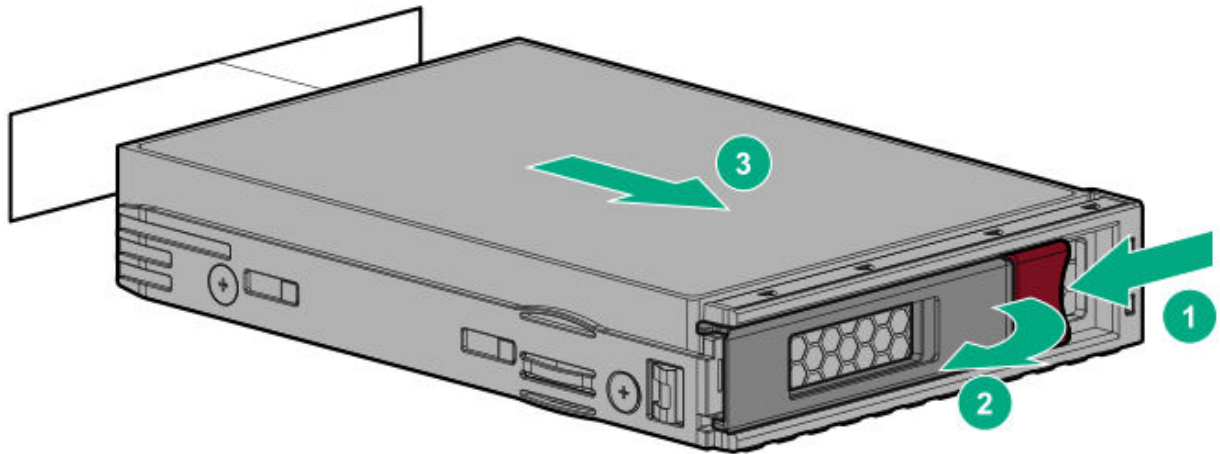
CAUTION

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

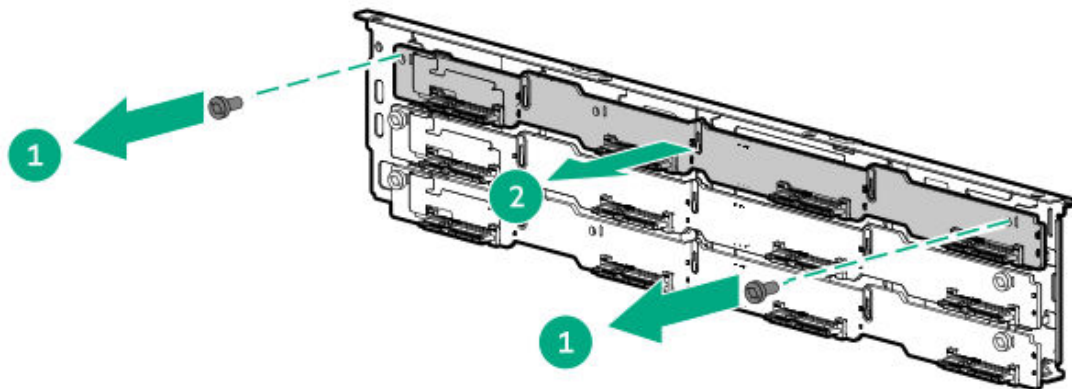
Procedure

1. If installed, [remove the front bezel](#).
2. [Power down the server](#).
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - [Extend the server out of the rack](#).
 - [Remove the server from the rack](#).
6. [Remove the access panel](#).
7. [Remove the air baffle](#).

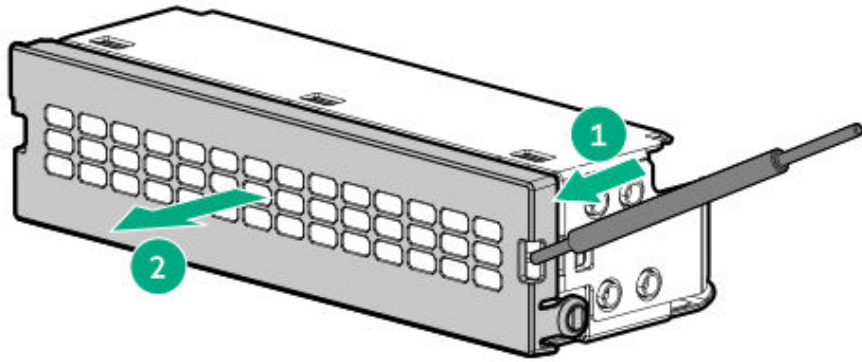
8. Remove the fan cage.
9. Remove the midwall bracket.
0. Disconnect the drive cables from the drive backplanes.
1. Remove the drive backplane bracket.
2. In the 12 LFF drive configuration, do the following:
 - a. Remove all LFF drives from the box 1.



- b. Remove the drive backplane from the box 1.



3. Use a plastic spudger to pry one side of the blank from the chassis.



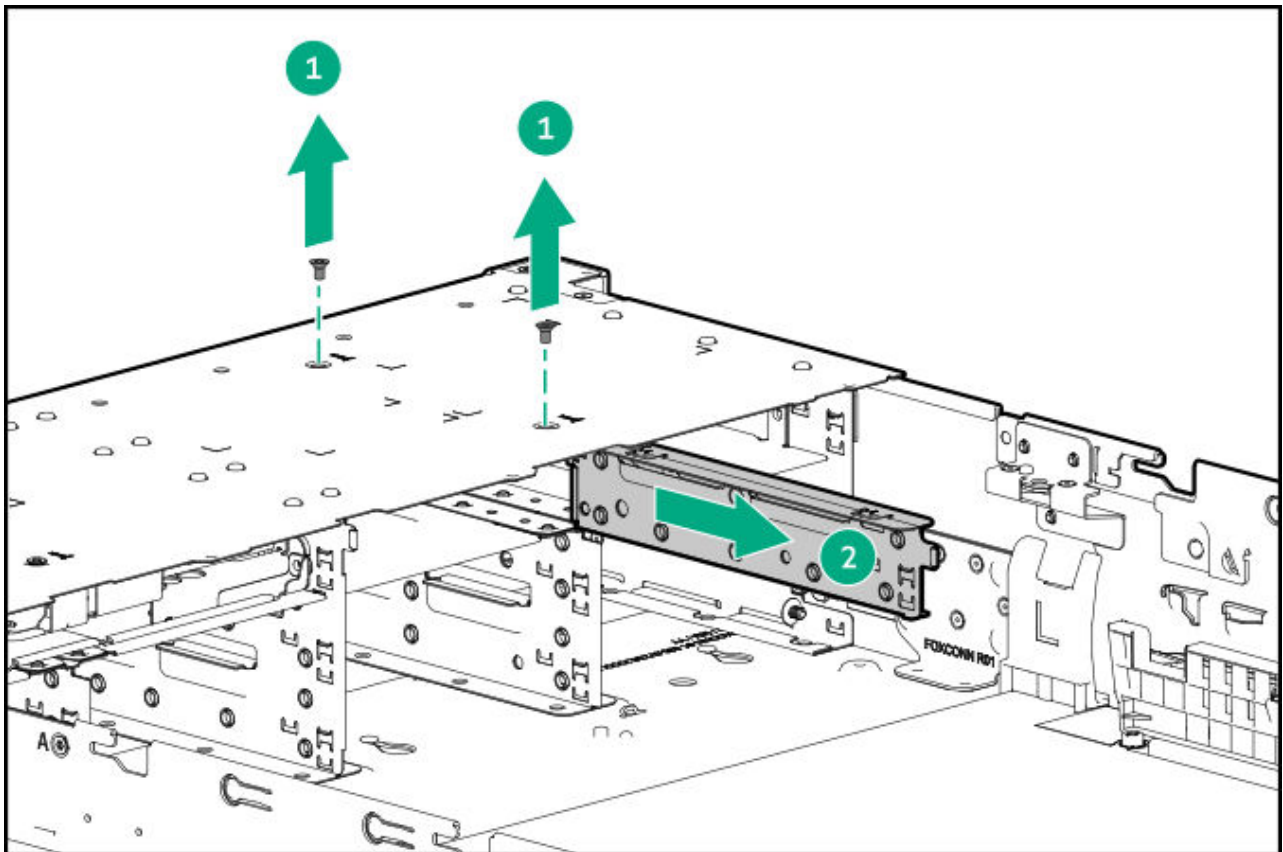
4. Remove the screws, and then remove the partition from the box 1 bays 1 and 2.

Retain the screws. These screws will be used to secure the universal media bay.



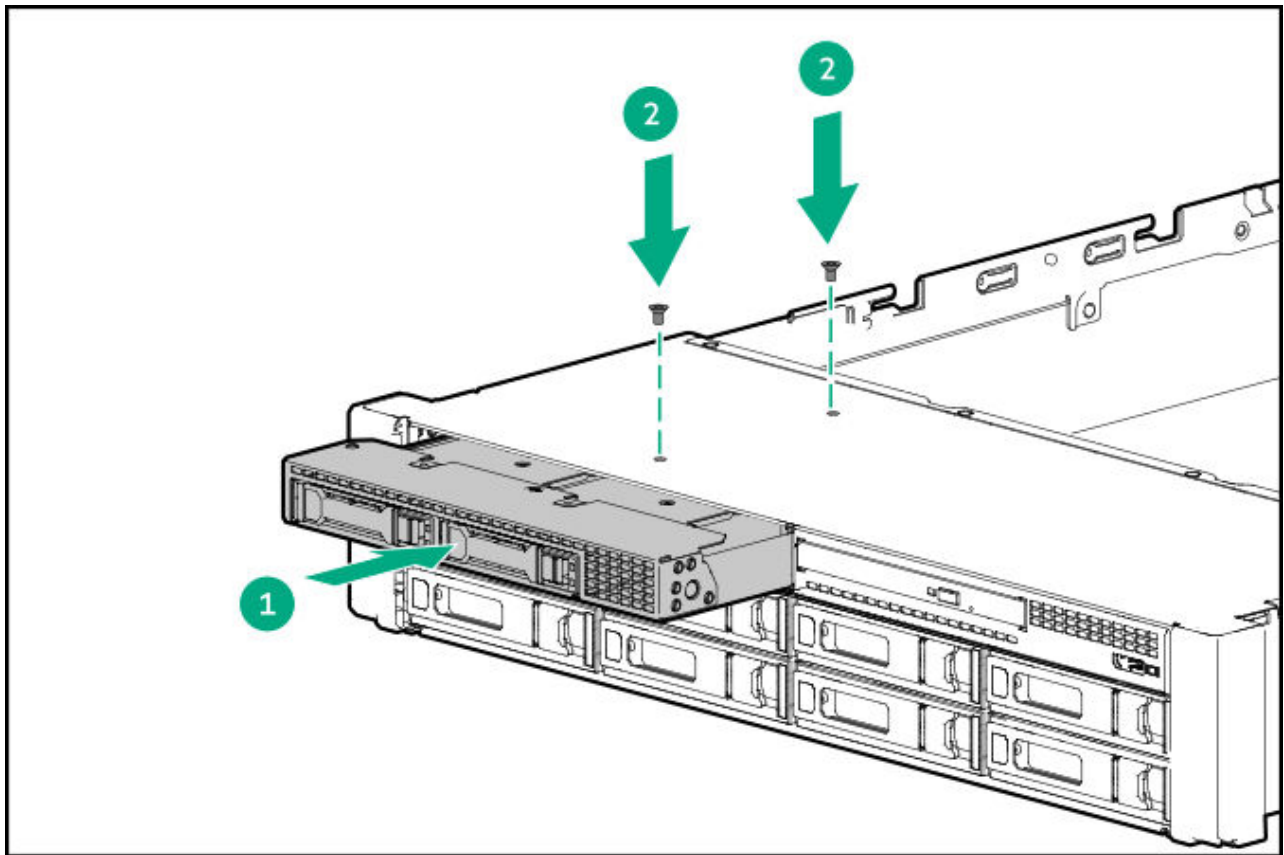
IMPORTANT

Retain the removed partitions to revert to the 12 LFF drive configuration.



5. (Optional) Install the universal media bay.

- .6. Install the SFF drive in the side-by-side drive cage.
- .7. Slide the 2 SFF side-by-side drive cage, and then secure it with the two screws.



- .8. Install the drive backplane bracket.
- .9. Install the drives.
- .10. Connect the drive cables to the LFF and SFF drive backplanes:
 - Storage controller cables
 - Drive power cables
- .11. Install the midwall bracket.
- .12. Install the fan cage.
- .13. Install the air baffle.
- .14. Install the access panel.
- .15. Install the server into the rack.
- .16. Connect all peripheral cables to the server.

- !7. Connect each power cord to the server.
- !8. Connect each power cord to the power source.
- !9. Power up the server.
- !0. If removed, install the front bezel.

Results

The installation procedure is complete.

Installing the front 2 SFF stacked drive cage

Prerequisites

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

About this task

The SFF chassis supports the front 2 SFF stacked drive cage option. This drive cage supports U.3 NVMe drives.



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.



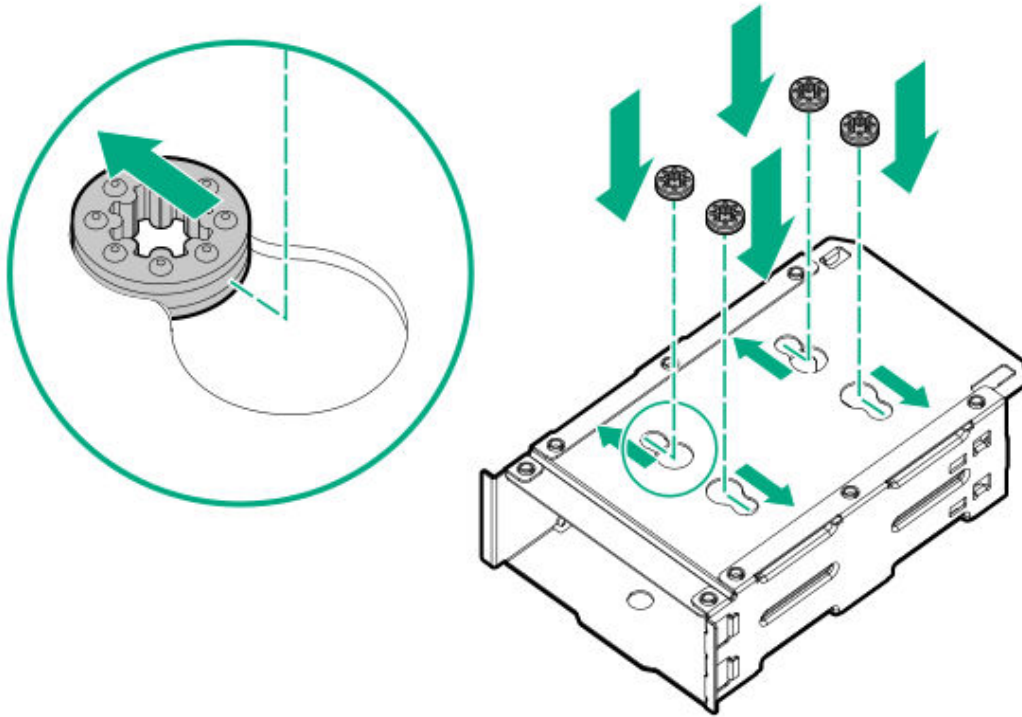
CAUTION

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

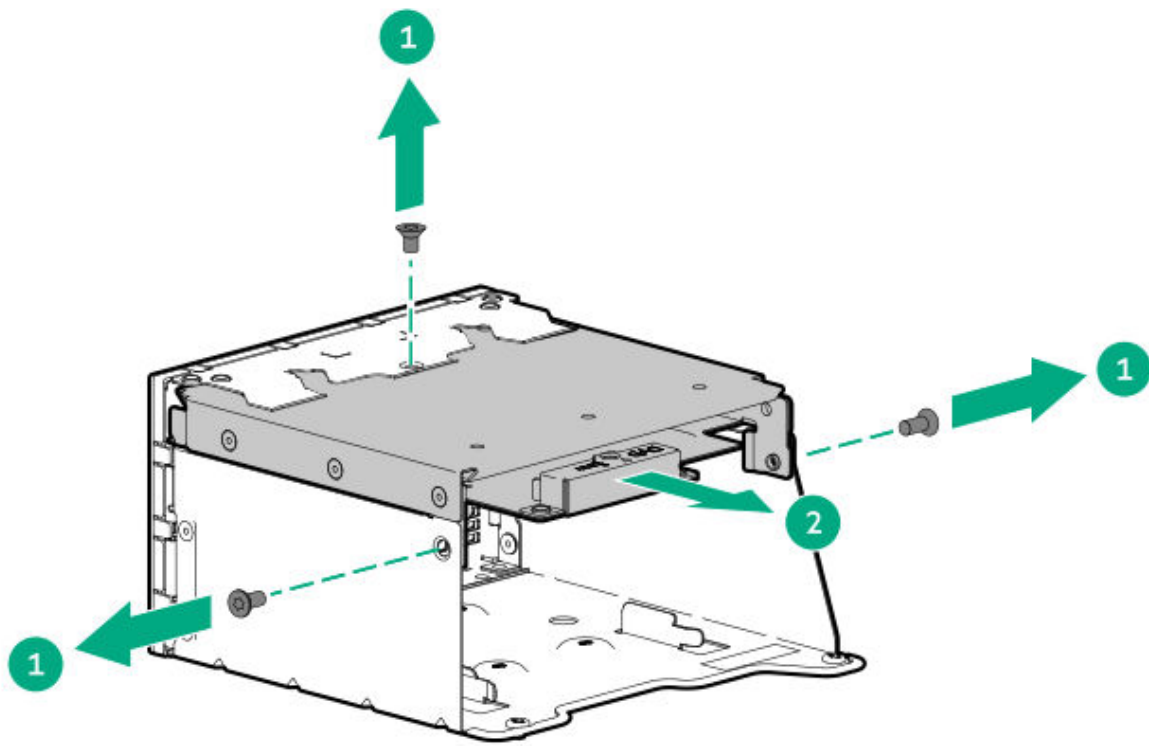
Procedure

Installing the front 2 SFF stacked drives in the universal media bay

1. Install the grommets onto the underside of the stacked drive cage.

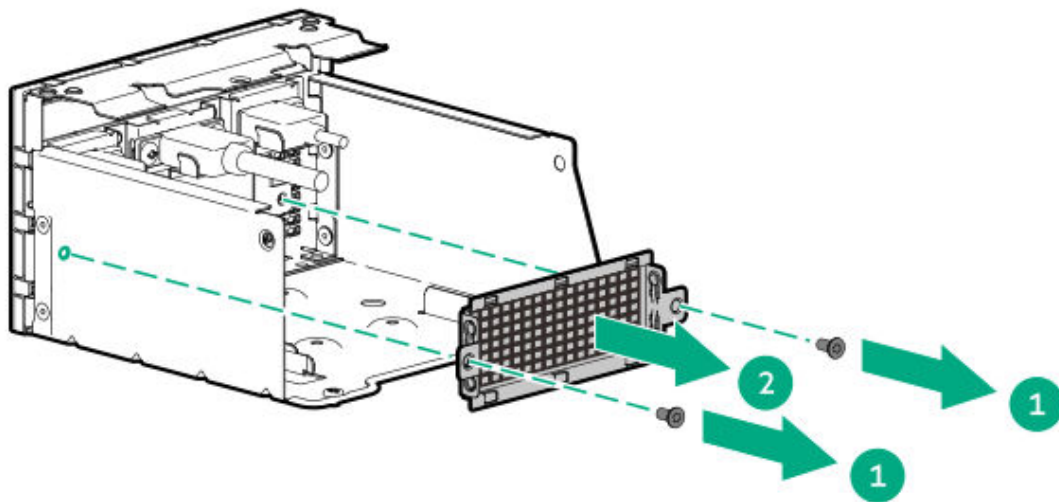


2. Remove the optical drive tray:
 - a. Remove the optical drive tray screws.
 - b. Remove the optical drive tray from universal media bay.



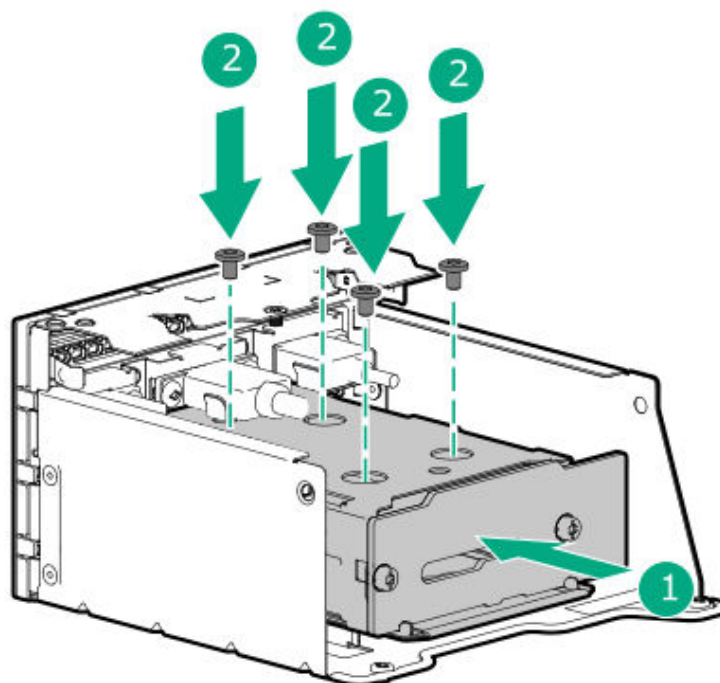
3. Remove the 2 SFF drive blank:

- a. Remove the blank screws.
- b. Remove the drive blank from universal media bay.

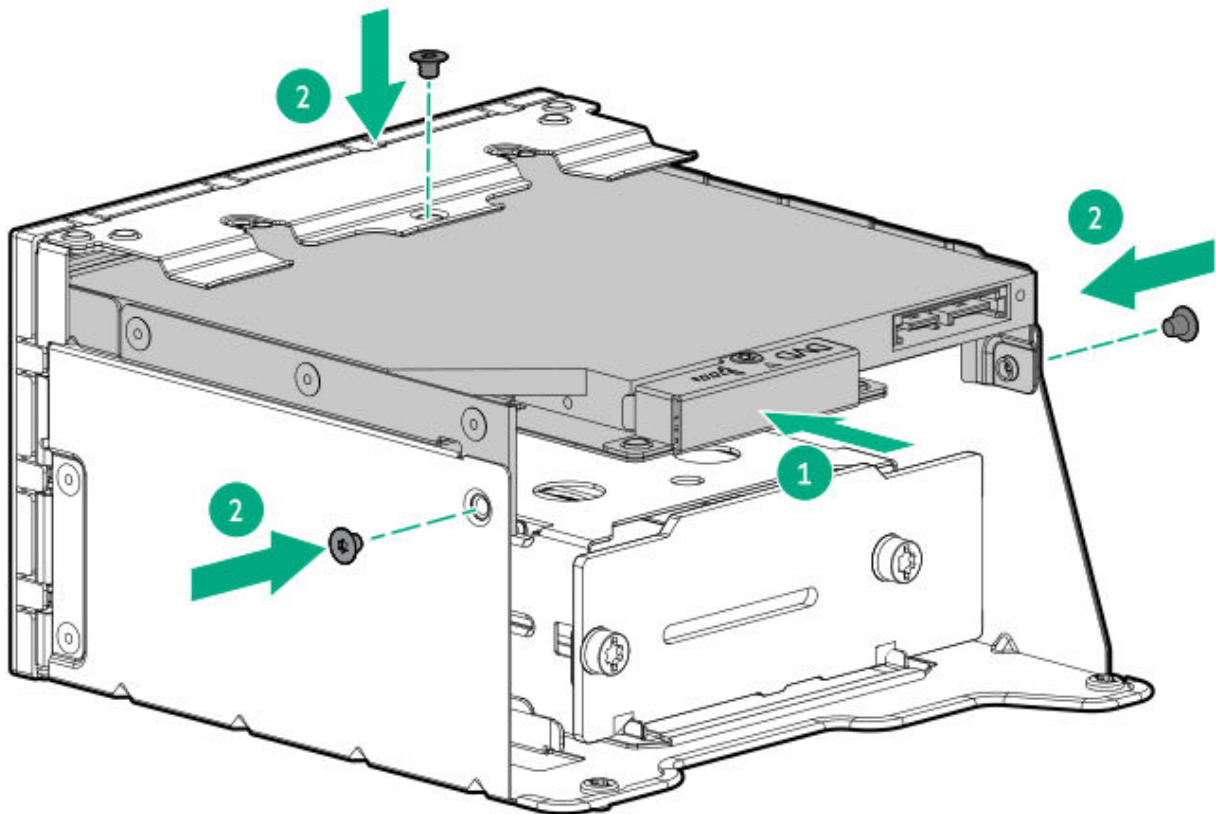


4. Install the front 2 SFF stacked drive cage:

- a. Install the 2 SFF stacked drive cage in the universal media bay.
- b. Install the stacked drive cage screws.



5. Install the optical drive tray:
 - a. Install the optical drive bay on the universal media bay.
 - b. Install the optical drive bay screws.



Installing the universal media bay in the server

6. If installed, remove the front bezel.
7. Power down the server.
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. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
11. Remove the access panel.
12. Remove the air baffle.
13. Remove the fan cage.
14. Remove the midwall bracket.

- .5. Install the universal media bay in the server.
- .6. Install the drives.
- .7. Connect the following 2 SFF stacked drive cables:
 - Storage controller cable
 - Drive power cable
- .8. Connect the universal media bay cable to the system board.
- .9. Install the midwall bracket.
- !0. Install the fan cage.
- !1. Install the air baffle.
- !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. Power up the server.
- !8. If removed, install the front bezel.

Results

The installation procedure is complete.

Installing the 8 SFF drive cage

Prerequisites

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

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

About this task



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.

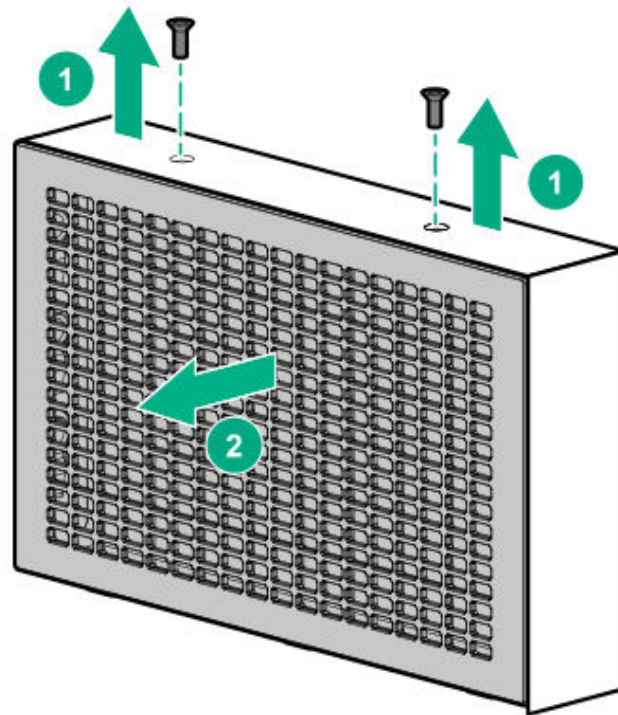


CAUTION

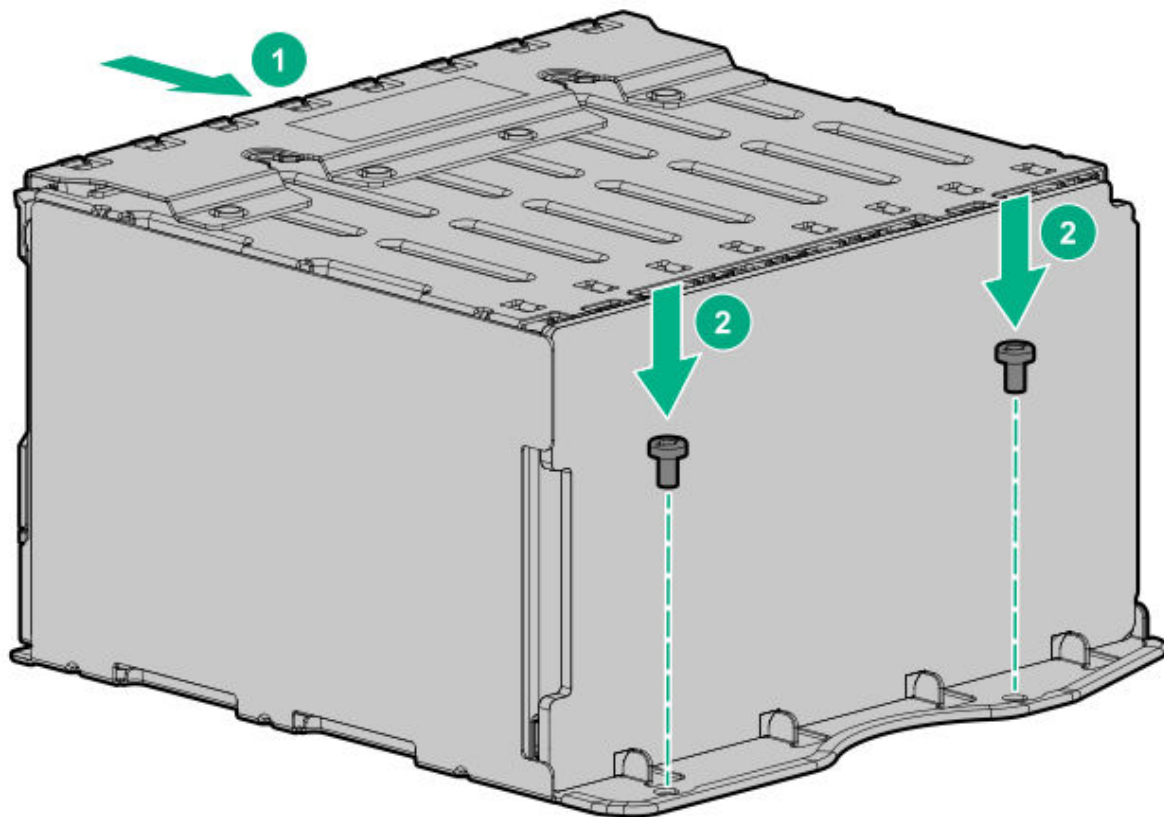
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Do one of the following:
 - In the SFF / E3.S drive configuration, remove the midwall bracket.
 - In the GPU-optimized configuration, remove the middle cover.
10. Remove the drive box blank.



.1. Slide the cage in the drive box, and then install the drive cage screws.



- .2. Install the drives.
- .3. Connect the following cables:
 - Storage controller cable
 - Drive power cable
- .4. Do one of the following:
 - Install the midwall bracket.
 - Install the middle cover.
- .5. Install the fan cage.
- .6. Install the air baffle.
- .7. Install the access panel.
- .8. Install the server into the rack.
- .9. Connect all peripheral cables to the server.
- !0. Connect each power cord to the server.
- !1. Connect each power cord to the power source.
- !2. Power up the server.
- !3. Install the SFF drive.
- !4. If removed, install the front bezel.

Results

The installation procedure is complete.

Energy packs

Subtopics

HPE Smart Storage Battery

HPE Smart Storage Hybrid Capacitor

Installing the energy pack

HPE Smart Storage Battery

A single 96 W battery can support up to 24 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.

This server supports the 96 W HPE Smart Storage Battery with the 145 mm cable.

For more information, see HPE Smart Storage Batteries and Hybrid Capacitors QuickSpecs:

https://www.hpe.com/psnow/doc/a00028553enw.pdf?jumpid=in_pdp-psnow-qs

HPE Smart Storage Hybrid Capacitor

The capacitor pack can support up to three devices.

This server supports the 12 W or 16 W HPE Smart Storage Hybrid Capacitor with the 145 mm cable.

Before installing the HPE Smart Storage Hybrid Capacitor, verify that the system BIOS meets the minimum firmware requirements to support the capacitor pack.



IMPORTANT

If the system BIOS or controller firmware is older than the minimum recommended firmware versions, the capacitor pack will only support one device.

The capacitor pack is fully charged after the system boots.

For more information, see HPE Smart Storage Batteries and Hybrid Capacitors QuickSpecs:

https://www.hpe.com/psnow/doc/a00028553enw.pdf?jumpid=in_pdp-psnow-qs

Subtopics

Minimum firmware versions

Minimum firmware versions

Product	Minimum firmware version
Server system ROM	1.20

Product**Minimum firmware version**

HPE MR type-o and type-p Gen11 controllers

52.24.3-4948

Installing the energy pack

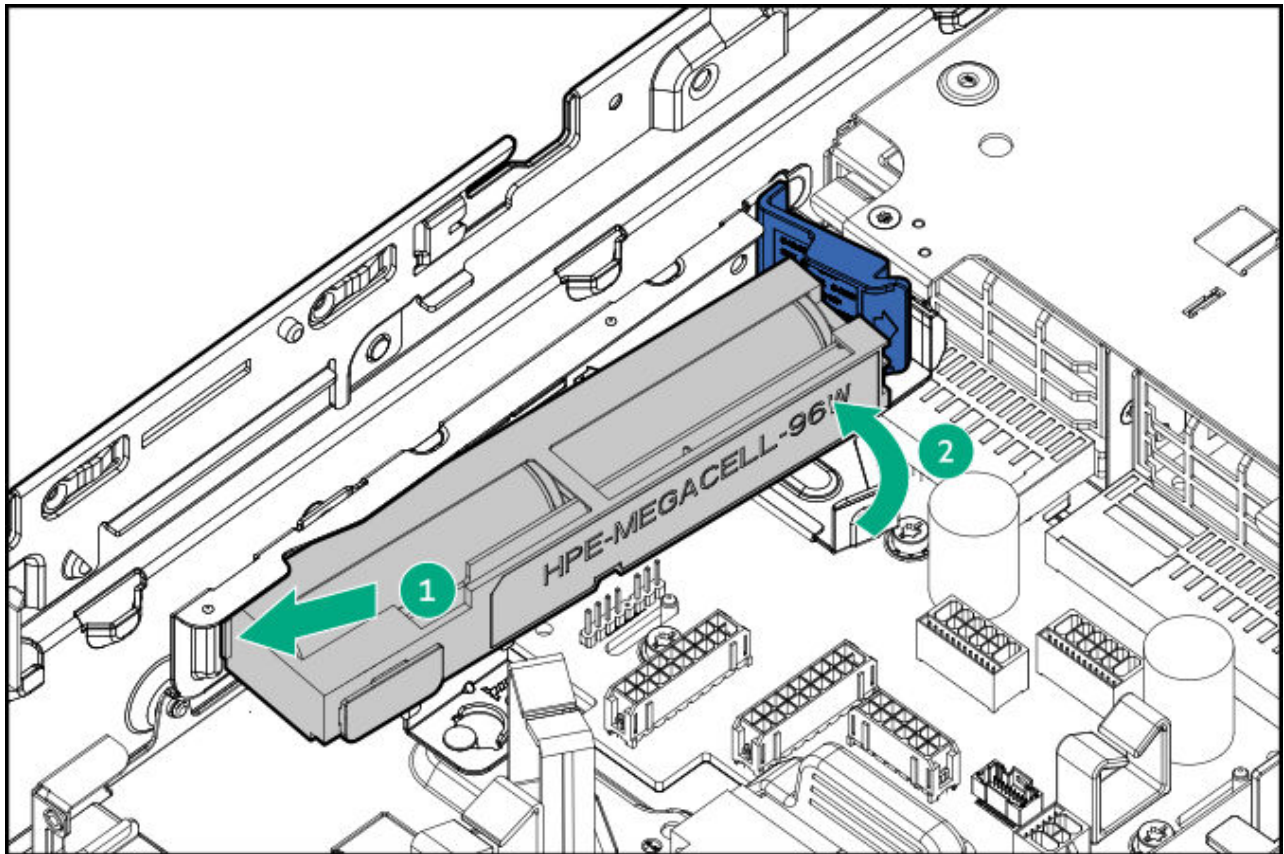
About this task

**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.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Install the energy pack.



8. Connect the energy pack cable to the system board.
9. Install the air baffle.
0. Install the access panel.
- .1. Install the server into the rack.
- .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. Power up the server.

Results

The installation procedure is complete.

GPUs

Subtopics

GPU installation guidelines

Installing a GPU in the PCIe riser cage

Installing a GPU in the GPU cage

GPU installation guidelines

To ensure optimal GPU performance and avoid bottlenecks, observe these requirements:

- In non-GPU-optimized configurations, single-width GPUs with TDP under 75 W are supported in the primary and secondary PCIe riser slots.
- In GPU-optimized configuration:
 - Install GPUs in pairs.
 - When installing two GPUs, place them in the GPU cage 1 slot 12 and cage 2 slot 17.
- This server does not support the installation of different GPU models in the same system.



IMPORTANT

Workloads for high performance GPUs with passive cooling can cause the fans to operate at high speeds to maintain optimum system cooling. Hewlett Packard Enterprise does not recommend installing GPUs with passive cooling in or near a site where there is a reasonable expectation for a quiet environment.

System memory requirements

- Minimum: At least 1.5x the total GPU memory.
- Recommendation: At least 2.0x the total GPU memory.

Cooling requirements

- All six high performance fans are required for GPU installation.
- The operating inlet ambient temperature limits vary by GPU model and server drive configuration. For more information, see the Extended Ambient Temperature Guidelines for HPE Gen12 Servers:



IMPORTANT

Workloads for high performance GPUs with passive cooling can cause the fans to operate at high speeds to maintain optimum system cooling. Hewlett Packard Enterprise does not recommend installing GPUs with passive cooling in or near a site where there is a reasonable expectation for a quiet environment.

Auxiliary power cable requirements

This server supports multiple GPU auxiliary power cable options, each designed for different maximum GPU TDP requirements. To determine the appropriate cable for your selected GPU, see the server QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/quickspecs>).

Installing a GPU in the PCIe riser cage

Prerequisites

- [Review the GPU installation guidelines.](#)
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task



CAUTION

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



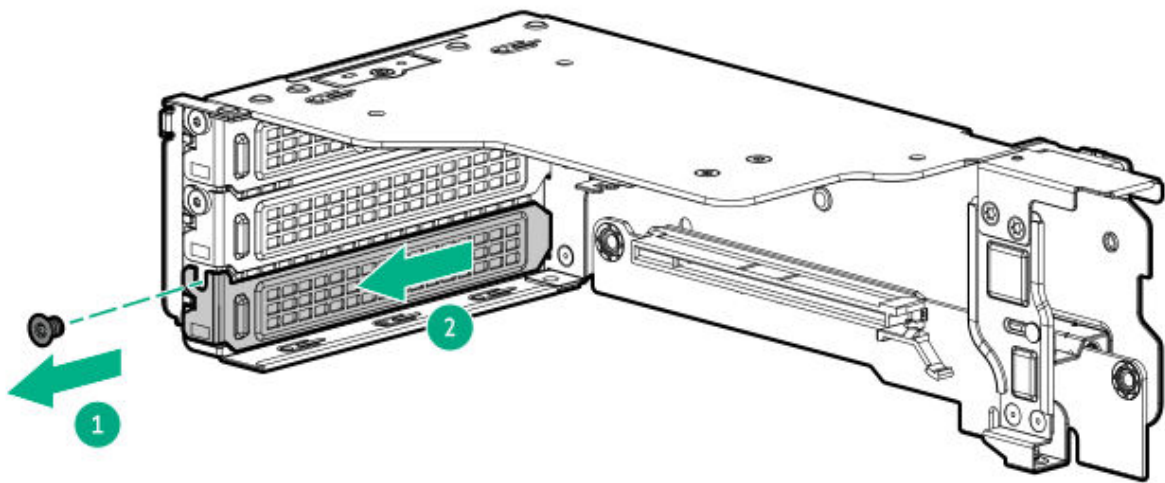
CAUTION

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](#).

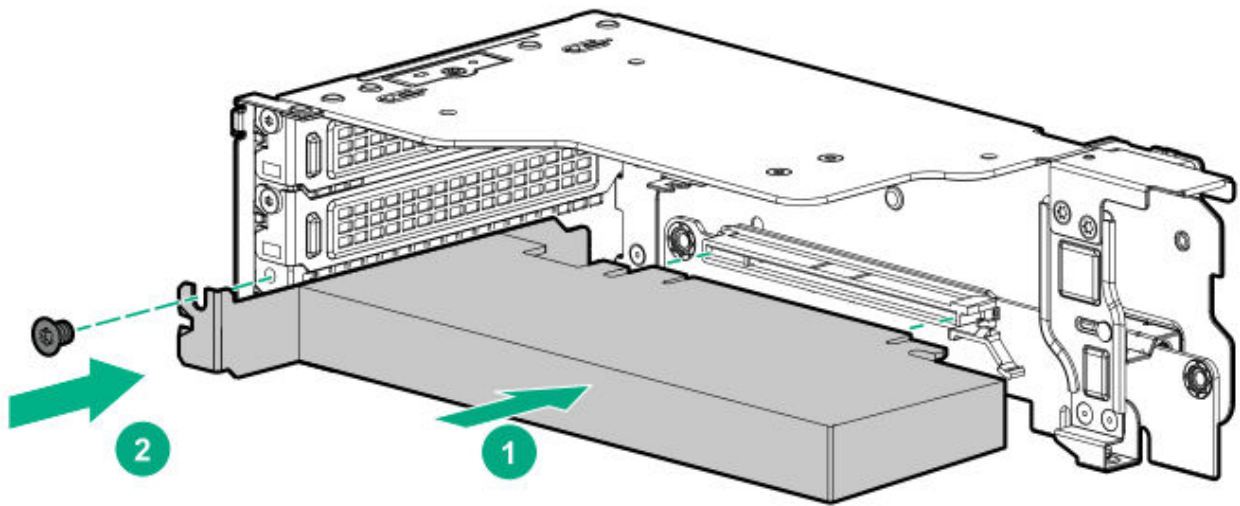
Procedure

1. [Power down the server.](#)
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.

3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the riser cage.
8. Remove the riser slot blank.



9. Install the GPU, and then secure the screw.
Make sure that the GPU is seated firmly in the slot.



- .0. Install the riser cage.
- .1. Install the air baffle.
- .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. Power up the server.

Results

The installation procedure is complete.

Installing a GPU in the GPU cage

Prerequisites

- Review the GPU installation guidelines.
- The GPU auxiliary power cable option (P75110-B21) is required if the L40S / L20 double-width GPU is installed.

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

About this task



CAUTION

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

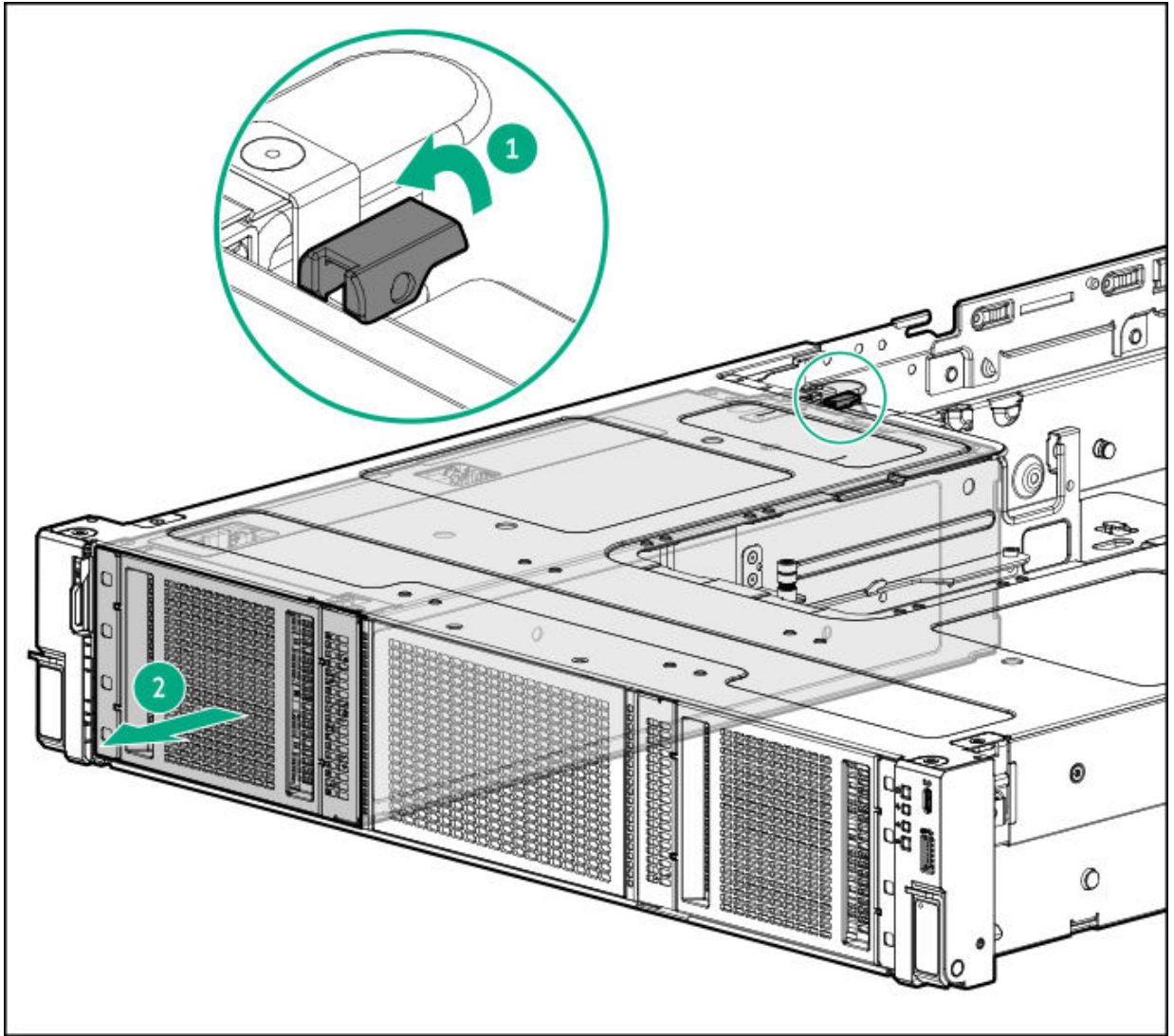


CAUTION

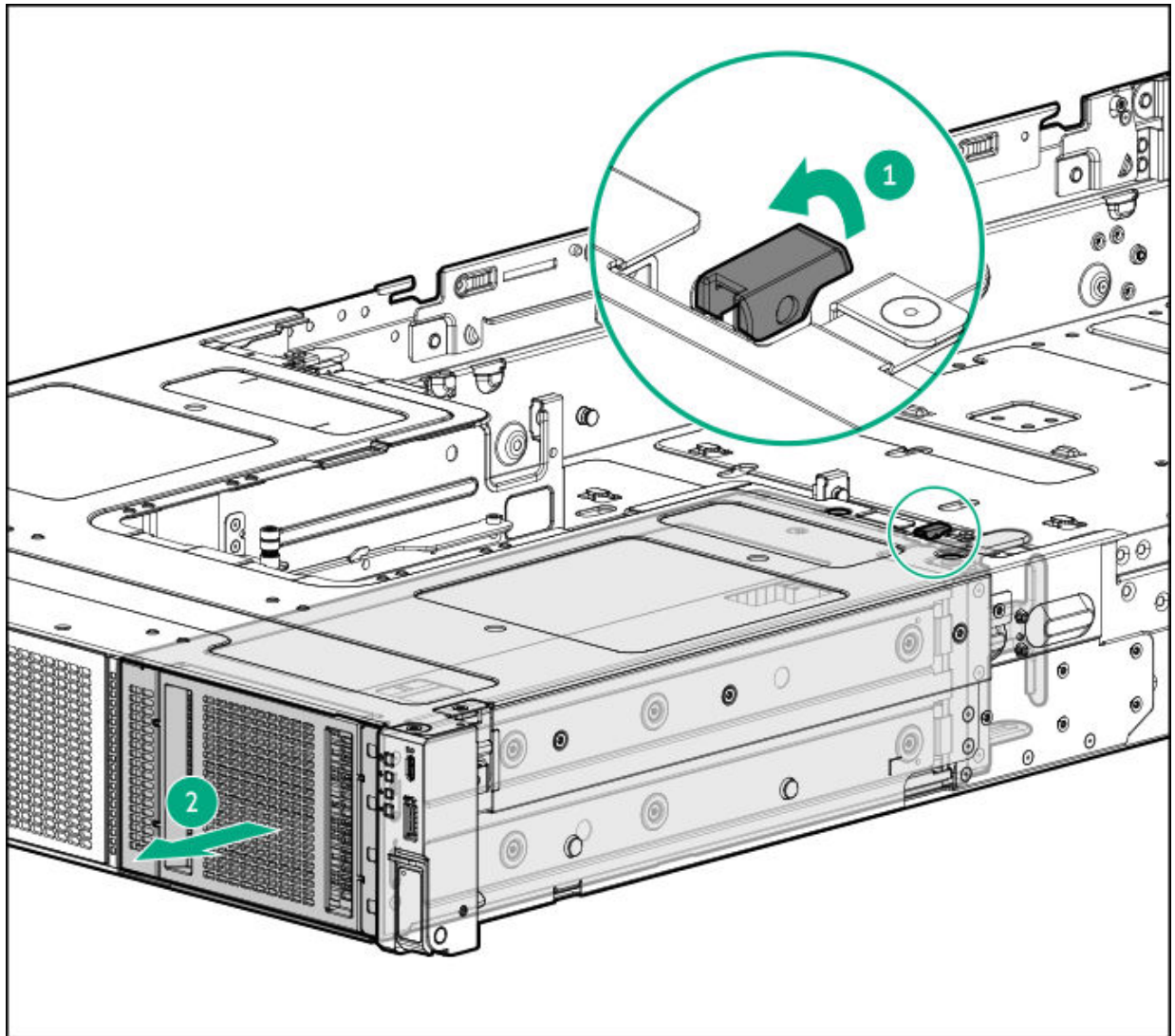
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

Procedure

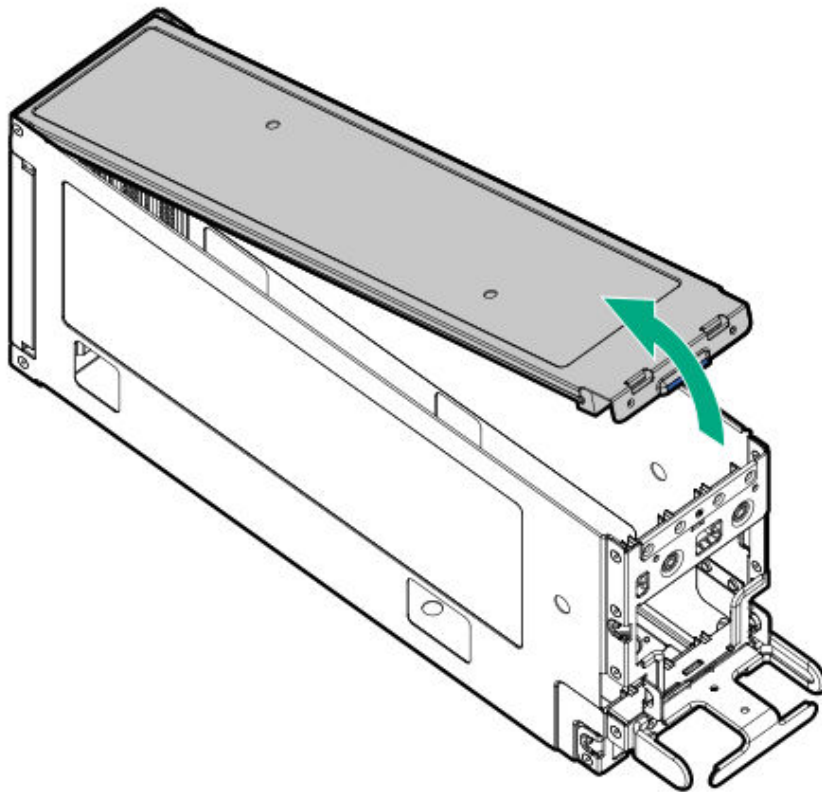
1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the middle cover.
0. Disconnect the GPU captive riser and power cables from the system board.
- .1. Remove the GPU cage.
 - GPU cage 1



- GPU cage 2



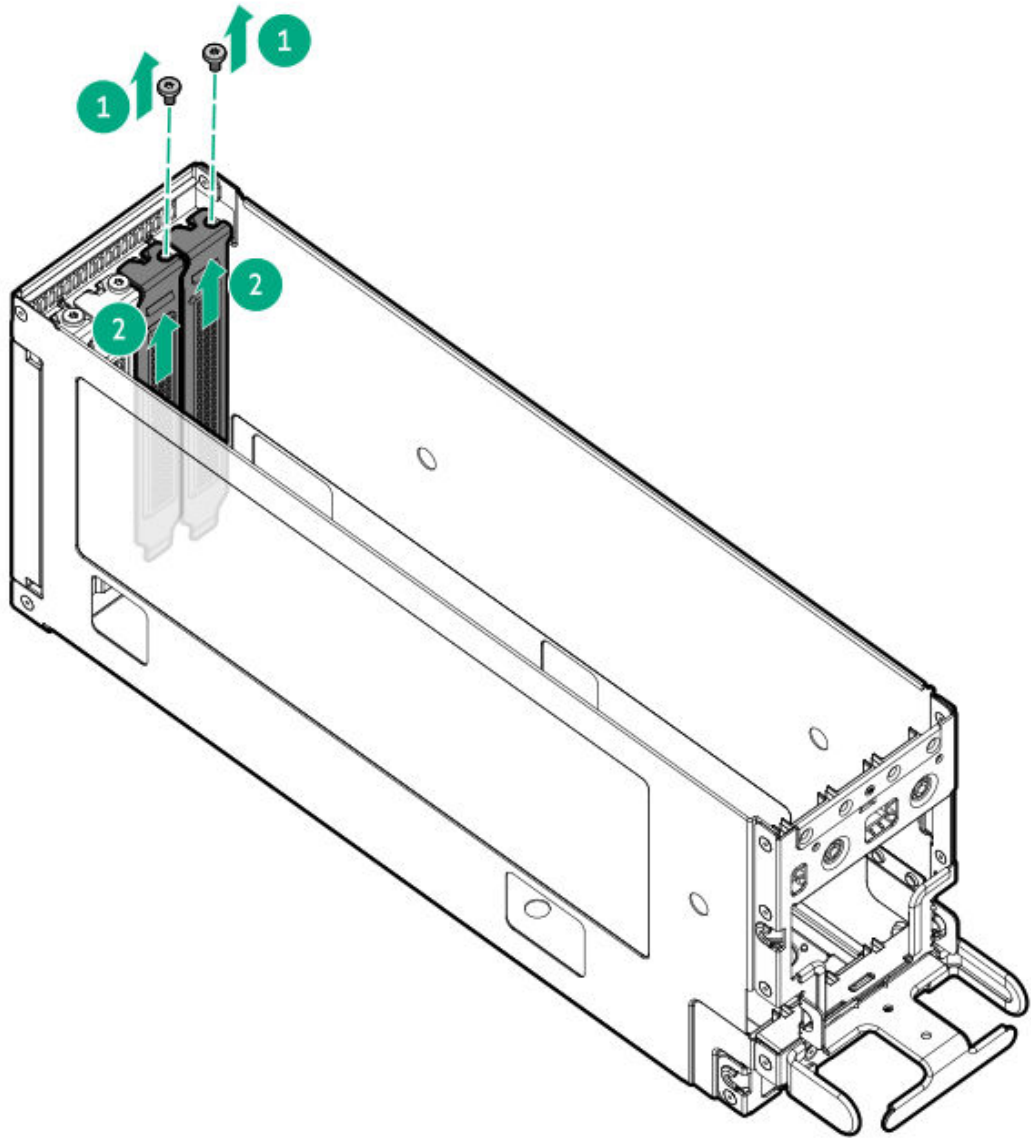
.2. Remove the GPU cage cover.



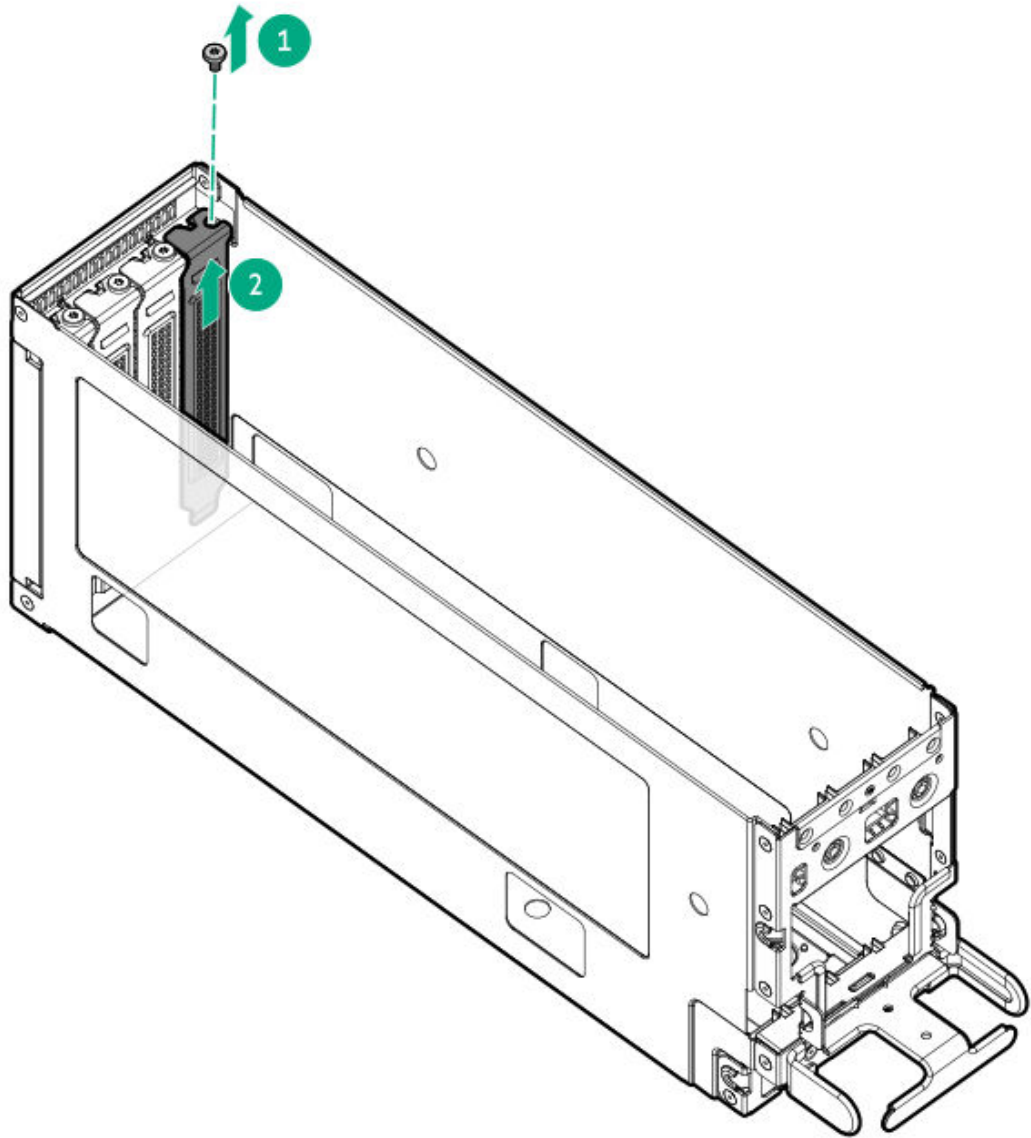
.3. Remove the GPU slot blank.

Retain the screws. These screws are used to secure the GPU.

- Double-width GPU



- Single-width GPU

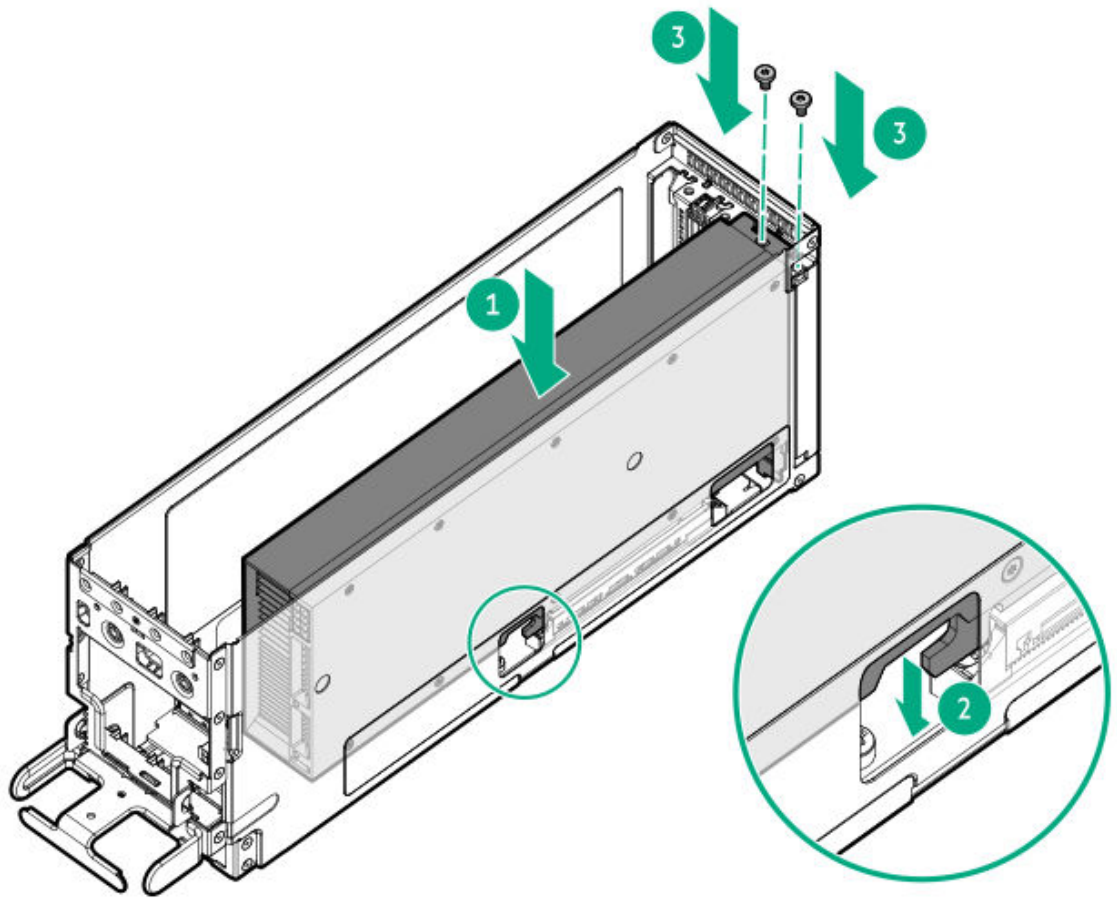


.4. If installing the L40S double-width GPU, connect the GPU auxiliary power cable to the captive riser.

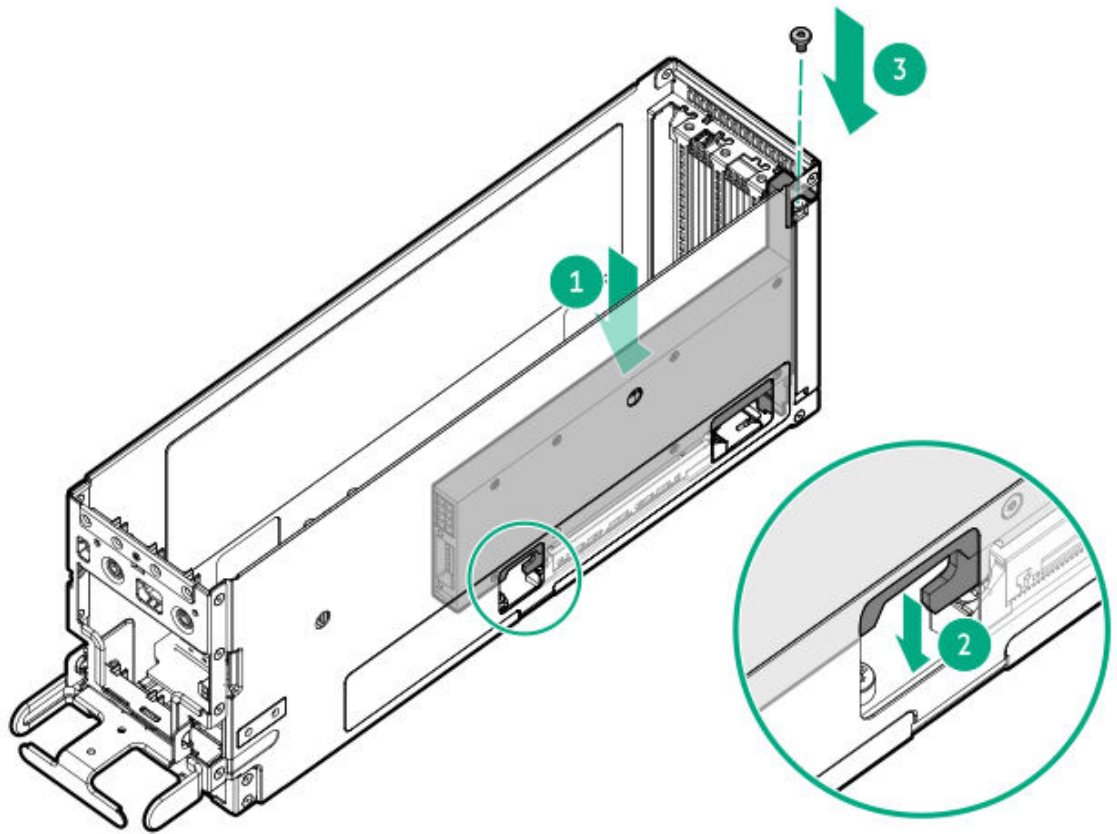
.5. Install the GPU.

Make sure that the GPU is firmly seated in the riser slot.

- Double-width GPU



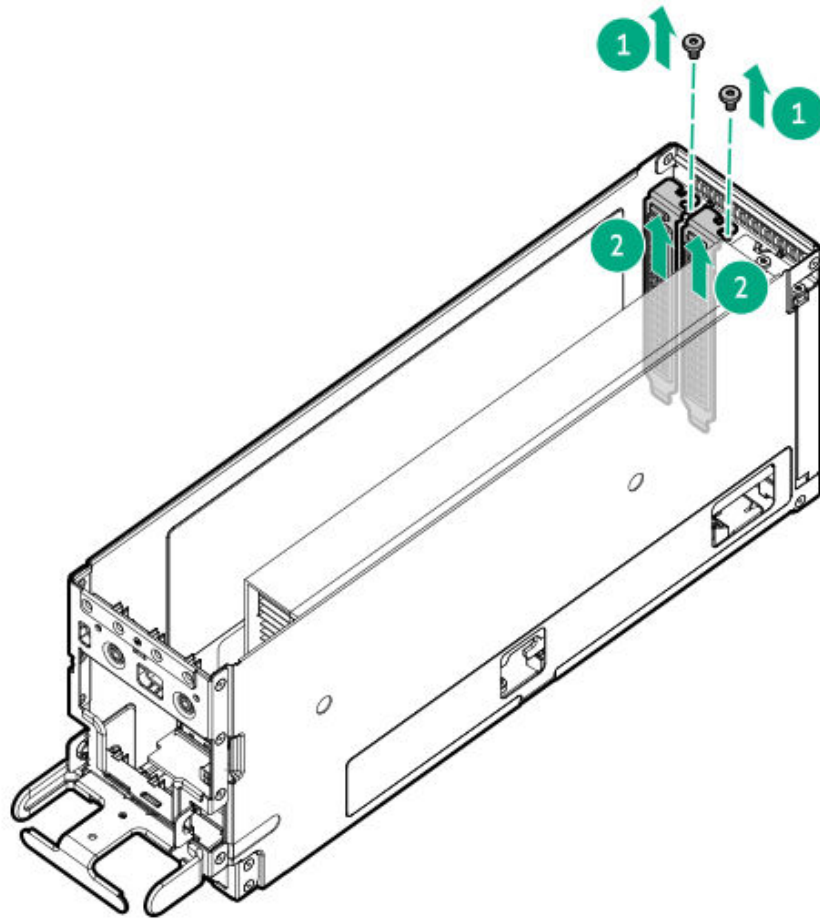
- Single-width GPU



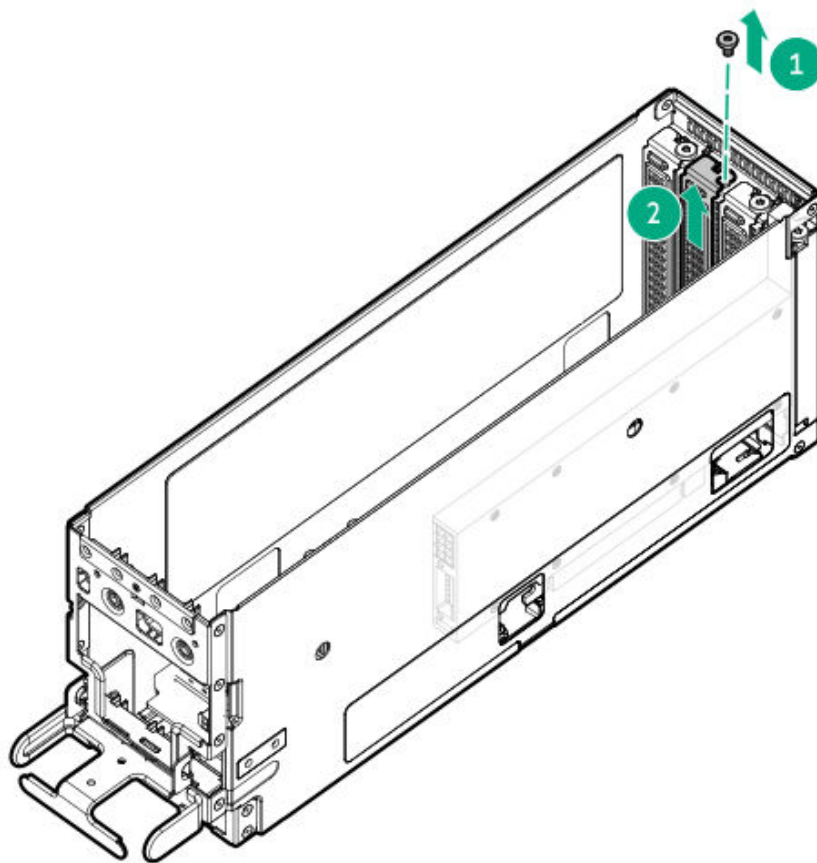
.6. If you are planning to install the second GPU, remove the GPU slot blanks.

Retain the screws. These screws are used to secure the GPU.

- Double-width GPU

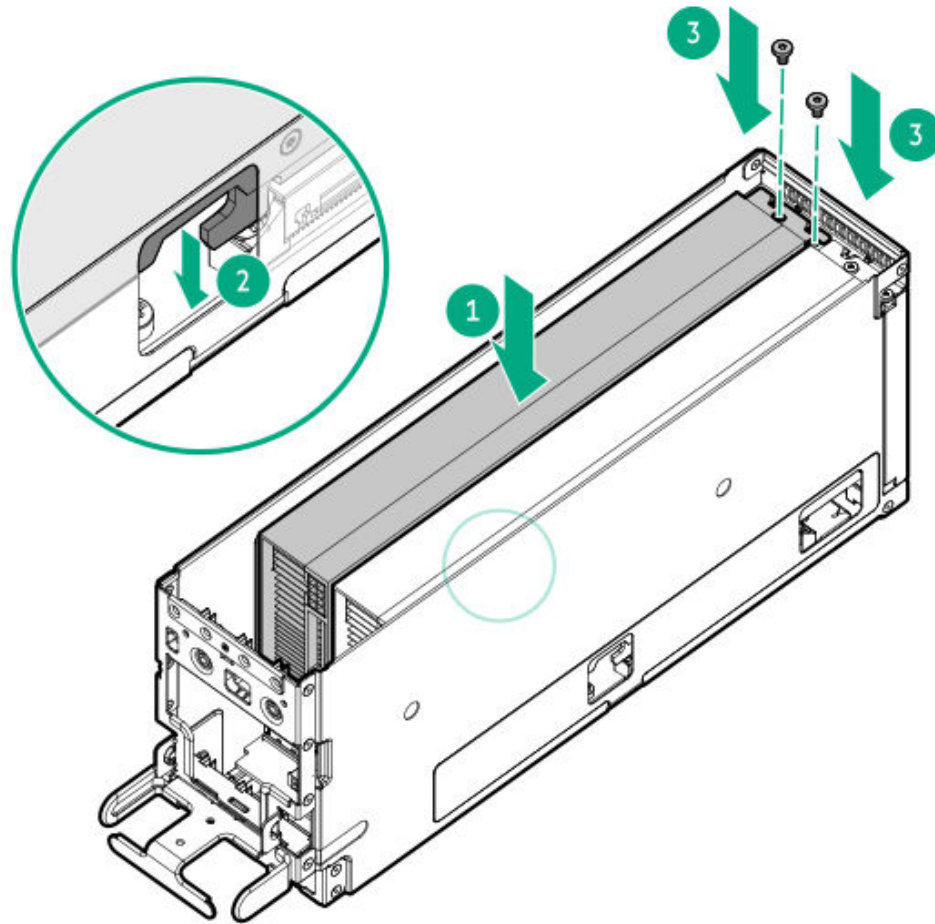


- Single-width GPU

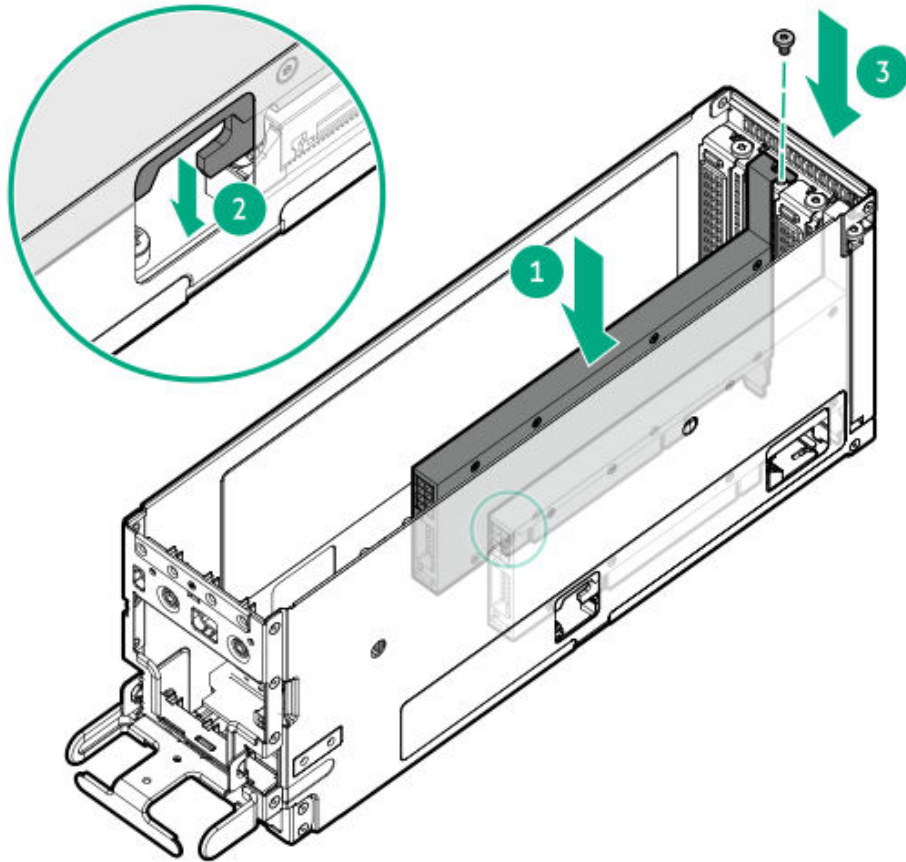


.7. Install the second GPU

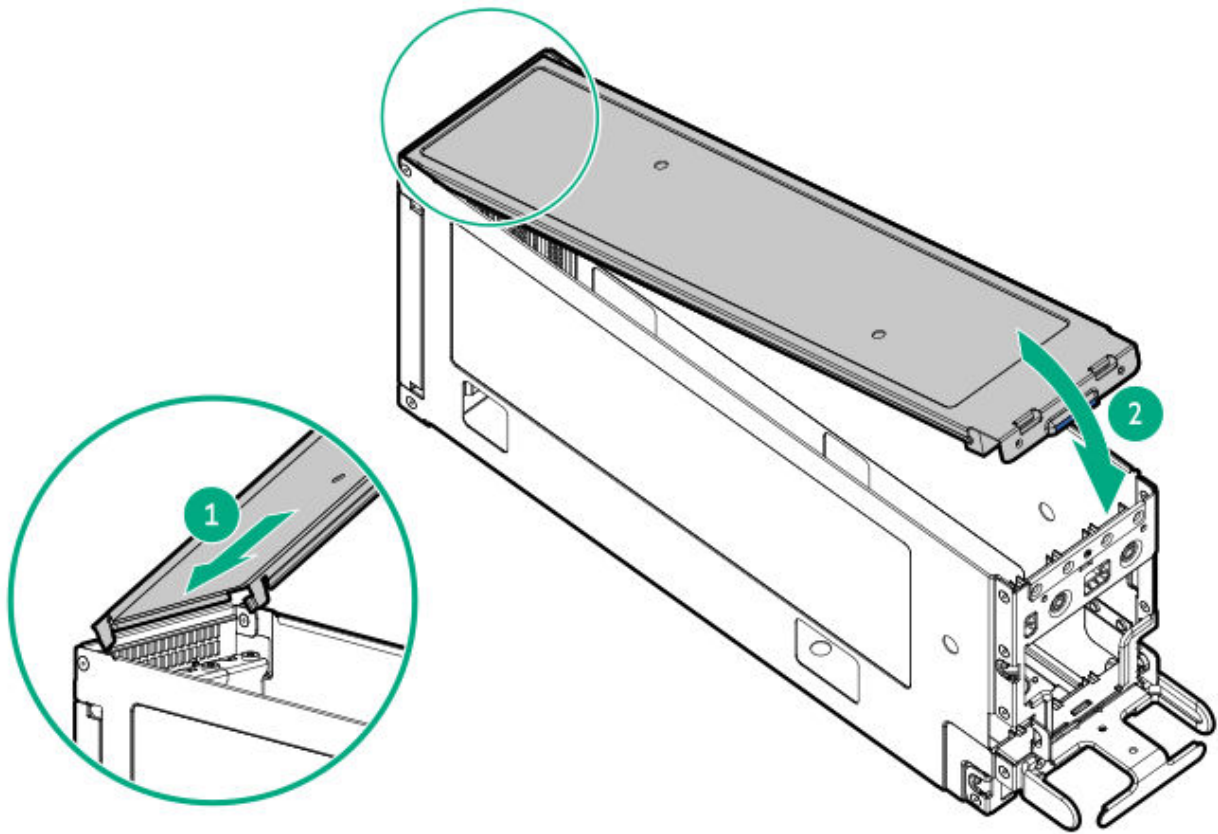
- Double-width GPU



- Single-width GPU



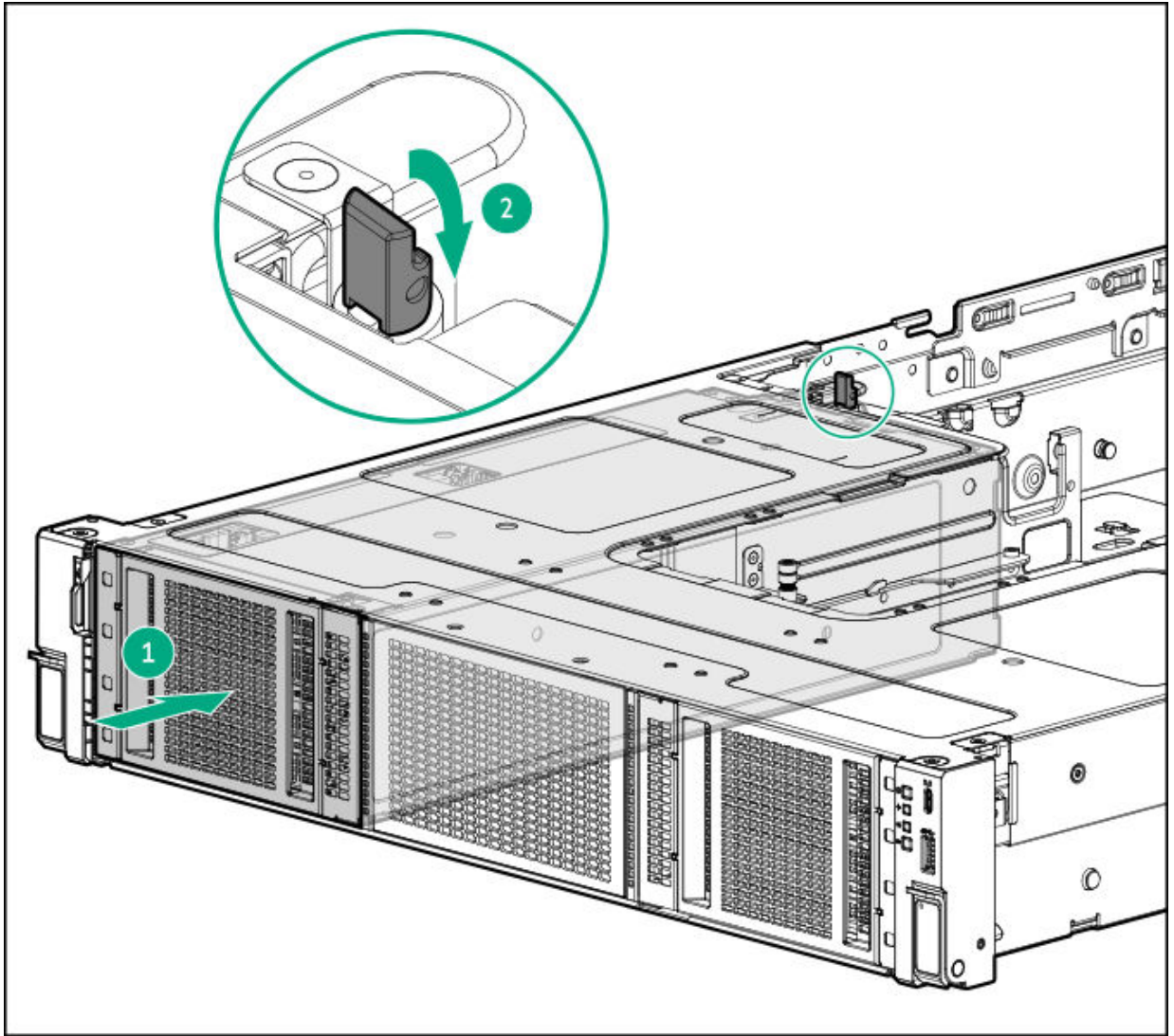
- .8. If the L40S double-width GPU is installed, connect the GPU auxiliary power cable to the L40S.
- .9. Install the GPU cage cover.



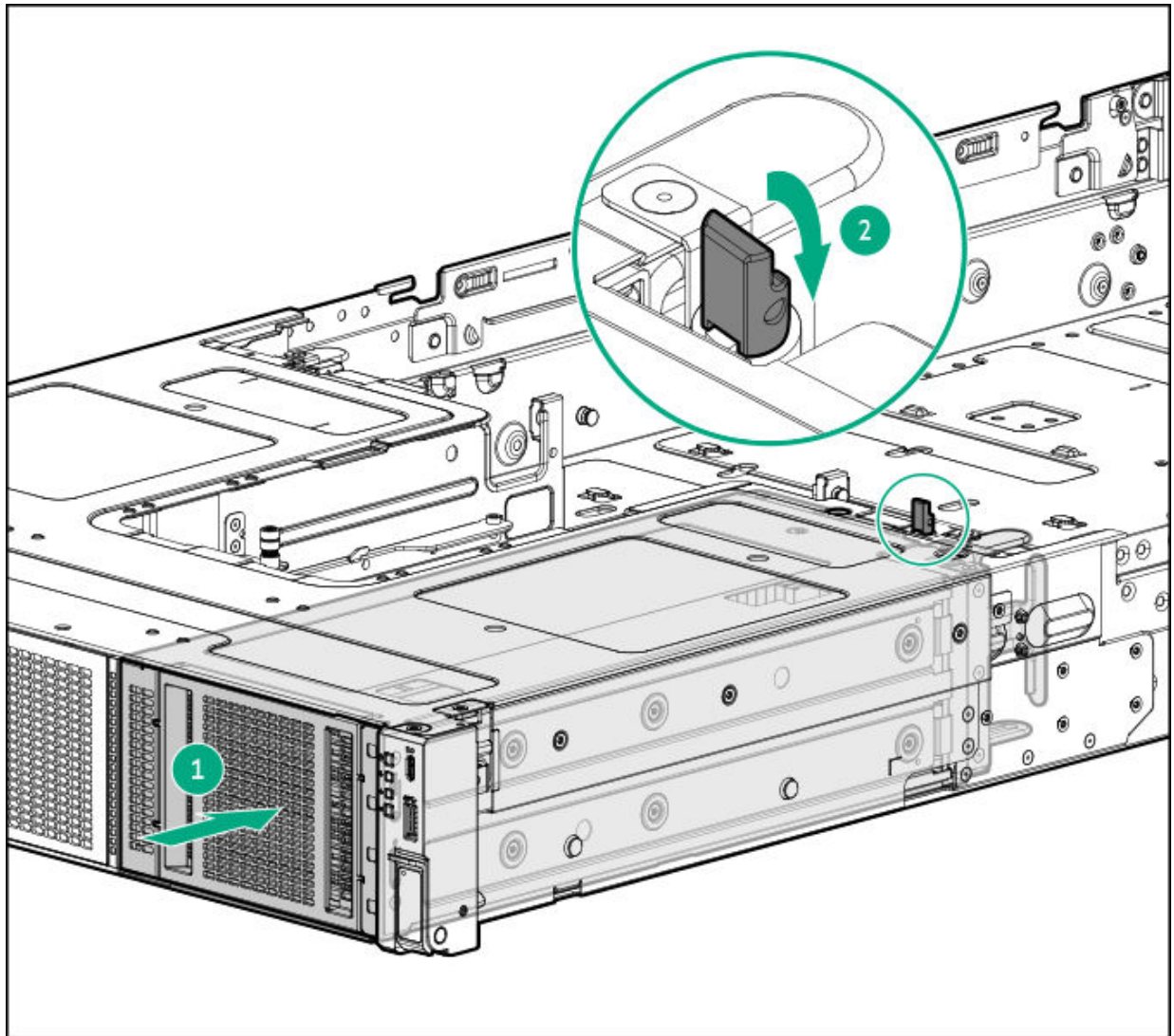
10. Install the front GPU riser cage in the server.

Make sure that the latch is closed to secure the GPU cage.

- GPU cage 1

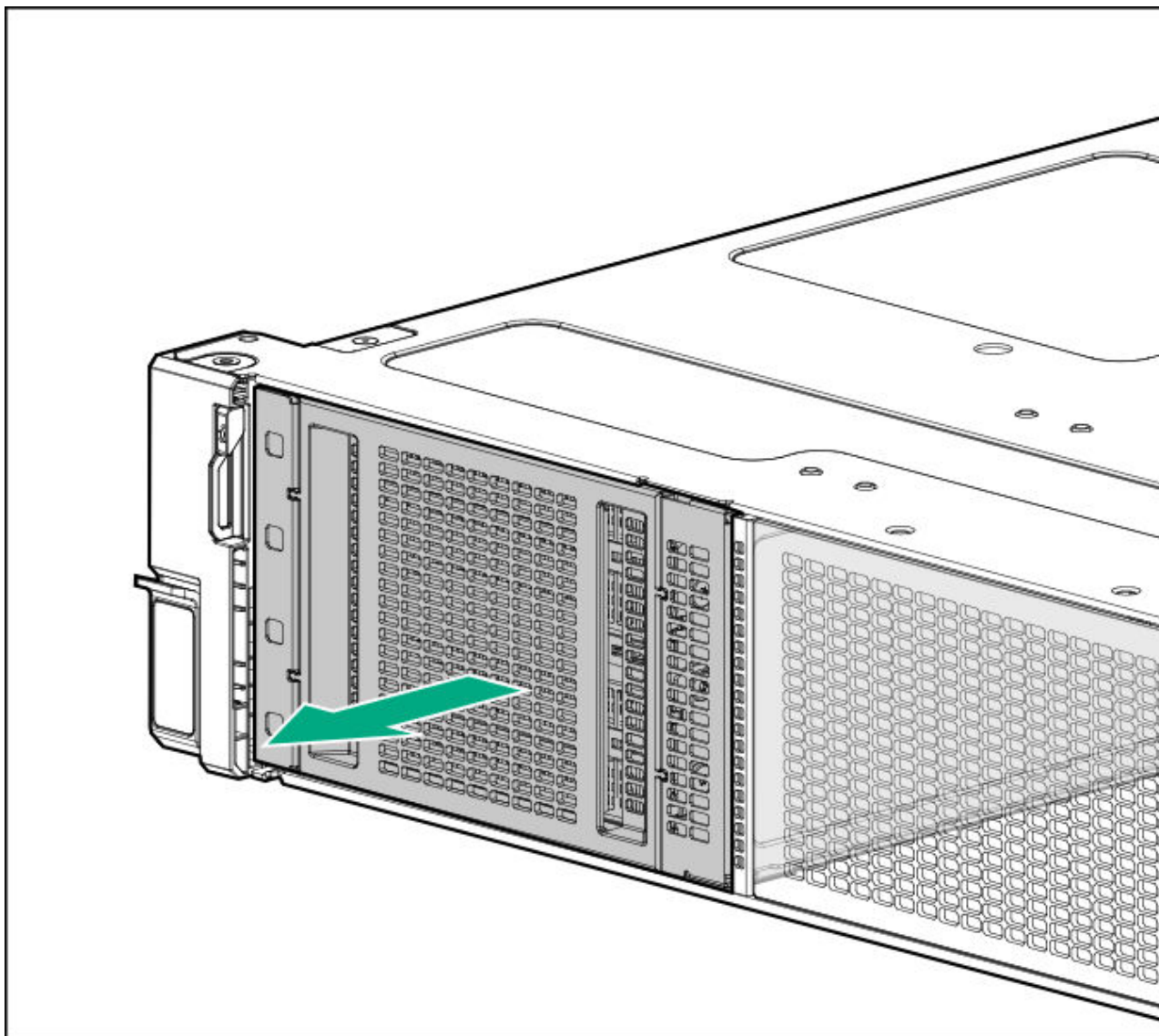


- GPU cage 2



- !1. Connect the GPU captive riser and power cables.
- !2. Install the middle cover.
- !3. Install the fan cage.
- !4. Install the air baffle.
- !5. Install the access panel.
- !6. Install the server into the rack.
- !7. Connect all peripheral cables to the server.
- !8. Connect each power cord to the server.
- !9. Connect each power cord to the power source.
- !0. Power up the server.

1. To connect an external cable to the GPU, remove the GPU cage bezel.



2. If no external cable is connected to the GPU, install the front bezel.

Results

The installation procedure is complete.

Management

Subtopics

Installing the System Insight Display

Installing the System Insight Display

Prerequisites

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

- The components included with the hardware option kit
- T-10 Torx screwdriver

About this task

The Systems Insight Display is supported on SFF / E3.S drive configurations.



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

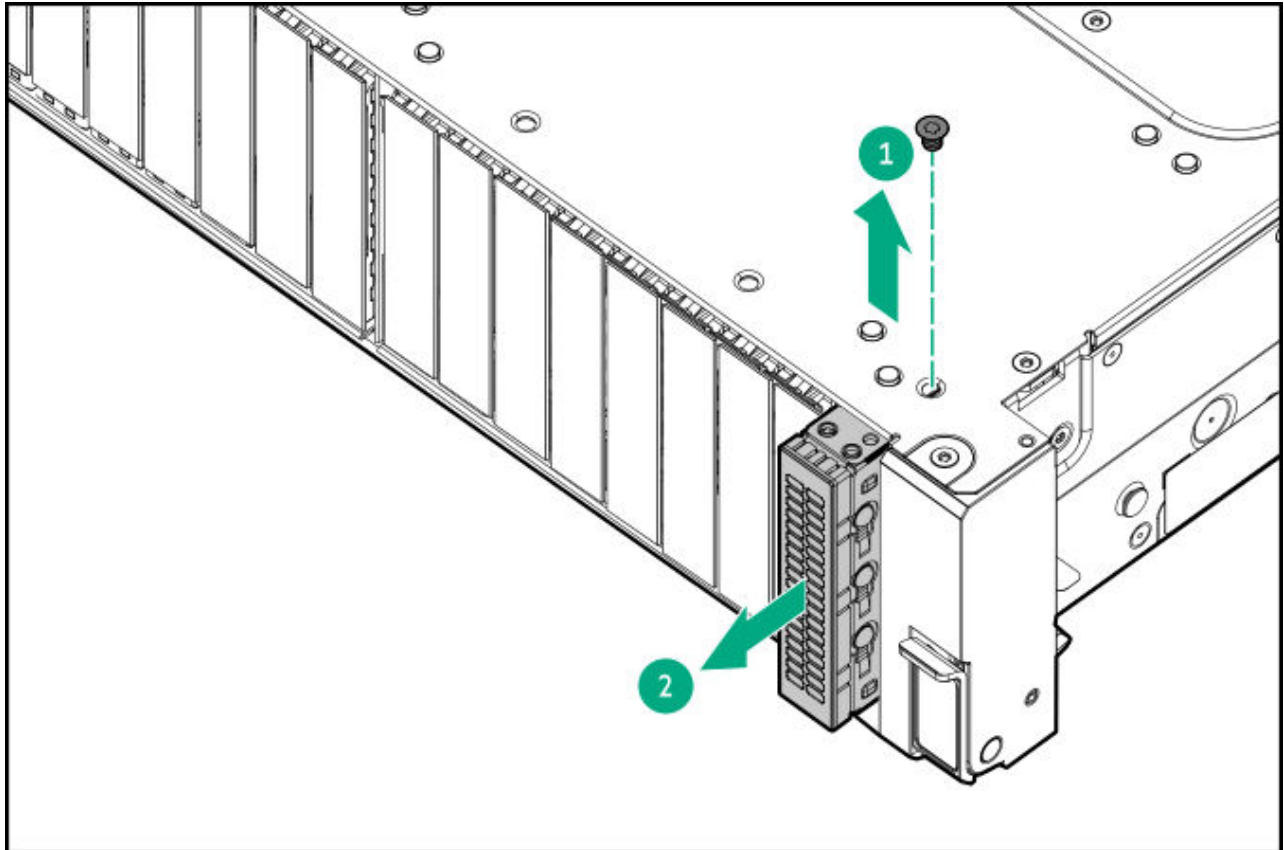
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.

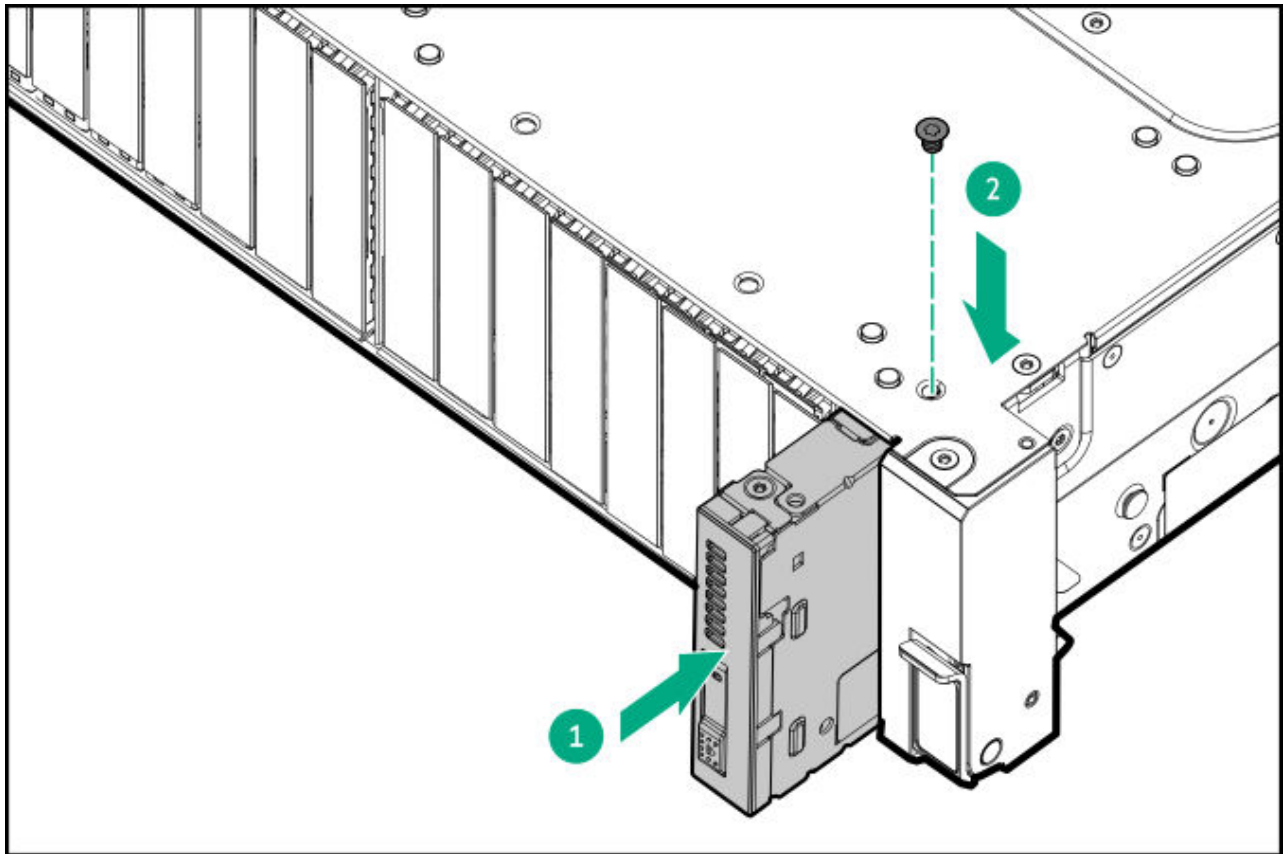
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Remove the SID blank.

Retain the screw. This screw is used to be secure the SID.

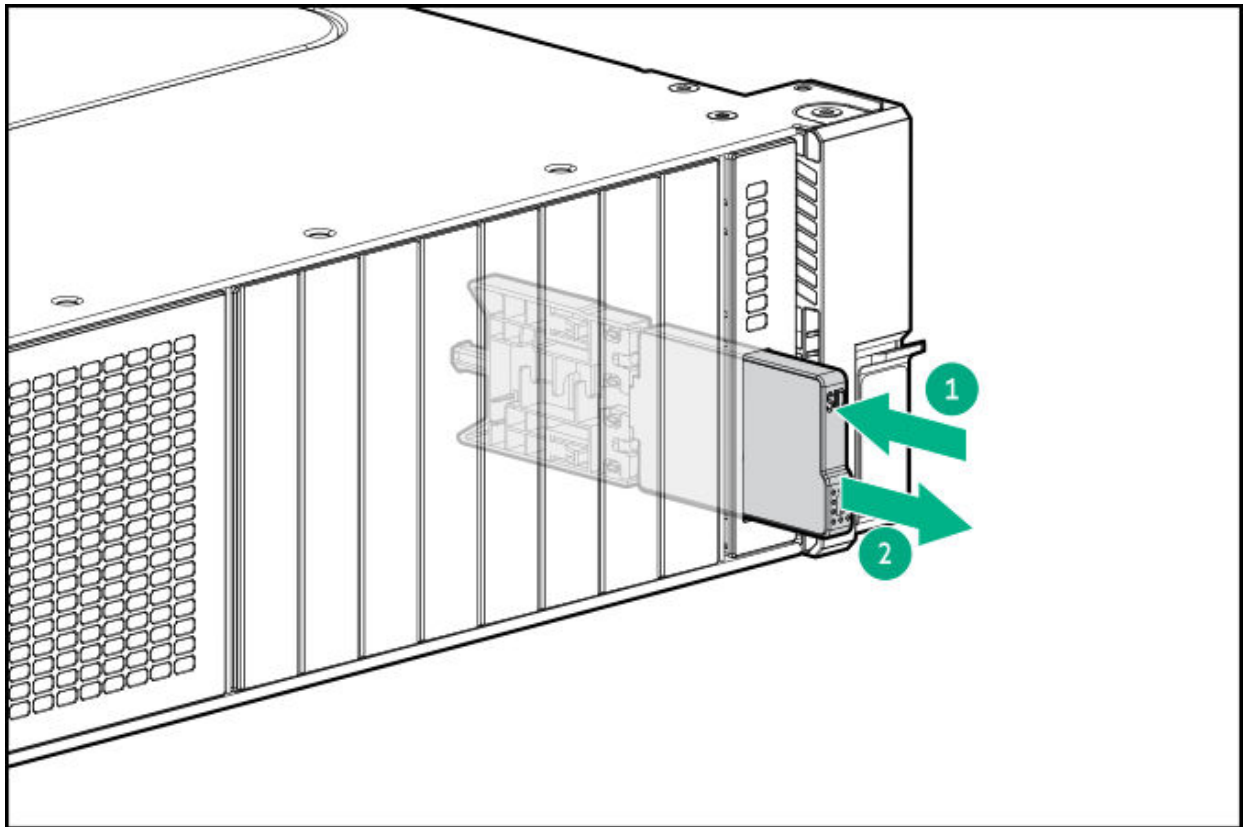


11. Route the SID cable through the opening in the front of the server, and then install the SID.

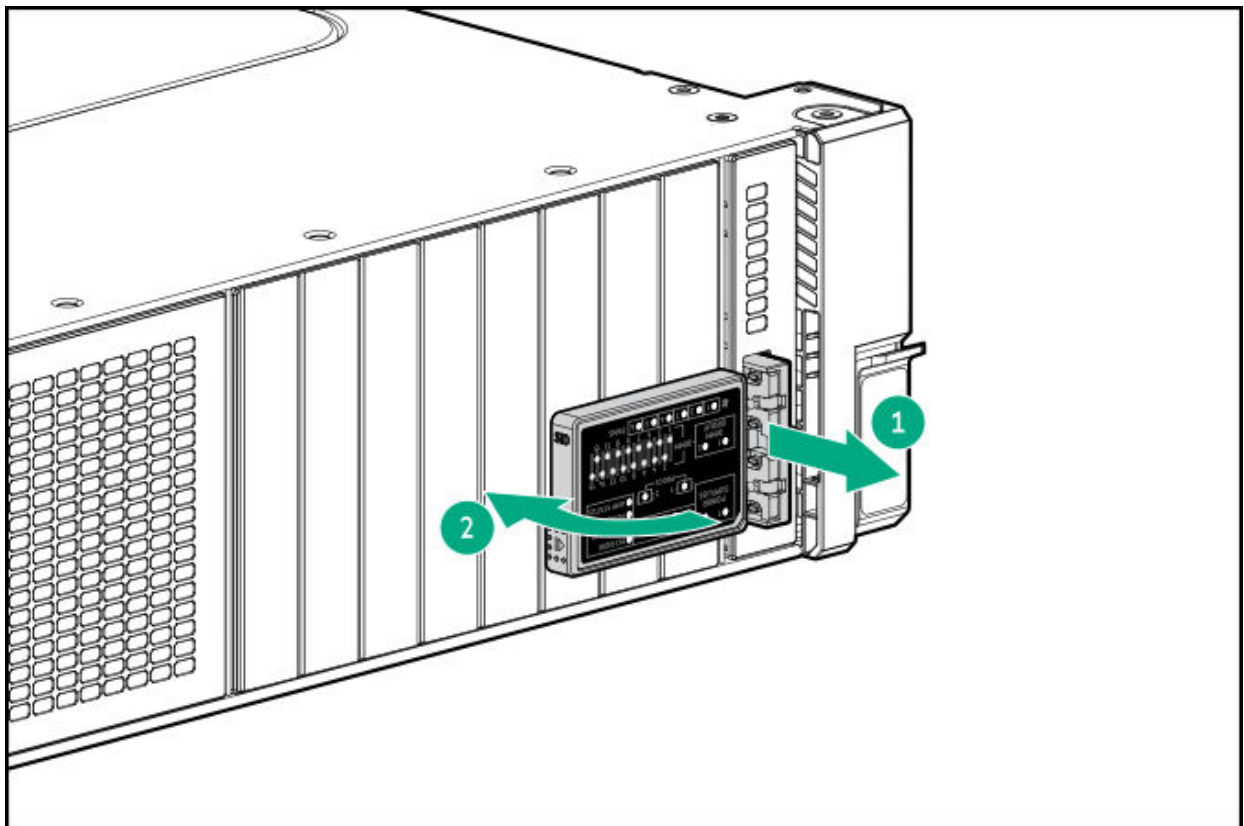
Make sure that the SID cable is not in a position where it can be pinched or crimped.



- .2. Connect the SID cable to the system board.
- .3. Install the midwall bracket.
- .4. Install the fan cage.
- .5. Install the air baffle.
- .6. Install the access panel.
- .7. Install the server into the rack.
- .8. Connect all peripheral cables to the server.
- .9. Connect each power cord to the server.
- .10. Connect each power cord to the power source.
- .11. Power up the server.
- .12. To access the SID, do the following:
 - a. Press and release the panel.



b. After the display fully ejects, rotate the display to view the LEDs.



!3. Determine the server status from the SID display LEDs and the combined LEDs.

Results

The installation procedure is complete.

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.

Subtopics

Installing the serial port

Installing the serial port

Prerequisites

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

- T-10 Torx screwdriver—This tool is required to remove the ix port cable bracket from the power supply bay 1.
- Spudger or any small prying tool—This tool is required to remove the ix port blank.
- Phillips No. 1 screwdriver—This tool is required to secure the ix port cable on the bracket.

About this task



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.

Procedure

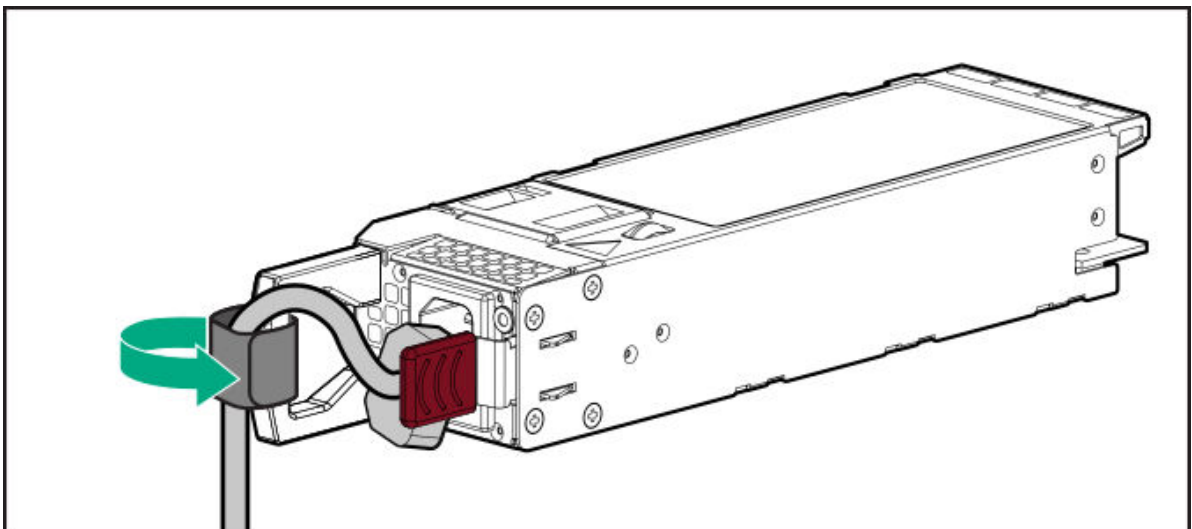
1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the rear boot device holder.
8. Remove a power supply:



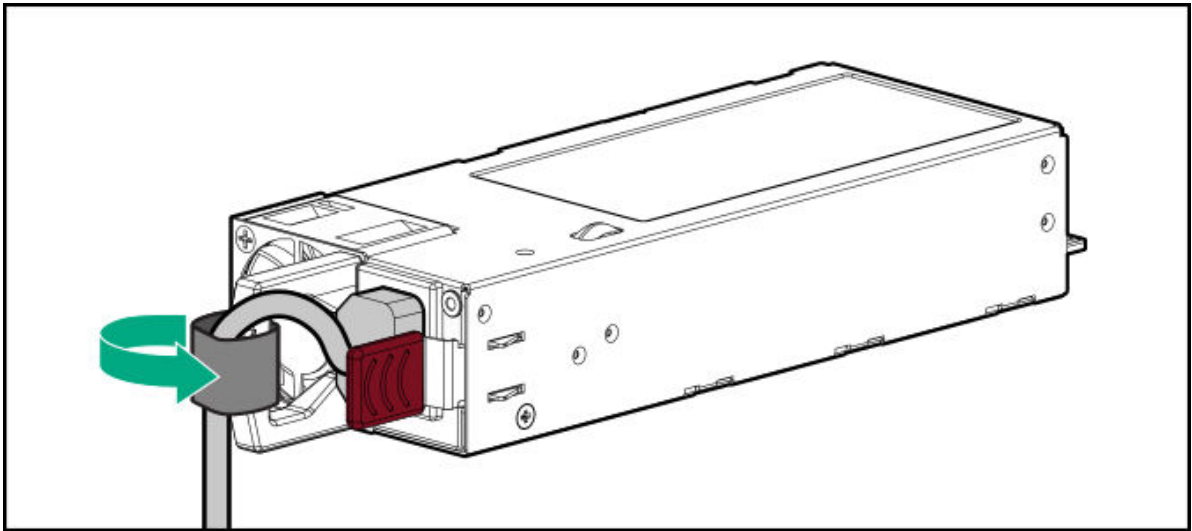
WARNING

To reduce the risk of personal injury, keep your fingers away from the attached left sliding rail when removing the power supply from the bay 1. The attached left sliding rail could scrape your fingers.

- a. Release the power cord from the strain relief strap, and then disconnect the power cord from the power supply.
 - 60-mm M-CRPS

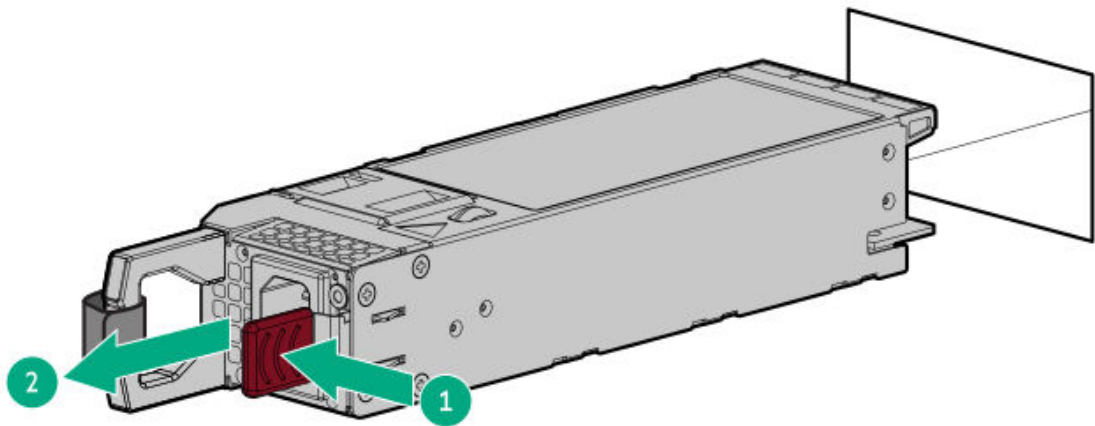


- 73.5-mm M-CRPS

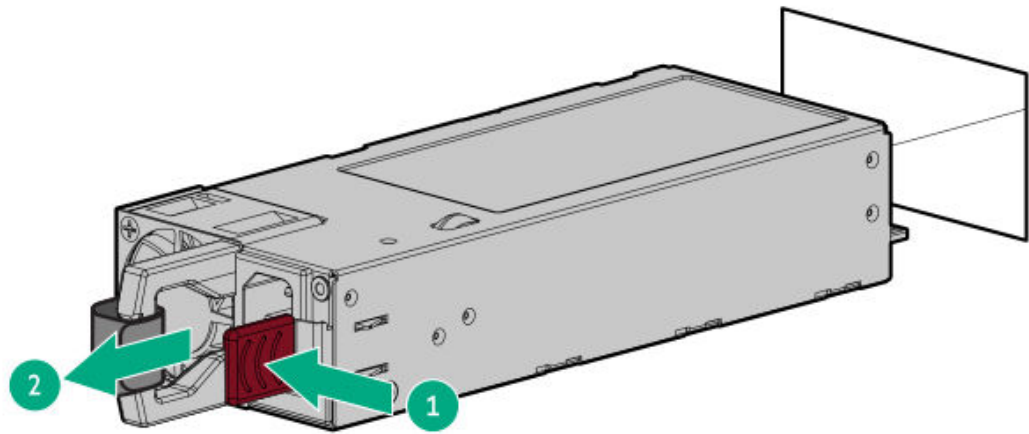


b. Press and hold the release latch, and then remove the power supply.

- 60-mm M-CRPS

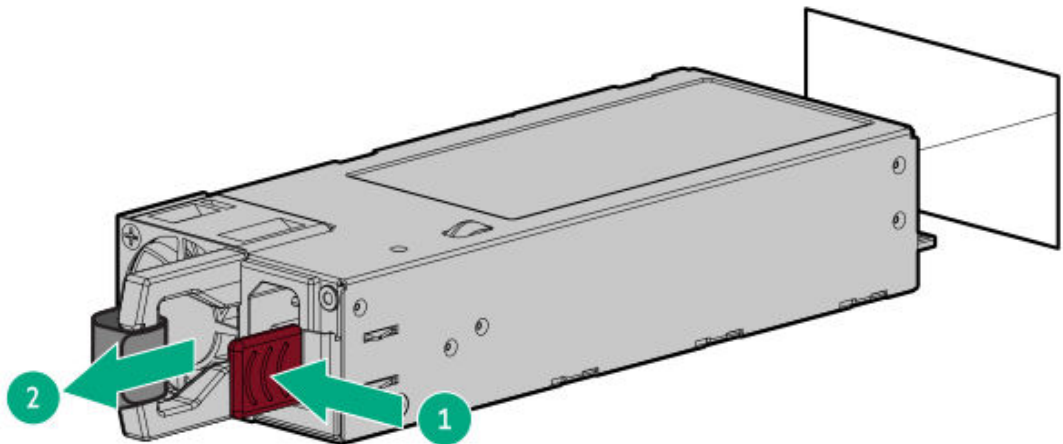


- 73.5-mm M-CRPS

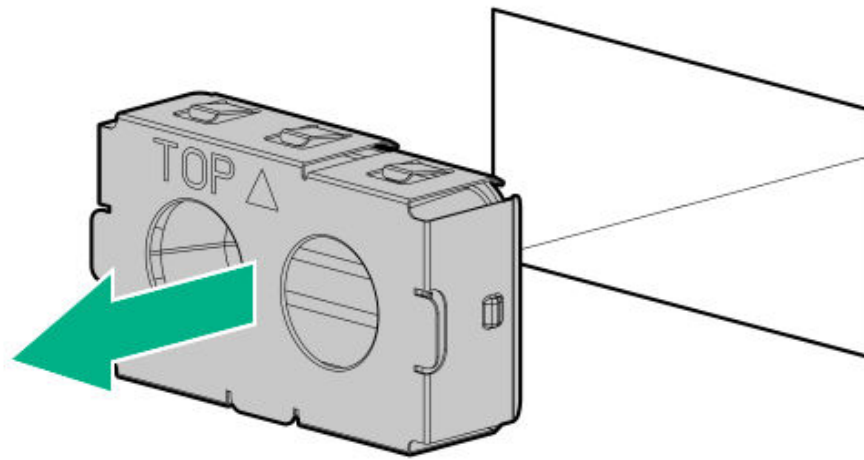


9. In the server with 73.5-mm M-CRPS installed, remove one of the following components from the bay 2:

- 73.5-mm M-CRPS

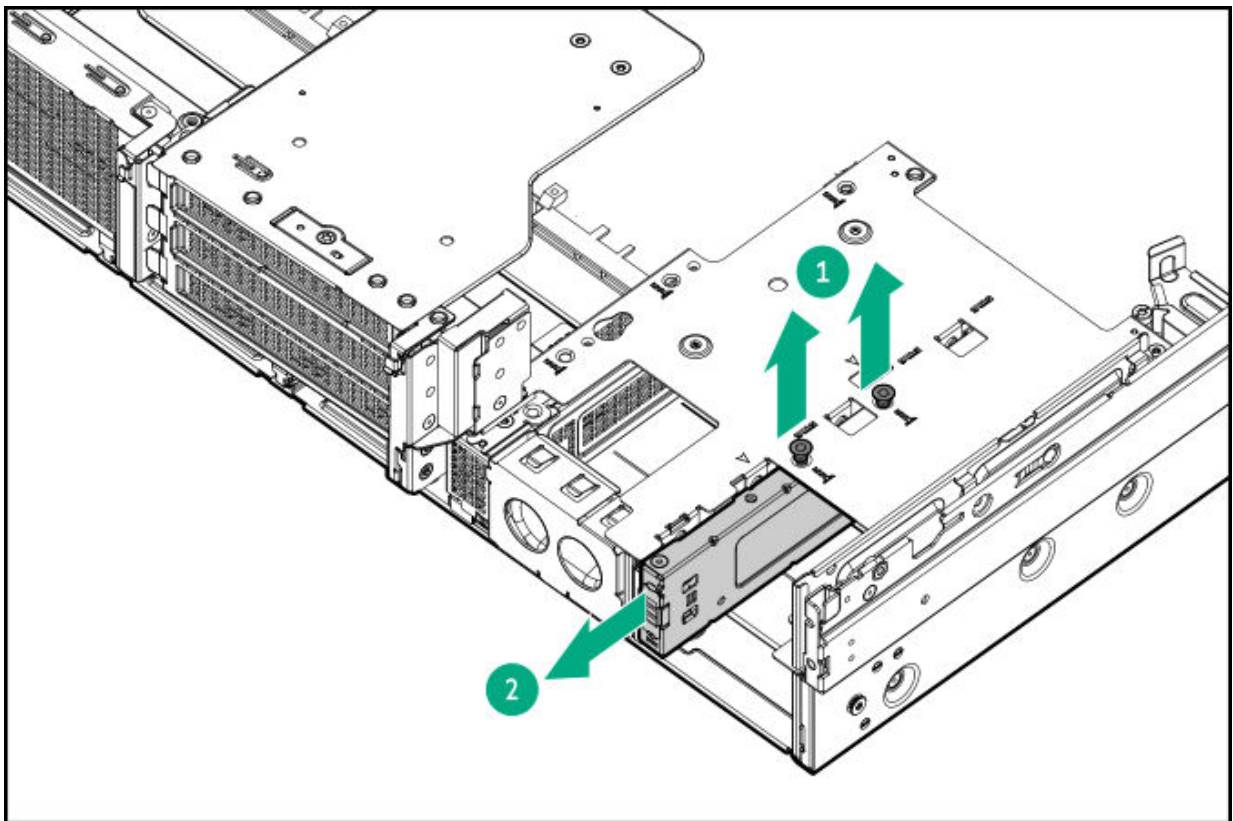


- Power supply bay blank

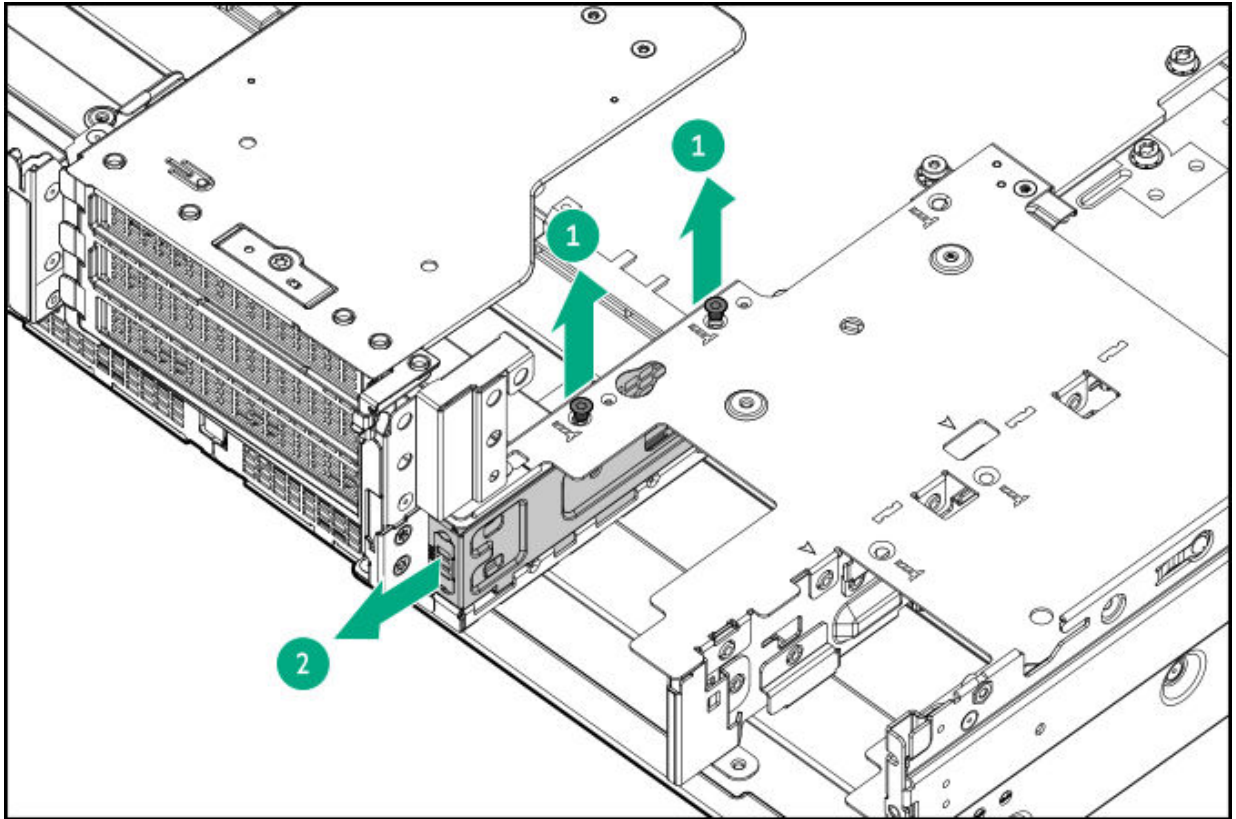


.0. Remove the ix port cable bracket.

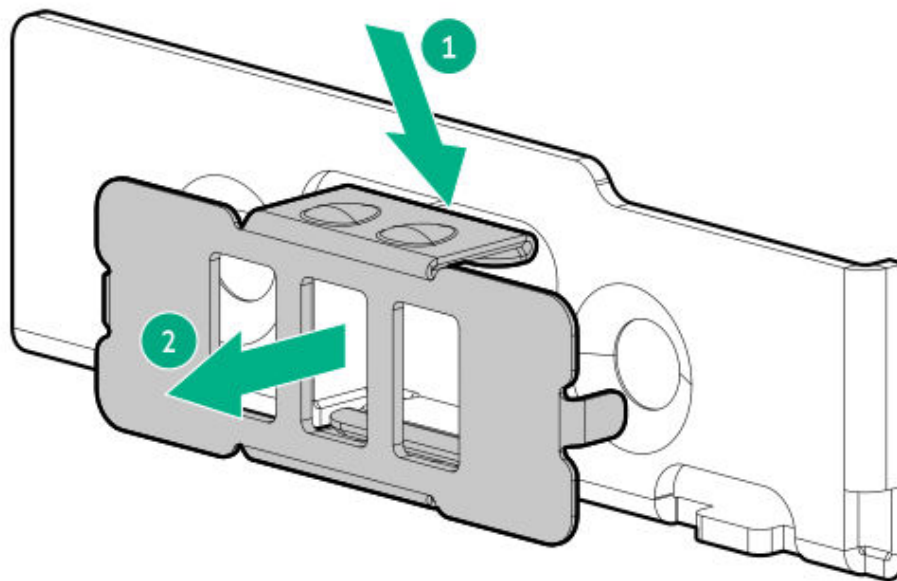
- 60-mm M-CRPS



- 73.5-mm M-CRPS

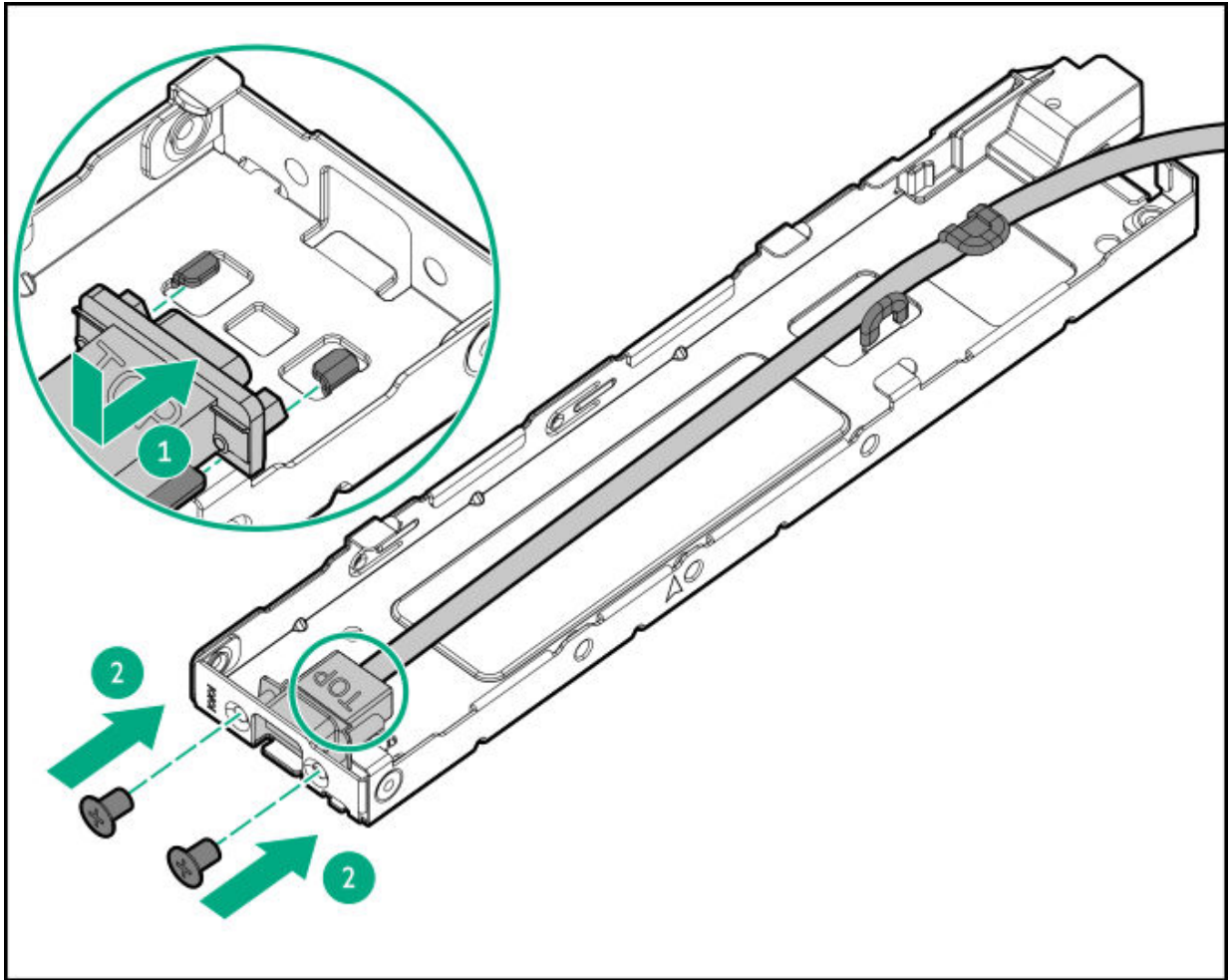


.1. Remove the ix port blank.

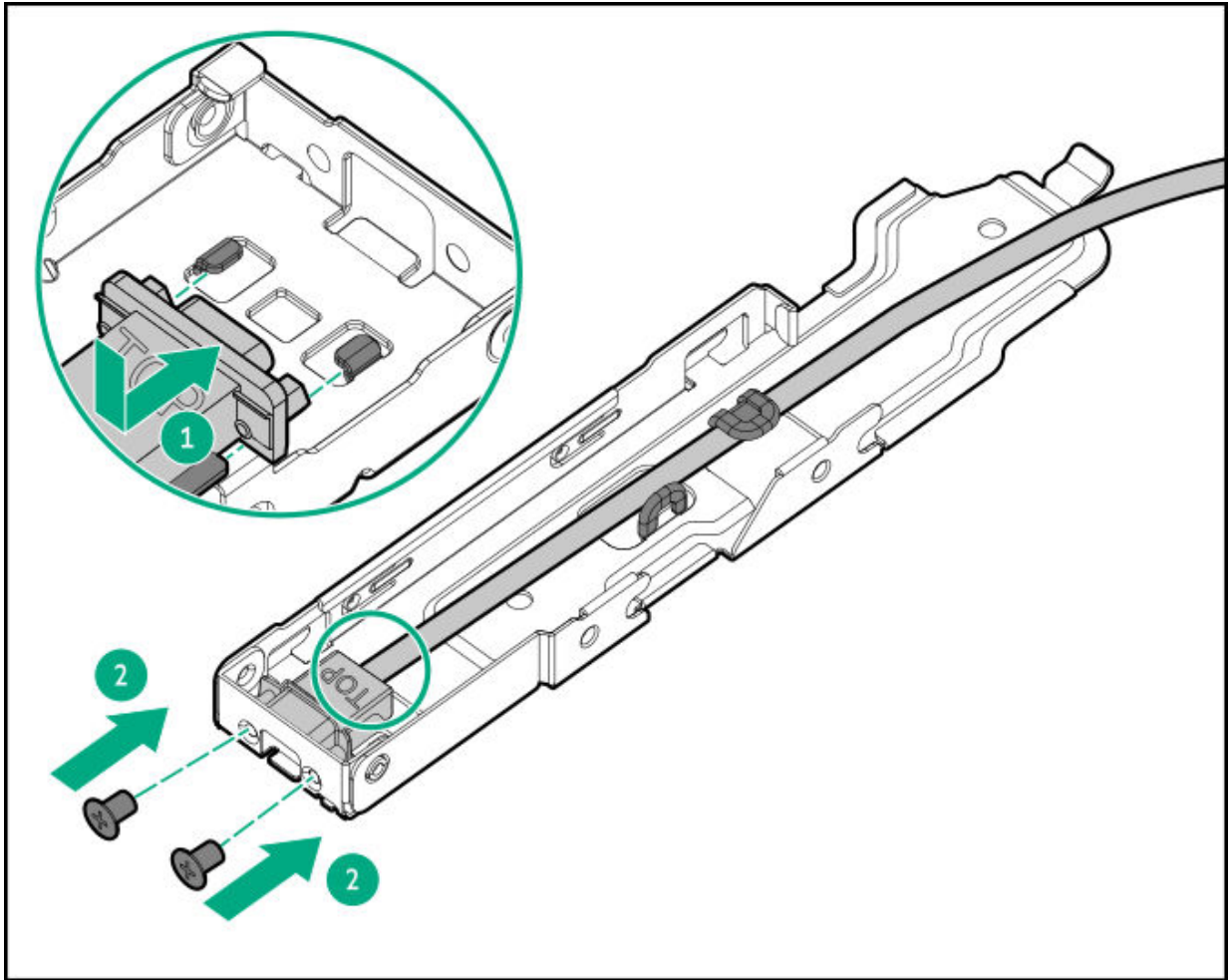


.2. Slide the ix port in the tabs, and then secure the ix port on the bracket.

- 60-mm M-CRPS

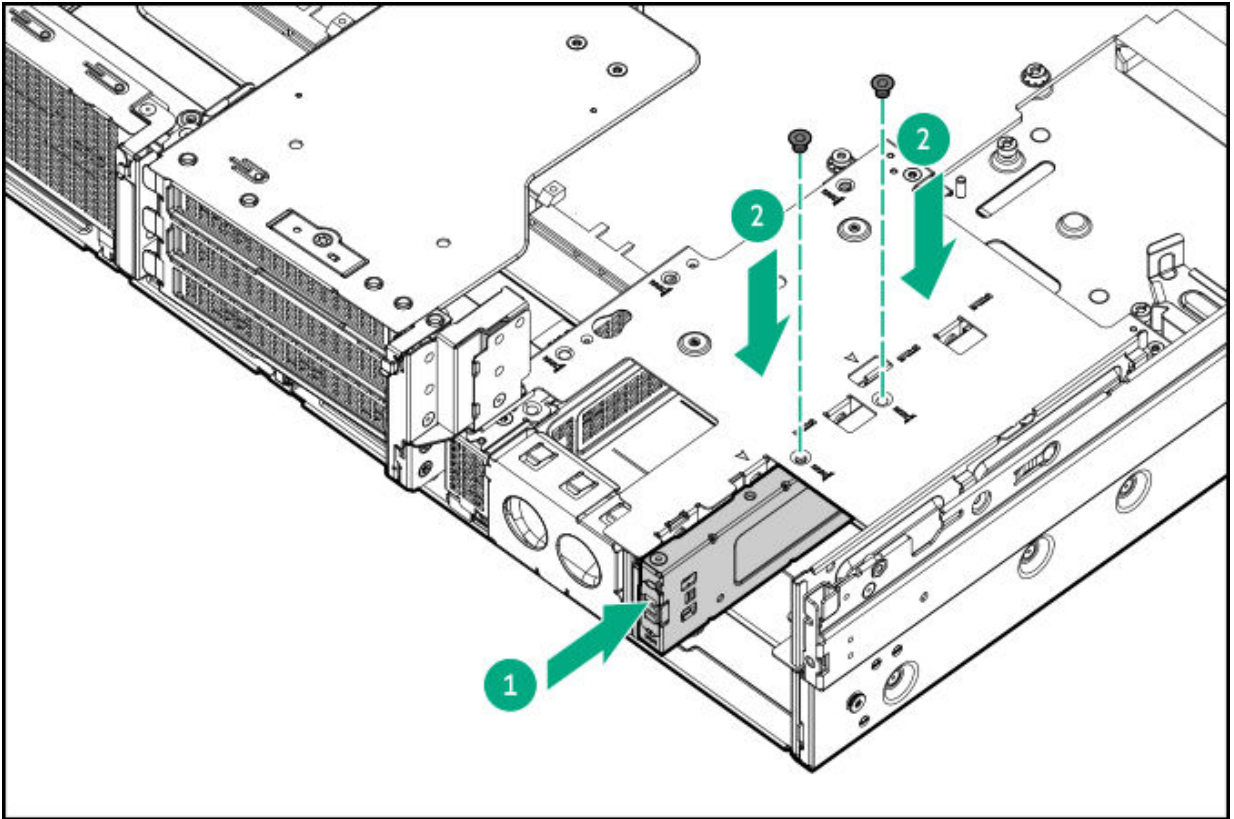


- 73.5-mm M-CRPS

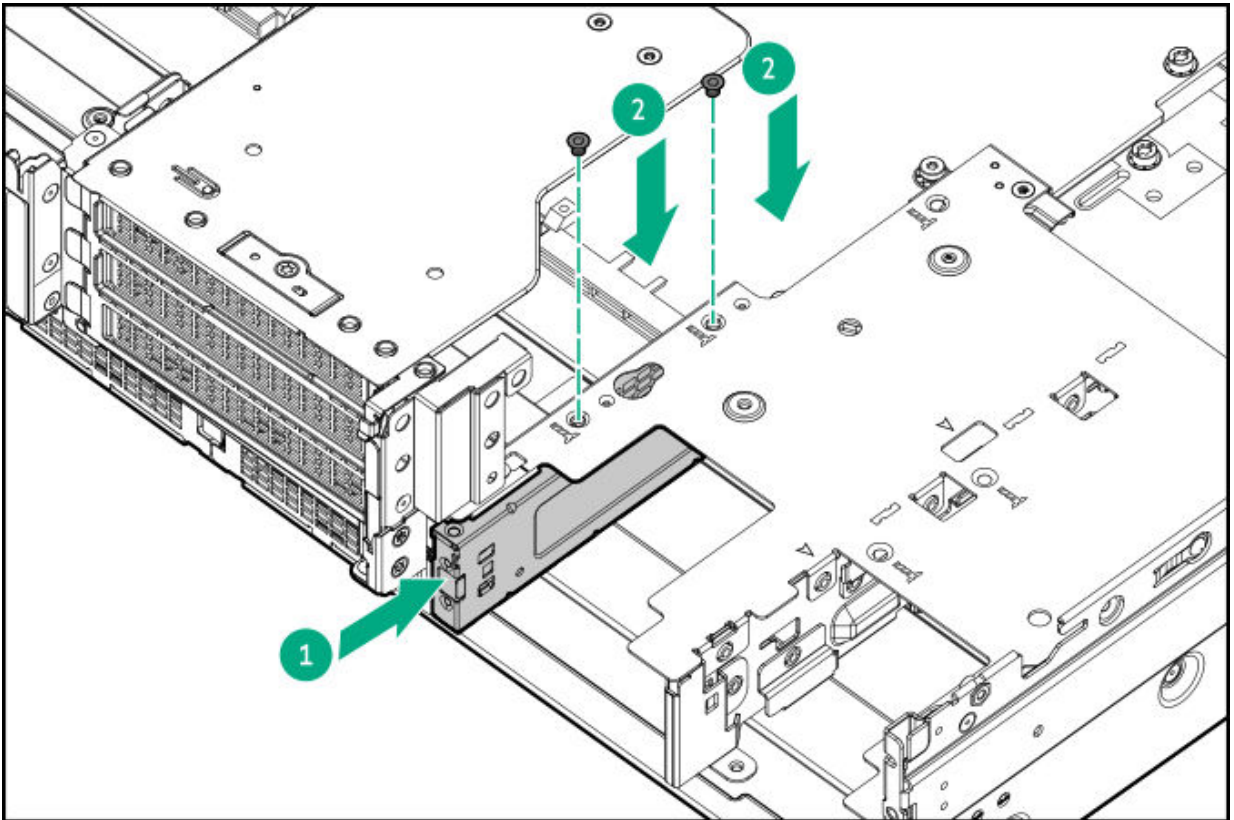


.3. Install the iX port cable bracket.

- 60-mm M-CRPS

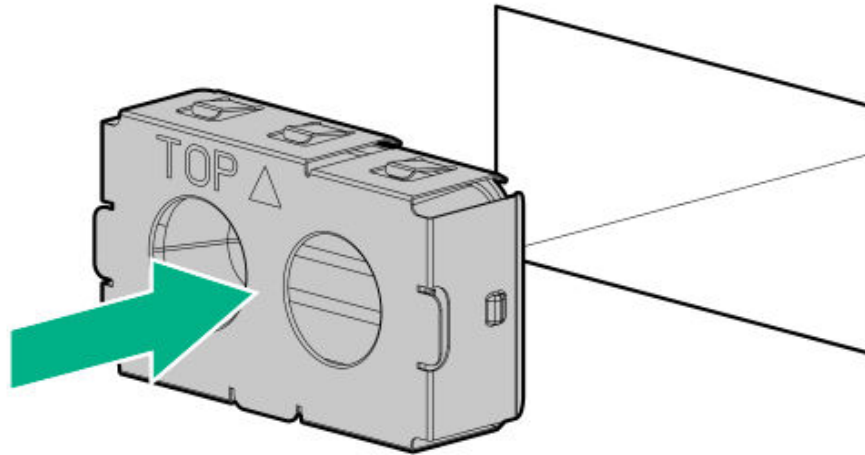


- 73.5-mm M-CRPS



.4. Install the following in the power supply bays:

- M-CRPS
- Power supply bay blank



.5. If installed, remove the primary riser cage.

.6. Connect the ix port cable to the DC-SCM.

.7. Install the rear boot device holder.

.8. If removed, install the primary riser cage.

.9. Install the air baffle.

!0. Install the access panel.

!1. Install the server into the rack.

!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. Power up the server.

!6. Connect the serial port dongle to the ix port.

Configuring the serial port

!7. 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**.

Results

The installation procedure is complete.

Media devices

Subtopics

[Installing the universal media bay in the LFF chassis](#)

[Installing the optical drive in the LFF universal media bay](#)

[Installing the universal media bay in the SFF chassis](#)

[Installing the optical drive in the SFF universal media bay](#)

Installing the universal media bay in the LFF chassis

Prerequisites

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

About this task

The universal media bay is populated in the Box 1 with an optical drive bay and DisplayPort 1.1a.



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.

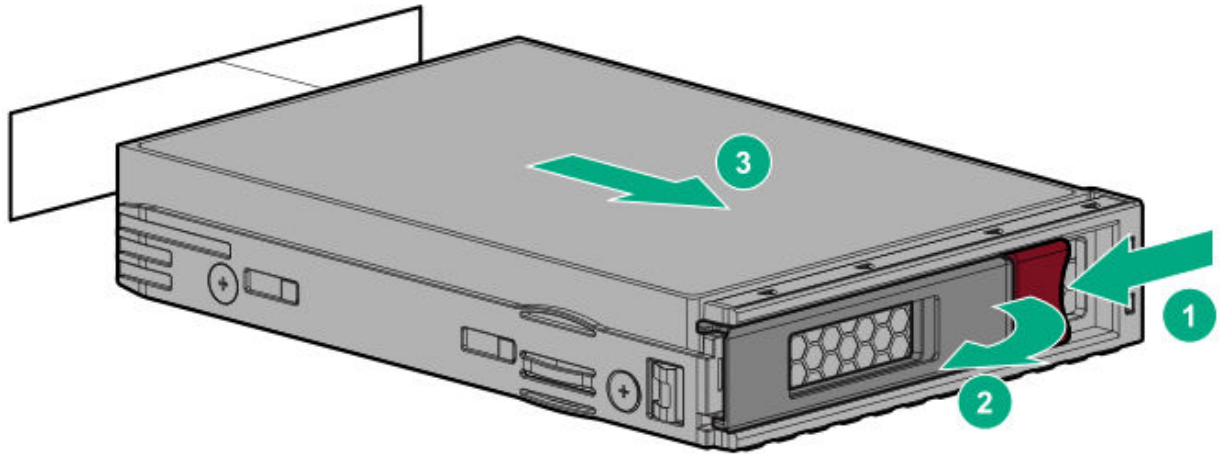


CAUTION

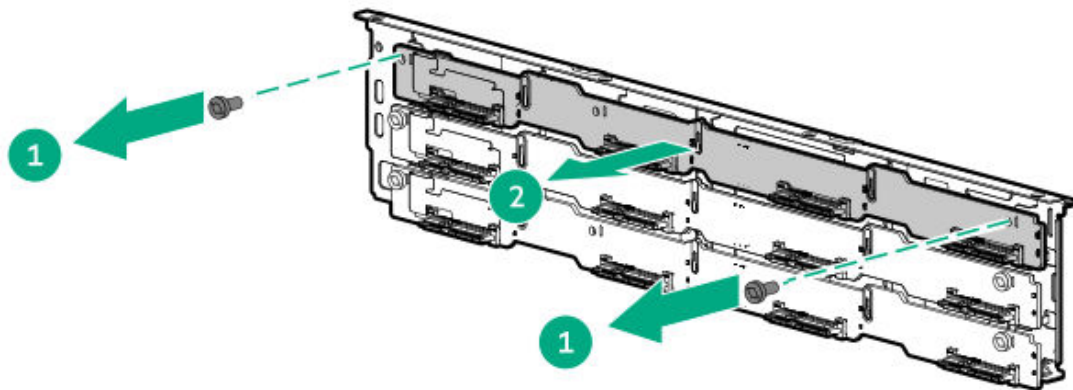
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

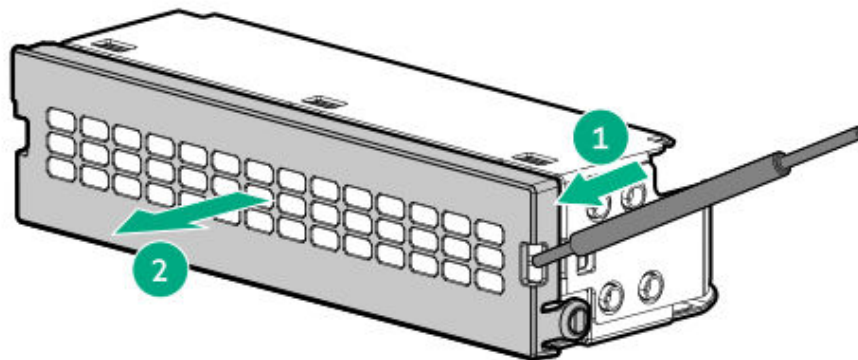
1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the midwall bracket.
10. Disconnect the drive cables from the drive backplanes.
11. Remove the drive backplane bracket.
12. In the 12 LFF drive configuration, do the following:
 - a. Remove all LFF drives from the box 1.



b. Remove the drive backplane from the box 1.



.3. In 4 or 8 LFF drive configuration, use a plastic spudger to pry one side of the blank from the chassis.



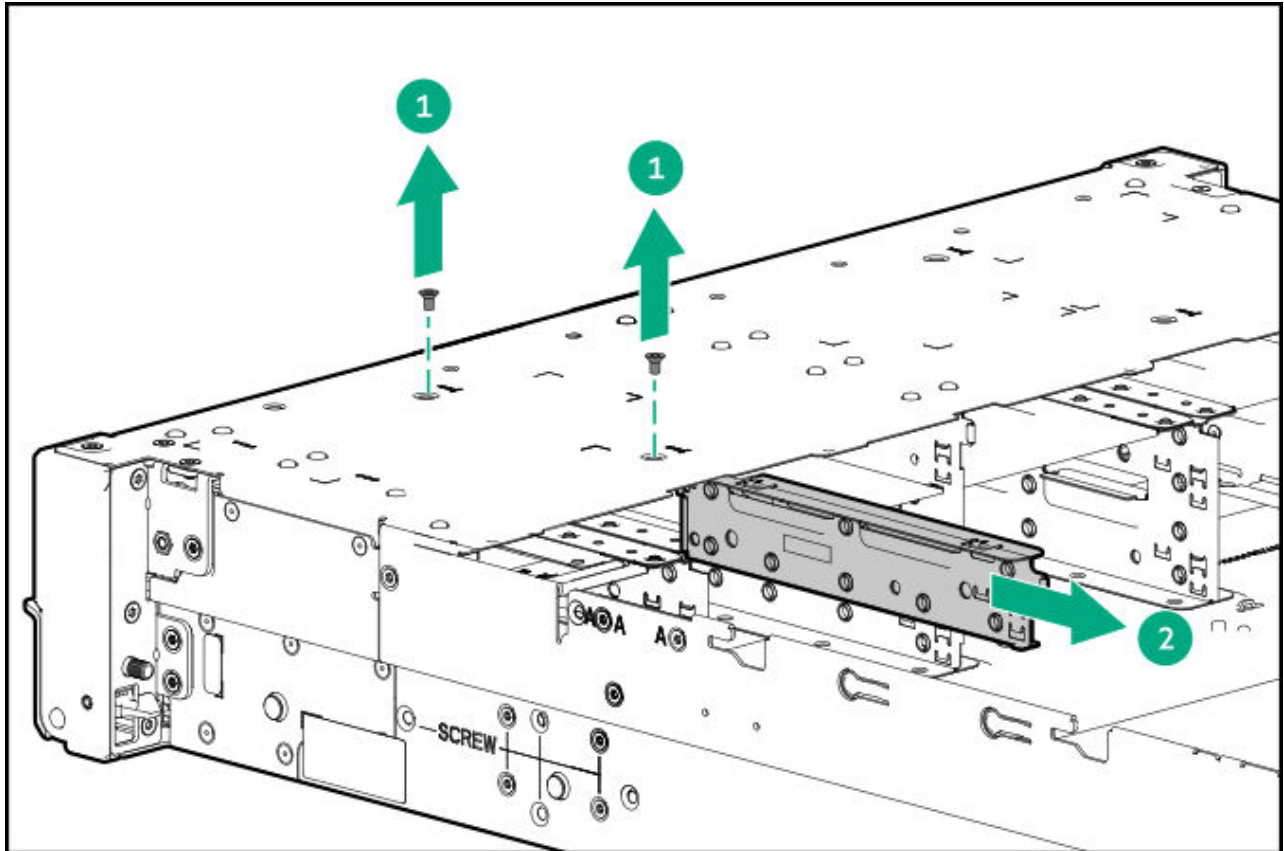
.4. Remove the screws, and then remove the partition from the box 1 bays 3 and 4.

Retain the screws. These screws will be used to secure the universal media bay.

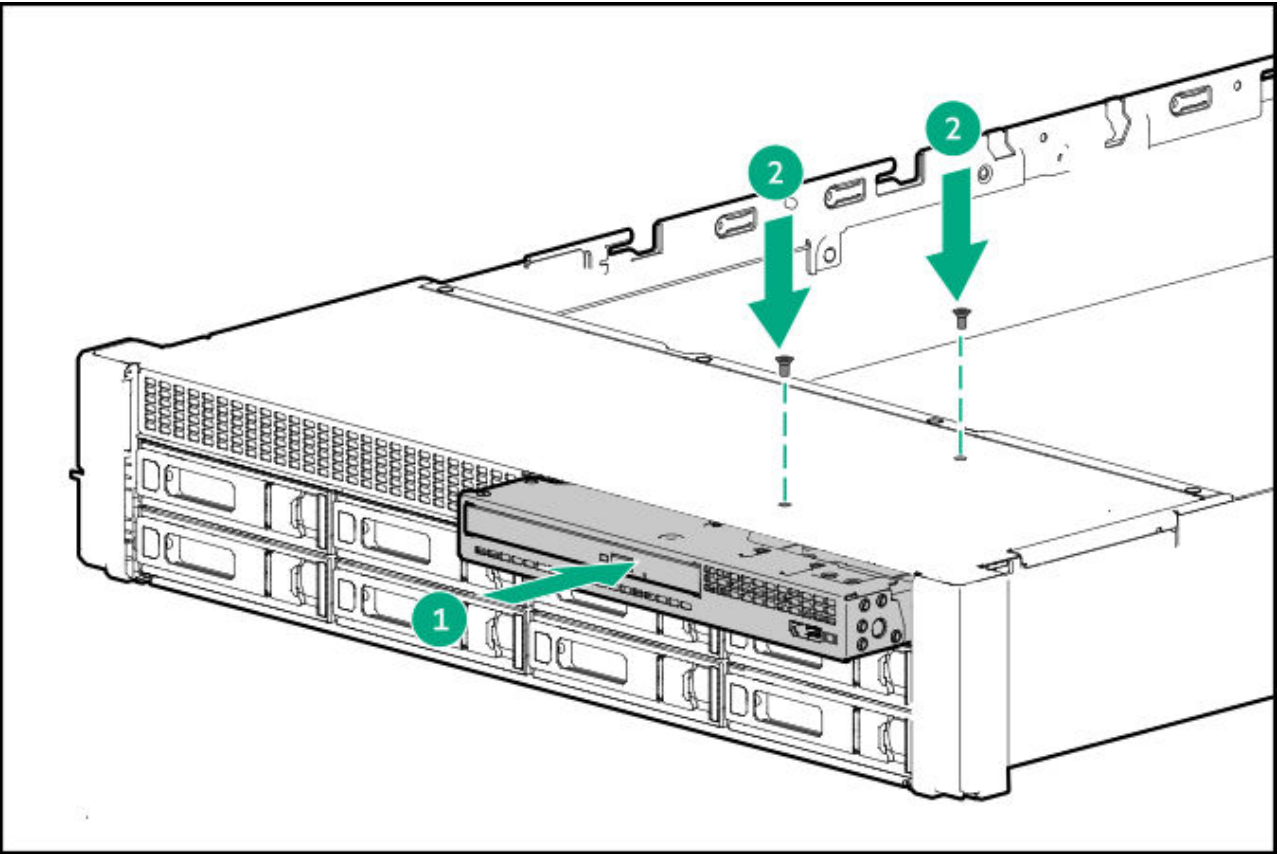


IMPORTANT

Retain the removed partitions to revert to the 12 LFF drive configuration.



- .5. (Optional) Install the optical drive into the universal media bay.
- .6. Install the universal media bay in the server.



- .7. Connect the DisplayPort cable to the system board.
- .8. (Optional)Install the 2 SFF side-by-side drive cage.
- .9. Install the drive backplane bracket.
- !0. Connect the following cables:
 - Storage controller cable
 - Drive power cable
- !1. Install the midwall bracket.
- !2. Install the fan cage.
- !3. Install the air baffle.
- !4. Install the access panel.
- !5. Install the server into the rack.
- !6. Connect all peripheral cables to the server.
- !7. Connect each power cord to the server.

8. Connect each power cord to the power source.
9. Power up the server.
10. If removed, install the front bezel.

Results

The installation procedure is complete.

Installing the optical drive in the LFF universal media bay

Prerequisites

- The optical drive installation requires the optical drive cable option (P72199-B21).
- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - Phillips No. 1 screwdriver
 - Spudger or any small prying tool

About this task



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.



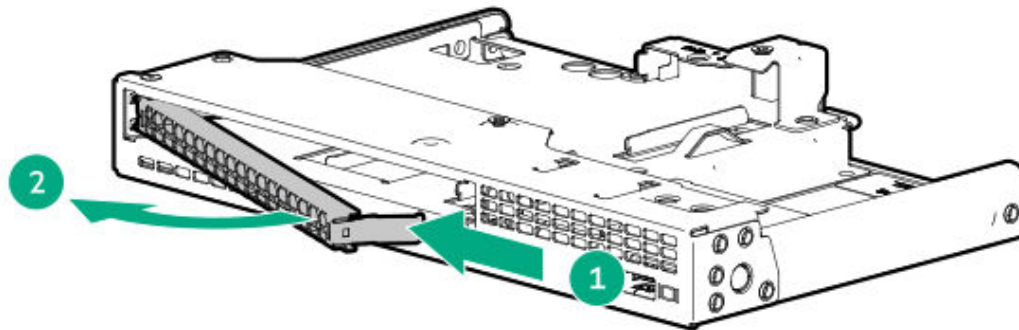
CAUTION

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

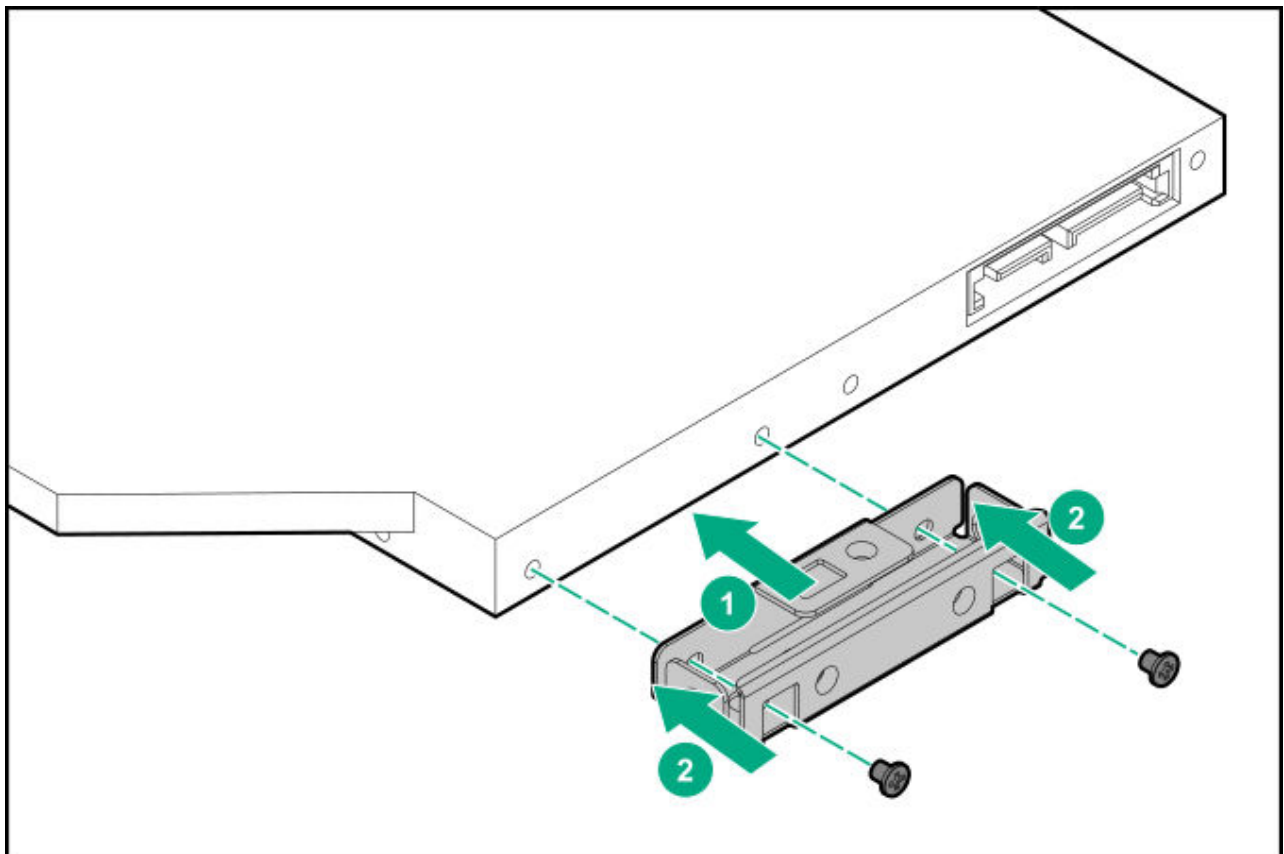
Procedure

Installing the optical drive in the universal media bay

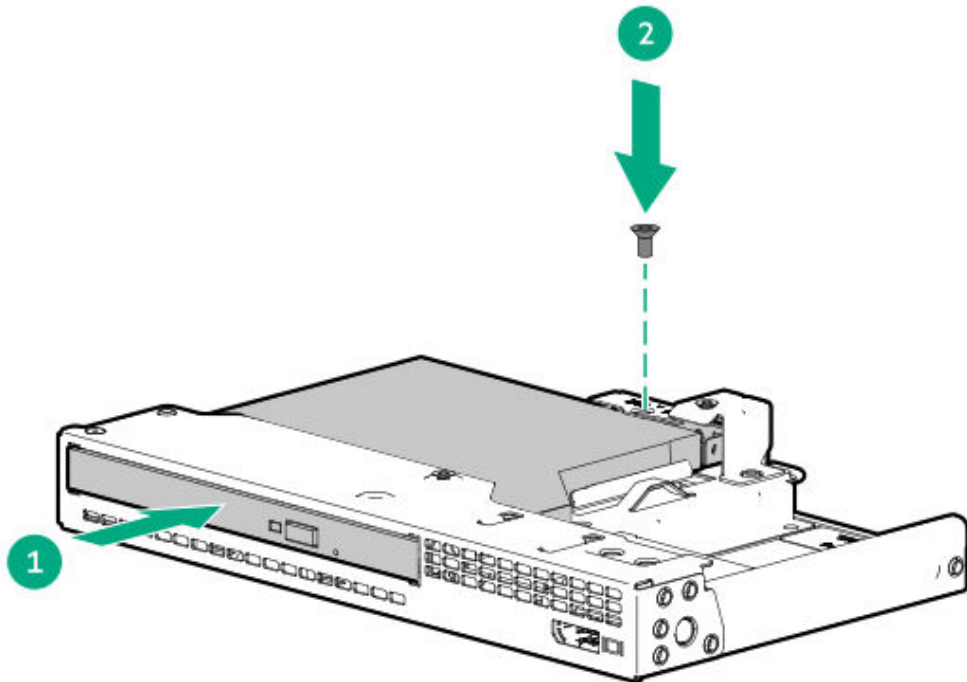
1. Remove the optical drive blank from the universal media bay.



2. Install the optical drive bracket.



3. Install the optical drive in the universal media bay, and then install the screw.

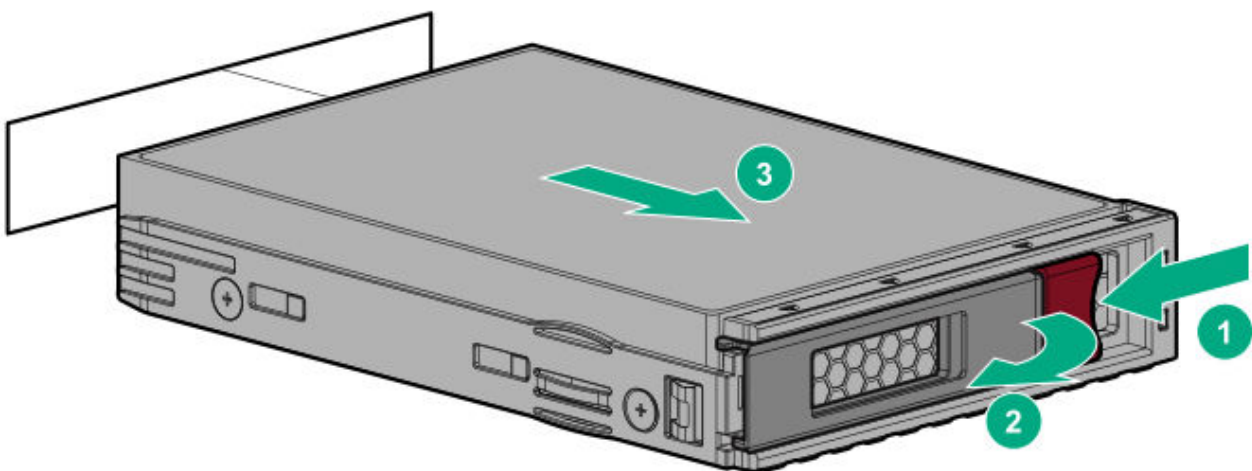


4. Connect the cable to the optical drive.

Installing the universal media bay in the server

5. If installed, remove the front bezel.

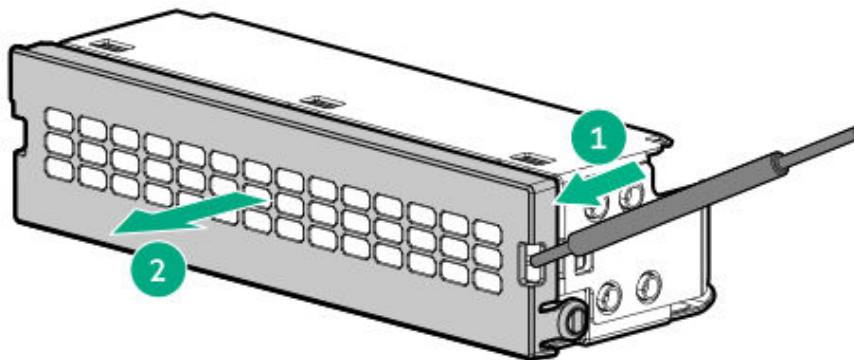
6. If installed, remove the LFF drives from Box 1 bays 3 and 4.



7. Power down the server.

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.
0. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
- .1. Remove the access panel.
- .2. Remove the air baffle.
- .3. Remove the fan cage.
- .4. Remove the midwall bracket.
- .5. Disconnect the drive cables from the drive backplanes.
- .6. Remove the drive backplane bracket.
- .7. Use a plastic spudger to pry one side of the blank from the chassis.

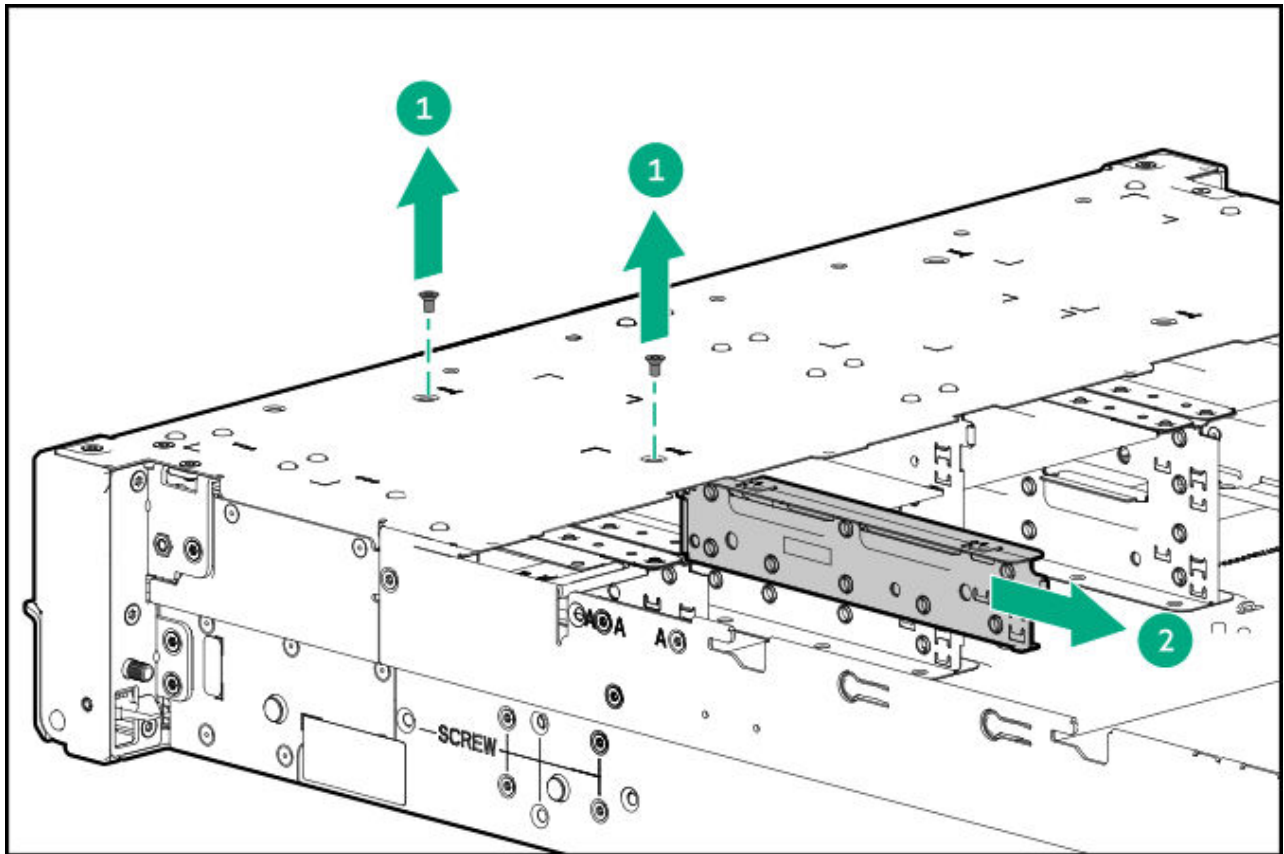


- .8. Remove the screws, and then remove the partition from the box 1 bays 3 and 4.
Retain the screws. These screws will be used to secure the universal media bay.



IMPORTANT

Retain the removed partitions to revert to the 12 LFF drive configuration.



9. Install the universal media bay.
10. Connect the optical drive cable to the system board.
11. Install the midwall bracket.
12. Install the fan cage.
13. Install the air baffle.
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. Power up the server.
20. If removed, install the front bezel.

Results

The installation procedure is complete.

Installing the universal media bay in the SFF chassis

Prerequisites

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

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

About this task

The SFF chassis supports the universal media bay in the Box 1 with the following:

- Optical drive bay
- USB 2.0 ports
- DisplayPort 1.1a
- 2 SFF stacked drive cage



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.



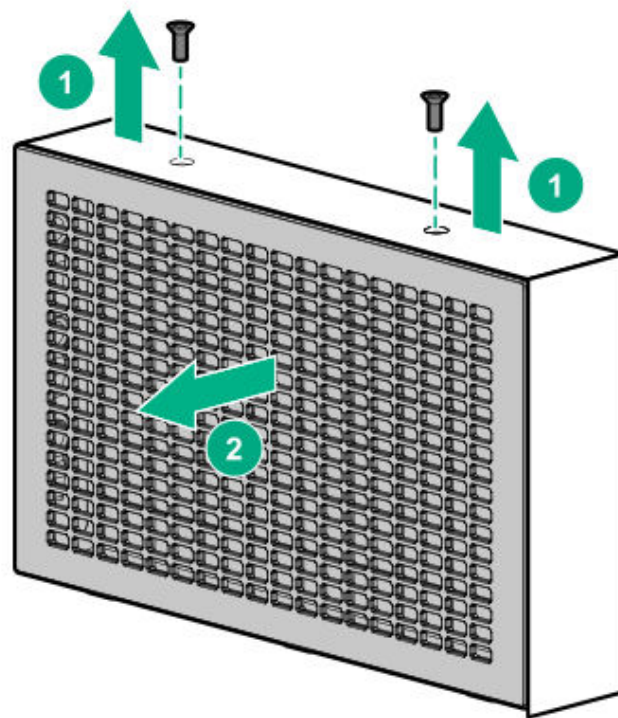
CAUTION

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

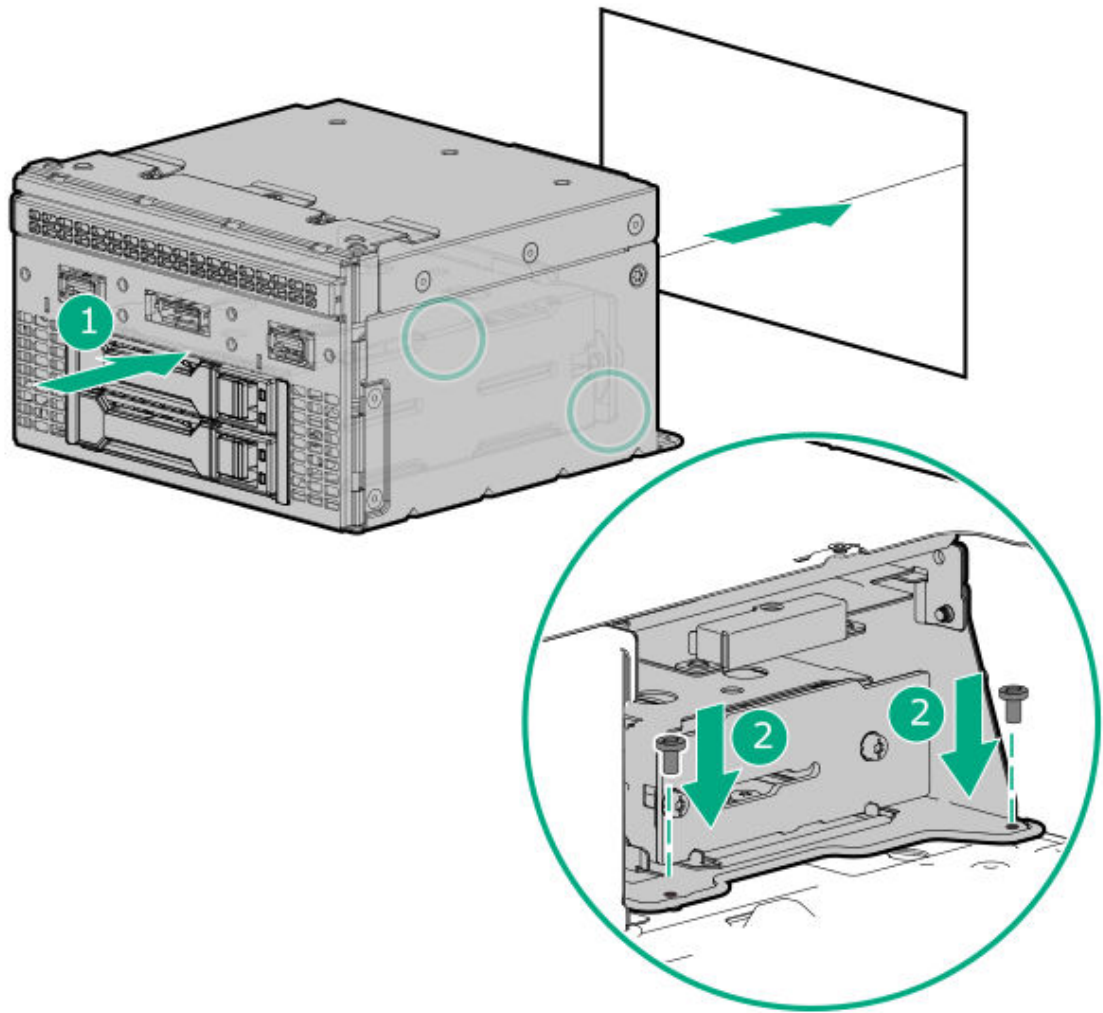
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:

- Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
 7. Remove the air baffle.
 8. Remove the fan cage.
 9. Remove the midwall bracket.
 0. (Optional) Install the front 2 SFF stacked drive cage in the universal media bay.
 1. Remove the drive box blank.



2. Thread all cables on the universal media bay into the drive box 1, and then slide the universal media bay in and secure it with the two screws.



- .3. Connect the universal media bay cable to the system board.
- .4. (Optional) Install the optical drive.
- .5. Install the midwall bracket.
- .6. Install the fan cage.
- .7. Install the air baffle.
- .8. Install the access panel.
- .9. Install the server into the rack.
- !0. Connect all peripheral cables to the server.
- !1. Connect each power cord to the server.
- !2. Connect each power cord to the power source.

- !3. Power up the server.
- !4. If removed, install the front bezel.

Results

The installation procedure is complete.

Installing the optical drive in the SFF universal media bay

Prerequisites

- The optical drive installation requires the optical drive cable option (P72199-B21).
- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - Phillips No. 1 screwdriver

About this task



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.



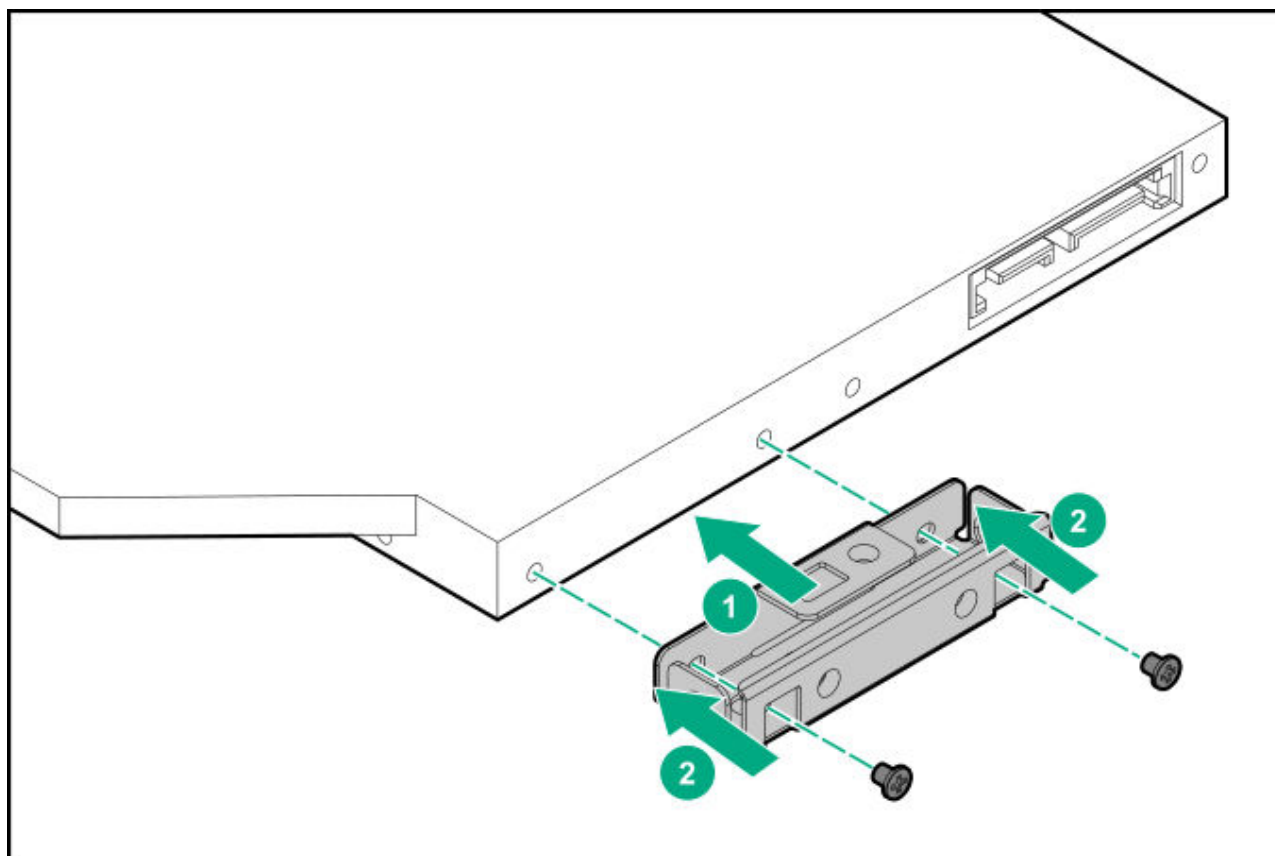
CAUTION

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

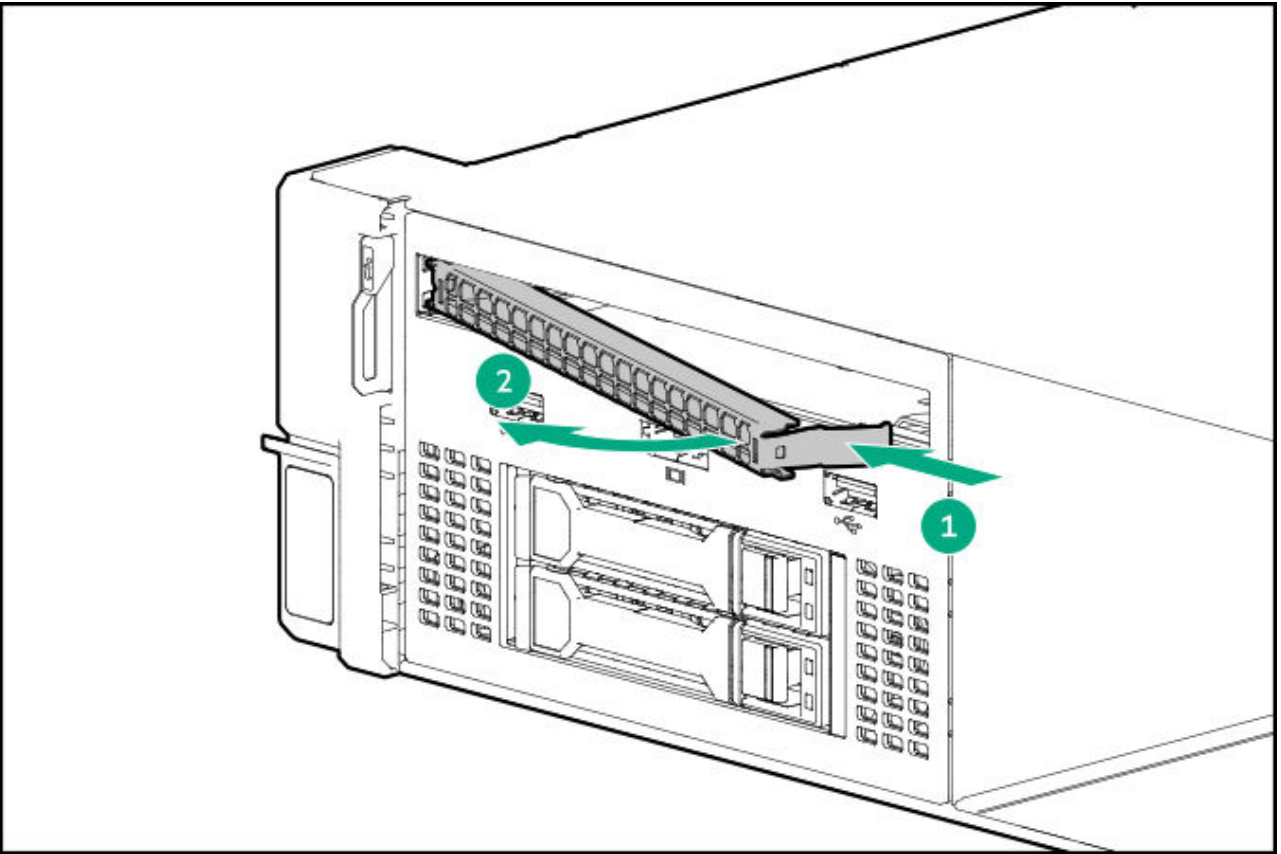
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.

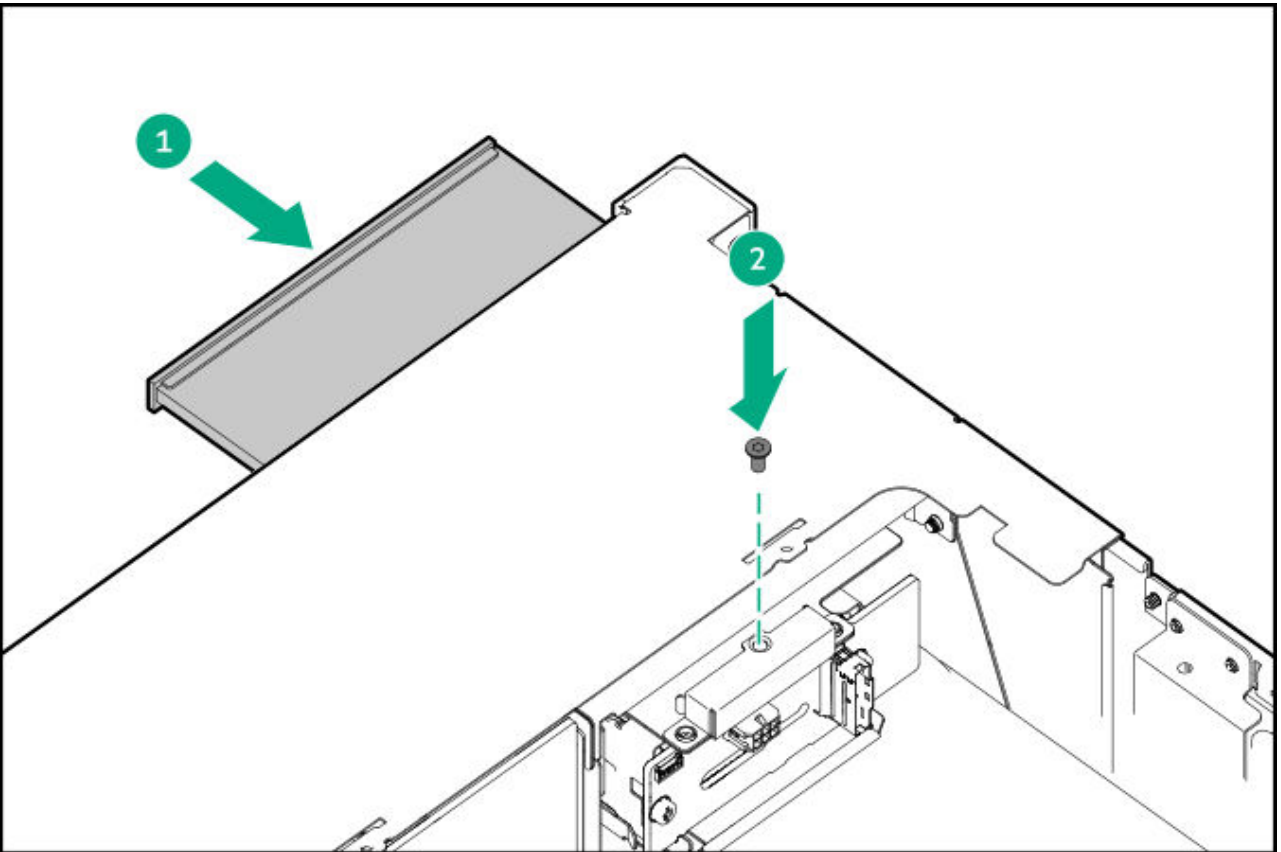
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the midwall bracket.
0. Install the universal media bay.
- .1. Install the optical drive bracket.



- .2. Remove the optical drive blank from the universal media bay.



3. Install the optical drive in the universal media bay, and then install the screw.



- .4. Connect the optical drive cable to the system board.
- .5. Install the midwall bracket.
- .6. Install the fan cage.
- .7. Install the air baffle.
- .8. Install the access panel.
- .9. Install the server into the rack.
- !0. Connect all peripheral cables to the server.
- !1. Connect each power cord to the server.
- !2. Connect each power cord to the power source.
- !3. Power up the server.
- !4. If removed, install the front bezel.

Results

The installation procedure is complete.

Memory

Subtopics

HPE SmartMemory speed and population information

DIMM installation guidelines

Installing a DIMM

HPE SmartMemory speed and population information

For information about memory speed and server-specific DIMM population rules for HPE servers using Intel Xeon 6 Processors, see the relevant memory technical paper in:

<https://www.hpe.com/docs/server-memory>

DIMM installation guidelines

When handling a DIMM, observe the following:

- Observe antistatic precautions.
- Handle the DIMM only along the edges.
- Do not touch the components on the sides of the DIMM.
- Do not touch the connectors on the bottom of the DIMM.
- Never wrap your fingers around a DIMM.
- Never bend or flex the DIMM.

When installing a DIMM, observe the following:

- To align and seat the DIMM, use two fingers to hold the DIMM along the side edges.
- To seat the DIMM, use two fingers to apply gentle pressure along the top of the DIMM.

For more information, see the Hewlett Packard Enterprise website (<https://www.hpe.com/support/DIMM-20070214-CN>).

Installing a DIMM

Prerequisites

- Before you perform this procedure, review the following:
 - DIMM population information
 - DIMM installation guidelines
- If installing the DIMMs with 96 GB or higher capacity, make sure that the high performance fans are installed.

About this task



CAUTION

Do not install ×4 and ×8 DRAM widths in the same server. All memory installed in the server must be of the same type. Installing different DIMM types can cause the server to halt during BIOS initialization.



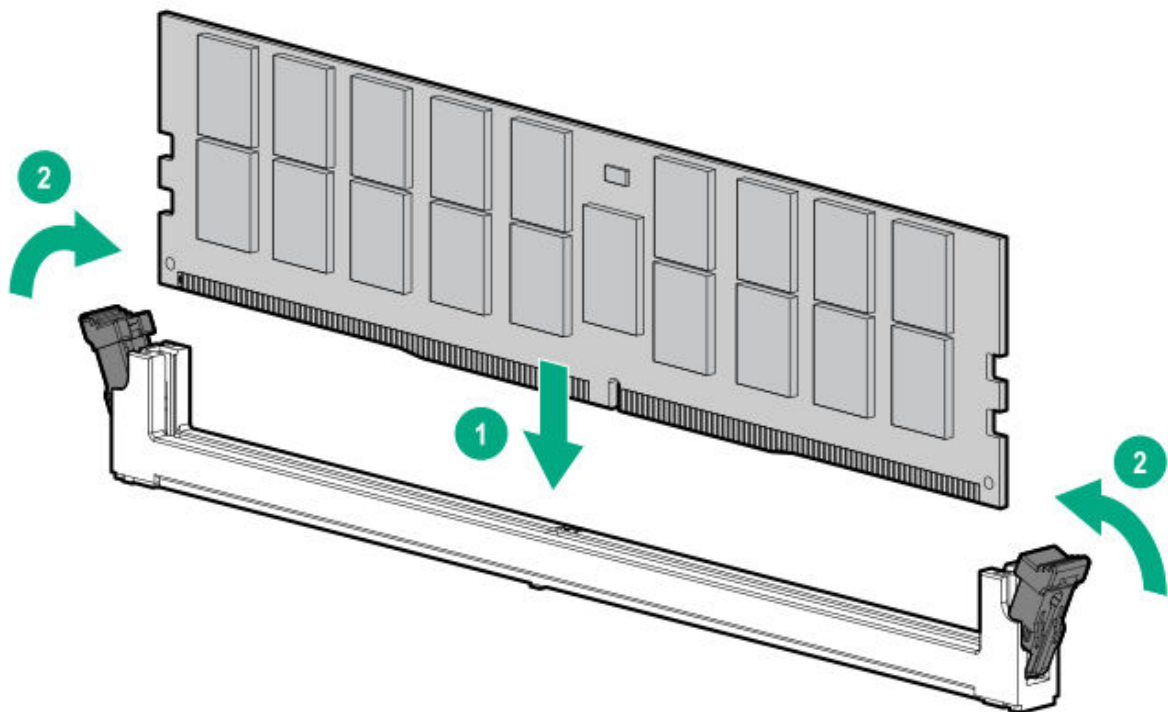
CAUTION

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.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Install the DIMM:
 - a. Open the DIMM slot latches.
 - 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.

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.



8. Install the air baffle.
9. Install the access panel.
0. Install the server into the rack.
- .1. Connect all peripheral cables to the server.
- .2. Connect each power cord to the server.
- .3. Connect each power cord to the power source.
- .4. Power up the server.
- .5. 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**.

Results

The installation procedure is complete.

Networking

Subtopics

[OCP slot population rules](#)

[Installing a front OCP NIC](#)

[Installing a rear OCP NIC](#)

[Installing a PCIe NIC in a riser cage](#)

[Installing a PCIe NIC in the GPU cage](#)

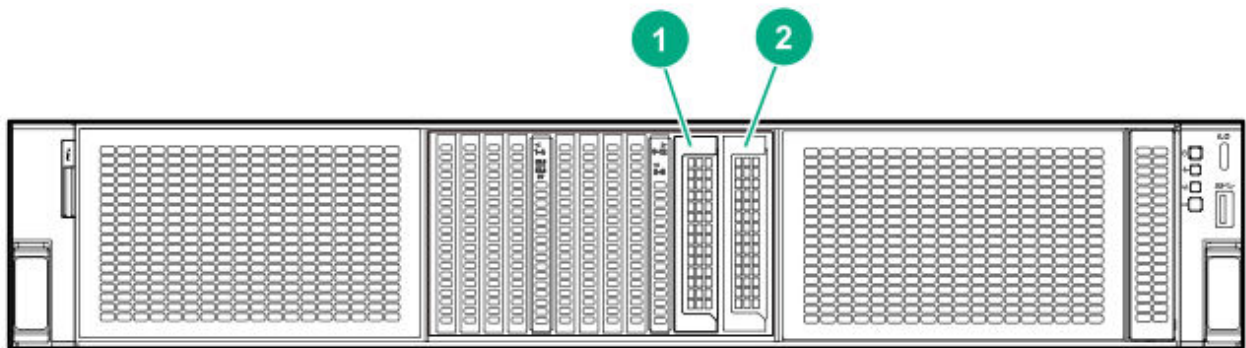
[Enabling the iLO shared network connection](#)

OCP slot population rules

This server supports up to two OCP NIC SFF slots in either the front or the rear panel.

Front OCP NIC slots

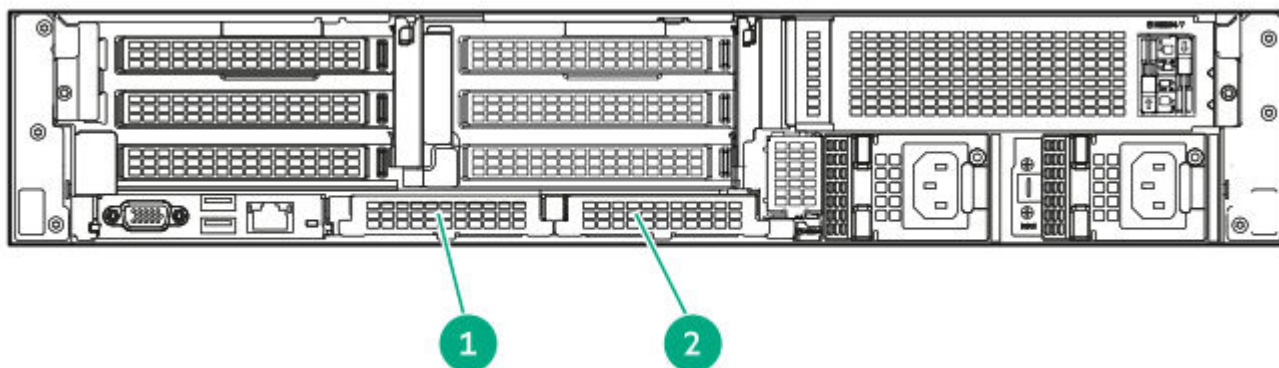
The front OCP NIC slots in the multipurpose cage require the front OCP enablement kits (P77277-B21, P75767-B21).



Item	Slot number	Supported component
1	Box 2: Bay 9 OCP slot PCIe5 x16	OCP NIC
2	Box 2: Bay 11 OCP slot PCIe5 x16	

Rear OCP NIC slots

The rear OCP NIC slots are default in the system.



Item	Slot number	Supported component
1	Slot 20 OCP A PCIe5 x16 ¹	<ul style="list-style-type: none"> OCP NIC
2	Slot 21 OCP B PCIe5 x16 ²	<ul style="list-style-type: none"> Type-o storage controller

¹ When installing a single OCP NIC, install it in Slot 20 OCP A.

² Depending on the configuration, Slot 21 OCP B requires one of the following rear OCP B enablement cable options:

- P77556-B21 to the secondary riser connector
- P71426-B21 to the M-XIO ports 4 and 6
- P75154-B21 to the M-XIO ports 13 and 17

Installing a front OCP NIC

This server supports up to two OCP NIC 3.0 SFF slots in either the the front or the rear panel. The front OCP slot requires the front OCP enablement kits.

Subtopics

About the front OCP NIC enablement kits

About the front OCP NIC enablement kits

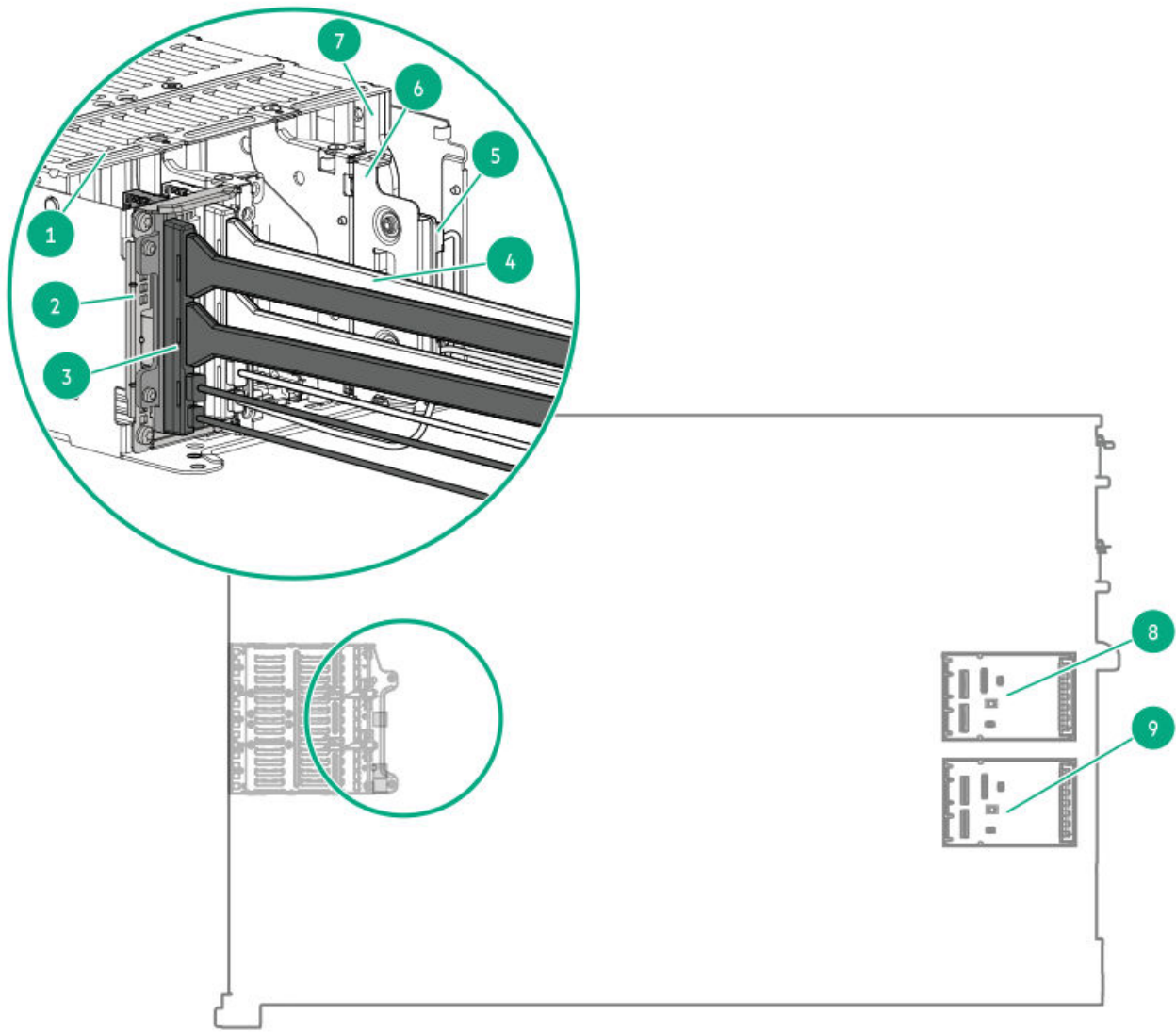
The front OCP NIC enablement kits transfer the NIC signal from the rear OCP slots to the front Box 2, Bay 9 and 11 OCP slots. Having an OCP NIC slot in the front panel has the following advantages:

- More convenient access to network ports

- Better cooling condition for NIC installation

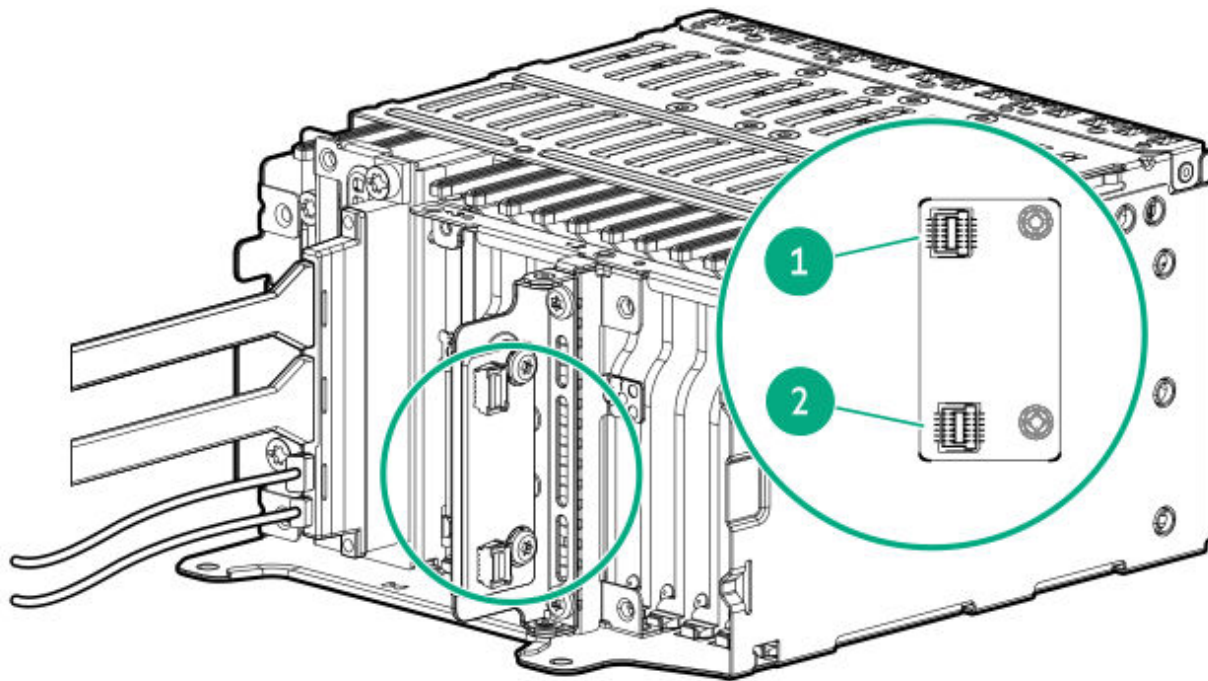
Depends on the configurations, this enablement kits content the following options:

- Multipurpose cage option (P76449-B21)
- Primary front OCP NIC enablement kit—Use this option to install the Box 2, Bay 9 OCP slot.
 - SFF / E3.S drive configurations: P71480-B21
 - GPU-optimized configurations: P77277-B21
- Secondary front OCP NIC enablement kit—Use this option to install the Box 2, Bay 11 OCP slot.
 - SFF / E3.S drive configurations: P75768-B21
 - GPU-optimized configurations: P75767-B21



Item	Description
1	<p>Multipurpose cage</p> <p>This cage supports several options:</p> <ul style="list-style-type: none"> • Up to 4 E3.S drives • Up to 2 front OCP NIC • One NS204i-u boot device
2	Front OCP NIC bracket
3	Secondary front OCP NIC cable
4	Primary front OCP NIC cable
5	<p>PHY board</p> <p>The PHY board serves as a transceiver that physically links the front OCP NIC to the OCP NIC interposer. When setting up an iLO shared network connection, the PHY board transfers the signal from the rear iLO dedicated network port to the front OCP NIC.</p>
6	PHY board bracket
7	E3.S drive filler
8	<p>OCP NIC interposer (in the rear Slot 21 OCP B)</p> <p>The interposer reroutes the NIC signal from the rear Slot 21 OCP B to the front Box 2, Bay 9 OCP slot.</p>
9	OCP NIC interposer (in the rear Slot 20 OCP A)

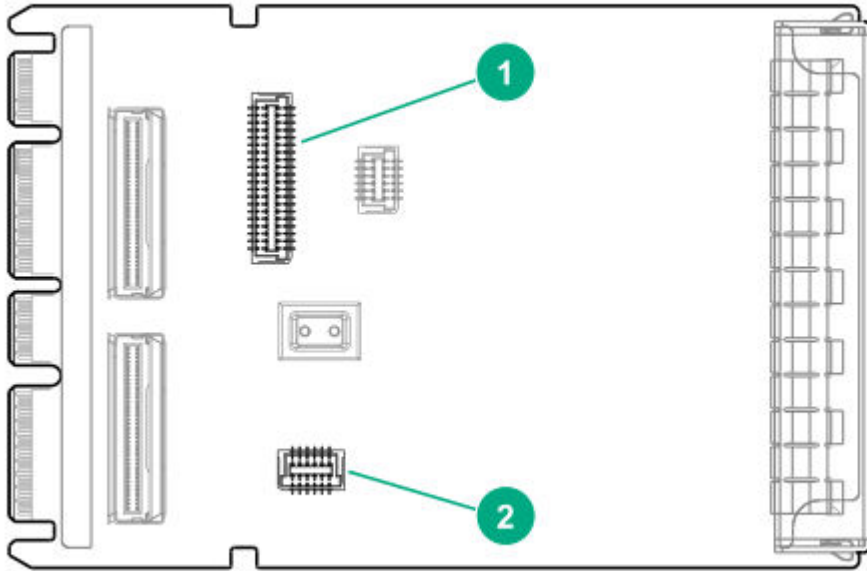
PHY board connectors



Item	Description
1	Front OCP NIC cable connector
2	PHY board cable connector

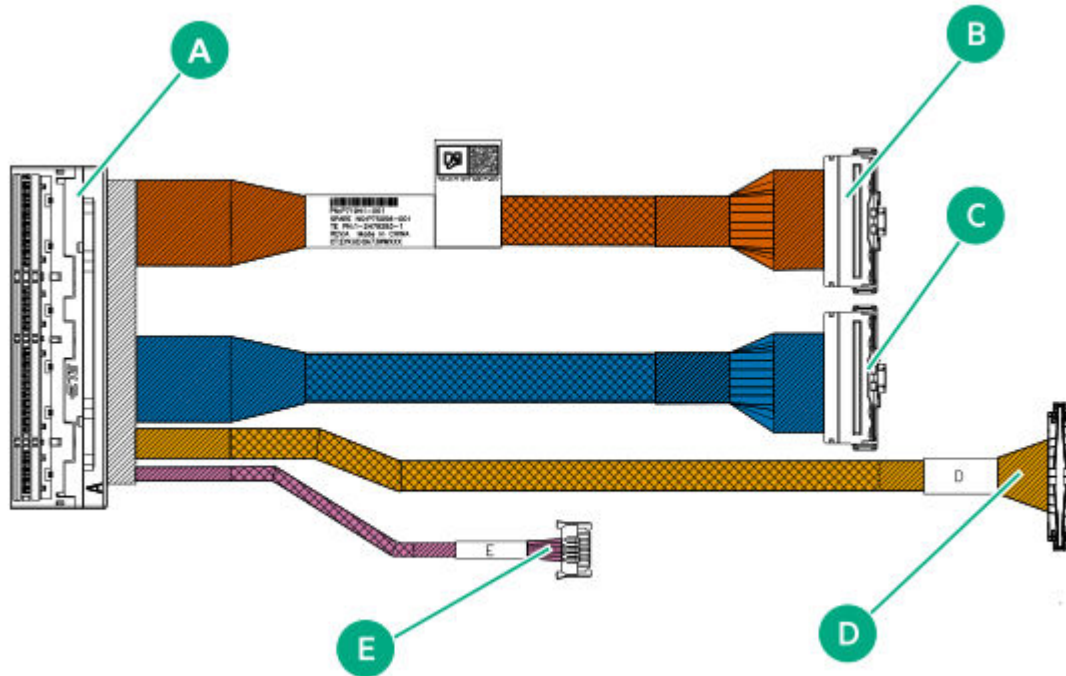
OCP NIC interposer connectors

The grayed out components in the image are not for use in this server.



Item	Description
1	Front OCP NIC cable connector
2	PHY board cable connector

Front OCP NIC cable connectors



Cable color	Cable connector label	Cable function
Orange	A	OCP NIC 3.0 slot
	B	Primary front OCP NIC cable: M-XIO port 5 Secondary front OCP NIC cable: M-XIO port 3
Blue	C	Primary front OCP NIC cable: M-XIO port 7 Secondary front OCP NIC cable: M-XIO port 1
	D	OCP NIC interposer connector
Pink	E	PHY board connector

PHY board cable connectors



Cable color	Cable connector label	Cable function
Orange	A	PHY board connector
	B	OCP NIC interposer connector

Subtopics

Installing a front OCP NIC

Installing a front OCP NIC

Prerequisites

- Review the following:
 - [OCP slot population rules](#)
 - [Fan and heatsink requirements](#)
- Before you perform this procedure, make sure that you have the following options available:
 - Multipurpose cage option (P76449-B21)
 - Primary front OCP NIC enablement kit—Use this option to install the Box 2, Bay 9 OCP slot.
 - SFF / E3.S drive configurations: P71480-B21
 - GPU-optimized configurations: P77277-B21
 - Secondary front OCP NIC enablement kit—Use this option to install the Box 2, Bay 11 OCP slot.
 - SFF / E3.S drive configurations: P75768-B21
 - GPU-optimized configurations: P75767-B21
 - OCP NICs
- Before you perform this procedure, make sure that you have the following items available:
 - T-15 Torx screwdriver—This tool is used to remove the screws from the multipurpose cage, install the front OCP NIC cable, or secure the PHY board on the bracket.
 - T-10 Torx screwdriver—This tool is used to remove the OCP slot blank, install the OCP bracket on the carrier, or remove the box 2 blank.

About this task

Multipurpose bay 9 supports the primary OCP NIC, and bay 11 supports the secondary OCP NIC.



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

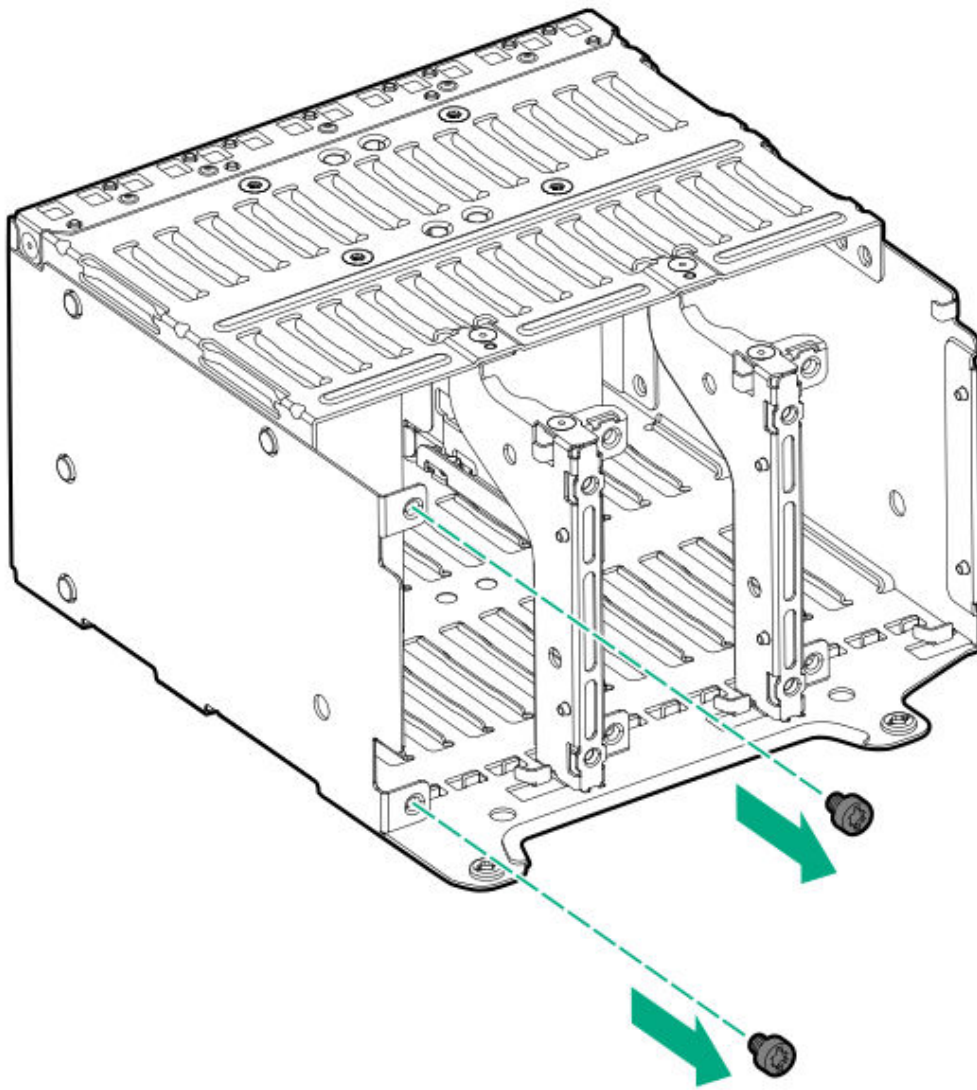
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

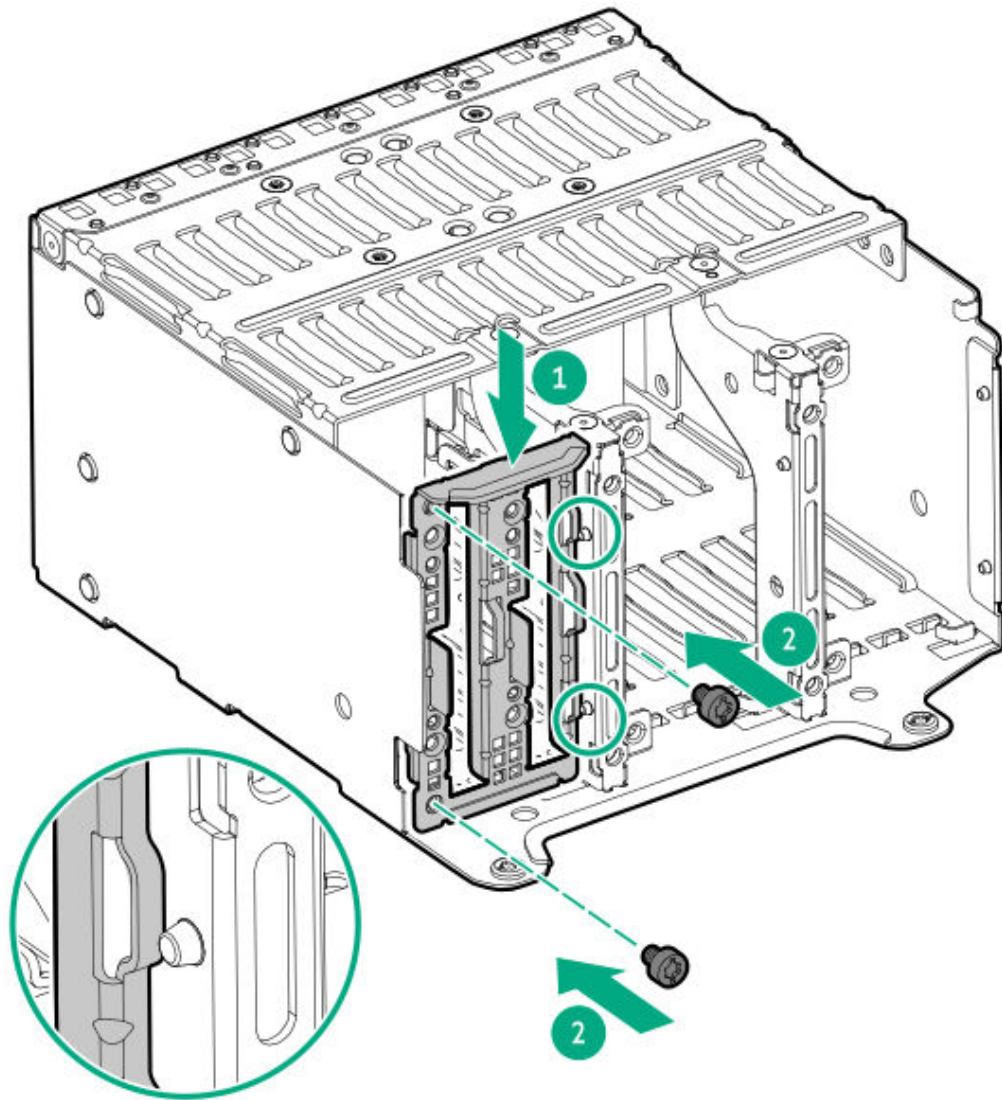
Install the front OCP NIC bracket

1. Remove two T-15 screws from the multipurpose cage.

Retain these screws to install the front OCP NIC bracket.



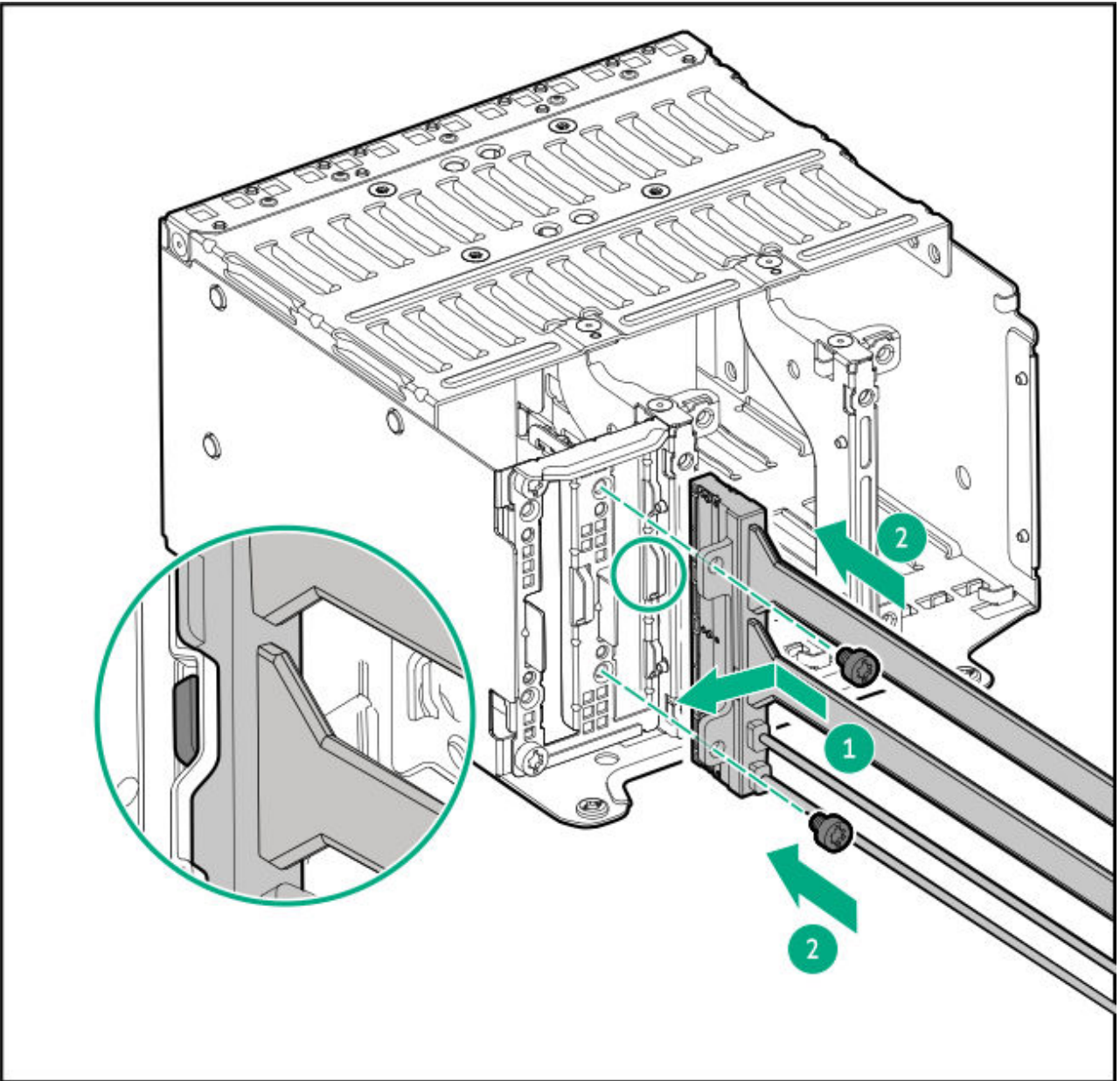
2. Slide the front OCP NIC bracket in the cage, and then secure the bracket with two T-15 screws.



Install the front OCP NIC cable

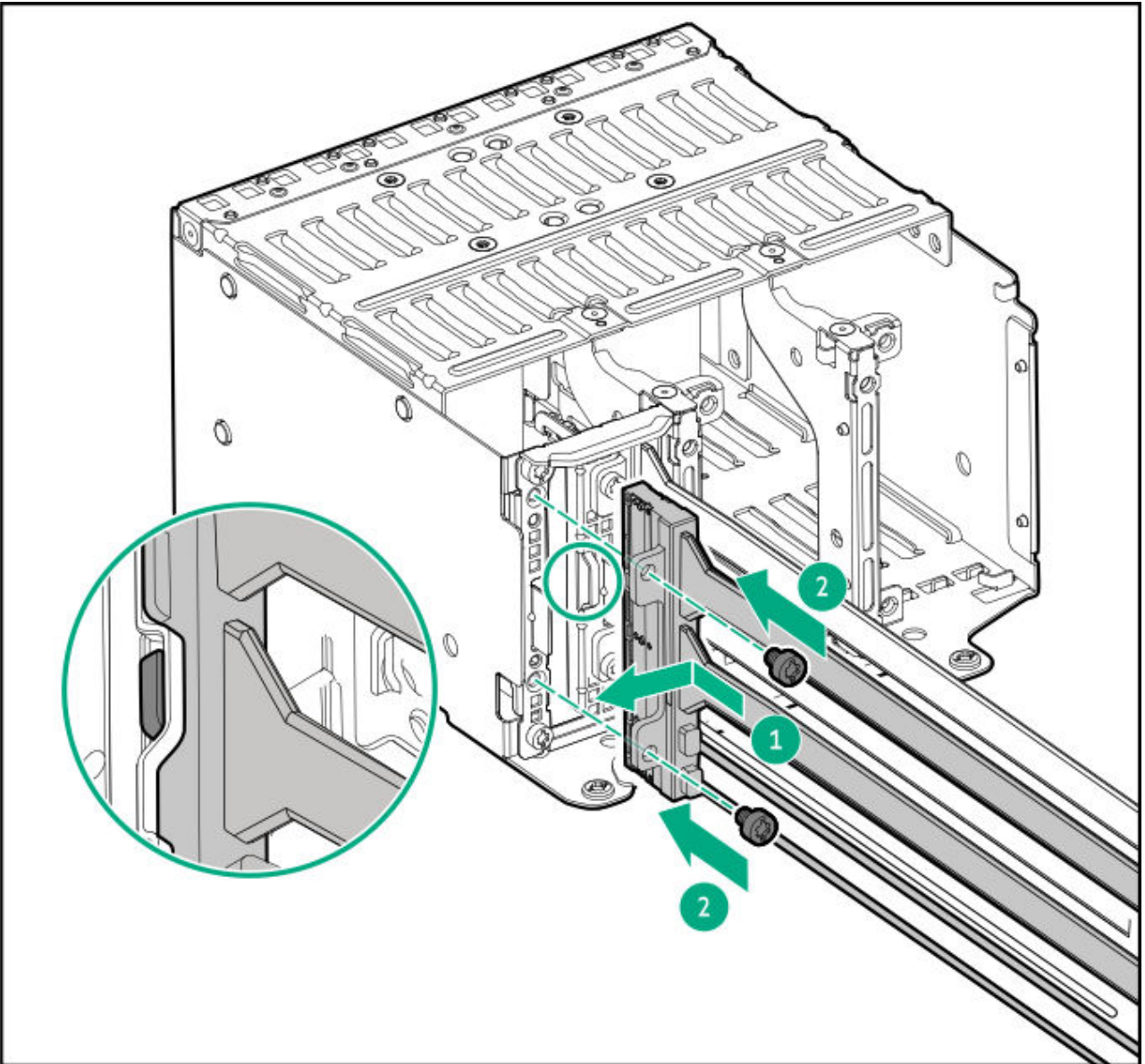
3. Insert the plastic tabs on the front OCP NIC cable into the notches on the bracket, and then secure the screws on the cable.

Make sure that the plastic tabs are secured in the bracket.



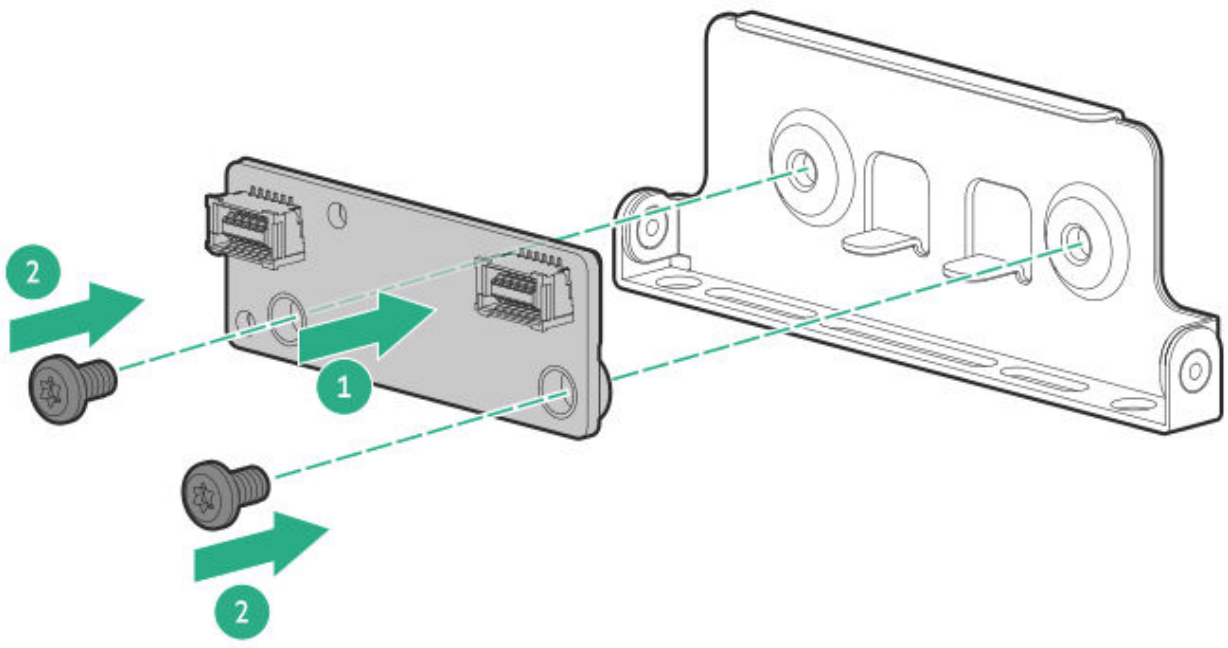
4. Install the secondary front OCP NIC cable.

Make sure that the plastic tabs are secured in the bracket.

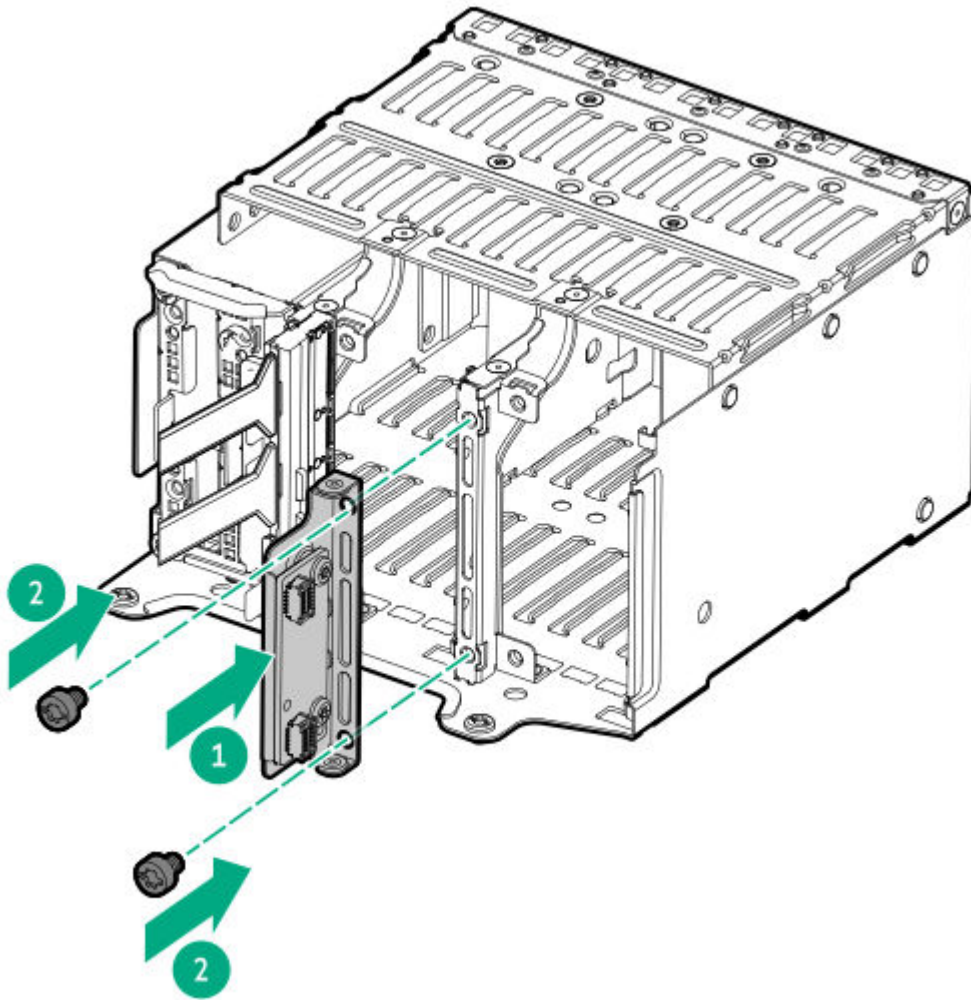


Install the PHY board

5. Install the PHY board on the PHY board bracket.

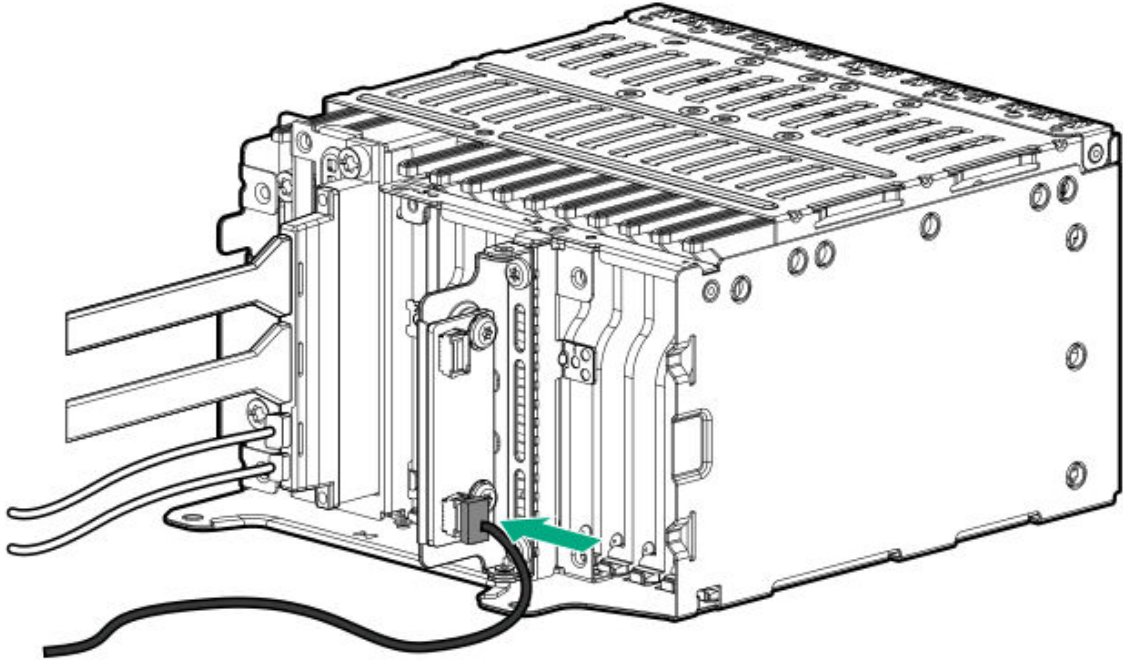


6. Install the PHY board bracket on the multipurpose cage.

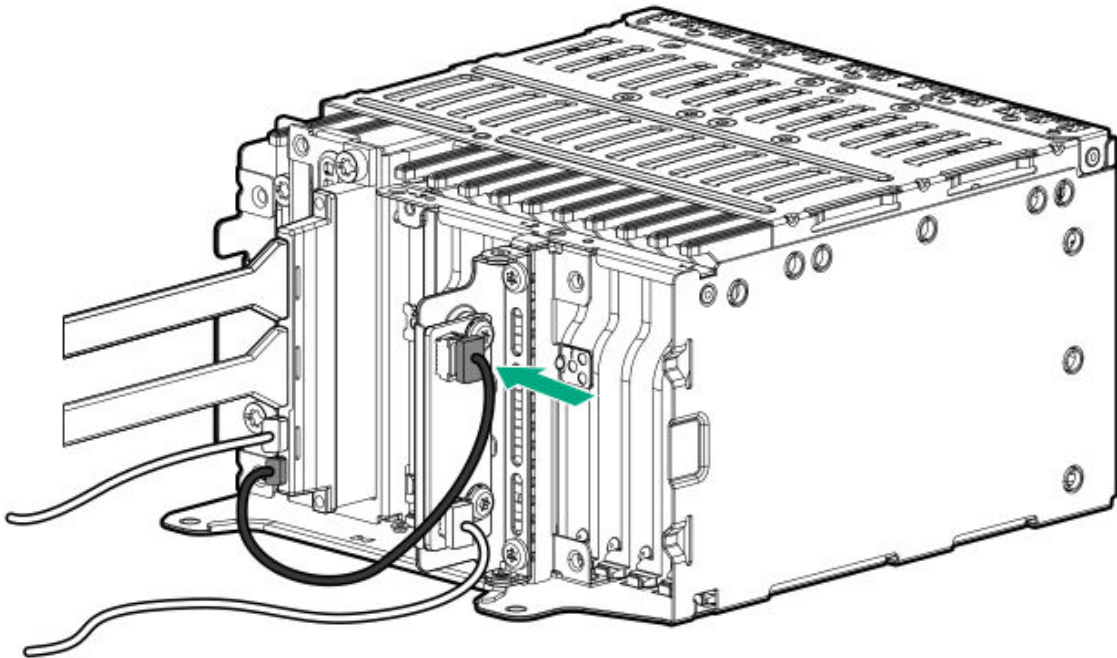


7. Connect the following primary front OCP NIC cable connectors to the PHY board:

- PHY board cable connector **A**

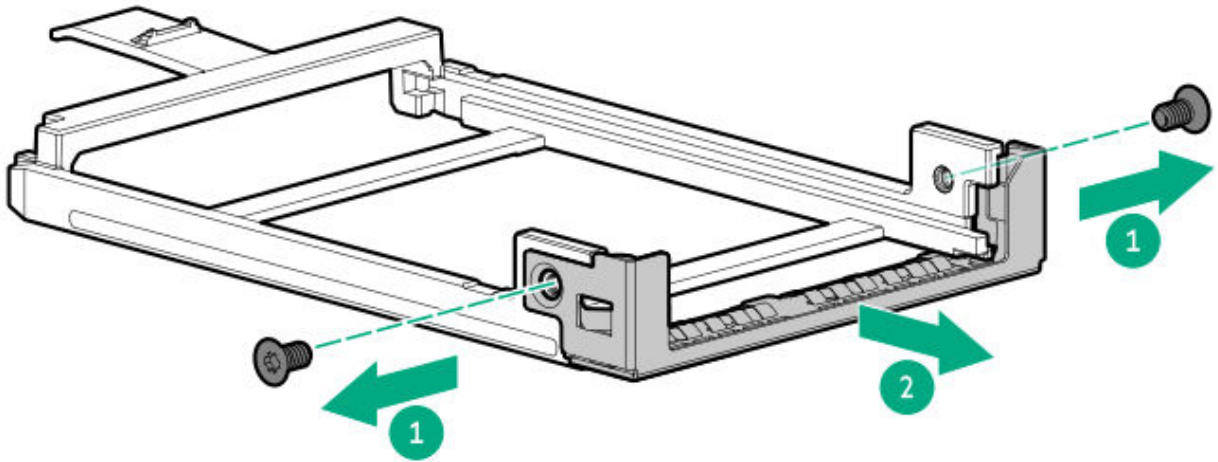


- Front OCP NIC cable connector **E**

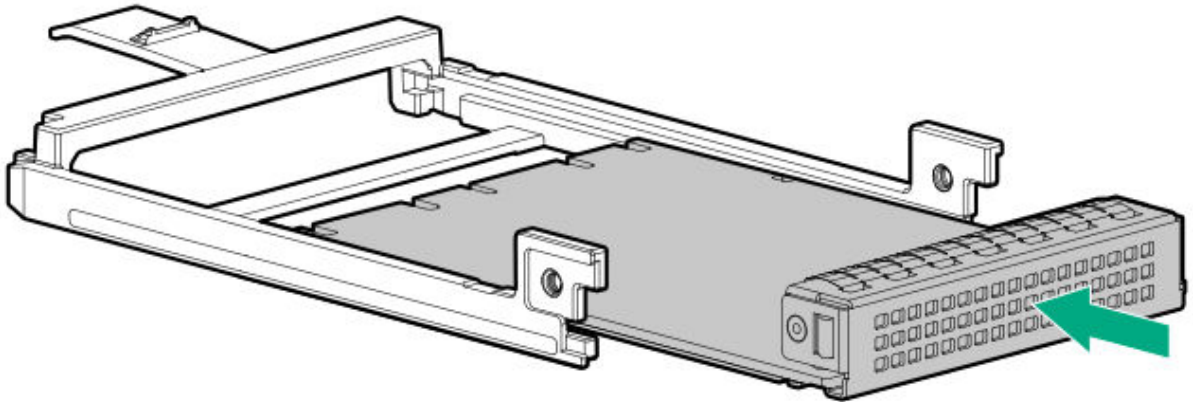


Install the OCP NIC on the multipurpose cage

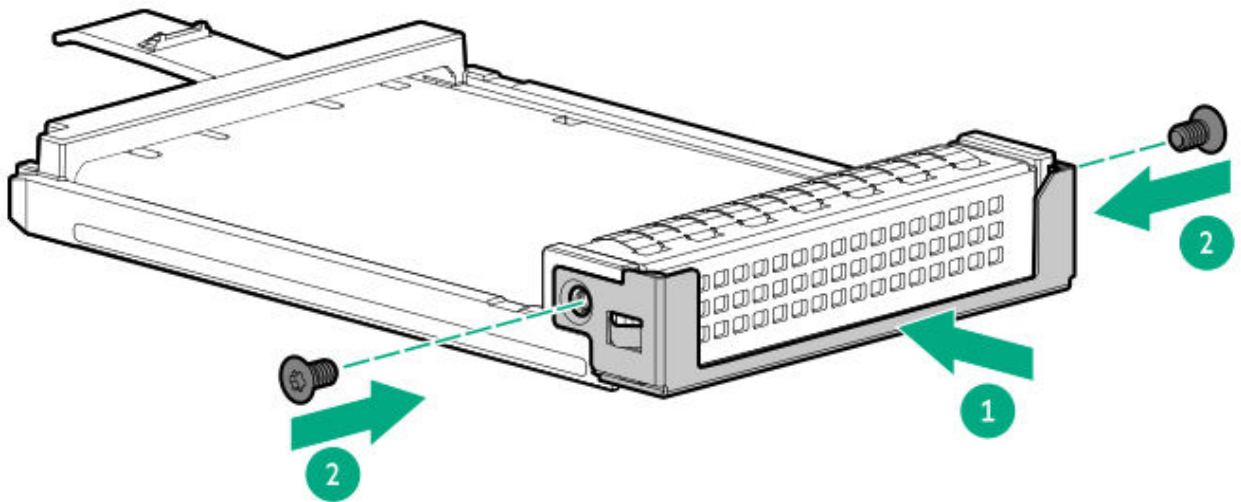
8. Remove the OCP NIC bracket.



9. Slide the OCP NIC into the OCP NIC carrier.



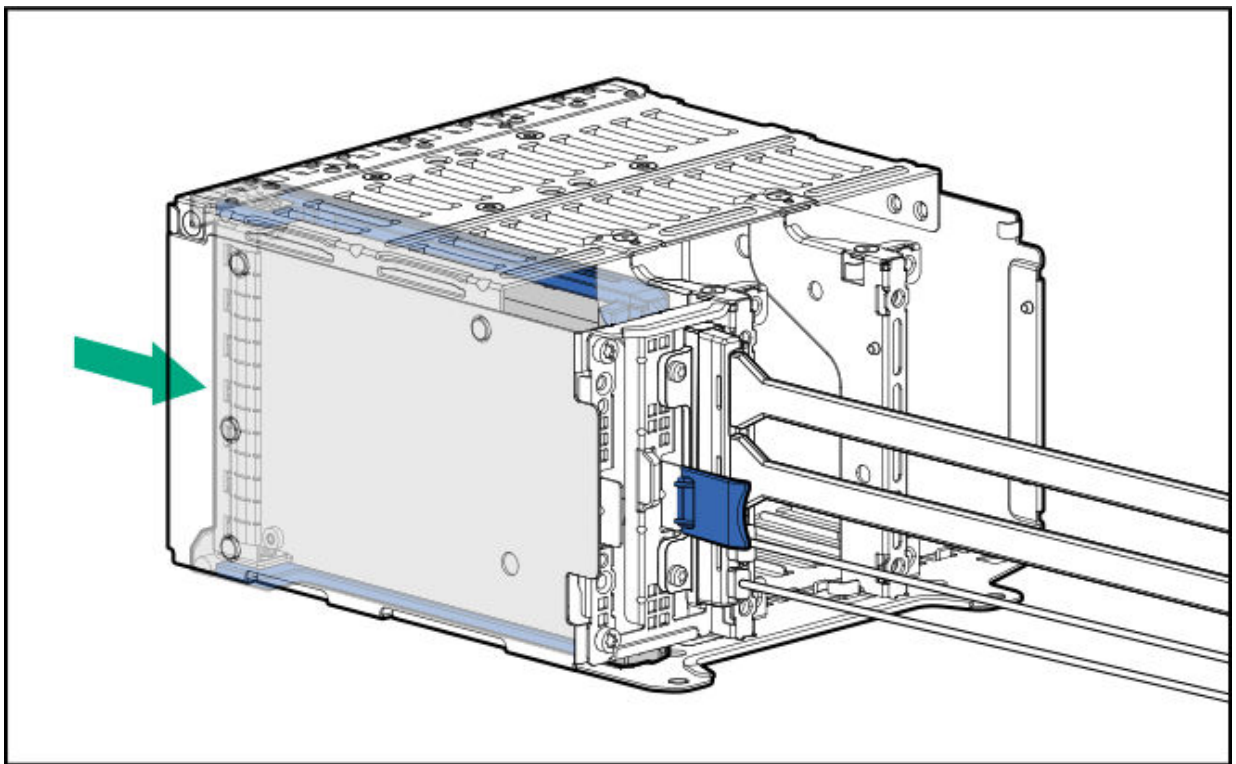
10. Install the OCP NIC bracket.



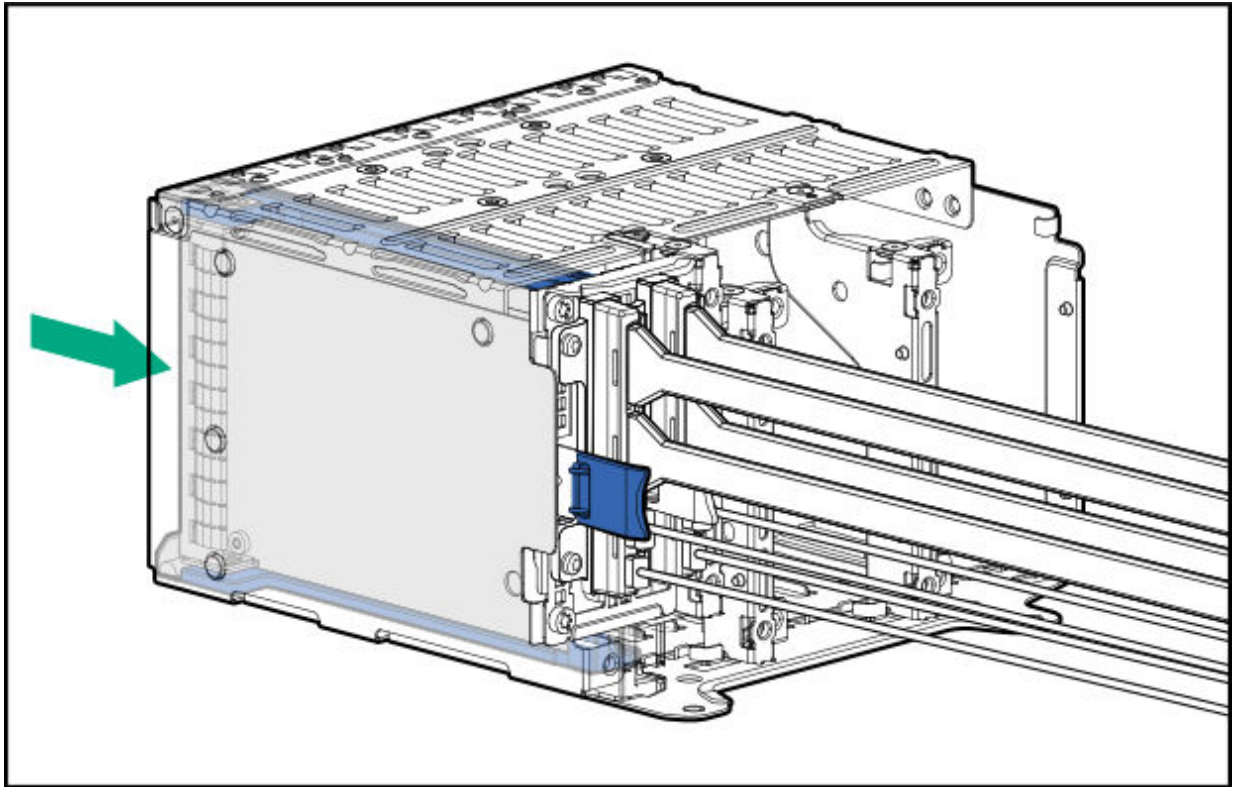
.1. Install the front OCP NIC.

There will be an audible click to indicate that the carrier latch is locked on the bracket.

- Primary front OCP NIC



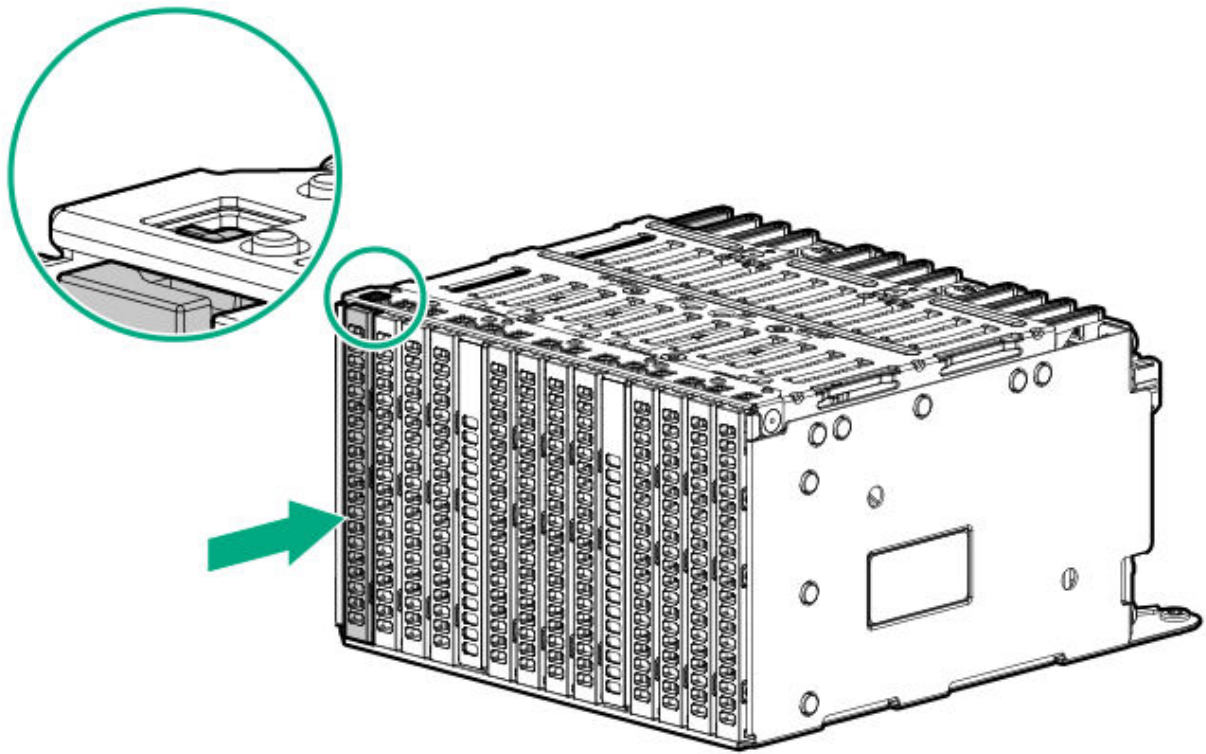
- Secondary front OCP NIC



Install the E3.S drive fillers

- .2. Install the E3.S drive fillers in all empty drive bays on the multipurpose cage.

Make sure that the filler is locked in the cage.

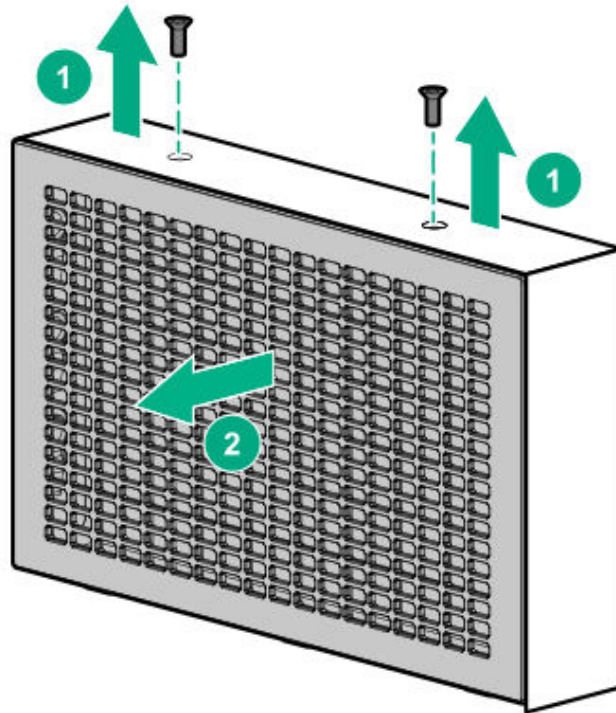


Install the multipurpose cage

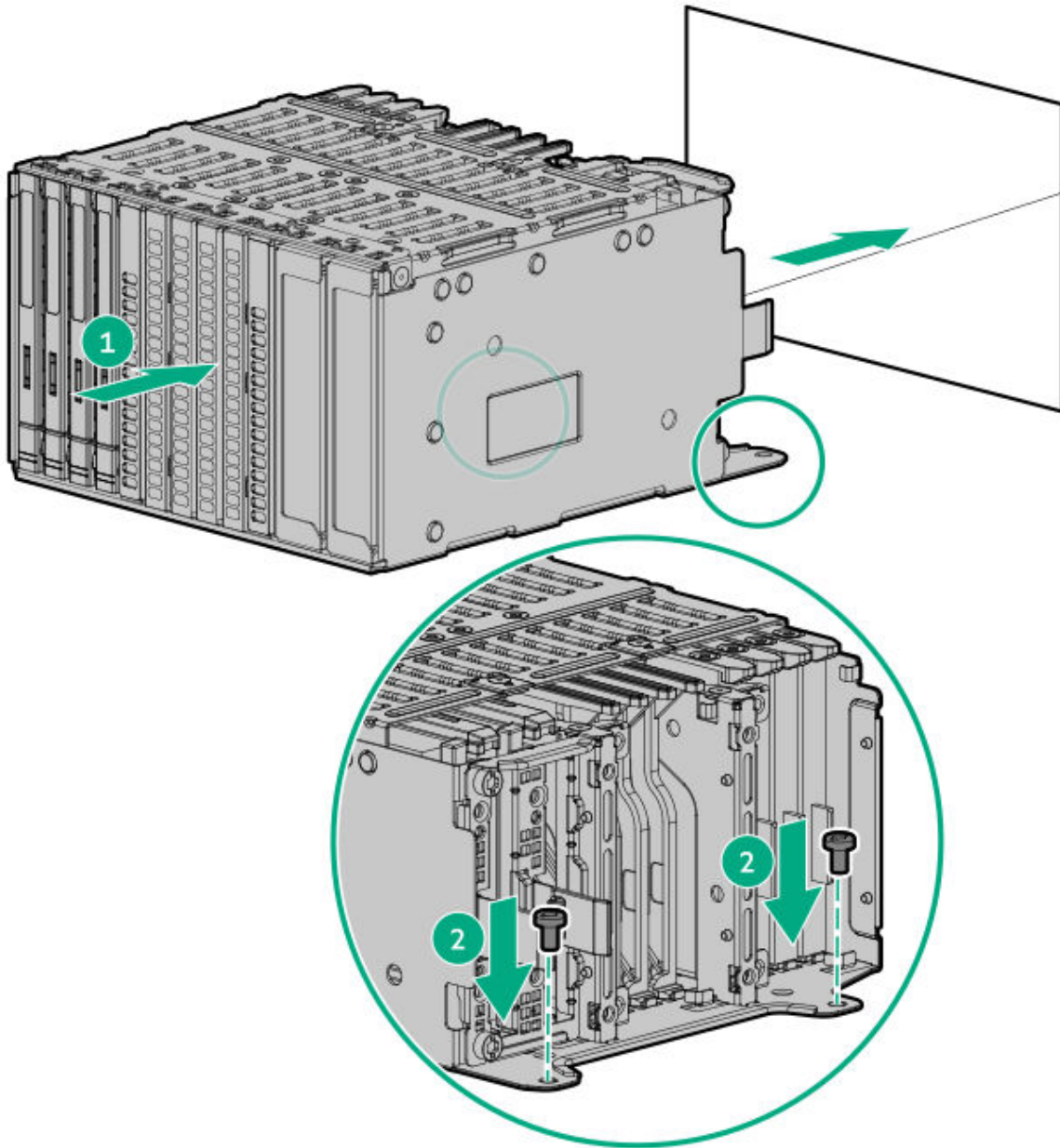
- .3. If installed, remove the front bezel.
- .4. Power down the server.
- .5. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
- .6. Disconnect all peripheral cables from the server.
- .7. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
- .8. Remove the access panel.
- .9. Remove the air baffle.
- .10. Remove the fan cage.
- .11. Do one of the following:

- In the SFF / E3.S drive configuration, remove the midwall bracket.
- In the GPU-optimized configuration, remove the middle cover.

!2. Remove the drive box 2 blank.

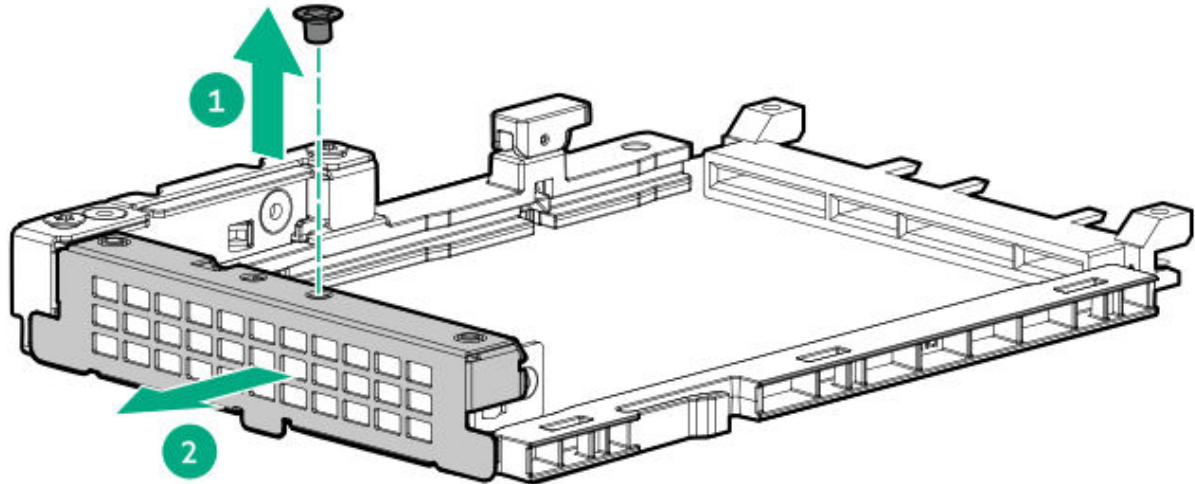


!3. Thread the front OCP NIC and PHY board cables into the drive box 2, and then slide the multipurpose cage in and secure it with the two screws.



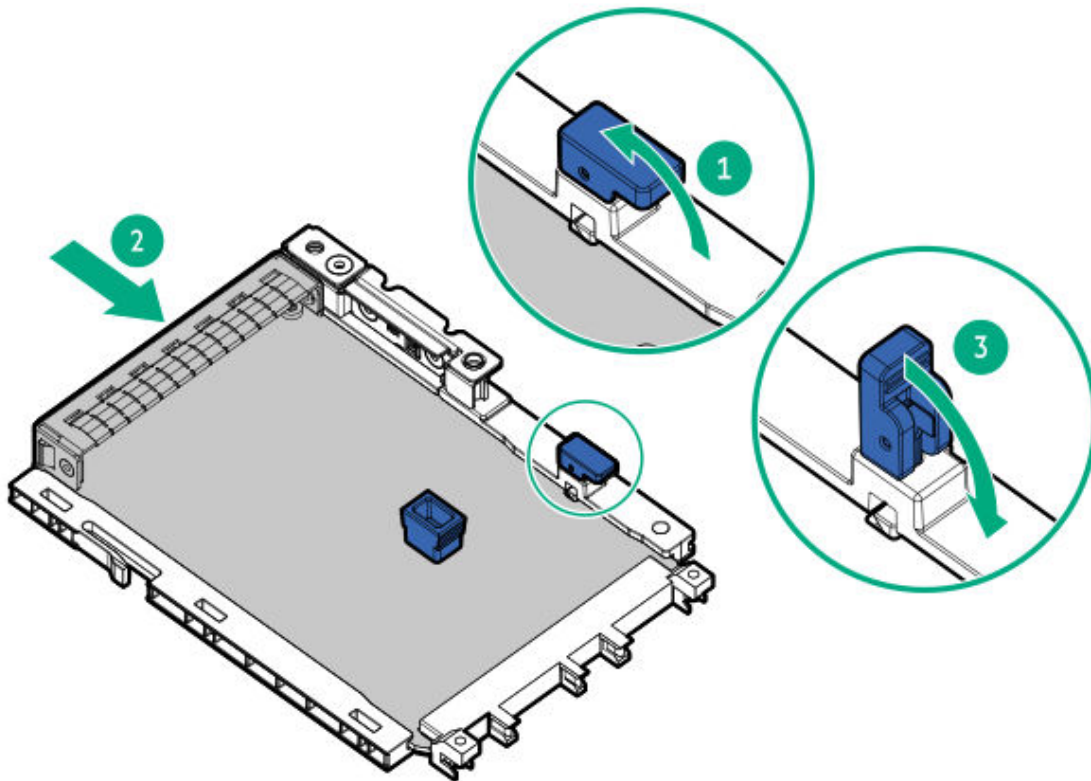
Install the OCP NIC interposers

4. Remove the Slot 21 OCP B and Slot 20 OCP A blanks.



!5. Install the OCP NIC interposer:

- a. Rotate the locking pin to the open (vertical) position.
- b. Slide the interposer into the slot until it clicks into place.
Make sure that the interposer is seated firmly in the slot.
- c. Rotate the locking pin to the close (horizontal) position.



6. Connect the following connectors on the primary front OCP NIC cable and the PHY board cable:

- OCP NIC primary cable connectors B and C to the system board
- OCP NIC primary cable connector D to the OCP NIC interposer
- PHY board primary cable connector B to the OCP NIC interposer

7. Connect the following connectors on the secondary front OCP NIC cables:

- OCP NIC secondary cable connectors B and C to the system board
- OCP NIC secondary cable connector D to the OCP NIC interposer

8. Do one of the following:

- Install the midwall bracket.
- Install the middle cover.

9. Install the fan cage.

10. Install the air baffle.

11. Install the access panel.

- i2. Install the server into the rack.
- i3. Connect all peripheral cables to the server.
- i4. Connect each power cord to the server.
- i5. Connect each power cord to the power source.
- i6. Power up the server.
- i7. If removed, install the front bezel.
- i8. If you intend to use a front OCP NIC port as an iLO shared network port, enable the iLO shared connection in the UEFI System Utilities.

Results

The installation procedure is complete.

Installing a rear OCP NIC

Prerequisites

- Review the following:
 - OCP slot population rules
 - Fan and heatsink requirements
- Slot 21 OCP B enablement cable option (P77556-B21/P71426-B21/P75154-B21) —This cable is required only if you are installing an OCP NIC in the Slot 21 OCP B.
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task



IMPORTANT

Servers that use Intel Xeon 6 65x1P/67x1P processors are considered rich I/O (RIO) configurations with 64 lanes of CXL 2.0 and up to 96 lanes of PCIe 5.0.



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](#).

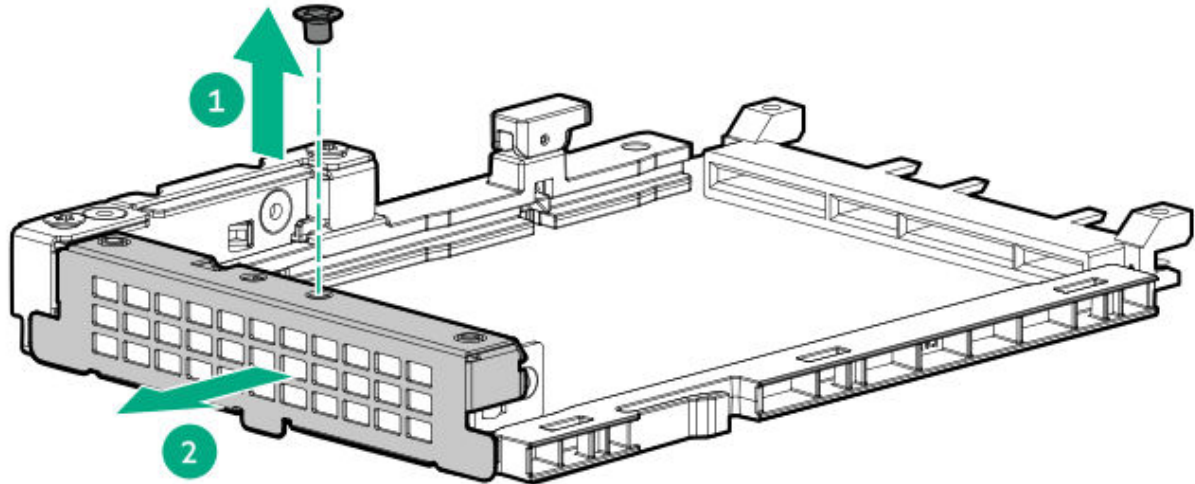


CAUTION

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.

Procedure

1. [Power down the server](#).
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - [Extend the server out of the rack](#).
 - [Remove the server from the rack](#).
5. [Remove the access panel](#).
6. [Remove the secondary riser cage blank](#).
7. If installed, [remove the secondary riser cage](#).
8. Remove the OCP slot blank.

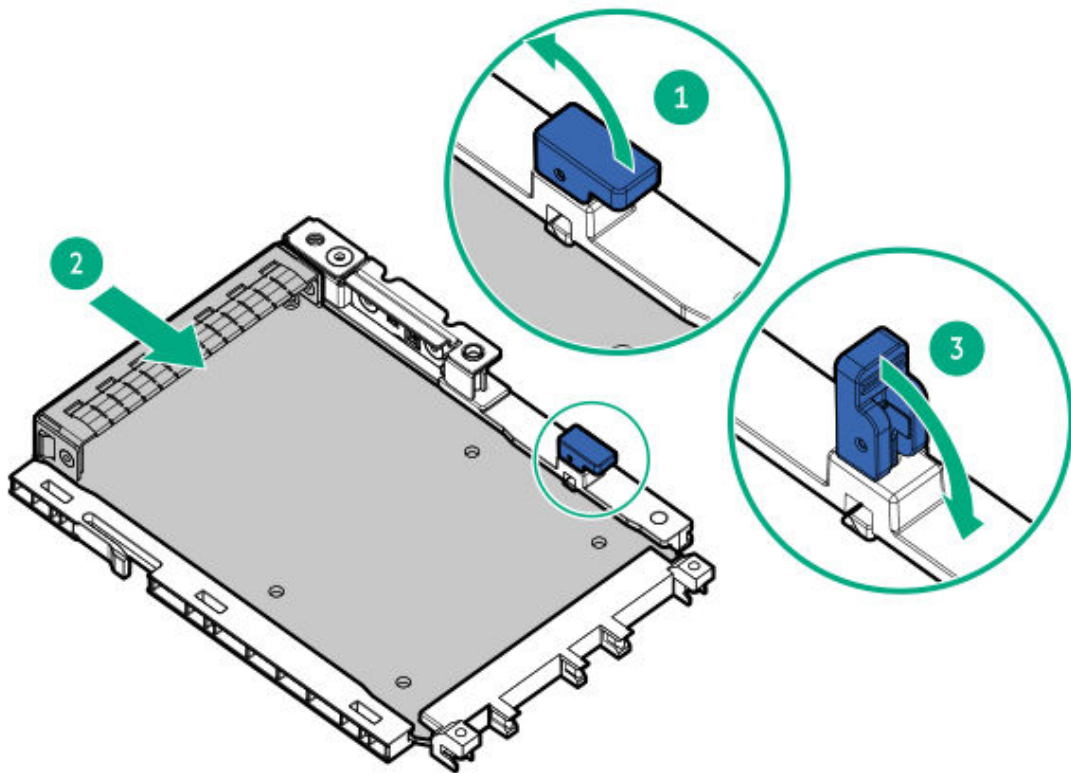


9. Install the OCP NIC:

- a. Rotate the locking pin to the open (vertical) position.
- b. Slide the into the slot until it clicks into place.

Make sure that the is seated firmly in the slot.

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



- .0. If you installed the NIC in the Slot 21 OCP B, connect the OCP B enablement cable.
- .1. Install the secondary riser cage blank.
- .2. If removed, install the secondary riser cage.
- .3. Install the access panel.
- .4. Install the server into the rack.
- .5. Connect all peripheral cables to the server.
- .6. Connect each power cord to the server.
- .7. Connect each power cord to the power source.
- .8. Power up the server.

Results

The installation procedure is complete.

Installing a PCIe NIC in a riser cage

Prerequisites

- Review the [fan and heatsink requirements](#).
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task



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](#).

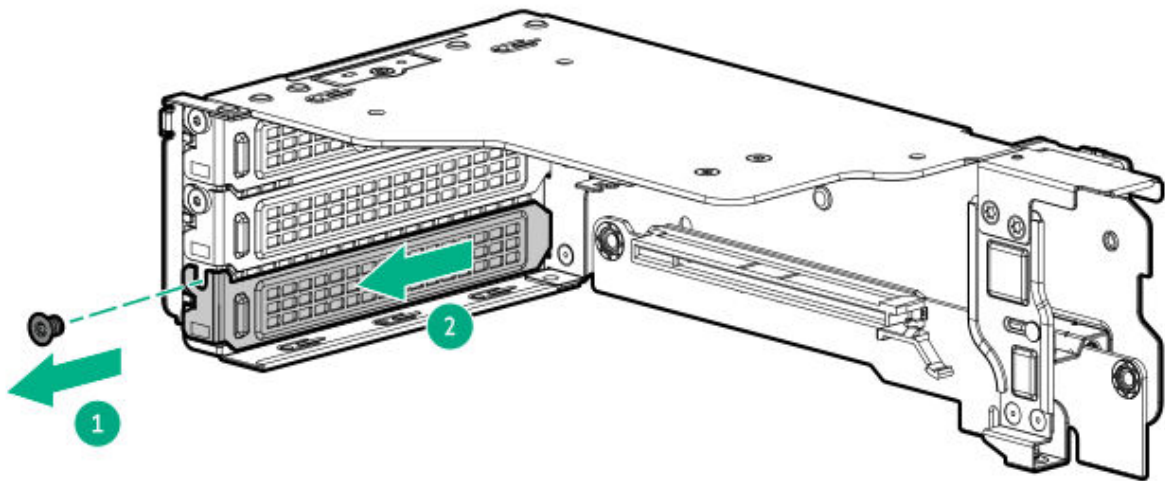


CAUTION

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

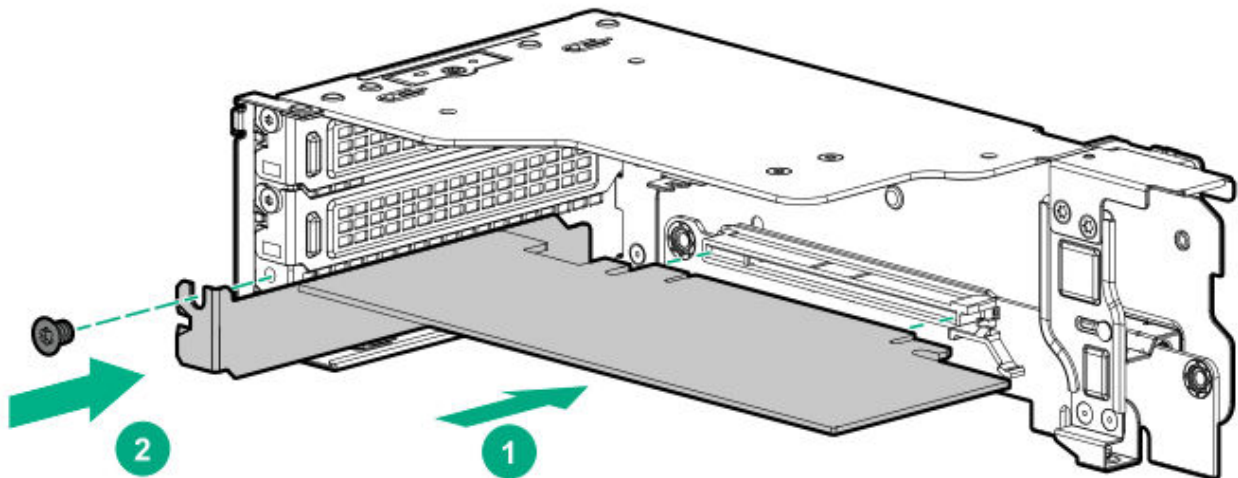
Procedure

1. [Power down the server](#).
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - [Extend the server out of the rack](#).
 - [Remove the server from the rack](#).
5. [Remove the access panel](#).
6. [Remove the air baffle](#).
7. [Remove the riser cage](#).
8. Remove the riser slot blank.



9. Install the PCIe NIC, and then secure it with the screw.

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



0. Connect all necessary internal cabling to the PCIe NIC.
1. Install the riser cage.
2. Install the air baffle.
3. Install the access panel.

- .4. Install the server into the rack.
- .5. Connect all peripheral cables to the server.
- .6. Connect each power cord to the server.
- .7. Connect each power cord to the power source.
- .8. Power up the server.

Results

The installation procedure is complete.

Installing a PCIe NIC in the GPU cage

Prerequisites

- Review the fan and heatsink requirements.
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task



CAUTION

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



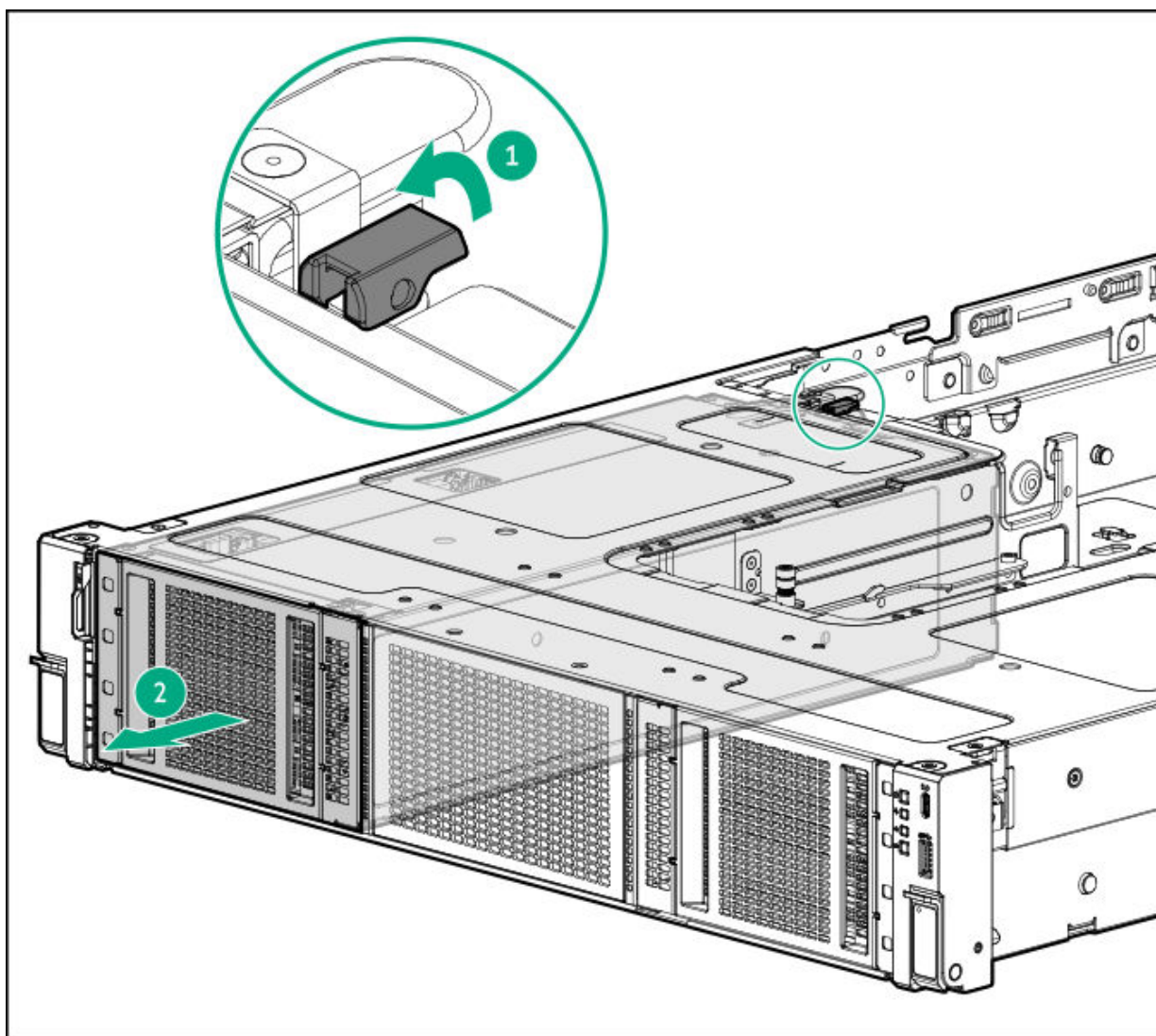
CAUTION

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.

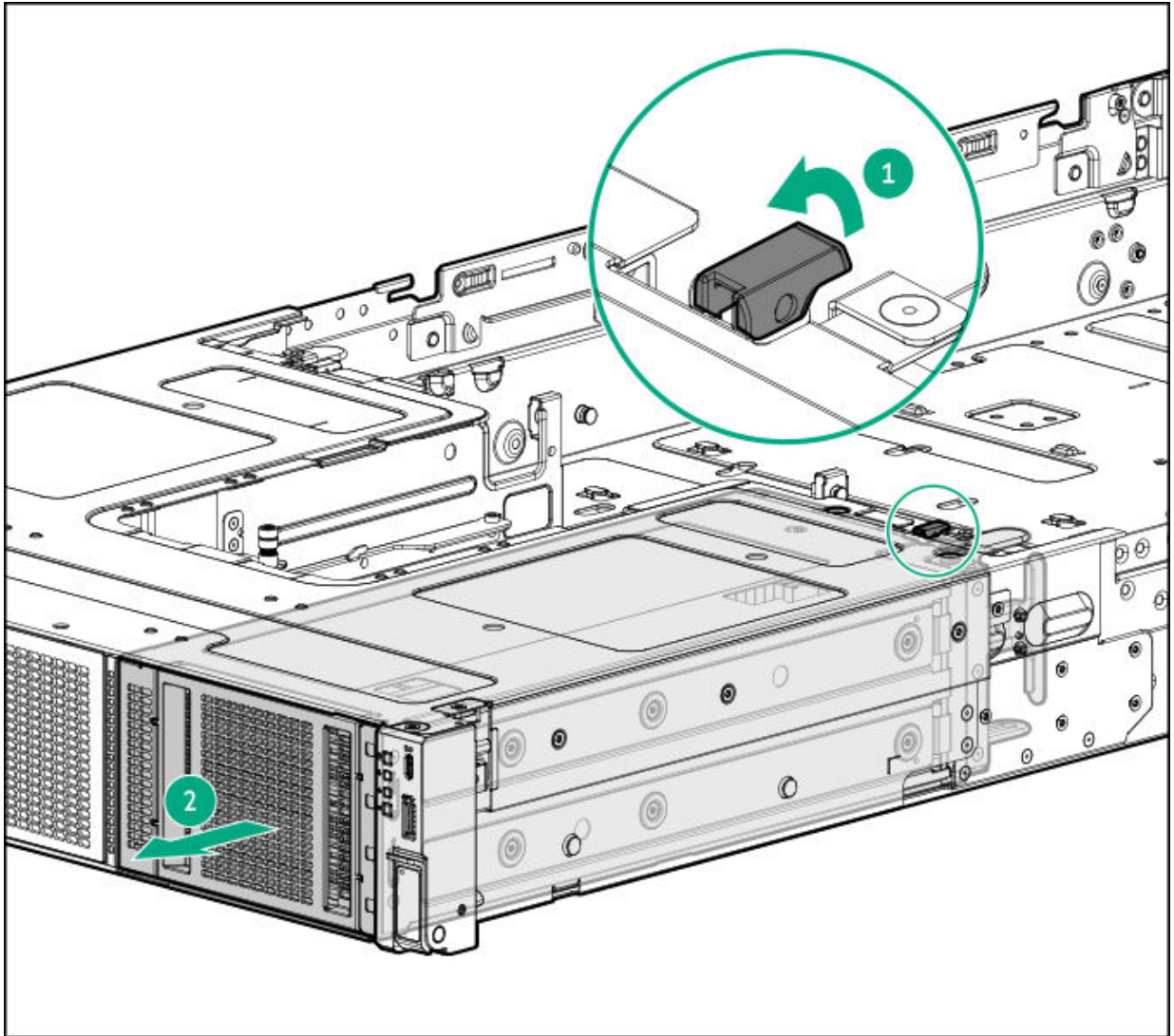
Procedure

1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.

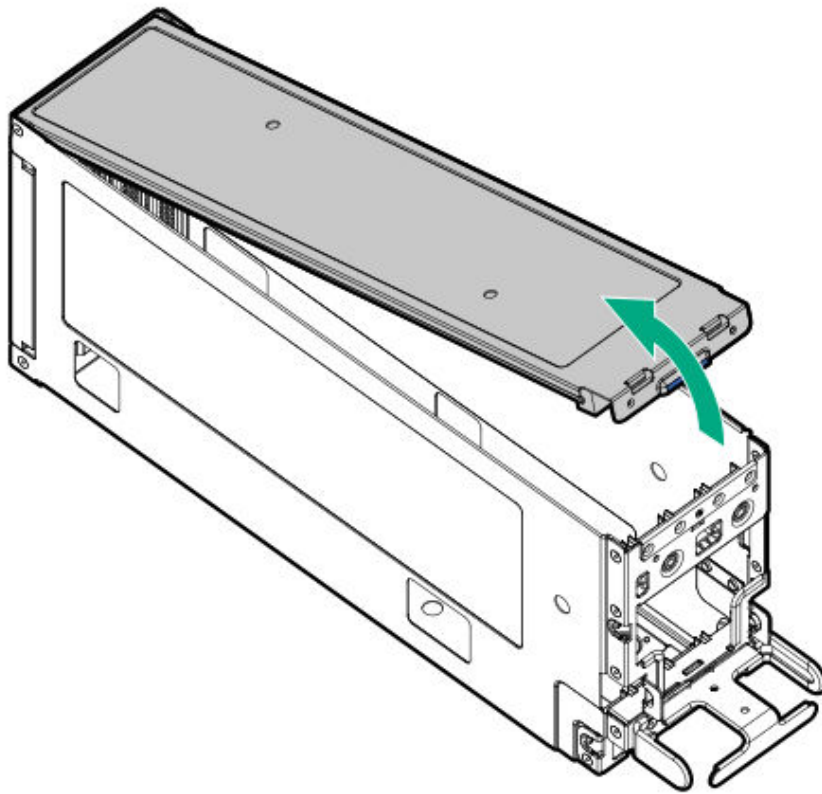
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Remove the middle cover.
0. Remove the GPU cage.
 - GPU cage 1



- GPU cage 2

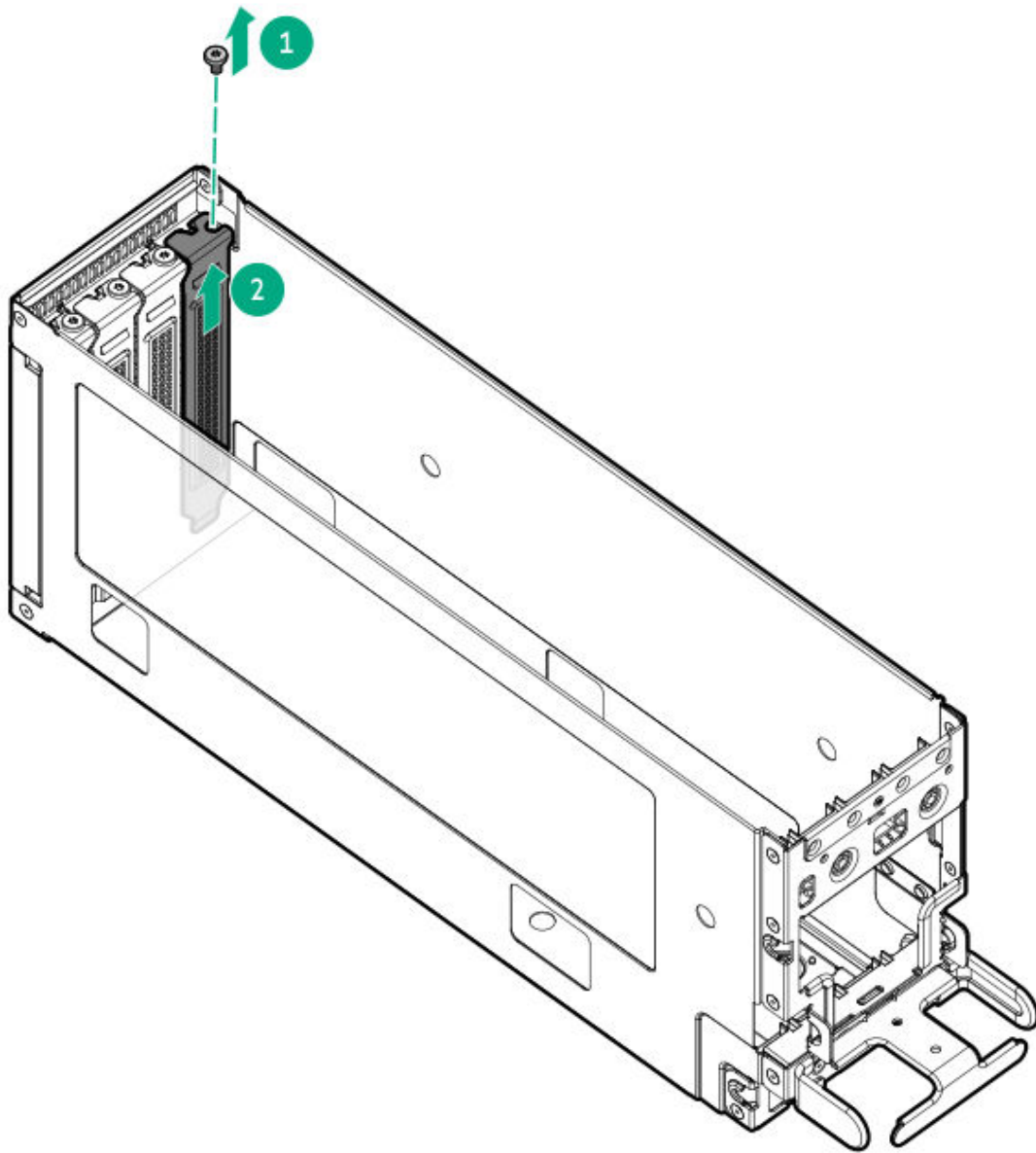


.1. Remove the GPU cage cover.



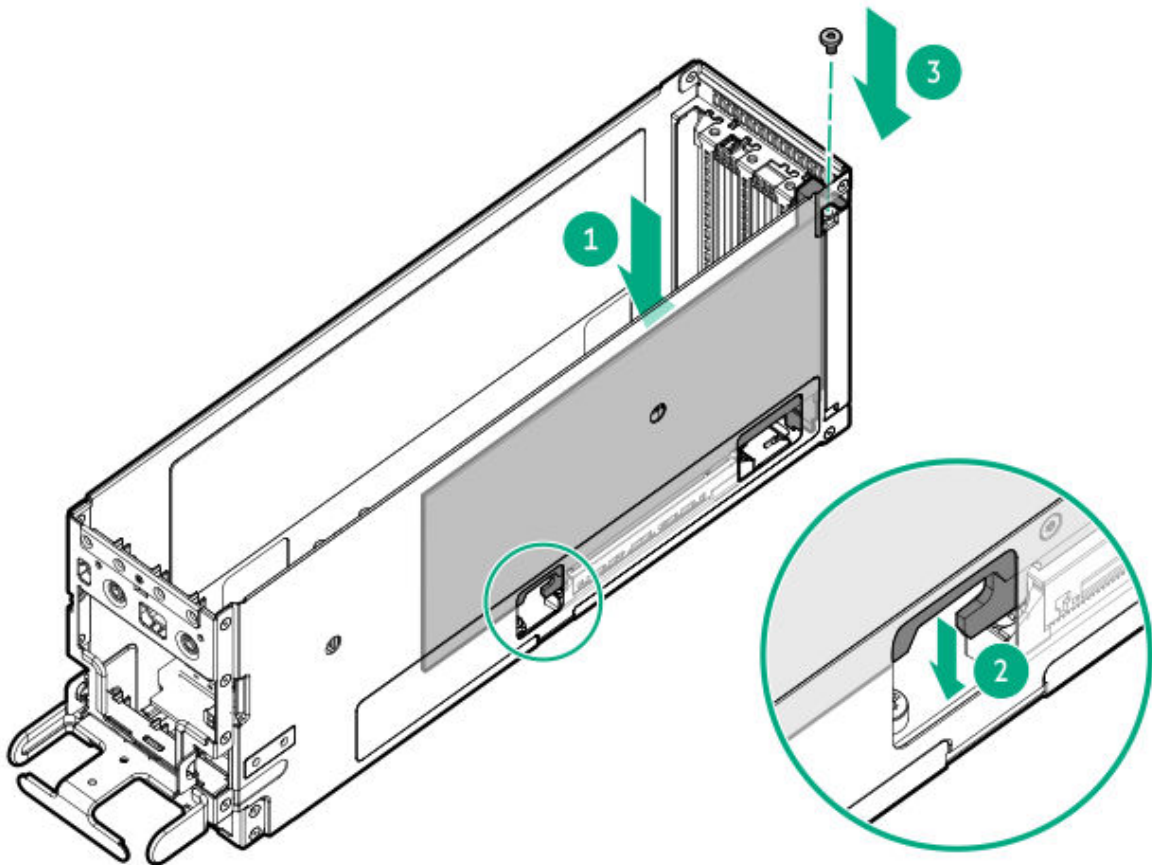
.2. Remove the front PCIe riser slot blank.

Retain the screws. These screws are used to secure the front PCIe.



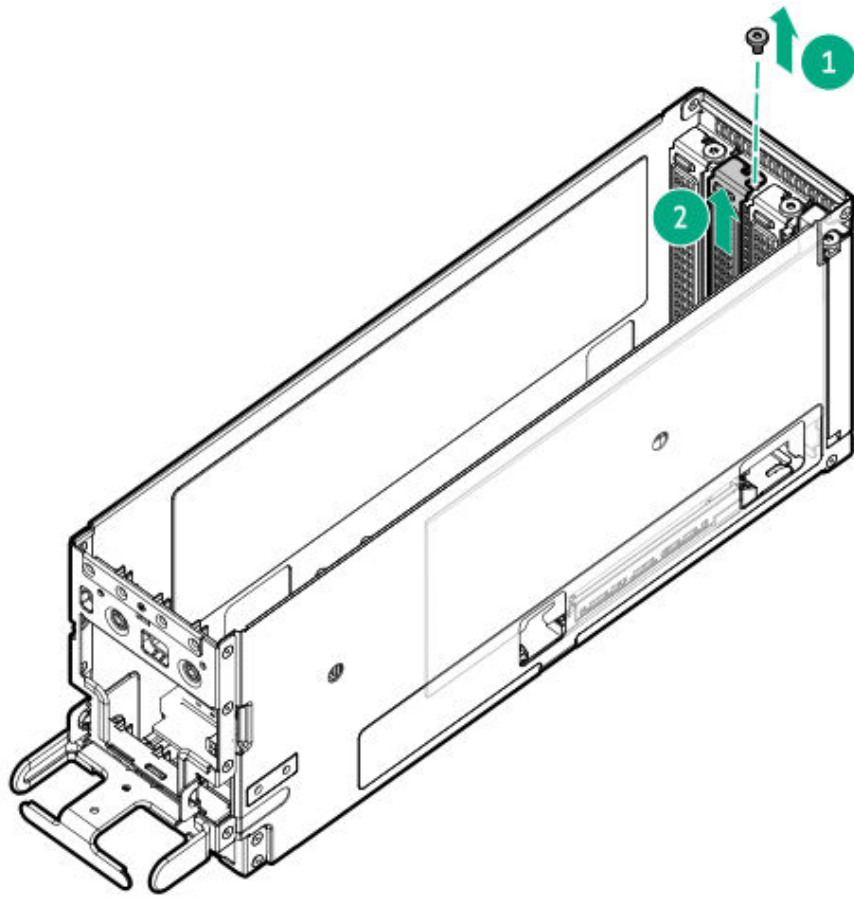
.3. Install the PCIe NIC.

Make sure that the NIC is firmly seated in the riser slot.

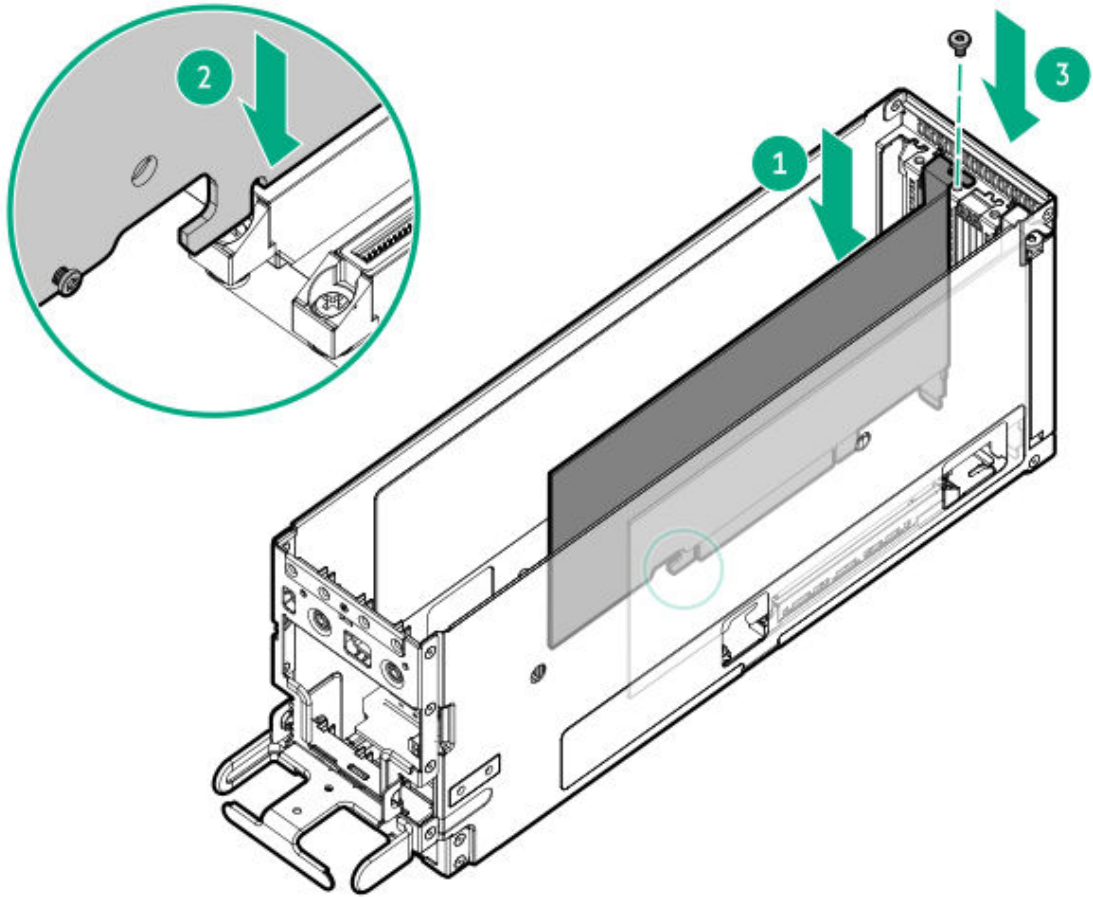


4. If you are planning to install the second PCIe NIC, remove the slot blank.

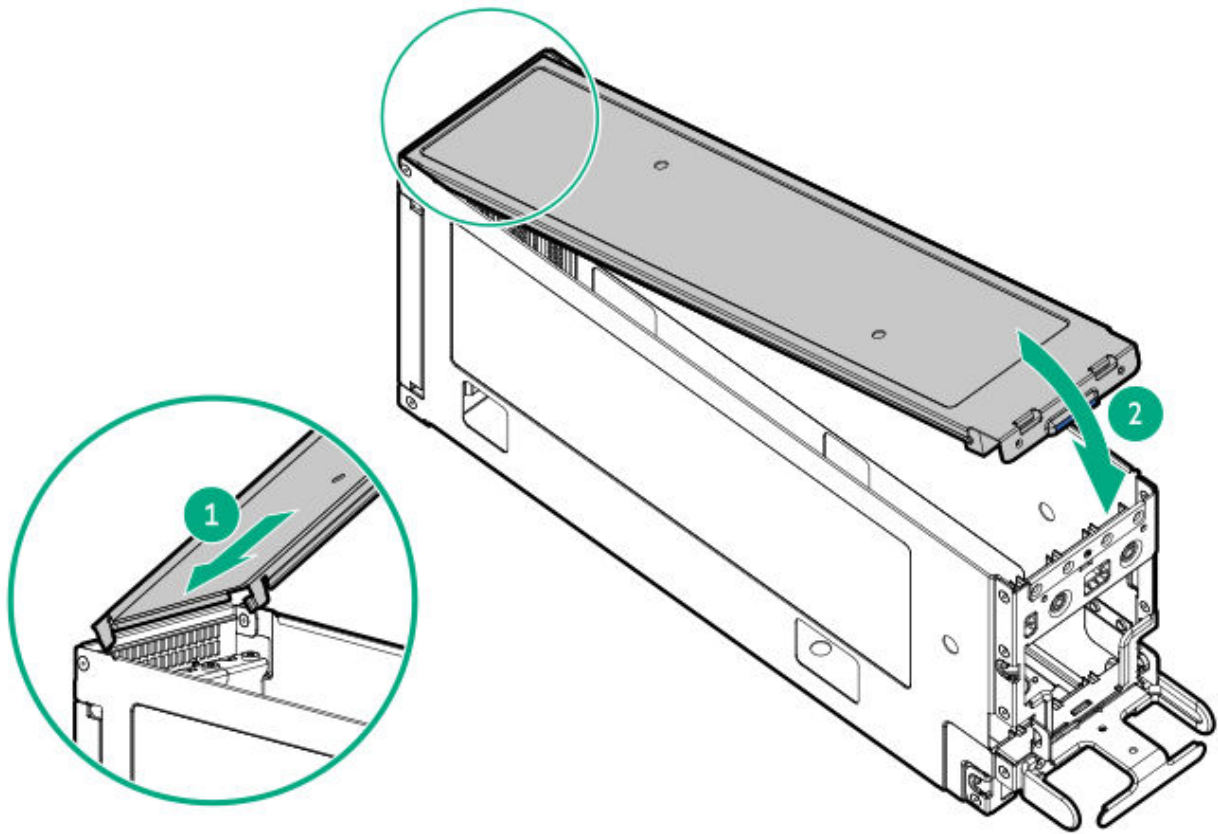
Retain the screws. These screws are used to secure the NIC.



.5. Install the PCIe NIC.



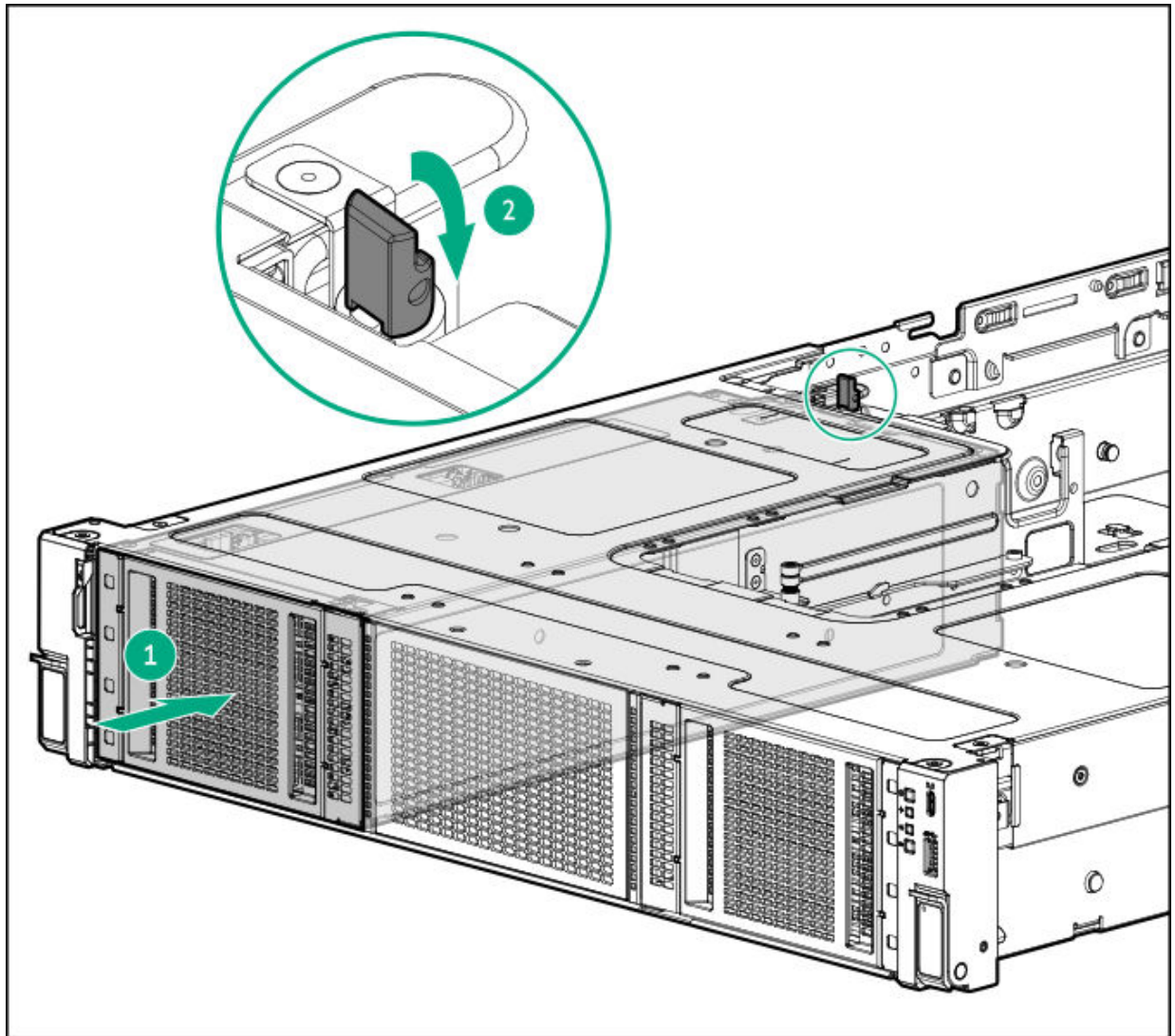
.6. Install the GPU cage cover.



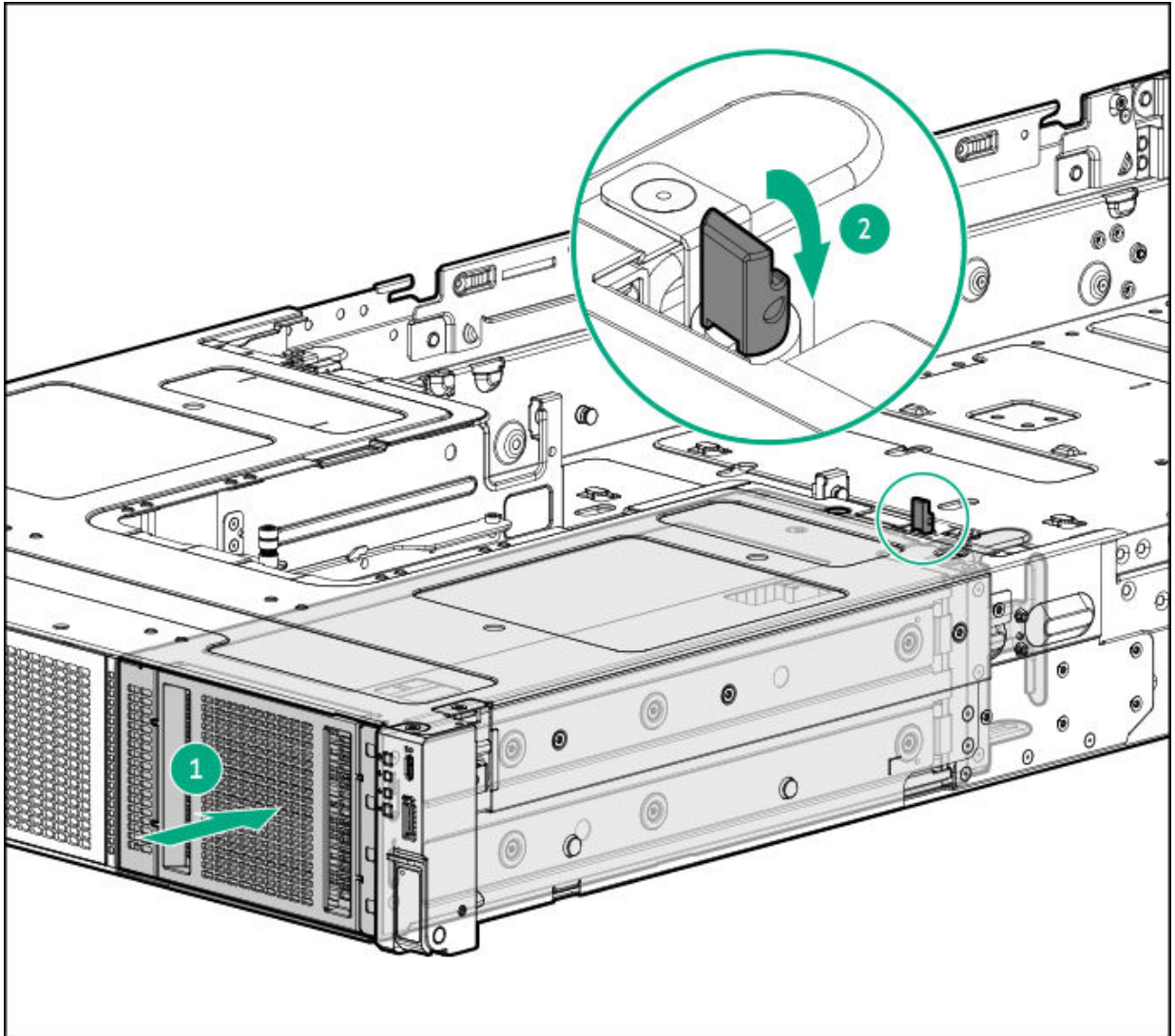
7. Install the front GPU riser cage in the server.

Make sure that the latch is closed to secure the GPU cage.

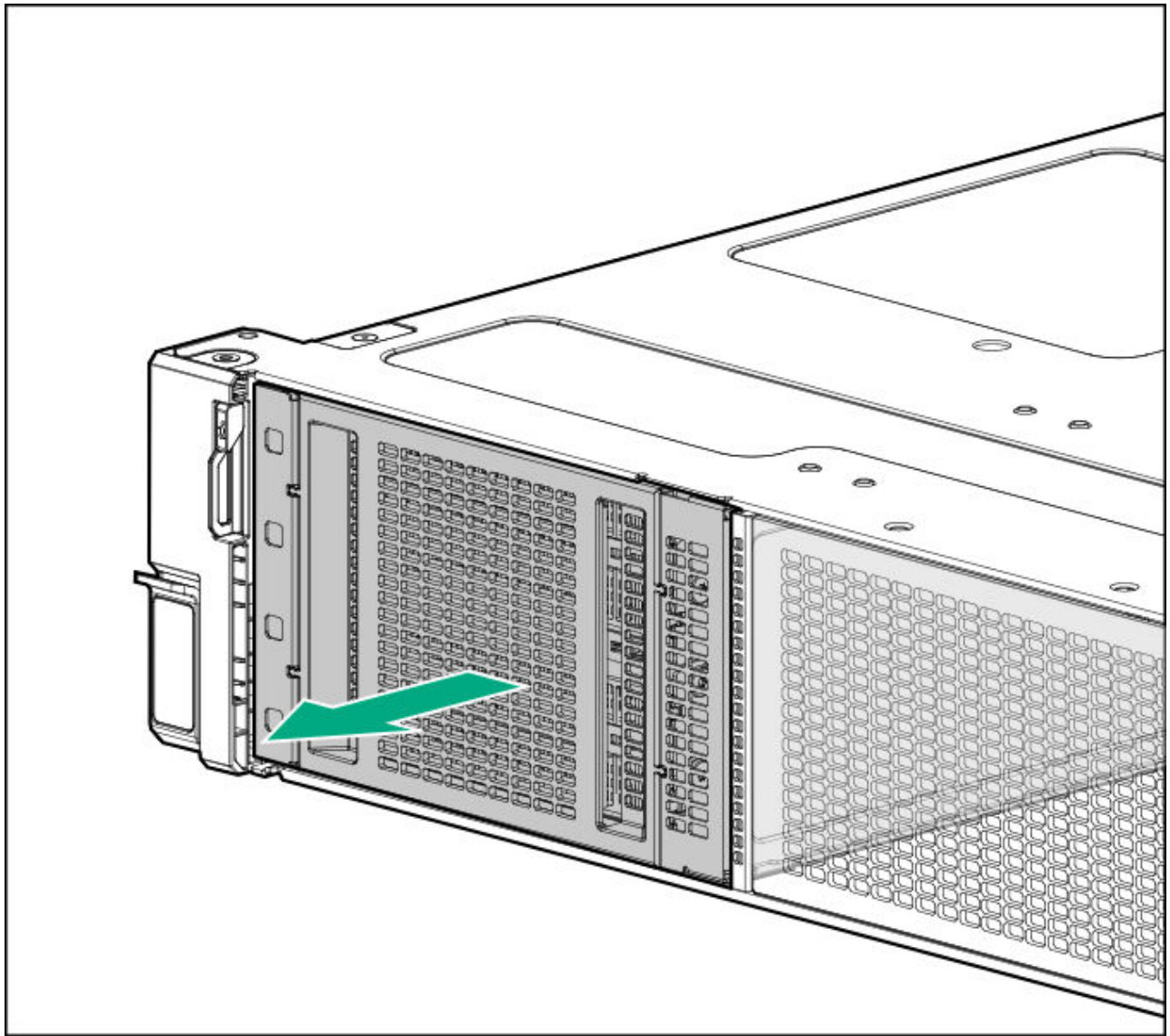
- GPU cage 1



- GPU cage 2



- .8. Install the middle cover.
- .9. Install the fan cage.
- .10. Install the air baffle.
- .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. Power up the server.
- .17. To connect an external cable to the PCIe NIC, remove the GPU cage bezel.



!8. If no external cable is connected to the PCIe NIC, install the front bezel.

Results

The installation procedure is complete.

Enabling the iLO shared network connection

About this task

This procedure applies to iLO 6 and iLO 7.



IMPORTANT

If the iLO configuration settings are reset to the default values, remote access to the machine will be lost. Access the physical machine and repeat the procedure described in this section to re-enable the iLO shared network port.

Procedure

1. From the boot screen, press **F9** to access the UEFI System Utilities.
2. From the **System Utilities** screen, select **System Configuration > iLO Configuration Utility > Network Options**.
3. Set the **Network Interface Adapter** field to **Shared Network Port - OCPA** or **Shared Network Port - OCPB**, and then press **Enter**.
4. Press **F10** to save your changes.
5. Press **Enter** to reboot the iLO settings.
6. Press **Esc** until the main menu is displayed.
7. Select **Reboot the System** to exit the utility and resume the boot process.

The IP address of the iLO shared network port appears on the POST screen on the subsequent boot-up. Access the **Network Options** screen again to view this IP address for later reference.

OS boot device

Subtopics

[HPE NS204i-u Boot Device V2 option](#)

HPE NS204i-u Boot Device V2 option

Note the following information about the HPE NS204i-u Boot Device V2 option:

- The HPE NS204i-u Boot Device V2 is a PCIe5 custom form factor module that includes two hot-pluggable 2280 M.2 NVMe SSDs.
- This boot device enables the deployed OS to be mirrored through a dedicated hardware RAID 1.
- The boot device auto-creates a RAID 1 volume during boot. This means the boot device does not require further RAID configuration.
- This boot device is compatible with the following native OS:
 - Windows
 - Linux
 - VMware
- This boot device uses native inbox OS NVMe drivers.

Subtopics

[Installing the boot device in the front panel](#)

[Installing the boot device in the rear panel](#)

Installing the boot device in the front panel

Prerequisites

- Verify that your OS or virtualization software is supported:
<https://www.hpe.com/support/Servers-Certification-Matrices>
- Verify that you are running the latest iLO firmware and server BIOS version.
- Identify the HPE NS204i-u Boot Device V2 components.
- NS204i-u enablement option kit (P74759-B21)
- Before you perform this procedure, make sure that you have the following items available:
 - T-10 Torx screwdriver
 - T-15 Torx screwdriver
 - Spudger or any small prying tool—This tool is required to remove the E3.S drive bay filler.

About this task

The boot device supports in either multipurpose cage bays 5–8 or 9–12. If the front OCP NIC is installed, the boot device is supported in the multipurpose cage bays 5–8.



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.



IMPORTANT

For successful RAID 1 configuration, verify that the boot device SSDs have the same model number and firmware version:

- In the iLO web interface, see the **Storage** page.
- In UEFI System Utilities, see **System Configuration > HPE NS204i Boot Controller > Physical Device Information**.

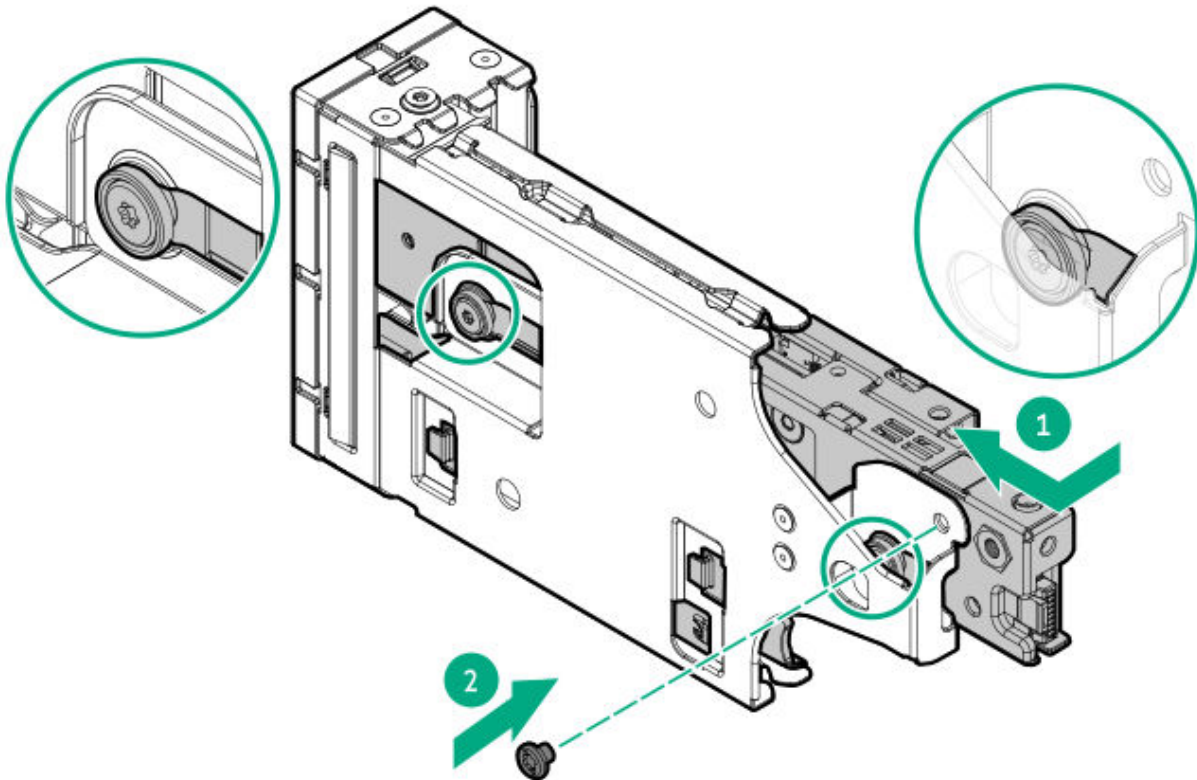
Configurations with SSDs from different manufacturers are not supported.

Procedure

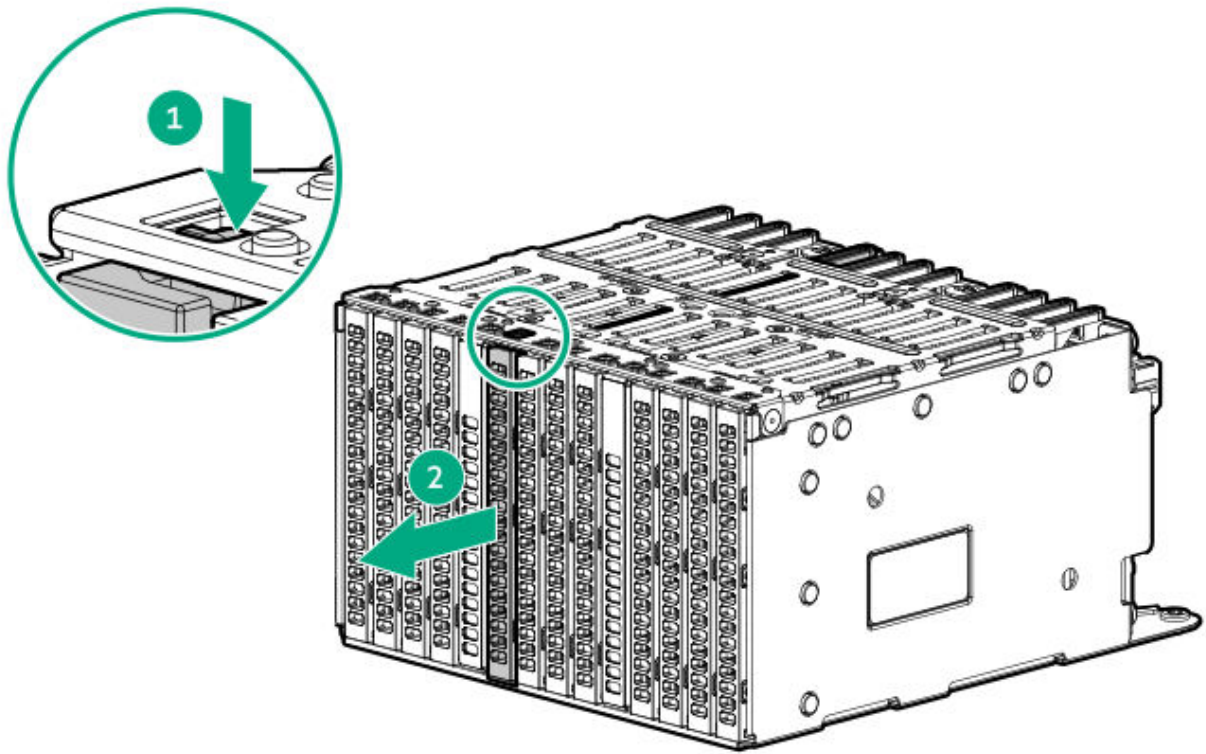
1. If installed, remove the front bezel.
2. Power down the server.
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
6. Remove the access panel.
7. Remove the air baffle.
8. Remove the fan cage.
9. Do one of the following:
 - In the SFF / E3.S drive configuration, remove the midwall bracket.

- In the GPU-optimized configuration, remove the middle cover.

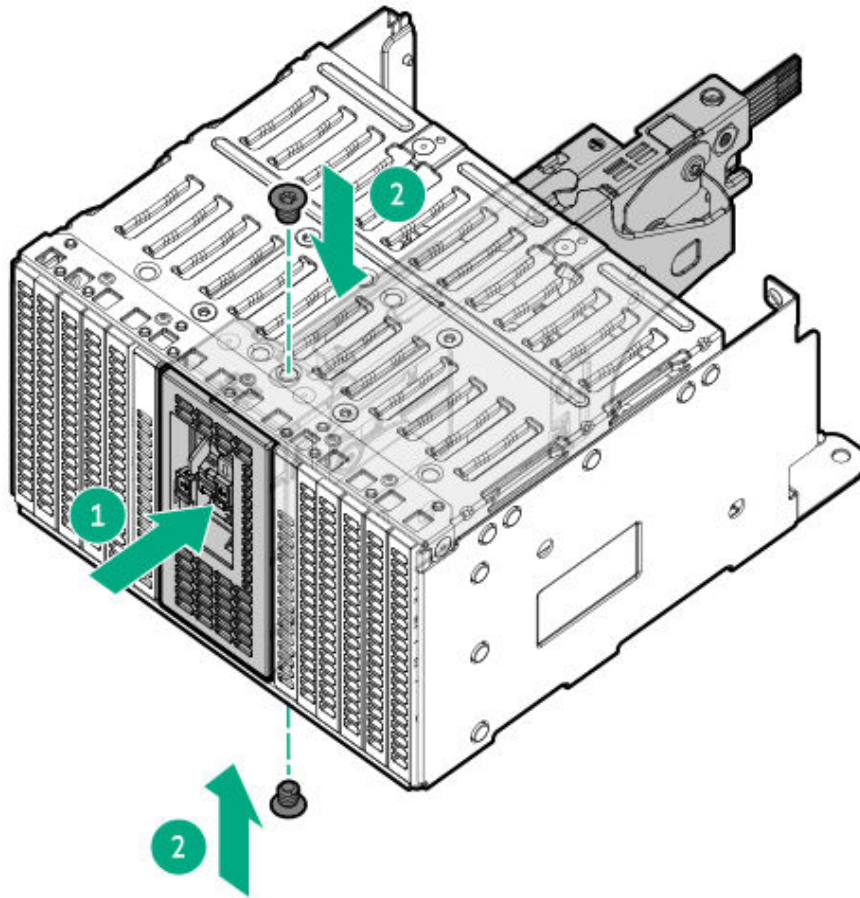
.0. Install the boot device cage on the bracket.



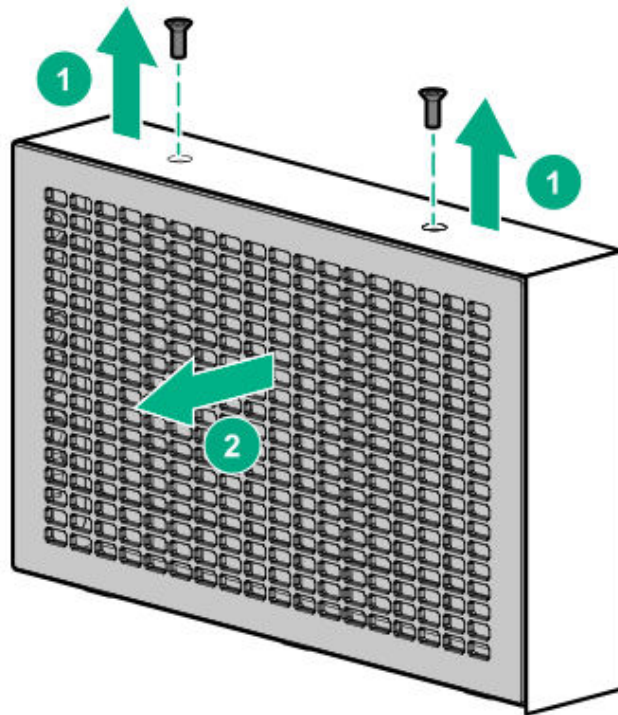
.1. Remove the E3.S drive fillers from the multipurpose cage.



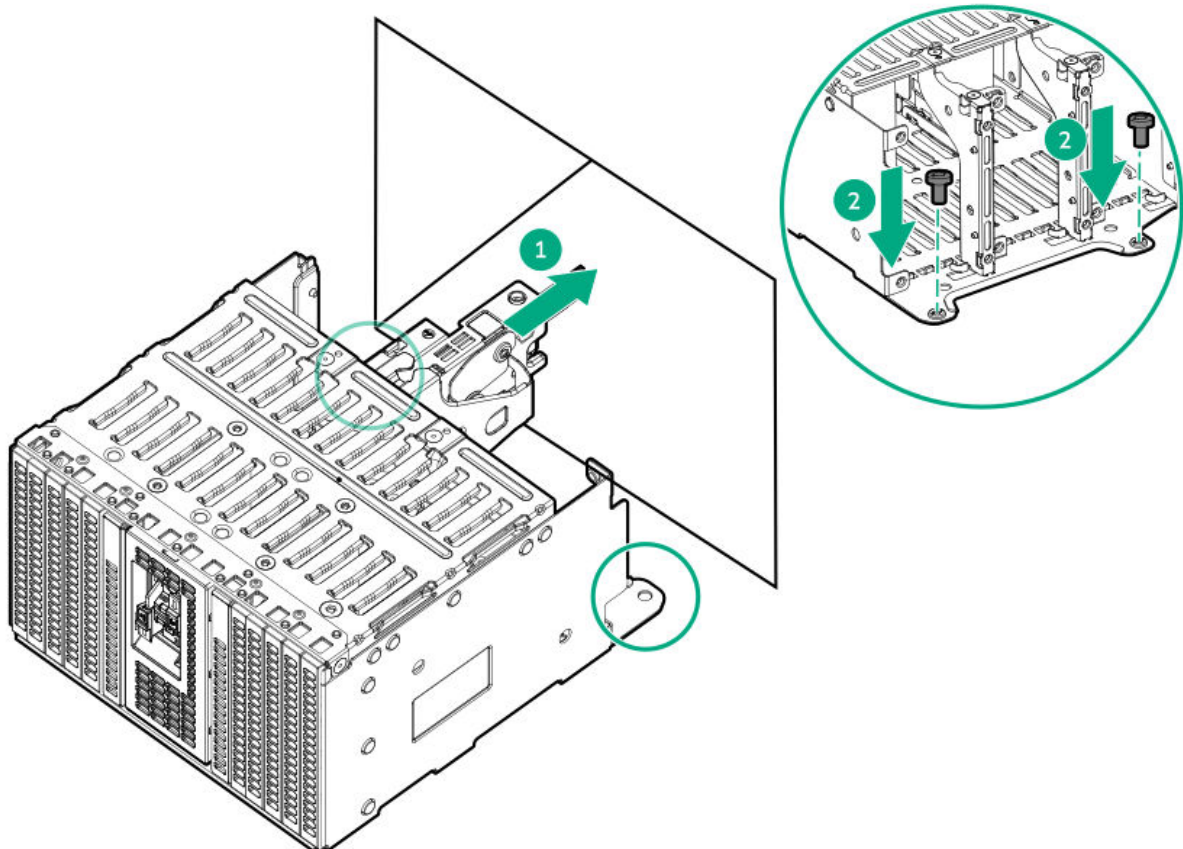
.2. Install the boot device bracket into the multipurpose cage.



.3. Remove the drive box blank.



4. Install the multipurpose cage.



- .5. Connect the boot device signal and power cables.
- .6. Do one of the following:
 - Install the midwall bracket.
 - Install the middle cover.
- .7. Install the fan cage.
- .8. Install the air baffle.
- .9. Install the access panel.
- !0. Install the server into the rack.
- !1. Connect all peripheral cables to the server.
- !2. Connect each power cord to the server.
- !3. Connect each power cord to the power source.
- !4. Power up the server.
- !5. If removed, install the front bezel.
- !6. Verify that the Online/Activity LEDs on the boot device are solid green.
- !7. Deploy a supported operating system to the boot device.
- !8. After the OS installation completes, the system automatically copies the operating system to the second, mirrored drive on the boot device.

Proceed with normal system setup and operation.

Results

The installation procedure is complete.

Installing the boot device in the rear panel

Prerequisites

- Verify that your OS or virtualization software is supported:

<https://www.hpe.com/support/Servers-Certification-Matrices>

- Verify that you are running the latest iLO firmware and server BIOS version.
- Identify the HPE NS204i-u Boot Device V2 components.
- Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

About this task



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.



IMPORTANT

For successful RAID 1 configuration, verify that the boot device SSDs have the same model number and firmware version:

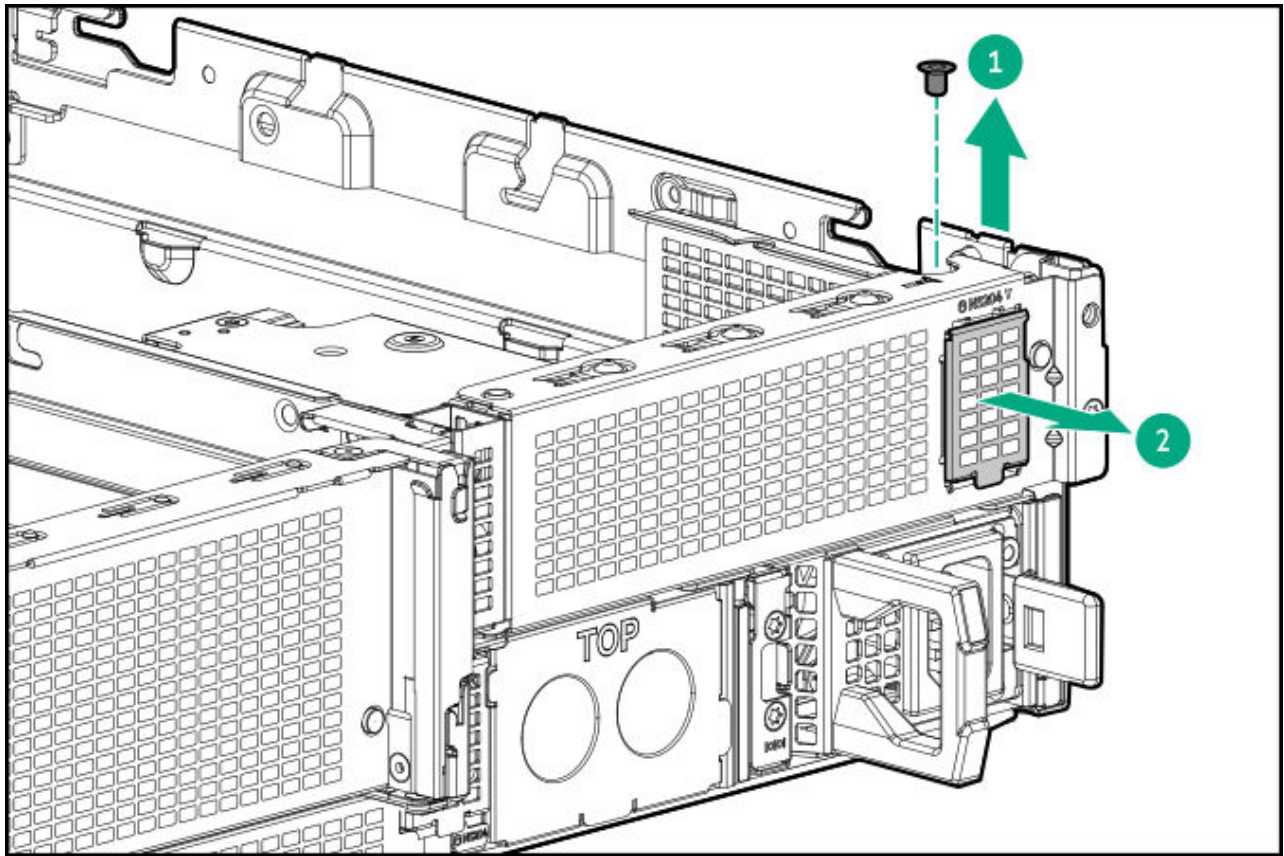
- In the iLO web interface, see the **Storage** page.
- In UEFI System Utilities, see **System Configuration > HPE NS204i Boot Controller > Physical Device Information**.

Configurations with SSDs from different manufacturers are not supported.

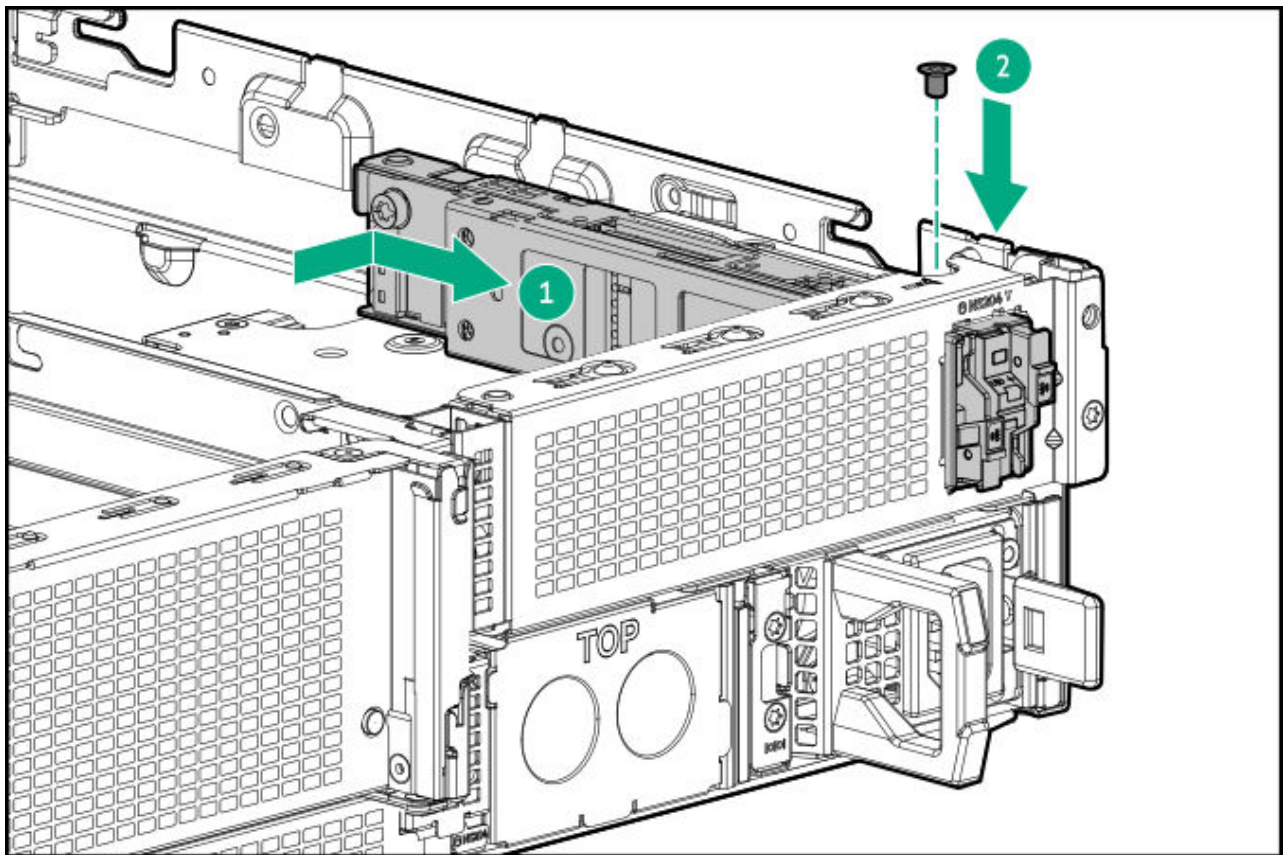
Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the boot device blank.

Retain the screw. The screws will be used to secure the boot device cage.



8. Install the boot device cage.



9. Connect the boot device signal and power cables.
- .0. Install the air baffle.
- .1. Install the access panel.
- .2. Install the server into the rack.
- .3. Connect all peripheral cables to the server.
- .4. Connect each power cord to the server.
- .5. Connect each power cord to the power source.
- .6. Power up the server.
- .7. Verify that the Online/Activity LEDs on the boot device are solid green.
- .8. Deploy a supported operating system to the boot device.
- .9. After the OS installation completes, the system automatically copies the operating system to the second, mirrored drive on the boot device.

Proceed with normal system setup and operation.

Results

The installation procedure is complete.

Power supplies

Subtopics

Hot-plug power supply calculations

Power supply warnings and cautions

DC power supply warnings and cautions

DC power supply wire colors

Installing an AC power supply

Installing a 60-mm DC power supply

Installing a 73.5-mm DC power supply

Connecting a DC power cable to a DC power source

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



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.



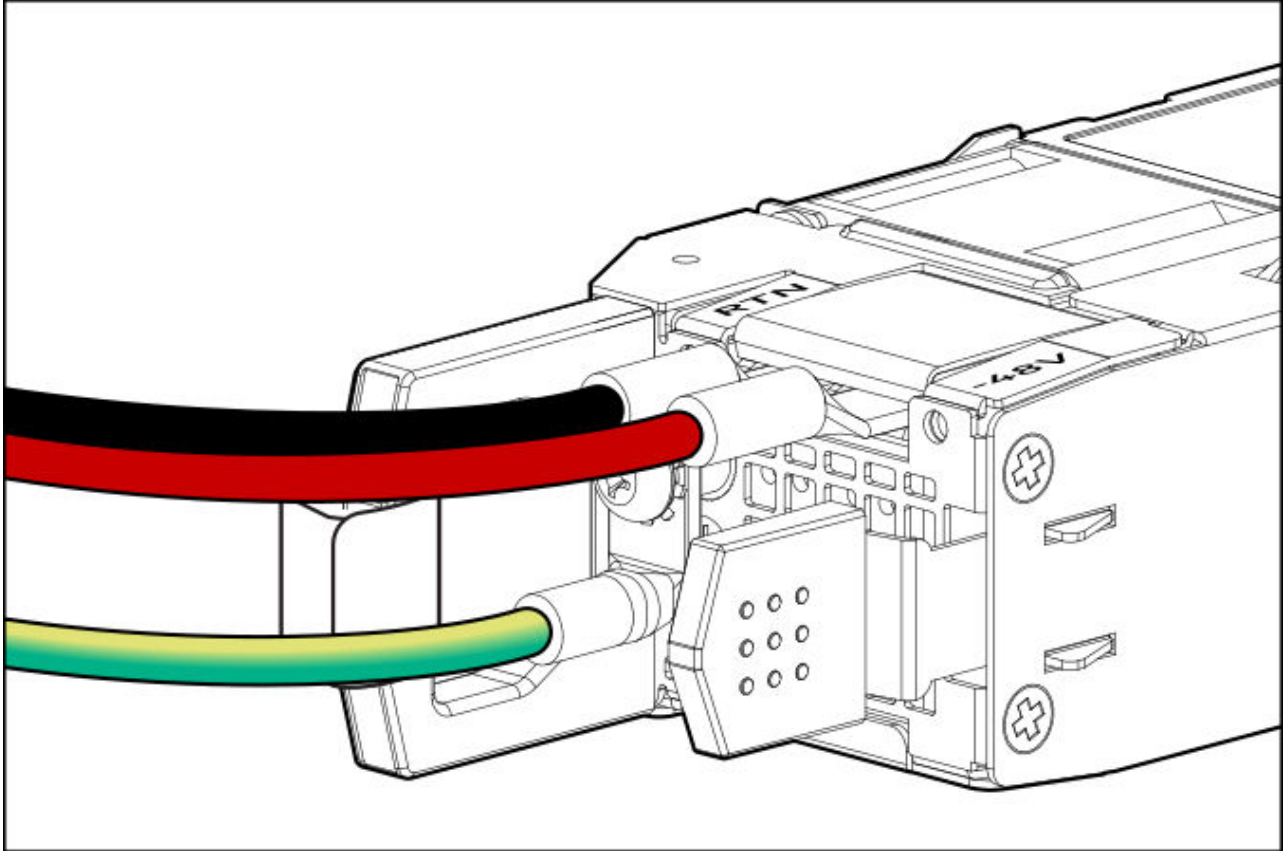
CAUTION

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:

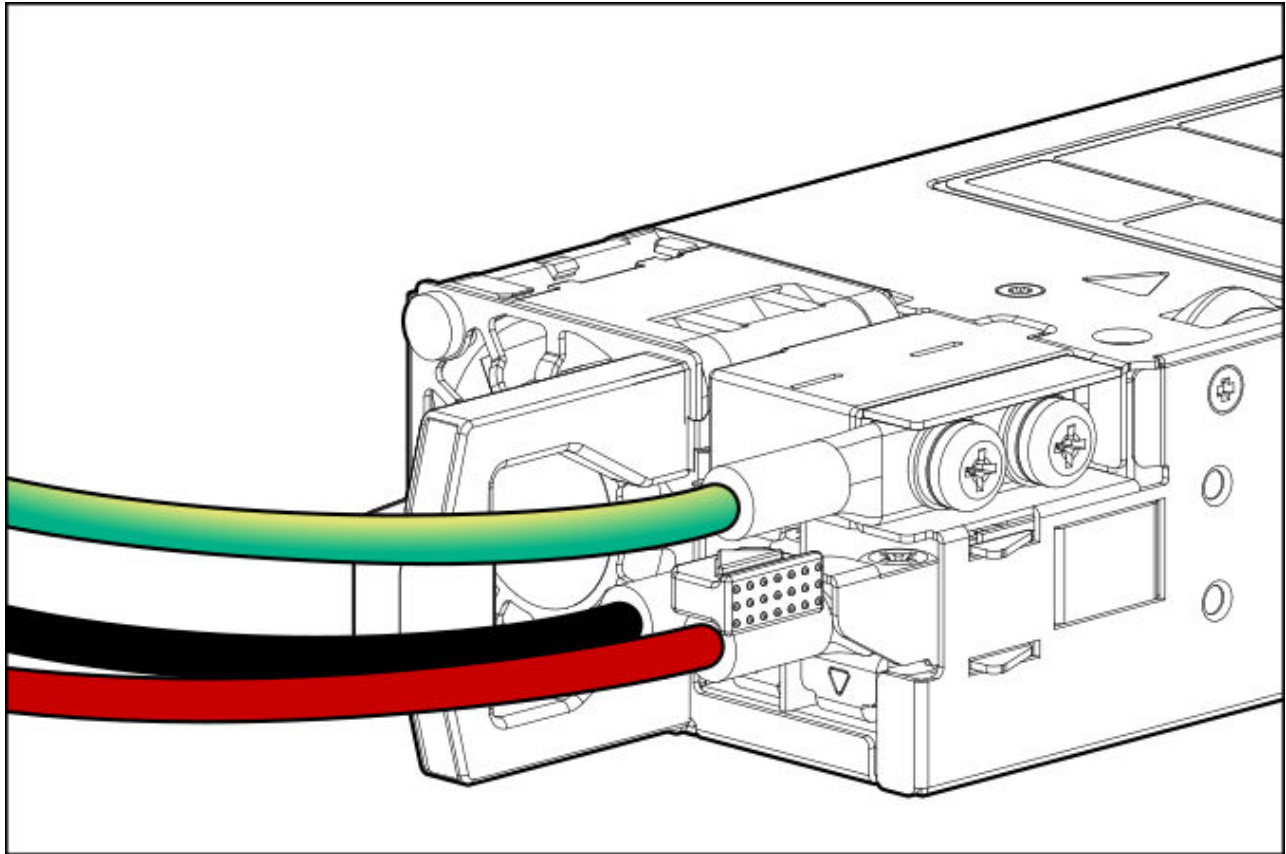
- This equipment must be connected directly to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode conductor is connected.
- This equipment must be located in the same immediate area (such as adjacent 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.

DC power supply wire colors

- 60-mm M-CRPS



- 73.5-mm M-CRPS



Wire color	Description	Wire slot
Red	Line wire	-48V
Black	Return wire	Return
Green + Yellow	Ground wire	Safety ground

Installing an AC power supply

Prerequisites

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

About this task

The installation procedure for the 60-mm and 73.5-mm modular hardware common redundant power supplies (M-CRPS) is the same.



WARNING

To reduce the risk of personal injury from hot surfaces, allow the power supply, power supply blank, or dual slot power supply adapter to cool before touching it.

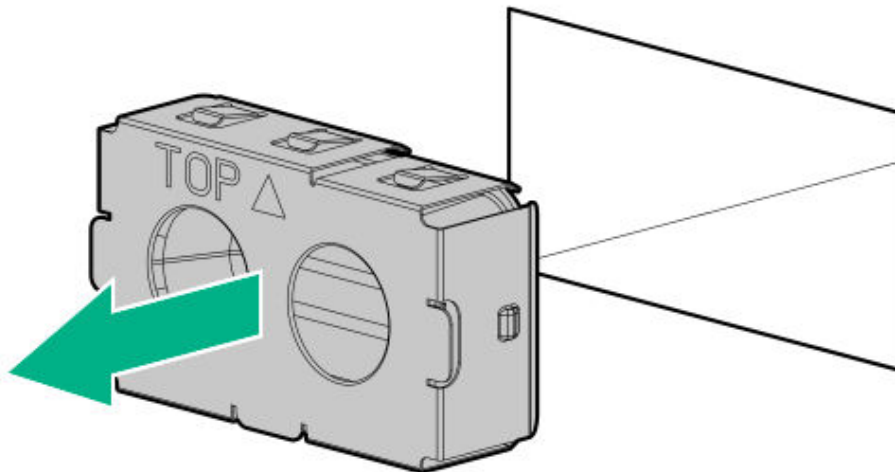


CAUTION

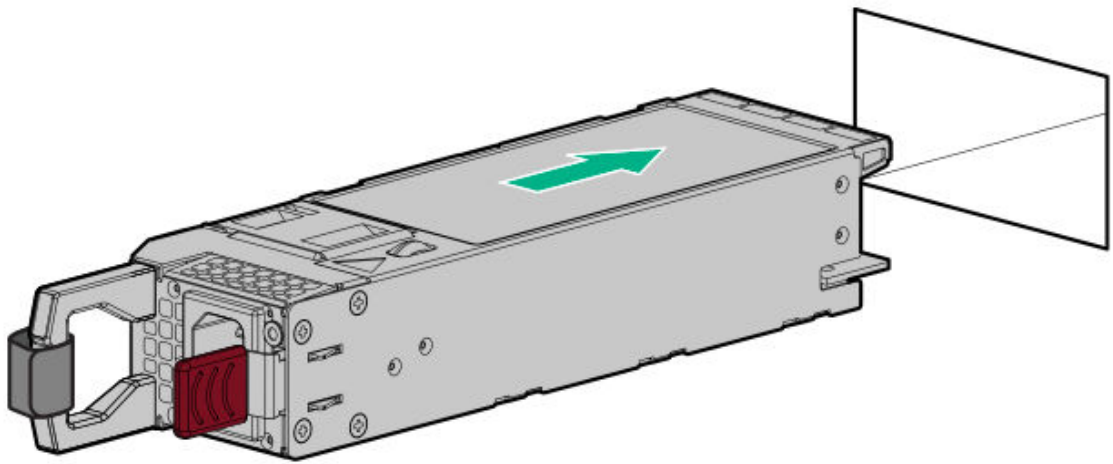
To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Procedure

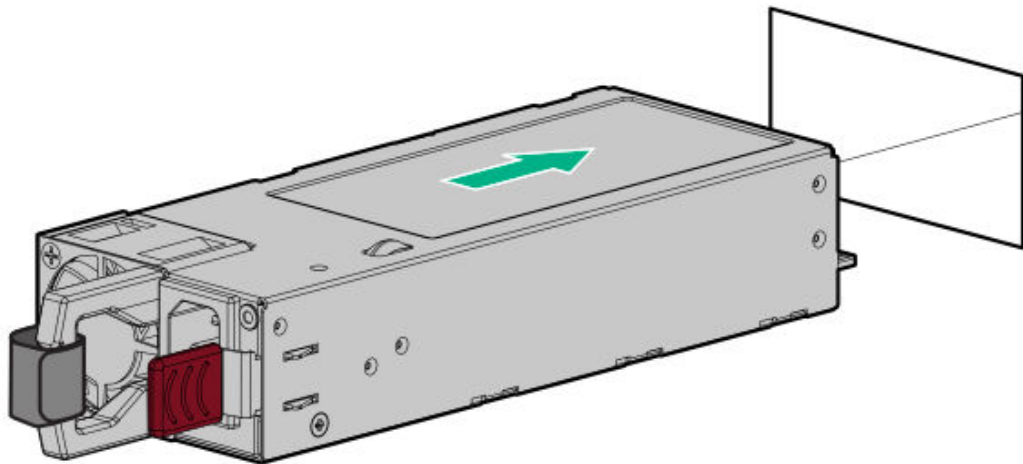
1. Remove the power supply bay blank.



2. Immediately slide the power supply into the bay until it clicks into place.
 - 60-mm M-CRPS



- 73.5-mm M-CRPS



3. Connect the power cord to the power supply.



WARNING

To reduce the risk of electric shock or damage to the equipment, do not connect the power cord to the power supply until the power supply is installed.



IMPORTANT

Make sure that the facility power phases are balanced. An imbalance can result in circuit breakers tripping.

4. 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.

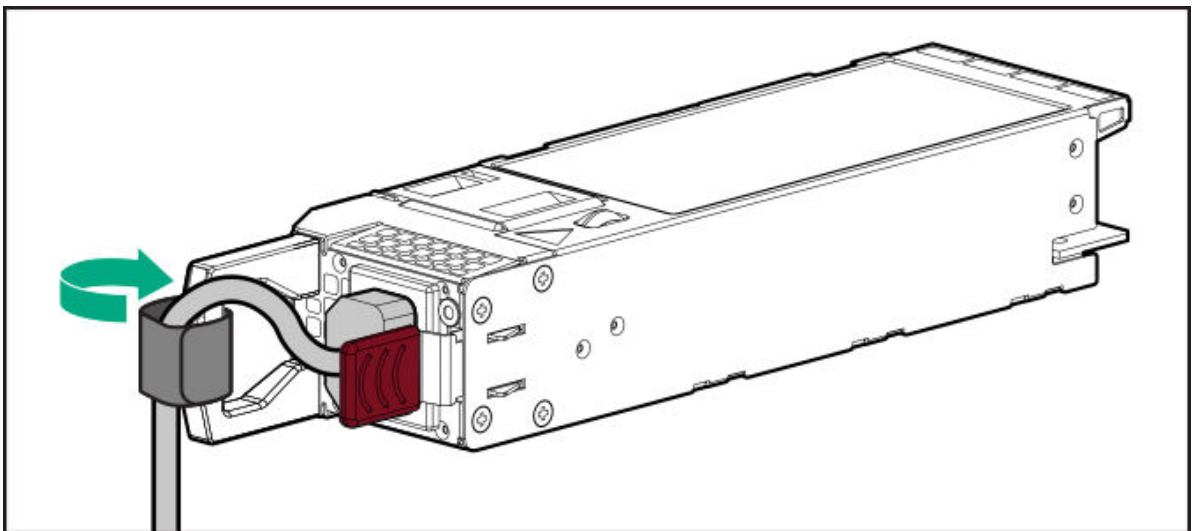


CAUTION

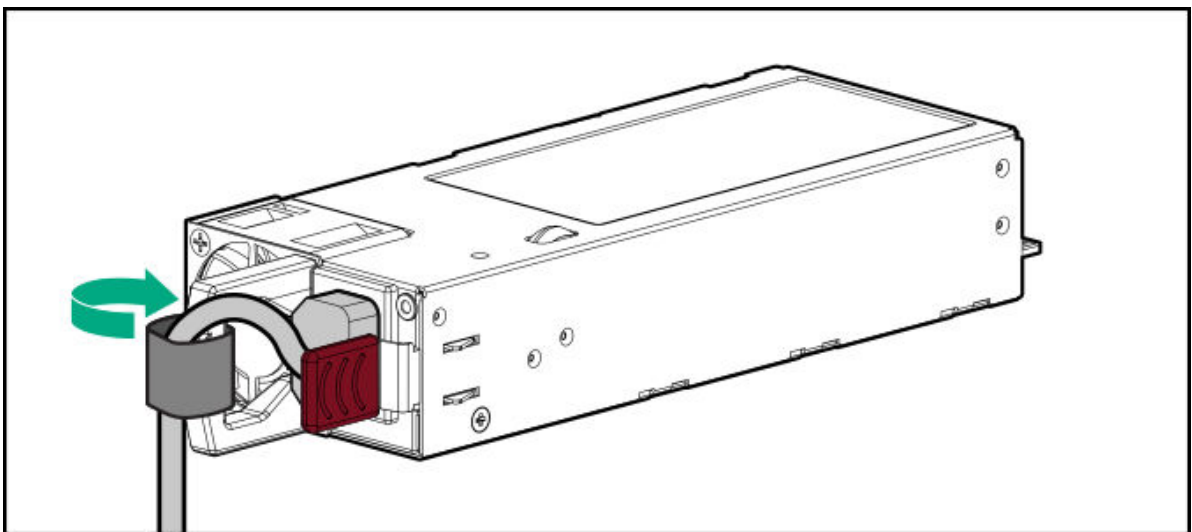
Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.

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

- 60-mm M-CRPS



- 73.5-mm M-CRPS



5. Connect each power cord to the server.
6. Connect each power cord to the power source.
7. Power up the server.
8. Make sure that the power supply LED is green.

Results

The installation procedure is complete.

Installing a 60-mm DC power supply

Prerequisites

- Before installing a power supply, review the following:
 - Power supply warnings and cautions
 - DC power supply warnings and cautions
 - DC power supply wire colors
- Before your perform this procedure, make sure that you have a Phillips No. 2 screwdriver with a recommended size of Ø4.5 mm available.
- Before connecting the power cables, review the following:
 - HPE DC PSU power cord kit P79842-B21 and the optional HPE lug kit P79845-B21 (for customer-supplied power cables) can be obtained from an authorized HPE reseller.
 - The DC power supply option kits do not ship with a Power Supply DC cable Kit and may not include a Power Supply Cable Lug kit. The optional DC Cable kit or the optional DC Cable Lug Kit may be purchased directly from Hewlett Packard Enterprise or an authorized HPE reseller. For additional information, see the power supply QuickSpecs at <https://www.hpe.com/info/fsp-sqs>.

About this task

If you are not using an input power cord option, the power supply cabling must be made in consultation with a licensed electrician and be compliant with local code.



WARNING

To reduce the risk of electric shock, fire, and damage to the equipment, you must install this product in accordance with the following guidelines:

- The DC power supply is intended only for installation in servers located in a restricted access location.
- The DC power supply is not intended for direct connection to the DC supply branch circuit. Only connect this power supply to a power distribution unit (PDU) that provides an independent overcurrent-protected output for each DC power supply. Each output overcurrent-protected device in the PDU must be suitable for interrupting fault current available from the DC power source and must be rated no more than 45 A.
- The PDU output must have a shut-off switch or a circuit breaker to disconnect power for each power supply. To completely remove power from the power supply, disconnect power at the PDU. The end product may have multiple power supplies. To remove all power from the product, disconnect the power for each power supply.
- In accordance with applicable national requirements for Information Technology Equipment and Telecommunications Equipment, this power supply only connects to DC power sources that are classified as SELV or TNV. Generally, these requirements are based on the International Standard for Information Technology Equipment, IEC 60950-1/IEC 62368-1. In accordance with local and regional electric codes and regulations, the DC source must have one pole (Neutral / Return) reliably connected to earth ground.
- You must connect the power supply ground screw located on the front of the power supply to a suitable ground (earth) terminal. In accordance with local and regional electric codes and regulations, this terminal must be connected to a suitable building ground (earth) terminal. Do not rely on the rack or cabinet chassis to provide adequate ground (earth) continuity.

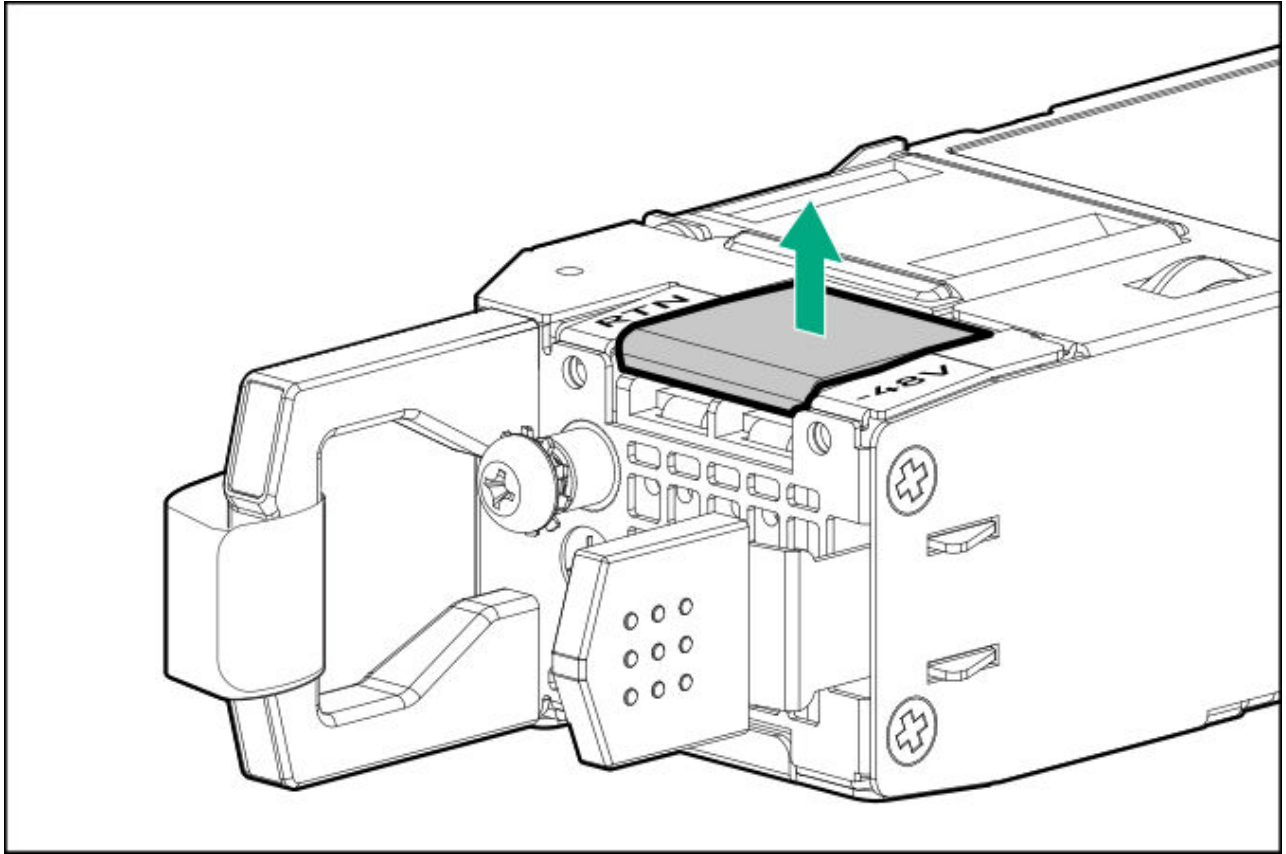


WARNING

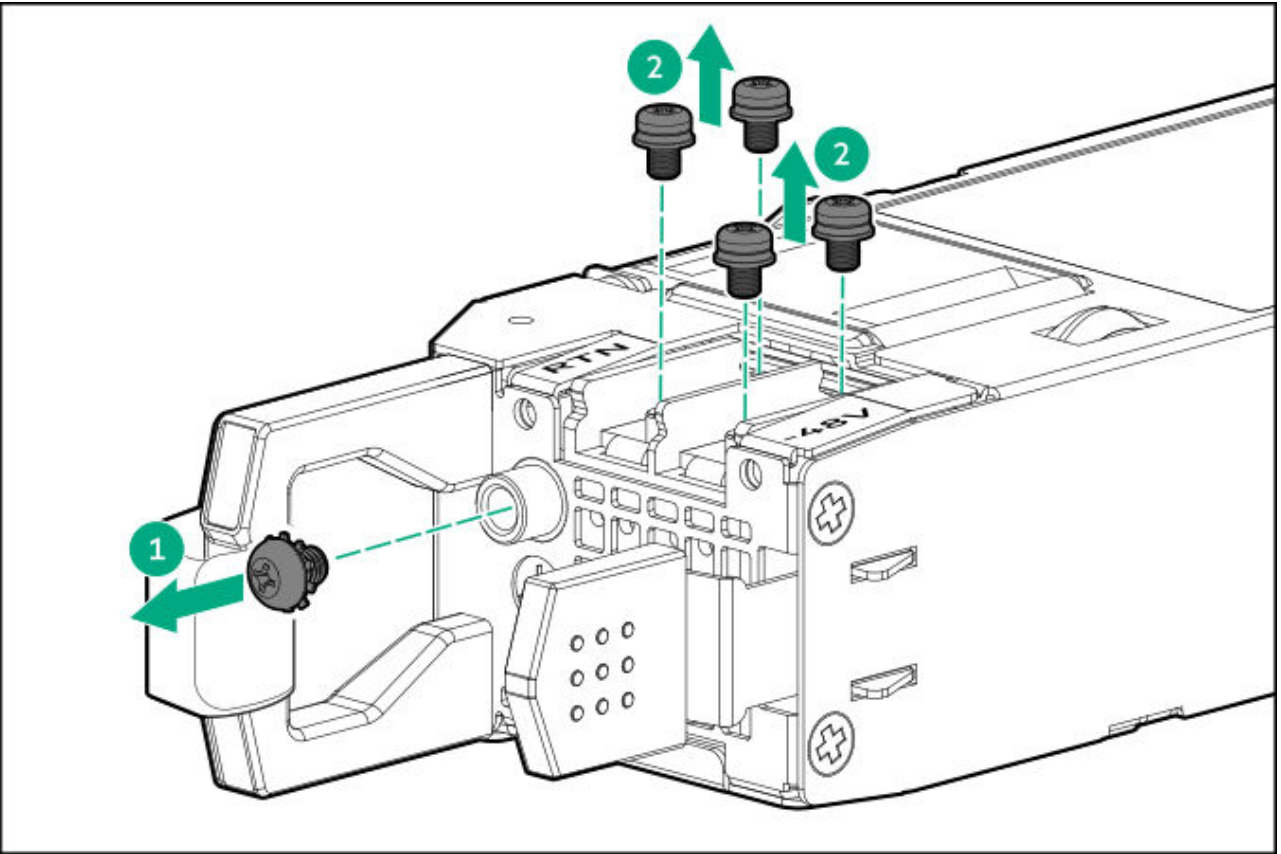
To reduce the risk of personal injury from hot surfaces, allow the power supply, power supply blank, or dual slot power supply adapter to cool before touching it.

Procedure

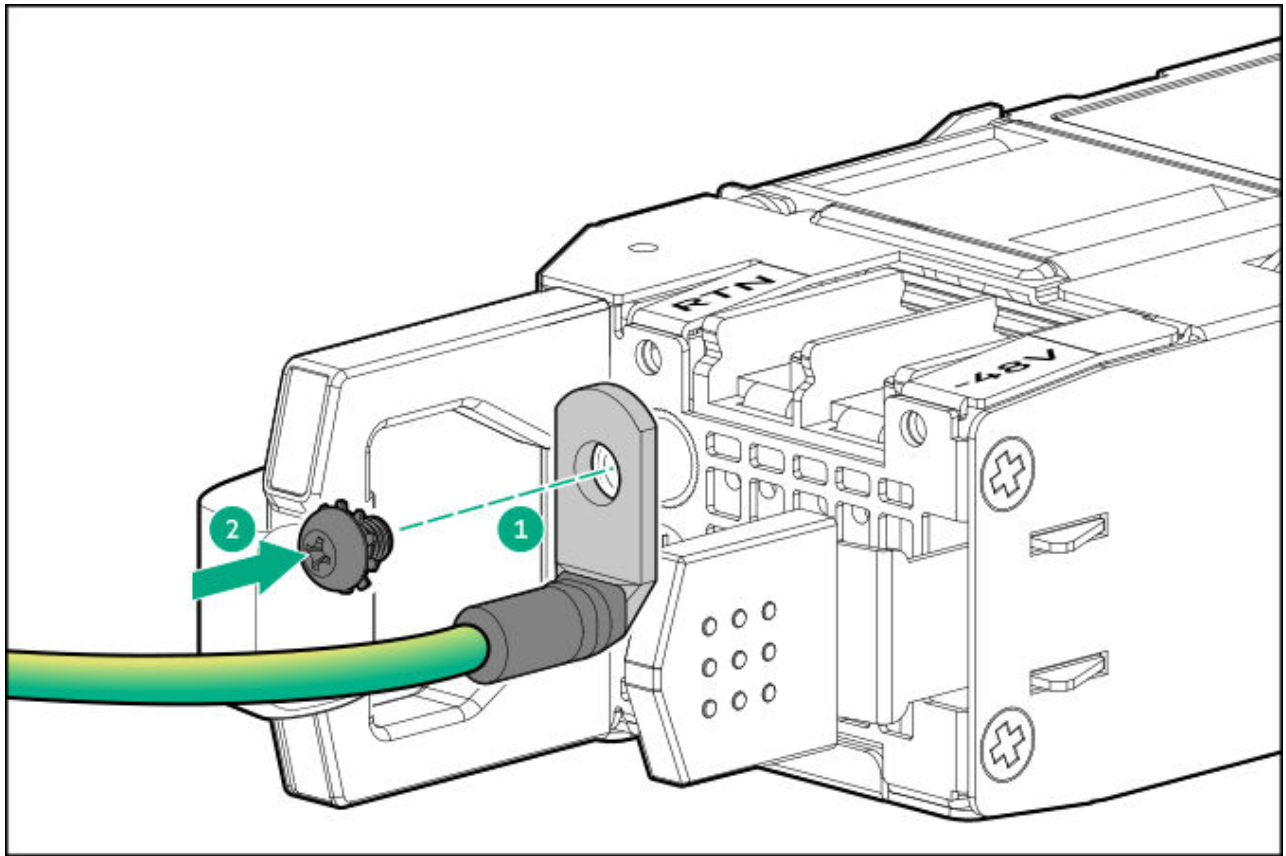
1. Remove the protective cover from the power supply.



2. Remove the ground wire screw, and then remove the return wire and line wire screws.

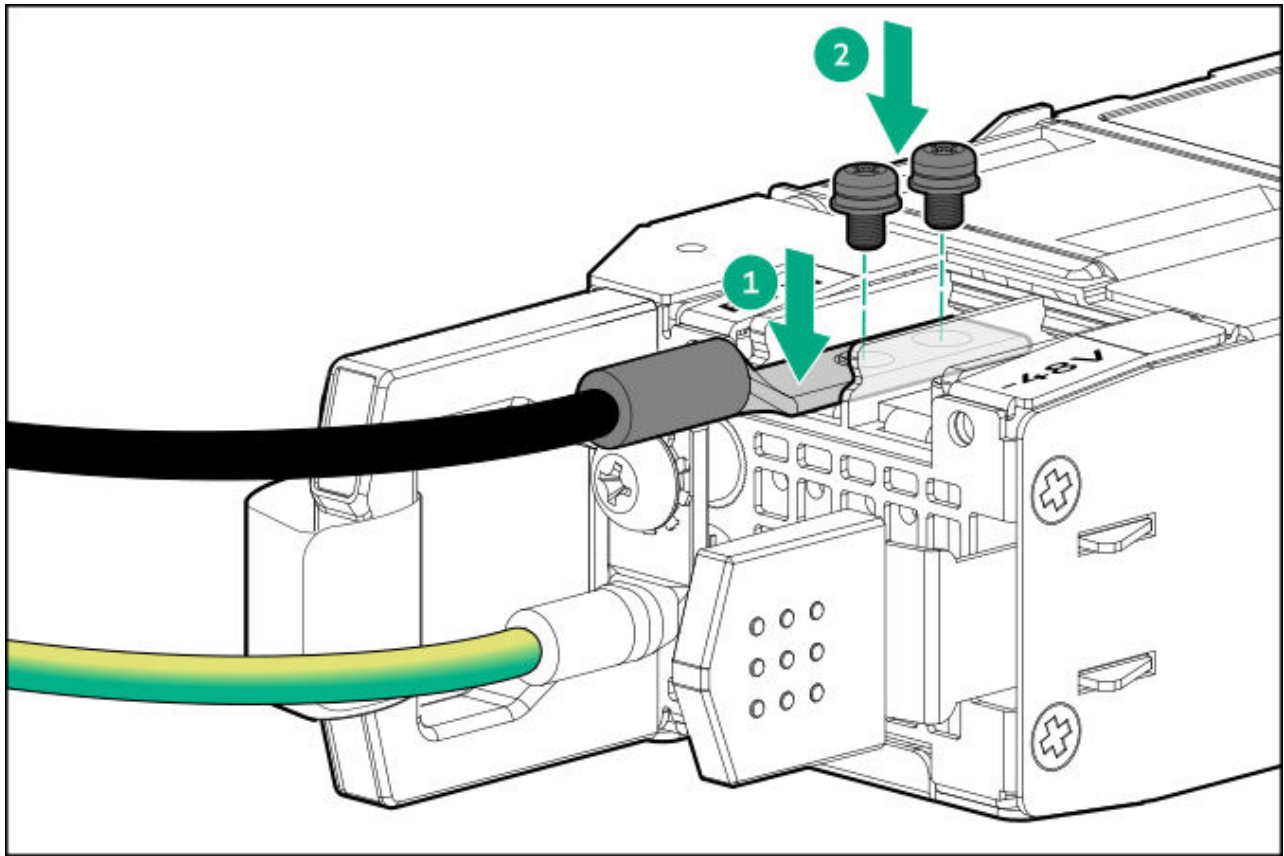


3. Attach the green and yellow ground wire (8 AWG [8.37 mm²]) to the power supply and tighten the M5 screw and washer and apply 3.0 N-M (26.55 lbf-in) of torque.



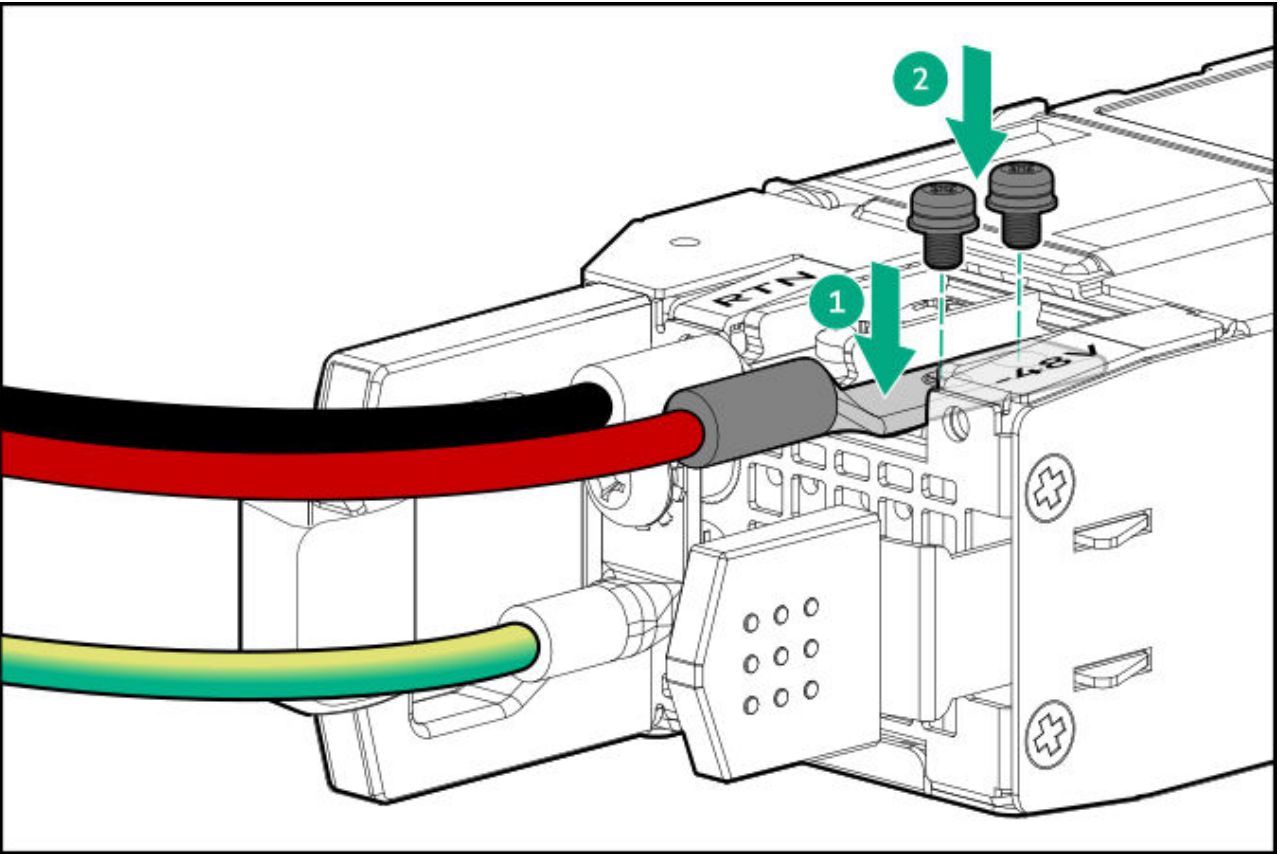
4. Install the return wire (black):

- a. Insert the return wire (8 AWG [8.37 mm²]) into the RTN slot on the power supply.
- b. Tighten the M4 screws with 1.2 N-m (10.62 lbf-in) of torque.

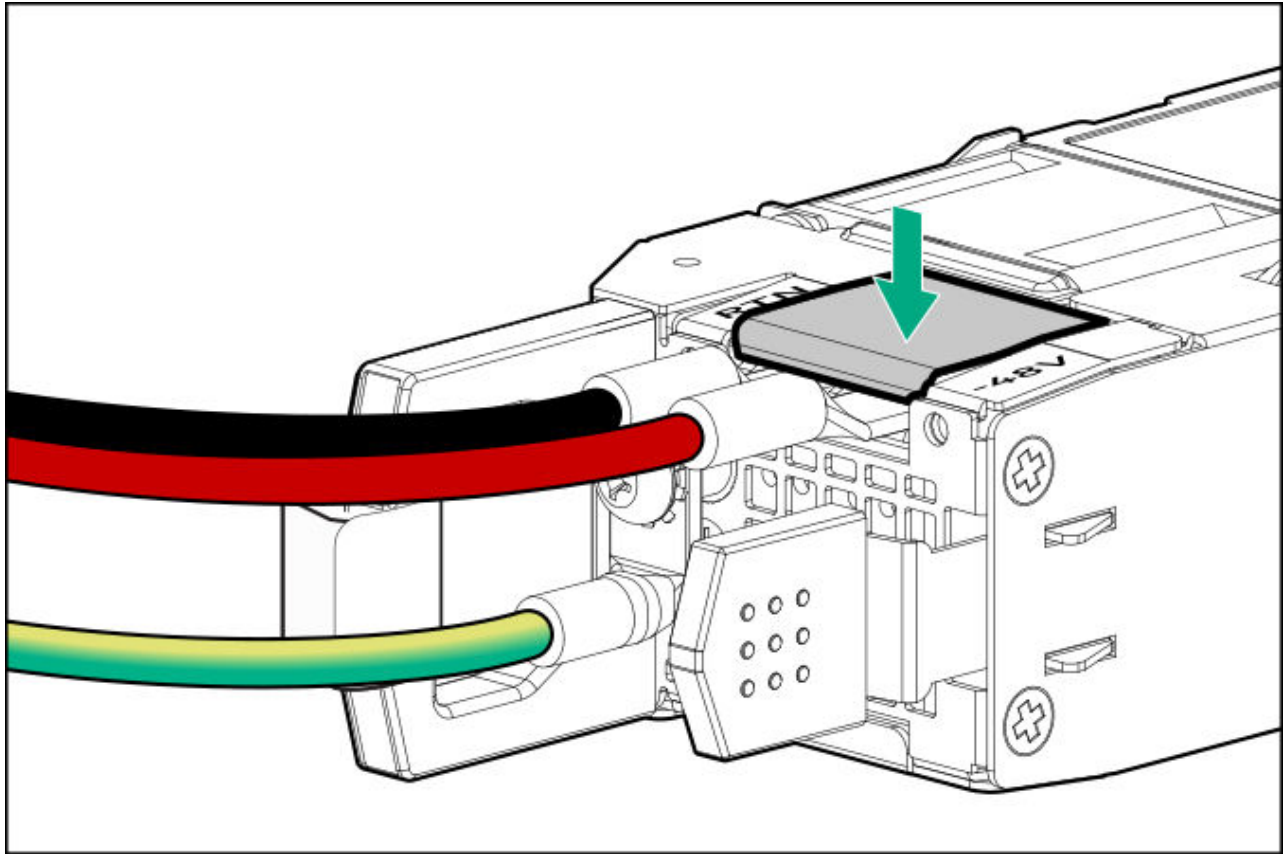


5. Install the line wire (red):

- a. Insert the line wire (8 AWG [8.37 mm²]) into the -48V slot on the power supply.
- b. Tighten the M4 screws to 1.2 N-m (10.62 lbf-in) of torque.



6. Install the protective cover on the power supply.
Make sure that the protective cover is locked.

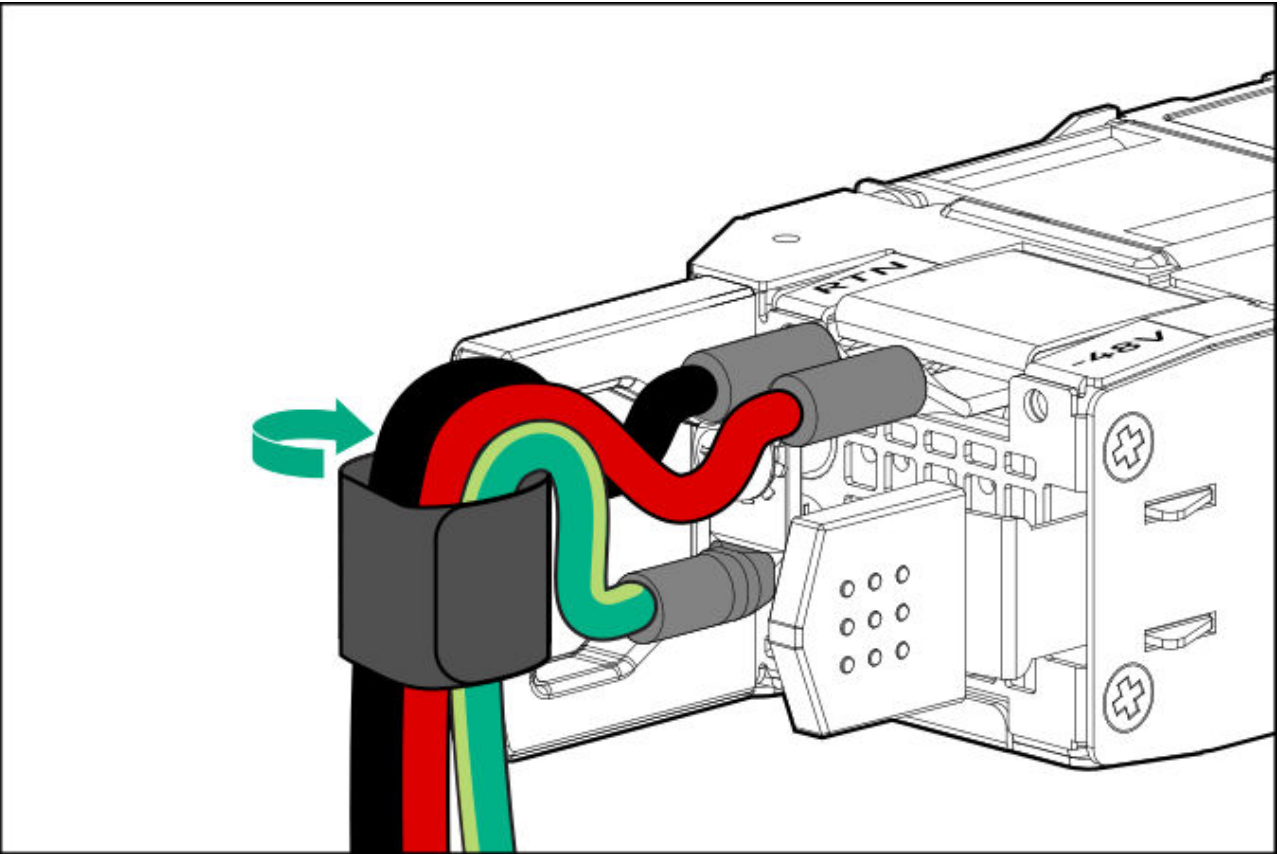


7. Secure the ground, positive return, and negative input wires in the strain relief strap.



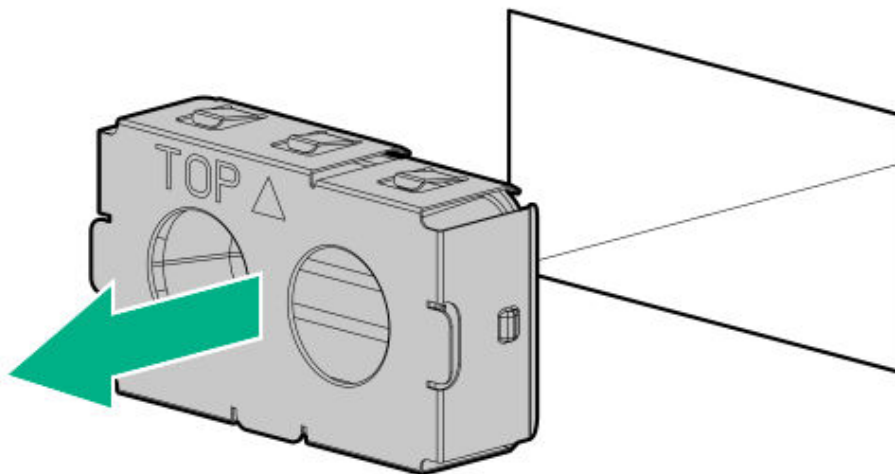
CAUTION

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.

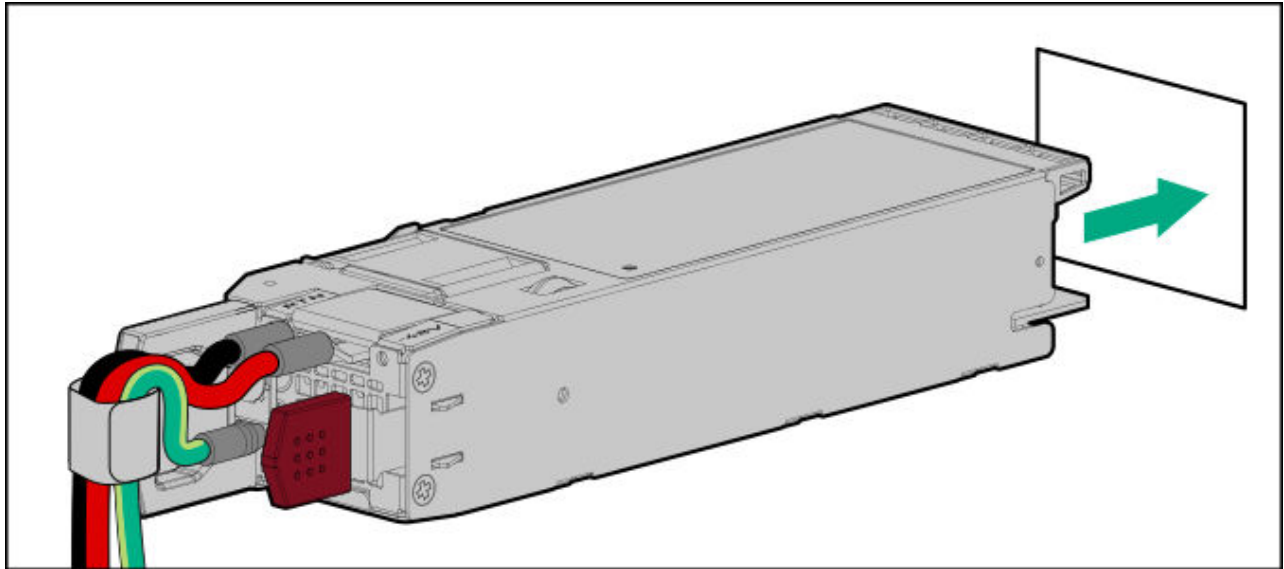


8. If you are installing a power supply in the power supply bay 2, remove the power supply blank.

Retain the blank for future use.



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



- .0. 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.
- .1. Turn on the -48 V power source or switch the PDU breaker to the on position to supply -48 V to the power supply.
- .2. Make sure that the power supply LED is green.

Results

The installation procedure is complete.

Installing a 73.5-mm DC power supply

Prerequisites

- Before installing a power supply, review the following:
 - [Power supply warnings and cautions](#)
 - [DC power supply warnings and cautions](#)
 - [DC power supply wire colors](#)
- Before your perform this procedure, make sure that you have a Phillips No. 2 screwdriver with a recommended size of Ø4.5 mm available.
- Before connecting the power cables, review the following:

- HPE DC PSU power cord kit P79874-B21 and the optional HPE lug kit P79839-B21 (for customer-supplied power cables) can be obtained from an authorized HPE reseller.
- The DC power supply option kits do not ship with a Power Supply DC cable Kit and may not include a Power Supply Cable Lug kit. The optional DC Cable kit or the optional DC Cable Lug Kit may be purchased directly from Hewlett Packard Enterprise or an authorized HPE reseller. For additional information, see the power supply QuickSpecs at <https://www.hpe.com/info/fsps-qs>.

About this task

If you are not using an input power cord option, the power supply cabling must be made in consultation with a licensed electrician and be compliant with local code.



WARNING

To reduce the risk of electric shock, fire, and damage to the equipment, you must install this product in accordance with the following guidelines:

- The DC power supply is intended only for installation in servers located in a restricted access location.
- The DC power supply is not intended for direct connection to the DC supply branch circuit. Only connect this power supply to a power distribution unit (PDU) that provides an independent overcurrent-protected output for each DC power supply. Each output overcurrent-protected device in the PDU must be suitable for interrupting fault current available from the DC power source and must be rated no more than 70 A.
- The PDU output must have a shut-off switch or a circuit breaker to disconnect power for each power supply. To completely remove power from the power supply, disconnect power at the PDU. The end product may have multiple power supplies. To remove all power from the product, disconnect the power for each power supply.
- In accordance with applicable national requirements for Information Technology Equipment and Telecommunications Equipment, this power supply only connects to DC power sources that are classified as SELV or TNV. Generally, these requirements are based on the International Standard for Information Technology Equipment, IEC 73.5950-1/IEC 62368-1. In accordance with local and regional electric codes and regulations, the DC source must have one pole (Neutral / Return) reliably connected to earth ground.
- You must connect the power supply ground screw located on the front of the power supply to a suitable ground (earth) terminal. In accordance with local and regional electric codes and regulations, this terminal must be connected to a suitable building ground (earth) terminal. Do not rely on the rack or cabinet chassis to provide adequate ground (earth) continuity.

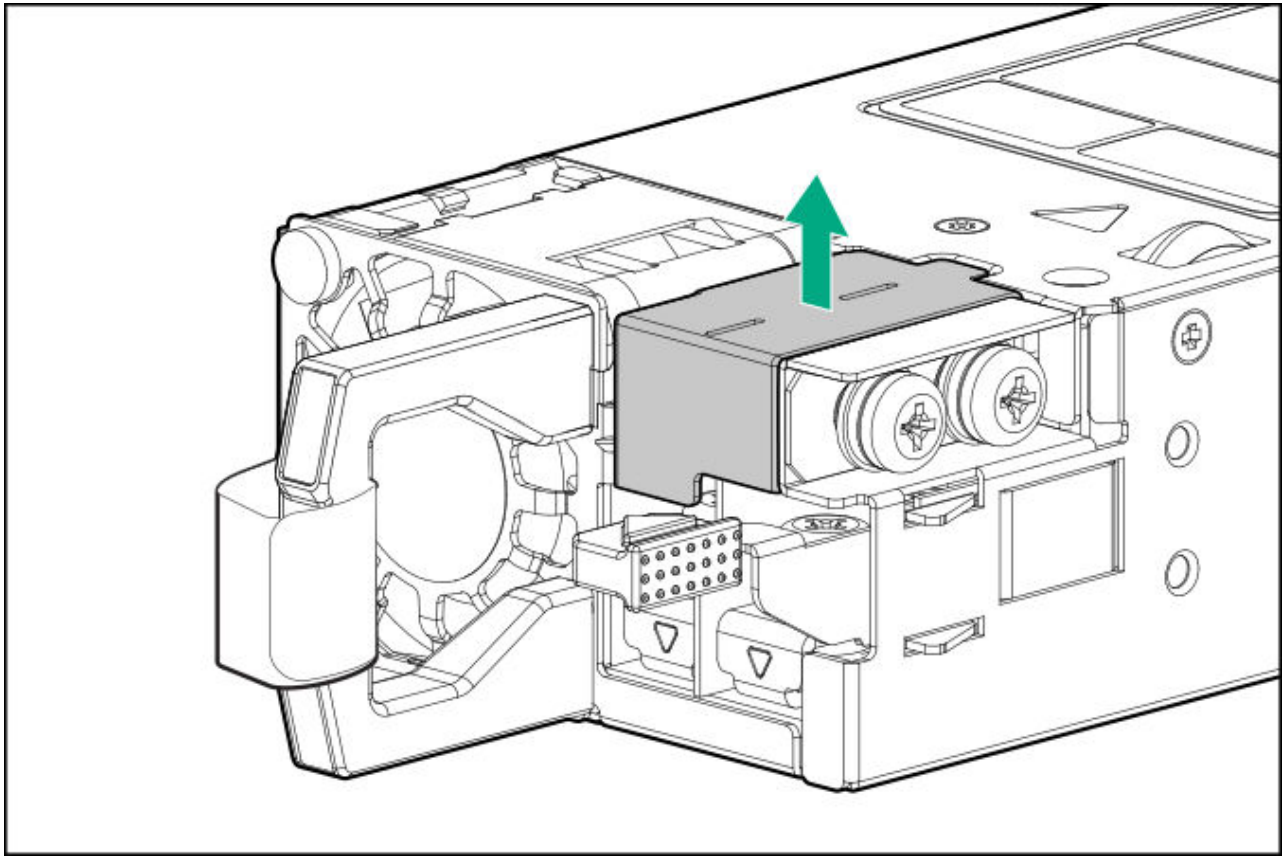


WARNING

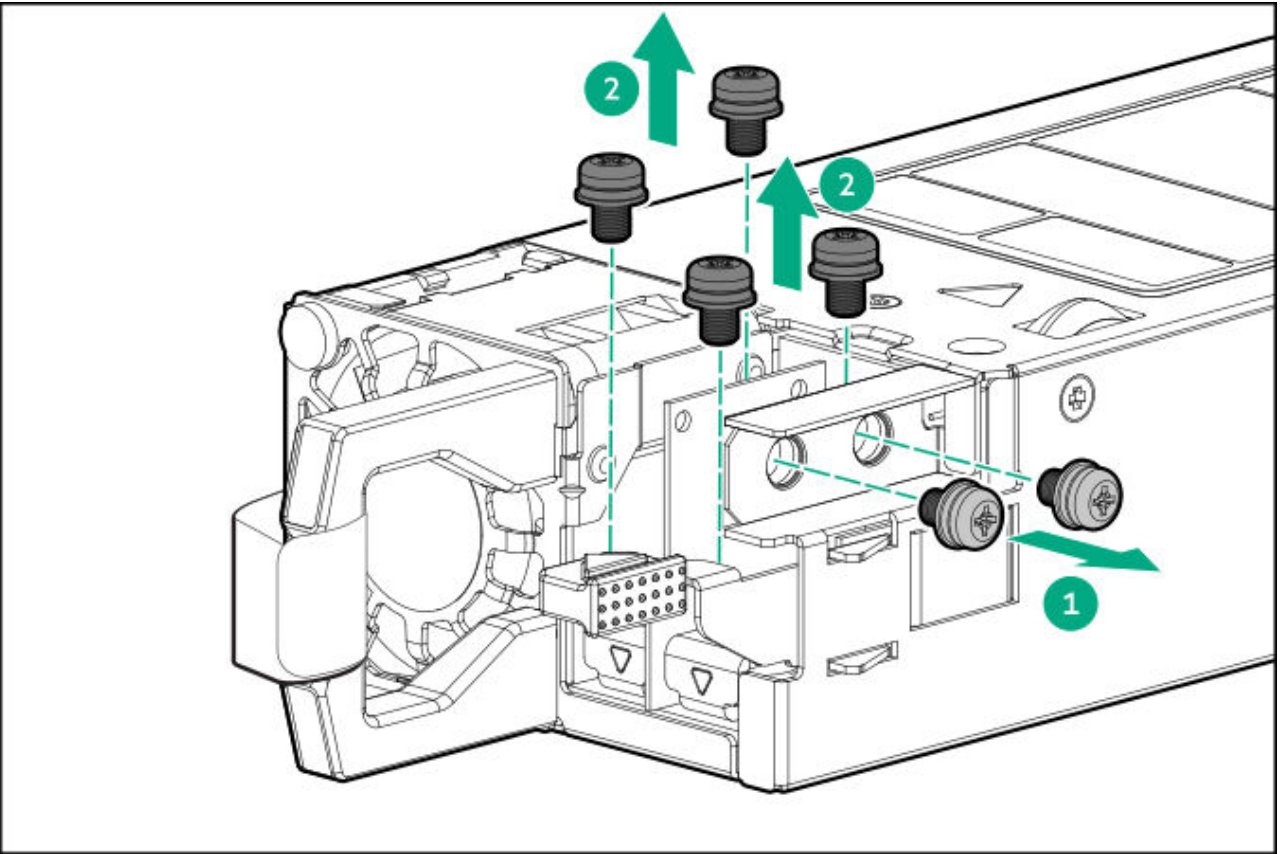
To reduce the risk of personal injury from hot surfaces, allow the power supply, power supply blank, or dual slot power supply adapter to cool before touching it.

Procedure

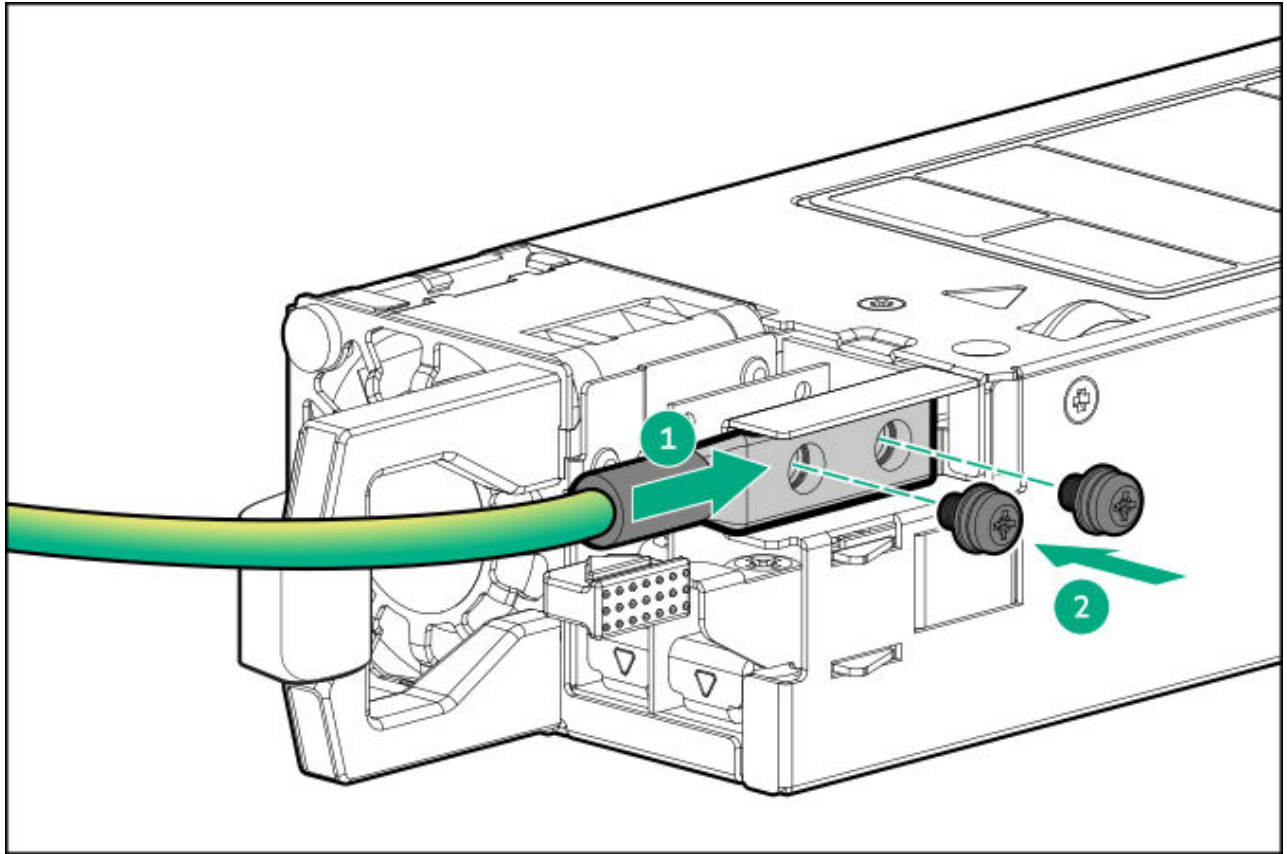
1. Remove the protective cover from the power supply.



2. Remove the ground wire screw, and then remove the return wire and line wire screws.

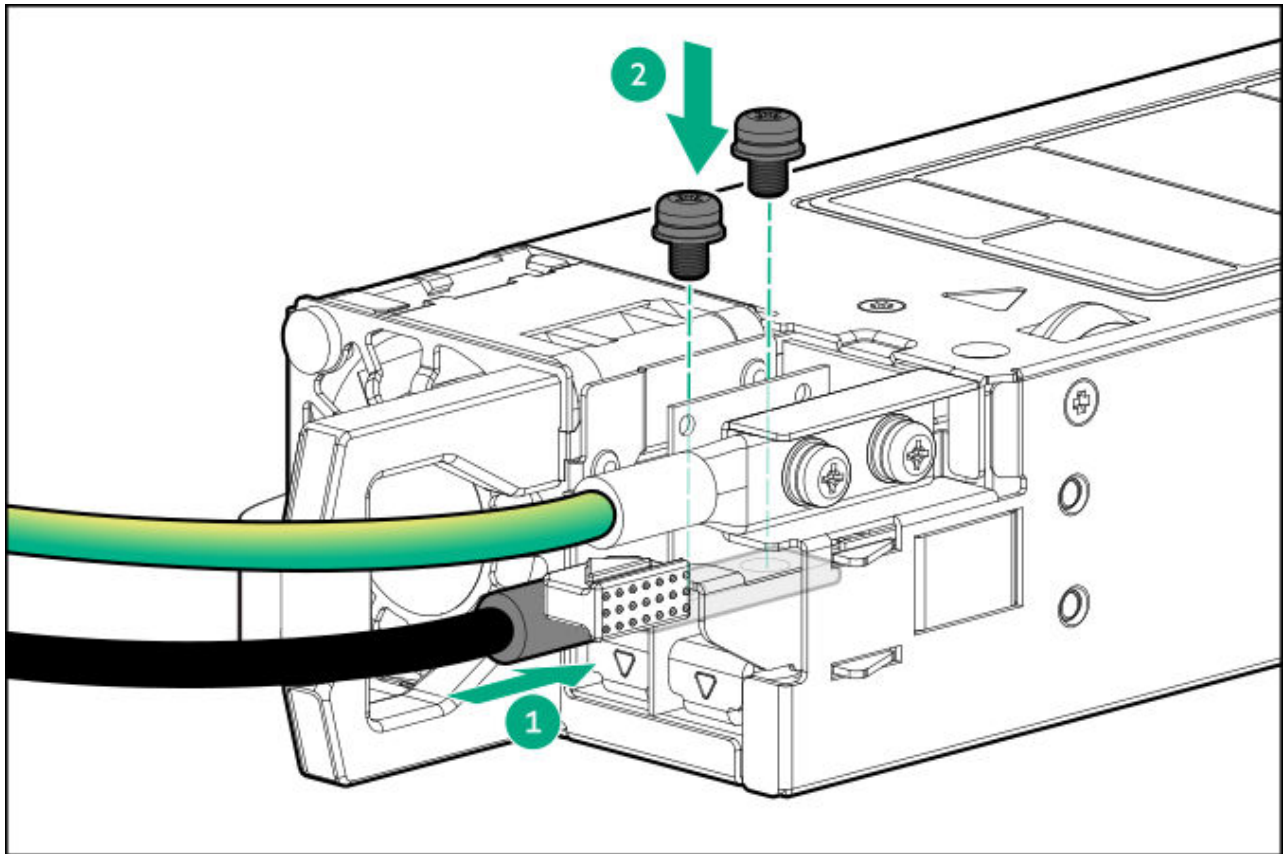


3. Attach the green and yellow ground wire (6 AWG [13.3 mm²]) to the power supply and tighten the M5 screws and washer and apply 0.59 N-m (5.22 lbf-in) of torque.



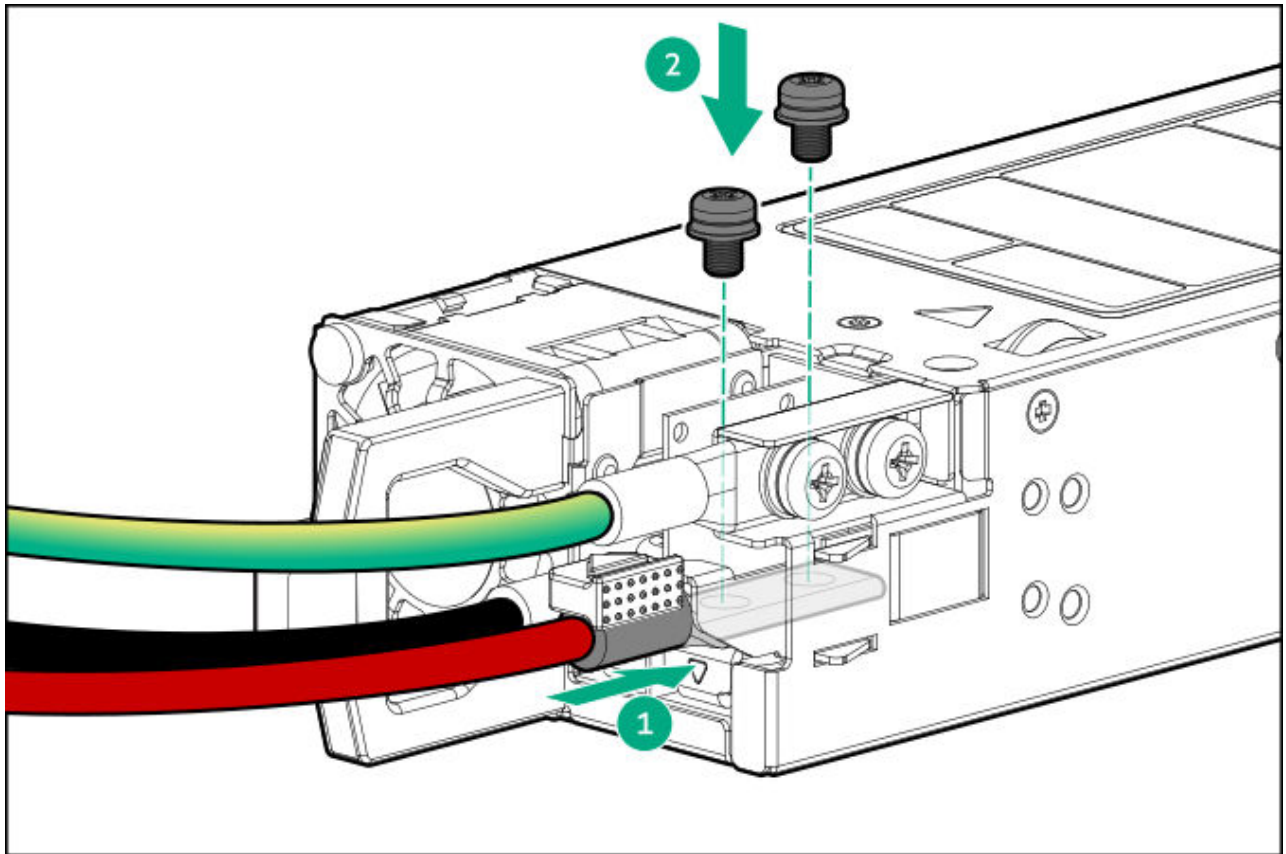
4. Install the return wire (black):

- a. Insert the return wire (6 AWG [13.3 mm²]) into the RTN slot on the power supply.
- b. Tighten the M5 screws with 0.59 N-m (5.22 lbf-in) of torque.



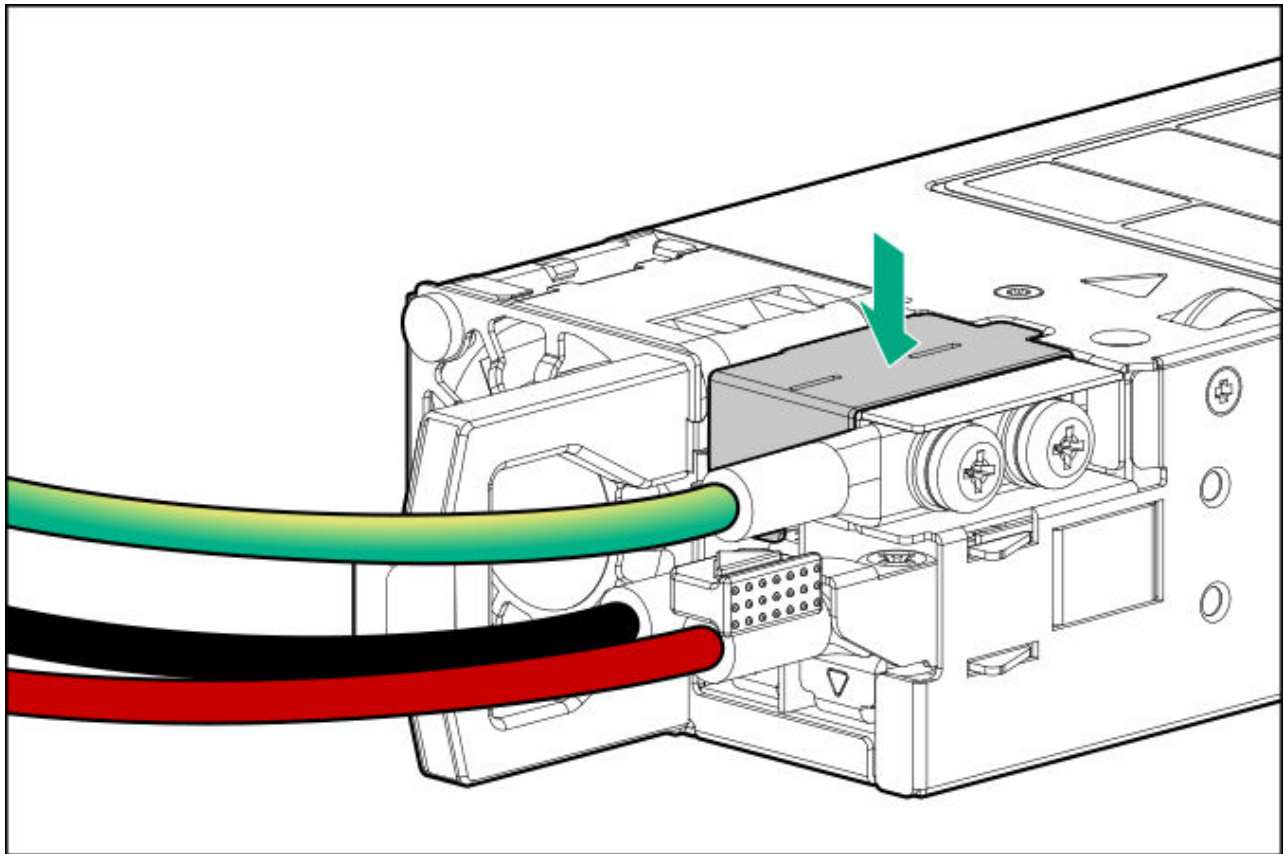
5. Install the line wire (red):

- a. Insert the line wire (6 AWG [13.3 mm²]) into the -48V slot on the power supply.
- b. Tighten the M5 screws with 0.59 N-m (5.22 lbf-in) of torque.



6. Install the protective cover on the power supply.

Make sure that the protective cover is locked.

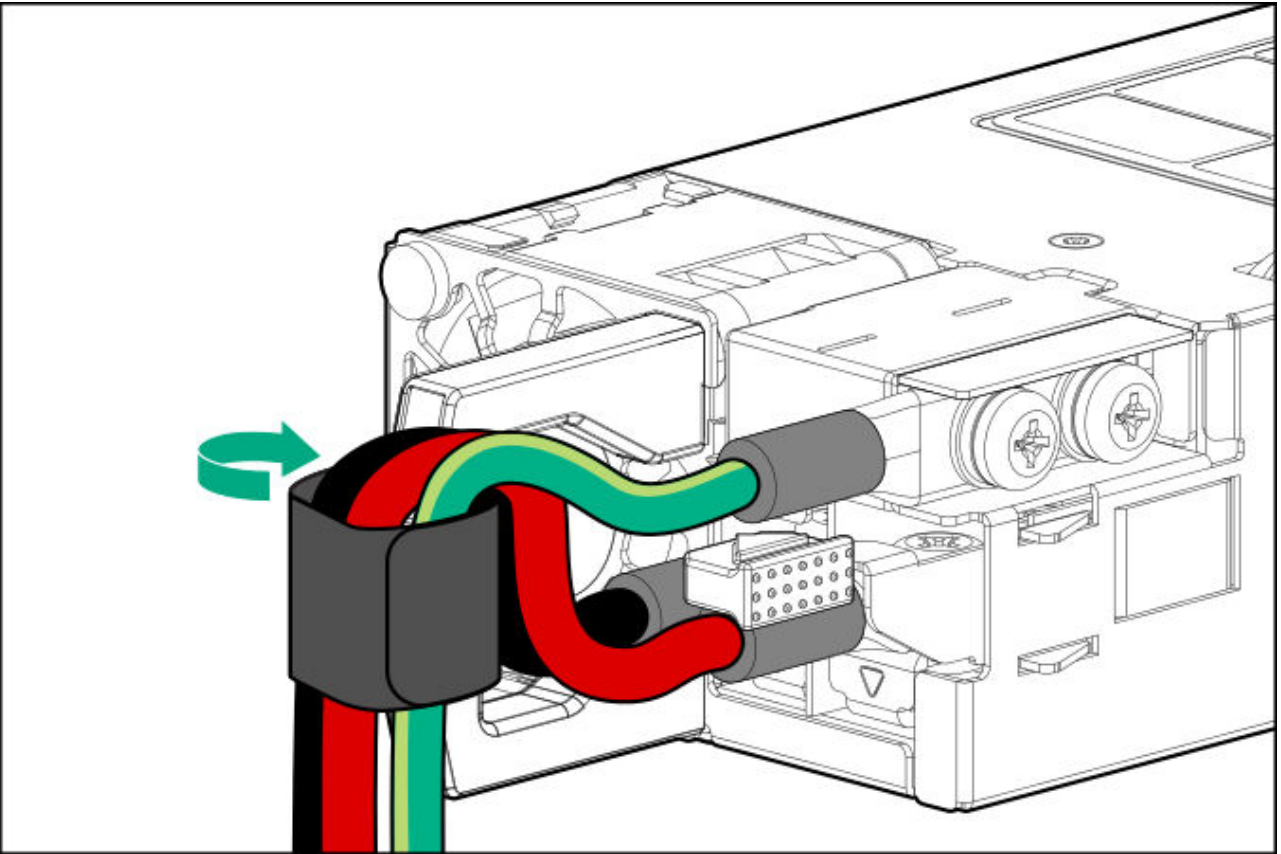


7. Secure the ground, positive return, and negative input wires in the strain relief strap.



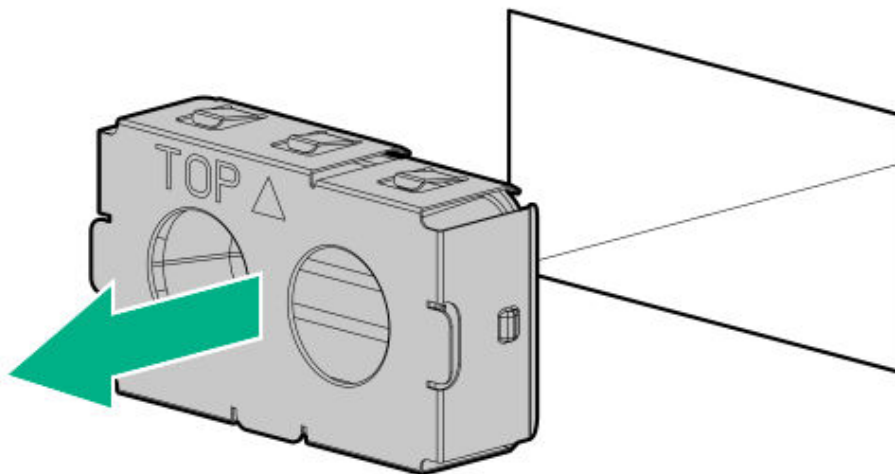
CAUTION

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.

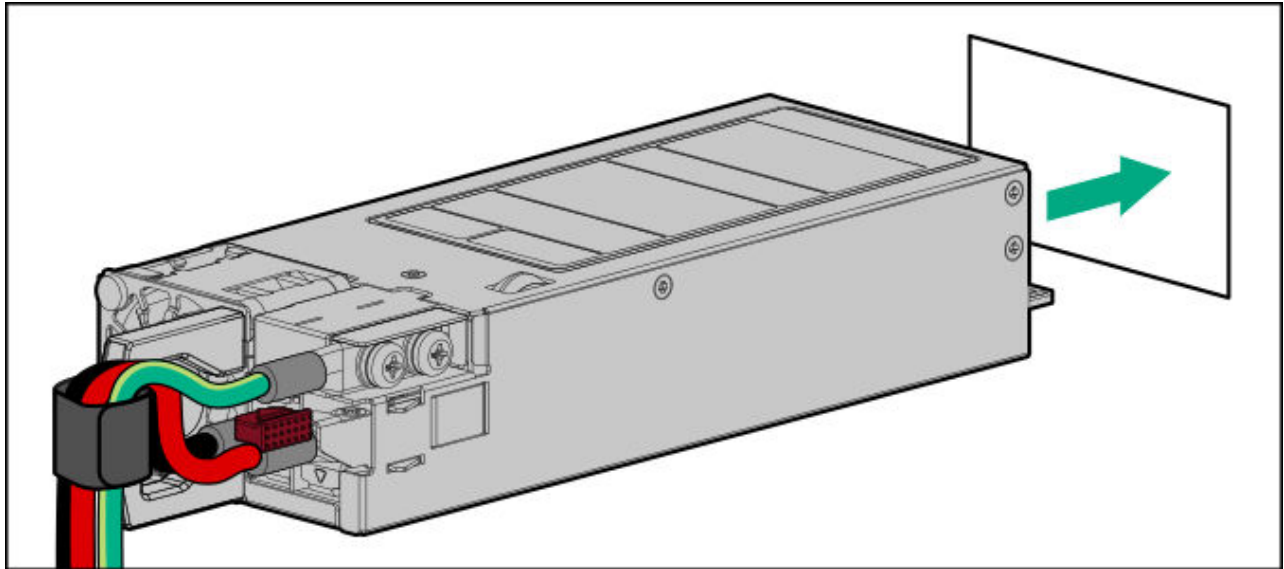


8. If you are installing a power supply in the power supply bay 2, remove the power supply blank.

Retain the blank for future use.



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



- .0. 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.
- .1. Turn on the -48 V power source or switch the PDU breaker to the on position to supply -48 V to the power supply.
- .2. Make sure that the power supply LED is green.

Results

The installation procedure is complete.

Connecting a DC power cable to a DC power source

Prerequisites

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

- Electrical wire cutter
- Hand crimp tool

About this task



WARNING

To reduce the risk of electric shock or energy hazards:

- This equipment must be installed by trained service personnel and in accordance with local and regional electric codes and regulations
- 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.
- Make sure that the overcurrent protection does not exceed the following values:
 - 1300 W DC M-CRPS: 45 A
 - 2200 W DC M-CRPS: 70 A



WARNING

When installing a DC power supply, the ground wire must be connected before the positive or negative leads.



WARNING

Remove power from the power supply before performing any installation steps or maintenance on the power supply.



CAUTION

The server equipment connects the earthed conductor of the DC supply circuit to the earthing conductor at the equipment. For more information, see the documentation that ships with the power supply.



CAUTION

If a DC connection exists between the earthed conductor of the DC supply circuit and the earthing conductor at the server equipment, the following conditions 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.
- Locate the equipment in the same immediate area (such as adjacent

Procedure

1. Cut the DC power cord ends no shorter than 150.00 cm (59.06 in).



IMPORTANT

The DC power cord uses AWG wires and includes pigtail connectors for the DC power source.

- Install terminals on the pigtails that are compatible with your power equipment.
- Ensure that all terminals and connection methods comply with your local electrical code.
- Wire Gauge Requirements:
 - 60-mm DC M-CRPS: 8 AWG wire
 - 73.5-mm DC M-CRPS: 6 AWG wire

2. If the power source requires ring tongues, use a crimping tool to install the ring tongues on the power cord wires and ground wire.
3. Stack each same-colored pair of wires and then attach them to the same power source.

For more information, see the documentation that ships with the power supply.

Processors and heatsinks

Subtopics

Processor cautions

Removing the standard heatsink

Installing the high performance heatsink

Processor cautions



CAUTION

To avoid damage to the processor or system board, only authorized personnel should attempt to replace or install the processor in this server.



CAUTION

To prevent possible server malfunction and damage to the equipment, multiprocessor configurations must contain processors with the same part number.



CAUTION

The pins on the processor socket and on the processor are very fragile and easily damaged. To avoid component damage, **do not touch these pins.** Any damage to them might require replacing the system board and/or processor.



IMPORTANT

Processor socket 1 must be populated at all times or the server does not function.



IMPORTANT

If installing a processor with a faster speed, update the system ROM before installing the processor. To download firmware, see [Updating firmware or system ROM](#).

Removing the standard heatsink

Prerequisites

- [Identify the heatsink and processor socket components.](#)
- [Review the processor cautions.](#)
- Before you perform this procedure, make sure that you have the following items available:
 - T-30 Torx screwdriver or a bit driver with T-30 Torx bit
 - Alcohol wipe

- If you are not immediately installing the replacement processor-heatsink assembly, make sure that you have a processor socket dust cover.

About this task

https://sketchfab.com/models/4c04ee6e4de04b5c8bca81cc78ec8bad/embed?ui_infos=0&ui_watermark=0&ui_help=0&ui_vr=0&ui_settings=0&ui_inspector=0&ui_hint=2&ui_color=01a982&ui_theme=dark&autostart=1&camera=0



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

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.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.

7. Allow all internal system components to cool before continuing.

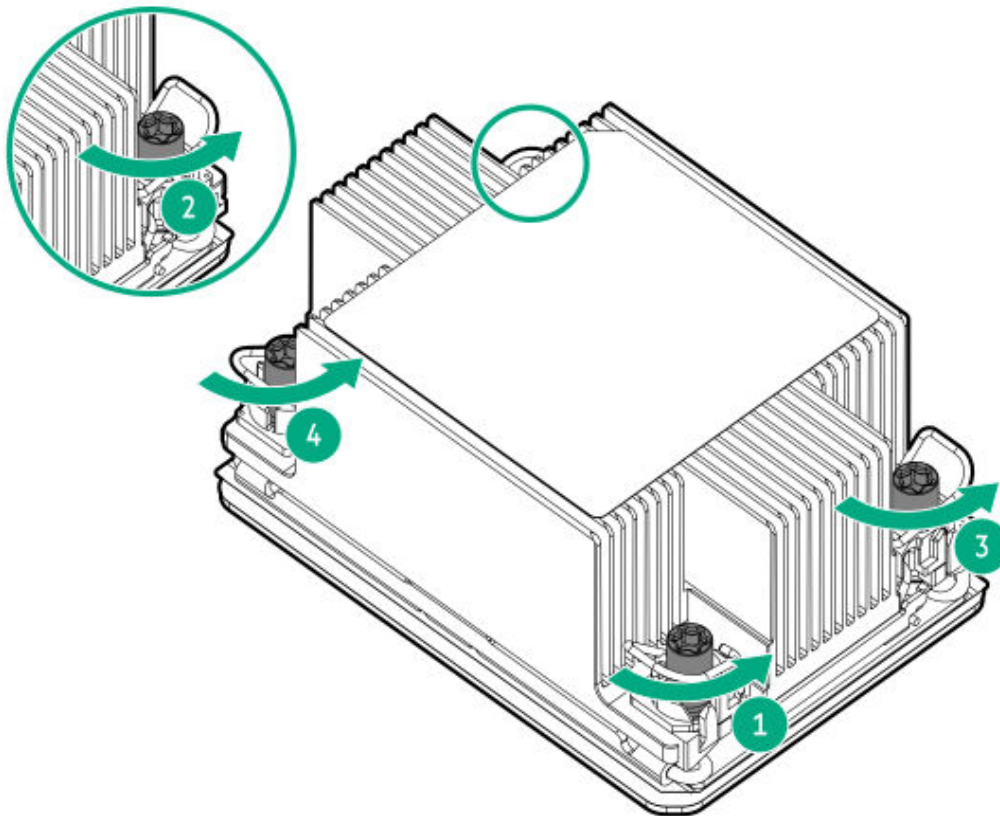
8.



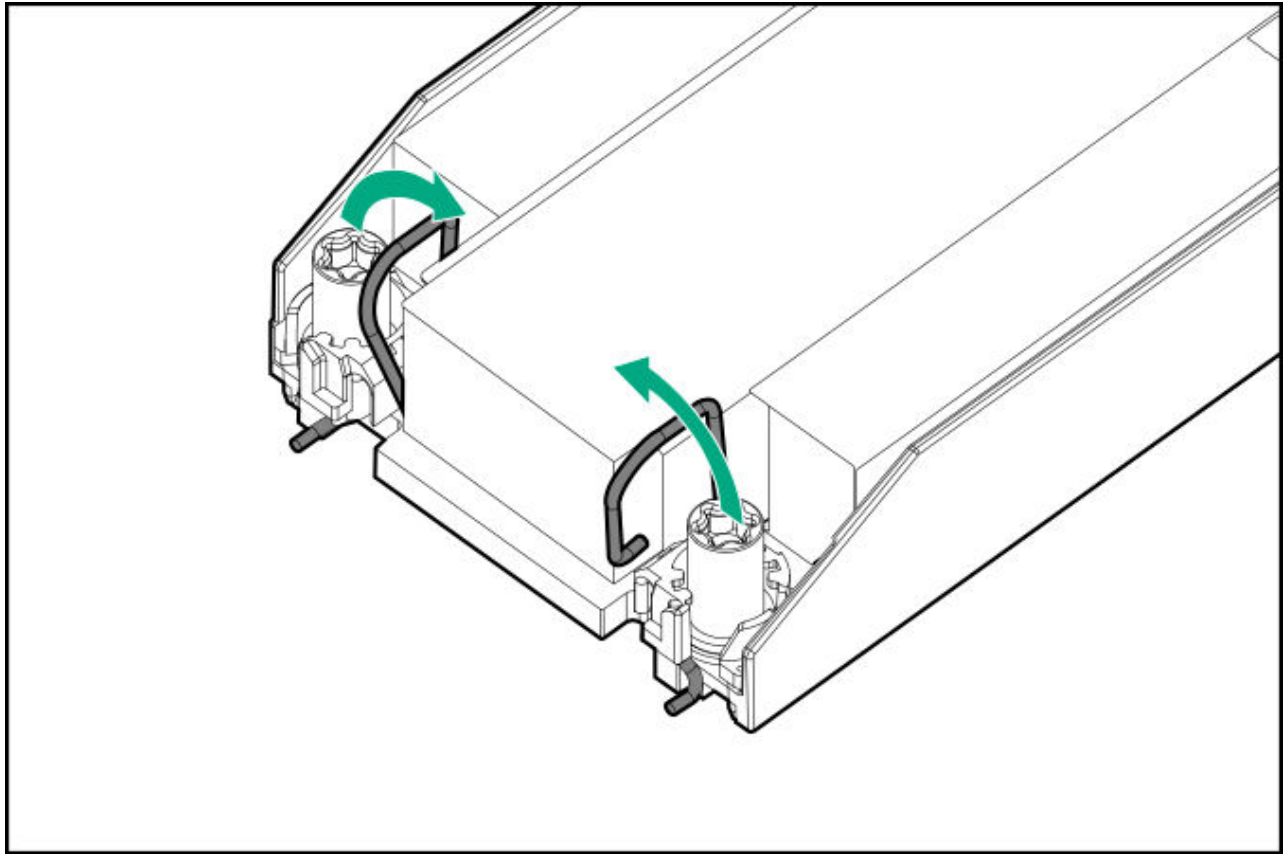
CAUTION

Heatsink screws must be tightened and loosened in alternating sequence. Do not overtighten the screws as this might damage the system board or the processor socket.

Loosen one pair of diagonally opposite heatsink screws, and then loosen the other pair of heatsink screws.



9. Set the anti-tilt wires to the unlocked position.



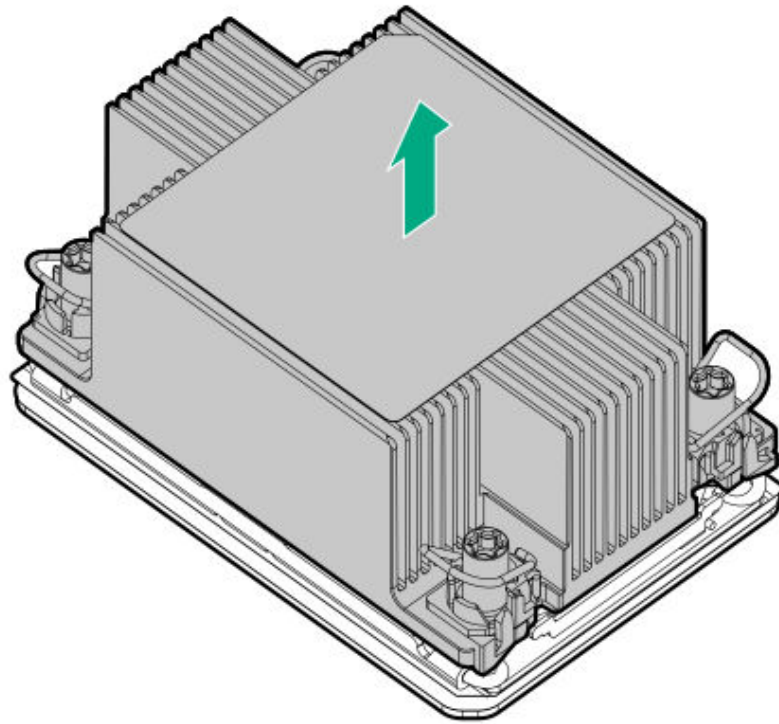
.0.



CAUTION

To prevent mechanical damage or depositing oil on your hands or other contaminants to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.

Lift the processor-heatsink module straight up from the system board.



- .1. Place the processor-heatsink module on a flat work surface with its contact side facing up.
- .2. If you are not immediately installing the replacement processor-heatsink module, install the dust cover on the empty processor socket:

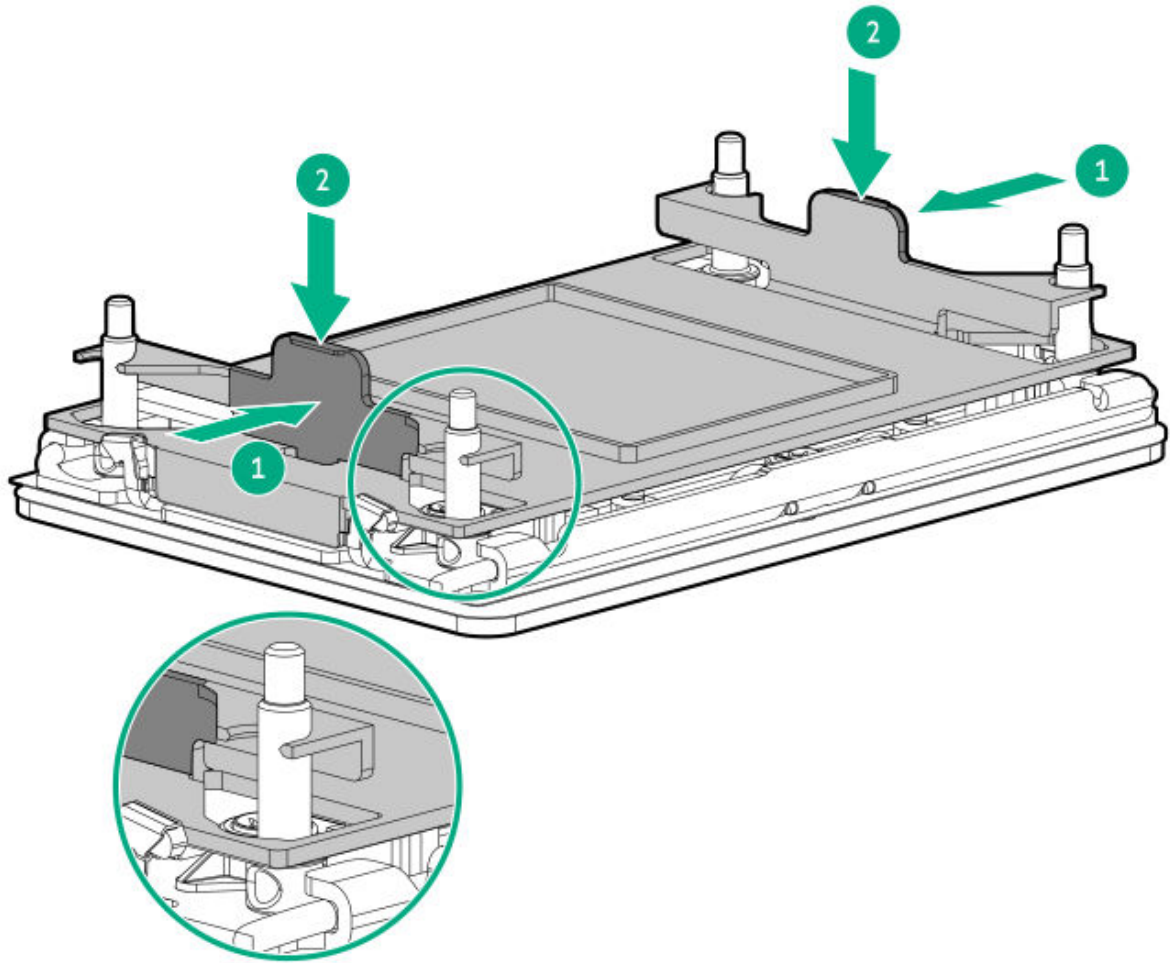


CAUTION

Do not press down on the dust cover. Pressing down on the dust cover might damage the processor socket.

- a. Press and hold the grip tabs on the dust cover.
- b. Carefully lower the dust cover onto the bolster plate guide posts.

Make sure that the corner holes of the dust cover are properly engaged with the guide posts on the bolster plate.

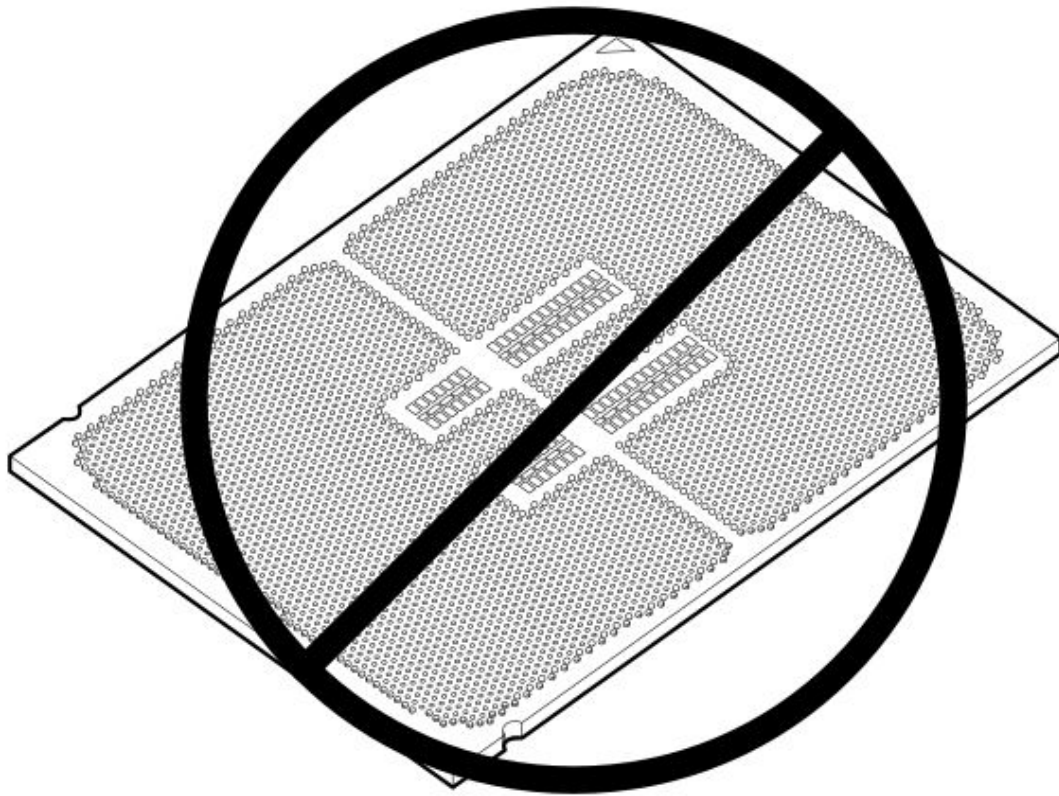
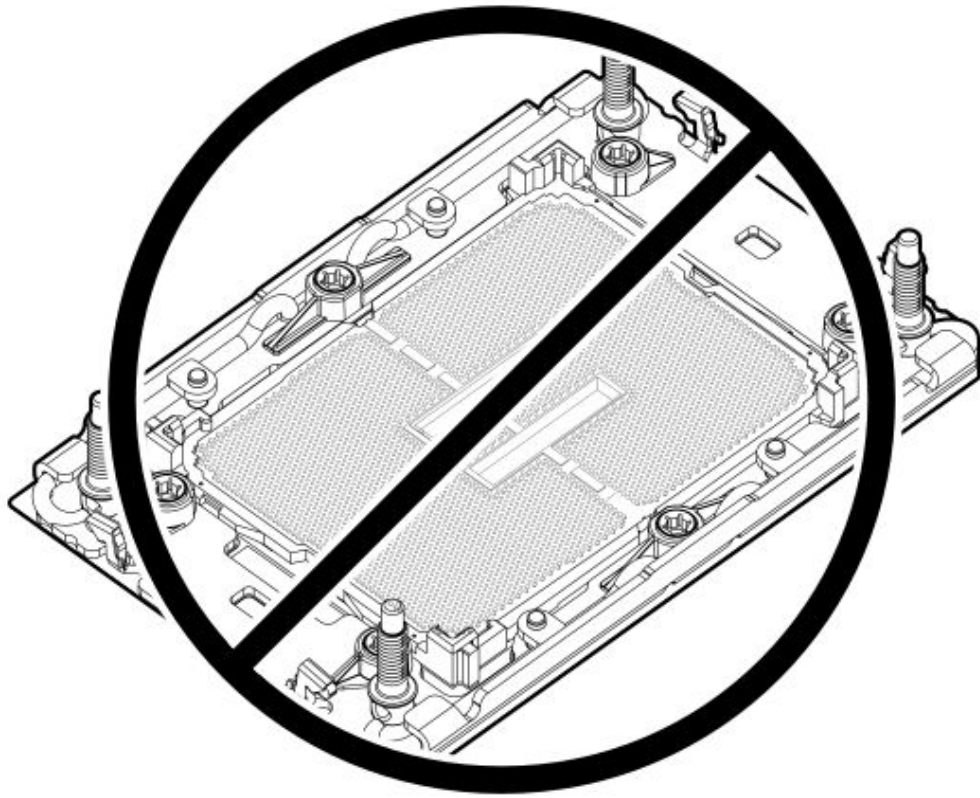


.3. Do not touch the pins on the processor socket and the processor.



CAUTION

THE PINS ON THE PROCESSOR SOCKET AND ON THE PROCESSOR ARE VERY FRAGILE AND EASILY DAMAGED. Any damage to them might require replacing the system board.

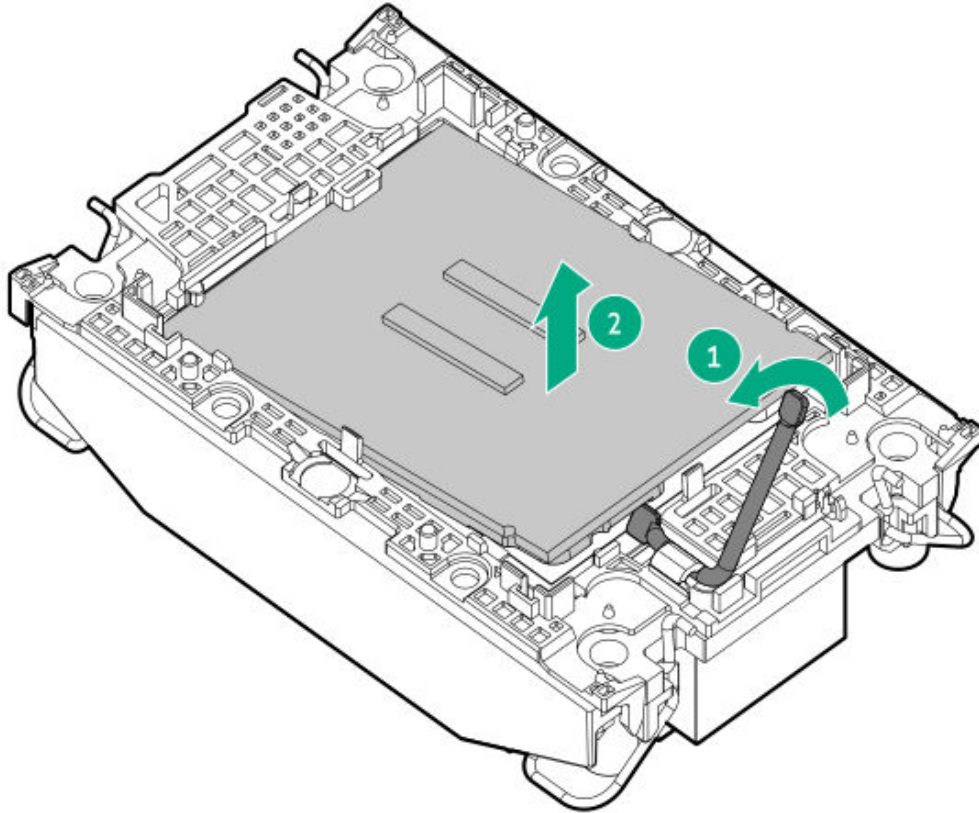


4. Remove the processor from the heatsink:

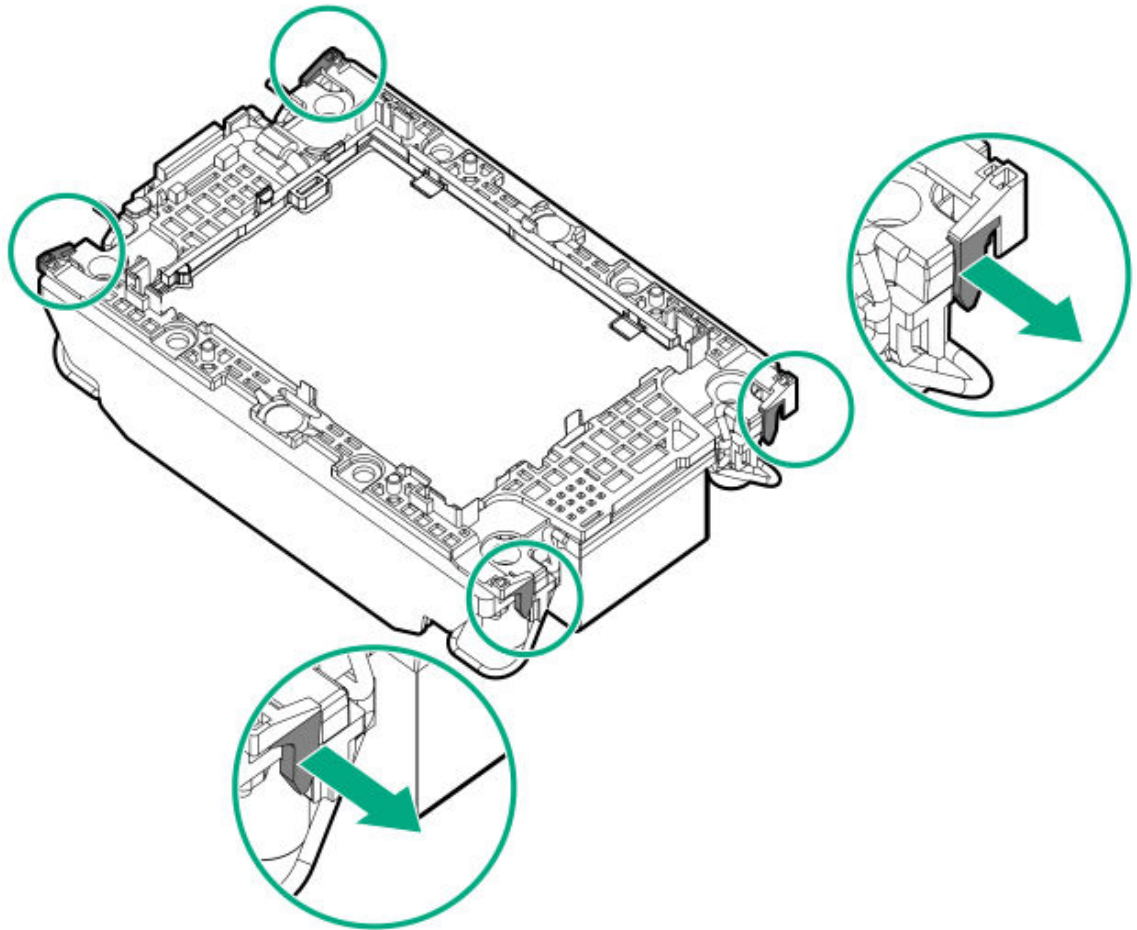
- a. Open the TIM breaker lever.

This action breaks the adhesion between the processor and the heatsink.

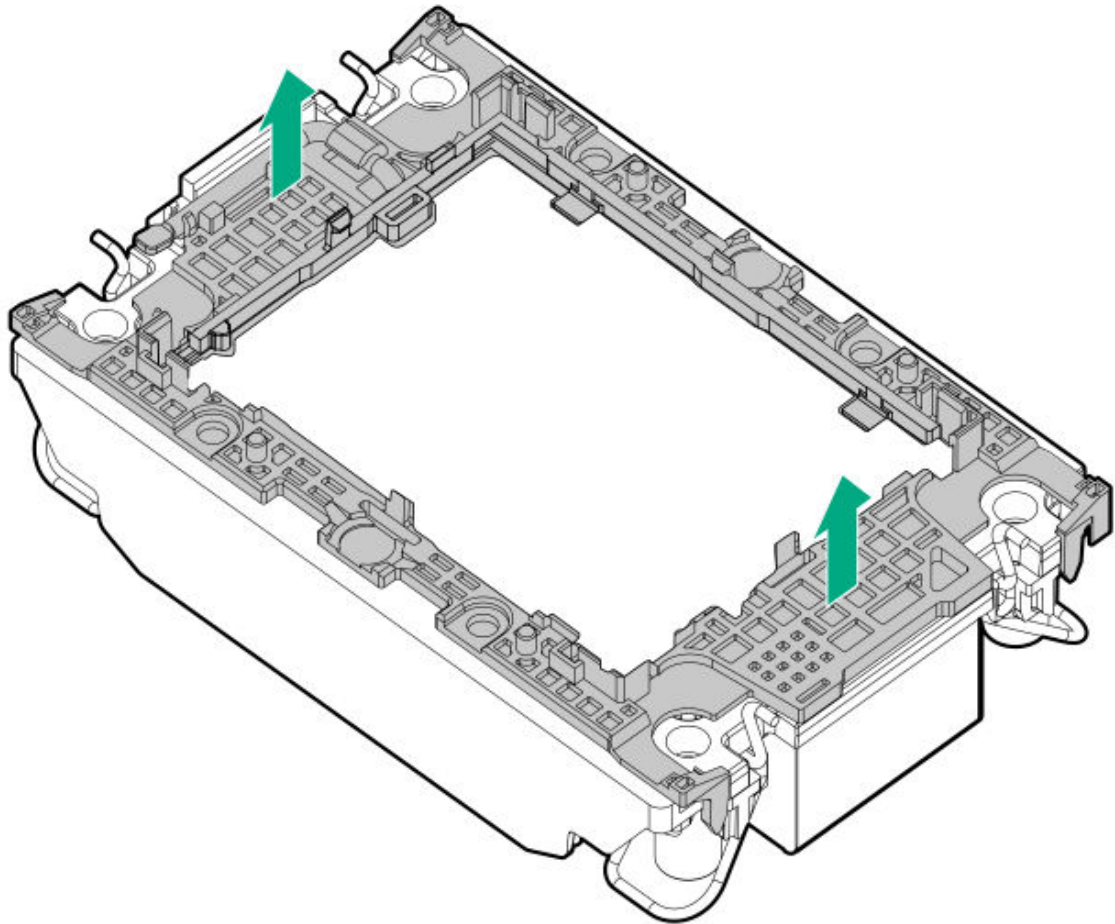
- b. Hold the processor on its edges, and then remove it from the carrier.



- c. Starting from the pin 1 corner and moving in an opposite manner, disengage the processor carrier release tabs from the heatsink.



d. Lift the processor carrier away from the heatsink.



5. Use an alcohol wipe to remove the existing thermal grease from the heatsink and processor.
Allow the alcohol to evaporate before continuing.

Installing the high performance heatsink

Prerequisites

- [Identify the heatsink and processor socket components.](#)
- [Review the processor cautions.](#)

Before you perform this procedure, make sure that you have a T-30 Torx screwdriver or a torque screwdriver with T-30 Torx bit available.

About this task



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.

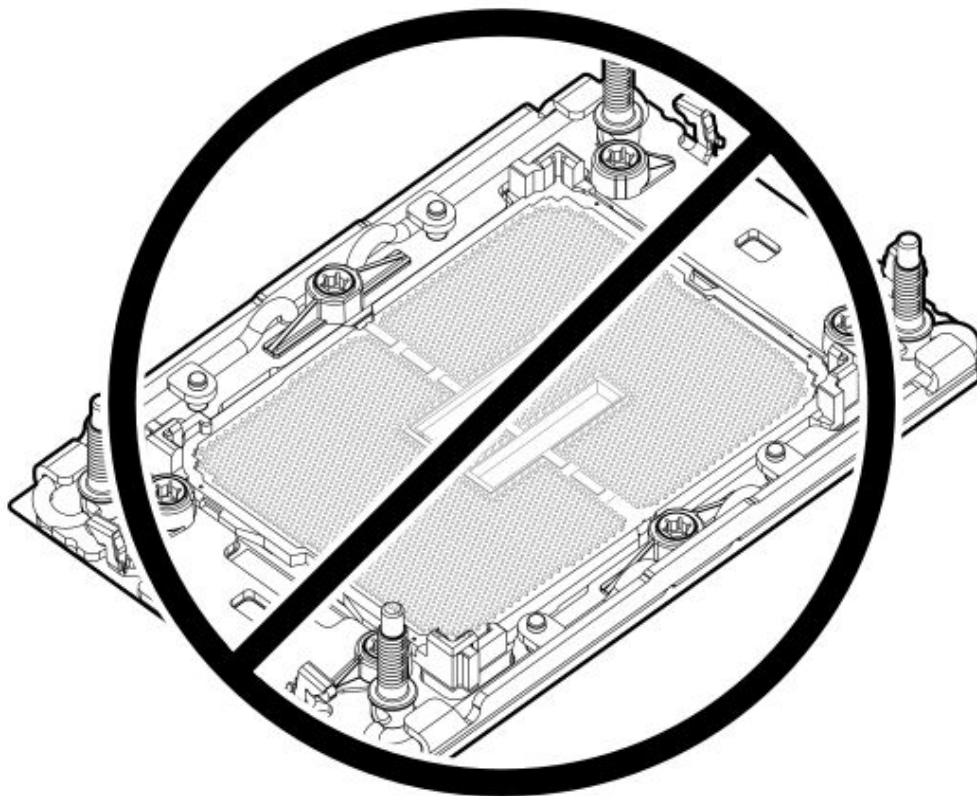
Procedure

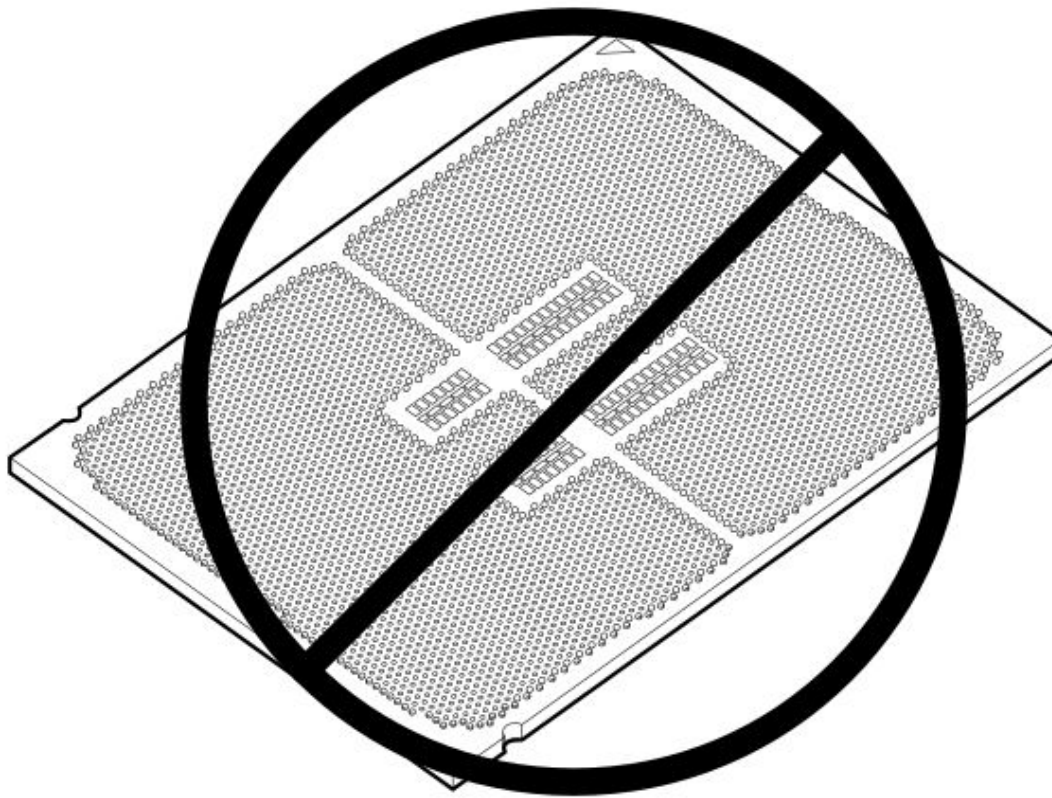
1. Do not touch the pins on the processor socket and the processor.



CAUTION

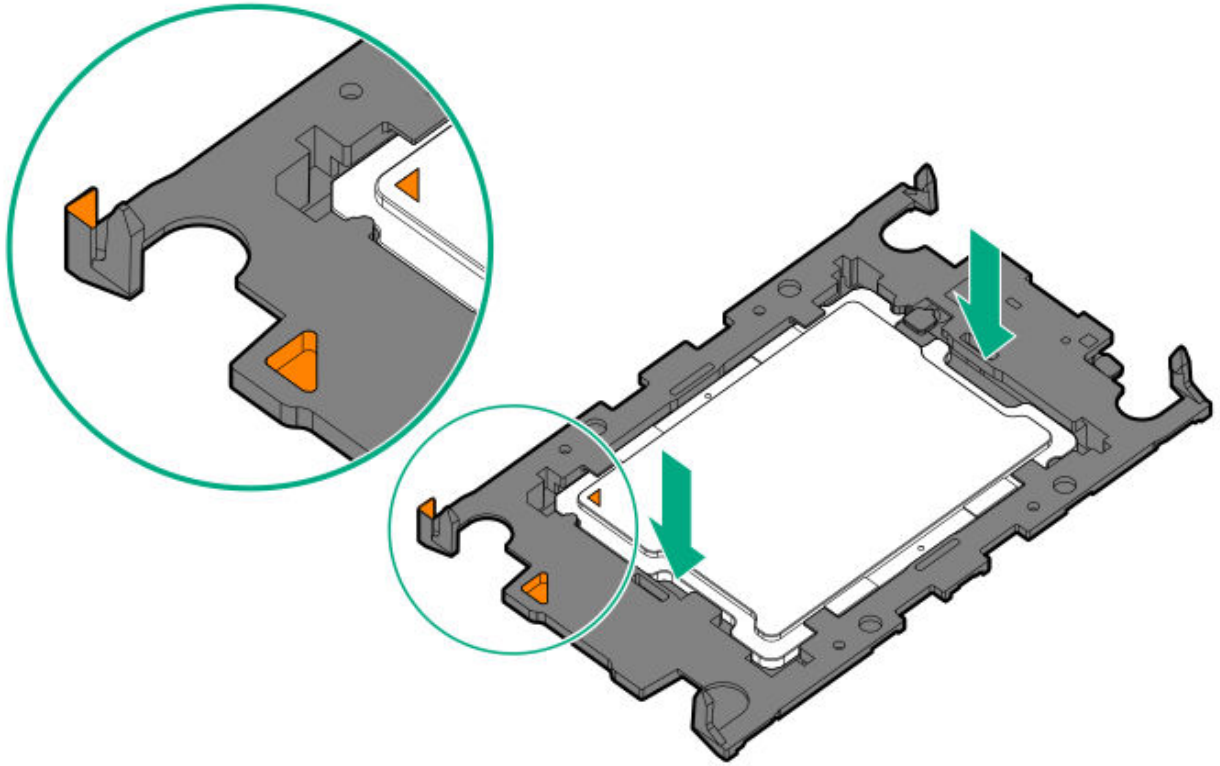
THE PINS ON THE PROCESSOR SOCKET AND ON THE PROCESSOR ARE VERY FRAGILE AND EASILY DAMAGED. Any damage to them might require replacing the system board.



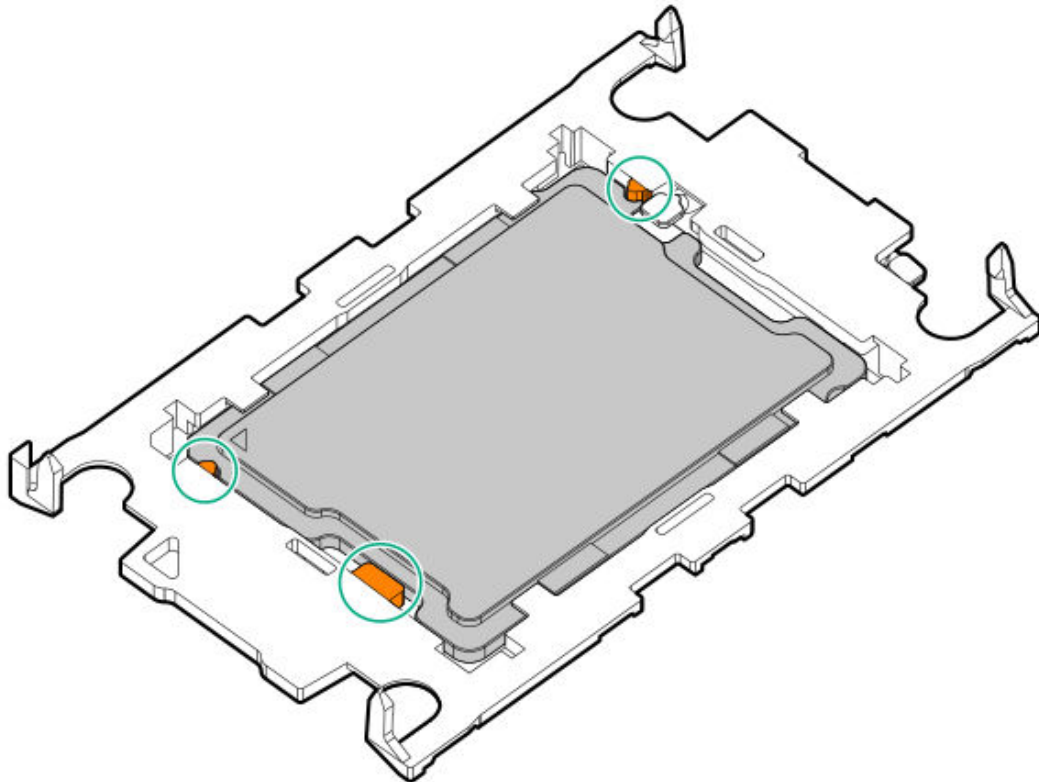


2. Install the processor carrier on the processor:

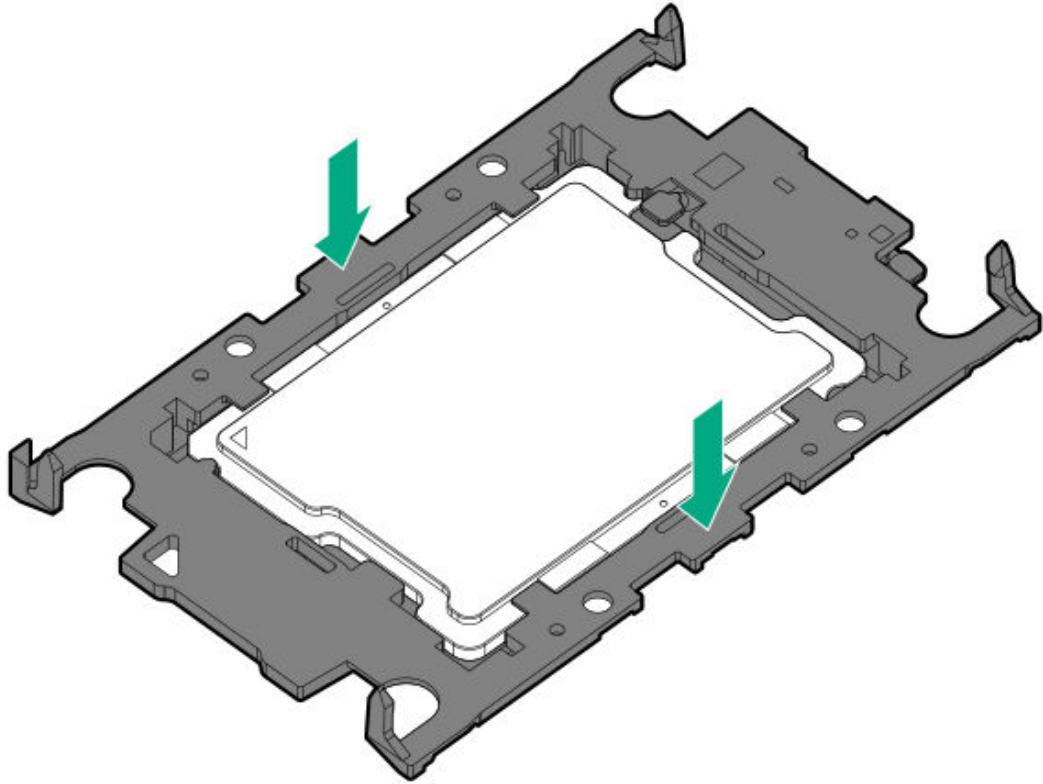
- a. Align the pin 1 indicator on the processor carrier with that on the processor, and then press on the pair of opposite sides on the TIM breaker lever of the processor carrier until it clicks into place.



b. Verify that the processor is properly latched on the processor carrier.



If not, press the other pair of opposite sides of the processor carrier until it clicks into place.

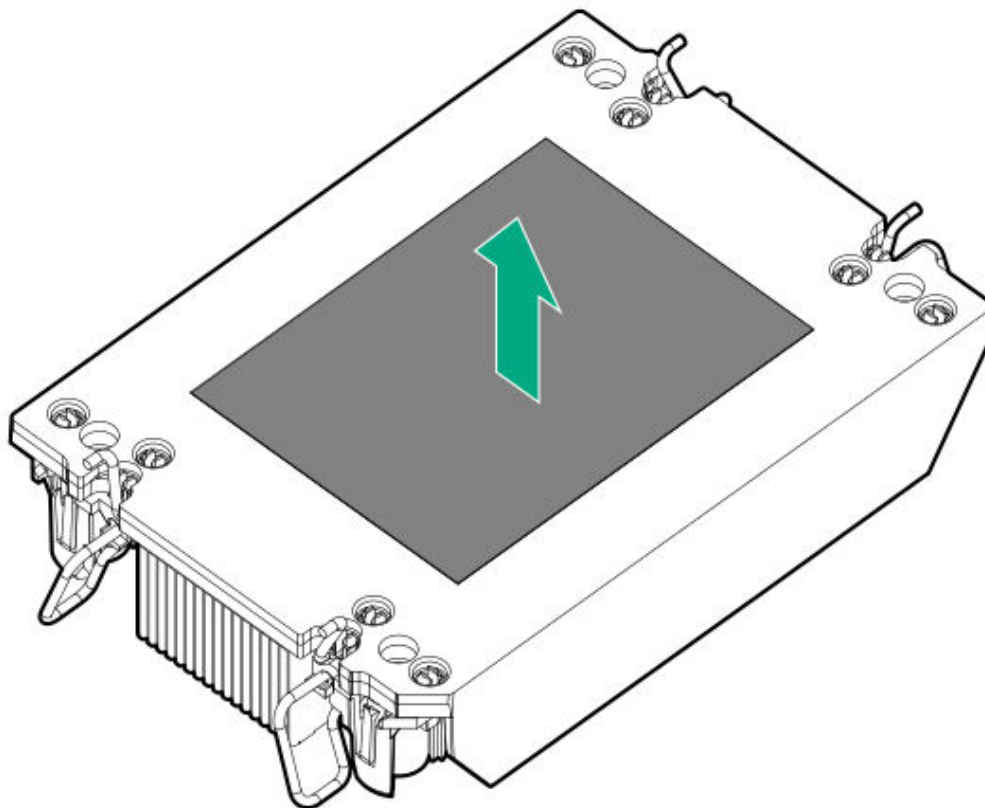


3. Remove the protective film from the thermal interface material.

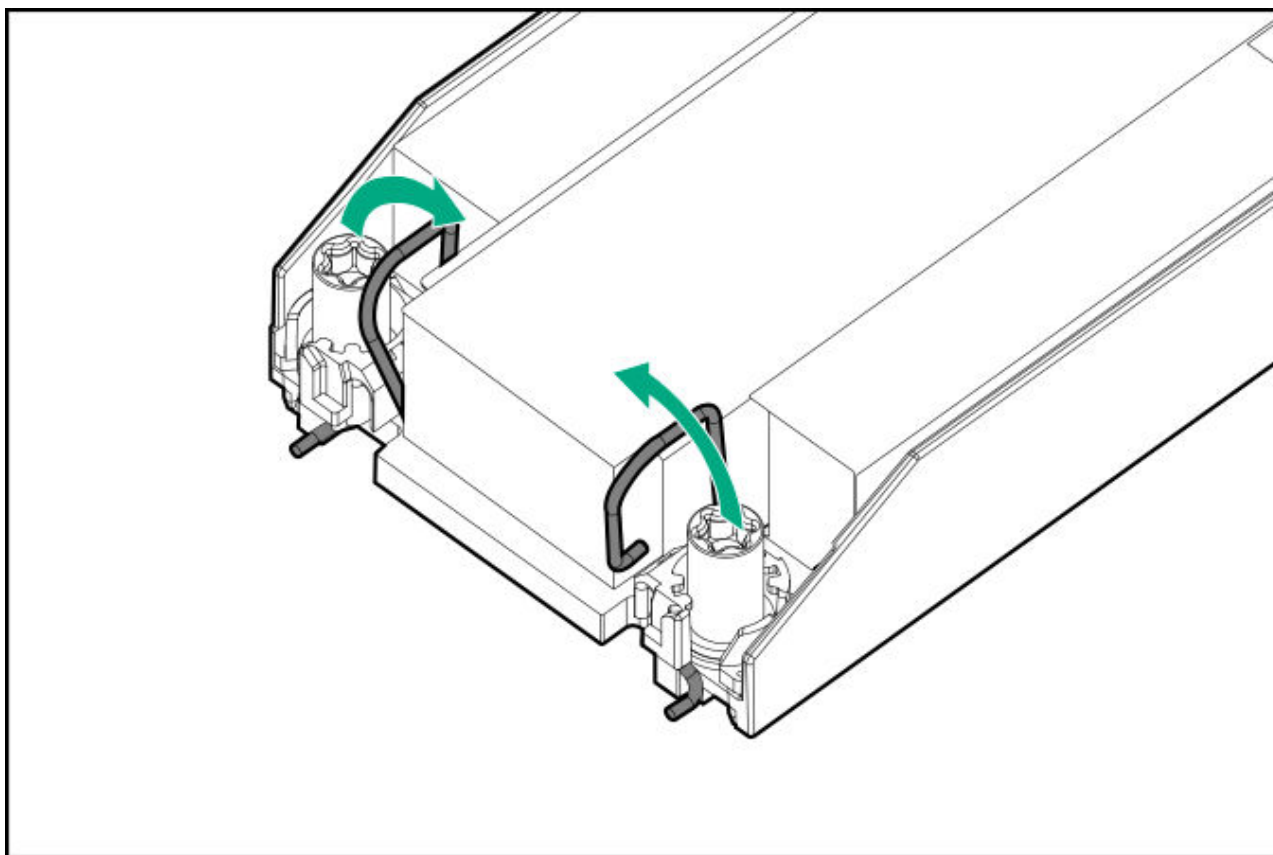


CAUTION

To prevent mechanical damage or depositing oil on your hands or other contaminants to the heatsink contact surface, hold the heatsink only by the edge of its base plate. Do not touch the heatsink fins.

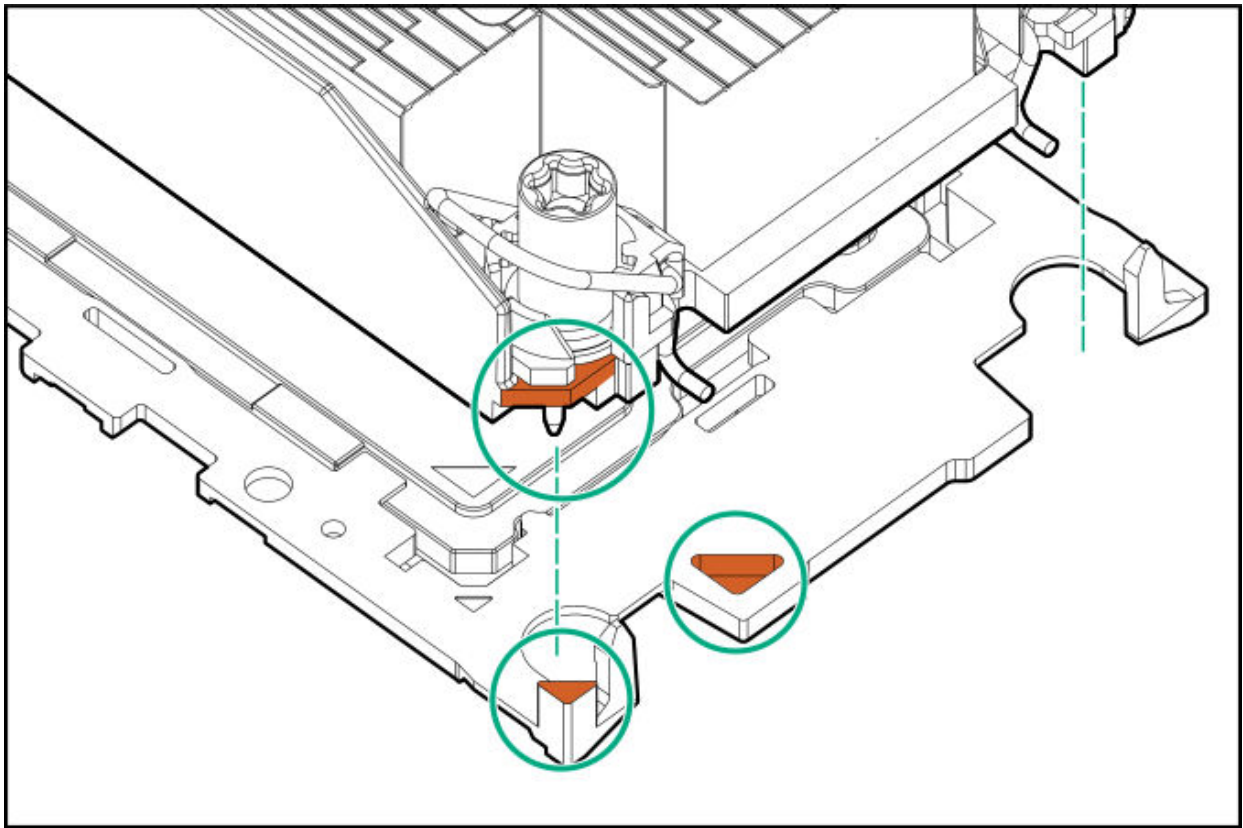


4. Set the anti-tilt wires to the unlocked position.



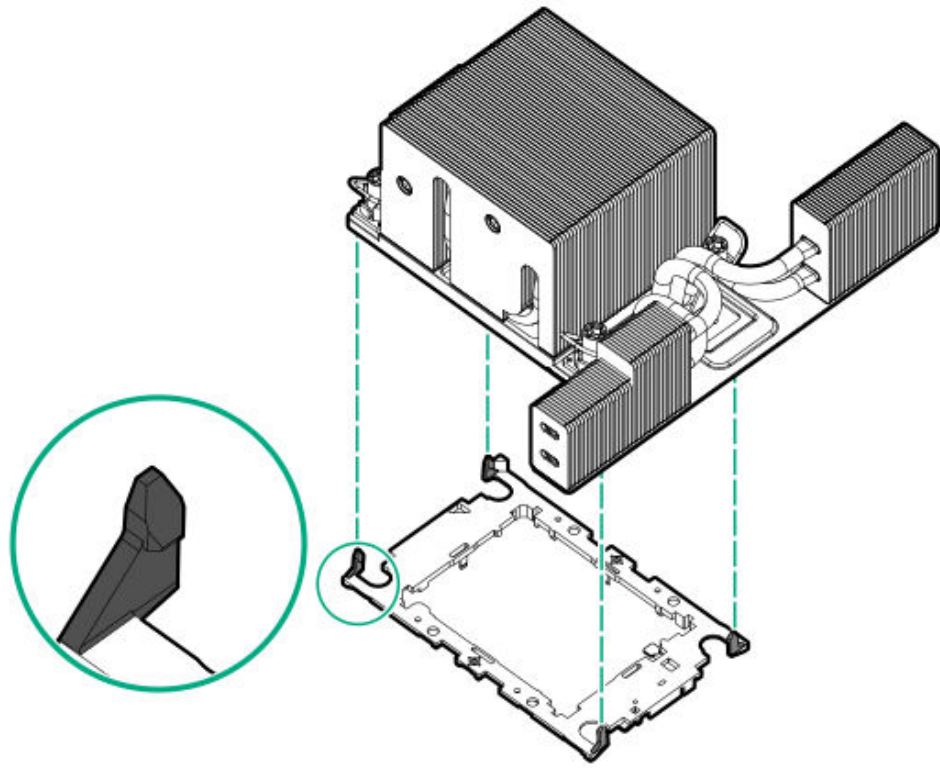
5. Attach the heatsink to the processor carrier:

a. Align the pin 1 indicator on the processor carrier with that on the heatsink.



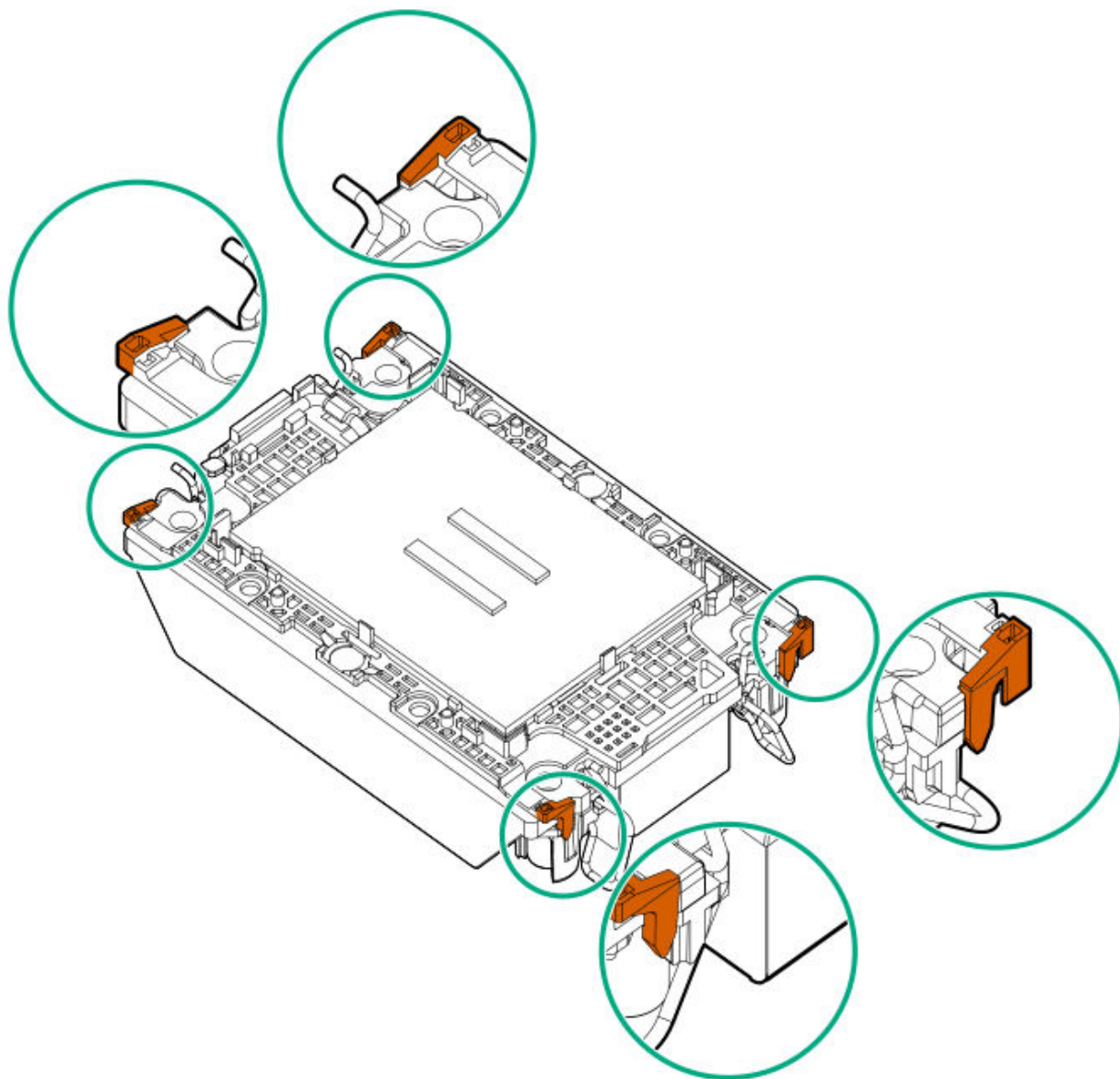
b. Lower the heatsink on the processor carrier until the carrier tabs snap into place.

There will be an audible click to indicate that the heatsink is properly latched on the processor carrier.

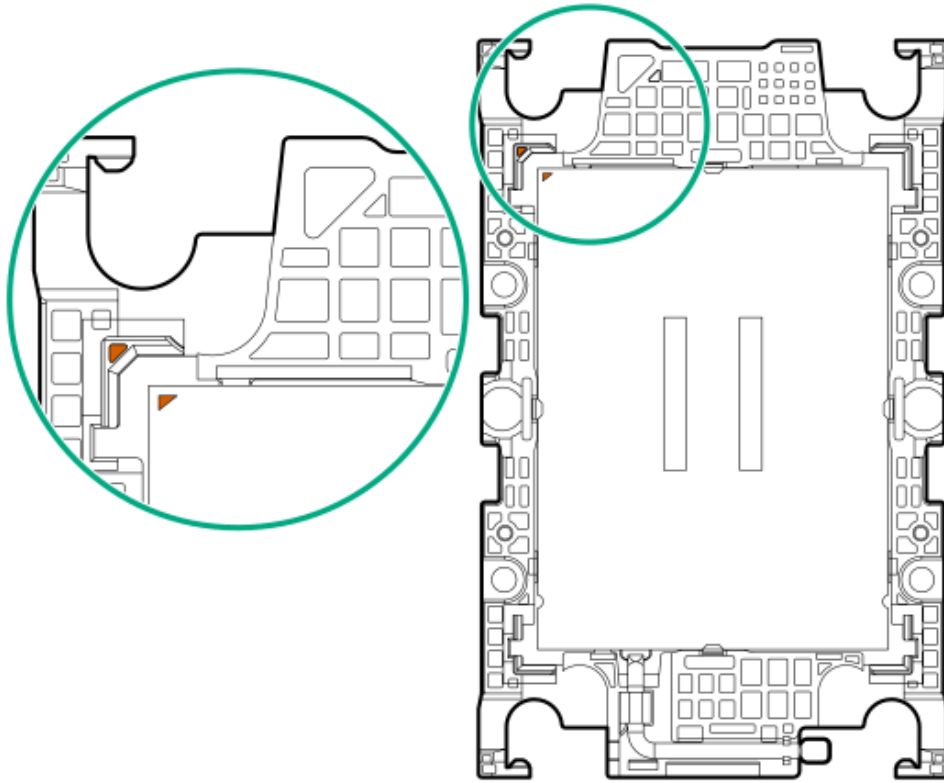


6. Perform the following verification steps:

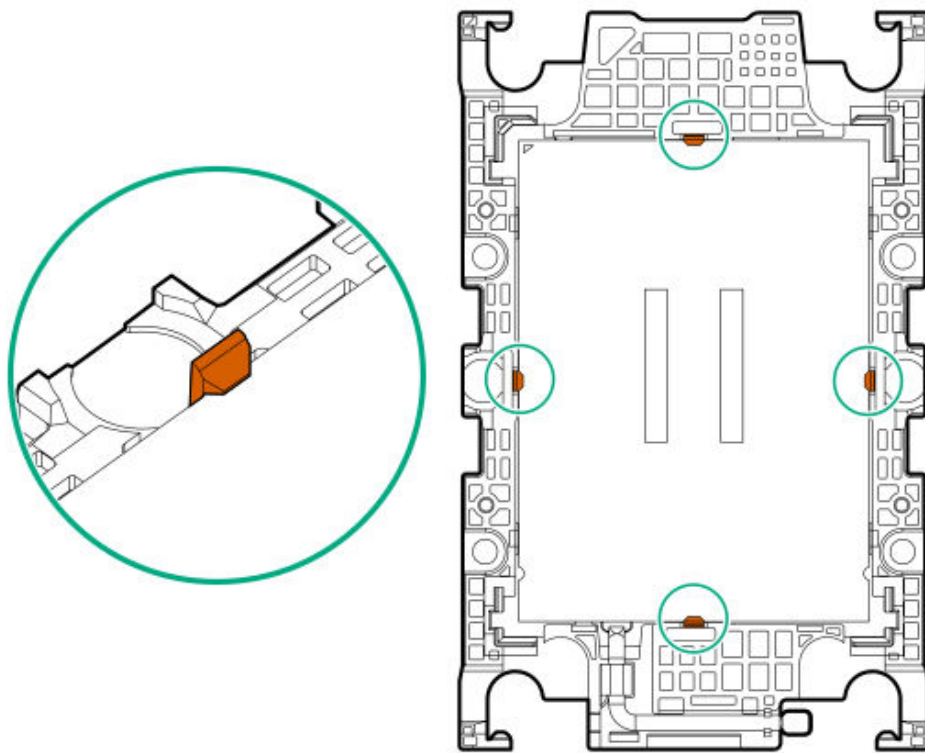
- a. Verify that the tabs on the processor carrier are securely latched on the heatsink.



b. Verify that the pin 1 indicators on the processor and processor carrier are aligned.



c. Verify that the processor is properly secured by the carrier snaps.



7. Install the processor-heatsink module:

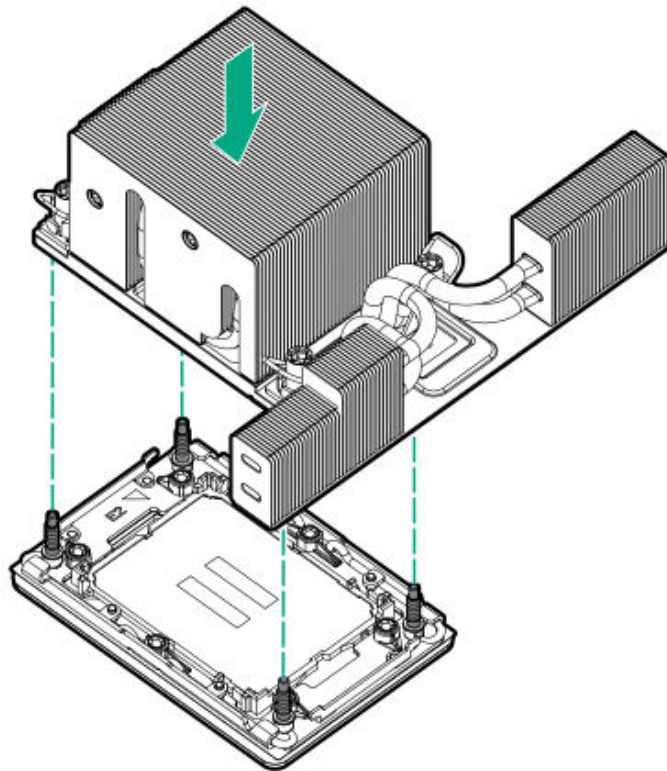


CAUTION

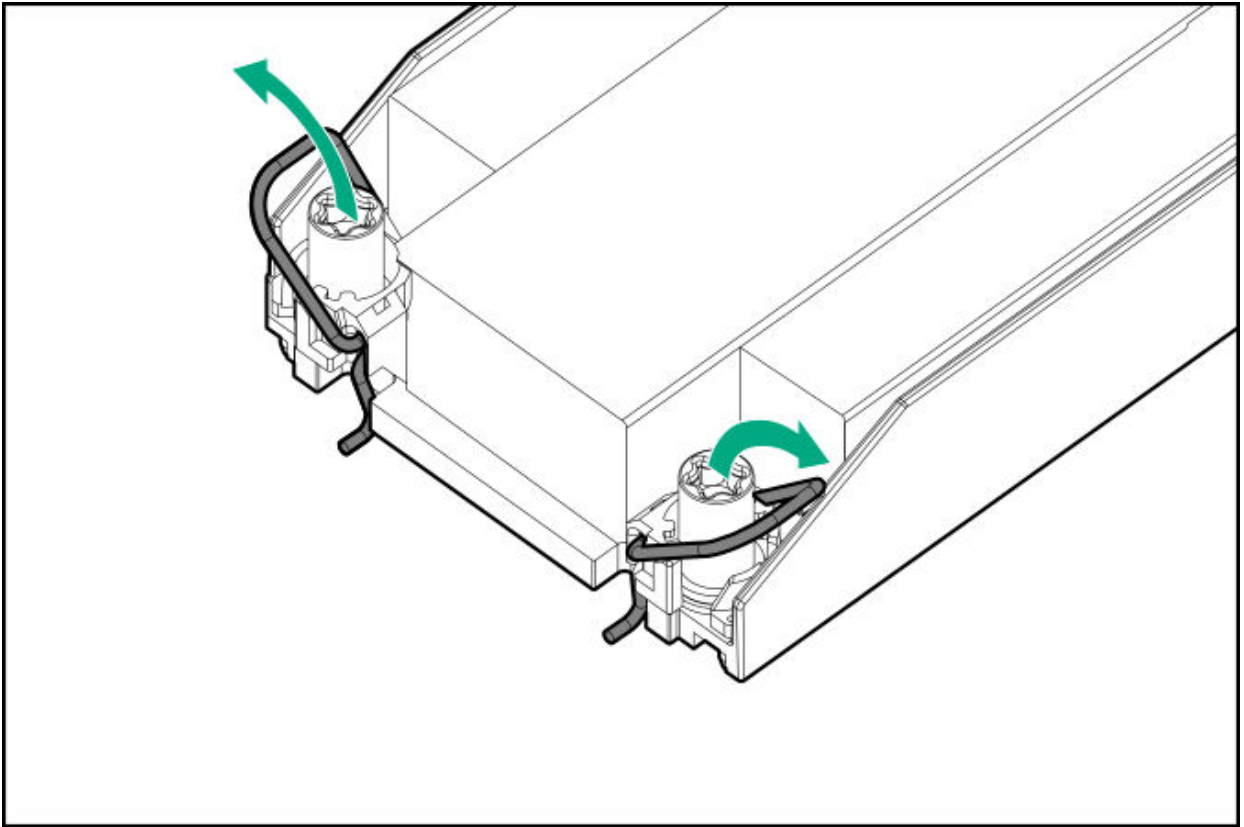
To prevent thermal failure or component damage, do not move the heatsink once the bottom of its base plate touches the top of the processor. Excessive heatsink movement can cause the thermal grease to smear and become uneven. Voids in the compound can adversely impact the transfer of heat away from the processor.

- a. When using a torque wrench to tighten the heatsink screws, set it to 0.9 N-m (8 in-lb) of torque.
- b. Note the **Front of server** text on the heatsink label to correctly orient the processor-heatsink module over the bolster plate.
- c. Carefully lower the processor-heatsink module onto the bolster plate guide posts.

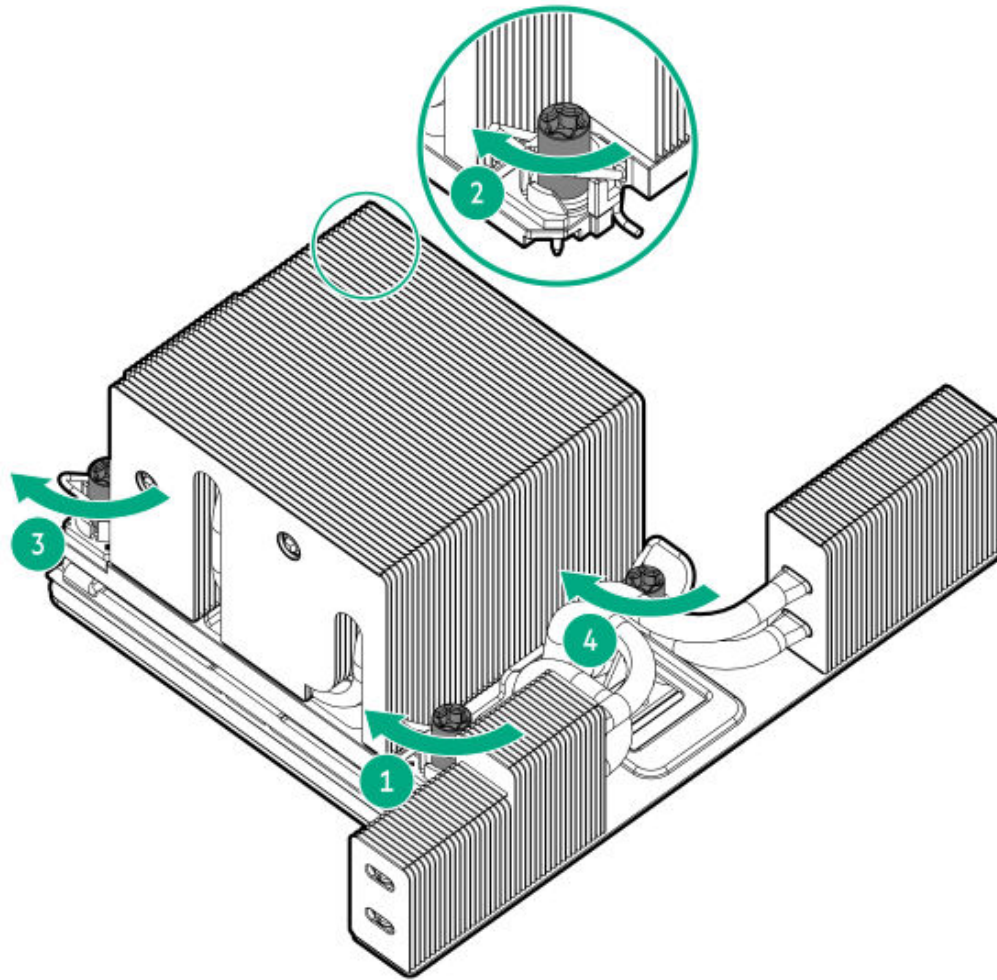
The posts are keyed so that the module can only be installed one way. Make sure that the module is properly seated on the bolster plate before securing the screws.



- d. Set the anti-tilt wires to the locked position.



- e. Tighten one pair of diagonally opposite heatsink screws, and then tighten the other pair of heatsink screws.



8. Install all removed components.
9. Install the air baffle.
10. Install the access panel.
1. Install the server into the rack.
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. Power up the server.

Results

The installation procedure is complete.

Rack rail and CMA

Subtopics

[Rail identification markers](#)

[Rack mounting interfaces](#)

[Rack rail options](#)

[Installing the friction rack rails](#)

[Installing the ball-bearing rack rails](#)

[Installing the rack rail hook-and-loop strap](#)

[Installing the cable management arm](#)

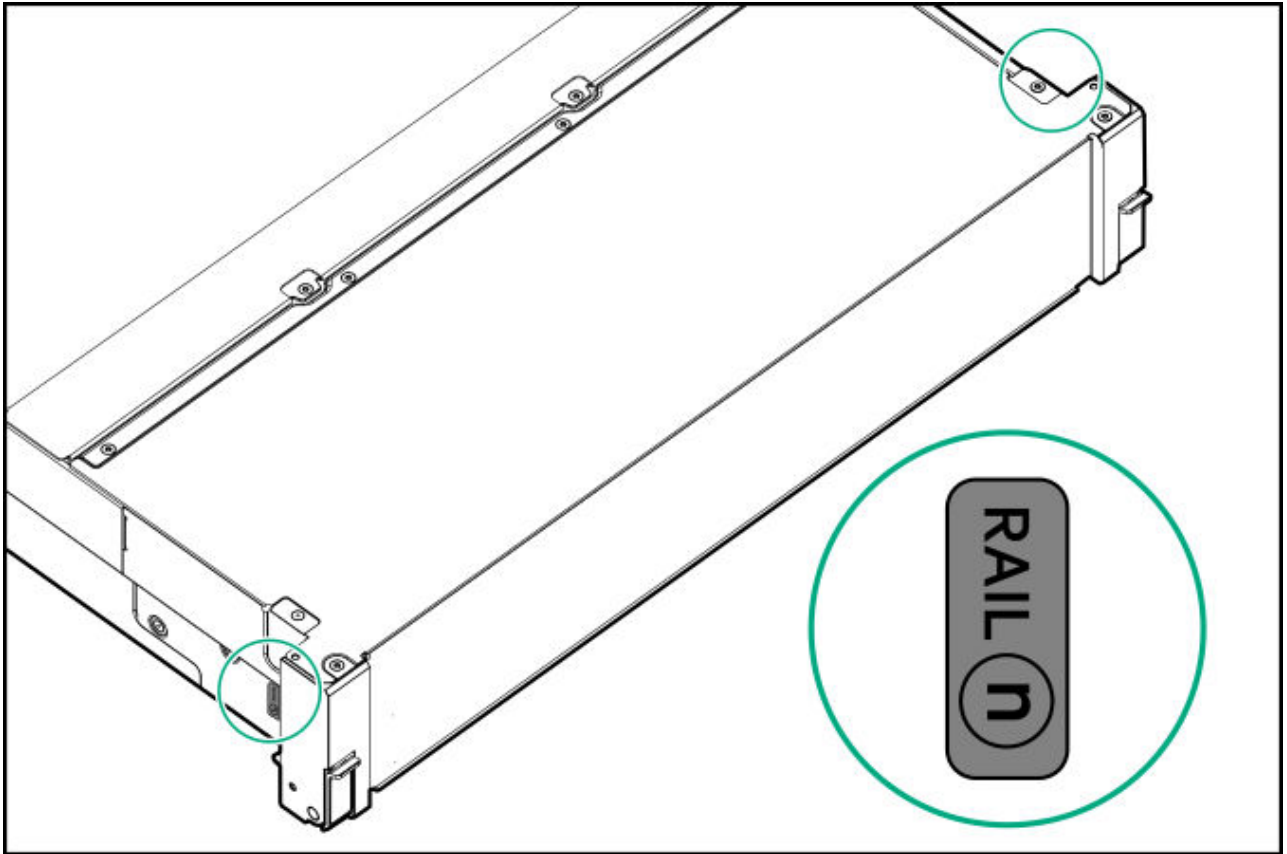
Rail identification markers

The rack rail option support is dependent on these two factors:

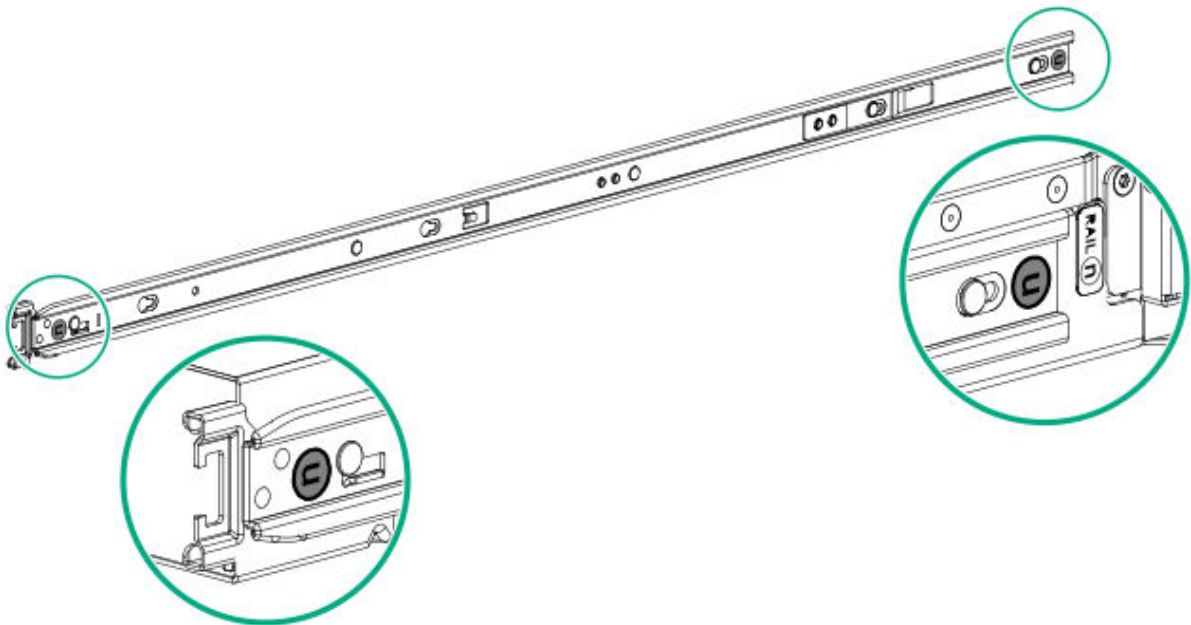
- The height and weight of the chassis are determined by the front- and rear-end server configurations.
- The depth of the chassis is measured from the edge of the front panel (without the front bezel) to the edge of the rear panel.

To ensure compatibility between the rack rails and the server, verify that the rail number labels on the chassis match the ones stamped on the rails.

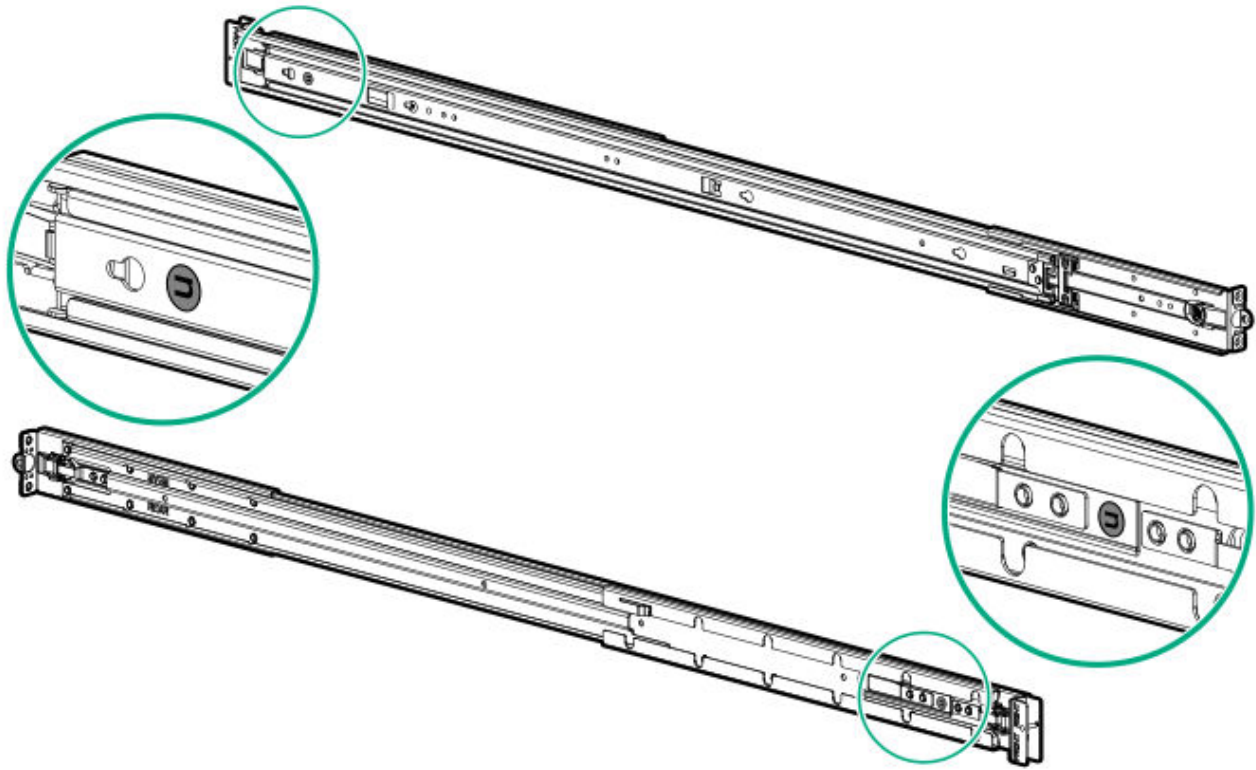
- Rail number labels on the chassis



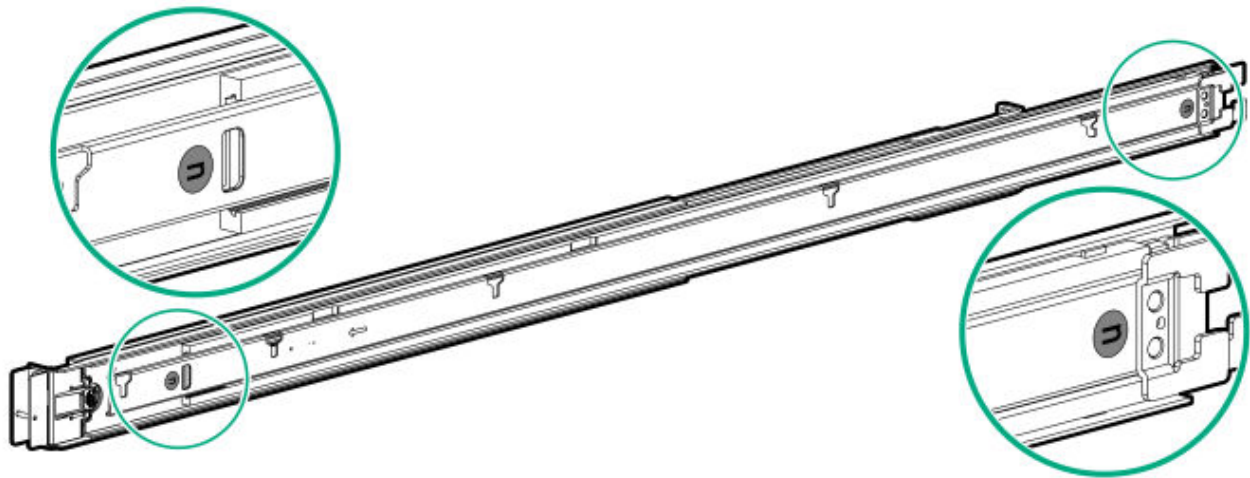
- Rail identifier stamps on the inner rail of the friction rack rail



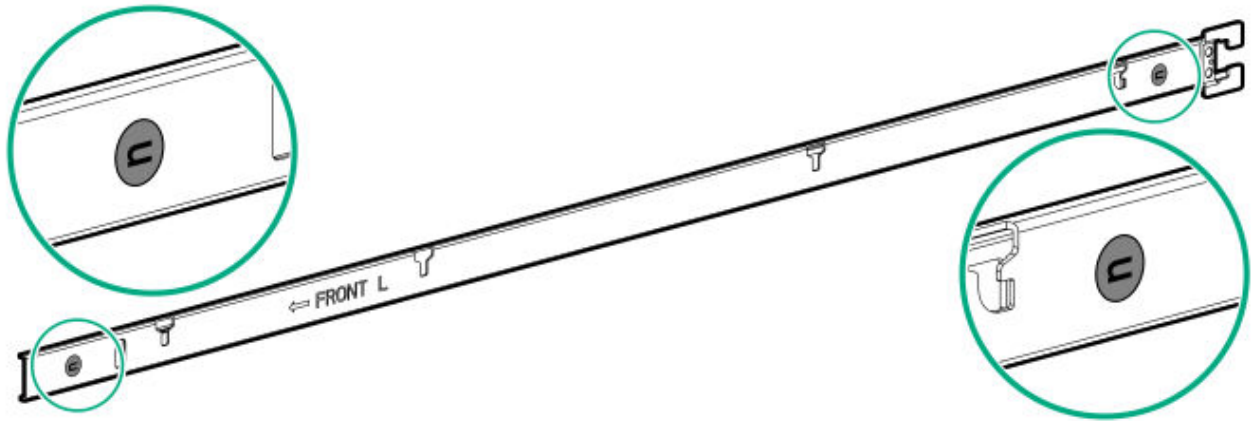
- Rail identifier stamps on the mounting rail of the friction rack rail



- Rail identifier stamps on the short ball-bearing rail

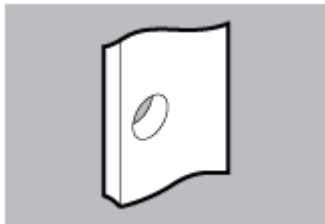


- Rail identifier stamps on the long ball-bearing rail

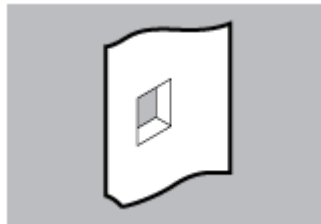


Rack mounting interfaces

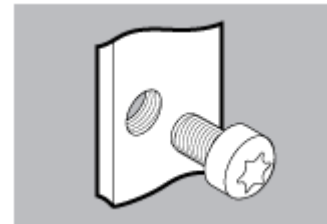
The rack rails can be installed in a rack that has the following mounting interfaces:



Round-hole



Square-hole



Threaded round-hole

The illustrations used in this procedure show an icon on the upper right corner of the image. This icon indicates the type of mounting interface for which the action illustrated in the image is valid.

Rack rail options

This server supports the following rack rail option:

Configuration	Rack rail option	Type	Minimum rail length	Adjustable rail range
LFF / SFF / E3.S drive	Rail option #2 (P52351-B21)	Friction rack rail (s tab-in)	714.32 mm (28.12 in)	609.60 mm to 918.10 mm (24.00 in to 36.15 in)
GPU-optimized	Rail option #6 (P69769-B21)	Ball-bearing rack rail (hybrid)	874.93 mm (34.45 in)	

Installing the friction rack rails

Prerequisites

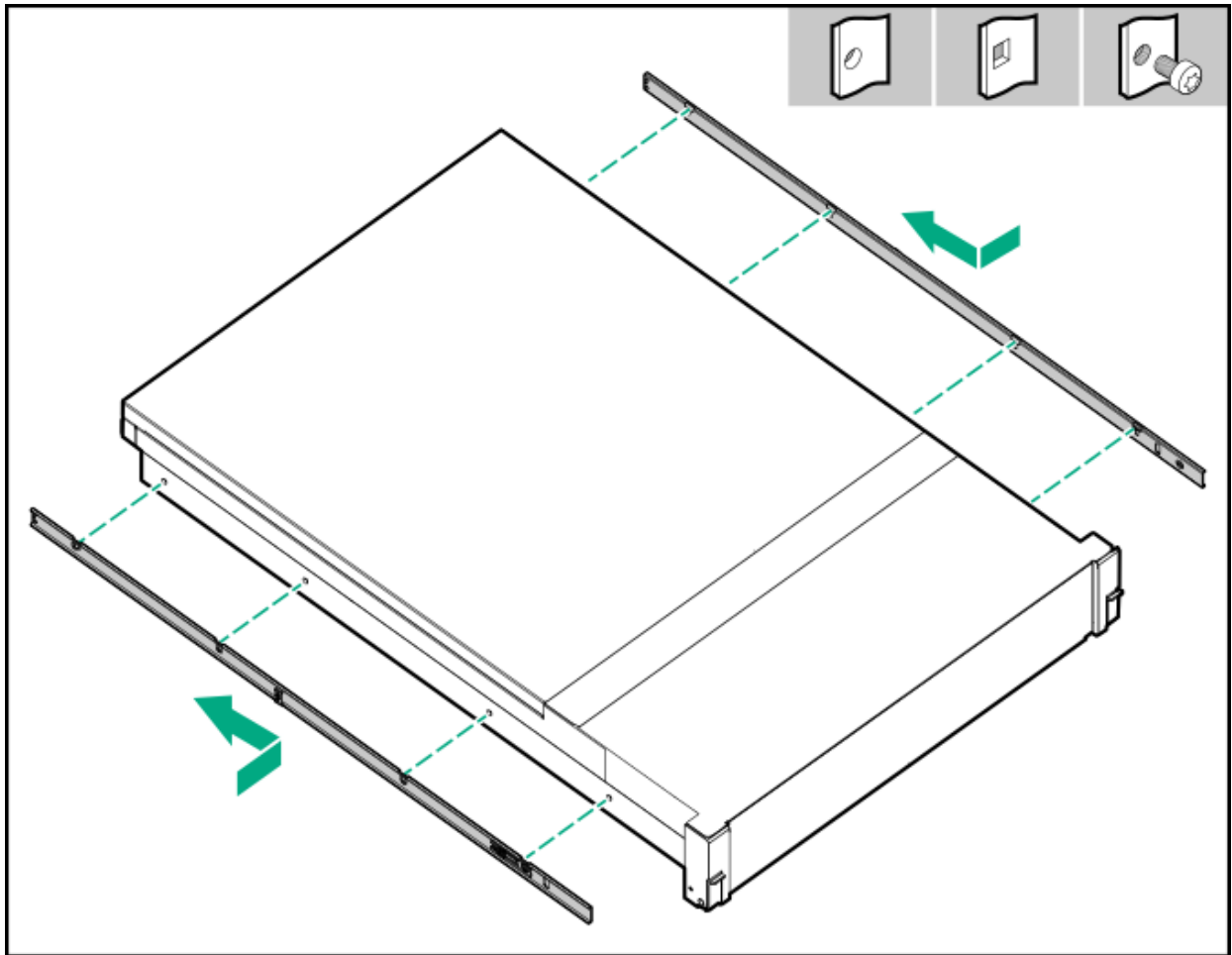
- Before you perform this procedure, review the:
 - [Space and airflow requirements](#)
 - [Rack warnings and cautions](#)
 - [Server warnings and cautions](#)
- A fully populated server is heavy. Hewlett Packard Enterprise recommends removing the external chassis components before installing the server into a rack.
- Before you perform this procedure, make sure that you have a small slotted screwdriver—This tool is required if you intend to install the server in a threaded round-hole rack.

About this task

https://sketchfab.com/models/2d6612a1b0d44a7886a9cd7ef2561681/embed?ui_infos=0&ui_watermark=0&ui_help=0&ui_vr=0&ui_settings=0&ui_inspector=0&ui_hint=2&ui_color=01a982&ui_theme=dark&autostart=1&camera=0

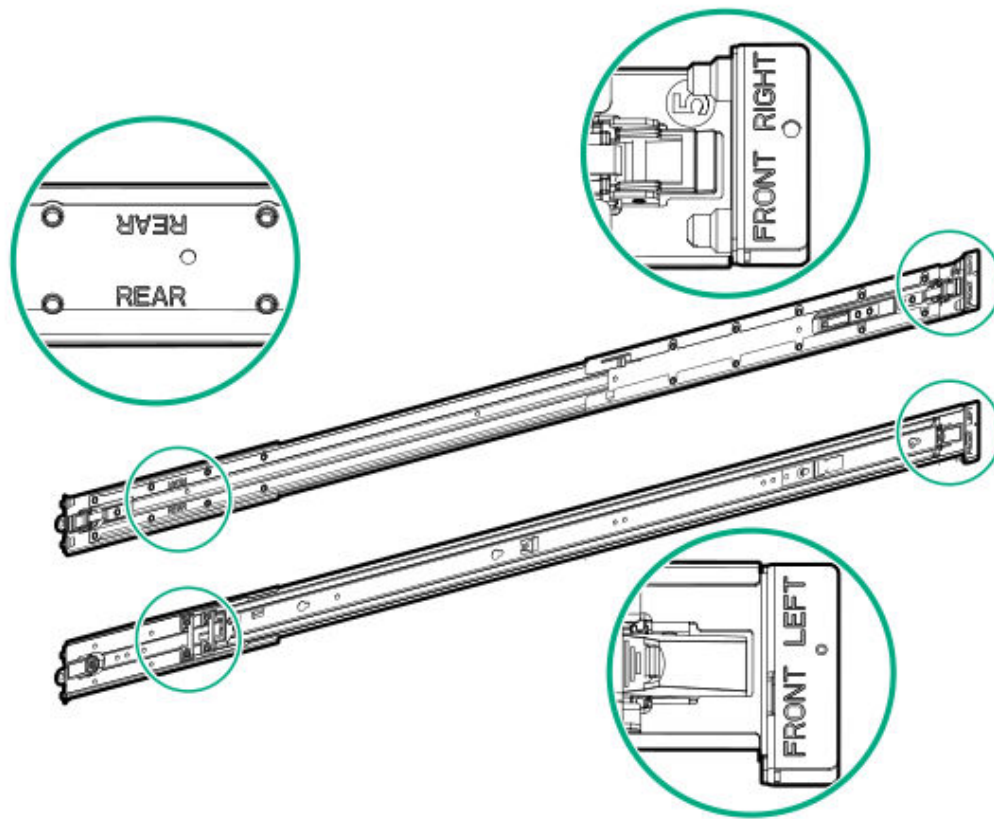
Procedure

1. Attach the sliding rails to the server:
 - a. Insert the spools on the sides of the server through the keyed slots on the rails.
 - b. Slide the rail towards the rear panel to lock it into place.

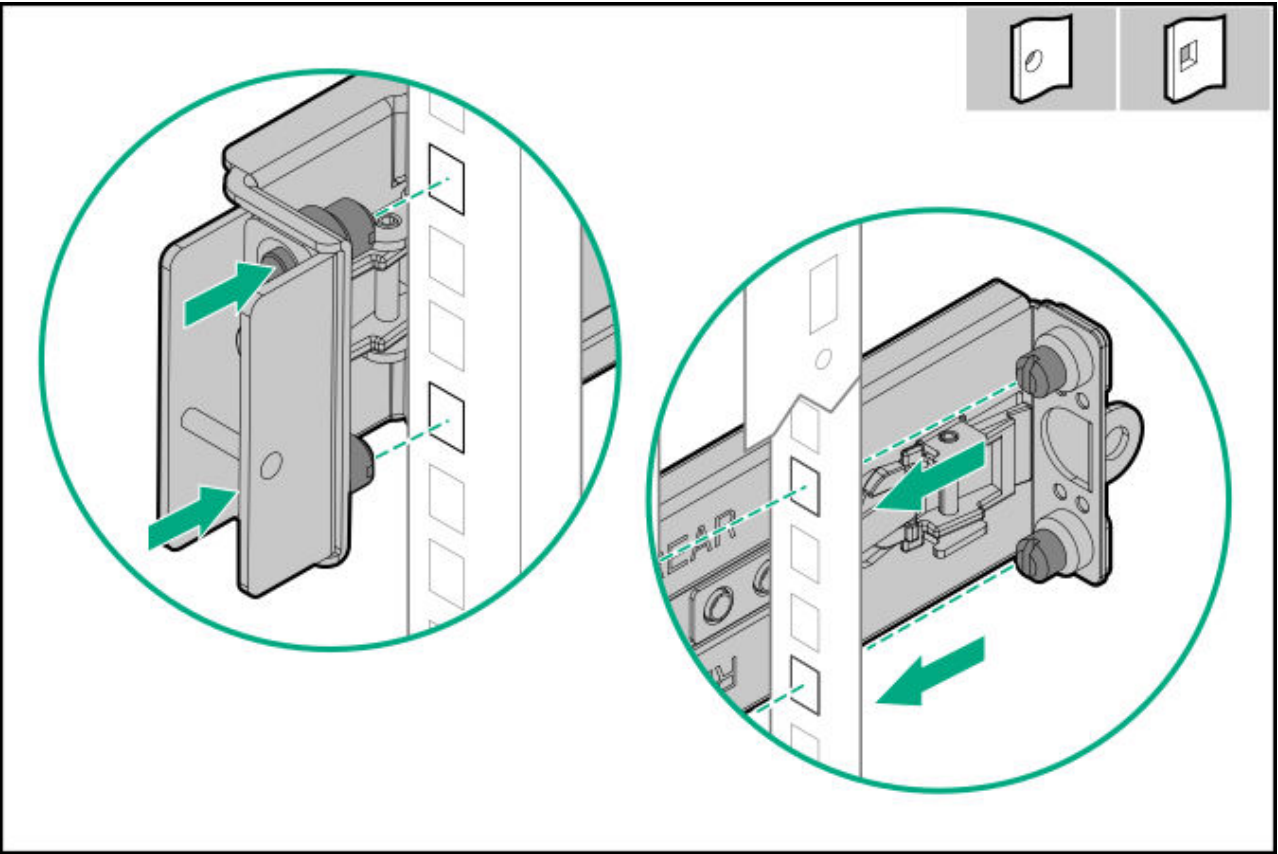


2. Locate the orientation markers on the mounting rails.

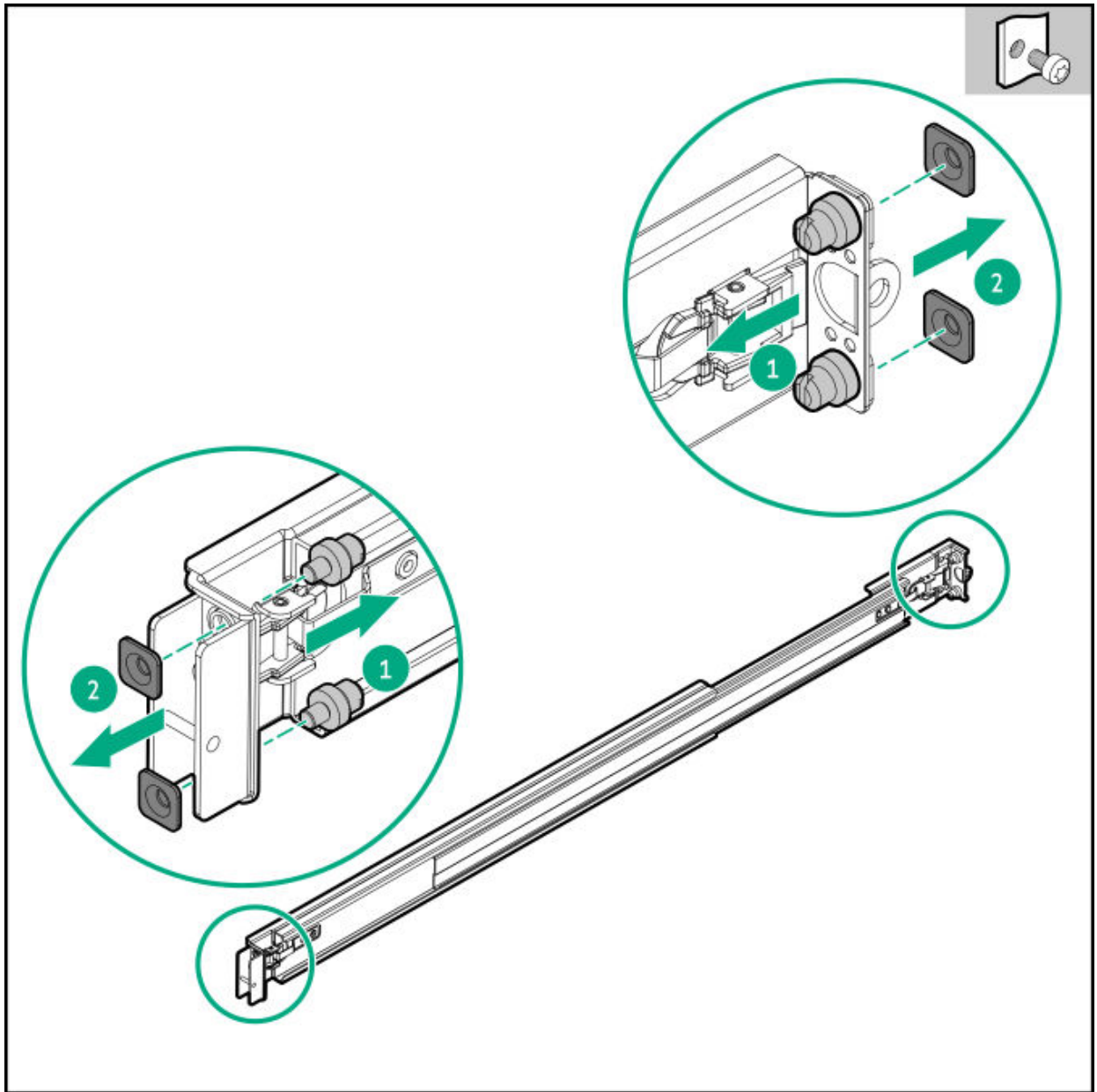
- The front end of the rails is marked as **FRONT LEFT** or **FRONT RIGHT**.
- The other end of the rails is marked as **REAR**.



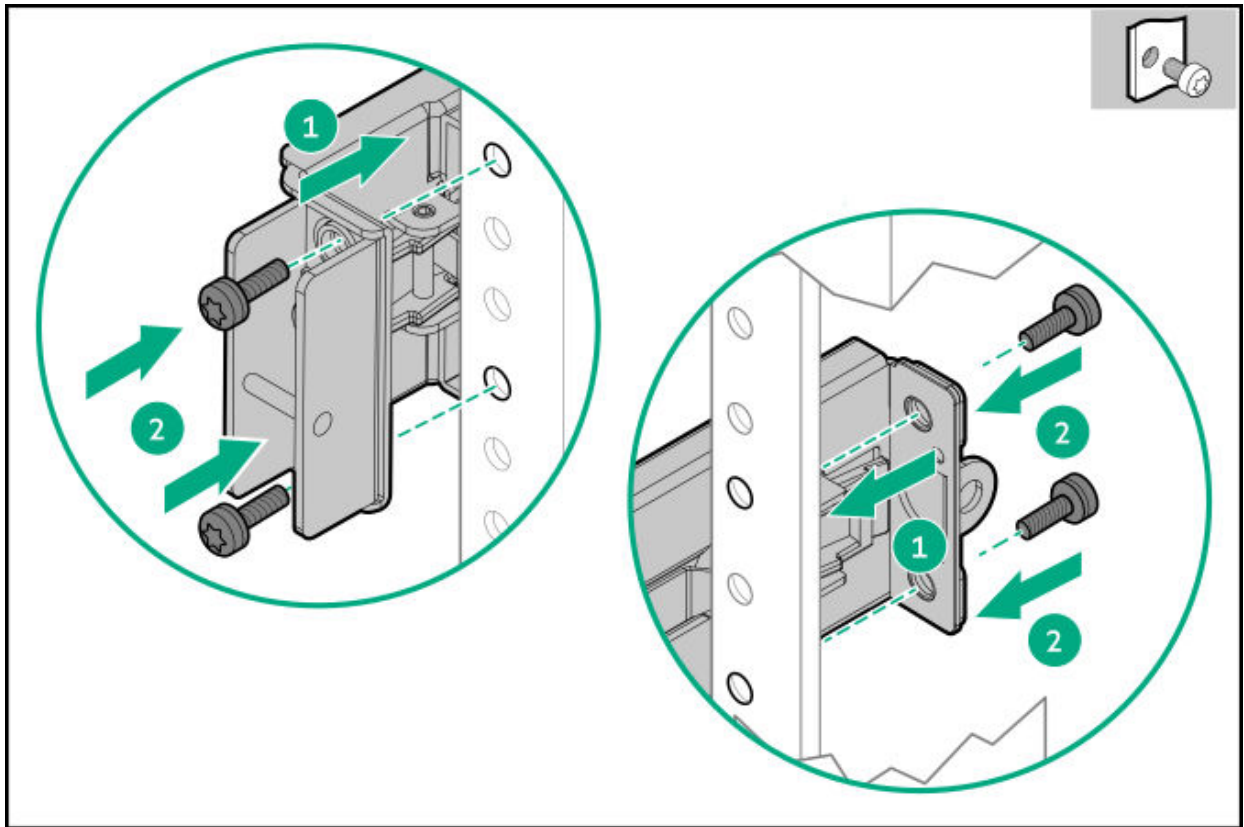
3. Extend the mounting rails to align with the depth of the rack.
4. To install the mounting rails in a round-hole or square-hole rack, insert the pins on the mounting flanges into the rack post holes.



5. To install the mounting rails in a threaded round-hole rack, do the following:
 - a. Remove the pins and washers from the mounting rails.



- b. Position the holes on the mounting flanges against the threaded holes on the rack post.
- c. Install the rack mounting screws.



6. Install the server into the rack.

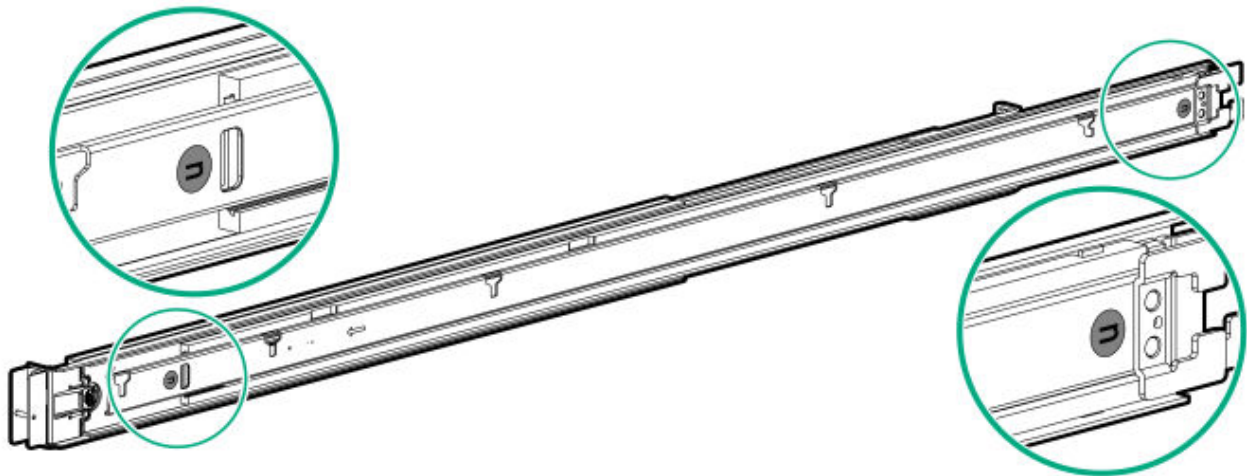
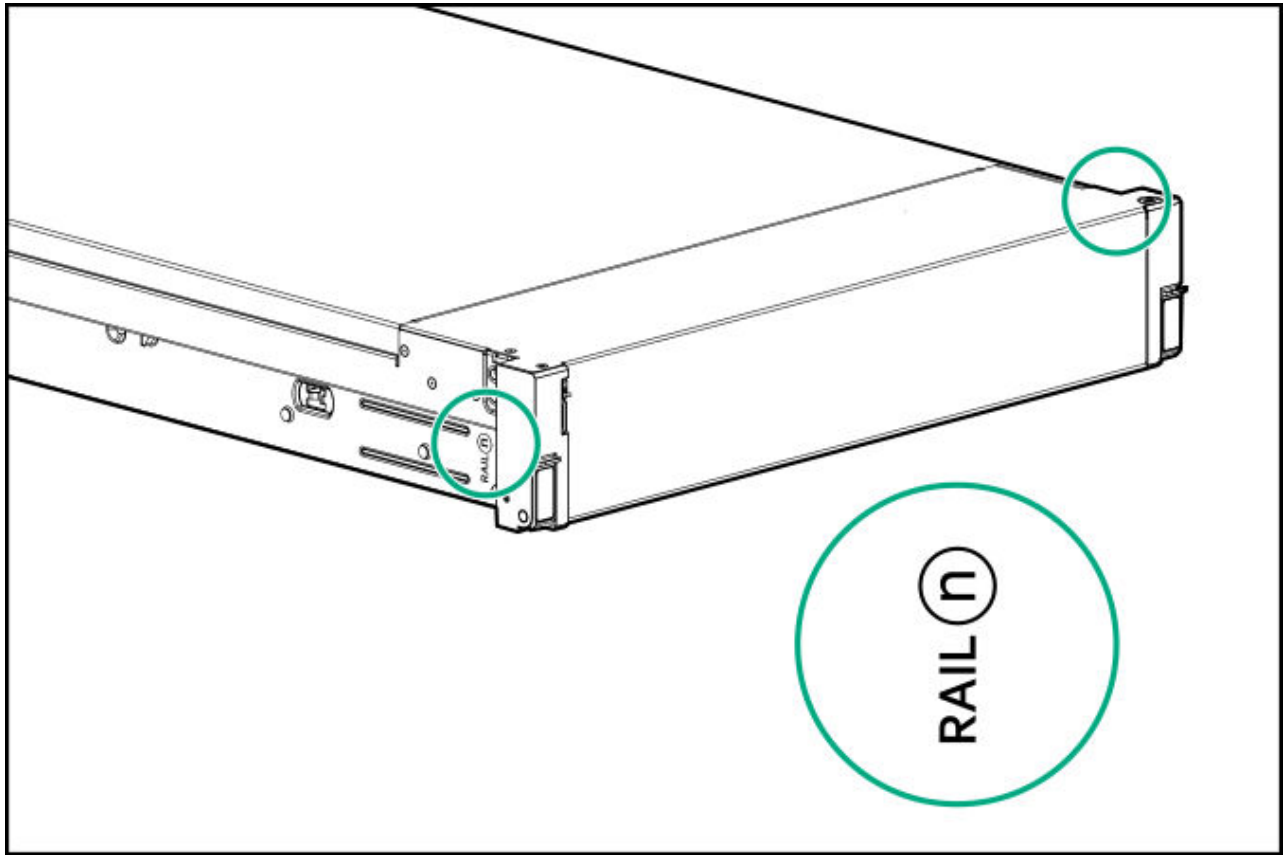
Installing the ball-bearing rack rails

Prerequisites

- Make sure that the rail option is compatible with the server configuration.
- Before you perform this procedure, review the:
 - Space and airflow requirements
 - Rack warnings and cautions
 - Server warnings and cautions
- A fully populated server is heavy. Hewlett Packard Enterprise recommends removing the external chassis components before installing the server into a rack.
- Before you perform this procedure, make sure that you have a small slotted screwdriver—This tool is required if you intend to install the server in a threaded round-hole rack.

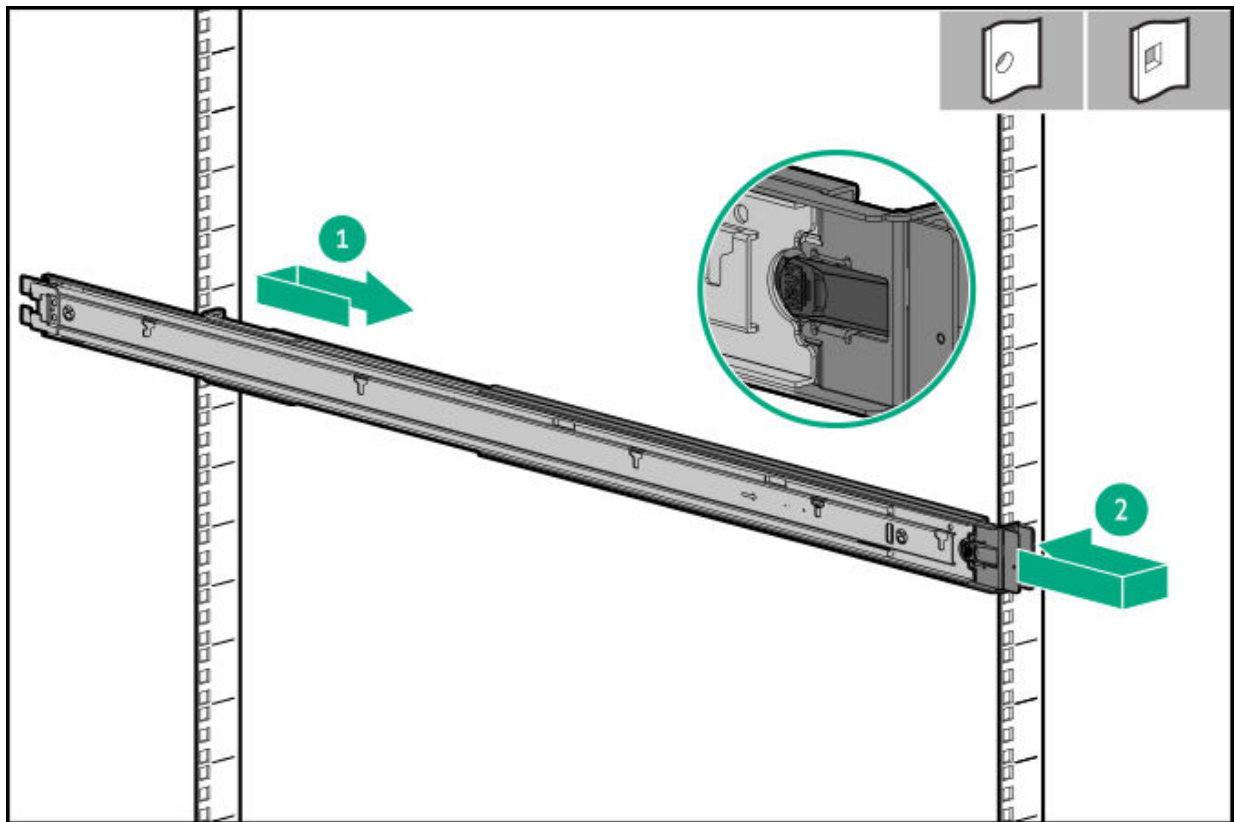
Procedure

1. Verify the rail identifiers match on the server and rails.

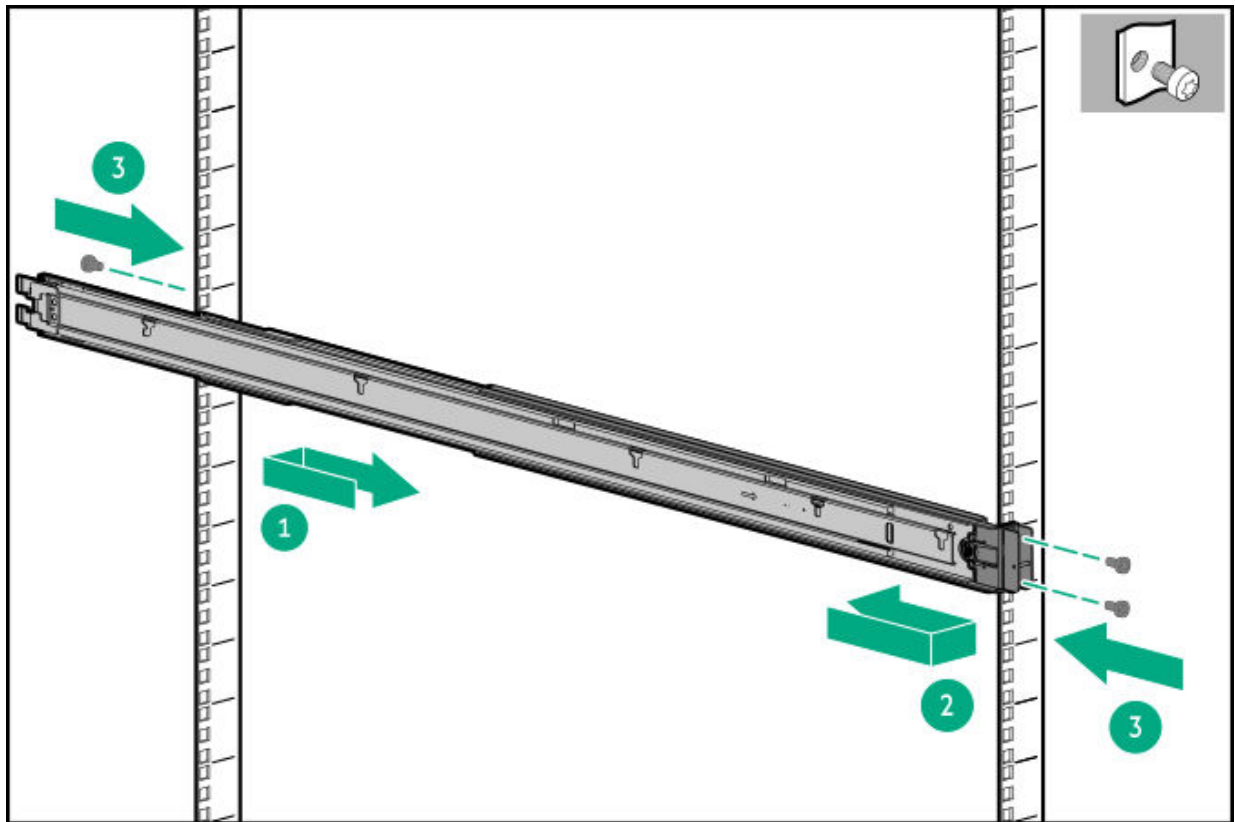
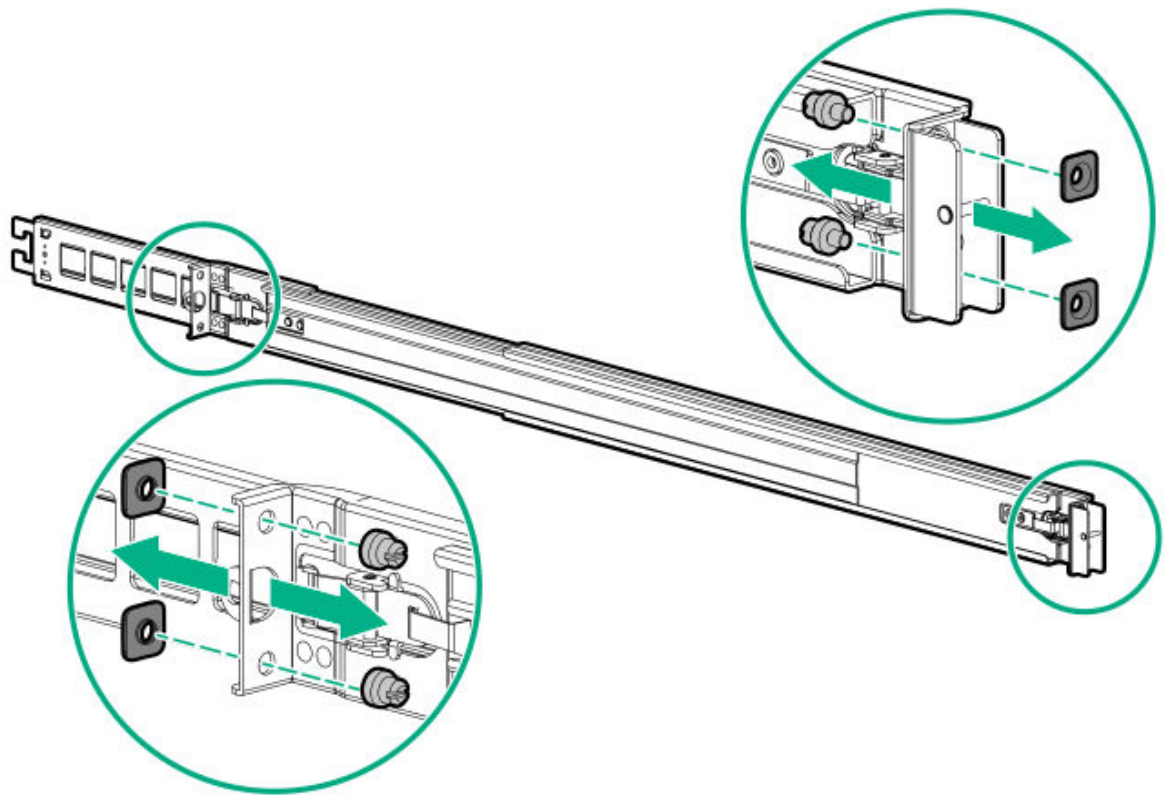


2. Install the rack rails.

- For round and square-hole racks



- For threaded-hole racks



3. Install the server into the rack.

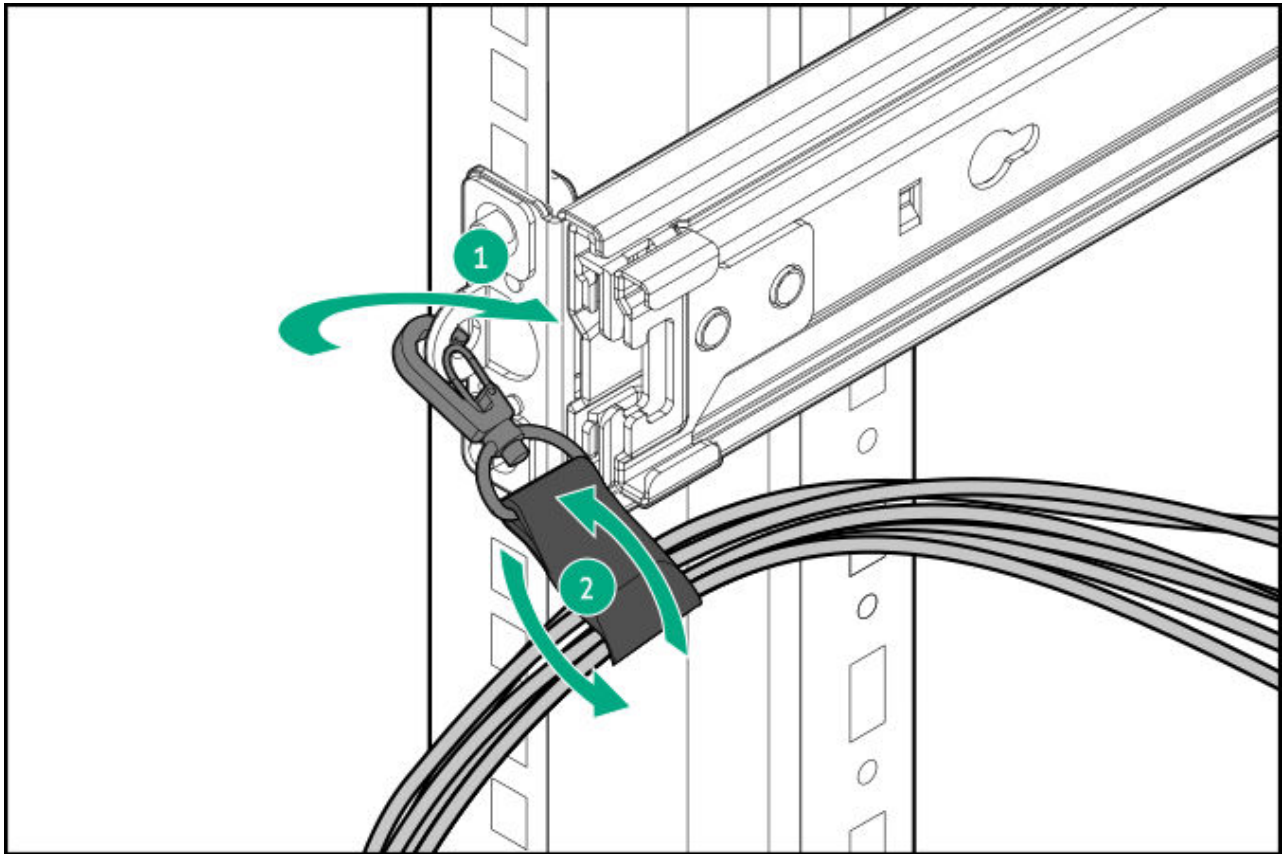
Installing the rack rail hook-and-loop strap

About this task

The hook-and-loop strap can be installed on either the left or right rail.

Procedure

1. Attach the strap carabiner to the rail.
2. Bundle the cords and cables, and then wrap the strap around the cables.



Results

The installation procedure is complete.

Installing the cable management arm

Prerequisites

- Review the [Rack warnings and cautions](#).
- T-25 Torx screwdriver—This tool is required if the shipping screws located inside the chassis ears need to be loosened or tightened.

About this task

The cable management arm (CMA) allows the server to be fully extended from the rack without the need to power off the system or disconnect any rear panel cables. This CMA is designed for ambidextrous implementation.

For the purpose of this procedure, left and right terminology is from the perspective of a user facing the front of the rack.



CAUTION

Support the CMA during the removal and replacement procedures. Do not allow the CMA to hang by its own weight during the procedure.

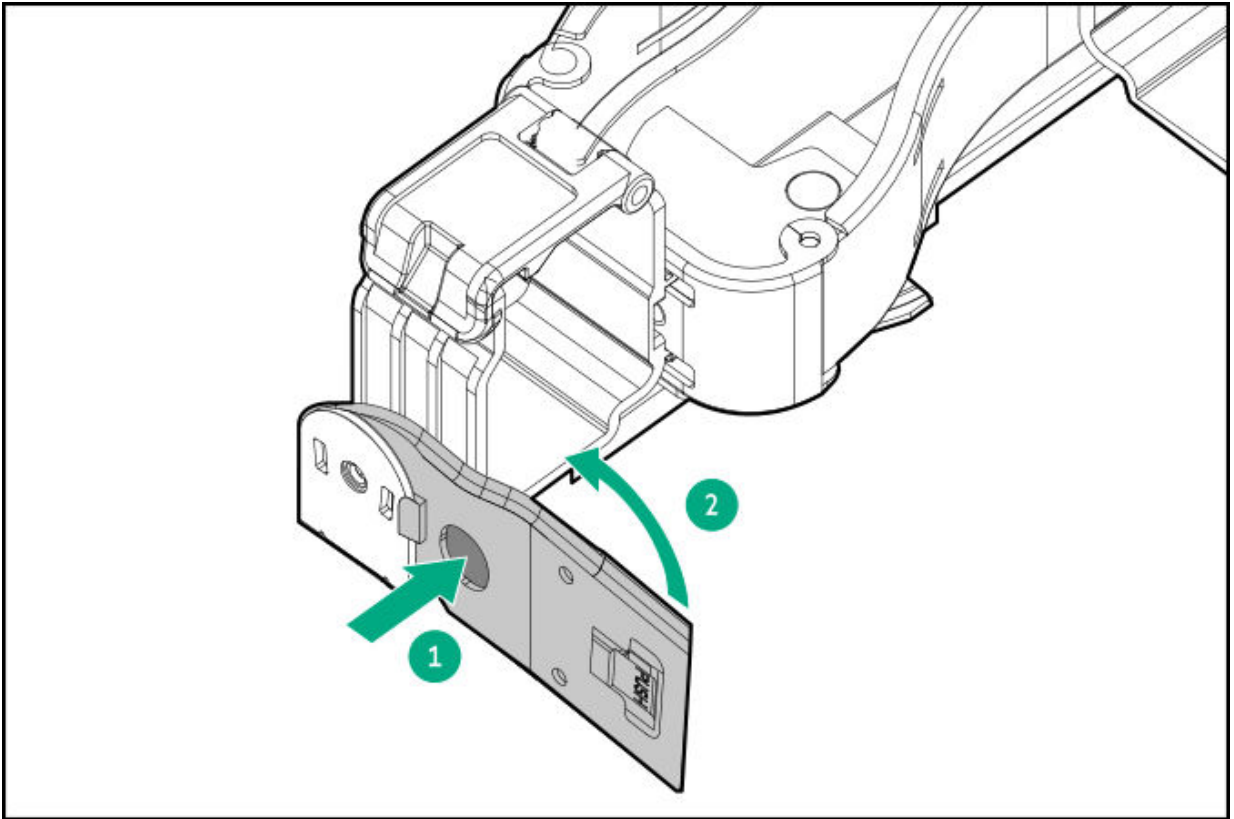
Procedure

1. Connect and secure all peripheral cables and power cords to the rear panel.
2. (Optional) The CMA retention bracket can be rotated to fit a left- or right-hand CMA operation. Press and hold the rotate mechanism, and then rotate the bracket 180°.

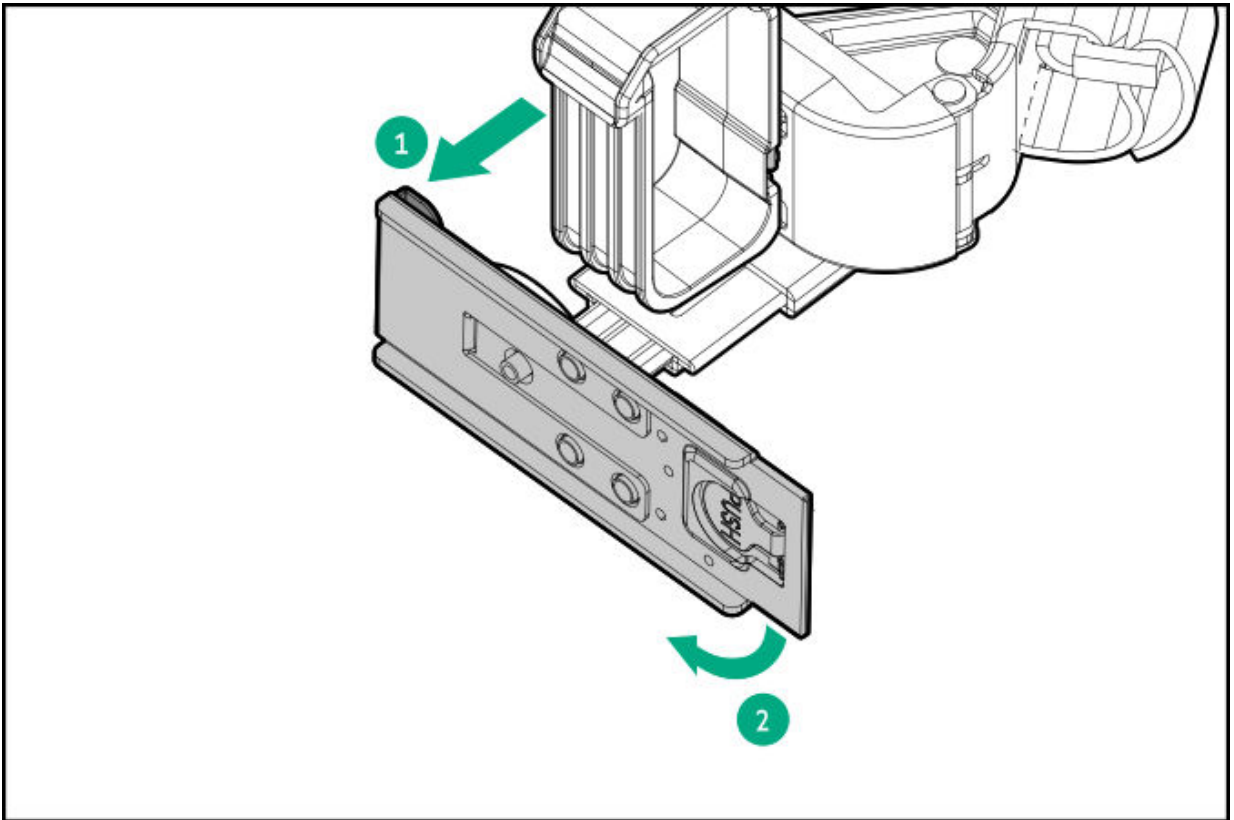
There will be an audible click to indicate that the bracket is locked in its adjusted position.

The direction of the bracket rotation will differ depending on the CMA module that you are using:

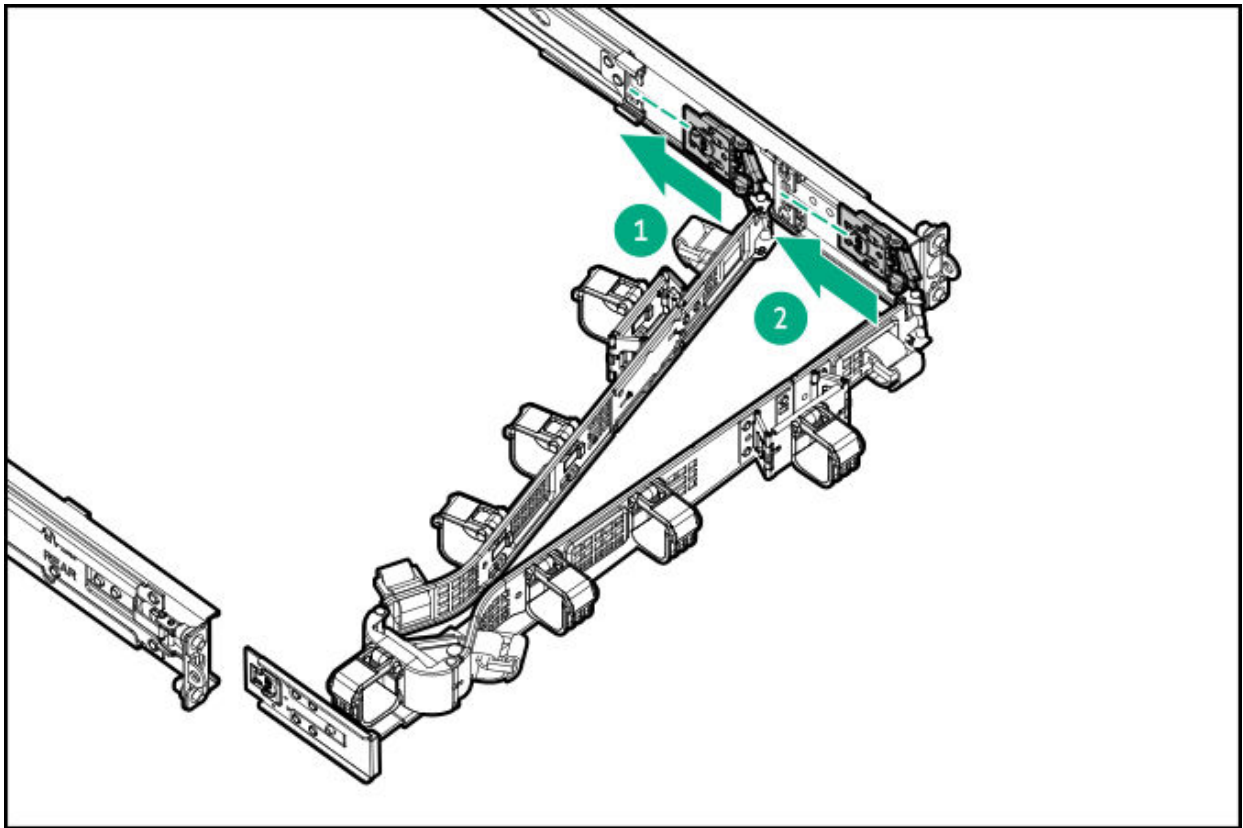
- CMA with a rotate button



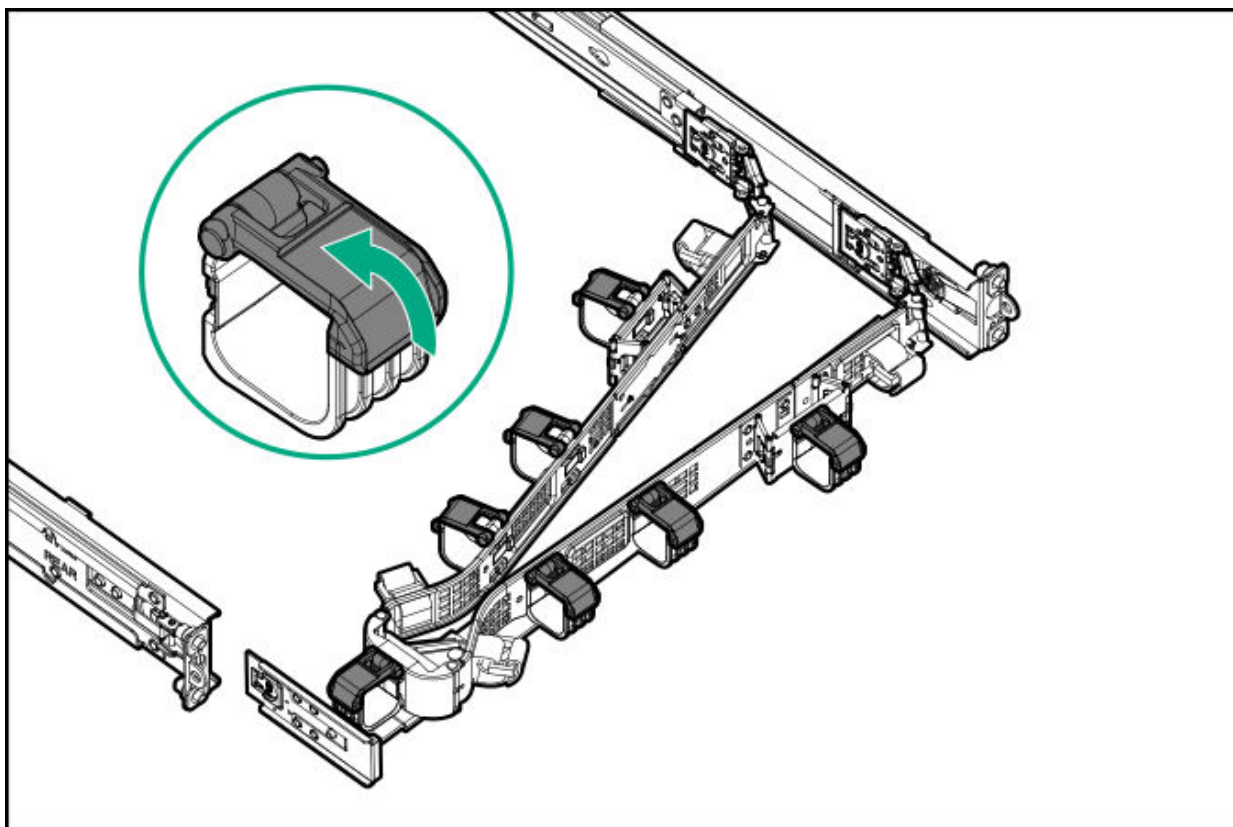
- CMA with a rotate latch



3. Connect the CMA hinged tabs and retention bracket to the rack rails:
 - a. Insert the inner tab into the sliding rail.
 - b. Insert the outer tab into the mounting rail.



- c. Open the cable clamps.



d.

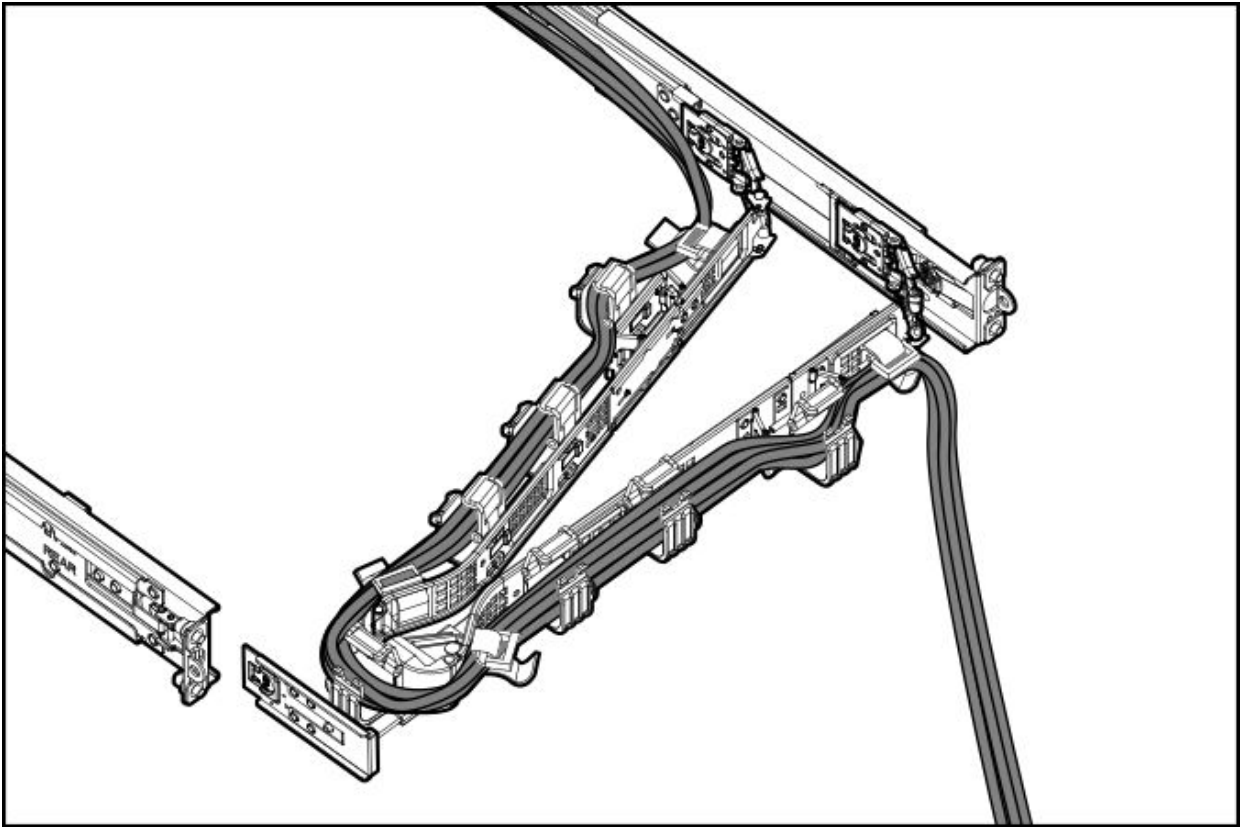


CAUTION

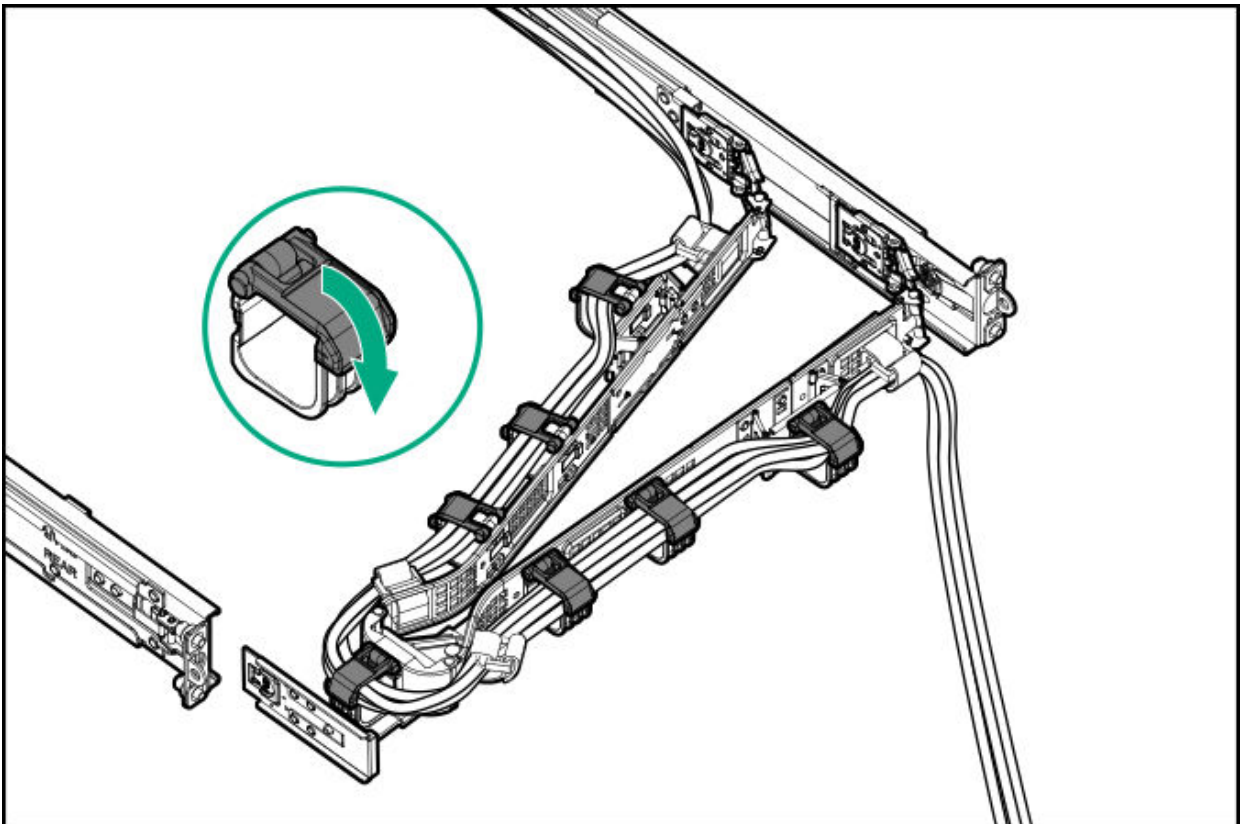
Employ industry best practices in managing peripheral cables and power cords secured in the CMA. These are some of the more important points:

- Leave enough cable slack between the rear panel and the CMA to allow the full extension of the CMA when the server is extended out of the rack.
- However, there should be no excess cable slack inside the CMA; this might cause cable binding and could lead to cable damage.
- Make sure that the cables and power cords do not extend above the top or below the bottom of the server to which they are attached. Otherwise, the cables might snag on other equipment installed in the rack when the server is extended from or returned to the rack.

Route the peripheral cables and power cords through the cable clamps and/or straps.

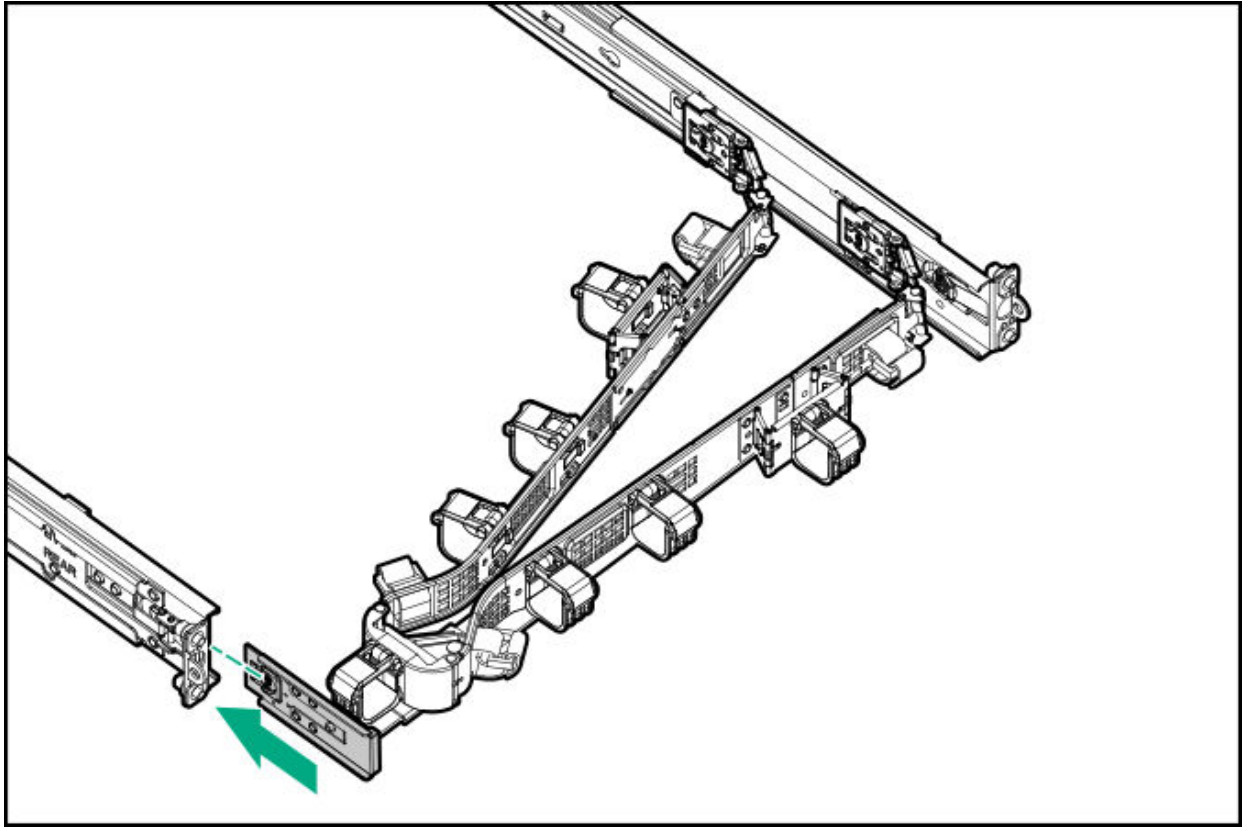


e. Close the cable clamps.

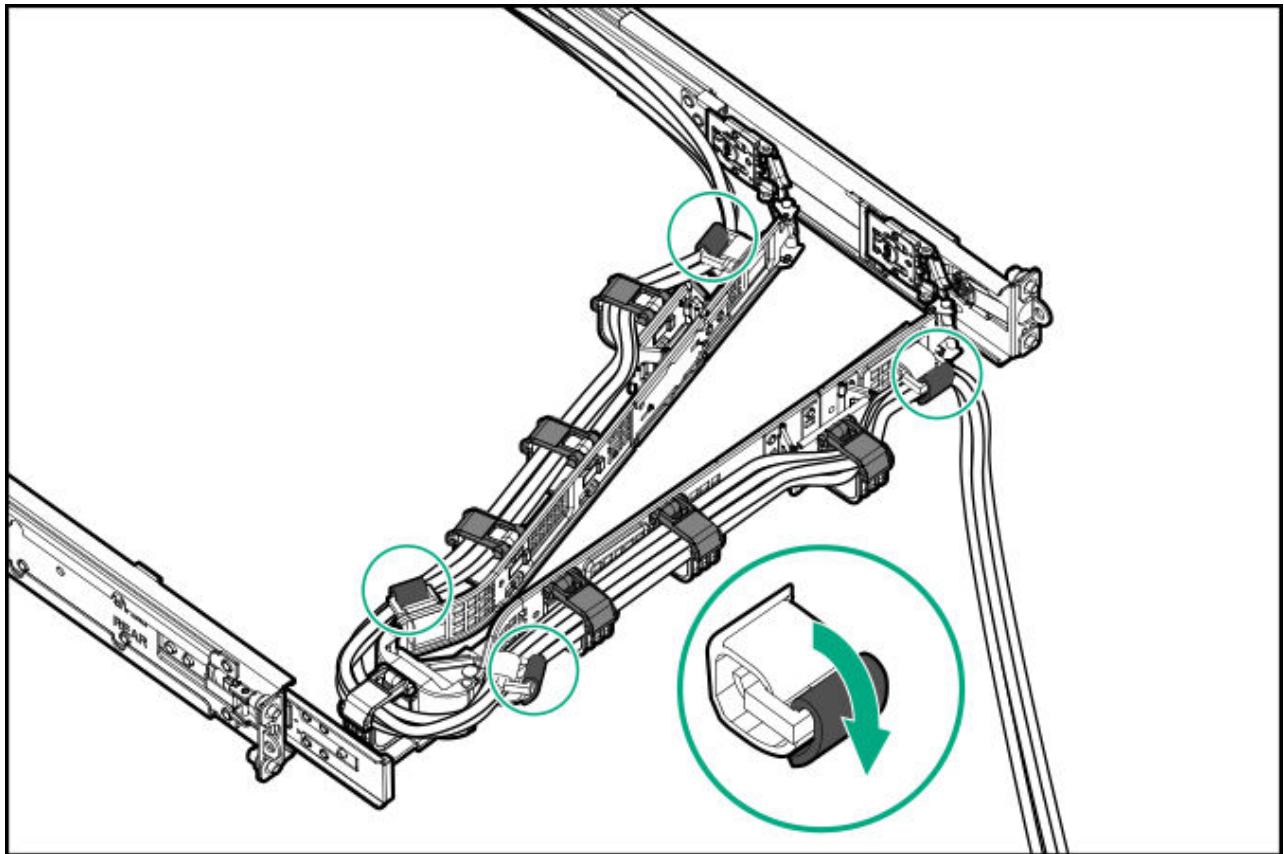


- f. Insert the retention bracket into the opposite mounting rail.

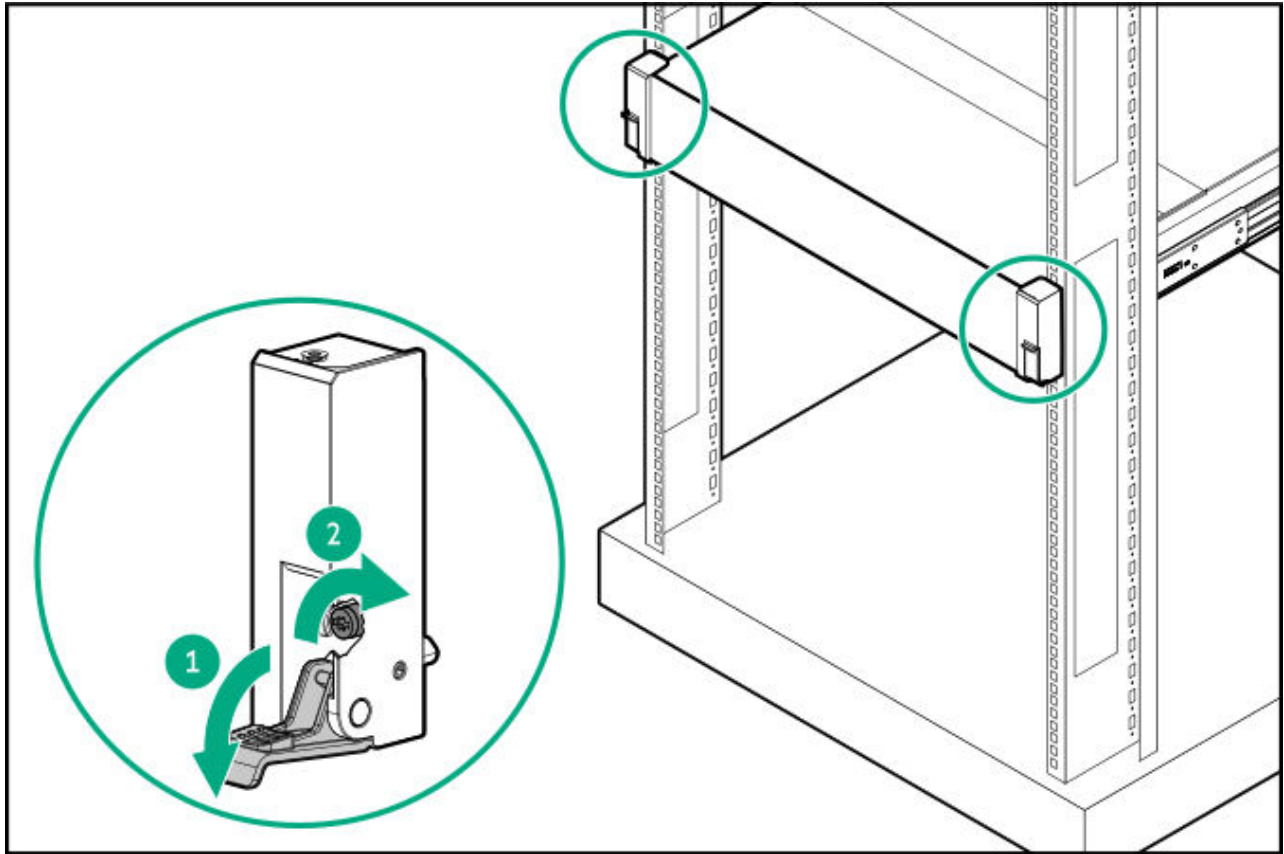
There will be an audible click to indicate that the tabs and bracket are locked into place.



4. (Optional) If your CMA has cable straps, fasten the straps.



5. Verify the operation of the rack rails:
 - a. Fully extend the chassis out of the rack.
 - b. Check that there is enough slack in the cables and cords for full extension of the chassis. Make sure that there is no cable binding or crimping.
 - c. To ensure that the cables and cords are secured properly, slide the chassis in and out of the rack. Make sure that there is no risk of accidental disconnection of the peripheral cables and power cords.
6. Slide the server into the rack until the chassis ears are flushed against the rack posts.
7. (Optional) Open the chassis ear latches, and then tighten the shipping screws.



Results

The installation procedure is complete.

Risers and riser cages

Subtopics

[Installing the secondary riser cage](#)

[Installing a two-slot captive riser](#)

Installing the secondary riser cage

Prerequisites

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

About this task

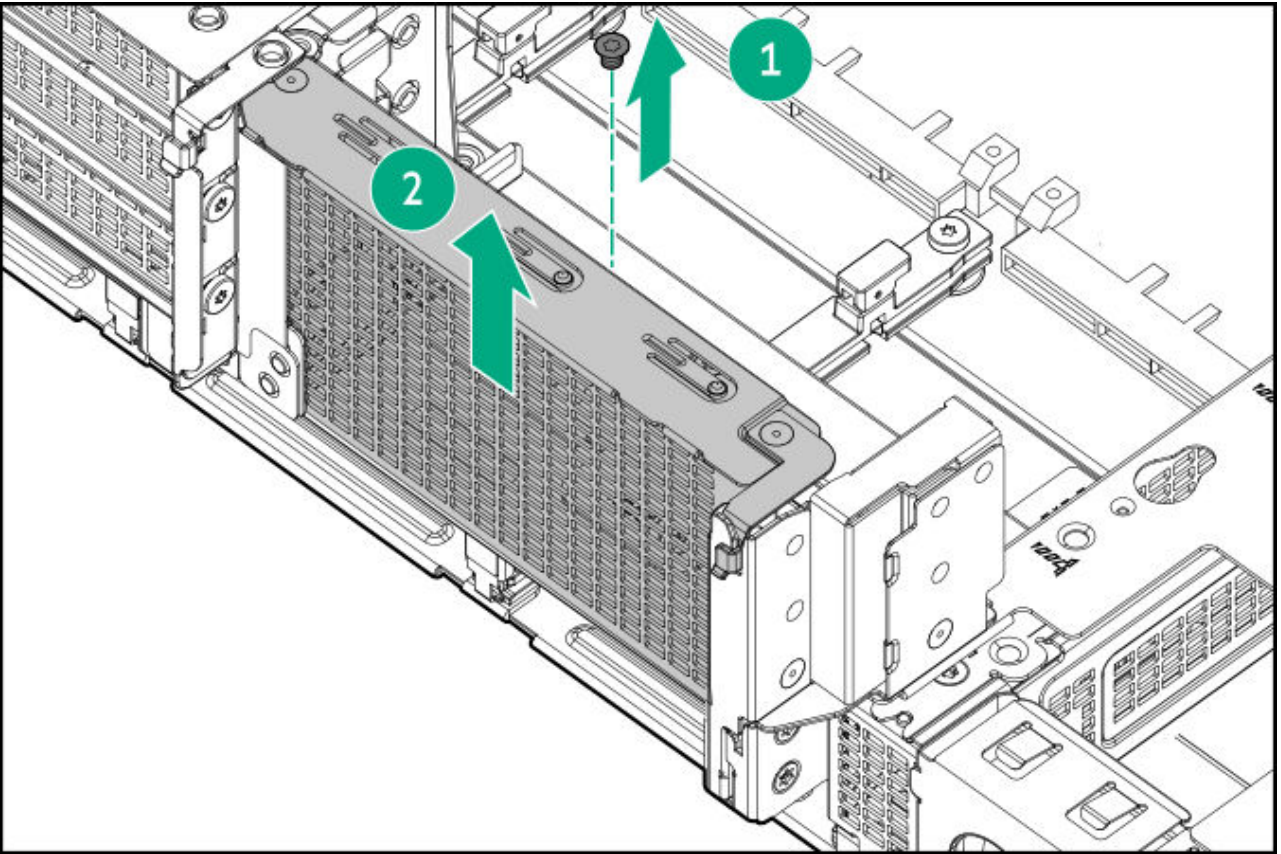


WARNING

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. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the secondary riser cage blank.

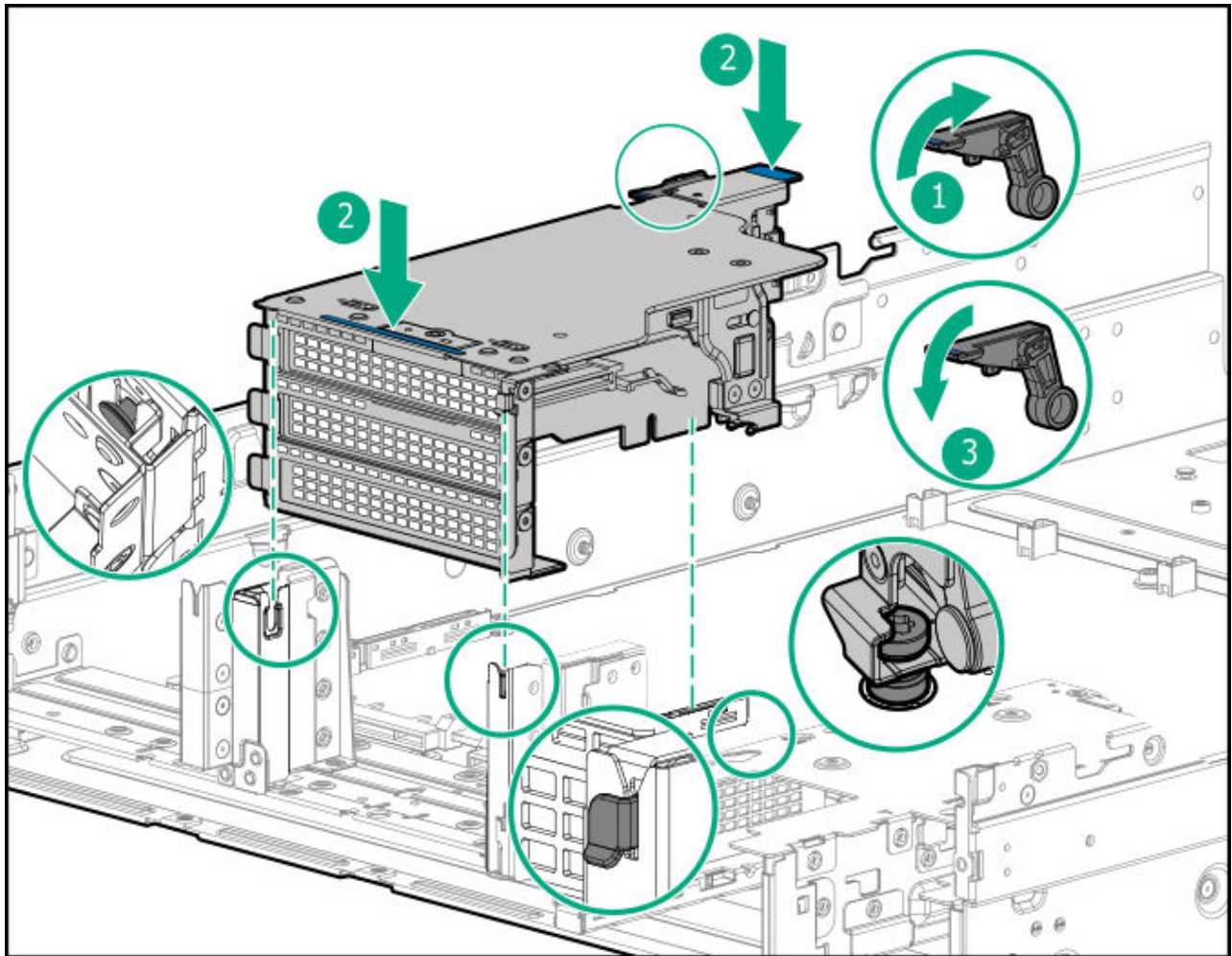


8. (Optional) Install the following option on the secondary riser cage:

- Two-slot captive riser
- PCIe NIC
- Type-p storage controller
- GPU

9. Install the riser on the system board, and then close the latch.

Make sure that the riser cage is secured with the screw spool on the system board.



- .0. Install the air baffle.
- .1. Install the access panel.
- .2. Install the server into the rack.
- .3. Connect all peripheral cables to the server.
- .4. Connect each power cord to the server.
- .5. Connect each power cord to the power source.
- .6. Power up the server.

Results

The installation procedure is complete.

Installing a two-slot captive riser

Prerequisites

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

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

About this task

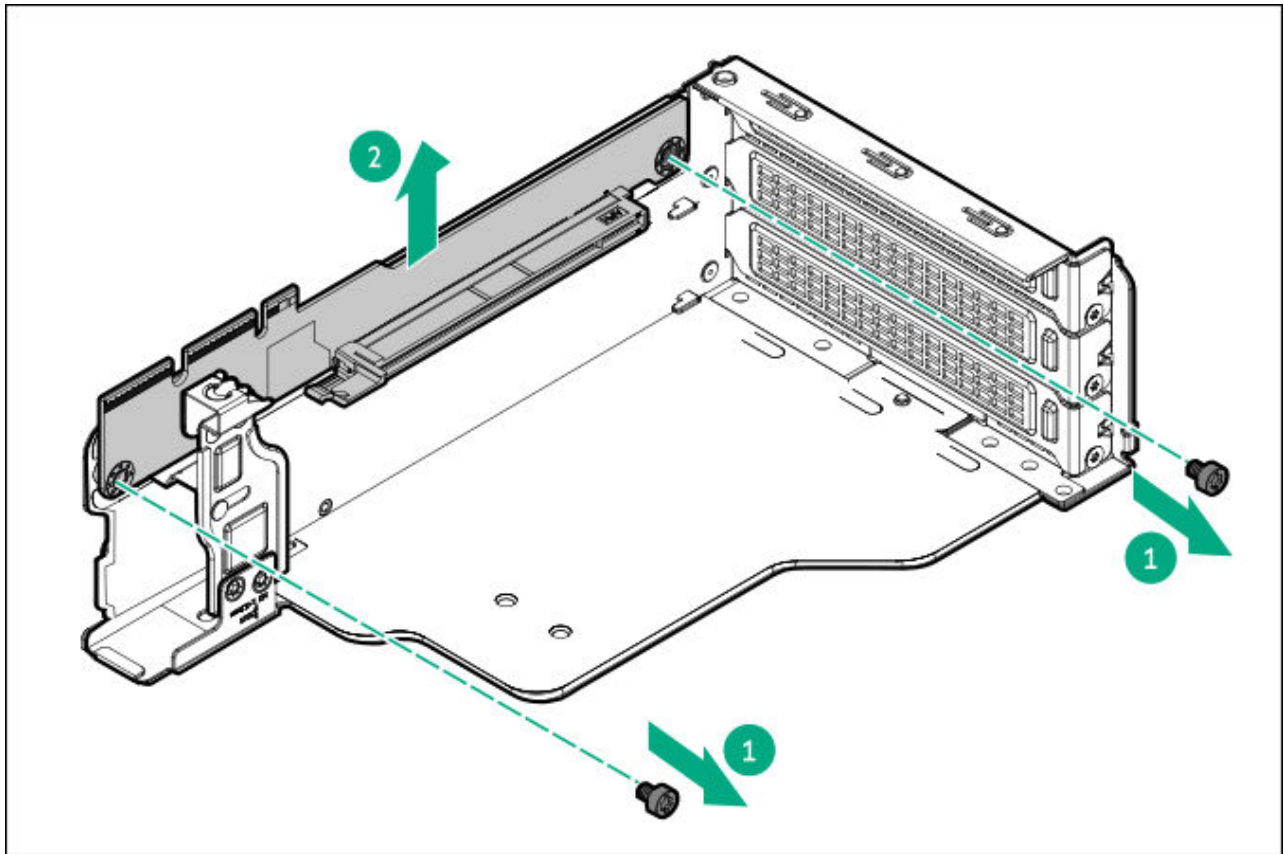


WARNING

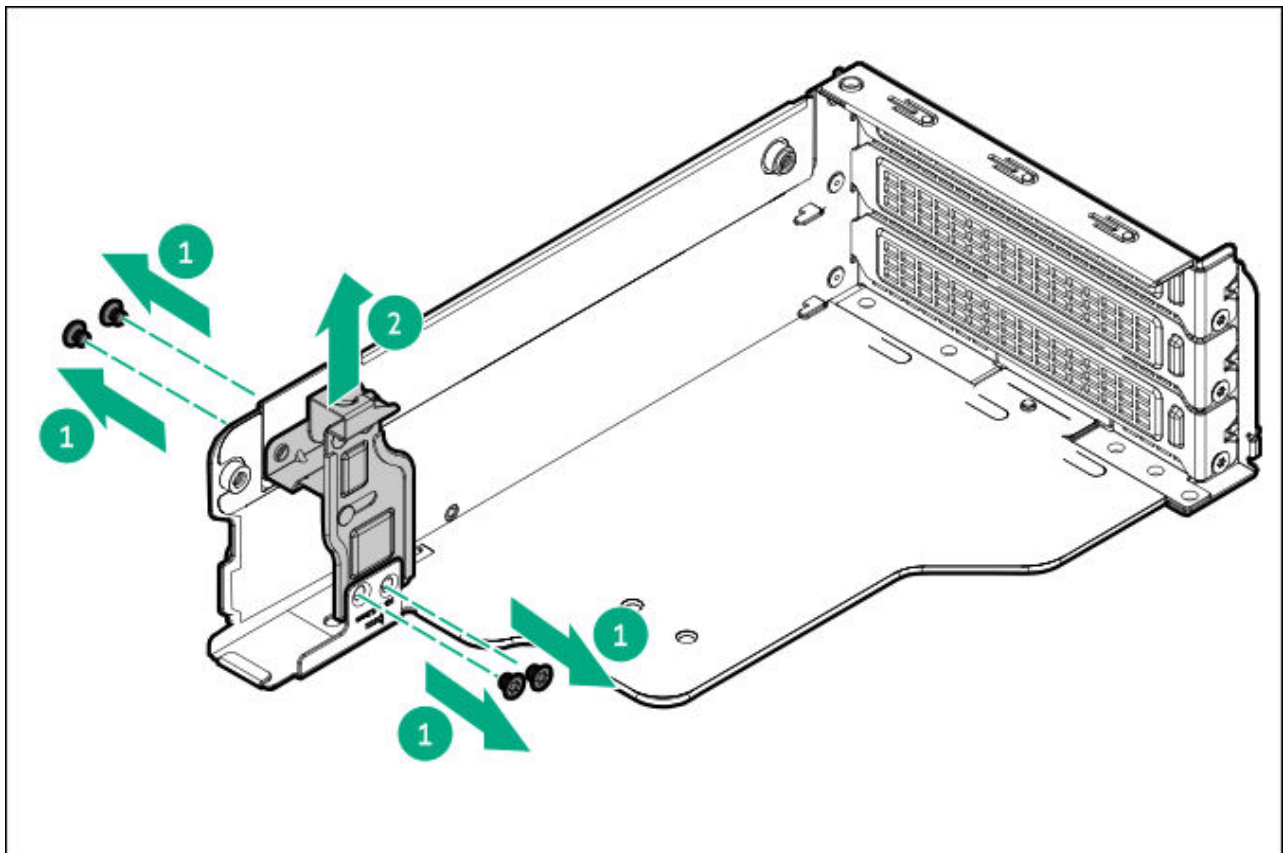
To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Procedure

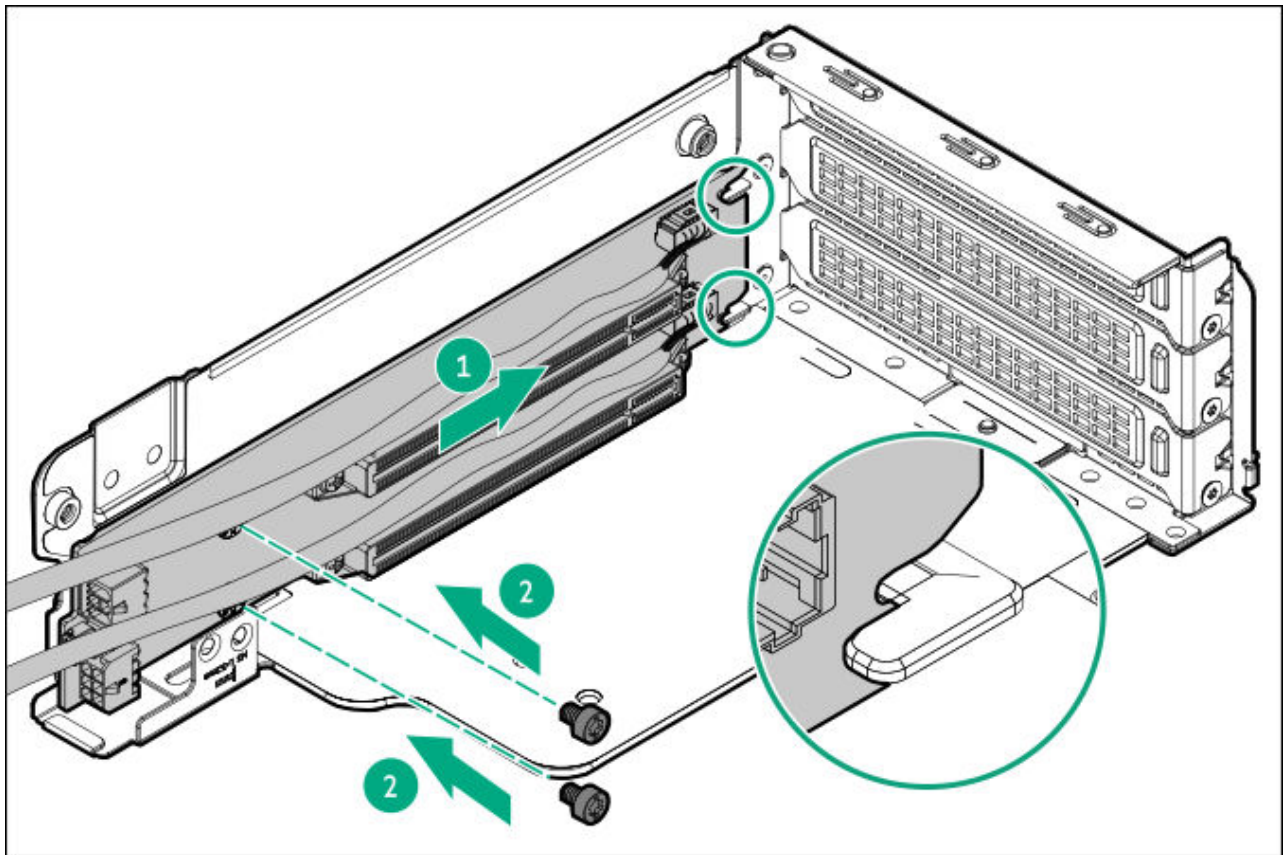
1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Remove the riser cage.
8. Remove the one-slot base riser.



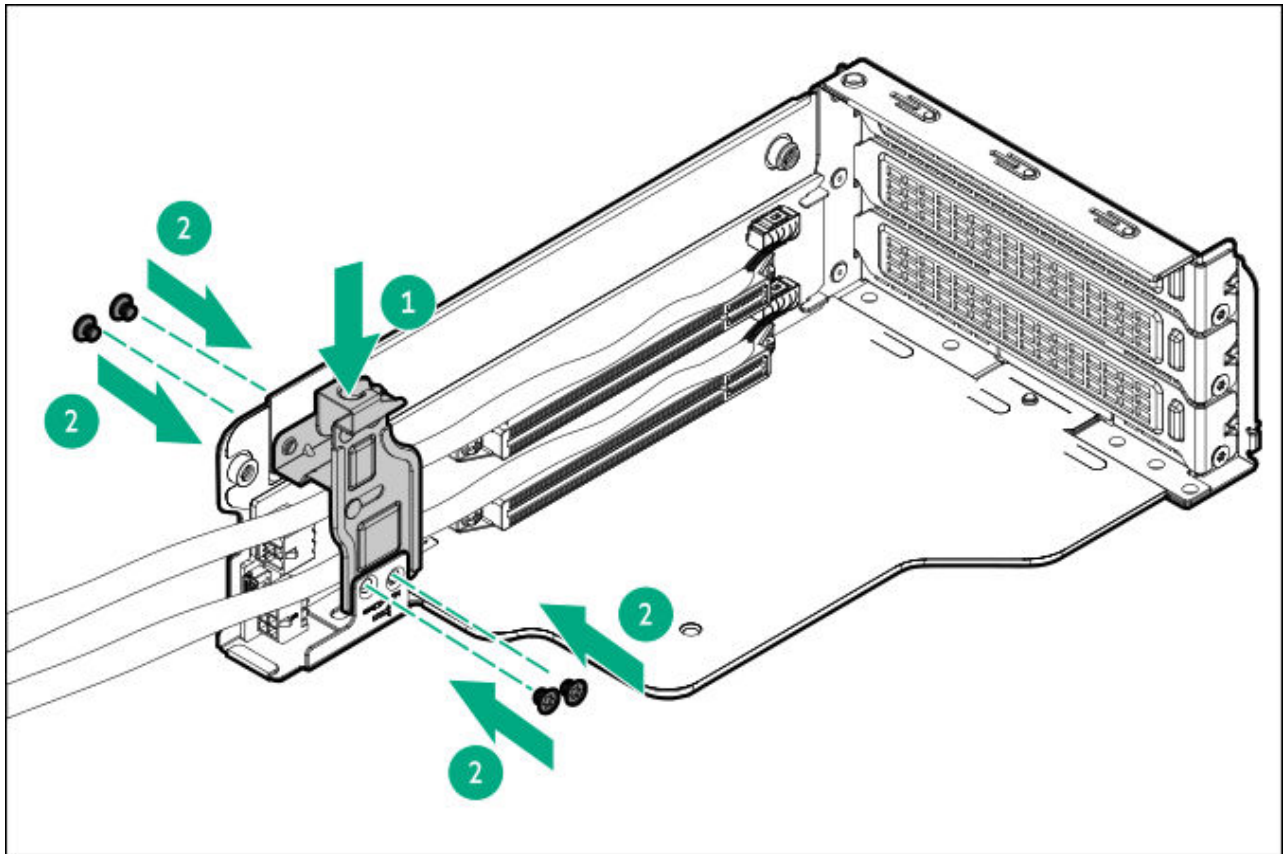
9. Remove the riser screw bracket.



.0. Install the two-slot captive riser in the riser cage.

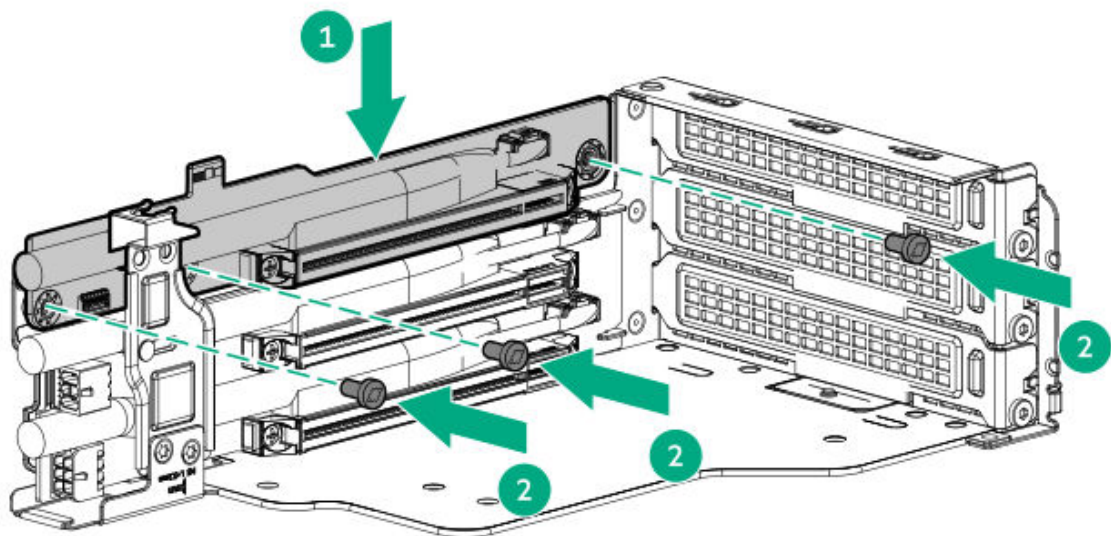


.1. Install the riser screw bracket.

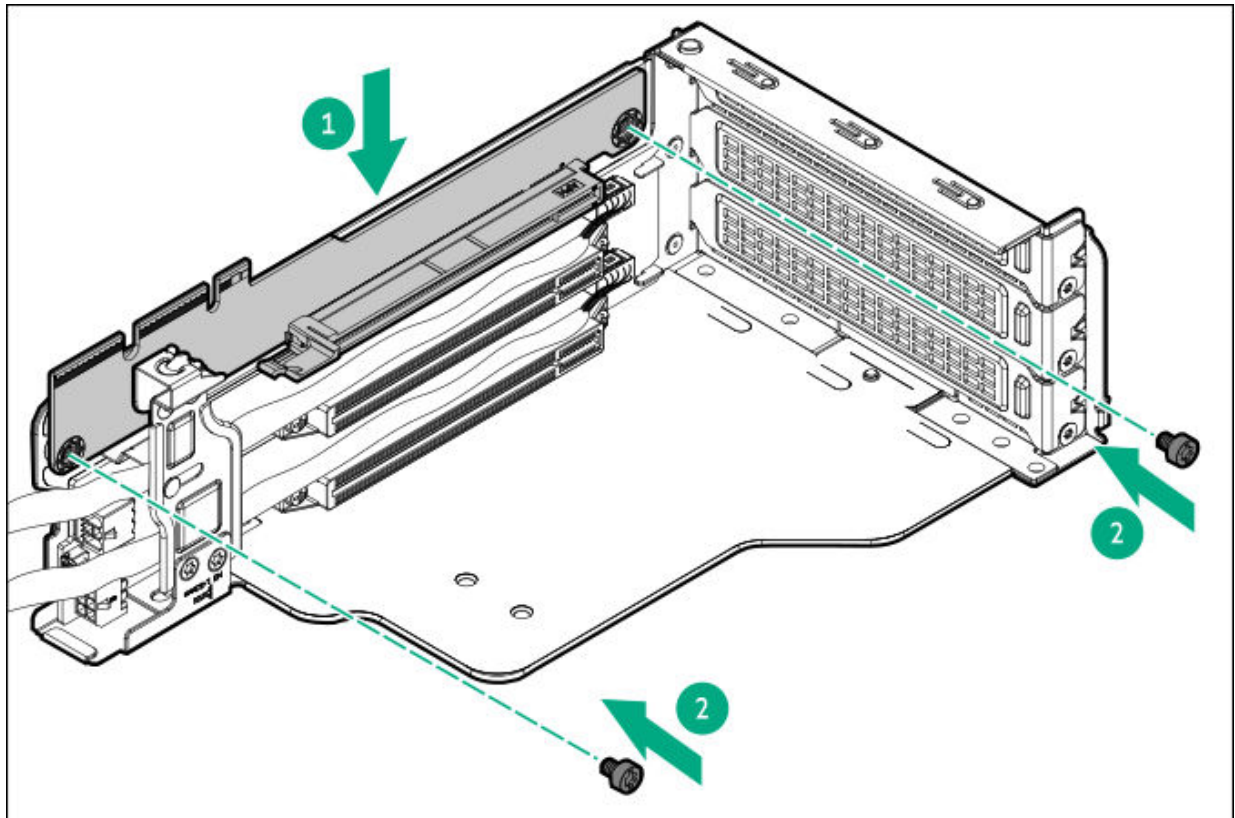


.2. If removed:

- Install the one-slot captive riser in the primary riser cage.



- Install the one-slot base riser in the secondary riser cage.



.3. (Optional) Install the following options:

- [PCIe NIC](#)
- [Type-p storage controller](#)
- [GPU](#)

.4. [Install the riser cage.](#)

.5. [Connect the PCIe captive riser cables.](#)

.6. [Install the air baffle.](#)

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

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

.9. Connect all peripheral cables to the server.

!0. Connect each power cord to the server.

!1. Connect each power cord to the power source.

!2. [Power up the server.](#)

Results

The installation procedure is complete.

Security

Subtopics

Chassis intrusion detection switch option
Installing the front bezel

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.

Subtopics

Installing the chassis intrusion detection switch

Installing the chassis intrusion detection switch

About this task



CAUTION

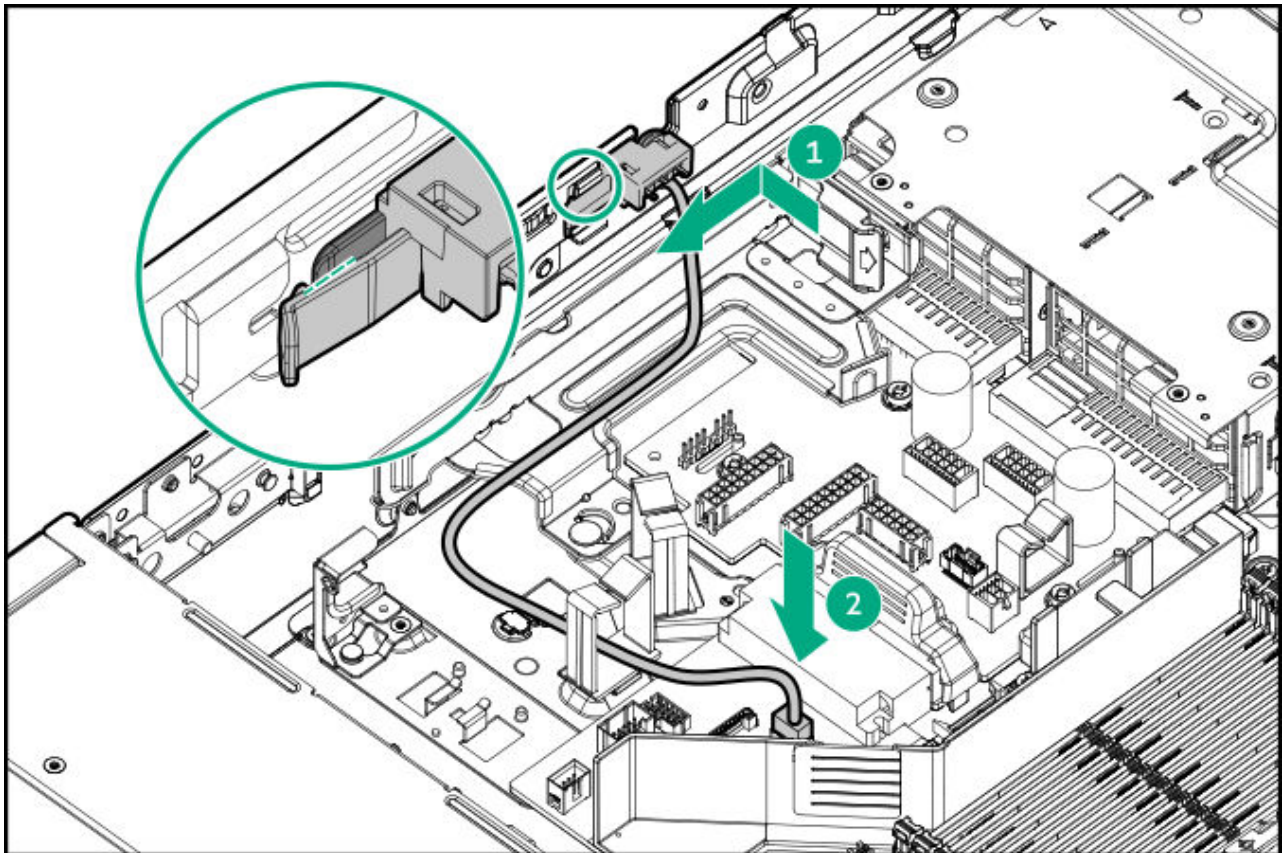
A discharge of static electricity from a finger or other conductor might damage system boards or other static-sensitive devices. To prevent damage, observe antistatic precautions.

Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.

3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the air baffle.
7. Insert the switch tab into the chassis slot until the switch clicks into place, and then connect the switch cable to the system board.

Make sure that the cable is secured in the cable clamp.



8. Install the air baffle.
9. Install the access panel.
10. Install the server into the rack.
11. Connect all peripheral cables to the server.
12. Connect each power cord to the server.

- .3. Connect each power cord to the power source.
- .4. Power up the server.

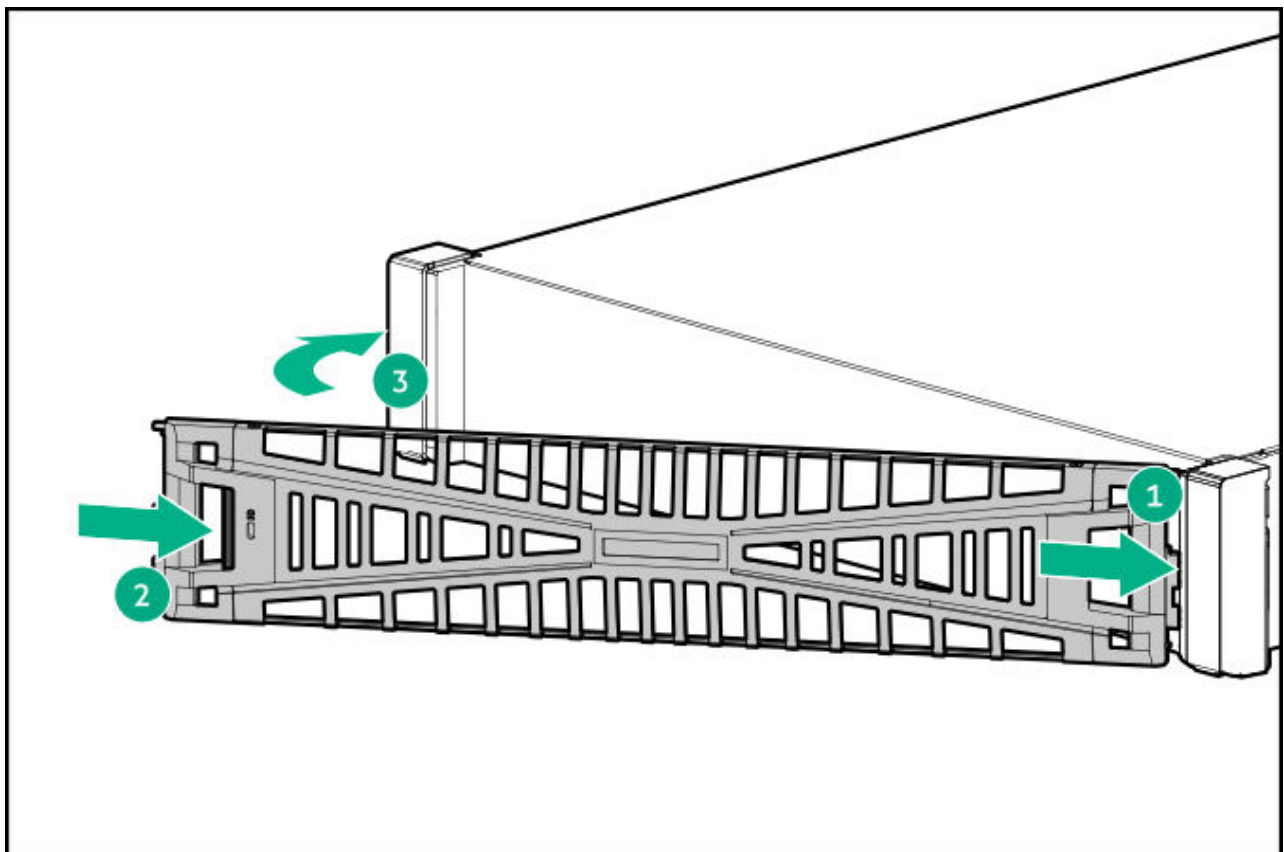
Results

The installation procedure is complete.

Installing the front bezel

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. (Optional) Install the Kensington security lock.
For more information, see the lock documentation.

Results

The installation procedure is complete.

Storage controllers

Subtopics

[Installing a type-o storage controller](#)

[Installing a type-p storage controller](#)

Installing a type-o storage controller

Prerequisites

- Review the [OCP slot population rules](#).
- To enable the flash-backed write cache (FBWC) feature of a storage controller option, [install an energy pack](#).

For more information on the controller caching feature, see the controller QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/quickspecs>).

- Before you perform this procedure, make sure that you have the following items available:
 - [Compatible controller cable](#)
 - T-10 Torx screwdriver

About this task

This server supports type-o storage controller installation in the Slot 21 OCP B.



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.

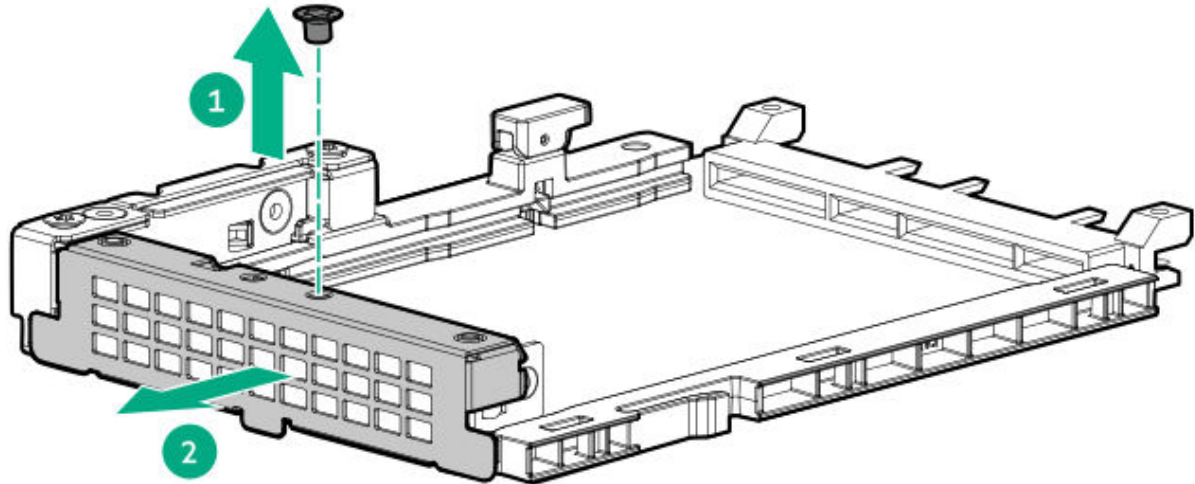


CAUTION

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.

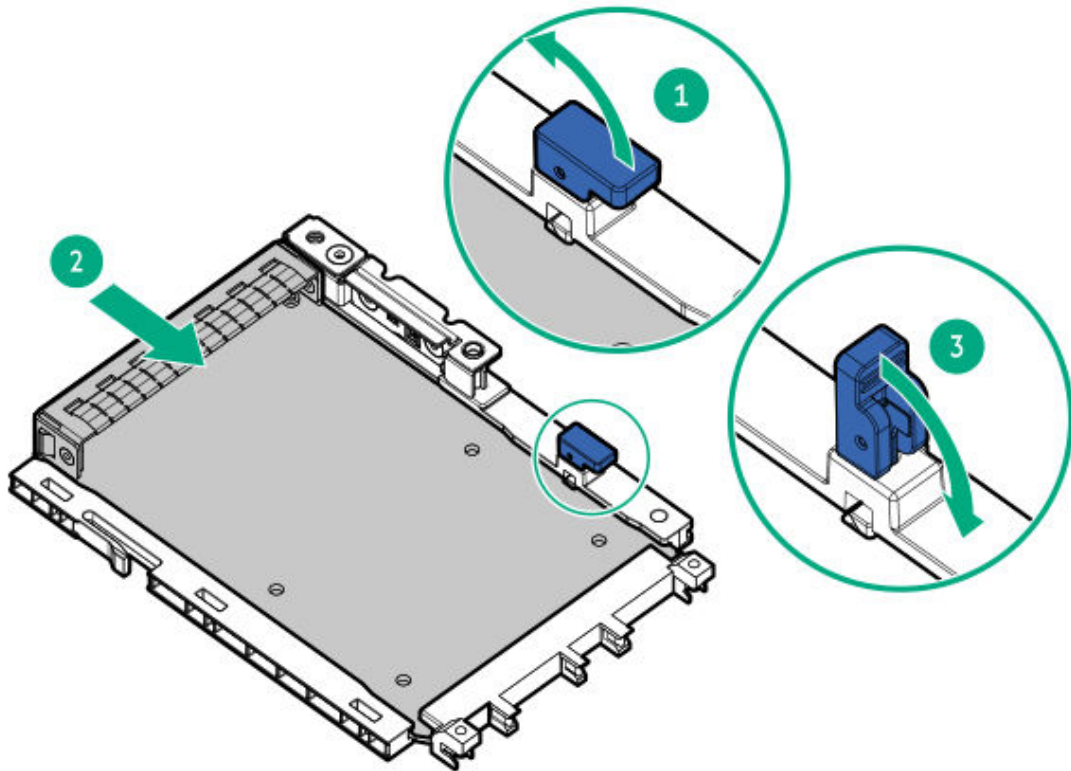
Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.
5. Remove the access panel.
6. Remove the secondary riser cage blank.
7. If installed, remove the secondary riser cage.
8. Remove the slot OCP blank.



9. Install the type-o storage controller:

- a. Rotate the locking pin to the open (vertical) position.
- b. Slide the controller into the slot until it clicks into place.
Make sure that the controller is seated firmly in the slot.
- c. Rotate the locking pin to the close (horizontal) position.



0. Cable the type-o storage controller.
1. To enable the FBWC feature of the storage controller, install an energy pack.
2. Install the secondary riser cage blank.
3. If removed, install the secondary riser cage.
4. Install the access panel.
5. Install the server into the rack.
6. Connect all peripheral cables to the server.
7. Connect each power cord to the server.
8. Connect each power cord to the power source.
9. Power up the server.
0. Update the server firmware if they are not the latest revision.
1. Configure the controller.

Results

The installation procedure is complete.

Installing a type-p storage controller

Prerequisites

- To enable the flash-backed write cache (FBWC) feature of a storage controller option, install an energy pack.

For more information on the controller caching feature, see the controller QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/quickspecs>).

- Before you perform this procedure, make sure that you have the following items available:
 - Compatible controller cable
 - T-10 Torx screwdriver

About this task



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.



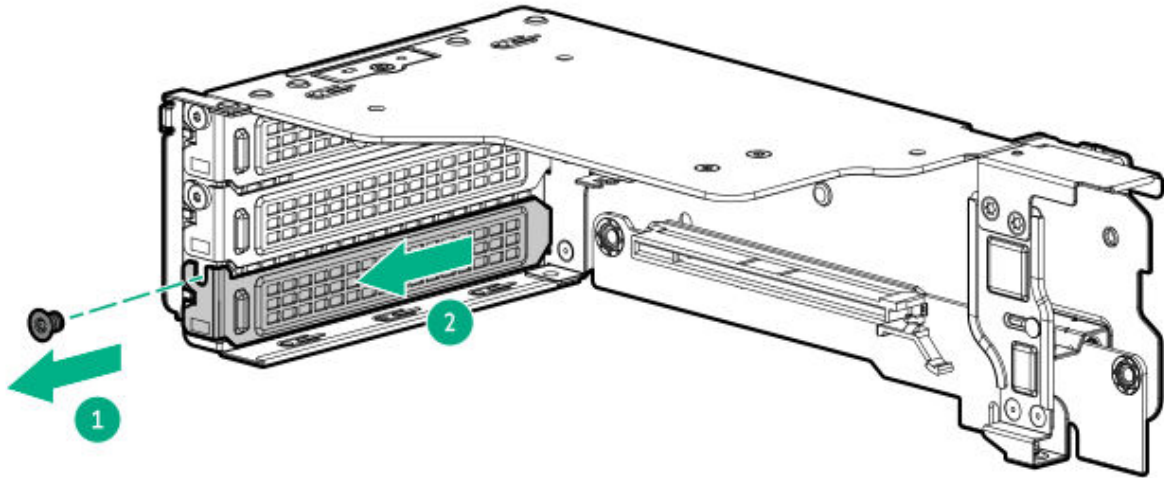
CAUTION

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

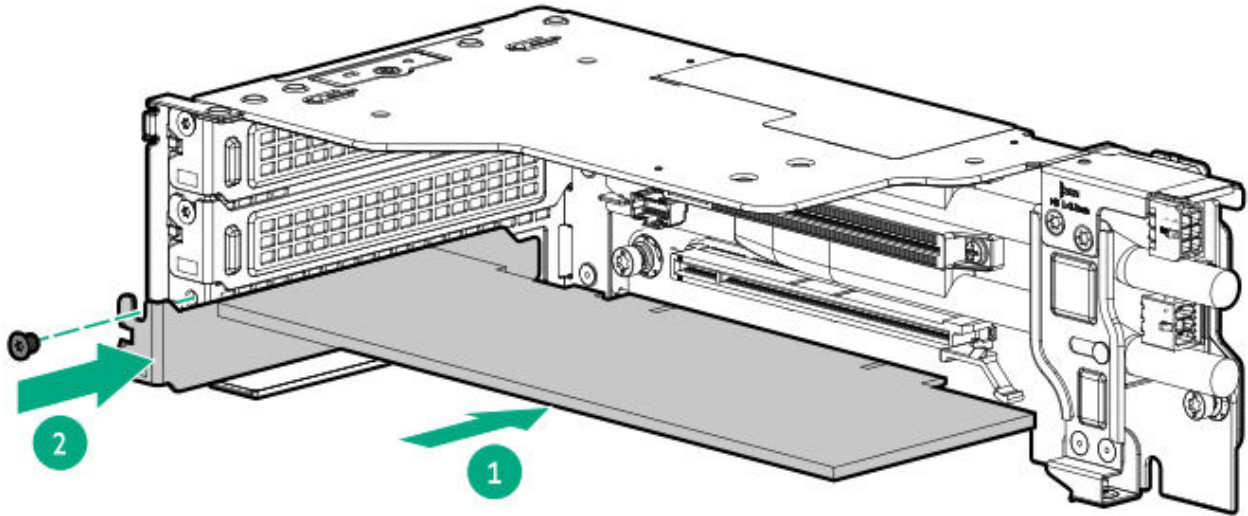
Procedure

1. Power down the server.
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.
4. Do one of the following:
 - Extend the server out of the rack.
 - Remove the server from the rack.

5. Remove the access panel.
6. Remove the air baffle.
7. Remove the riser cage.
8. Remove the riser slot blank.



9. Install the storage controller, and then secure the screw.
Make sure that the controller is seated firmly in the slot.



- .0. Cable the type-p storage controller.
- .1. To enable the FBWC feature of the storage controller, install an energy pack.
- .2. Install the riser cage.
- .3. Install the air baffle.
- .4. Install the access panel.
- .5. Install the server into the rack.
- .6. Connect all peripheral cables to the server.
- .7. Connect each power cord to the server.
- .8. Connect each power cord to the power source.
- .9. Power up the server.
- !0. Update the server firmware if they are not the latest revision.
- !1. Configure the controller.

Results

The installation procedure is complete.

Cabling

Subtopics

[Cabling guidelines](#)

[Cable diagrams](#)

[Storage cabling](#)

[GPU cabling](#)

[OCP slot cabling](#)

[HPE NS204i-u Boot Device V2 cabling](#)

[Universal media bay cabling](#)

[Optical drive cabling](#)

[System Insight Display cabling](#)

[Front I/O cabling](#)

[Fan cabling](#)

[Chassis intrusion detection switch cabling](#)

[PCIe captive riser and power cabling](#)

[Serial port cabling](#)

[DLC module cabling](#)

Cabling guidelines

Observe the following:



NOTE

The colors in the cabling diagrams are for illustration purposes only.



CAUTION

To avoid damaging connectors, avoid repeated installation and removal of cables. Excessive handling can shorten the lifespan of the cable.

- For cable option kits, see the product QuickSpecs.
- For cable spare part numbers, see the Illustrated parts catalog in the maintenance and service guide.
- Some diagrams show alphabetical callouts such as A, B, C, etc. These callouts correspond to labels near the connectors on the cable.
- Some cables have more than one connector, such as a Y-cable, but not all connectors are used.
- Observe all guidelines when working with server cables.

Before connecting cables

- Note the port labels on the PCA components. Not all these components are used by all servers:
 - System board ports
 - Drive and power supply backplane ports
 - Expansion board ports (controllers, retimers, 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 prebent. 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.

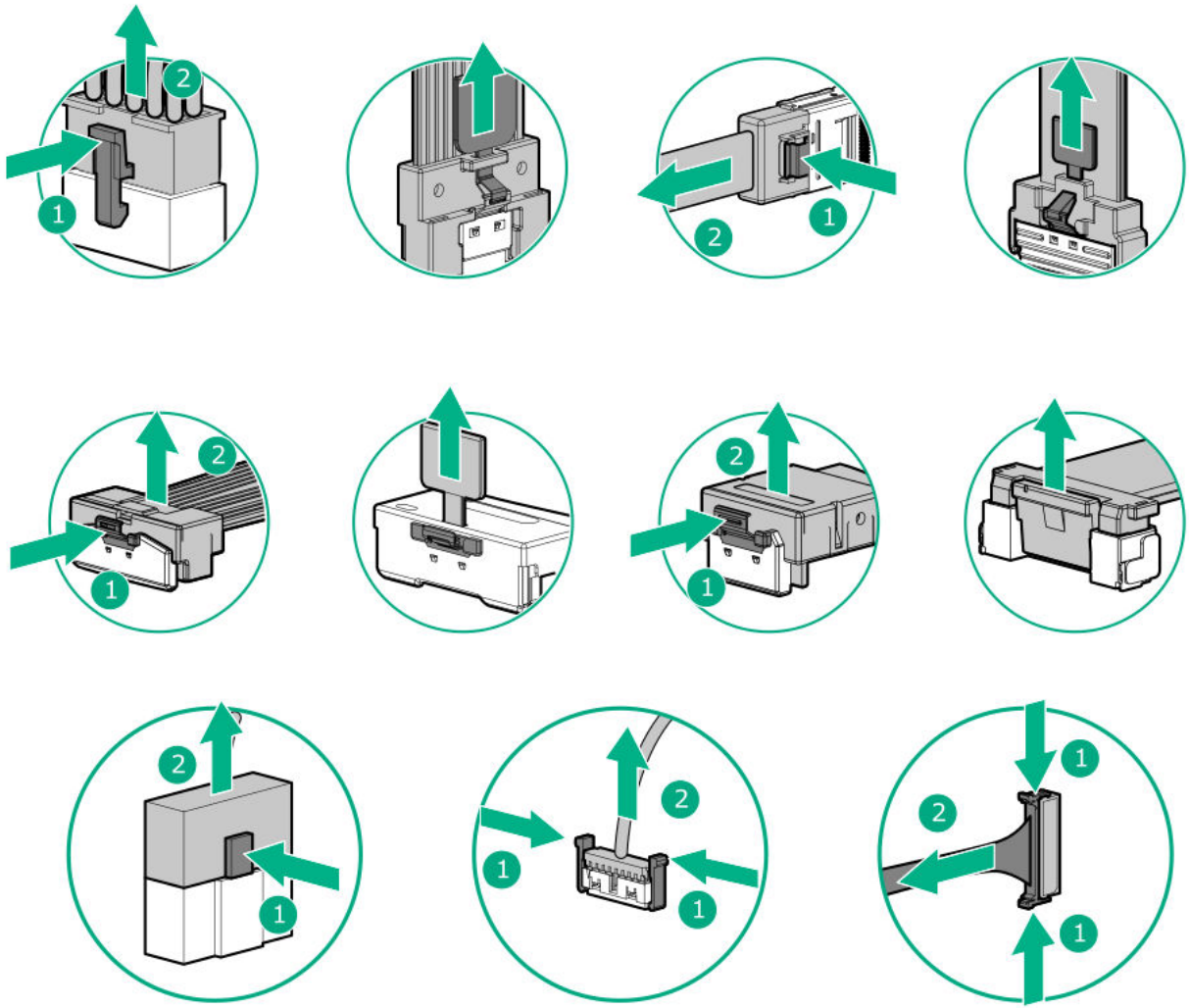
When connecting cables

- 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.
- Route cables so that they do not contact or rest on cooling components, including heatsinks. Ensure that cable routing does not obstruct airflow to or from heatsinks or ventilation openings
- 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 is properly secured to avoid excess bends, interference issues, and airflow restriction.
- Before installing a new component or closing up the server, make sure that all cables are in their appropriate routing position. This cable check prevents component damage and potential signal interference.

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 server can restrict airflow. If you intend to use the removed cables later, label and store them for future use.

Cable diagrams

Observe the following:

- Before cabling components, see the [Cabling guidelines](#).
- Use the cable part number or search feature to find your diagram.

Component cable	Cable part number
8 LFF drive cables: Type-p 2-port tri-mode controller	—
Box 2	P58063-001
Box 3	P54931-001
12 LFF drive cables: Type-p 2-port tri-mode controller	—
Boxes 1 and 2	P58063-001
Box 3	P54931-001
8 SFF x1 drive cable: Type-p 2-port tri-mode controller	—
Box 3	P58018-001
8 SFF x2 drive cable: Type-p 2-port tri-mode controller	—
Box 3	P76440-001
8 SFF x4 drive direct attach cables: Secondary riser blank	—
Box 3 ports 1 and 2	P74804-001
Box 3 ports 3 and 4	P74815-001
8 SFF x4 drive direct attach cables: Secondary riser cage	—
Box 3 ports 1 and 2	P74807-001
Box 3 ports 3 and 4	P75257-001
16 SFF x1 drive cables: Type-o 2-port tri-mode controller	—
Box 2	P58148-001
Box 3	P58014-001
16 SFF x2 drive cables: Type-p 2-port tri-mode controllers	—
Box 2	P76440-001
Box 3	P76440-001
16 SFF x4 drive direct attach cables: Boxes 2 and 3	—
Box 2	P76442-001
Box 3 ports 1 and 2	P75257-001
Box 3 ports 3 and 4	P74815-001
16 SFF x2 drive direct attach cables: Boxes 1 and 3	—
Box 1 ports 1 and 2	P71880-001
Box 1 ports 3 and 4	P71881-001
Box 3 ports 1 and 2	P75257-001
Box 3 ports 3 and 4	P74815-001
24 SFF x1 drive cables: Type-p 2-port tri-mode controller	—

Component cable	Cable part number
Boxes 1 and 2	P58020-001
Box 3	P58018-001
24 SFF x1 drive cables: Type-p 4-port tri-mode controller	—
Boxes 1 and 2	P79151-001
Box 3	P81063-001
24 SFF x2 drive direct attach cables	—
Box 1	P75563-001
Box 2	P74816-001
Box 3	P74814-001
24 SFF x2 drive cables: Type-p 2-port tri-mode controller	—
Box 1	P76440-001
Box 2	P76440-001
Box 3	P76440-001
24 SFF x4 drive direct attach cables	—
Box 1 ports 1 and 2	P74807-001
Box 1 ports 3 and 4	P71881-001
Box 2	P76442-001
Box 3 ports 1 and 2	P75257-001
Box 3 ports 3 and 4	P74815-001
2 SFF stacked drive direct attach cable	—
Box 1	P75367-001
2 SFF side-by-side direct attach cable	—
Box 1	P75367-001
8 E3.S drive direct attach cables: Universal media bay configuration	—
Box 3 bays 1 to 4	P75317-001
Box 3 bays 5 to 8	P75246-001
8 E3.S drive direct attach cables: Front OCP NIC configuration	—
Box 3 bays 1 to 4	P75580-001
Box 3 bays 5 to 8	P75246-001
16 E3.S drive direct attach cables: Secondary riser blank configuration	—
Box 1 bays 1 to 4	P75580-001
Box 1 bays 5 to 8 port 1	P75317-001

Component cable	Cable part number
Box 1 bays 5 to 8 port 2	
Box 3 bays 1 to 4 port 1	
Box 3 bays 1 to 4 port 2	
Box 3 bays 5 to 8	<u>P75246-001</u>
16 E3.S drive direct attach cables: Rich I/O configuration	—
Box 1 bays 1 to 4	<u>P75576-001</u>
Box 1 bays 5 to 8	<u>P75317-001</u>
Box 3 bays 1 to 4	
Box 3 bays 5 to 8	<u>P75246-001</u>
16 E3.S drive cables: Type-p 4-port tri-mode controller	—
Box 1	<u>P75569-001</u>
Box 3	<u>P75569-001</u>
24 E3.S drive direct attach cables	—
Box 1 bays 1 to 4	<u>P75576-001</u>
Box 1 bays 5 to 8	<u>P75317-001</u>
Box 3 bays 1 to 4	
Box 3 bays 5 to 8	<u>P75246-001</u>
Box 2	<u>P75504-001</u>
24 E3.S drive cables: Type-p 4-port tri-mode controller	—
Box 1	<u>P75569-001</u>
Box 2	<u>P75570-001</u>
Box 3	<u>P75569-001</u>
36 E3.S drive direct attach cables	—
Box 1 bays 1 to 4	<u>P75908-001</u>
Box 1 bays 5 to 8	<u>P75369-001</u>
Box 1 bays 9 to 12	
Box 2	<u>P75908-001</u>
Box 3 bays 1 to 4	<u>P75258-001</u>
Box 3 bays 5 to 8	
Box 3 bays 9 to 12	<u>P75369-001</u>
36 E3.S drive cables: Type-p 4-port tri-mode controller	—
Box 1	<u>P75275-001</u>
Box 2	<u>P75275-001</u>

Component cable	Cable part number
Box 3	P75275-001
Drive controller cables in the GPU-optimized + secondary riser blank configuration	—
8 SFF direct attach cable: Box 2 ports 1 and 2	P74804-001
8 SFF direct attach cable: Box 2 ports 3 and 4	P74807-001
4 E3.S direct attach cable	P75580-001
12 E3.S direct attach cable: Box 2 bays 1 to 4	P75580-001
12 E3.S direct attach cable: Box 2 bays 5 to 8	P75576-001
12 E3.S direct attach cable: Box 2 bays 9 to 12	
Drive controller cables in the GPU-optimized + secondary riser cage configuration	—
8 SFF direct attach cable	P74807-001
8 SFF drive cable: Type-p 2-port tri-mode controller	P69542-001
2 SFF side-by-side + 8 LFF drive storage controller cables	—
2 SFF side-by-side drive direct attach cable: Box 1	P75367-001
8 LFF drive cables: Box 2 to the slot 3 type-p 2-port tri-mode controller	P58063-001
8 LFF drive cables: Box 3 to the slot 3 type-p 2-port tri-mode controller	P54931-001
2 SFF stacked + 8 E3.S drive storage controller cables	—
2 SFF stacked direct attach cable: Box 1	P75367-001
8 E3.S direct attach cable: Box 3 bays 1 to 4	P75317-001
8 E3.S direct attach cable: Box 3 bays 5 to 8	P75246-001
8 SFF + 8 E3.S drive storage controller cables	—
8 SFF drive cable: Box 1 to the slot 6 type-p 2-port tri-mode controller	P58018-001
8 E3.S drive direct attach cable: Box 3 bays 1 to 4	P75576-001
8 E3.S drive direct attach cable: Box 3 bays 5 to 8	P75317-001
LFF drive power cables	—
8 LFF drive power cables: Box 2	P75251-001
8 LFF drive power cables: Box 3	P75250-001
12 LFF drive power cables: Boxes 1 and 2	P75251-001
12 LFF drive power cables: Box 3	P75250-001
SFF drive power cables	—
8 SFF drive power cable: Box 3	P75248-001

Component cable	Cable part number
16 SFF drive power cable: Box 1	P71879-001
16 SFF drive power cable: Box 3	P75248-001
24 SFF drive power cable: Boxes 1 and 2	P71879-001
24 SFF drive power cable: Box 3	P75248-001
2 SFF stacked drive power cable: Box 1	P75251-001
2 SFF side-by-side drive power cable: Box 1	P77049-001
E3.S drive power cables	—
8 E3.S drive power cable: Box 3	P75247-001
16 E3.S drive power cable: Box 1	P75249-001
16 E3.S drive power cable: Box 3	P75247-001
24 E3.S drive power cable: Boxes 1 and 2	P75249-001
24 E3.S drive power cable: Box 3	P75247-001
36 E3.S drive power cable: Boxes 1 and 2	P75249-001
36 E3.S drive power cable: Box 3	P75247-001
Drive power cables in the GPU-optimized configuration	—
SFF drive power cable	P80888-001
E3.S drive power cable	P80887-001
2 SFF side-by-side + 8 LFF drive power cables	—
2 SFF side-by-side drive power cable: Box 1	P77049-001
8 LFF drive power cable: Box 2	P75251-001
8 LFF drive power cable: Box 3	P75250-001
2 SFF stacked + 8 E3.S drive power cables	—
2 SFF stacked drive power cable: Box 1	P75252-001
8 E3.S drive power cable: Box 3	P75247-001
8 SFF + 8 E3.S drive power cables	—
8 SFF drive power cable: Box 1	P71879-001
8 E3.S drive power cable: Box 3	P75247-001
Storage backup power cable	—
Type-o 2-port tri-mode controller	877850-001
Type-p 2-port tri-mode controller	877850-001
Energy pack cable	876850-001
GPU auxiliary power / sideband splitter cable	—
2 double-width GPUs	P75256-001

Component cable	Cable part number
4 double-width GPUs	P75256-001
GPU captive riser cables	—
Slot 10	P71888-001
Slot 12	P73415-001
Slot 15	P71884-001
Slot 17	P71891-001
GPU captive riser power cables	—
GPU cage 1	P75253-001
GPU cage 2	P75254-001
Front OCP NIC and PHY board cables: SFF / E3.S drive configuration	—
Primary front OCP NIC cable	P71941-001
Secondary front OCP NIC cable	P71941-001
PHY board cable	P73927-001
Front OCP NIC and PHY board cables: Rich I/O configuration	—
Primary front OCP NIC cable	P71941-001
Secondary front OCP NIC cable	P71941-001
PHY board cable	P73927-001
Front OCP NIC and PHY board cables: GPU-optimized configuration	—
Primary front OCP NIC cable	P71944-001
Secondary front OCP NIC cable	P71944-001
PHY board cable	P73927-001
Rear OCP enablement cable: Secondary riser blank configuration	—
Slot 21 OCP B PCIe x16 cable	P73494-001
Rear OCP enablement cable: Secondary riser cage configuration	—
Slot 21 OCP B PCIe x8 cable	P75507-001
Slot 21 OCP B PCIe x16 cable	P75506-001
Rear OCP enablement cable: Rich I/O configuration	—
Slot 21 OCP B PCIe x8 cable	P75591-001
Slot 21 OCP B PCIe x16 cable	P75591-001
HPE NS204i-u Boot Device V2 cables: Front panel	—
Signal cable	P74729-001
Power cable	P74730-001

Component cable	Cable part number
HPE NS204i-u Boot Device V2 cables: Rear panel	—
Signal cable	P63720-001
Power cable	P72024-001
HPE NS204i-u Boot Device V2 cables: GPU-optimized configuration	—
Signal cable	P74729-001
Power cable	P74730-001
Universal media bay cable	
LFF drive configuration	P75279-001
SFF / E3.S drive configuration	P75280-001
Optical drive cable	
LFF drive configuration	P73776-002
SFF / E3.S drive configuration	P73776-002
System Insight Display cable	P48971-001
Front I/O cable	—
LFF / SFF / E3.S drive configuration	P71909-002
GPU-optimized configuration	P71909-002
Fan cable	P71914-001
Chassis intrusion detection switch cable	P54901-001
PCIe captive riser cables	—
Slot 1	P71882-001
Slot 2	
Slot 4	
Slot 5	
PCIe captive riser power cables	—
Slot 1	P75255-001
Slot 2	
Slot 4	P75259-001
Slot 5	
Serial port cables: 60-mm M-CRPS configuration	—
ix port cable (620 mm)	P73744-001
Serial port dongle (160 mm)	P71826-001
Serial port cables: 73.5-mm M-CRPS configuration	
ix port cable (620 mm)	P73744-001

Component cable	Cable part number
Serial port dongle (160 mm)	P71826-001
DLC module cable	P84594-001

Storage cabling

Subtopics

[LFF drive controller cabling](#)

[SFF drive controller cabling: Non-GPU-optimized configuration](#)

[E3.S drive controller cabling: Non-GPU-optimized configuration](#)

[SFF drive controller cabling: GPU-optimized configuration](#)

[E3.S drive controller cabling: GPU-optimized configuration](#)

[Mixed drive controller cabling](#)

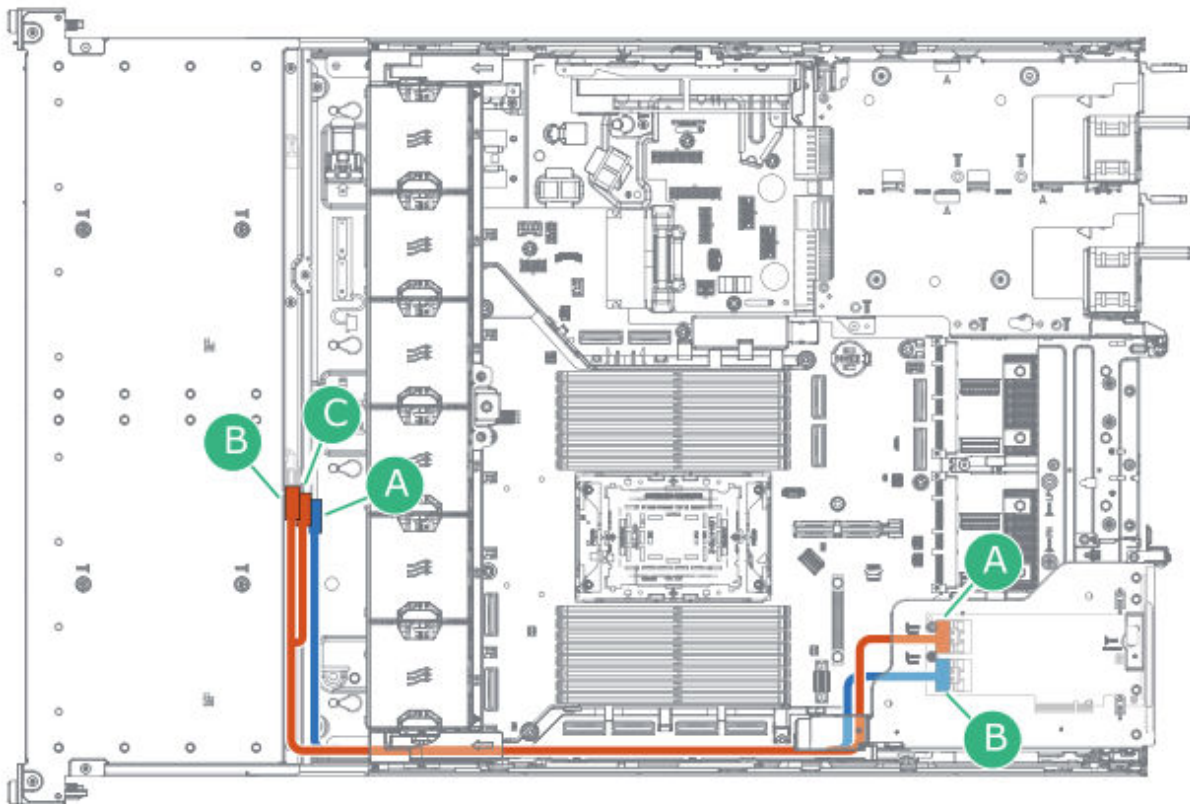
[Drive power cabling](#)

[Storage controller backup power cabling](#)

[Energy pack cabling](#)

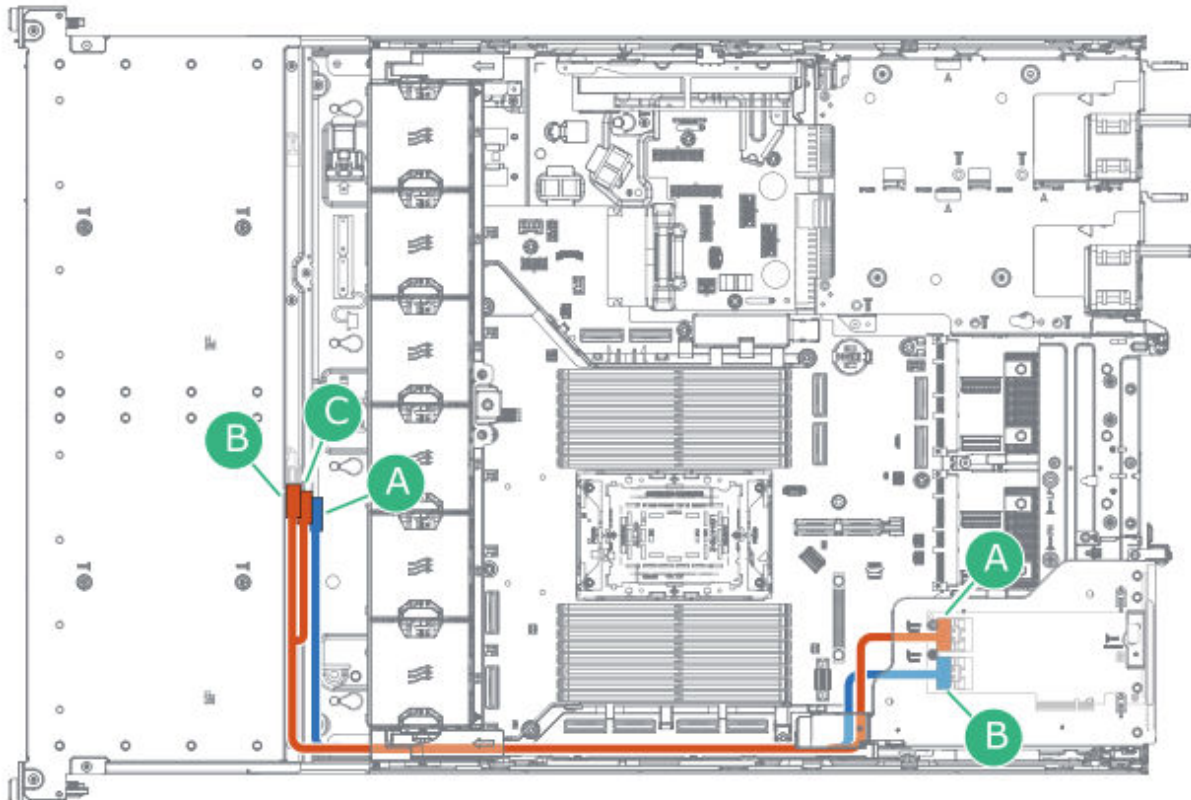
LFF drive controller cabling

8 LFF drive cabling: Type-p 2-port tri-mode controller



Cable part number	Cable color	From	To
P58063-001	Orange	Box 2 port 1	PCIe slot3 port 1
P54931-001	Blue	Box 3 port 1	PCIe slot3 port 2

12 LFF drive cabling: Type-p 2-port tri-mode controller



Cable part number	Cable color	From	To
P58063-001	Orange	Box 1 port 1 Box 2 port 1	PCIe slot 3 port 1
P54931-001	Blue	Box 3 port 1	PCIe slot 3 port 2

SFF drive controller cabling: Non-GPU-optimized configuration

Subtopics

8 SFF drive cabling

16 SFF drive cabling

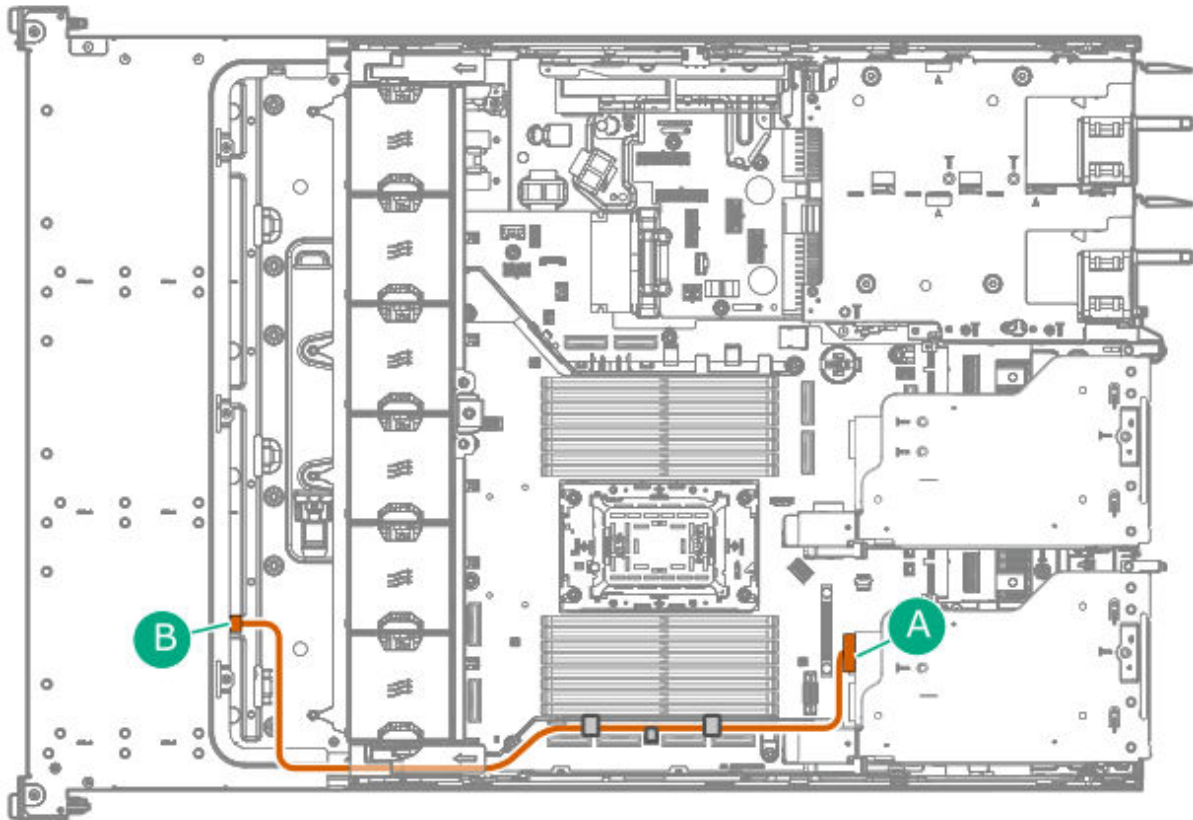
24 SFF drive cabling

2 SFF stacked drive cabling

2 SFF side-by-side drive cabling

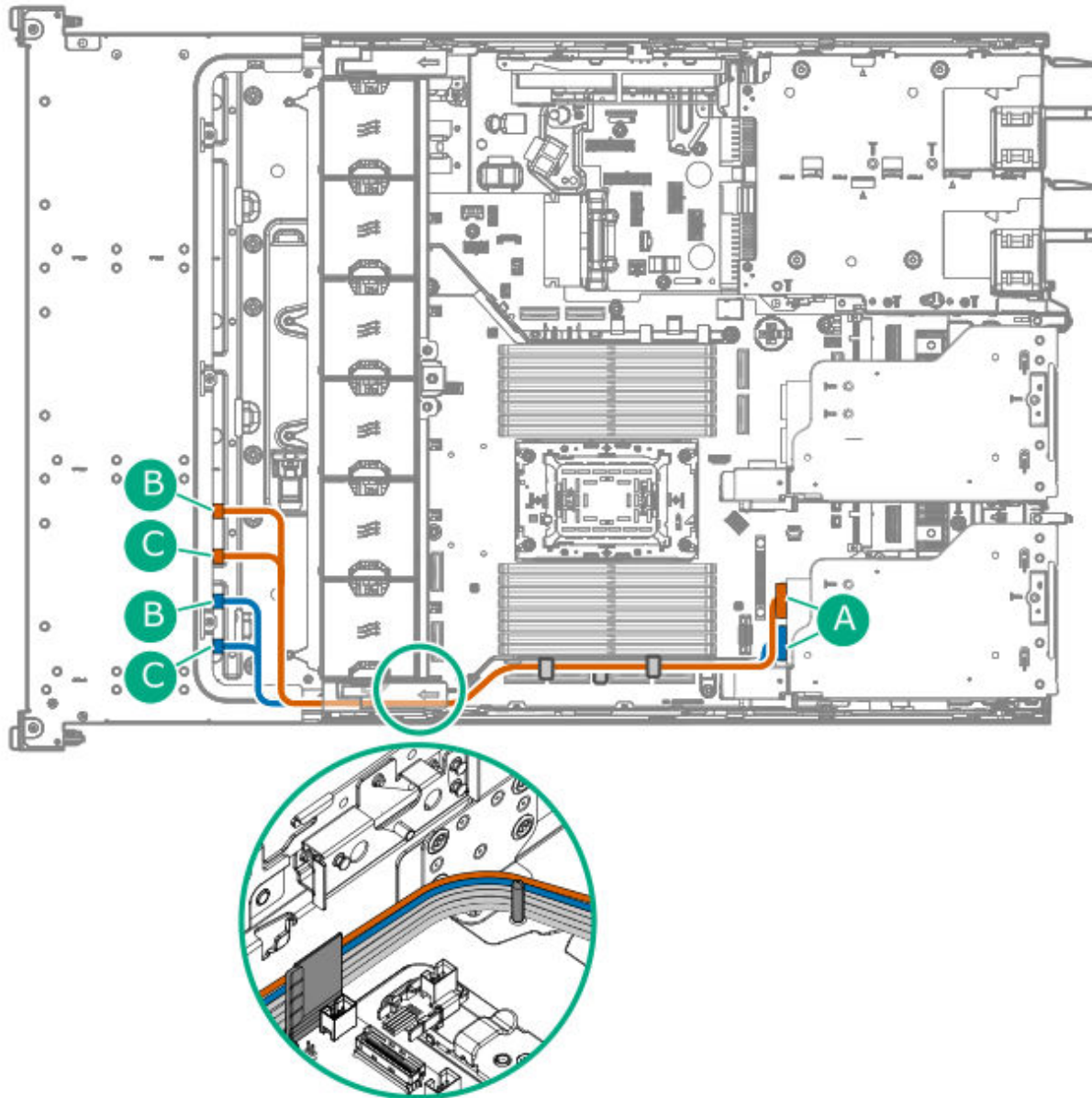
8 SFF drive cabling

8 SFF x1 drive cabling: Type-p 2-port tri-mode controller



Cable part number	Cable color	From	To
P58018-001	Orange	Box 3 port 1	PCIe slot 3 port 1

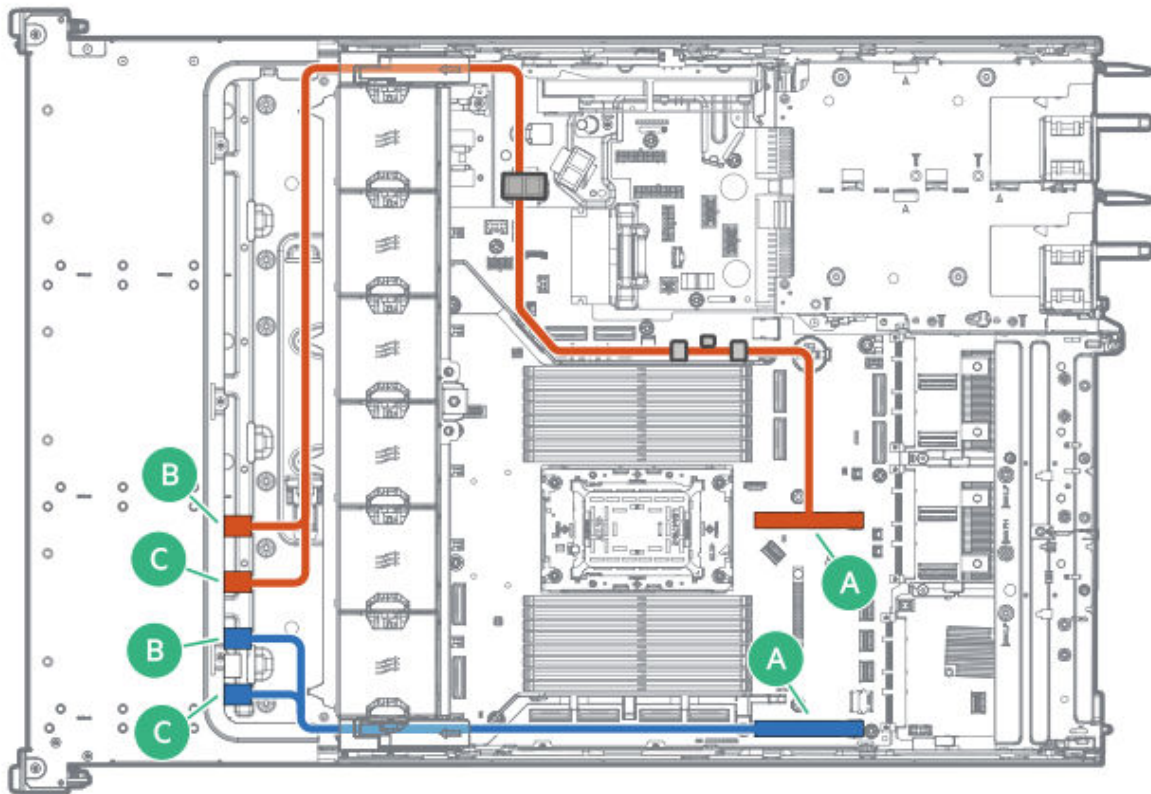
8 SFF x2 drive cabling: Type-p 2-port tri-mode controller



Cable part number	Cable color	From	To
P76440-001	Orange	Box 3 ports 1 and 2	PCIe slot 3 port 1
	Blue	Box 3 ports 3 and 4	PCIe slot 3 port 2

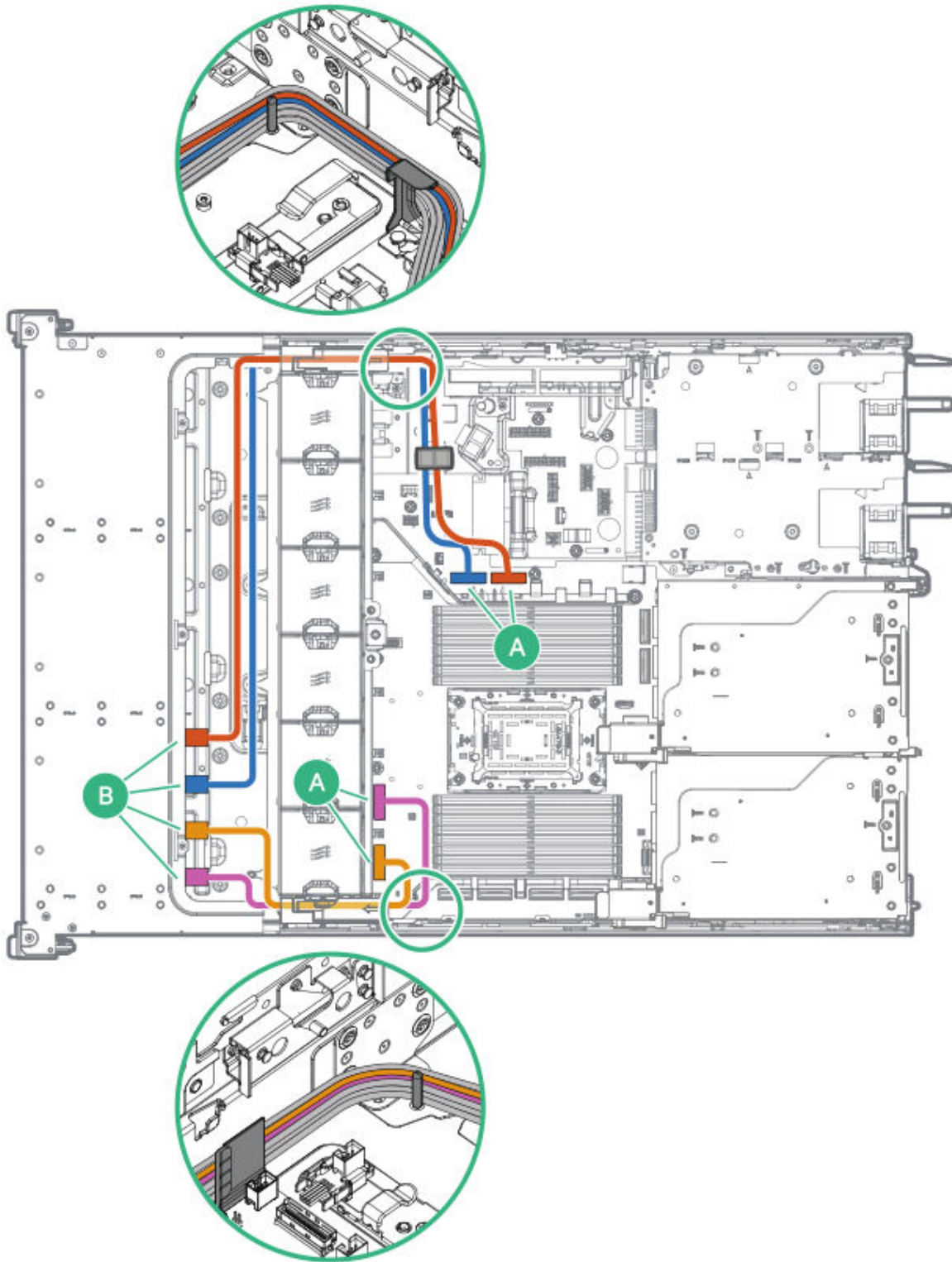
8 SFF x4 drive direct attach cabling

- Secondary riser blank configuration



Cable part number	Cable color	From	To
P74804-001	Orange	Box 3 ports 1 and 2	Secondary riser connector
P74815-001	Blue	Box 3 ports 3 and 4	Primary riser connector

- **Secondary riser cage configuration**

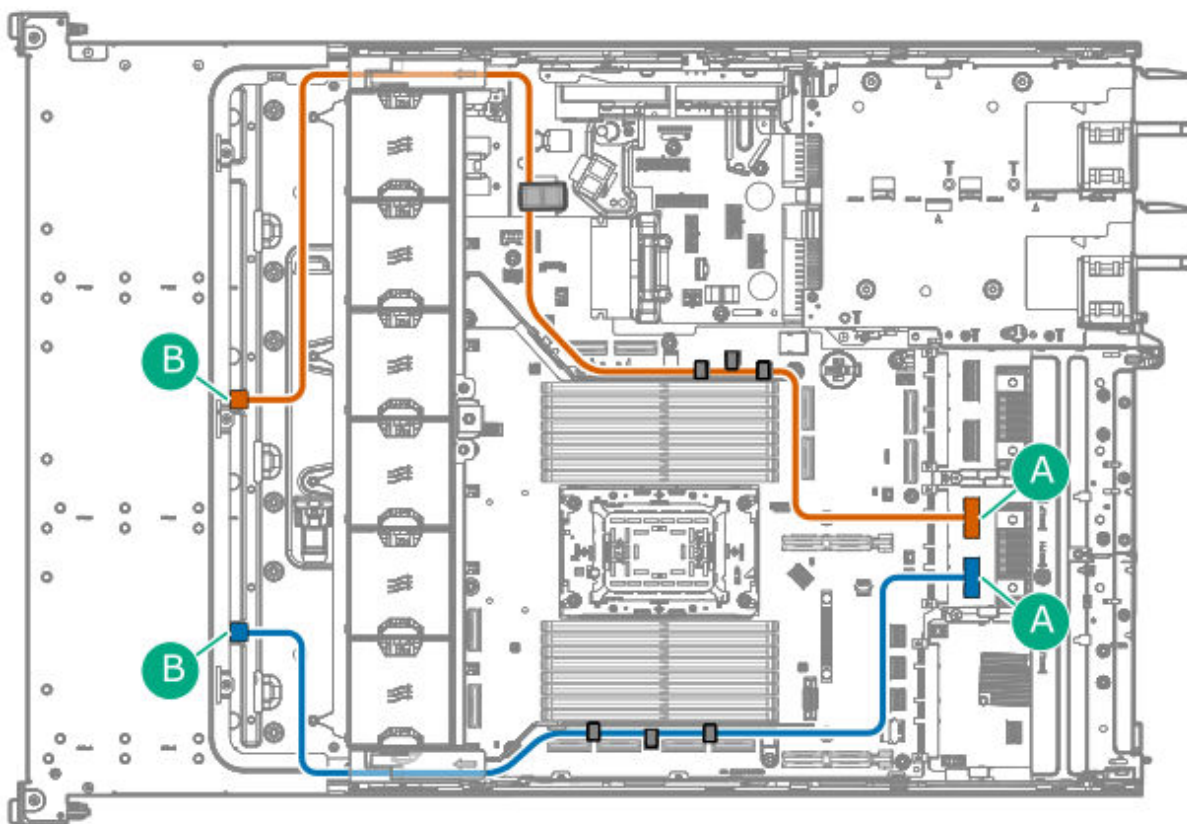


Cable part number	Cable color	From	To
P74807-001	Orange	Box 3 port 1	M-XIO port 4

Cable part number	Cable color	From	To
P75257-001	Blue	Box 3 port 2	M-XIO port 6
	Gold	Box 3 port 3	M-XIO port 0
	Pink	Box 3 port 4	M-XIO port 2

16 SFF drive cabling

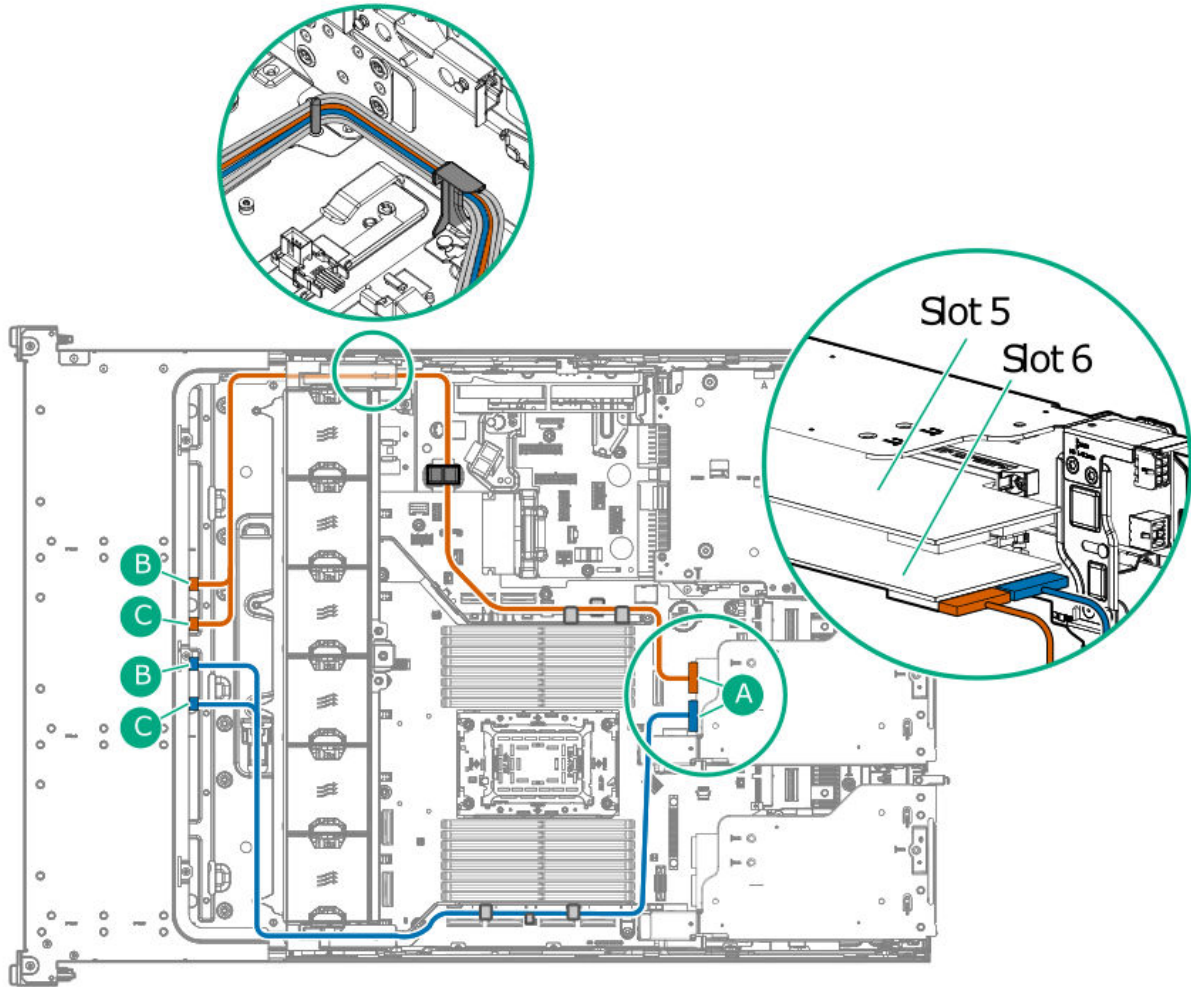
16 SFF x1 drive cabling: Slot 20 OCP A type-o 2-port tri-mode controller



Cable part number	Cable color	From	To
P58148-001	Orange	Box 2 port 1	OCP slot A port 2
P58014-001	Blue	Box 3 port 1	OCP slot A port 1

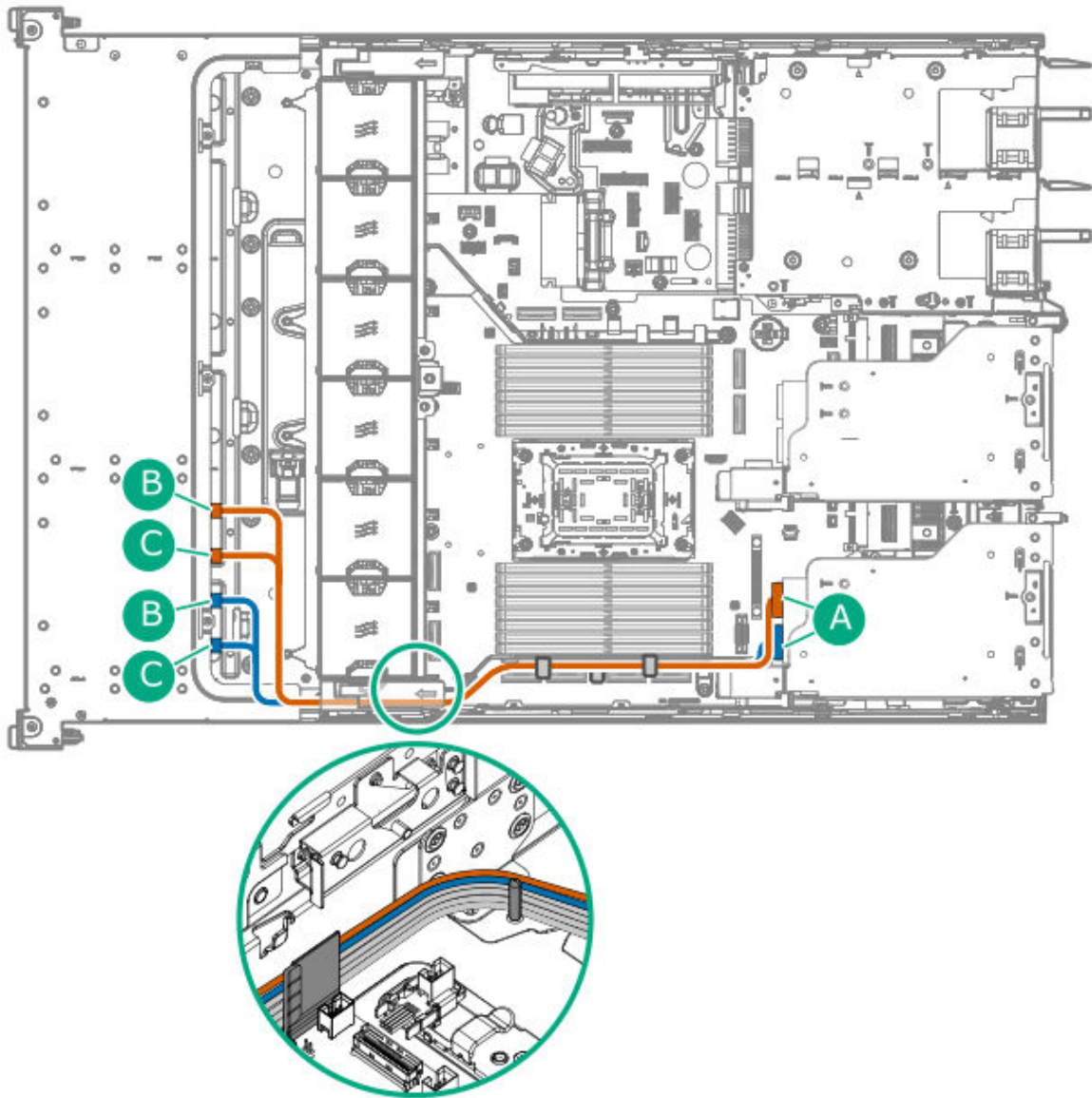
16 SFF x2 drive cabling: Type-p 2-port tri-mode controller

- **Box 2**



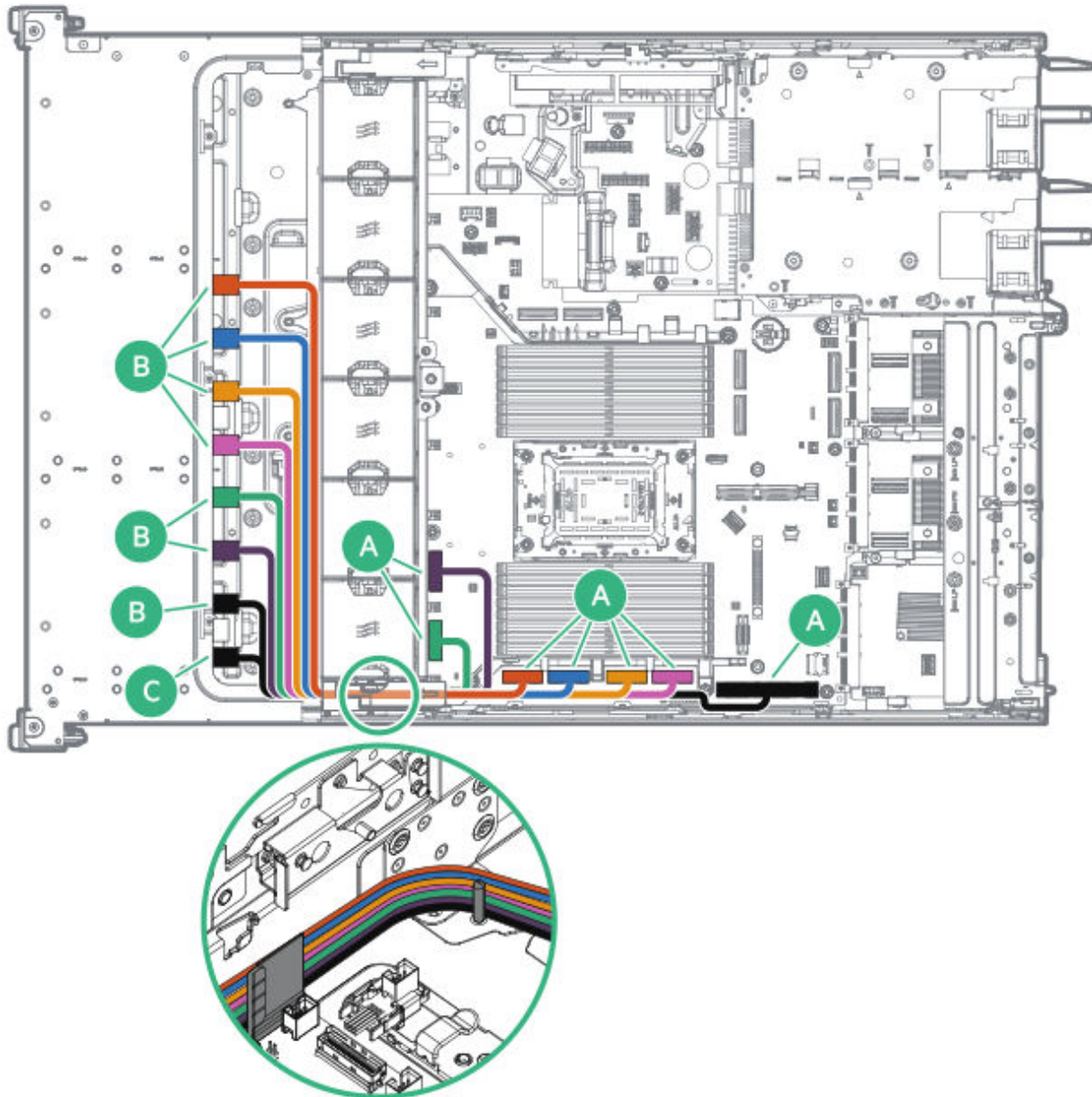
Cable part number	Cable color	From	To
P76440-001	Orange	Ports 1 and 2	PCIe slot 6 port 1
	Blue	Ports 3 and 4	PCIe slot 6 port 2

- **Box 3**



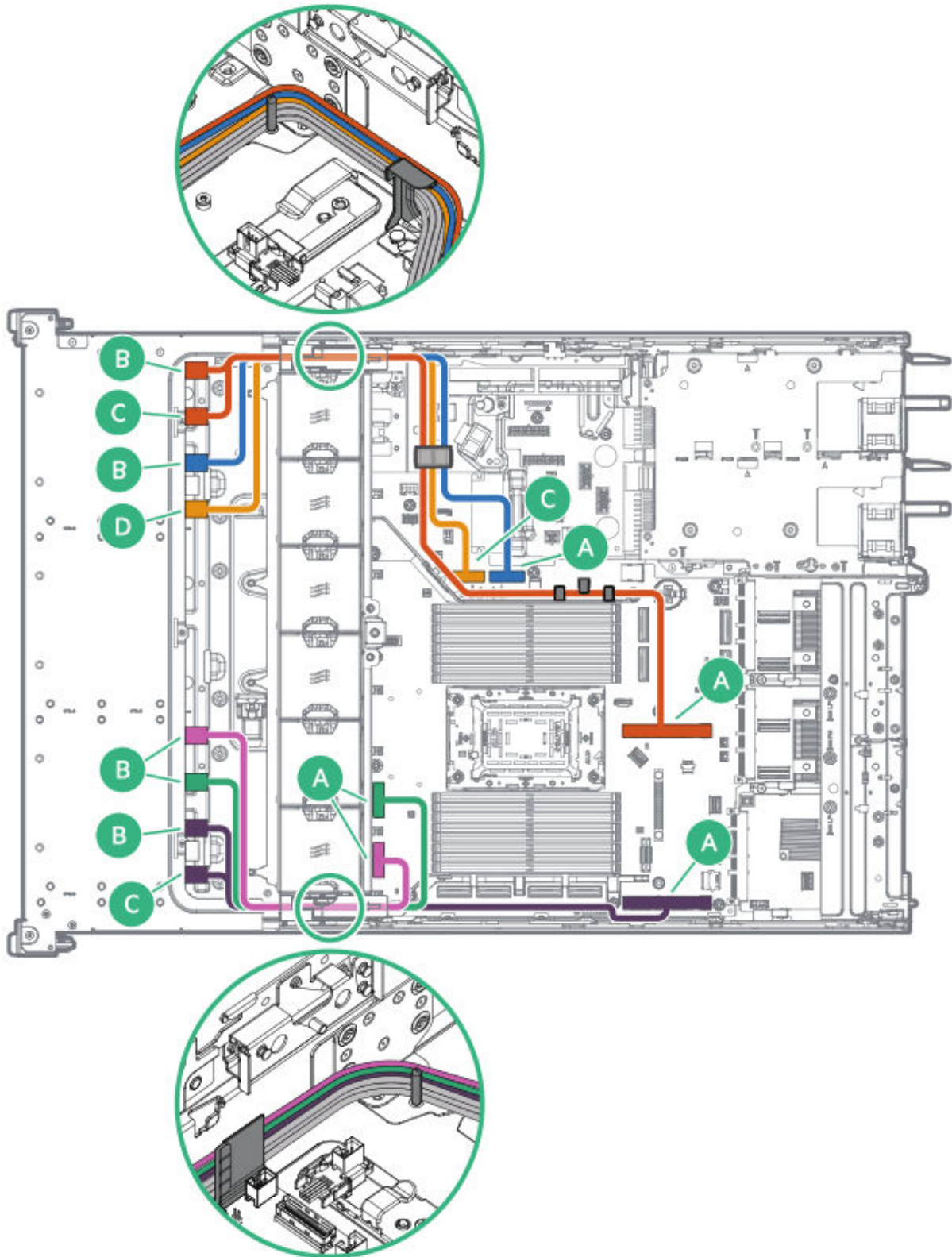
Cable part number	Cable color	From	To
P76440-001	Orange	Ports 1 and 2	PCIe slot 3 port 1
	Blue	Ports 3 and 4	PCIe slot 3 port 2

16 SFF x4 drive direct attach cabling: Boxes 2 and 3



Cable part number	Cable color	From	To
P76442-001	Orange	Box 2 port 1	M-XIO port 7
	Blue	Box 2 port 2	M-XIO port 5
	Gold	Box 2 port 3	M-XIO port 1
	Pink	Box 2 port 4	M-XIO port 3
P75257-001	Green	Box 3 port 1	M-XIO port 0
	Purple	Box 3 port 2	M-XIO port 2
P74815-001	Black	Box 3 ports 3 and 4	Primary riser connector

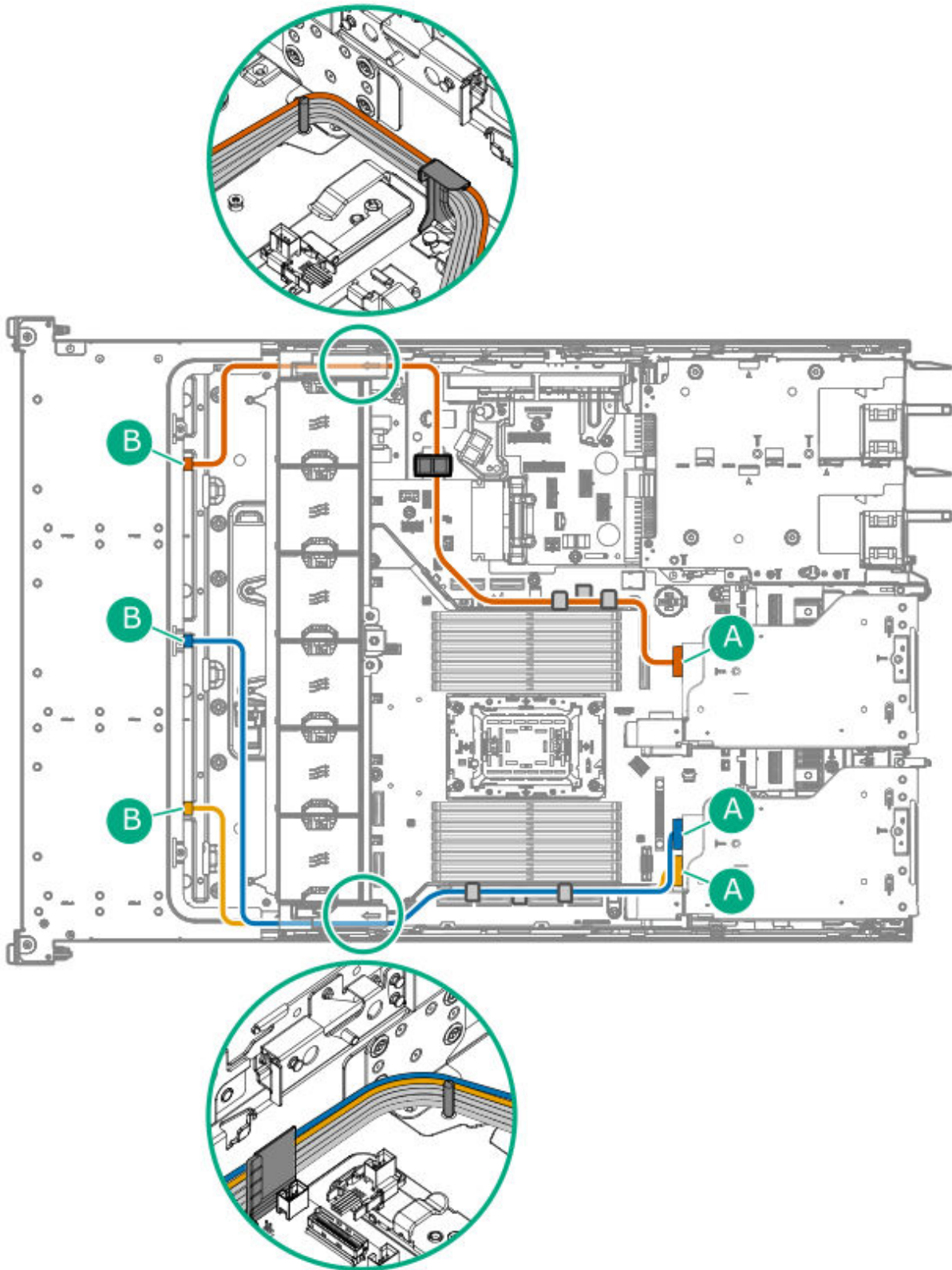
16 SFF x4 drive direct attach cabling: Boxes 1 and 3



Cable part number	Cable color	From	To
P71880-001	Orange	Box 1 ports 1 and 2	Secondary riser connector
P71881-001	Blue	Box 1 port 3	M-XIO port 4
	Gold	Box 1 port 4	M-XIO port 6
P75257-001	Pink	Box 3 port 1	M-XIO port 0
	Green	Box 3 port 2	M-XIO port 2
P74815-001	Purple	Box 3 ports 3 and 4	Primary riser connector

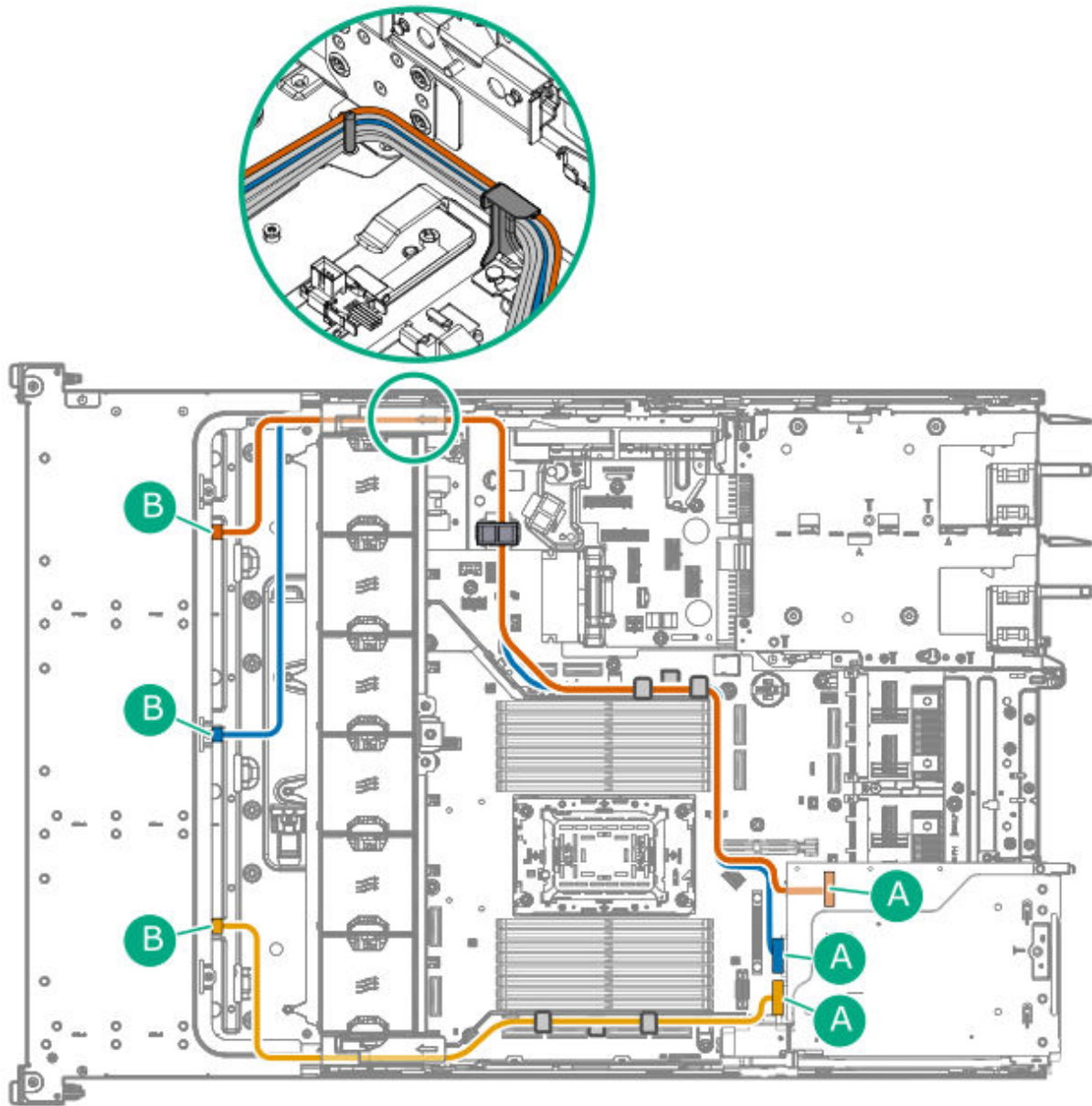
24 SFF drive cabling

24 SFF x1 drive cabling: Type-p 2-port tri-mode controllers



Cable part number	Cable color	From	To
P58020-001	Orange	Box 1 port 1	PCIe slot 6 port 1
	Blue	Box 2 port 1	PCIe slot 3 port 1
P58018-001	Gold	Box 3 port 1	PCIe slot 3 port 2

24 SFF x1 drive cabling: Type-p 4-port tri-mode controller

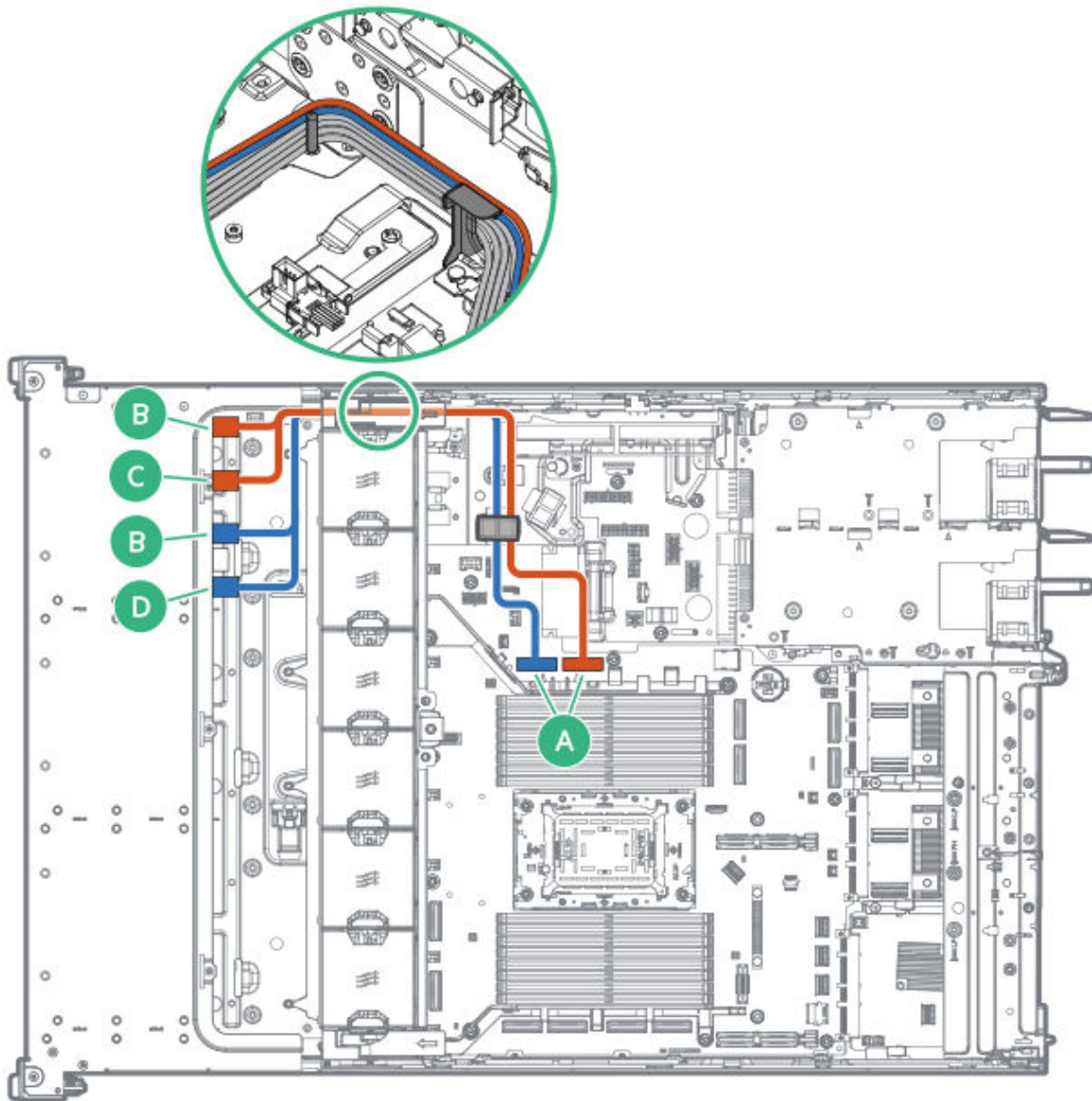


Cable part number	Cable color	From	To
P79151-001	Orange	Box 1 port 1	PCIe slot 3 port 4

Cable part number	Cable color	From	To
	Blue	Box 2 port 1	PCIe slot 3 port 1
P81063-001	Gold	Box 3 port 1	PCIe slot 3 port 2

24 SFF x2 drive direct attach cabling

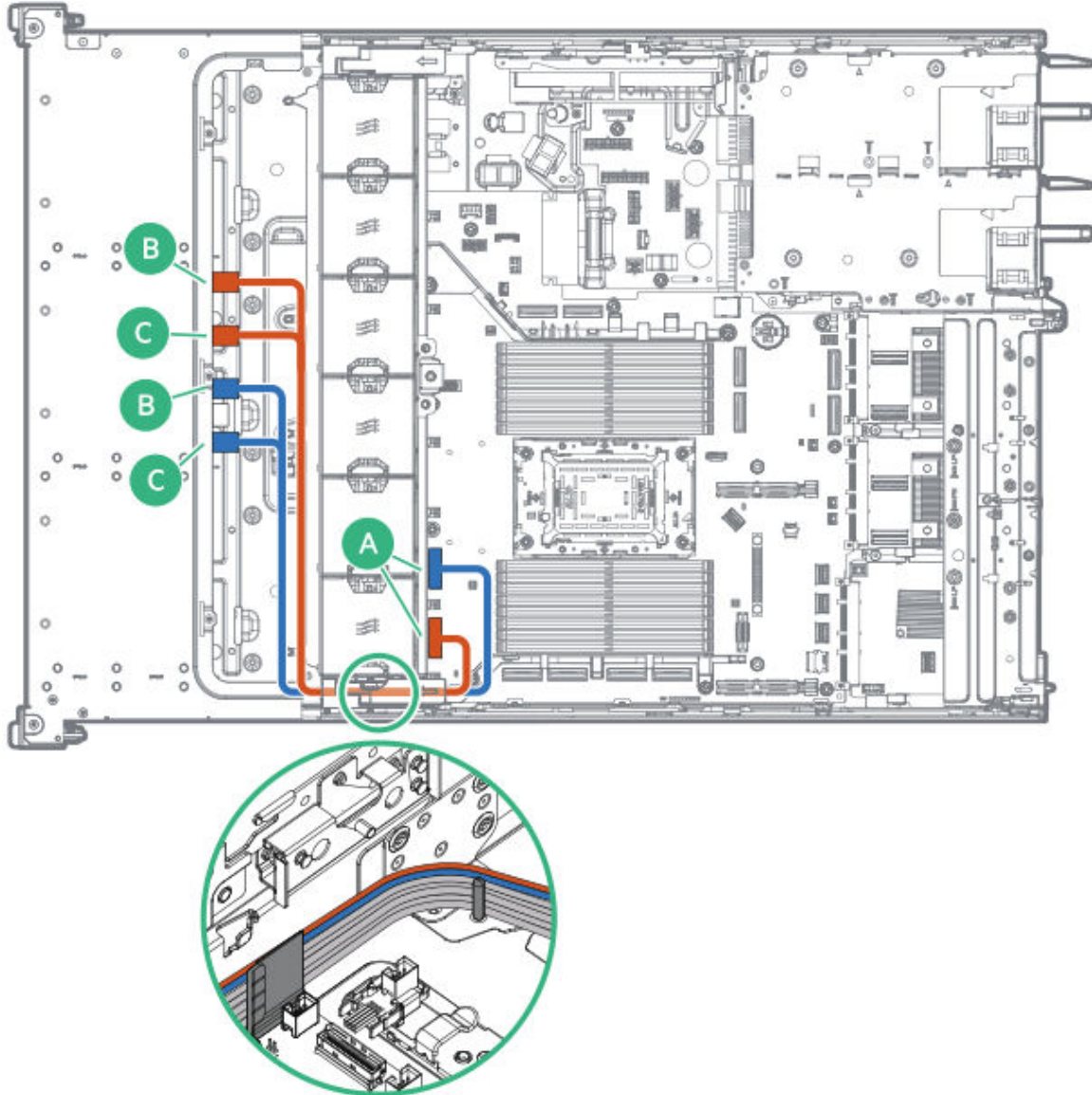
- **Box 1**



Cable part number	Cable color	From	To
P75563-001	Orange	Ports 1 and 2	M-XIO port 4

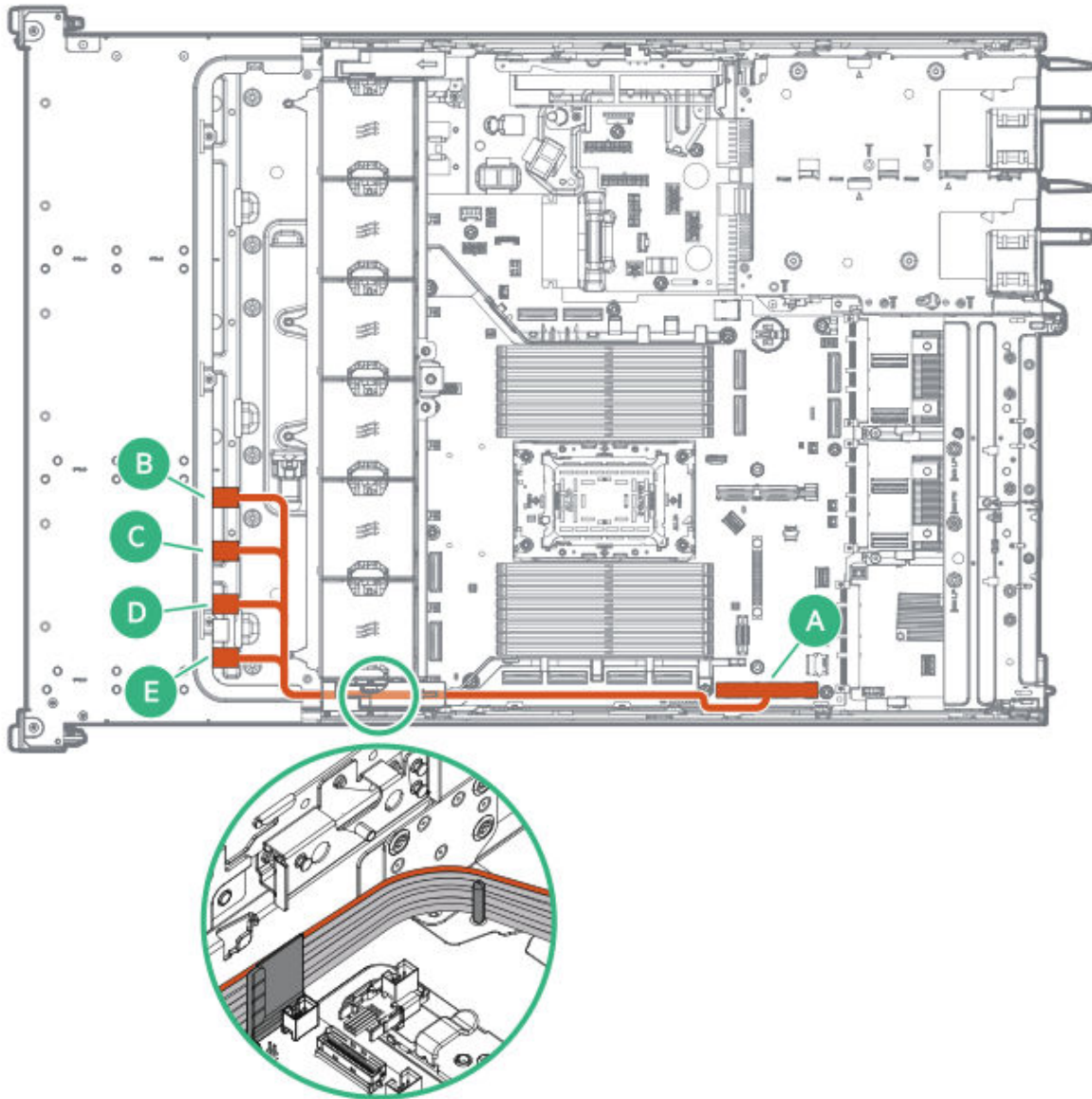
Cable part number	Cable color	From	To
	Blue	Ports 3 and 4	M-XIO port 6

- **Box 2**



Cable part number	Cable color	From	To
P74816-001	Orange	Ports 1 and 2	M-XIO port 0
	Blue	Ports 3 and 4	M-XIO port 2

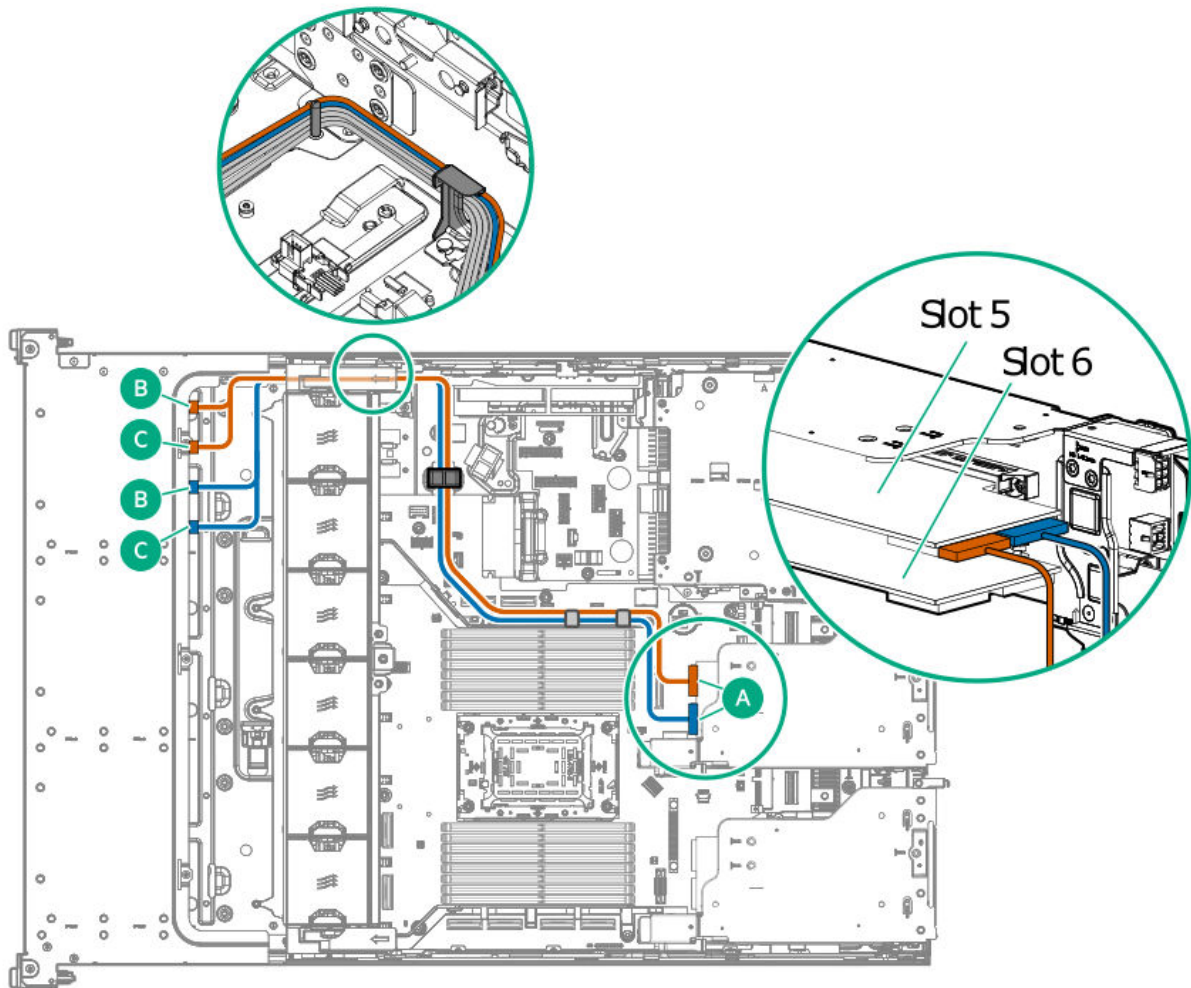
- **Box 3**



Cable part number	Cable color	From	To
P74814-001	Orange	Ports 1 to 4	Primary riser connector

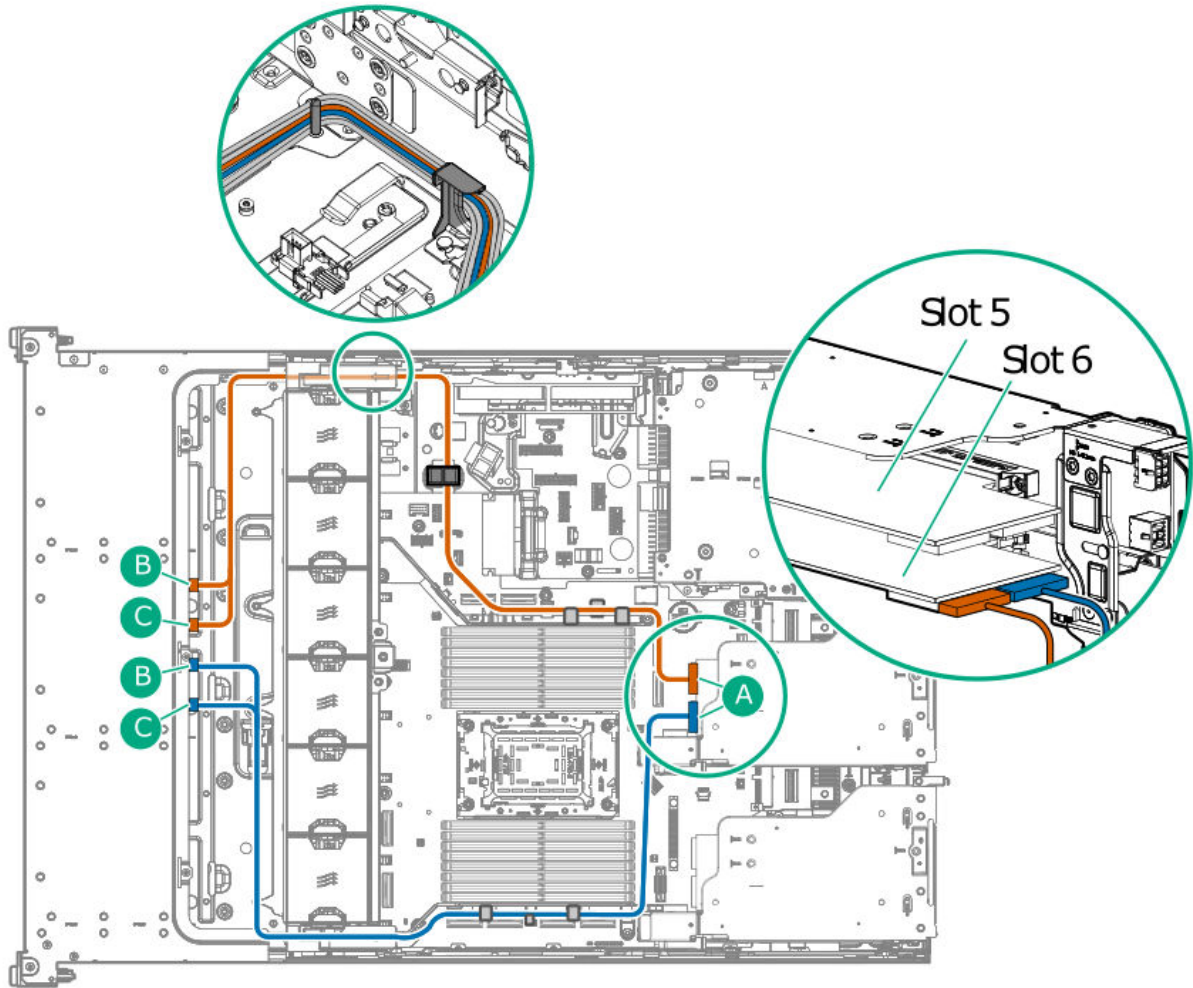
24 SFF x2 drive cabling: Type-p 2-port tri-mode controllers

- **Box 1**



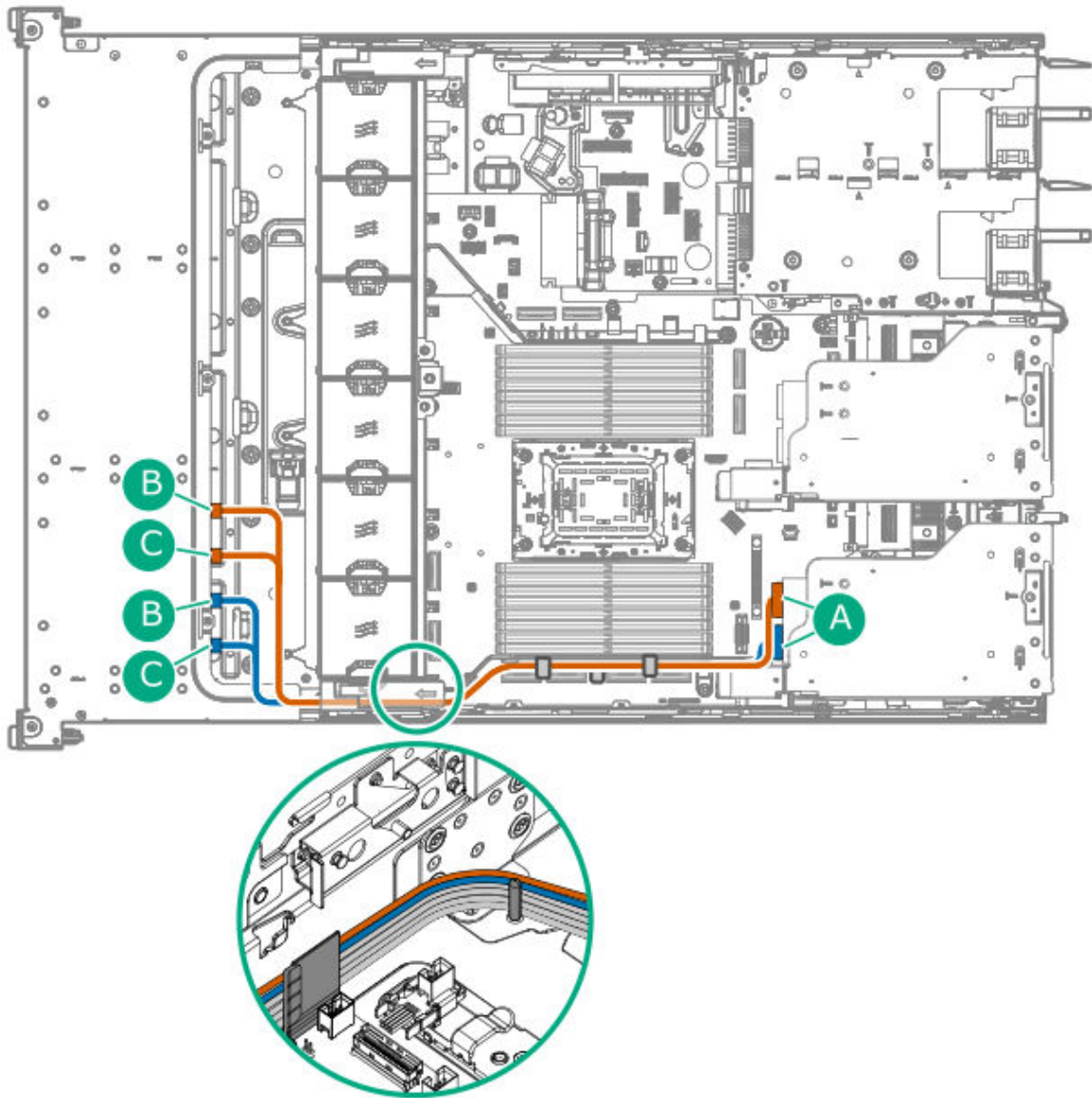
Cable part number	Cable color	From	To
P76440-001	Orange	Ports 1 and 2	PCIe slot 5 port 1
	Blue	Ports 3 and 4	PCIe slot 5 port 2

- **Box 2**



Cable part number	Cable color	From	To
P76440-001	Orange	Ports 1 and 2	PCIe slot 6 port 1
	Blue	Ports 3 and 4	PCIe slot 6 port 2

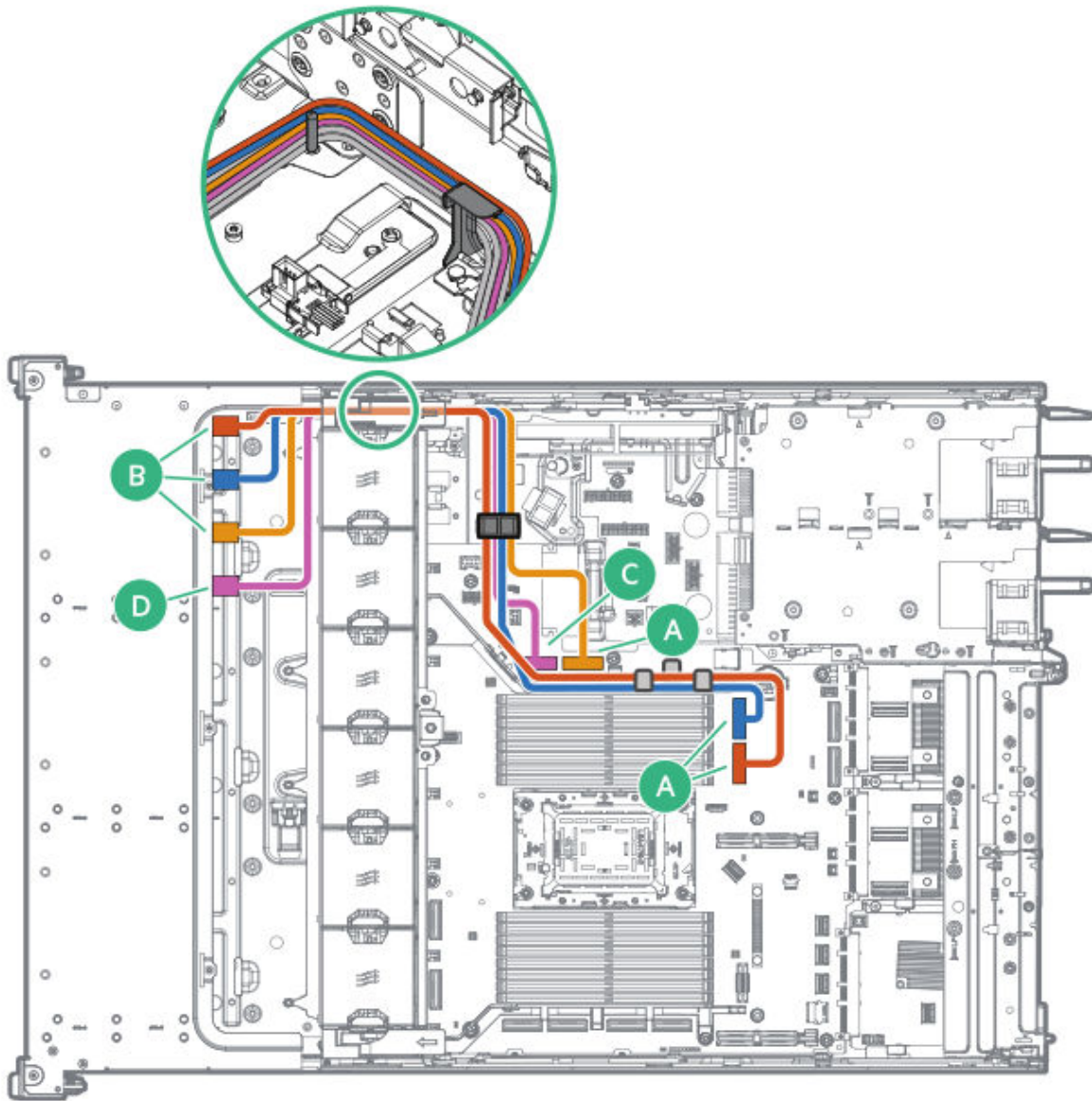
- **Box 3**



Cable part number	Cable color	From	To
P76440-001	Orange	Ports 1 and 2	PCIe slot 3 port 1
	Blue	Ports 3 and 4	PCIe slot 3 port 2

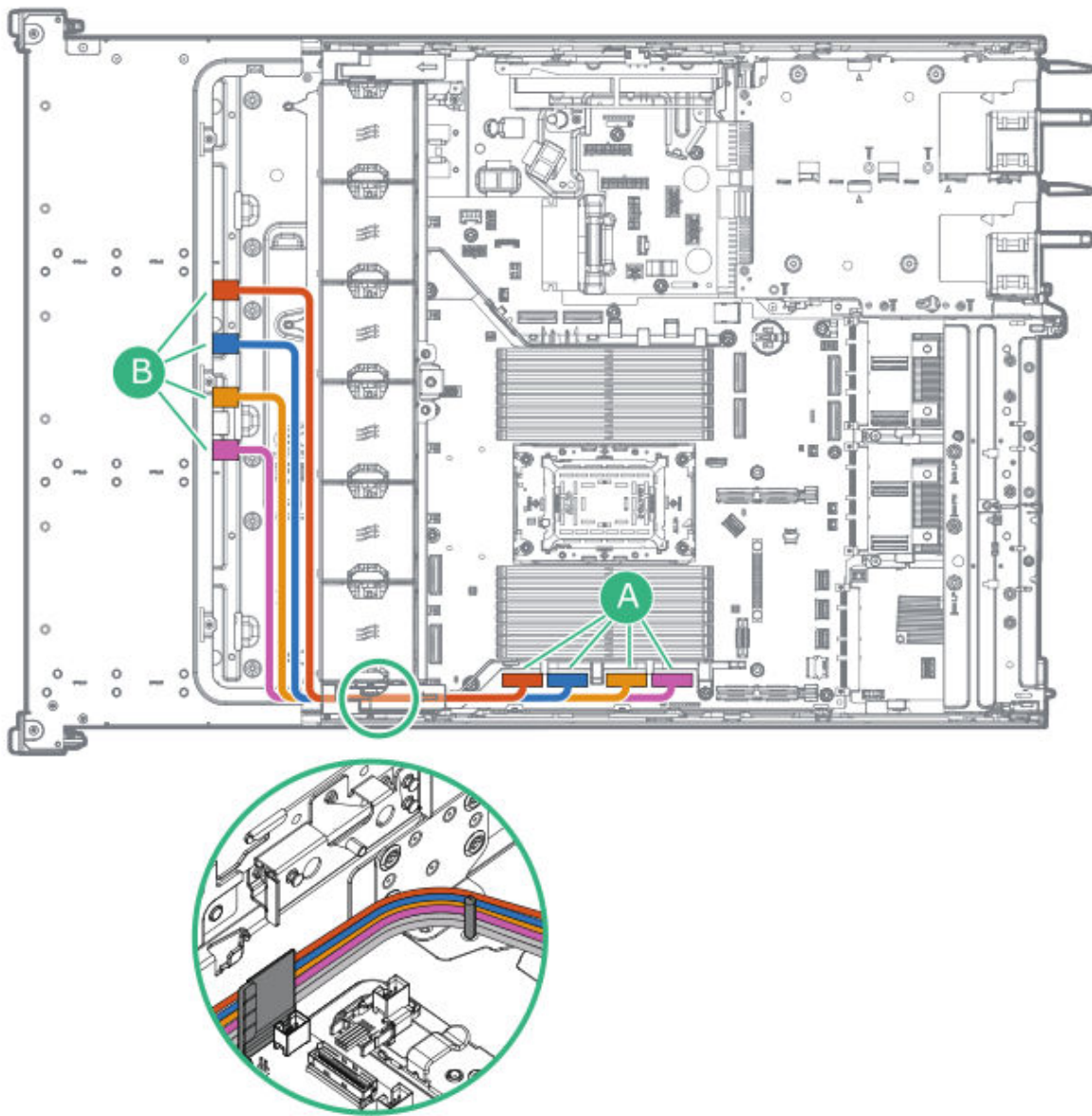
24 SFF x4 drive direct attach cabling

- **Box 1**



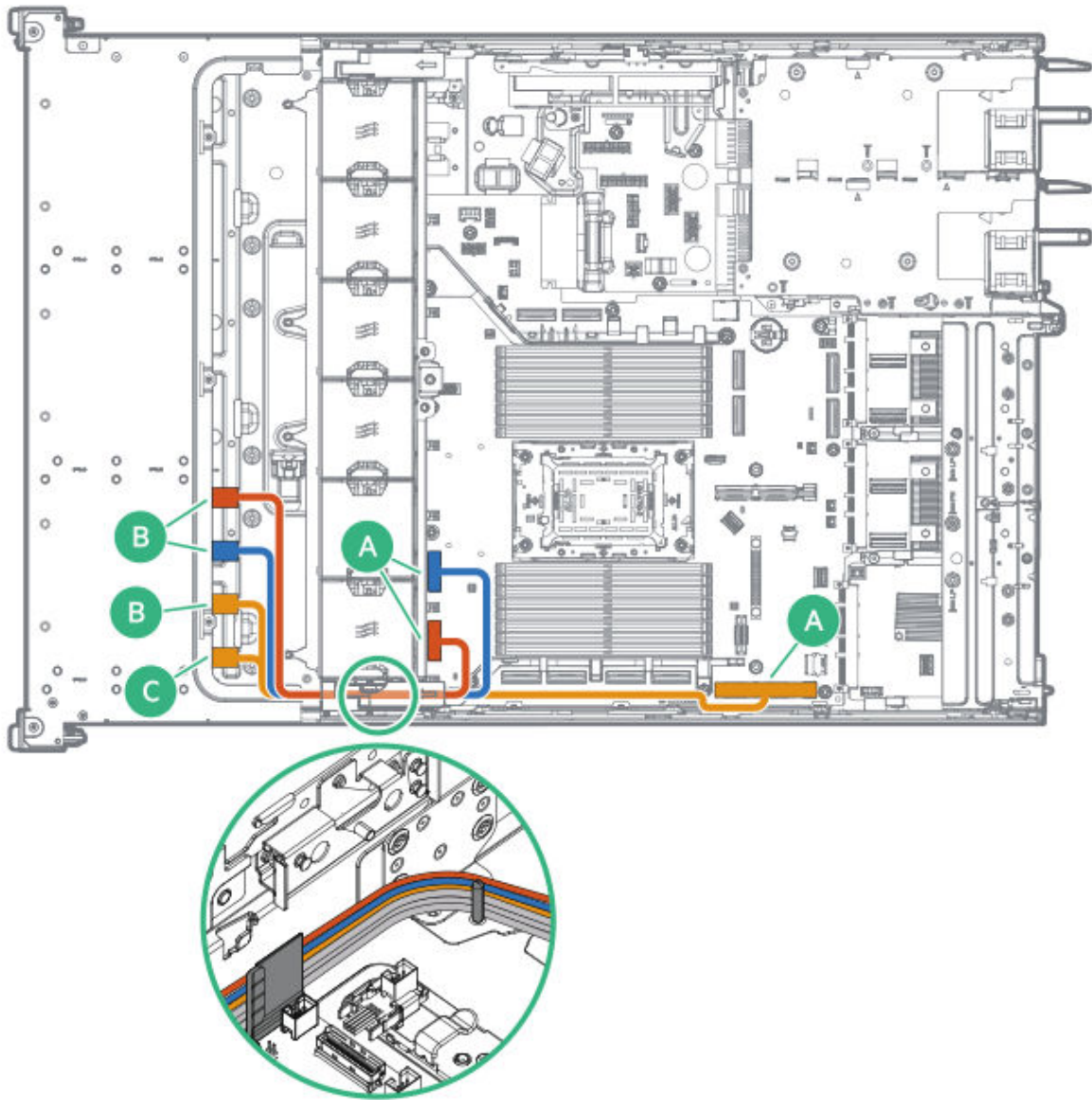
Cable part number	Cable color	From	To
P74807-001	Orange	Port 1	M-XIO port 13
	Blue	Port 2	M-XIO port 17
P71881-001	Gold	Port 3	M-XIO port 4
	Pink	Port 4	M-XIO port 6

- **Box 2**



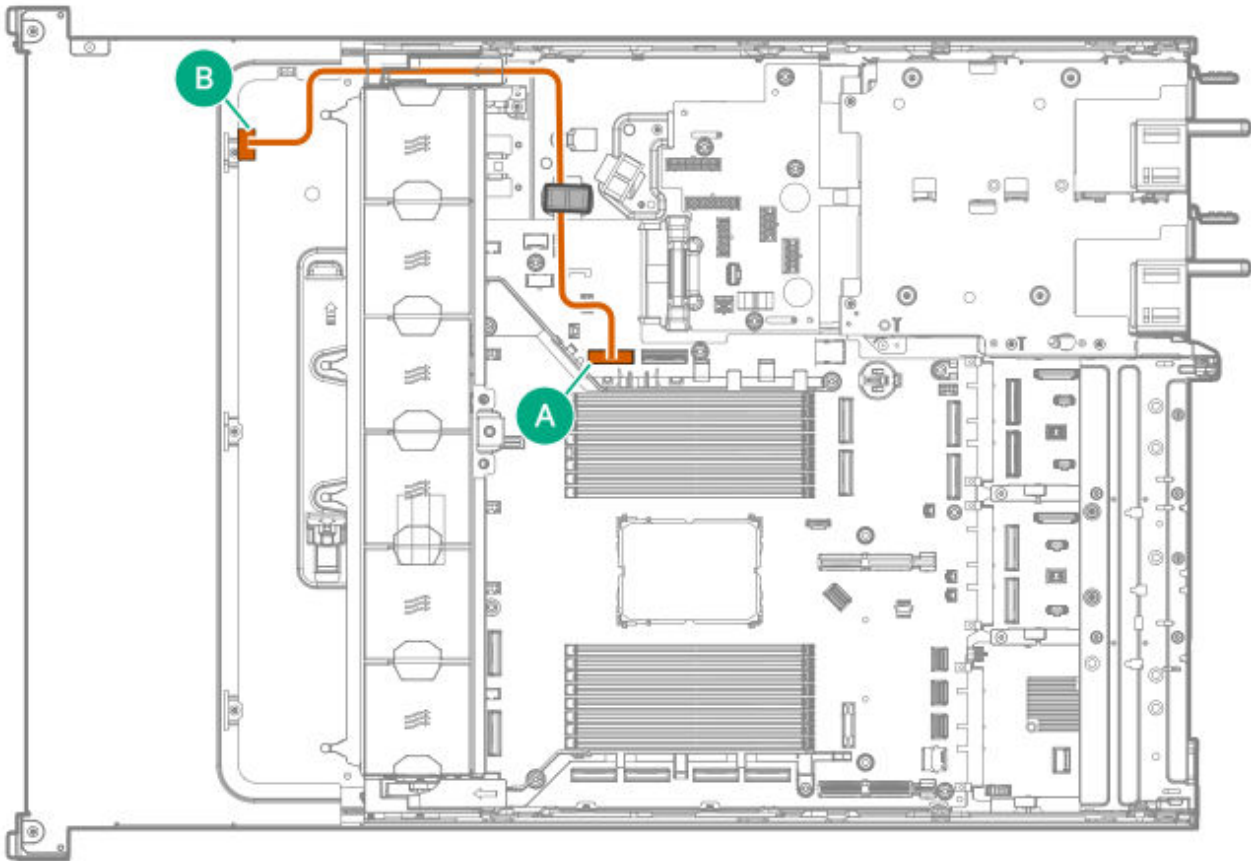
Cable part number	Cable color	From	To
P76442-001	Orange	Port 1	M-XIO port 7
	Blue	Port 2	M-XIO port 5
	Gold	Port 3	M-XIO port 1
	Pink	Port 4	M-XIO port 3

- **Box 3**



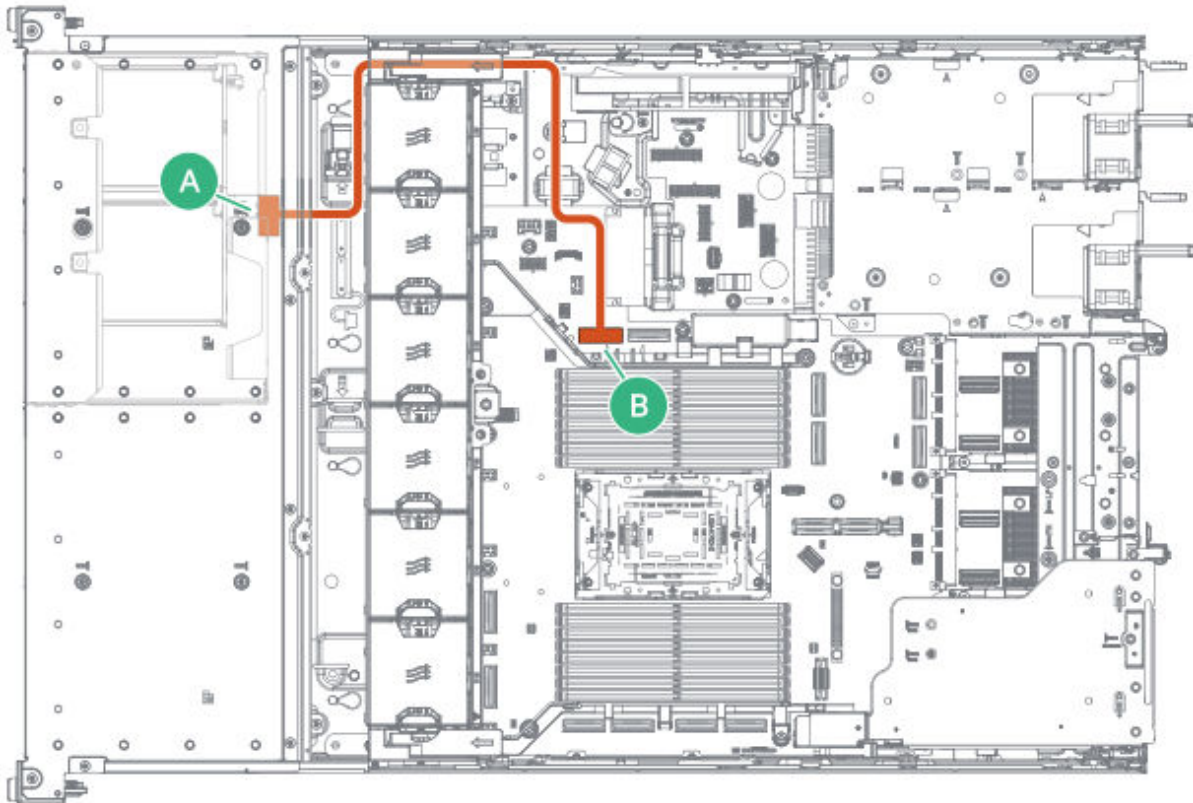
Cable part number	Cable color	From	To
P75257-001	Orange	Port 1	M-XIO port 0
	Blue	Port 2	M-XIO port 2
P74815-001	Gold	Port 3	Primary riser connector
		Port 4	

2 SFF stacked drive cabling



Cable part number	Cable color	From	To
P75367-001	Orange	Box 1 port 1	M-XIO port 6

2 SFF side-by-side drive cabling



Cable part number	Cable color	From	To
P75367-001	Orange	Box 1 port 1	M-XIO port 6

E3.S drive controller cabling: Non-GPU-optimized configuration

Subtopics

[8 E3.S drive cabling](#)

[16 E3.S drive cabling](#)

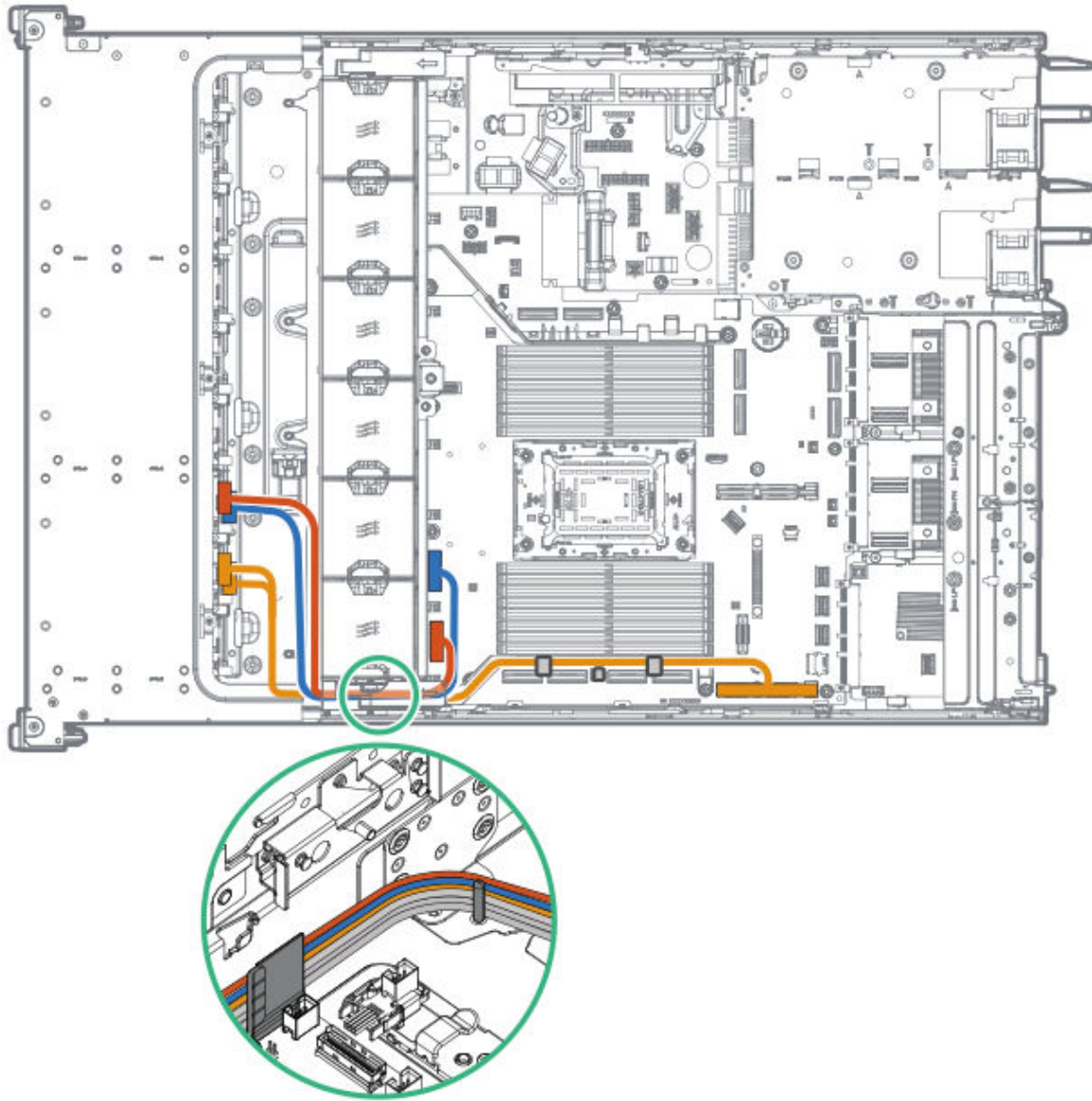
[24 E3.S drive cabling](#)

[36 E3.S drive cabling](#)

8 E3.S drive cabling

Direct attach

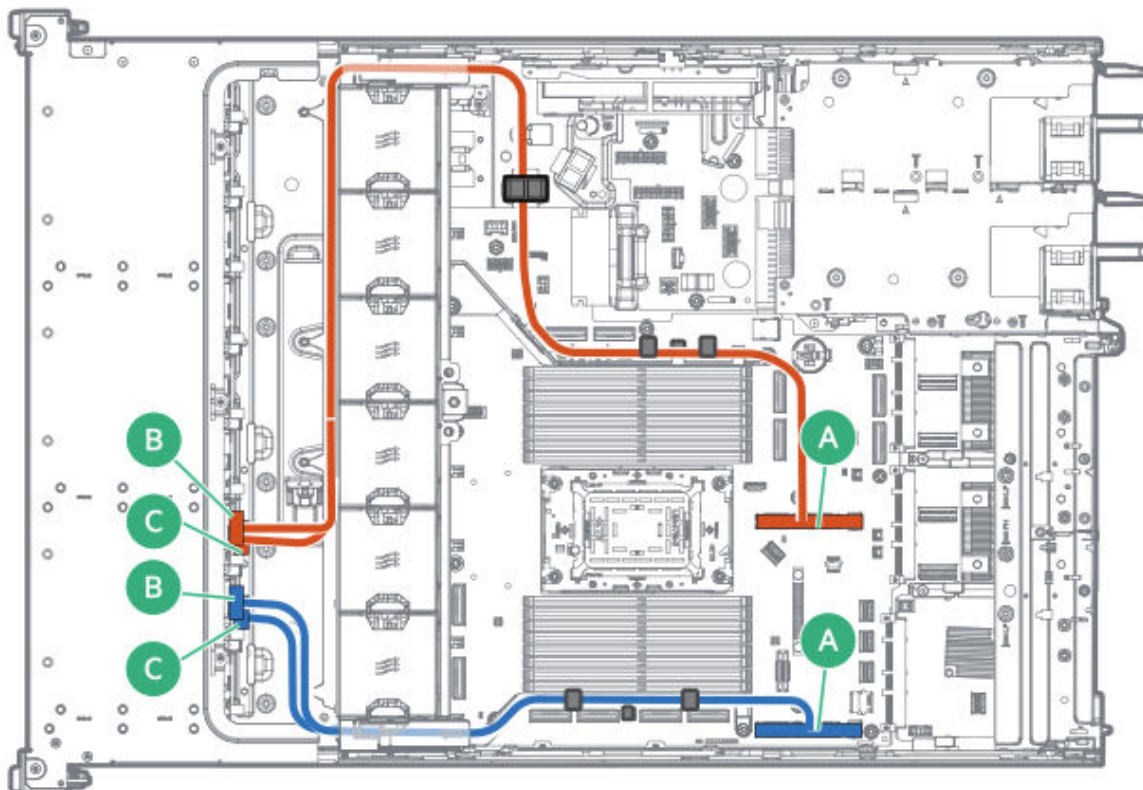
- Universal media bay configuration



Cable part number	Cable color	From	To
P75317-001	Orange	Box 3 bays 1 to 4 port 1	M-XIO port 0
	Blue	Box 3 bays 1 to 4 port 2	M-XIO port 2

Cable part number	Cable color	From	To
P75246-001	Gold	Box 3 bays 5 to 8 ports	Primary riser connector 1 and 2

- **Front OCP NIC configuration**

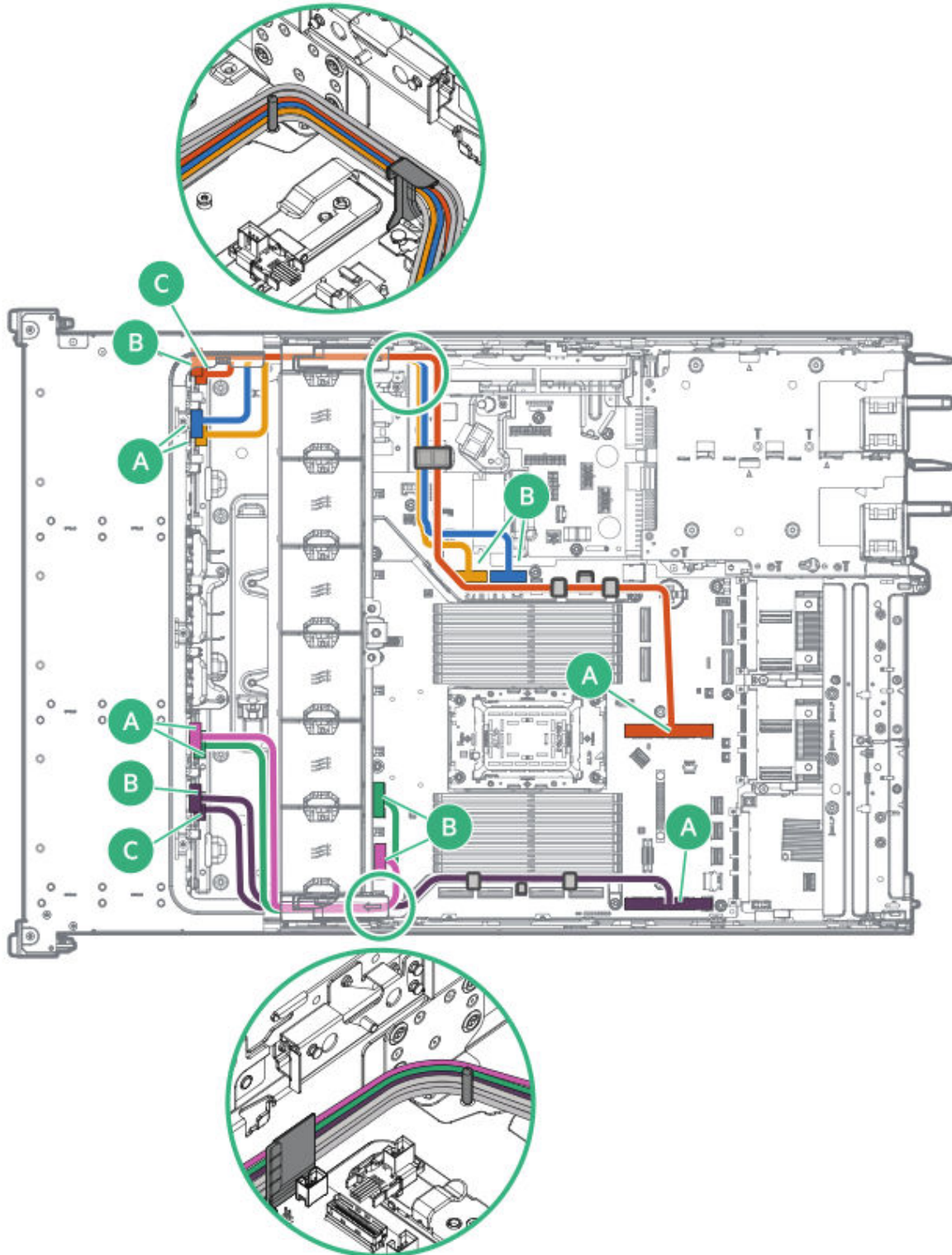


Cable part number	Cable color	From	To
P75580-001	Orange	Box 3 bays 1 to 4 ports	Secondary riser connector 1 and 2
P75246-001	Blue	Box 3 bays 5 to 8 ports	Primary riser connector 1 and 2

16 E3.S drive cabling

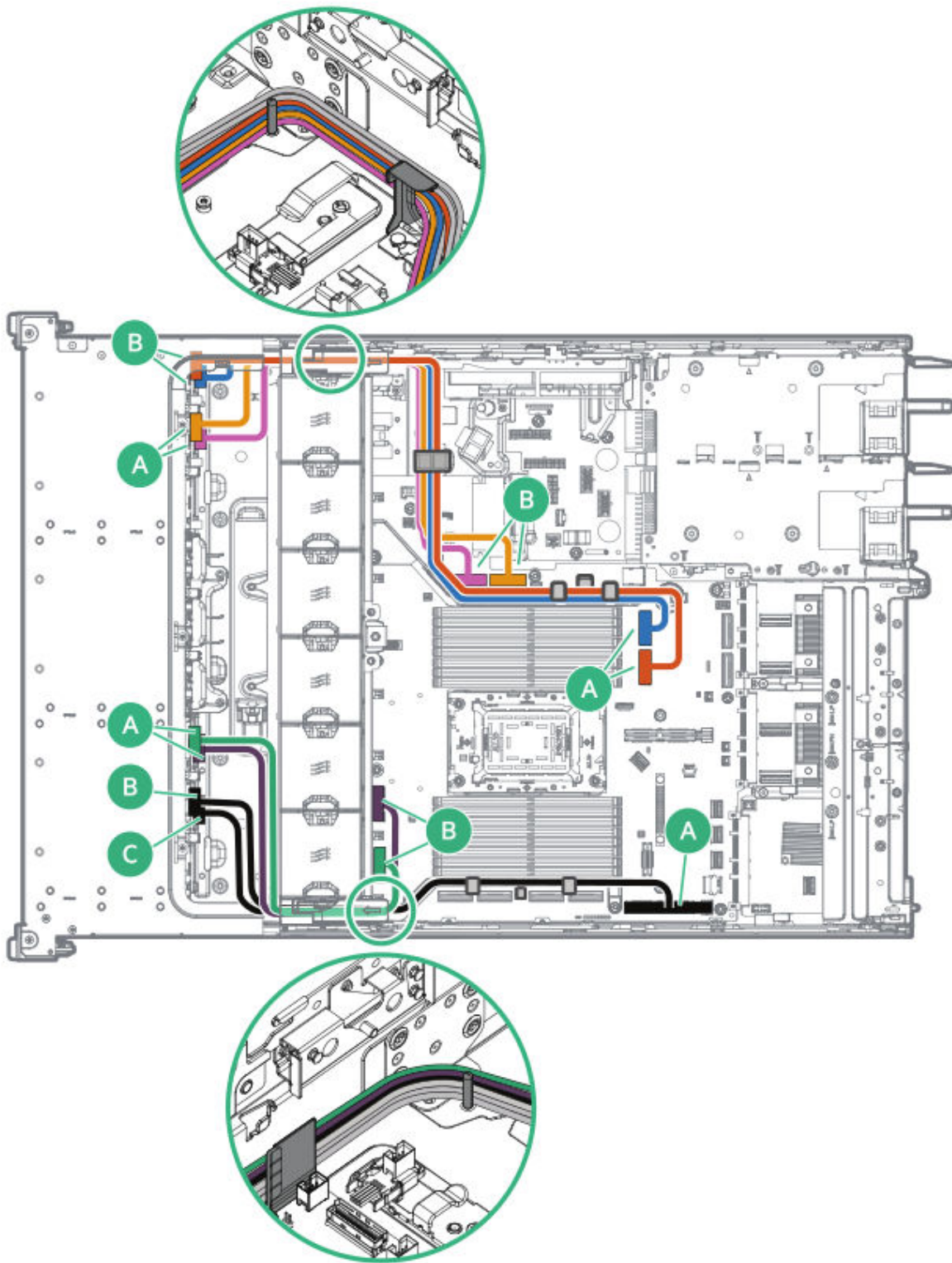
Direct attach

- Secondary riser blank configuration



Cable part number	Cable color	From	To
P75580-001	Orange	Box 1 bays 1 to 4 ports 1 and 2	Secondary riser connector
P75317-001	Blue	Box 1 bays 5 to 8 port 1	M-XIO port 4
	Gold	Box 1 bays 5 to 8 port 2	M-XIO port 6
	Pink	Box 3 bays 1 to 4 port 1	M-XIO port 0
	Green	Box 3 bays 1 to 4 port 2	M-XIO port 2
P75246-001	Purple	Box 3 bays 5 to 8 ports 1 and 2	Primary riser connector

- **Rich I/O configuration**

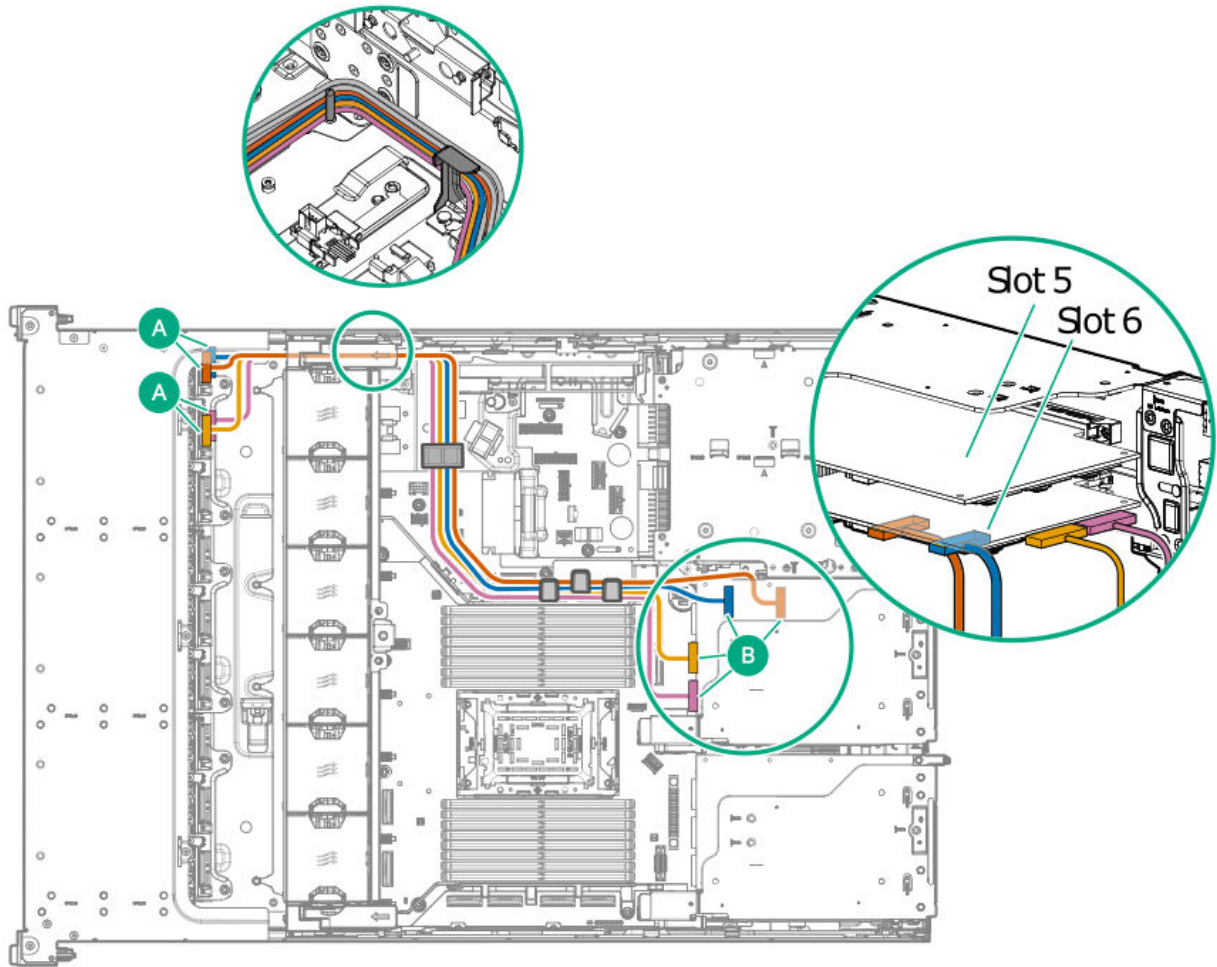


Cable part number	Cable color	From	To
P75576-001	Orange	Box 1 bays 1 to 4 port 1	M-XIO port 13

Cable part number	Cable color	From	To
P75317-001	Blue	Box 1 bays 1 to 4 port 2	M-XIO port 17
	Gold	Box 1 bays 5 to 8 port 1	M-XIO port 4
	Pink	Box 1 bays 5 to 8 port 2	M-XIO port 6
	Green	Box 3 bays 1 to 4 port 1	M-XIO port 0
	Purple	Box 3 bays 1 to 4 port 2	M-XIO port 2
P75246-001	Black	Box 3 bays 5 to 8 ports	Primary riser connector 1 and 2

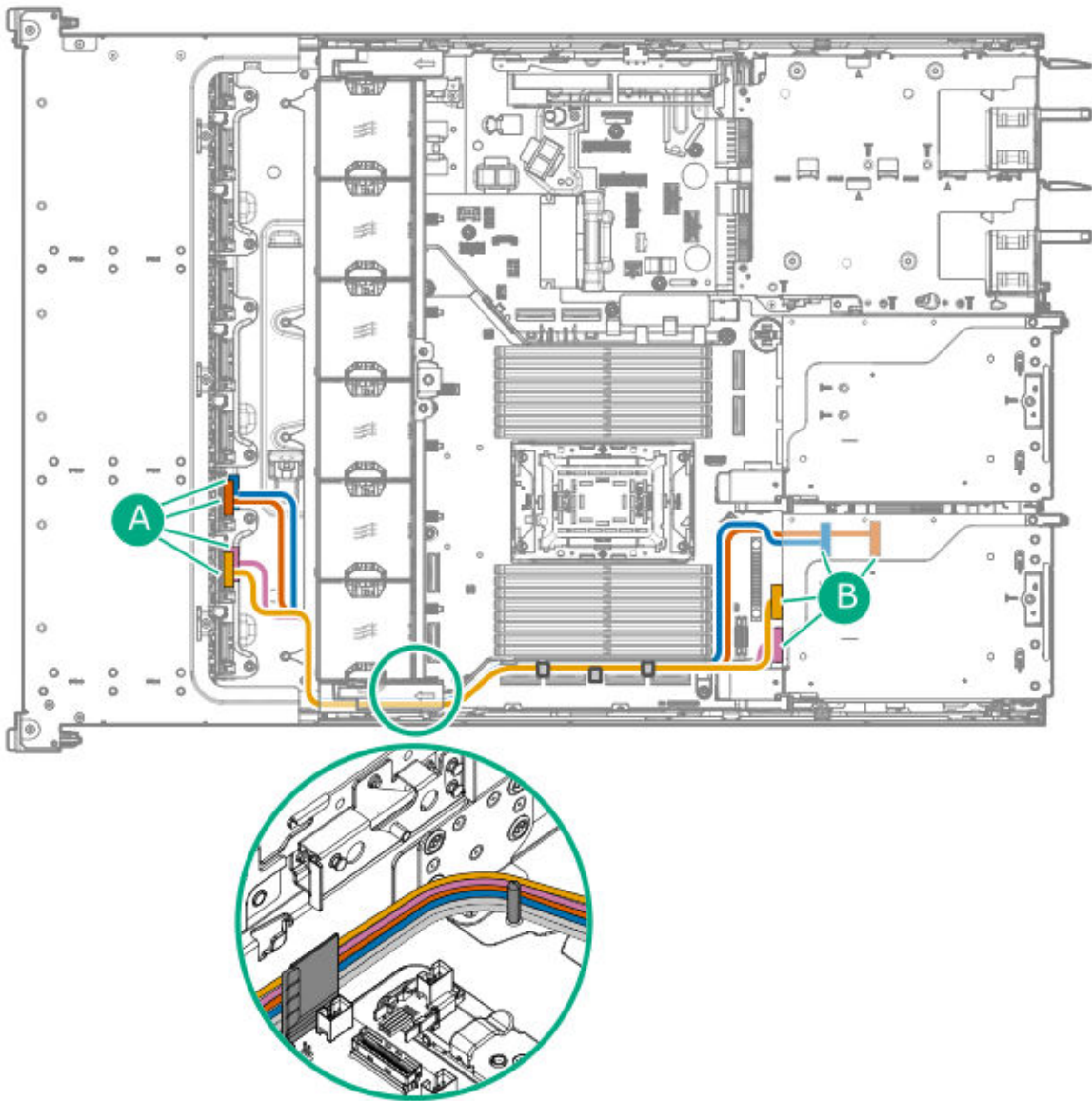
Type-p 4-port tri-mode controllers

- **Box 1**



Cable part number	Cable color	From	To
P75569-001	Orange	Bays 1 to 4 port 1	PCIe slot 6 port 3
	Blue	Bays 1 to 4 port 2	PCIe slot 6 port 4
	Gold	Bays 5 to 8 port 1	PCIe slot 6 port 1
	Pink	Bays 5 to 8 port 2	PCIe slot 6 port 2

- **Box 3**

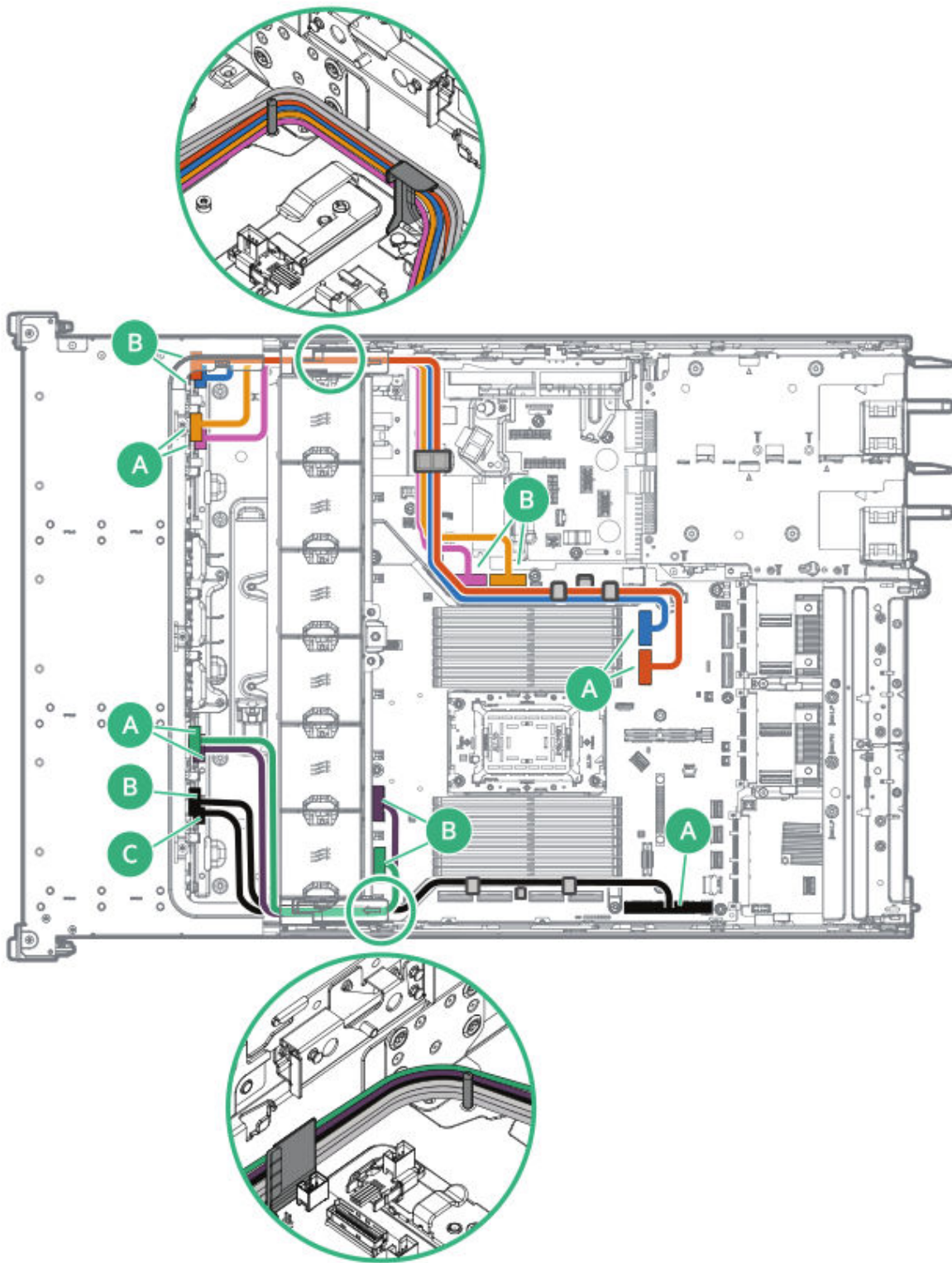


Cable part number	Cable color	From	To
P75569-001	Orange	Bays 1 to 4 port 1	PCIe slot 3 port 3
	Blue	Bays 1 to 4 port 2	PCIe slot 3 port 4
	Gold	Bays 5 to 8 port 1	PCIe slot 3 port 1
	Pink	Bays 5 to 8 port 2	PCIe slot 3 port 2

24 E3.S drive cabling

Direct attach

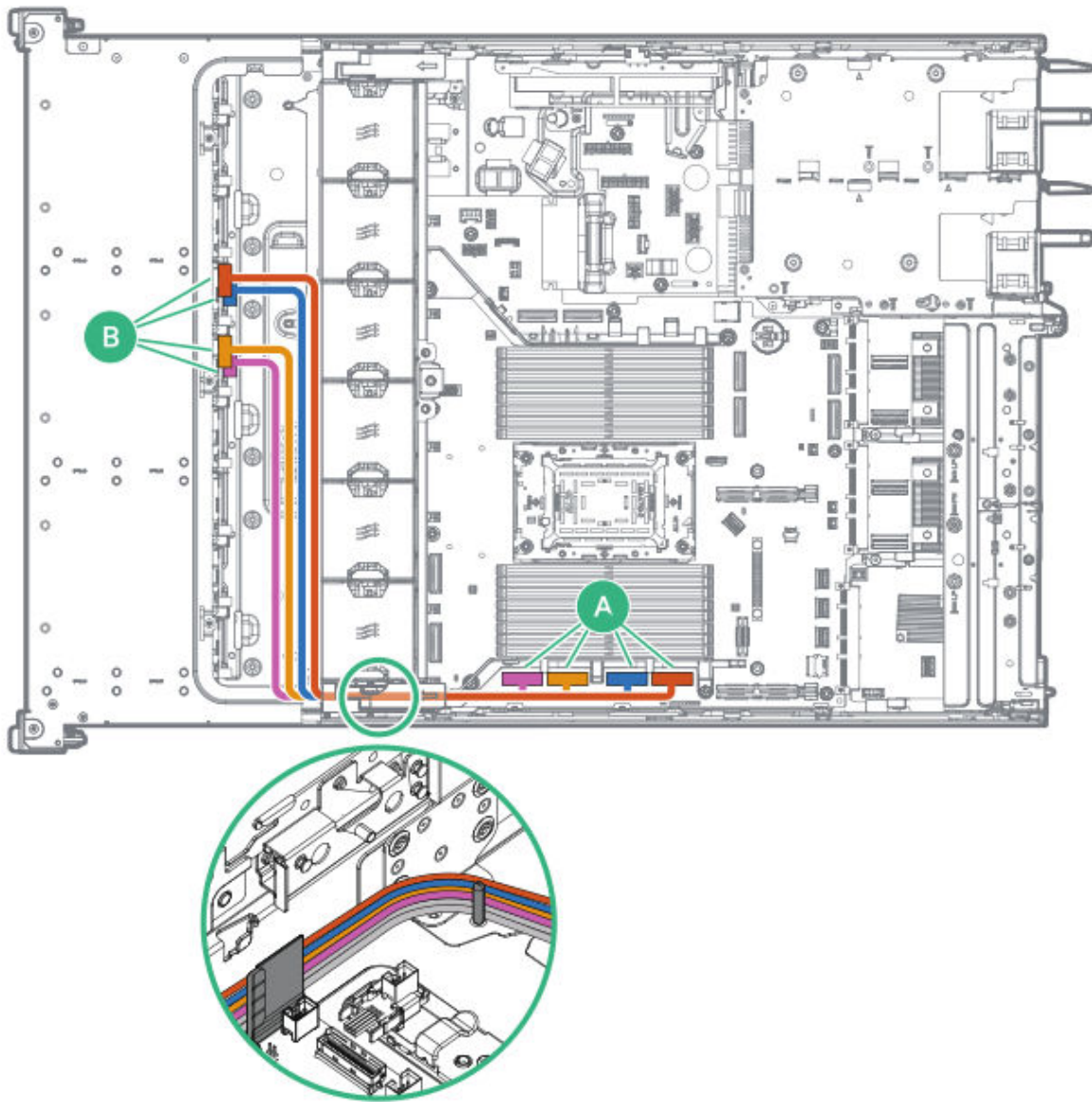
- **Boxes 1 and 3**



Cable part number	Cable color	From	To
P75576-001	Orange	Box 1 bays 1 to 4 port 1	M-XIO port 13

Cable part number	Cable color	From	To
P75317-001	Blue	Box 1 bays 1 to 4 port 2	M-XIO port 17
	Gold	Box 1 bays 5 to 8 port 1	M-XIO port 4
	Pink	Box 1 bays 5 to 8 port 2	M-XIO port 6
	Green	Box 3 bays 1 to 4 port 1	M-XIO port 0
	Purple	Box 3 bays 1 to 4 port 2	M-XIO port 2
P75246-001	Black	Box 3 bays 5 to 8 ports	Primary riser connector 1 and 2

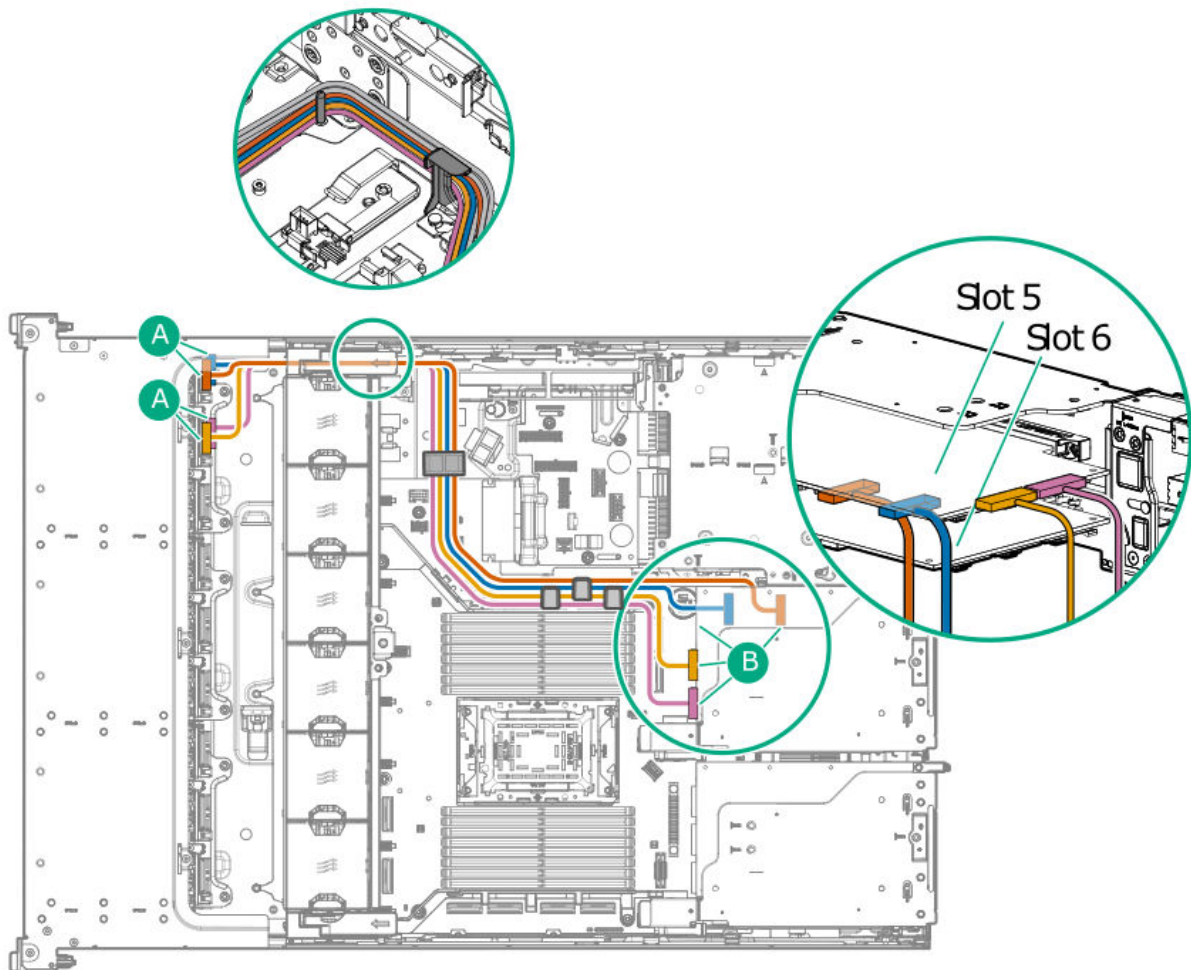
- **Box 2**



Cable part number	Cable color	From	To
P75504-001	Orange	Bays 1 to 4 port 1	M-XIO port 7
	Blue	Bays 1 to 4 port 2	M-XIO port 5
	Gold	Bays 5 to 8 port 1	M-XIO port 1
	Pink	Bays 5 to 8 port 2	M-XIO port 3

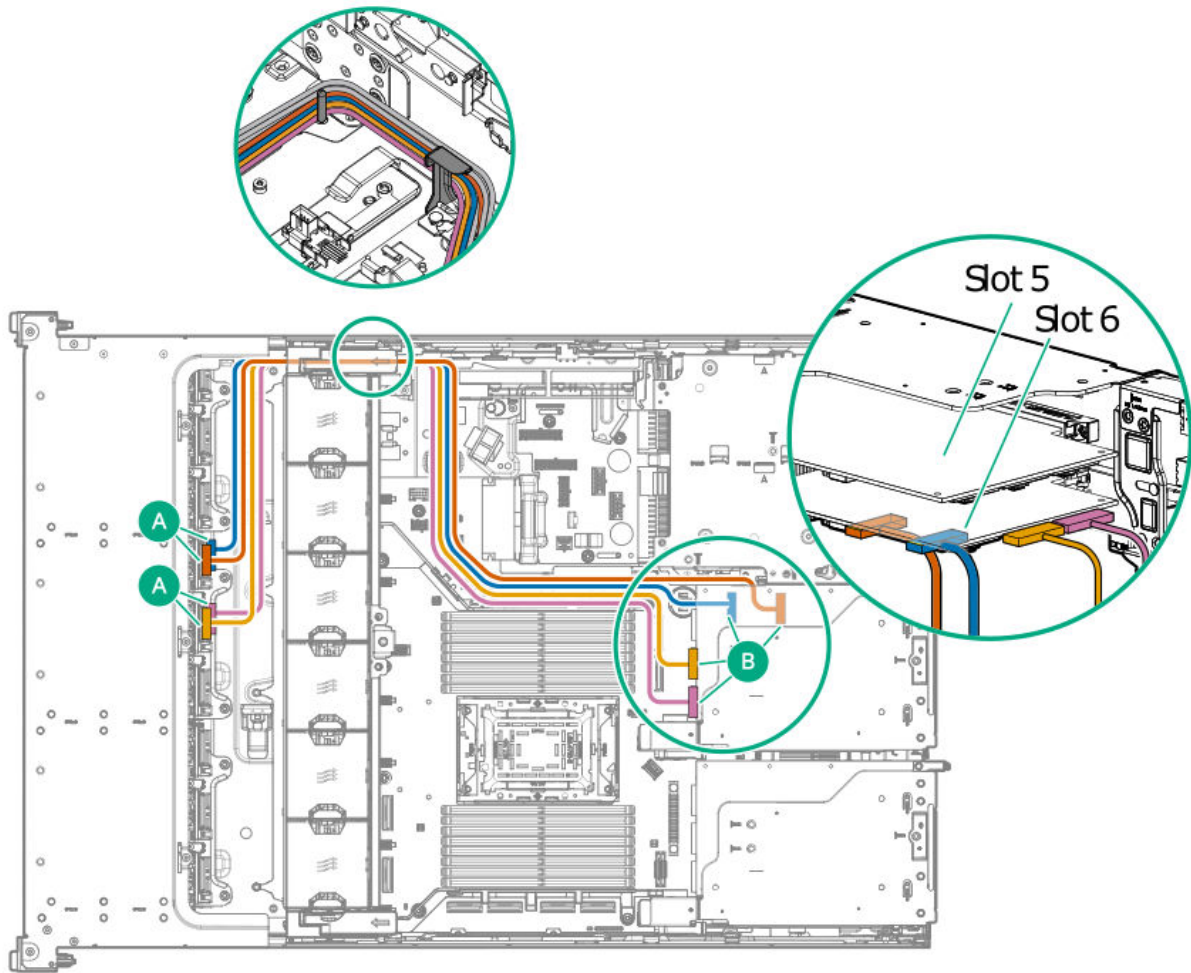
Type-p 4-port tri-mode controllers

- **Box 1**



Cable part number	Cable color	From	To
P75569-001	Orange	Bays 1 to 4 port 1	PCIe slot 5 port 3
	Blue	Bays 1 to 4 port 2	PCIe slot 5 port 4
	Gold	Bays 5 to 8 port 1	PCIe slot 5 port 1
	Pink	Bays 5 to 8 port 2	PCIe slot 5 port 2

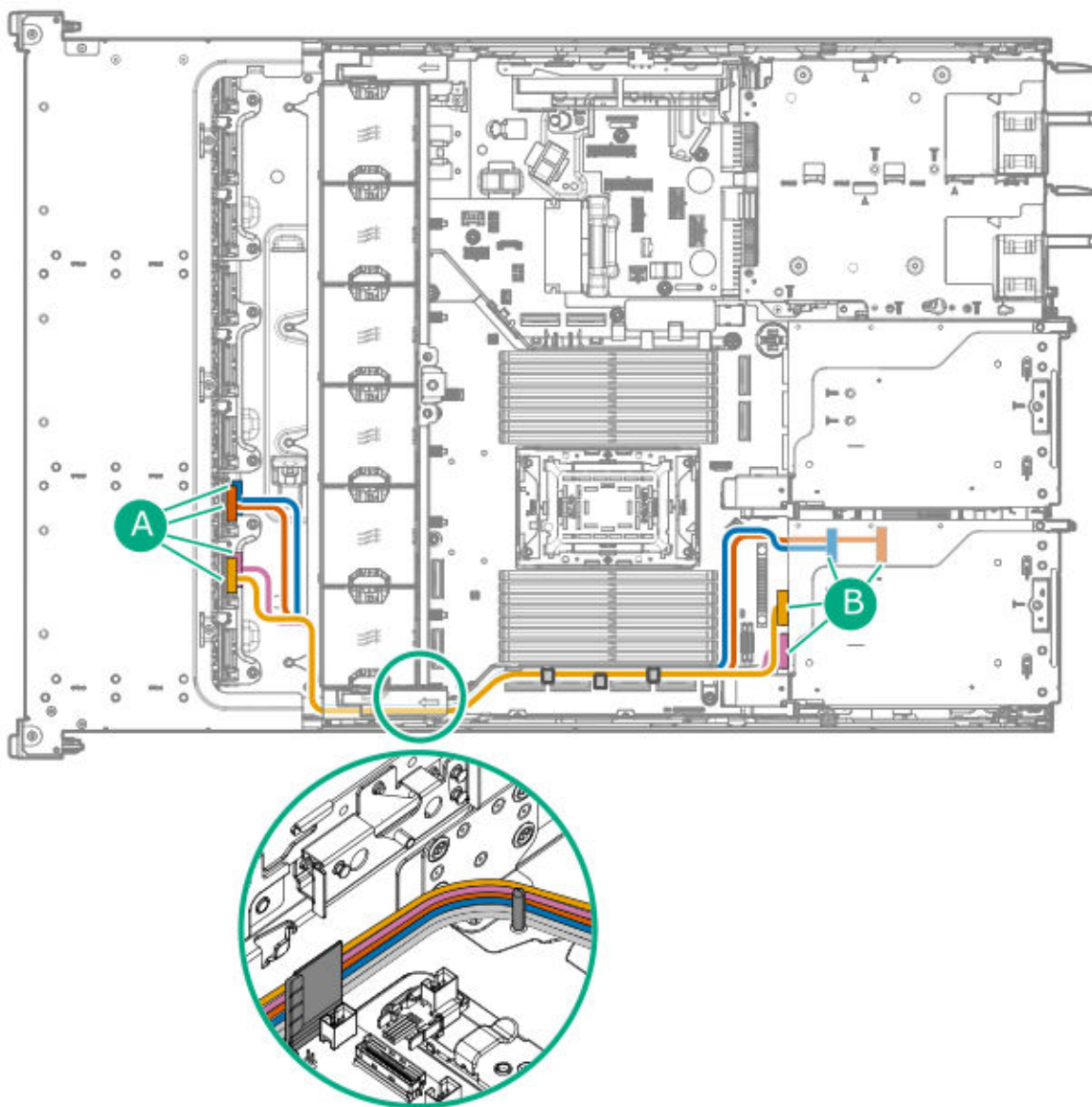
- **Box 2**



Cable part number	Cable color	From	To
P75570-001	Orange	Bays 1 to 4 port 1	PCIe slot 6 port 3
	Blue	Bays 1 to 4 port 2	PCIe slot 6 port 4

Cable part number	Cable color	From	To
	Gold	Bays 5 to 8 port 1	PCIe slot 6 port 1
	Pink	Bays 5 to 8 port 2	PCIe slot 6 port 2

- **Box 3**



Cable part number	Cable color	From	To
P75569-001	Orange	Bays 1 to 4 port 1	PCIe slot 3 port 3
	Blue	Bays 1 to 4 port 2	PCIe slot 3 port 4

Cable part number	Cable color	From	To
	Gold	Bays 5 to 8 port 1	PCIe slot 3 port 1
	Pink	Slots 5 to 8 port 2	PCIe slot 3 port 2

36 E3.S drive cabling

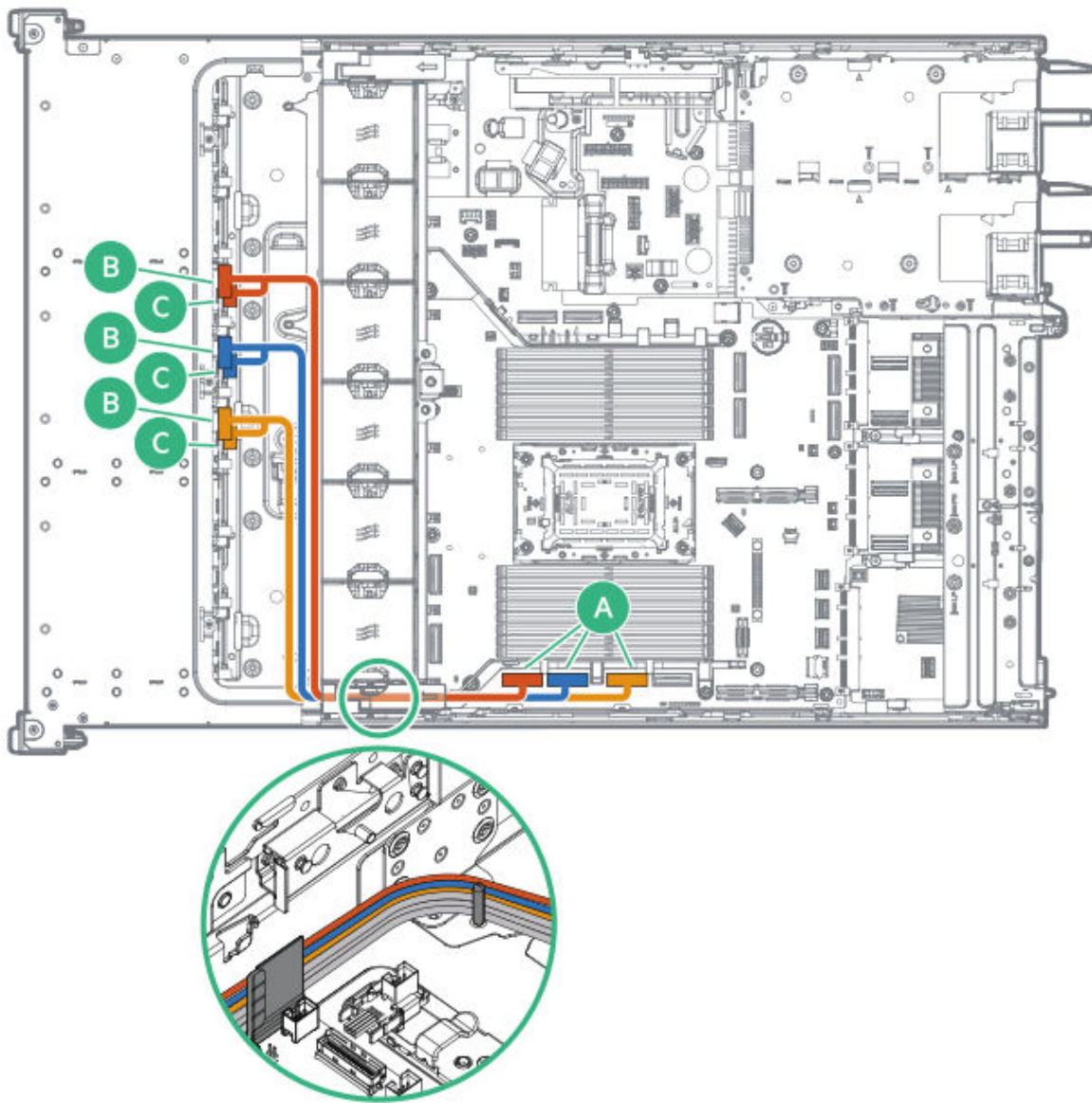
Direct attach

- **Box 1**



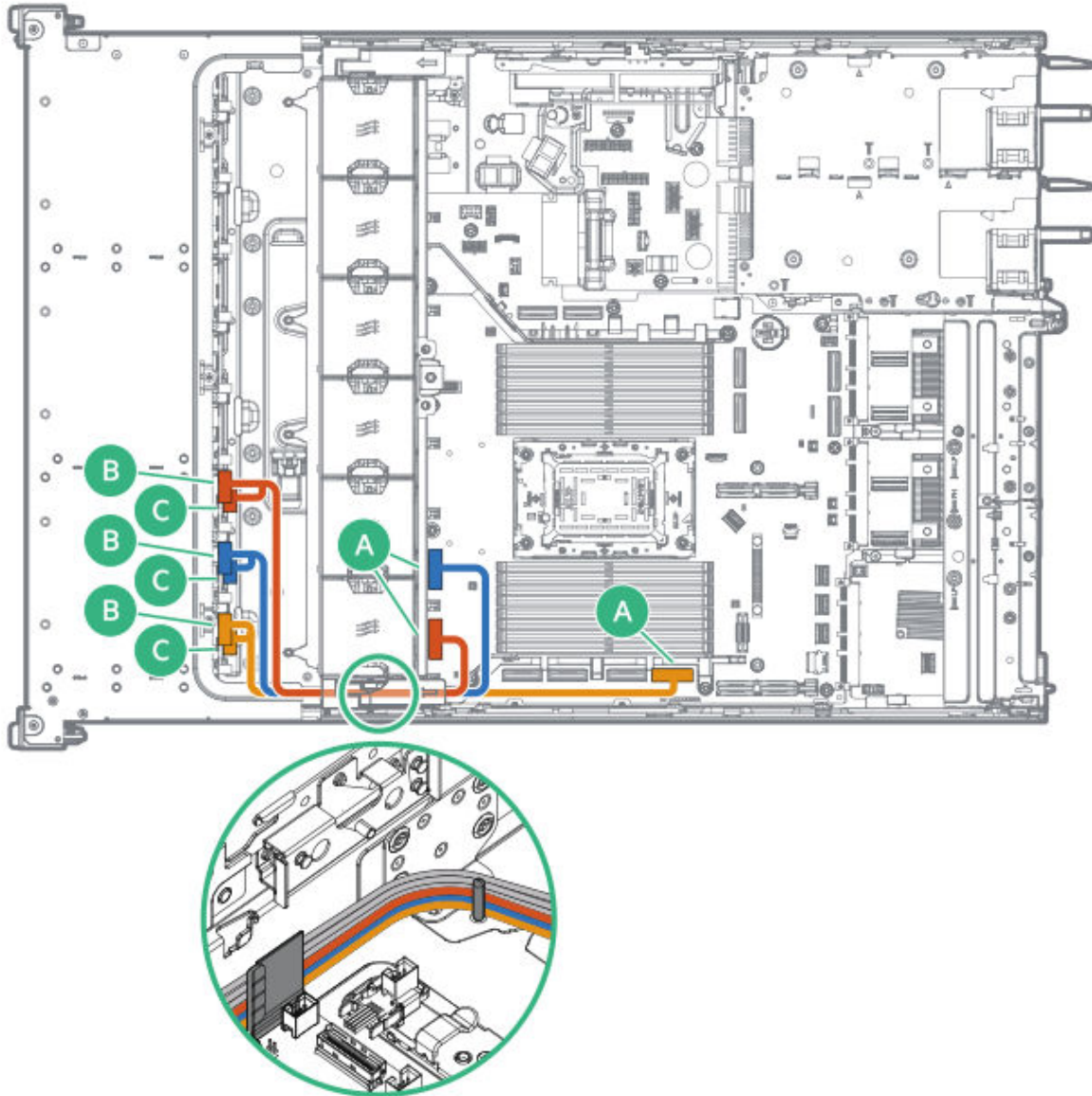
Cable part number	Cable color	From	To
P75908-001	Orange	Bays 1 to 4 port 1	M-XIO port 17
		Bays 1 to 4 port 2	
P75369-001	Blue	Bays 5 to 8 port 1	M-XIO port 4
		Bays 5 to 8 port 2	
	Gold	Bays 9 to 12 port 1	M-XIO port 6
		Bays 9 to 12 port 2	

- **Box 2**



Cable part number	Cable color	From	To
P75908-001	Orange	Bays 1 to 4 port 1	M-XIO port 7
		Bays 1 to 4 port 2	
	Blue	Bays 5 to 8 port 1	M-XIO port 5
		Bays 5 to 8 port 2	
	Gold	Bays 9 to 12 port 1	M-XIO port 1
		Bays 9 to 12 port 2	

- **Box 3**

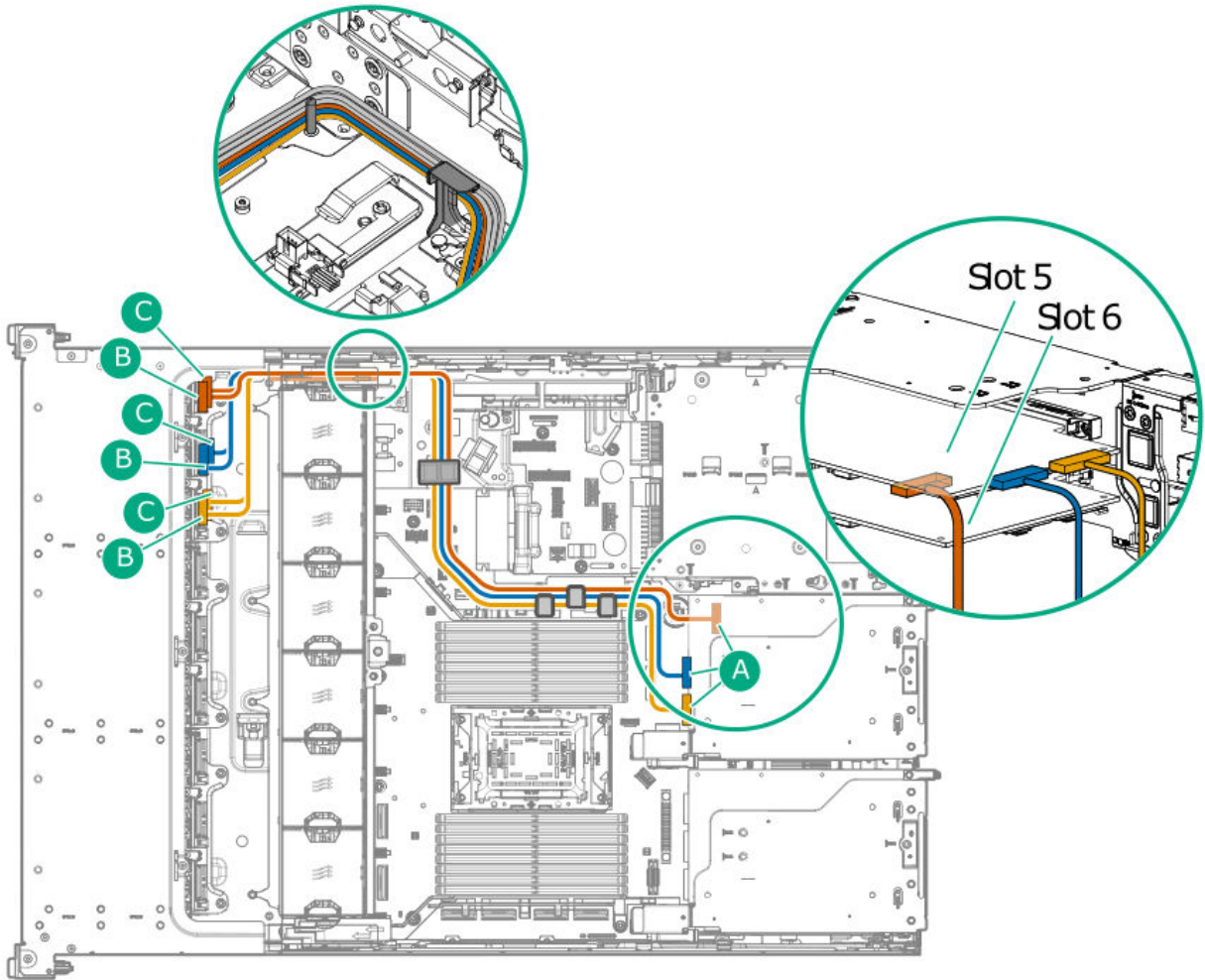


Cable part number	Cable color	From	To
P75258-001	Orange	Bays 1 to 4 port 1	M-XIO port 0
		Bays 1 to 4 port 2	
	Blue	Bays 5 to 8 port 1	M-XIO port 2
		Bays 5 to 8 port 2	
P75369-001	Gold	Bays 9 to 12 port 1	M-XIO port 3

Cable part number	Cable color	From	To
		Bays 9 to 12 port 2	

Type-p 4-port tri-mode controllers

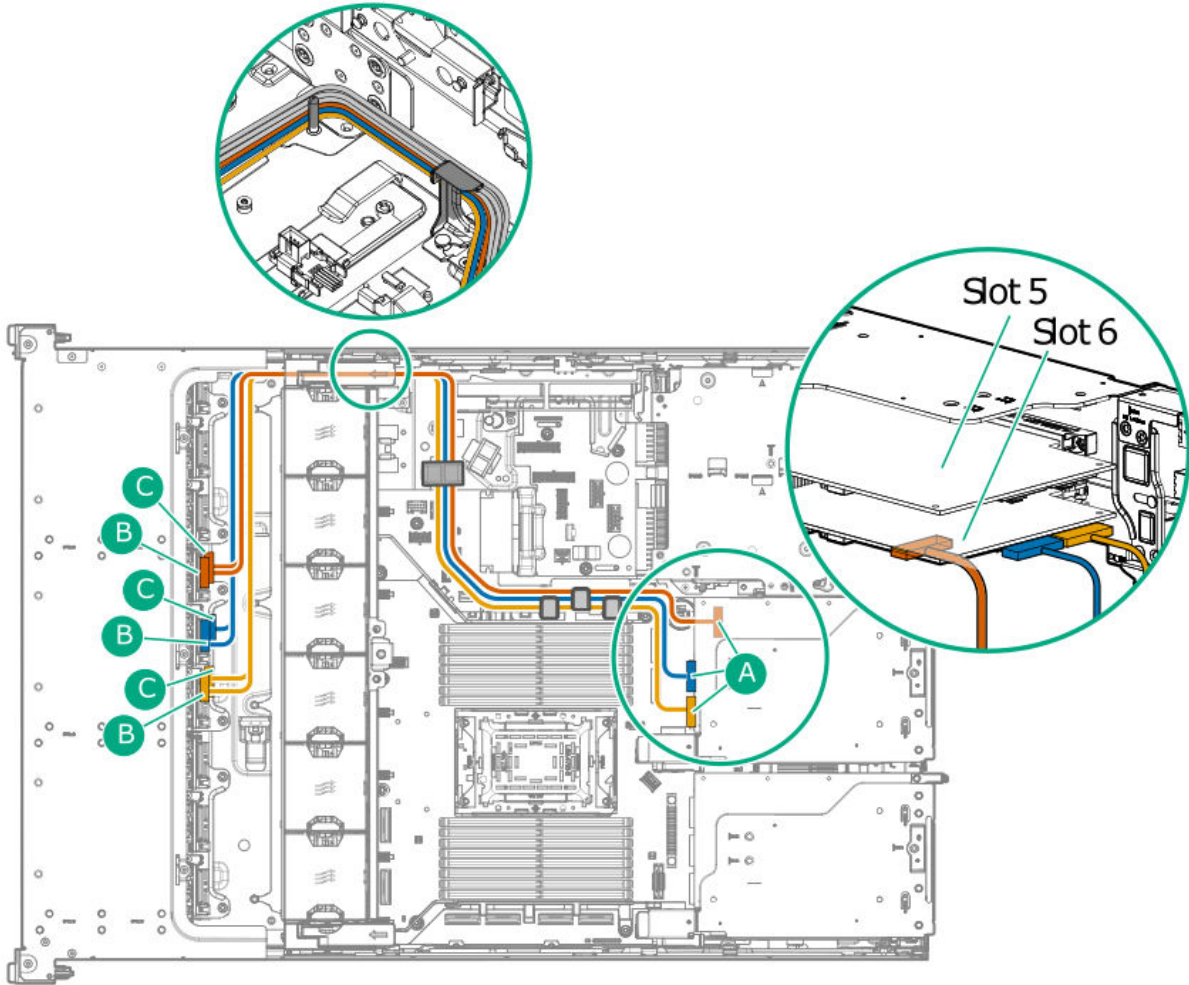
- **Box 1**



Cable part number	Cable color	From	To
P75275-001	Orange	Bays 1 to 4 port 1	PCIe slot 5 port 4
		Bays 1 to 4 port 2	
	Blue	Bays 5 to 8 port 1	PCIe slot 5 port 1
		Bays 5 to 8 port 2	
	Gold	Bays 9 to 12 port 1	PCIe slot 5 port 2

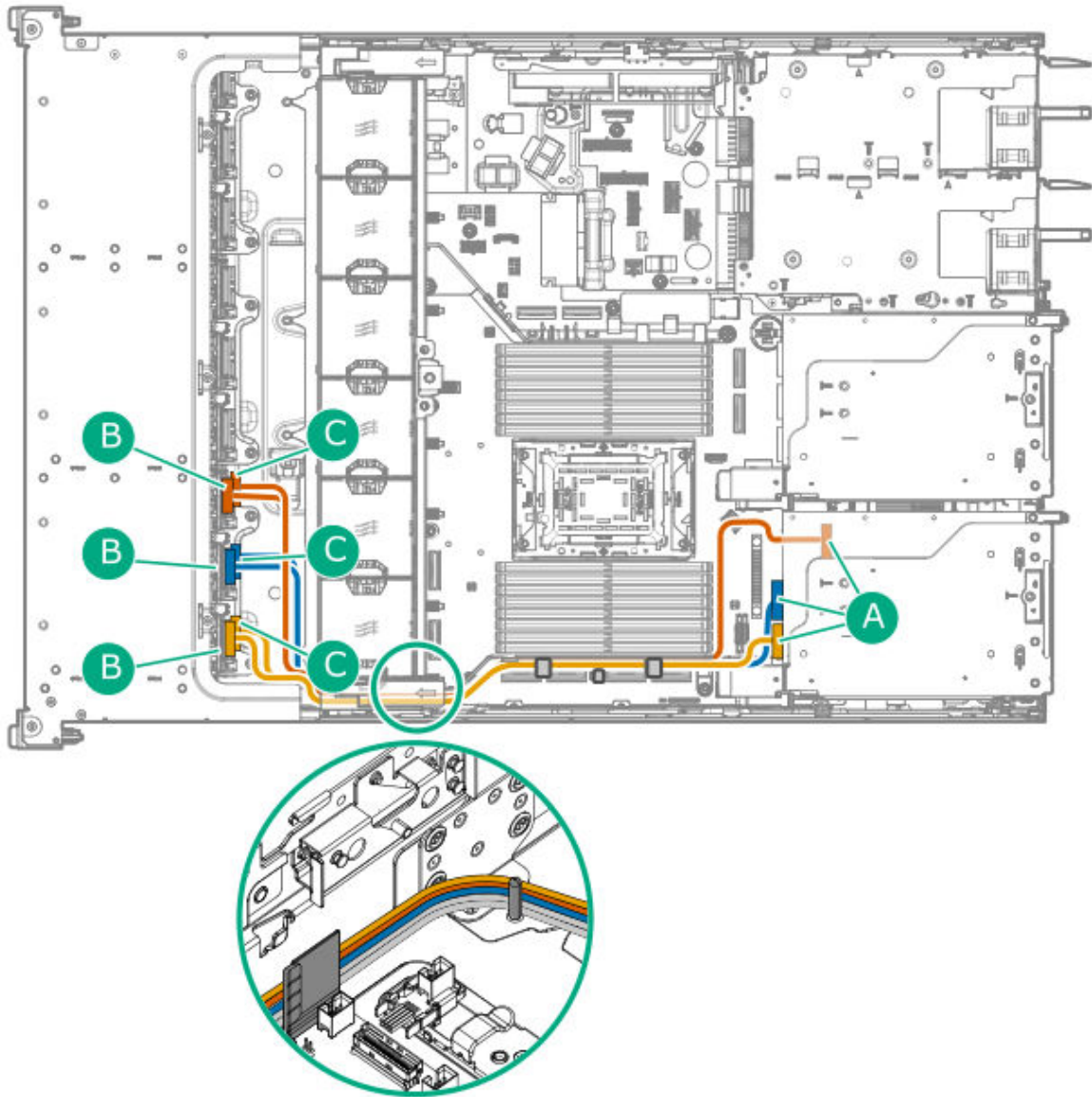
Cable part number	Cable color	From	To
		Bays 9 to 12 port 2	

• **Box 2**



Cable part number	Cable color	From	To
P75275-001	Orange	Bays 1 to 4 port 1	PCIe slot 6 port 4
		Bays 1 to 4 port 2	
	Blue	Bays 5 to 8 port 1	PCIe slot 6 port 1
		Bays 5 to 8 port 2	
	Gold	Bays 9 to 12 port 1	PCIe slot 6 port 2
		Bays 9 to 12 port 2	

- **Box 3**



Cable part number	Cable color	From	To
P75275-001	Orange	Bays 1 to 4 port 1	PCIe slot 3 port 4
		Bays 1 to 4 port 2	
	Blue	Bays 5 to 8 port 1	PCIe slot 3 port 1
		Bays 5 to 8 port 2	
	Gold	Bays 9 to 12 port 1	PCIe slot 3 port 2
		Bays 9 to 12 port 2	

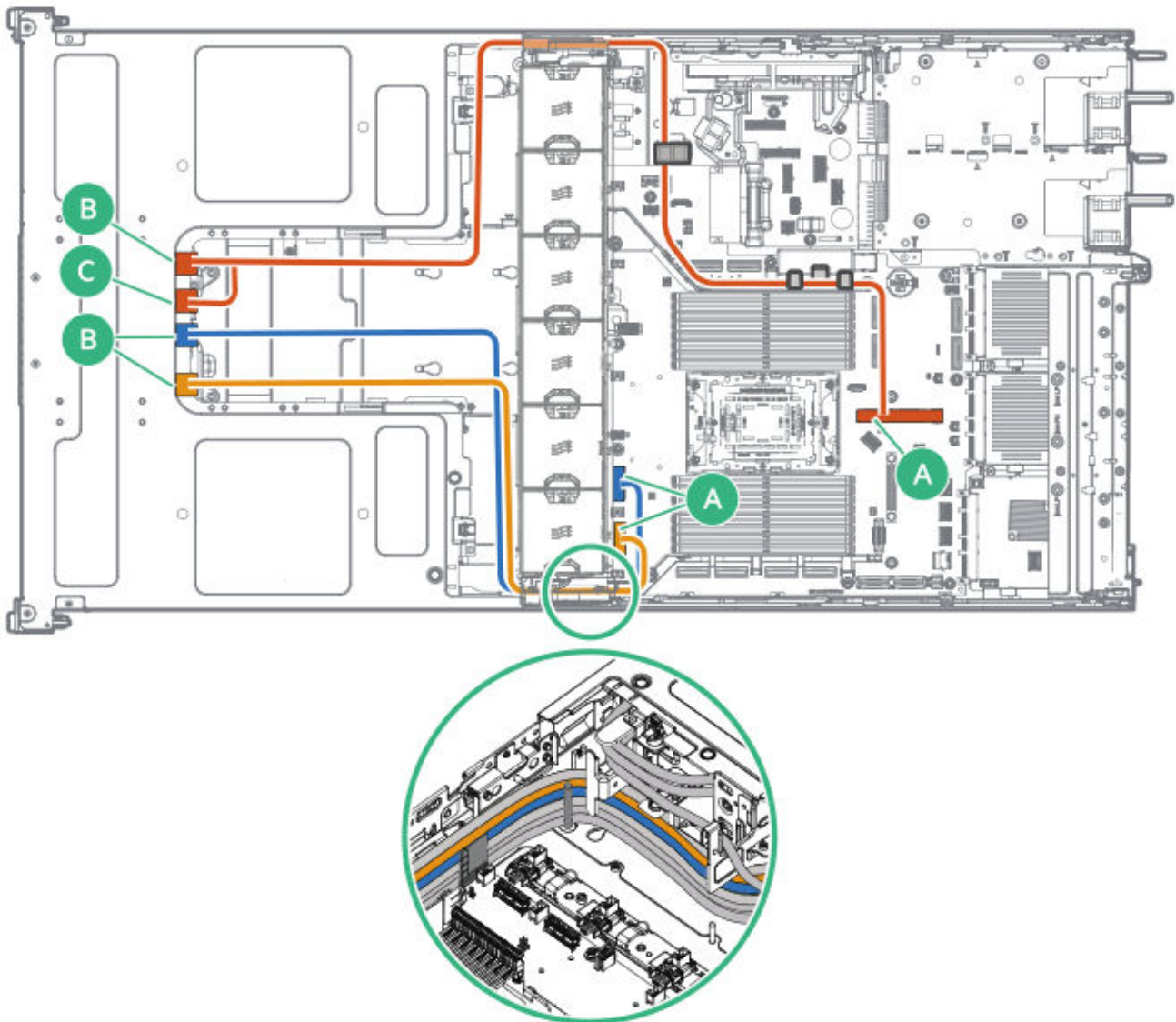
SFF drive controller cabling: GPU-optimized configuration

Subtopics

8 SFF drive cabling

8 SFF drive cabling

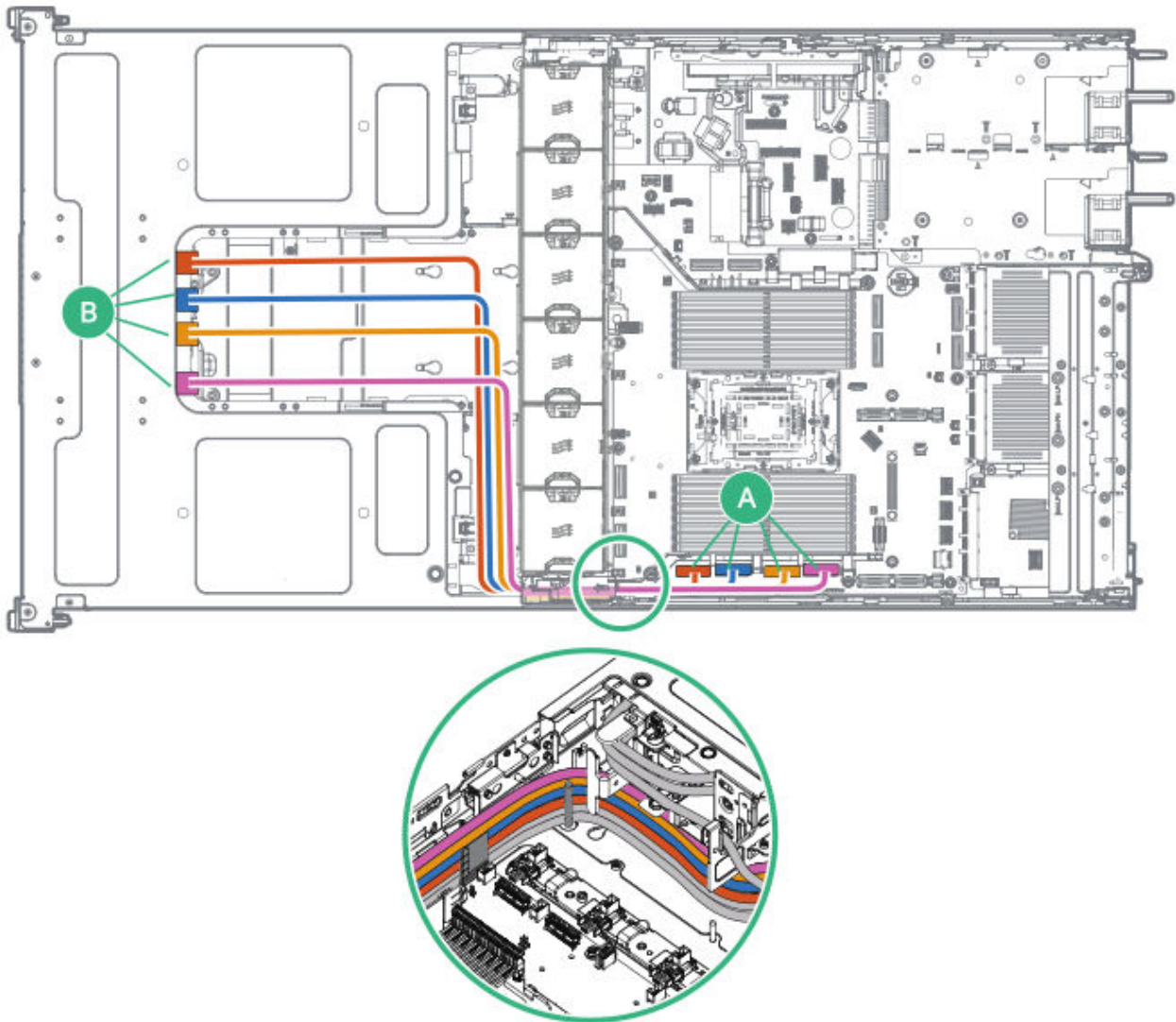
Secondary riser blank configuration



Cable part number	Cable color	From	To
P74804-001	Orange	Box 2 ports 1 and 2	Secondary riser connector
P74807-001	Blue	Box 2 port 3	M-XIO port 2
	Gold	Box 2 port 4	M-XIO port 0

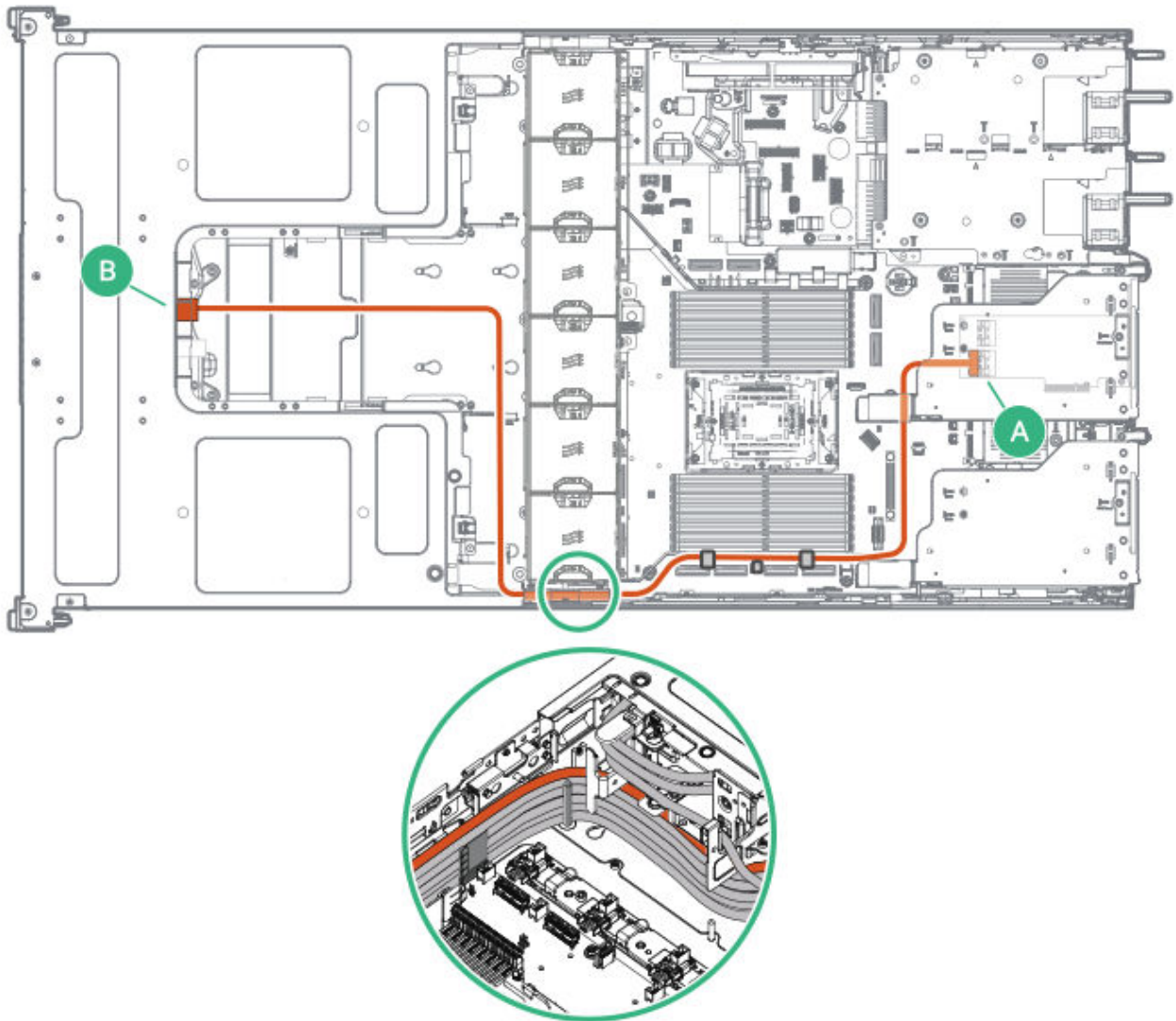
Secondary riser cage configuration

- Direct attach



Cable part number	Cable color	From	To
P74807-001	Orange	Box 2 port 1	M-XIO port 7
	Blue	Box 2 port 2	M-XIO port 5
	Gold	Box 2 port 3	M-XIO port 1
	Pink	Box 2 port 4	M-XIO port 3

- **Type-p 2-port tri-mode controller**



Cable part number	Cable color	From	To
P69542-001	Orange	Box 2 port 1	PCIe slot 6 port 2

E3.S drive controller cabling: GPU-optimized configuration

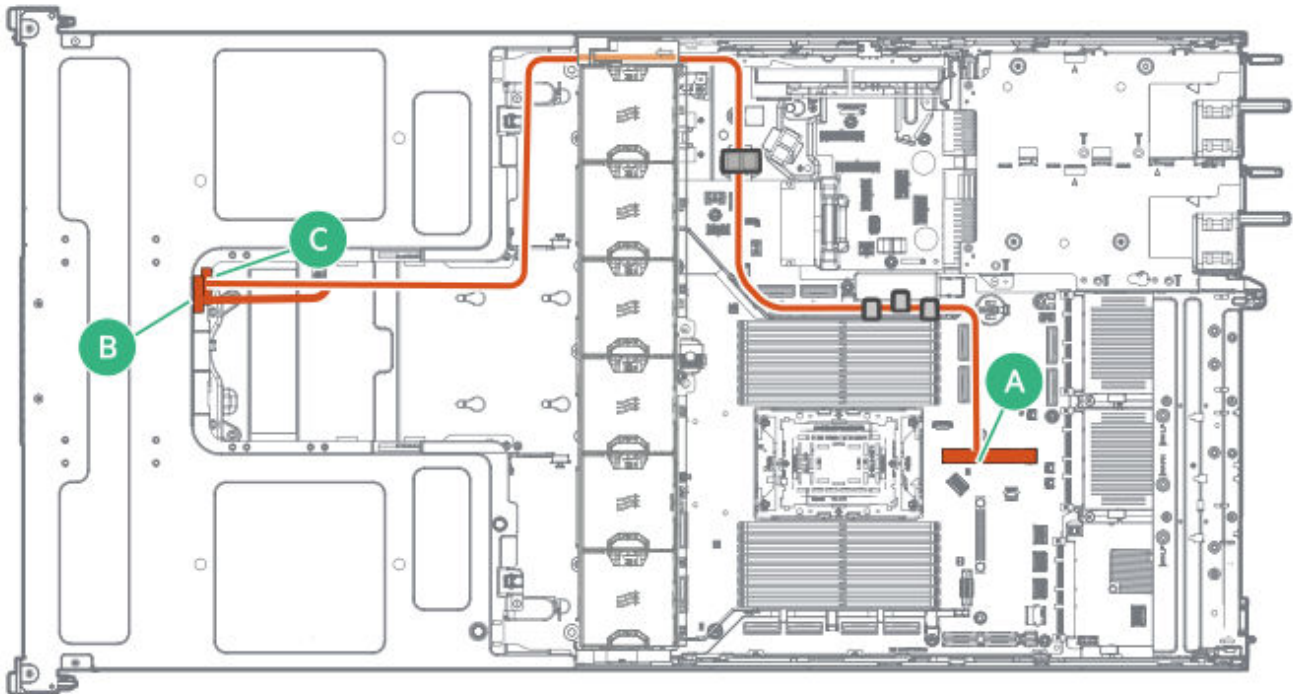
Subtopics

[4 E3.S drive cabling](#)

[12 E3.S drive cabling](#)

4 E3.S drive cabling

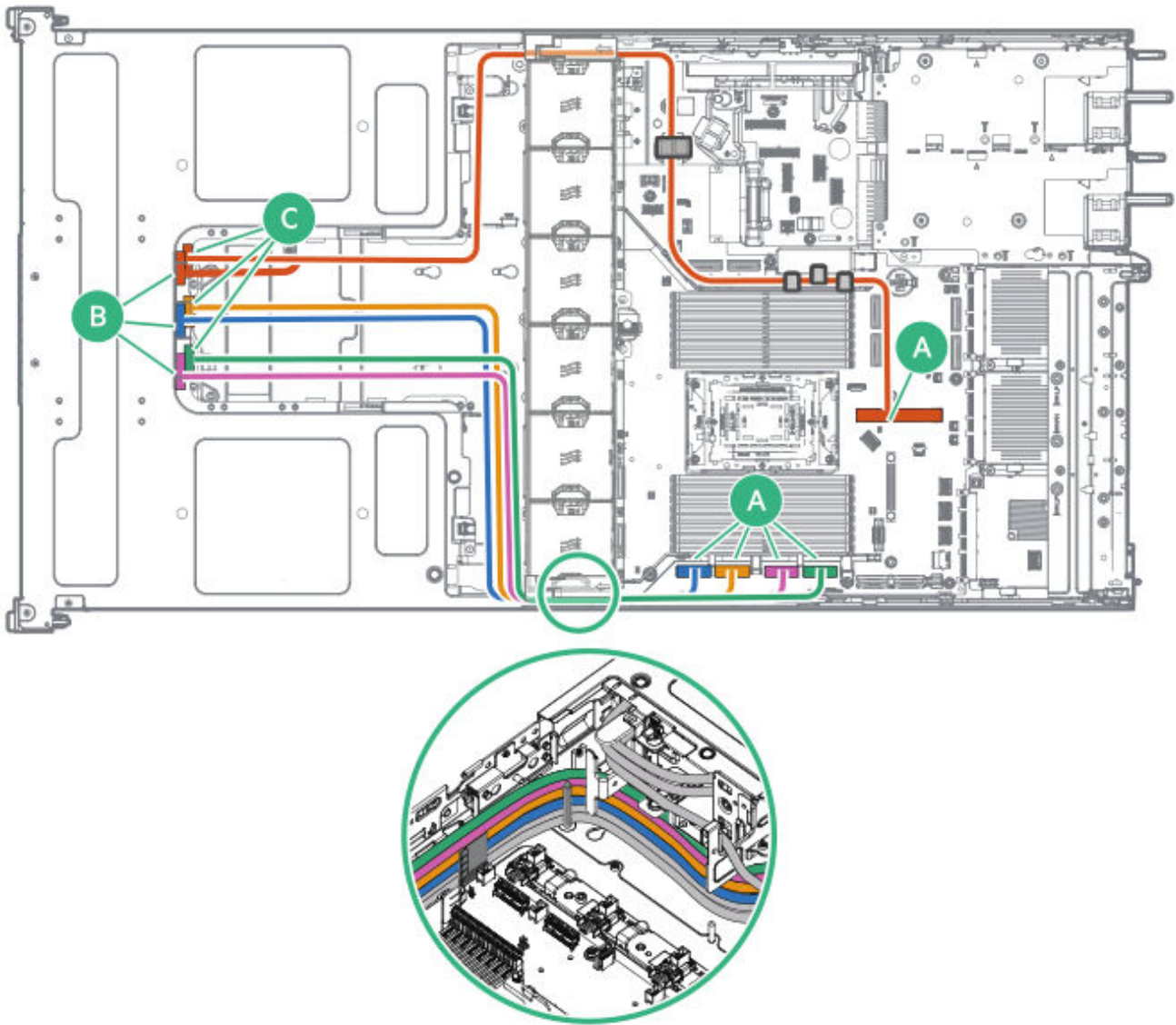
Secondary riser blank configuration



Cable part number	Cable color	From	To
P75580-001	Orange	Box 2 bays 1 to 4 ports 1 and 2	Secondary riser connector

12 E3.S drive cabling

Secondary riser blank configuration



Cable part number	Cable color	From	To
P75580-001	Orange	Box 2 bays 1 to 4 ports 1 and 2	Secondary riser connector
P75576-001	Blue	Box 2 bays 5 to 8 port 1	M-XIO port 7
	Gold	Box 2 bays 5 to 8 port 2	M-XIO port 5
	Pink	Box 2 bays 9 to 12 port 1	M-XIO port 1
	Green	Box 2 bays 9 to 12 port 2	M-XIO port 3

Mixed drive controller cabling

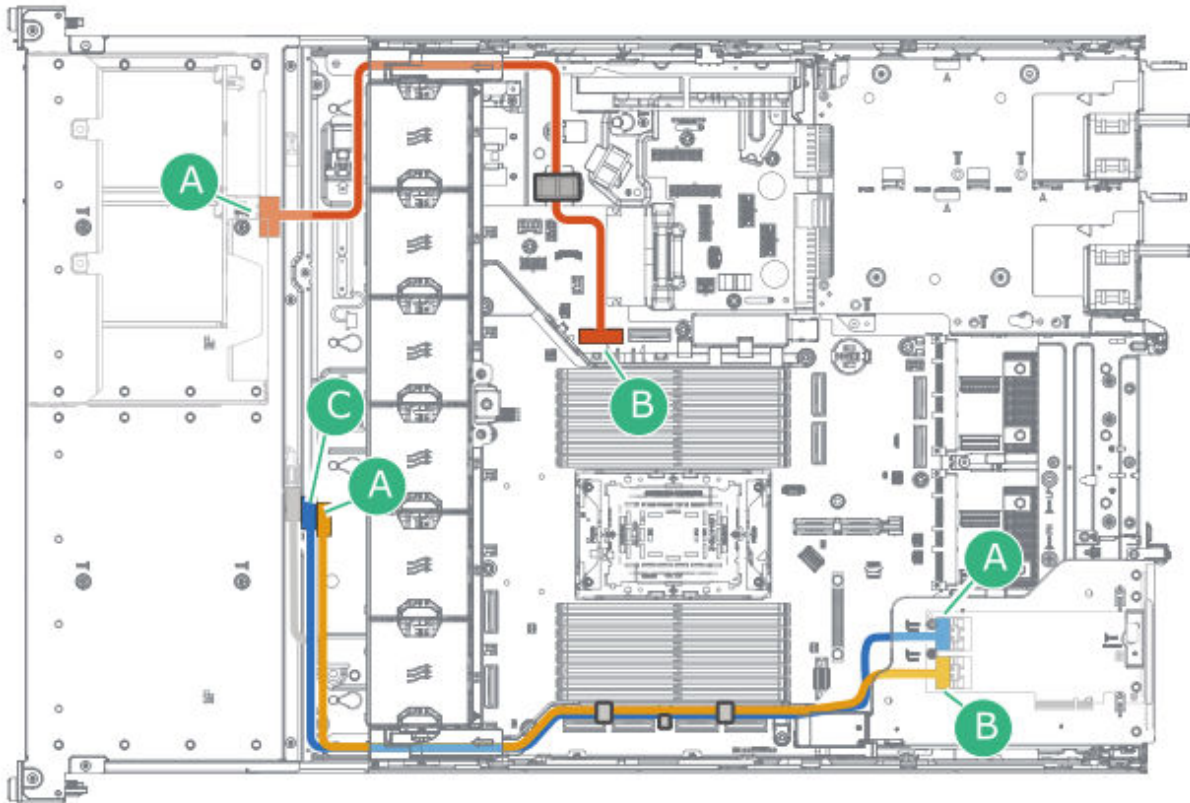
Subtopics

[2 SFF side-by-side + 8 LFF drive cabling](#)

[2 SFF stacked + 8 E3.S drive cabling](#)

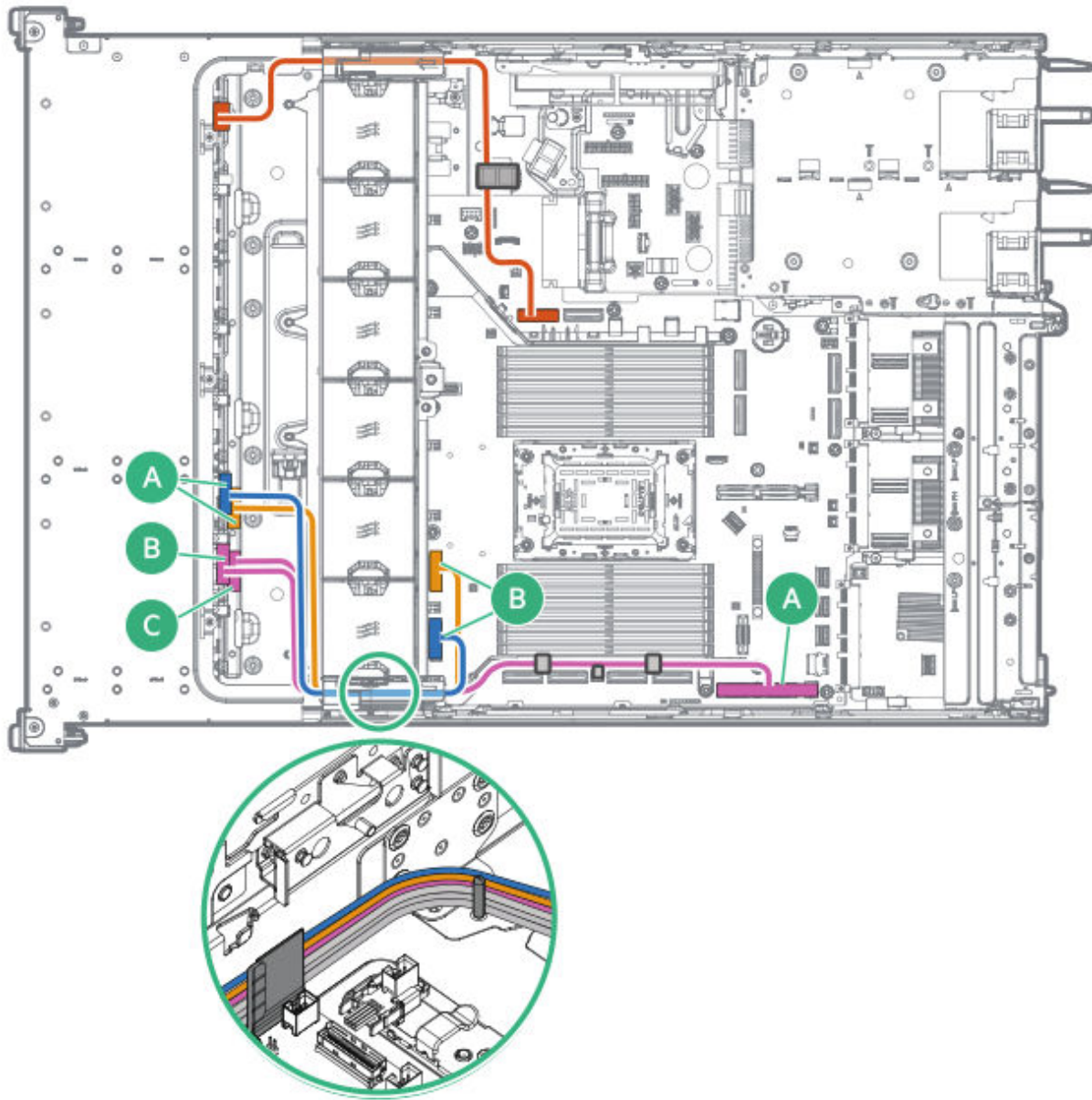
[8 SFF + 8 E3.S drive cabling](#)

2 SFF side-by-side + 8 LFF drive cabling



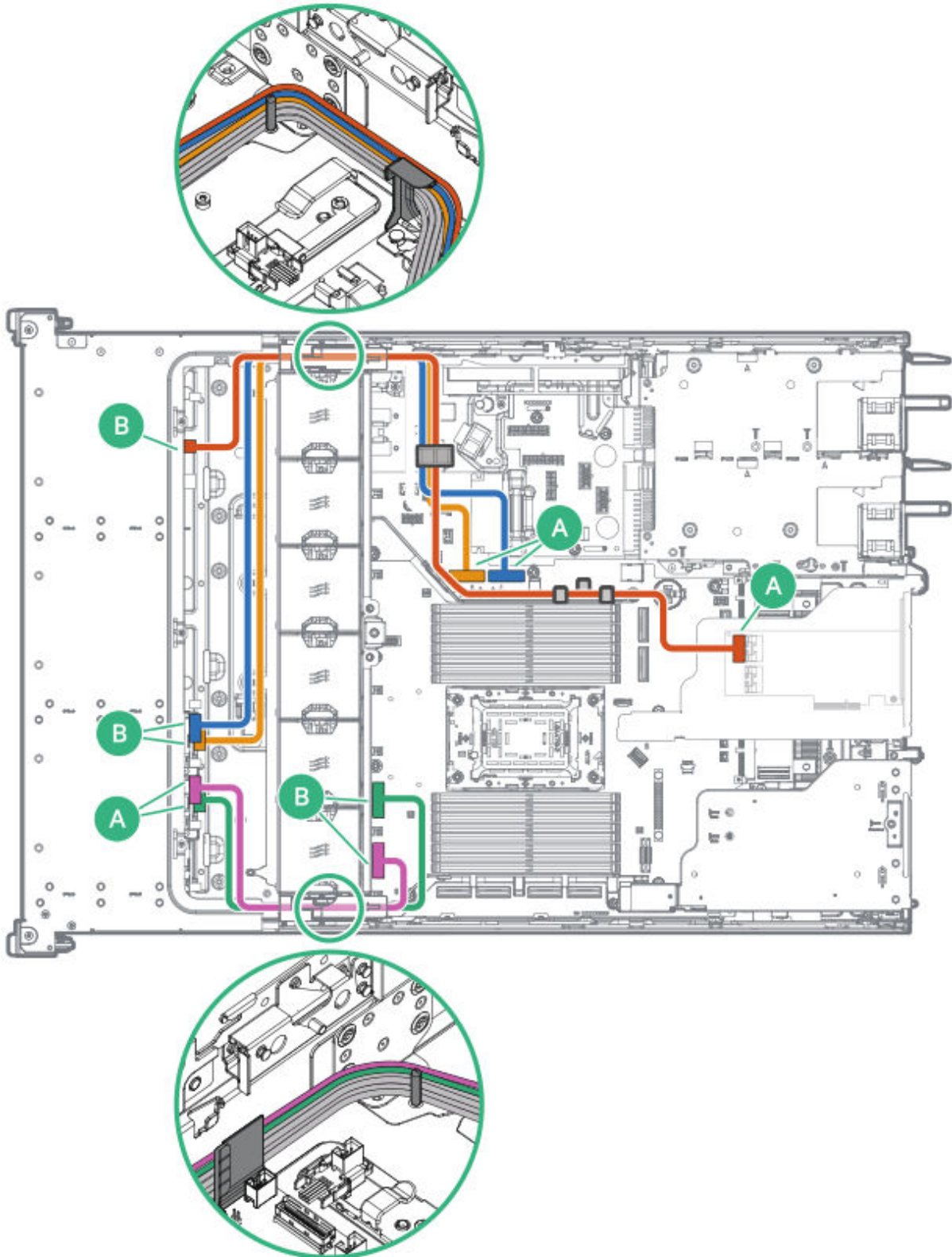
Cable part number	Cable color	From	To
P75367-001	Orange	Box 1 port 1	M-XIO port 6
P58063-001	Blue	Box 2 port 1	PCIe slot 3 port 1
P54931-001	Gold	Box 3 port 1	PCIe slot 3 port 2

2 SFF stacked + 8 E3.S drive cabling



Cable part number	Cable color	From	To
P75367-001	Orange	Box 1 port 1	M-XIO port 6
P75317-001	Blue	Box 3 bays 1 to 4 port 1	M-XIO port 0
	Gold	Box 3 bays 1 to 4 port 2	M-XIO port 2
P75246-001	Pink	Box 3 bays 5 to 8 ports 1	Primary riser connector and 2

8 SFF + 8 E3.S drive cabling



Cable part number	Cable color	From	To
P58018-001	Orange	Box 1 port 1	PCIe slot 6 port 1
P75576-001	Blue	Box 3 bays 1 to 4 port 1	M-XIO port 4
	Gold	Box 3 bays 1 to 4 port 2	M-XIO port 6
P75317-001	Pink	Box 3 bays 5 to 8 port 1	M-XIO port 0
	Green	Box 3 bays 5 to 8 port 2	M-XIO port 2

Drive power cabling

Subtopics

[**LFF drive power cabling**](#)

[**SFF drive power cabling**](#)

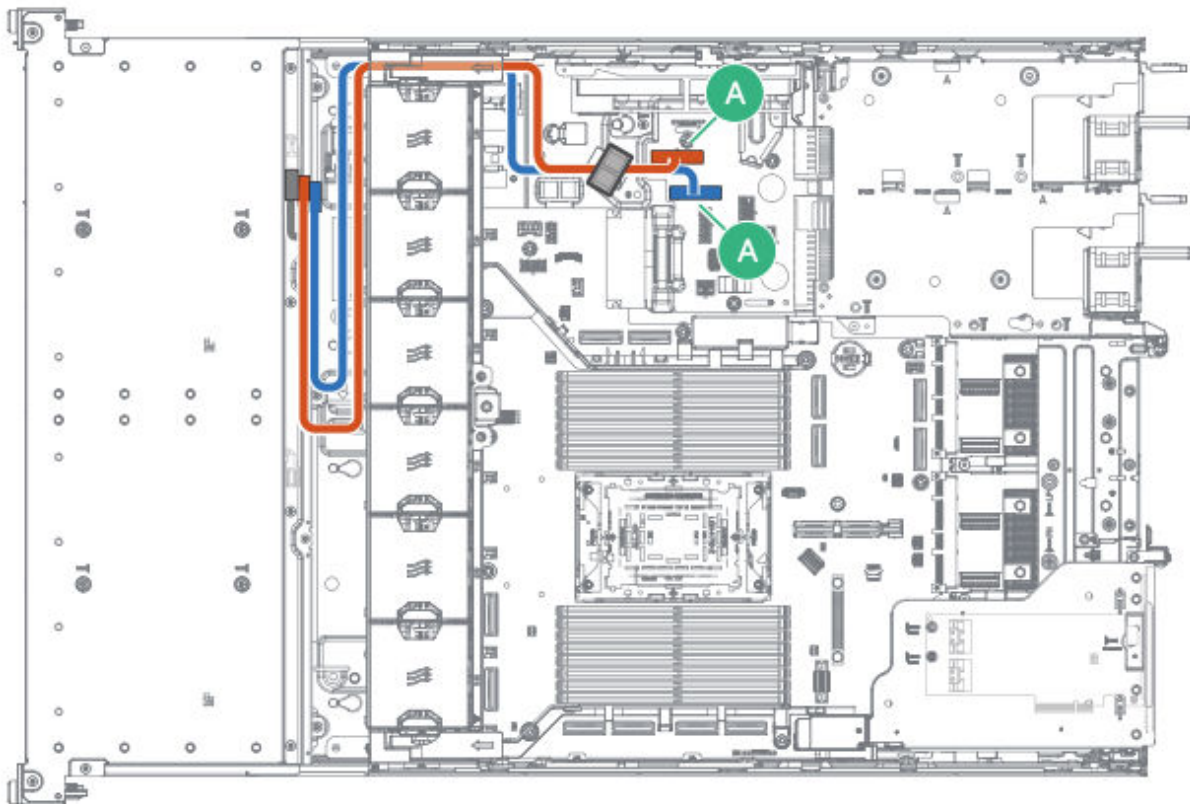
[**E3.S drive power cabling**](#)

[**Drive power cabling in the GPU-optimized configuration**](#)

[**Mixed drive power cabling**](#)

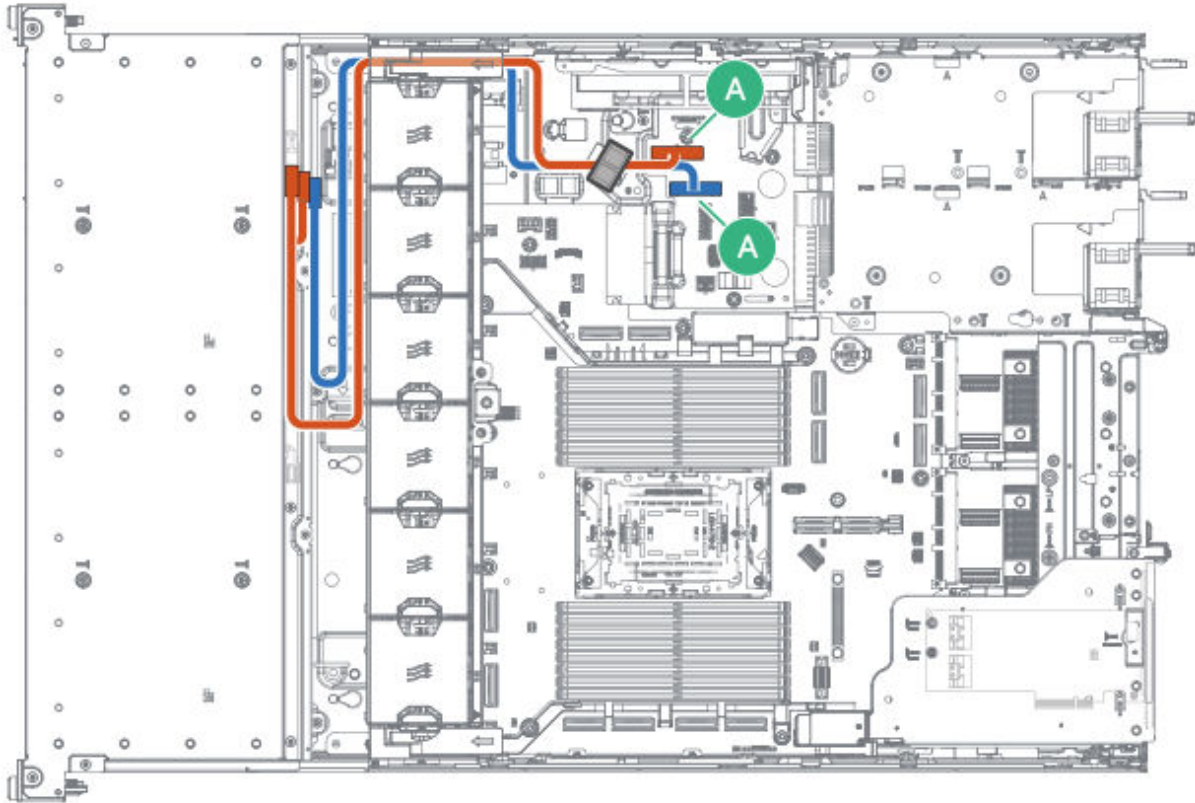
LFF drive power cabling

8 LFF drives



Cable part number	Cable color	From	To
P75251-001	Orange	Box 2	Box 1-2 drive backplane power connector
P75250-001	Blue	Box 3	Box 3 drive backplane power connector

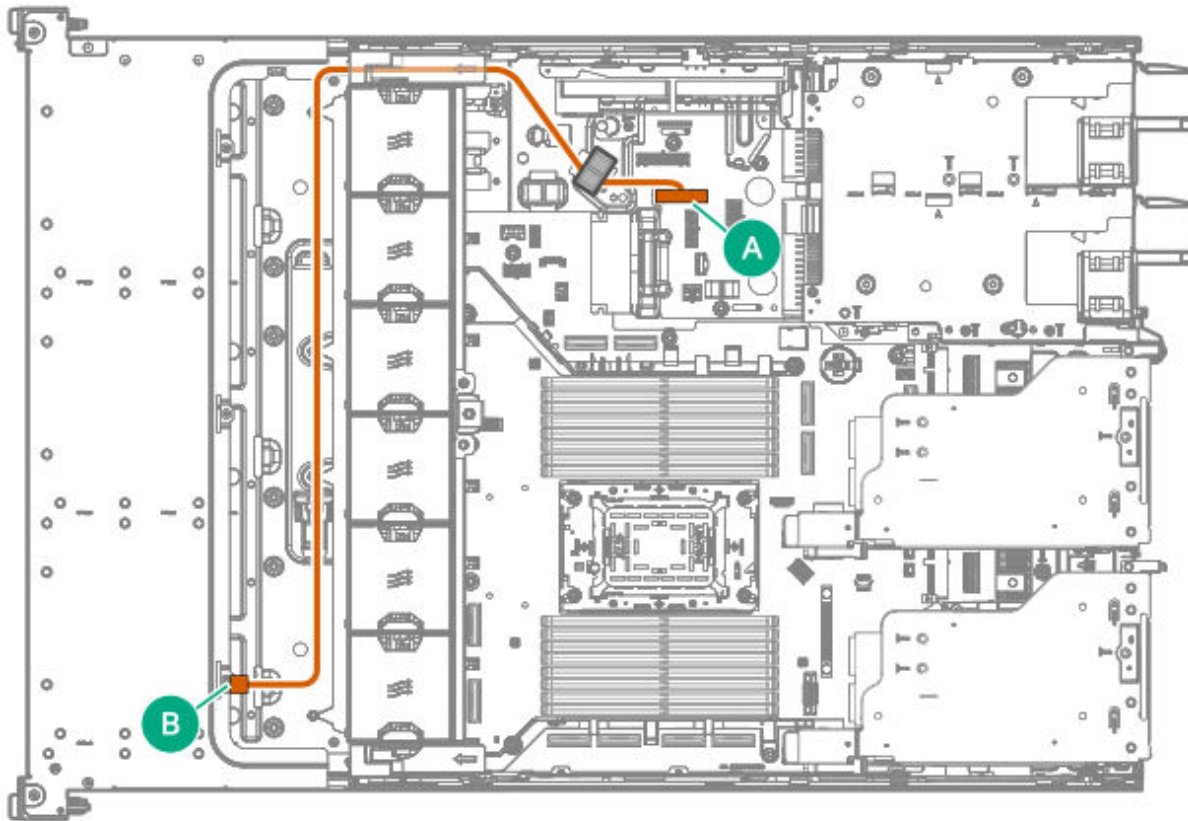
12 LFF drives



Cable part number	Cable color	From	To
P75251-001	Orange	Boxes 1 and 2	Box 1-2 drive backplane power connector
P75250-001	Blue	Box 3	Box 3 drive backplane power connector

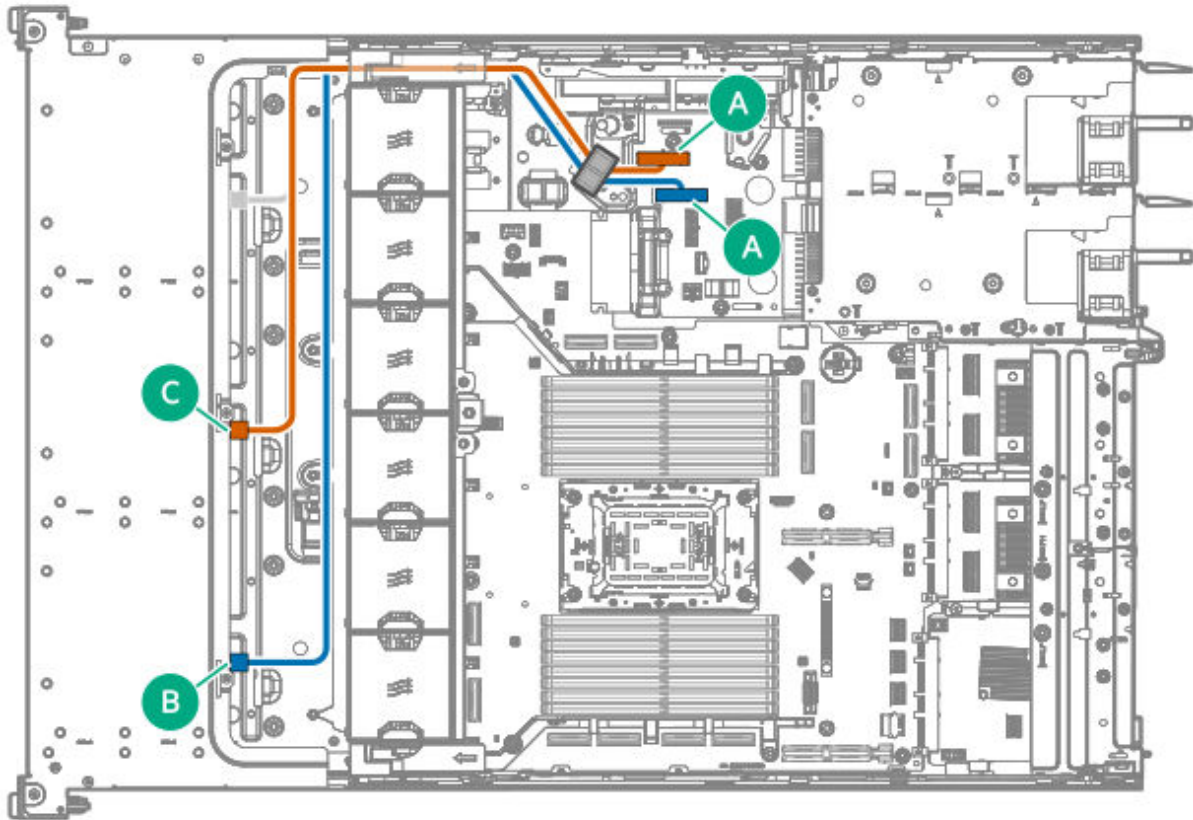
SFF drive power cabling

8 SFF drives



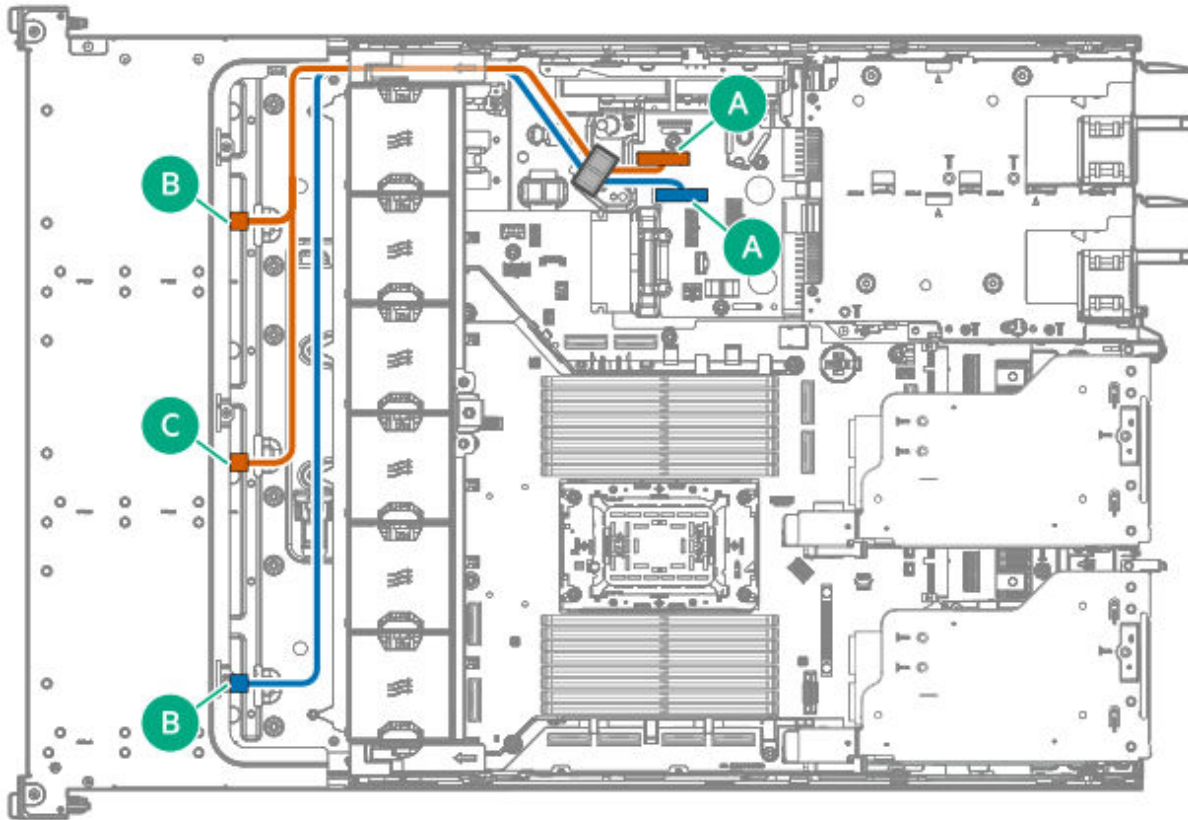
Cable part number	Cable color	From	To
P75248-001	Orange	Box 3	Box 3 drive backplane power connector

16 SFF drives



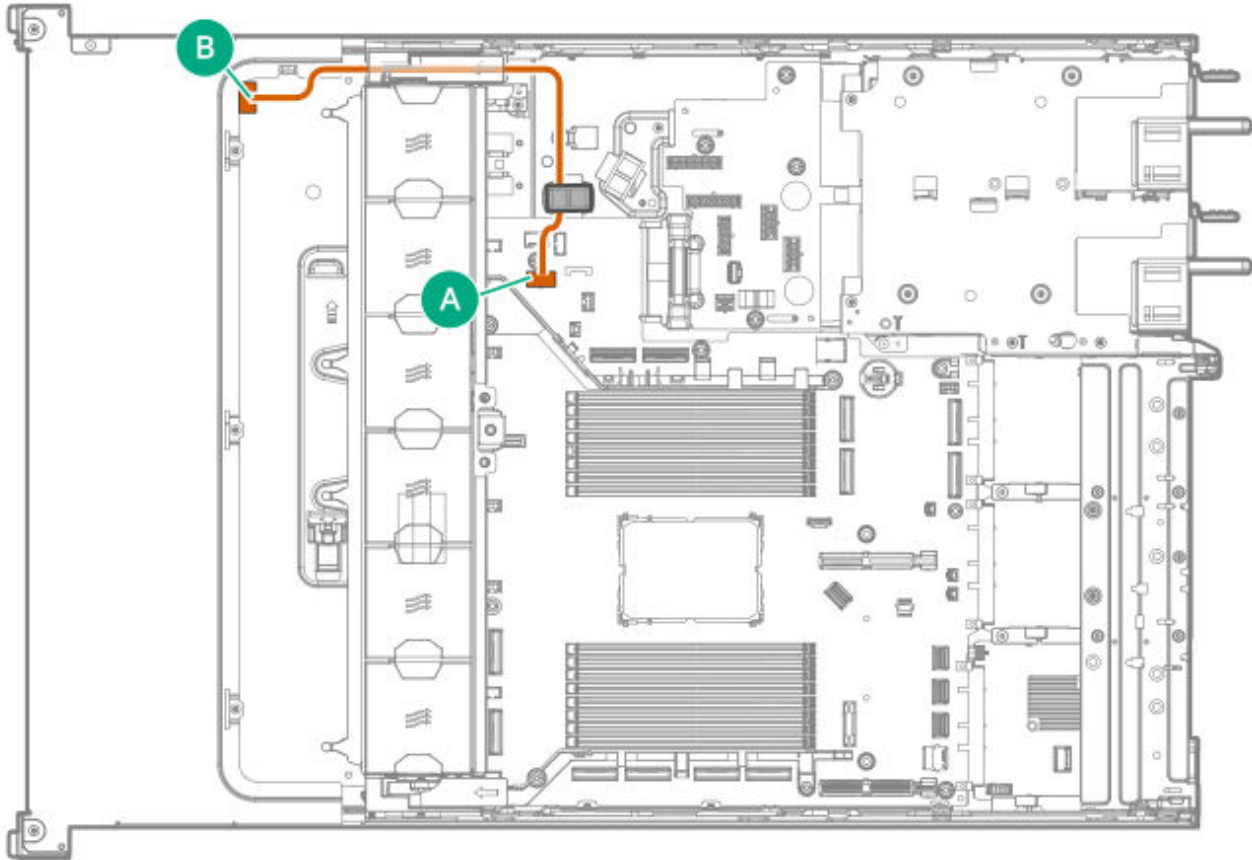
Cable part number	Cable color	From	To
P71879-001	Orange	Box 2	Box 1-2 drive backplane power connector
P75248-001	Blue	Box 3	Box 3 drive backplane power connector

24 SFF drives



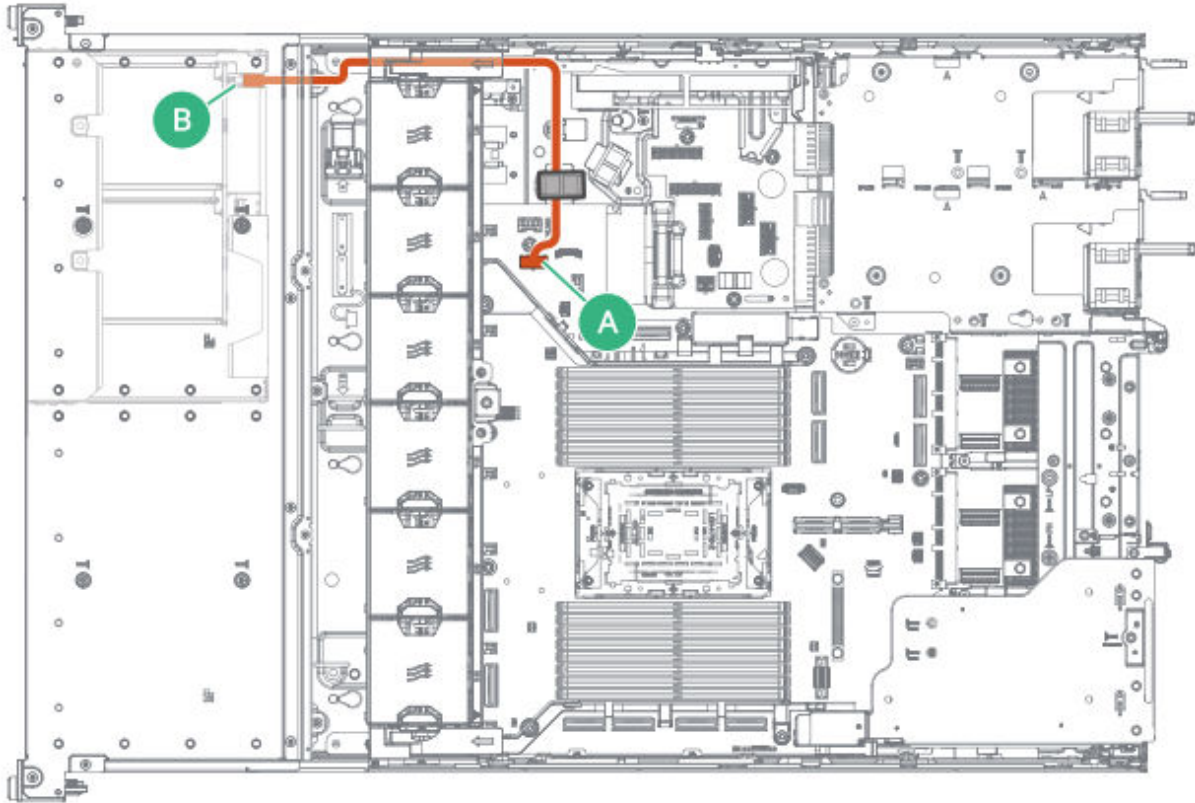
Cable part number	Cable color	From	To
P71879-001	Orange	Boxes 1 and 2	Box 1-2 drive backplane power connector
P75248-001	Blue	Box 3	Box 3 drive backplane power connector

2 SFF stacked drives



Cable part number	Cable color	From	To
P75252-001	Orange	Box 1	Universal media bay power connector

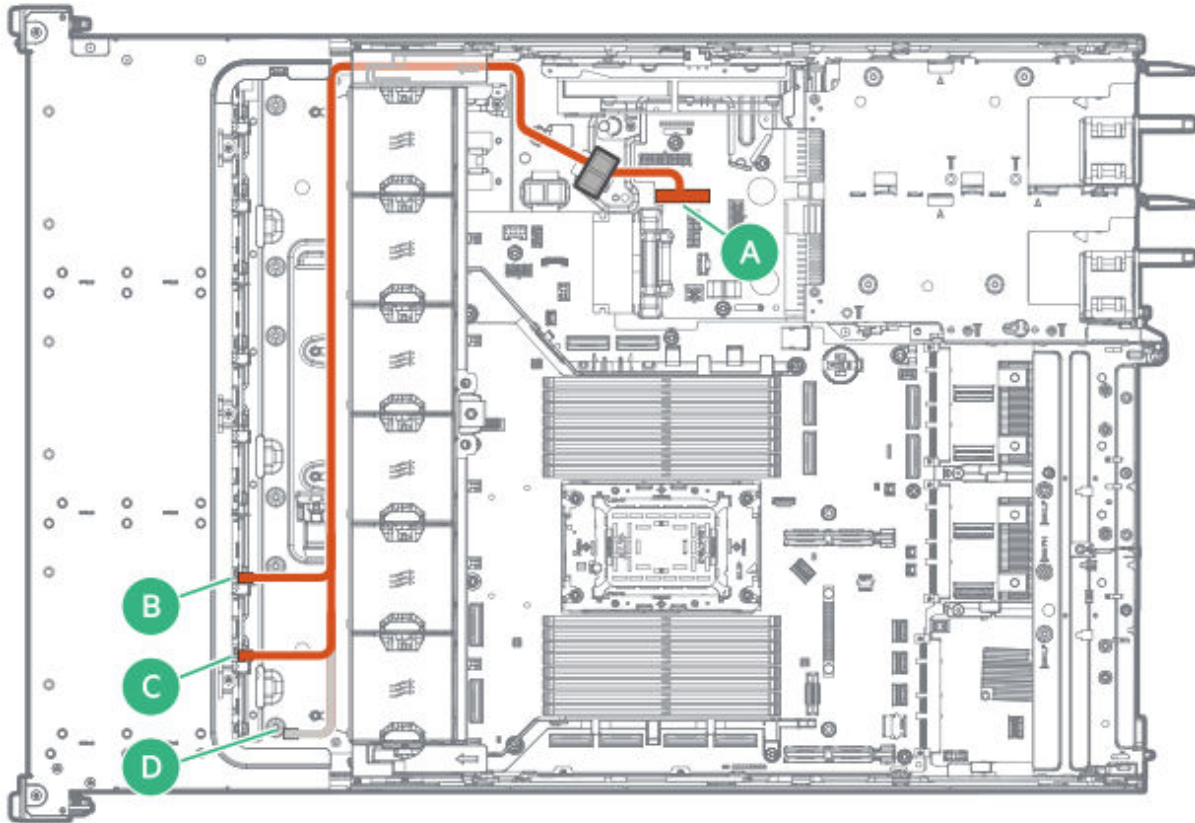
2 SFF side-by-side drives



Cable part number	Cable color	From	To
P77049-001	Orange	Box 1	Universal media bay power connector

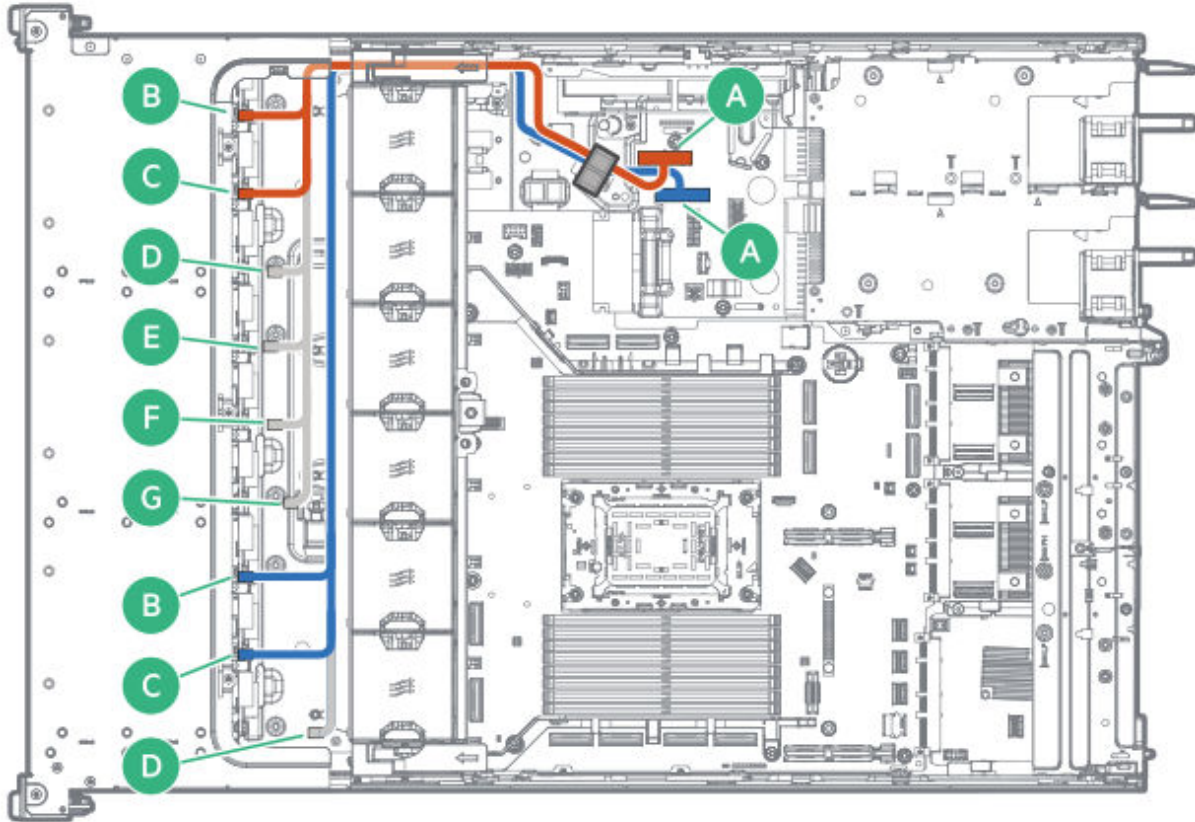
E3.S drive power cabling

8 E3.S drives



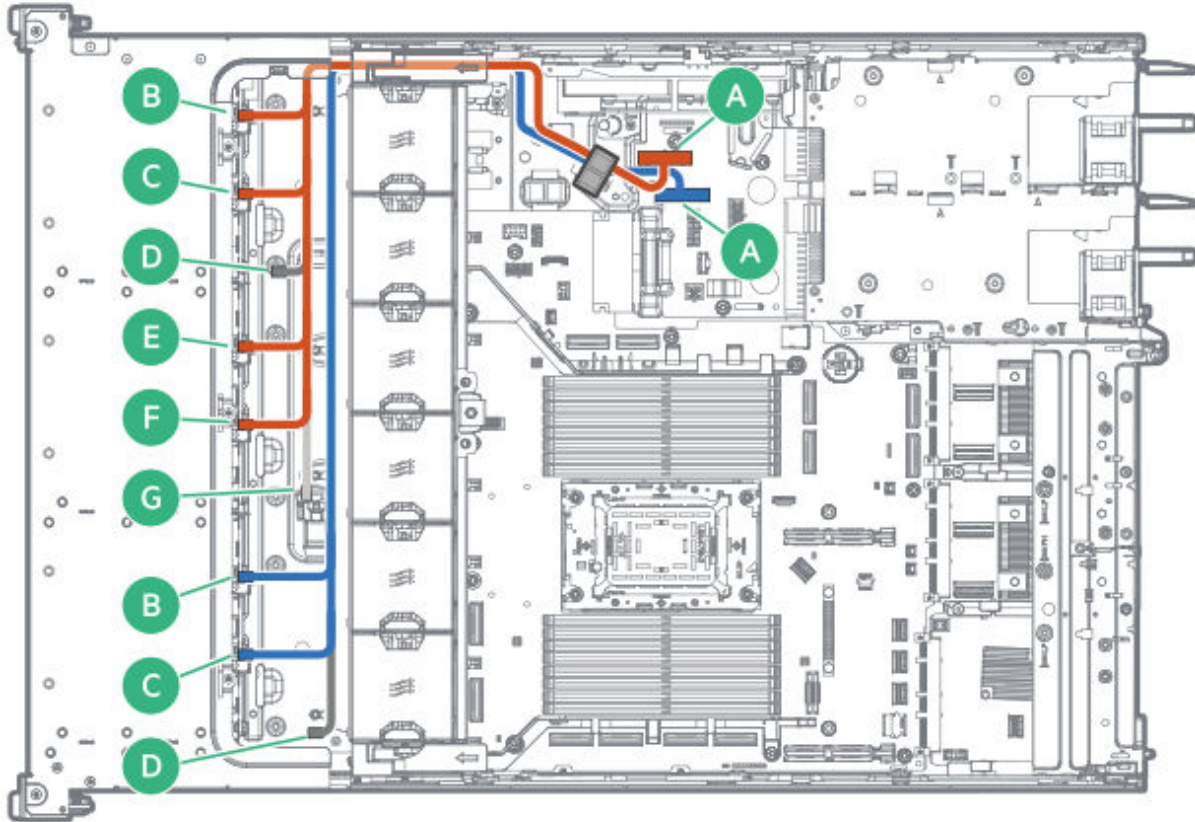
Cable part number	Cable color	From	To
P75247-001	Orange	Box 3	Box 3 drive backplane power connector

16 E3.S drives



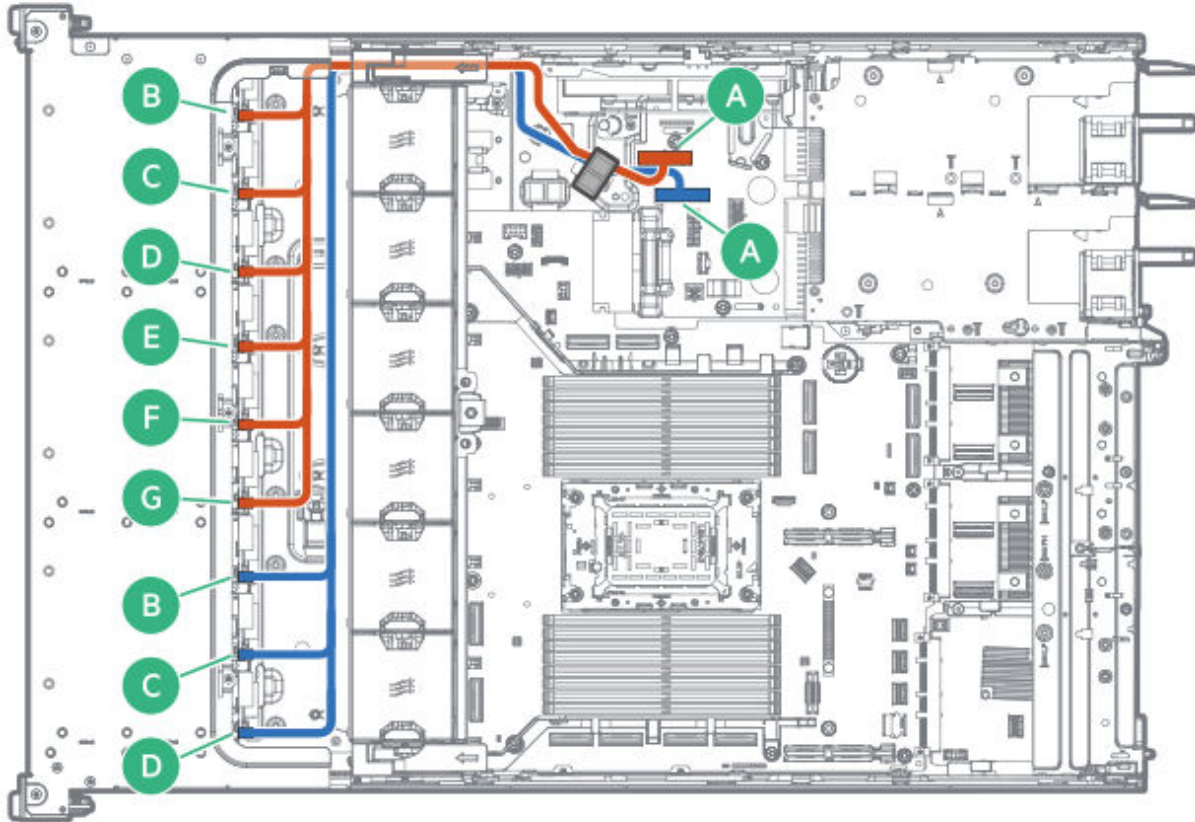
Cable part number	Cable color	From	To
P75249-001	Orange	Box 1	Box 1-2 drive backplane power connector
P75247-001	Blue	Box 3	Box 3 drive backplane power connector

24 E3.S drives



Cable part number	Cable color	From	To
P75249-001	Orange	Boxes 1 and 2	Box 1-2 drive backplane power connector
P75247-001	Blue	Box 3	Box 3 drive backplane power connector

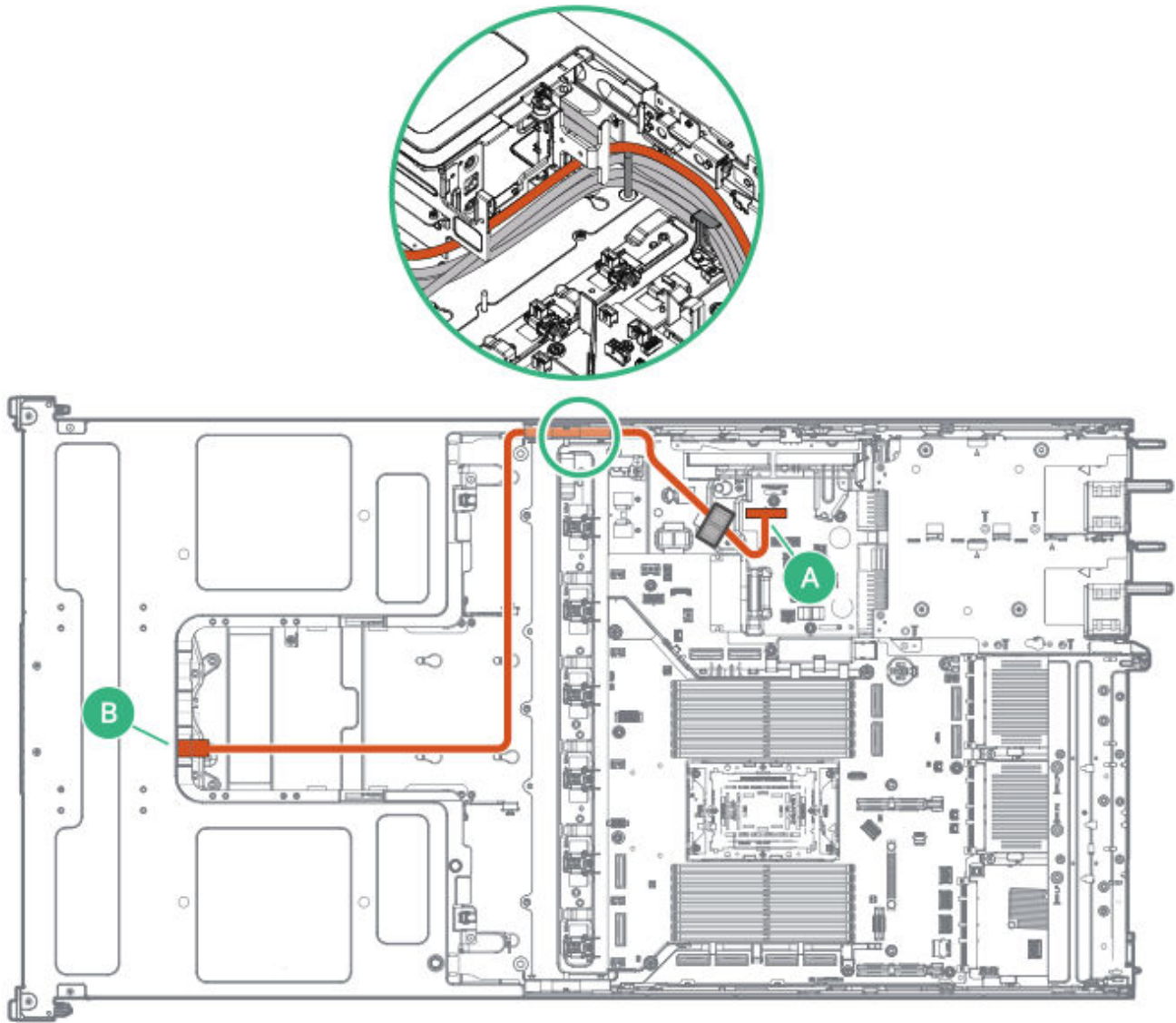
36 E3.S drives



Cable part number	Cable color	From	To
P75249-001	Orange	Boxes 1 and 2	Box 1-2 drive backplane power connector
P75247-001	Blue	Box 3	Box 3 drive backplane power connector

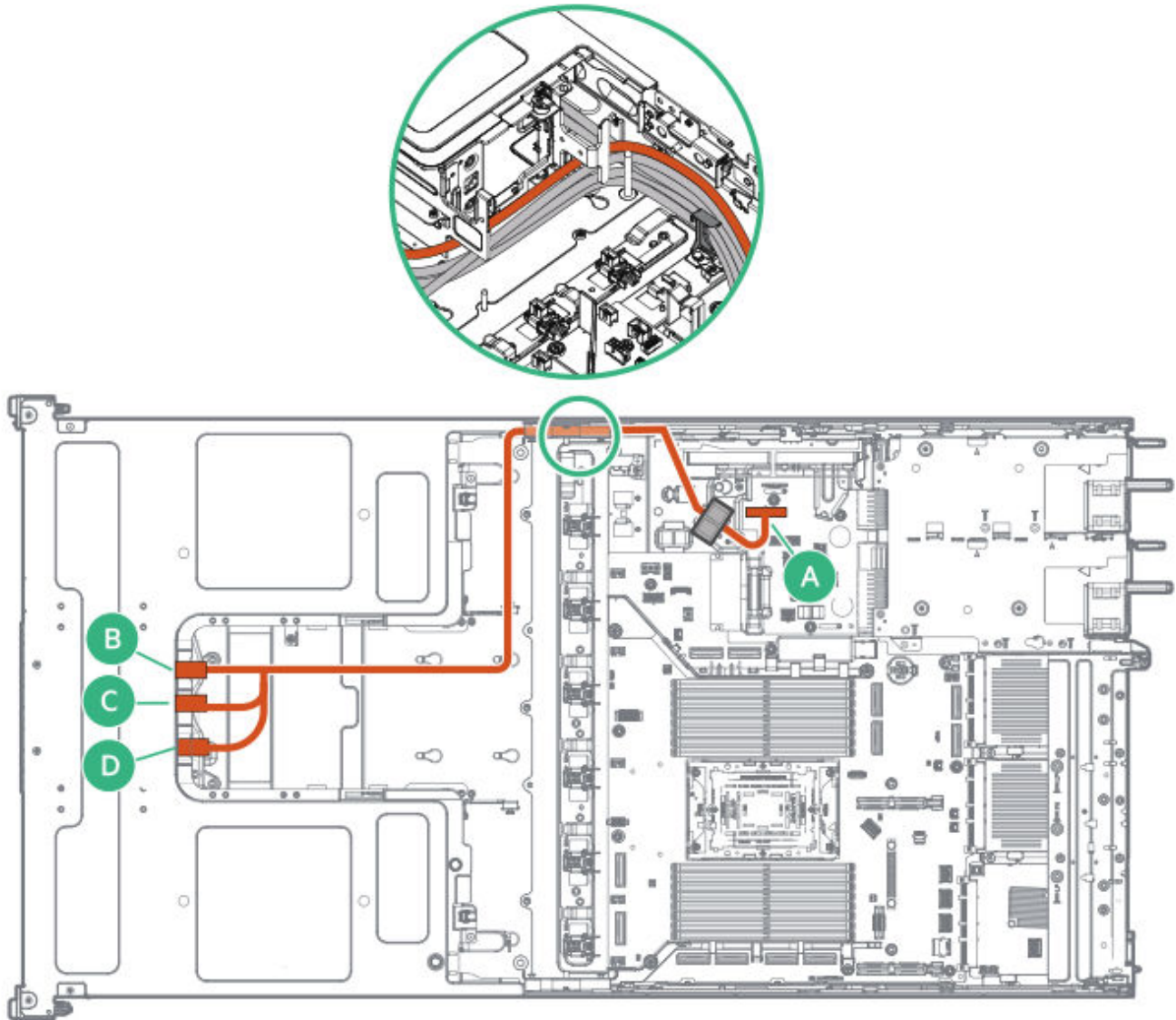
Drive power cabling in the GPU-optimized configuration

SFF drives



Cable part number	Cable color	From	To
P80888-001	Orange	Box 2	Box 1-2 drive backplane power connector

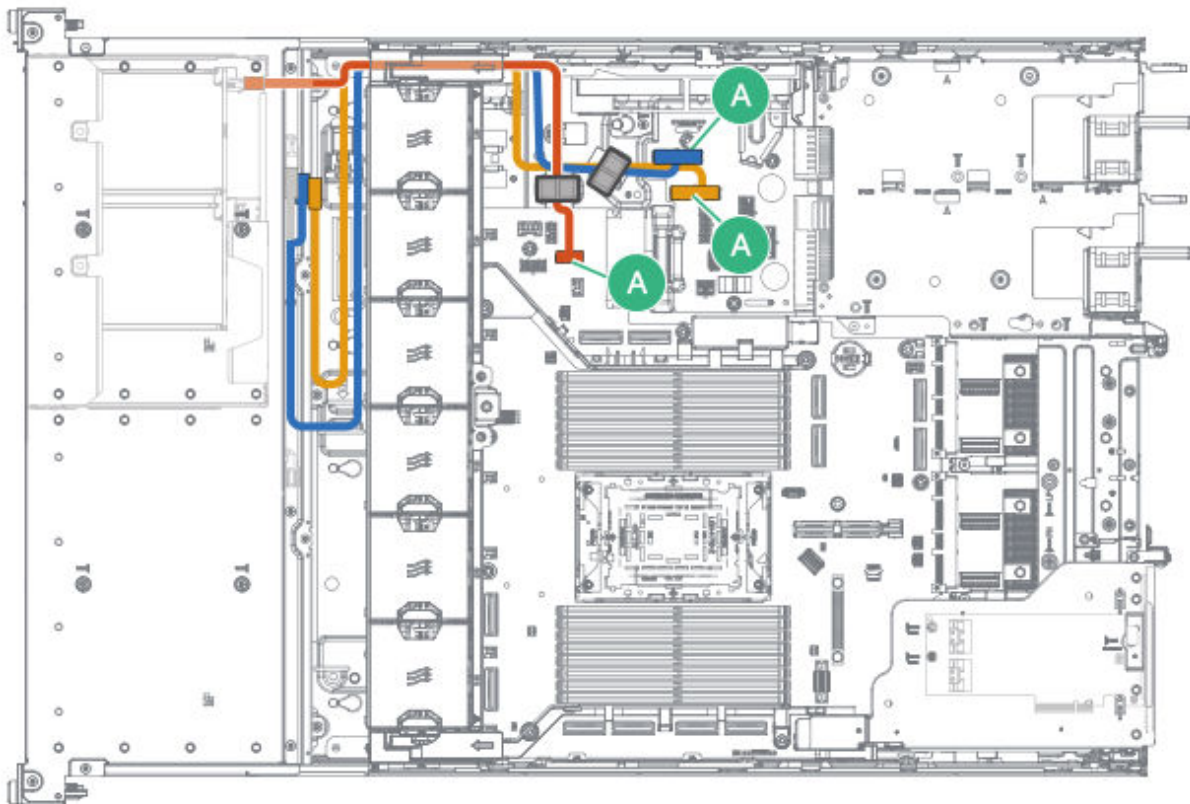
E3.S drives



Cable part number	Cable color	From	To
P80887-001	Orange	Box 2	Box 1-2 drive backplane power connector

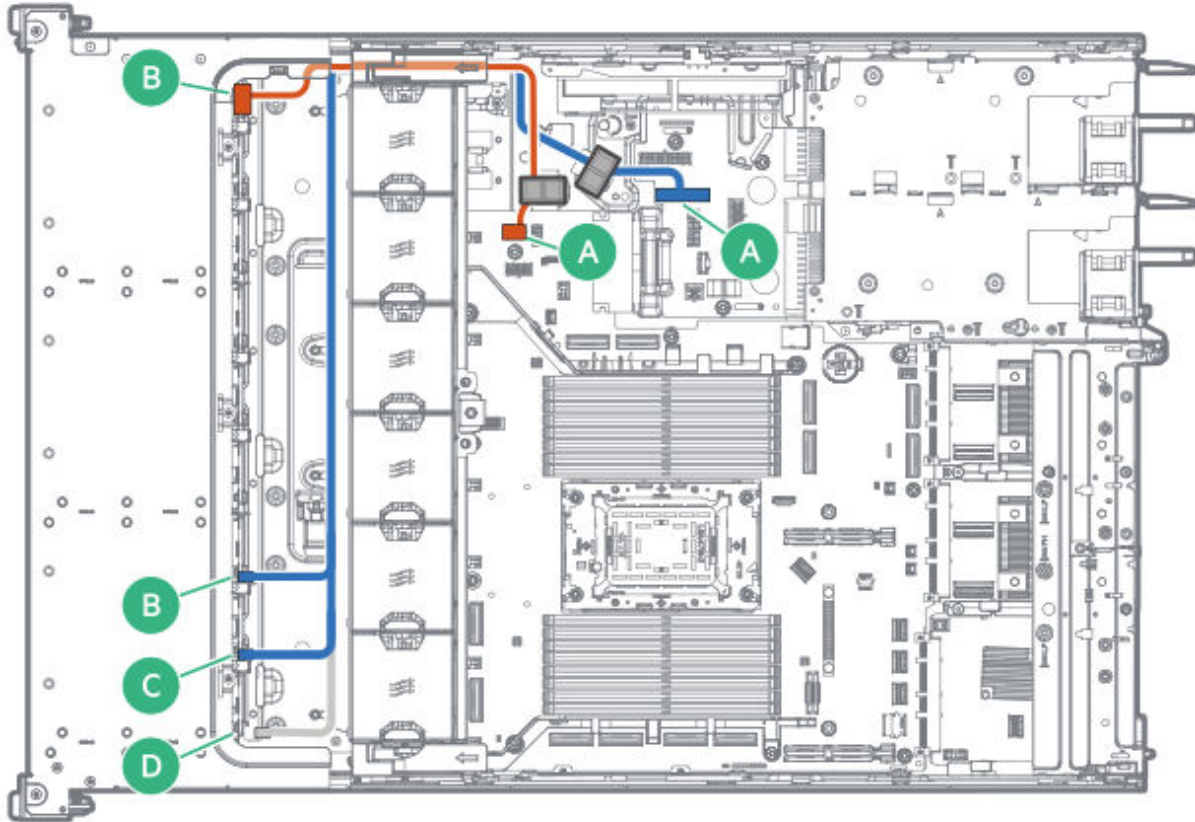
Mixed drive power cabling

2 SFF side-by-side + 8 LFF drives



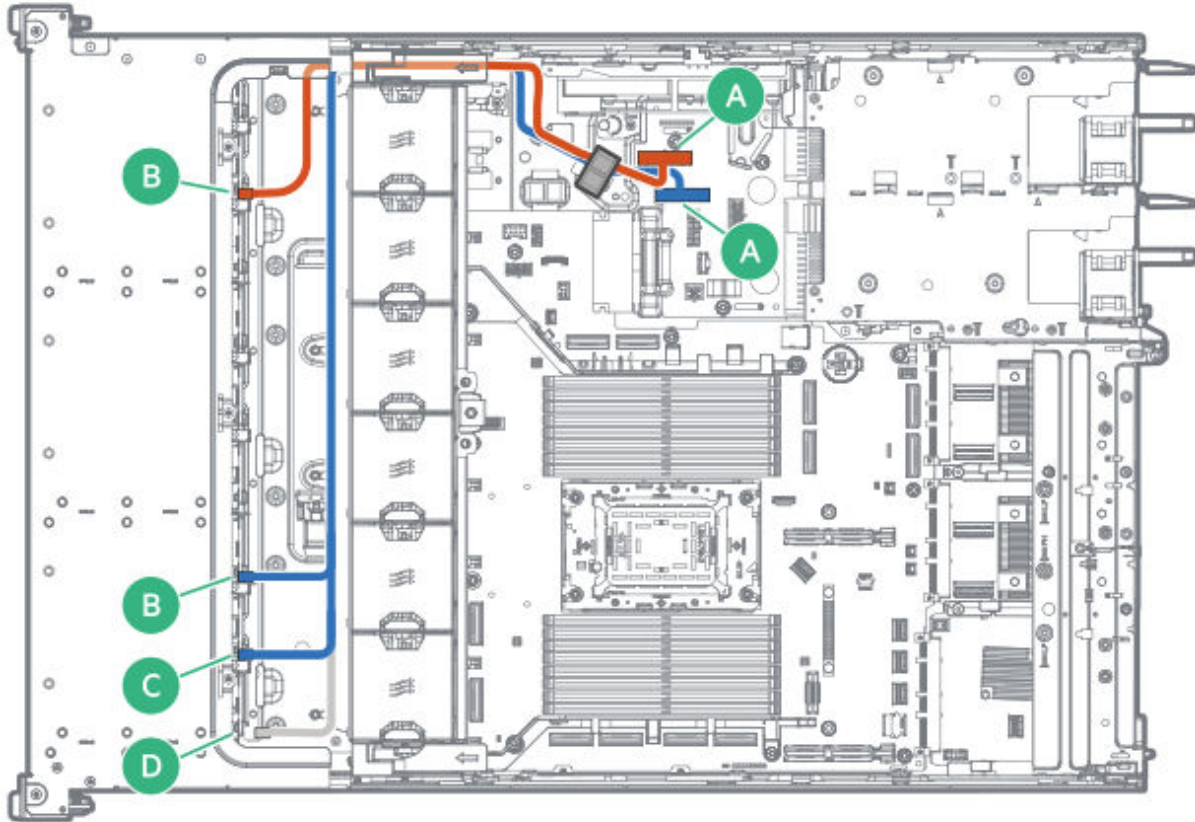
Cable part number	Cable color	From	To
P77049-001	Orange	Box 1	Universal media bay power connector
P75251-001	Blue	Box 2	Box 1-2 drive backplane power connector
P75250-001	Gold	Box 3	Box 3 drive backplane power connector

2 SFF stacked + 8 E3.S drives



Cable part number	Cable color	From	To
P75252-001	Orange	Box 1	Universal media bay power connector
P75247-001	Blue	Box 3	Box 3 drive backplane power connector

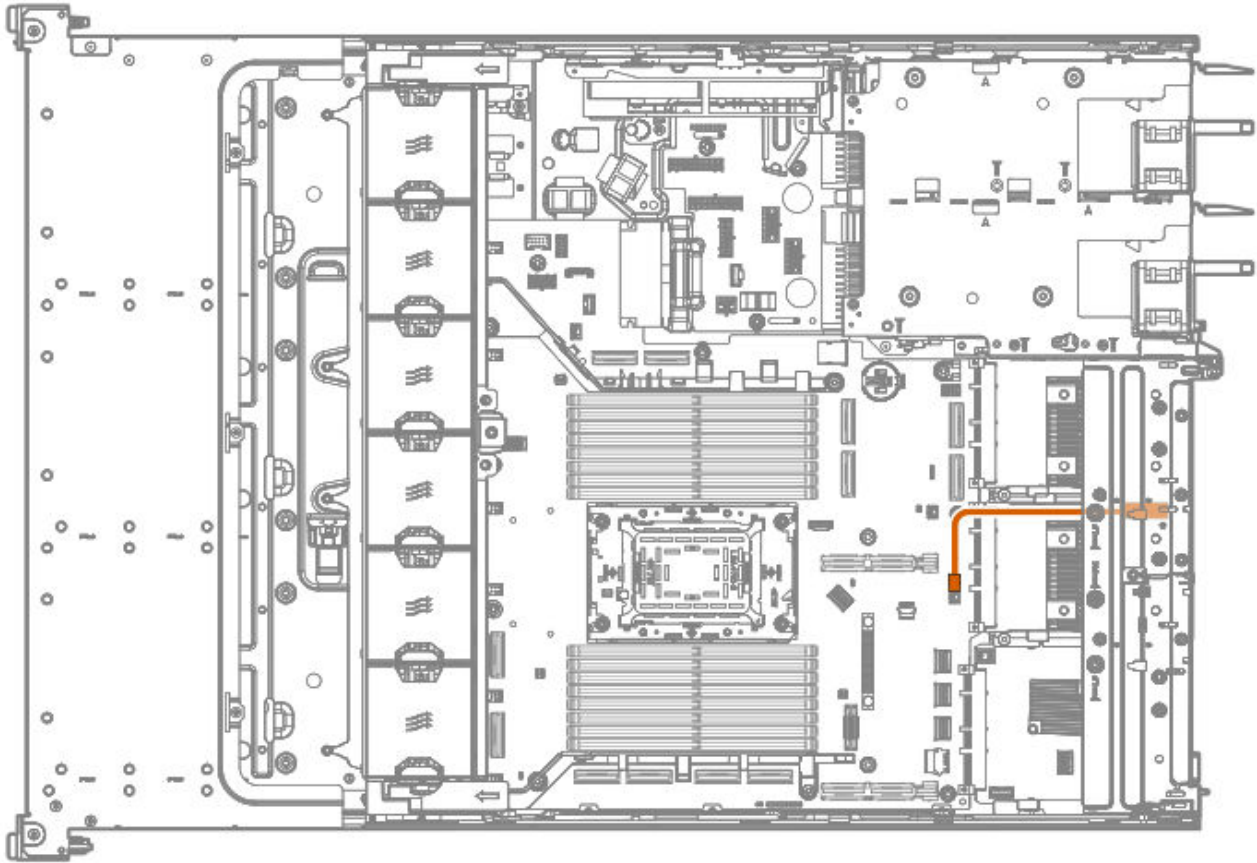
8 SFF + 8 E3.Sdrives



Cable part number	Cable color	From	To
P71879-001	Orange	Box1	Box 1-2 drive backplane power connector
P75247-001	Blue	Box 3	Box 3 drive backplane power connector

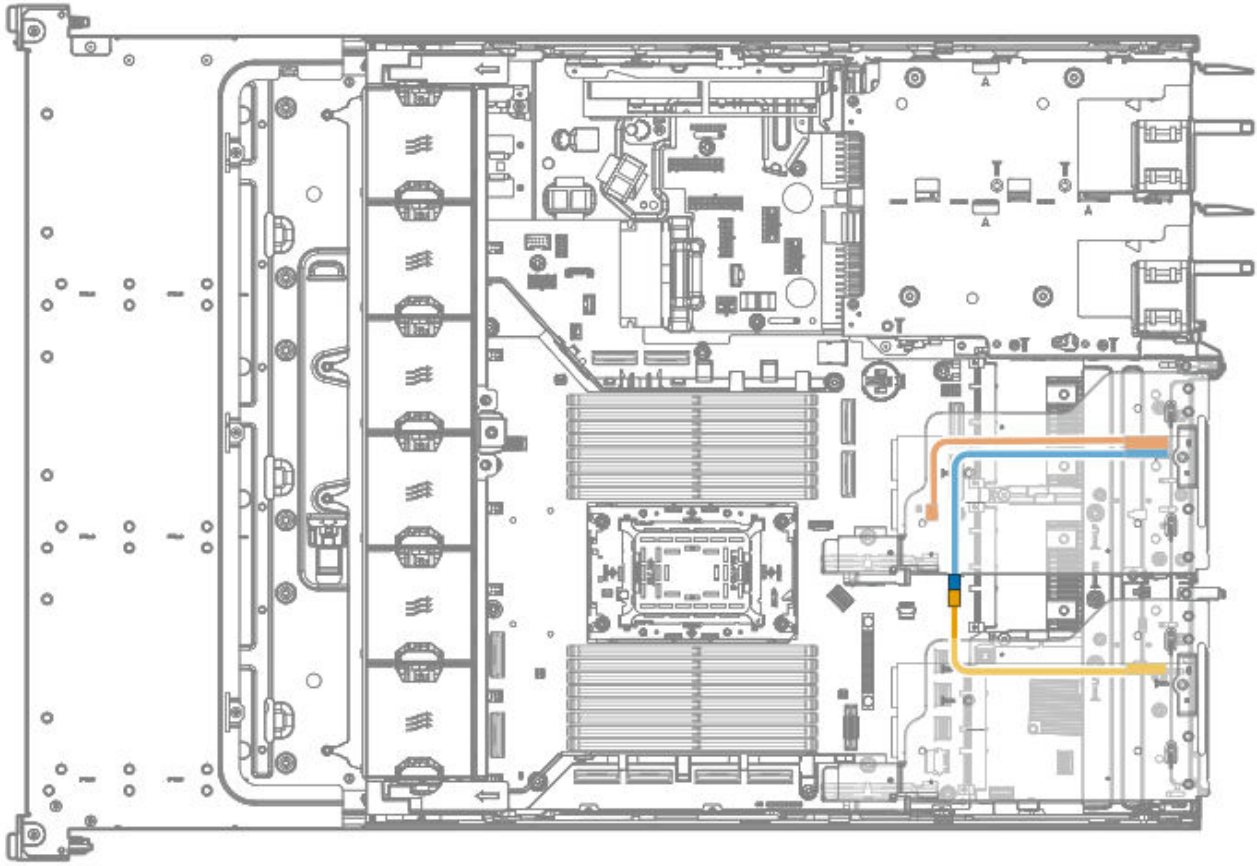
Storage controller backup power cabling

Type-o 2-port tri-mode controller



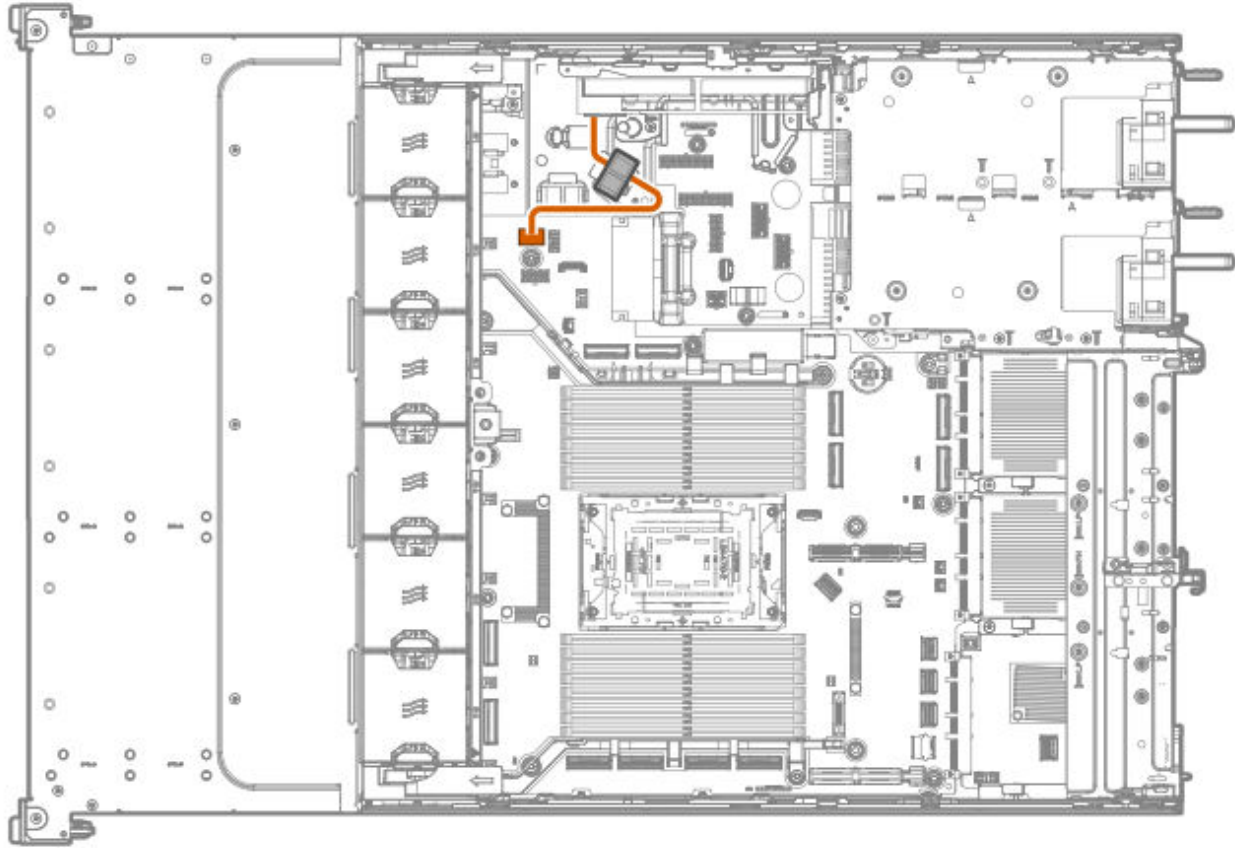
Cable part number	Cable color	From	To
877850-001	Orange	Slot 20 OCP A	Storage controller backup power connector 2

Type-p 2-port tri-mode controller



Cable part number	Cable color	From	To
877850-001	Orange	Slot 5	Storage controller backup power connector 1
877850-001	Blue	Slot 6	Storage controller backup power connector 2
877850-001	Gold	Slot 3	Storage controller backup power connector 3

Energy pack cabling



Cable part number	Cable color	From	To
876850-001	Orange	Energy pack	Energy pack connector

GPU cabling

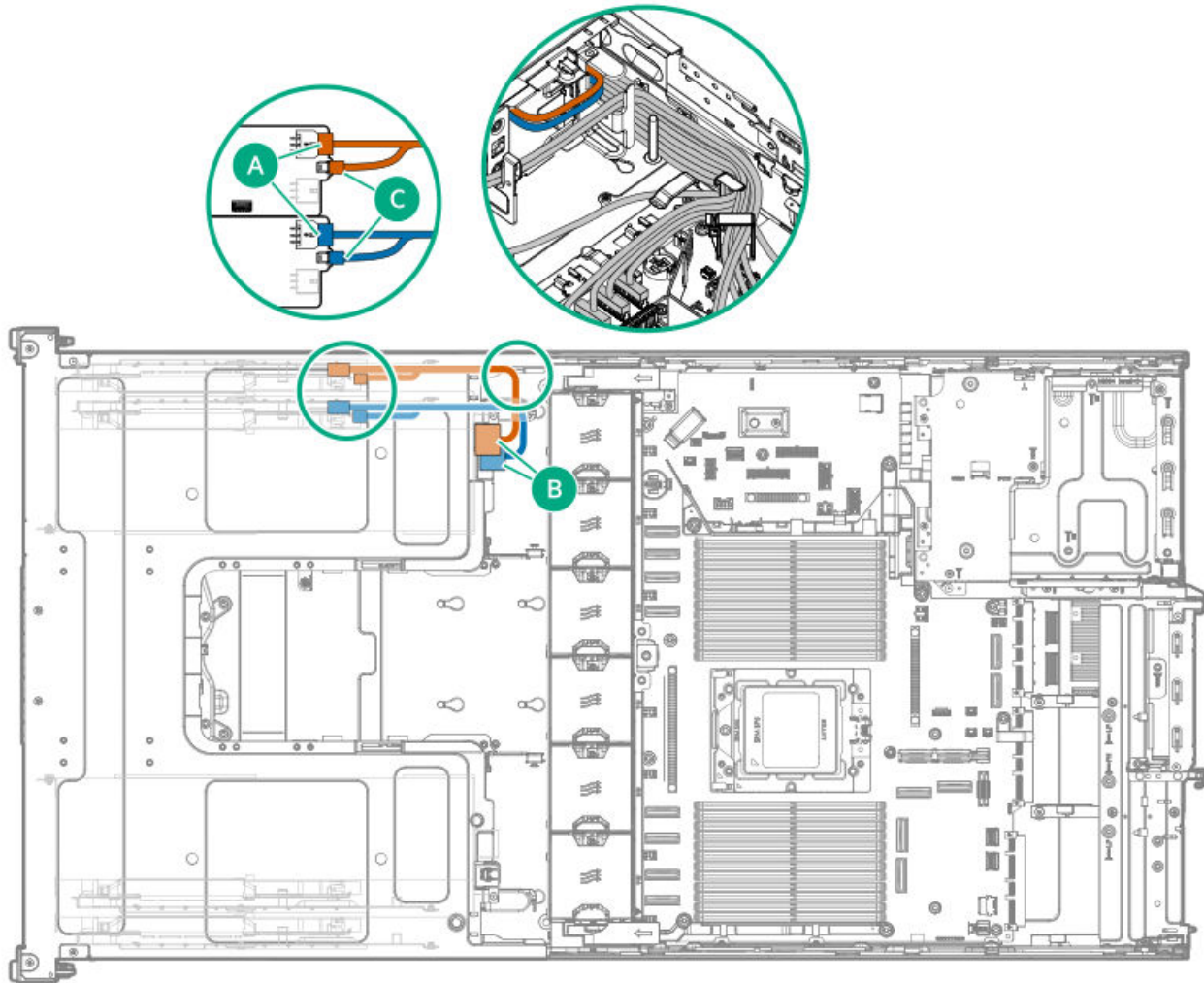
Subtopics

[GPU auxiliary power / sideband splitter cabling](#)

[GPU captive riser cabling](#)

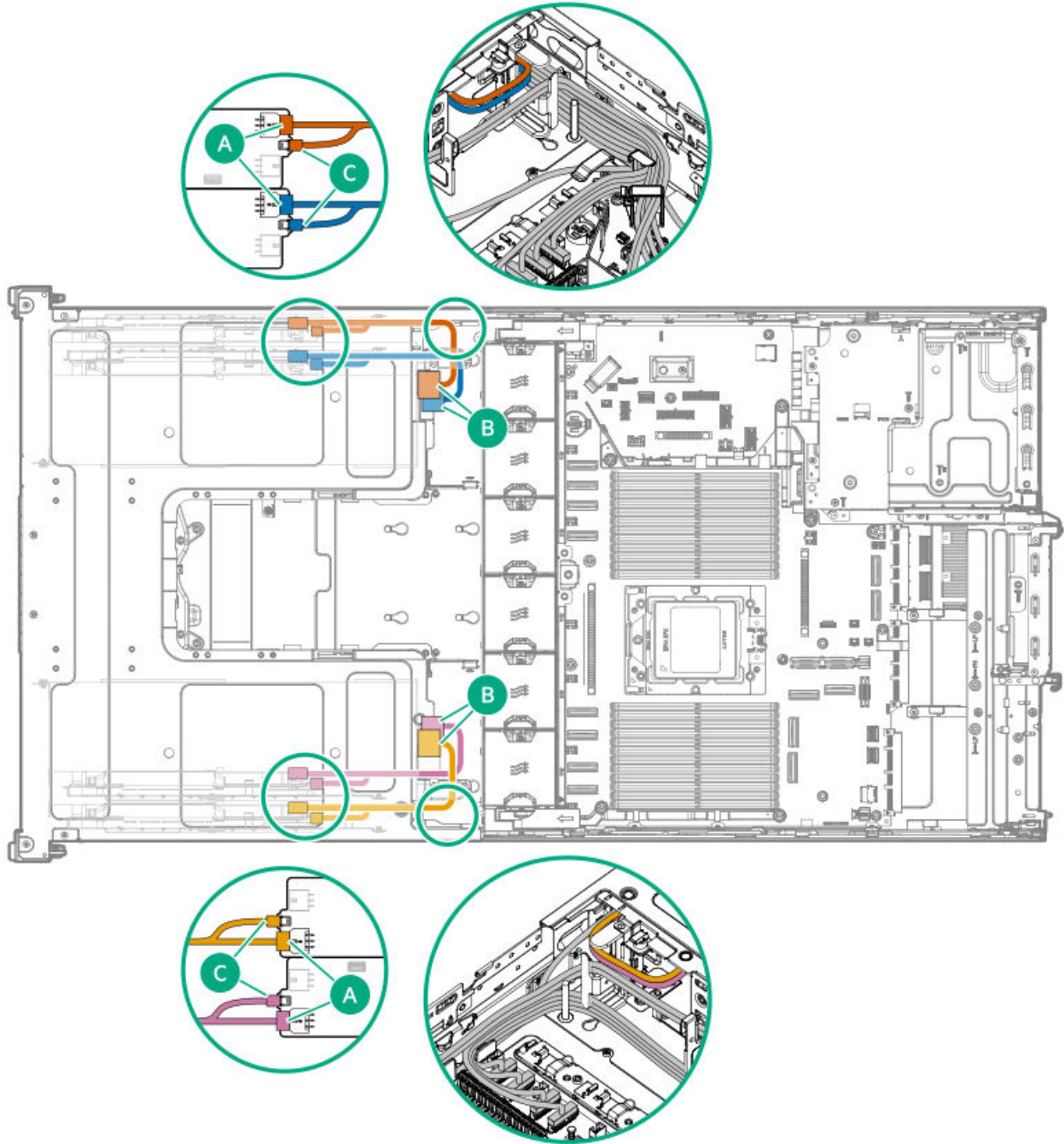
GPU auxiliary power / sideband splitter cabling

2 double-width GPUs (max TDP: 350 W)



Cable part number	Color	From	To
P75256-001	Orange	Slot 10 GPU	Slot 10 captive riser GPU auxiliary power connector
			Slot 10 captive riser GPU sideband connector
	Blue	Slot 12 GPU	Slot 12 captive riser GPU auxiliary power connector
			Slot 12 captive riser GPU sideband connector

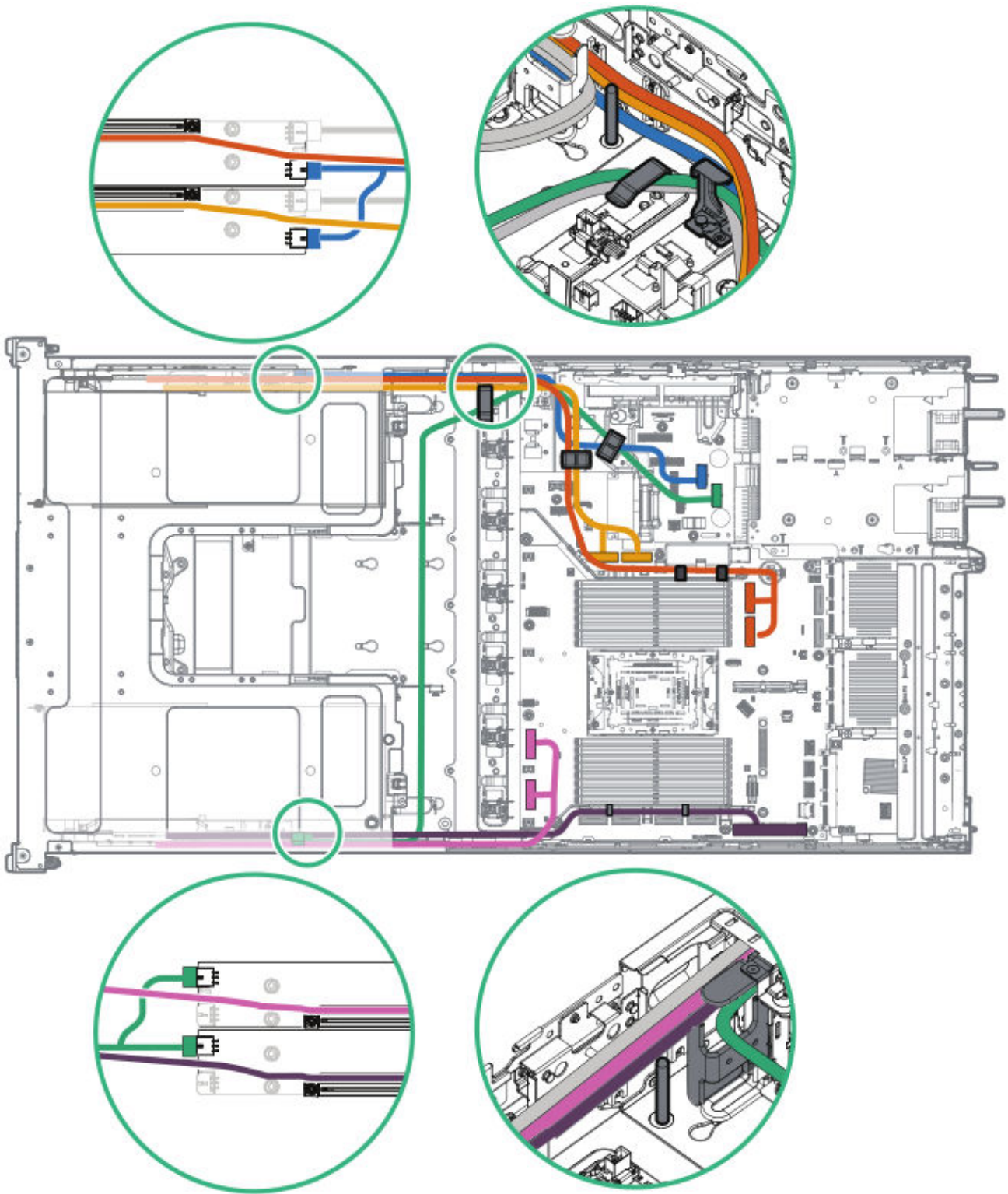
4 double-width GPUs (max TDP: 350 W)



Cable part number	Color	From	To
P75256-001	Orange	Slot 10 GPU	Slot 10 captive riser GPU auxiliary power connector
			Slot 10 captive riser GPU sideband connector

Cable part number	Color	From	To
	Blue	Slot 12 GPU	Slot 12 captive riser GPU auxiliary power connector Slot 12 captive riser GPU sideband connector
	Pink	Slot 15 GPU	Slot 15 captive riser GPU auxiliary power connector Slot 15 captive riser GPU sideband connector
	Gold	Slot 17 GPU	Slot 17 captive riser GPU auxiliary power connector Slot 17 captive riser GPU sideband connector

GPU captive riser cabling



Cable part number	Color	From	To
P71888-001	Orange	Captive riser slot 10	M-XIO port 13 M-XIO port 17
P75253-001	Blue	GPU cage 1 captive riser power connectors	2 x 6 M-PIC power connector
P73415-001	Gold	Captive riser slot 12	M-XIO port 4 M-XIO port 6
P71884-001	Pink	Captive riser slot 15	M-XIO port 0 M-XIO port 2
P75254-001	Green	GPU cage 2 captive riser power connectors	2 x 6 M-PIC power connector
P71891-001	Purple	Captive riser slot 17	Primary riser connector

OCP slot cabling

Subtopics

[Front OCP NIC and PHY board cabling](#)

[Front OCP NIC and PHY board cabling in the rich I/O configuration](#)

[Front OCP NIC and PHY board cabling in the GPU-optimized configuration](#)

[Rear OCP enablement cabling](#)

Front OCP NIC and PHY board cabling

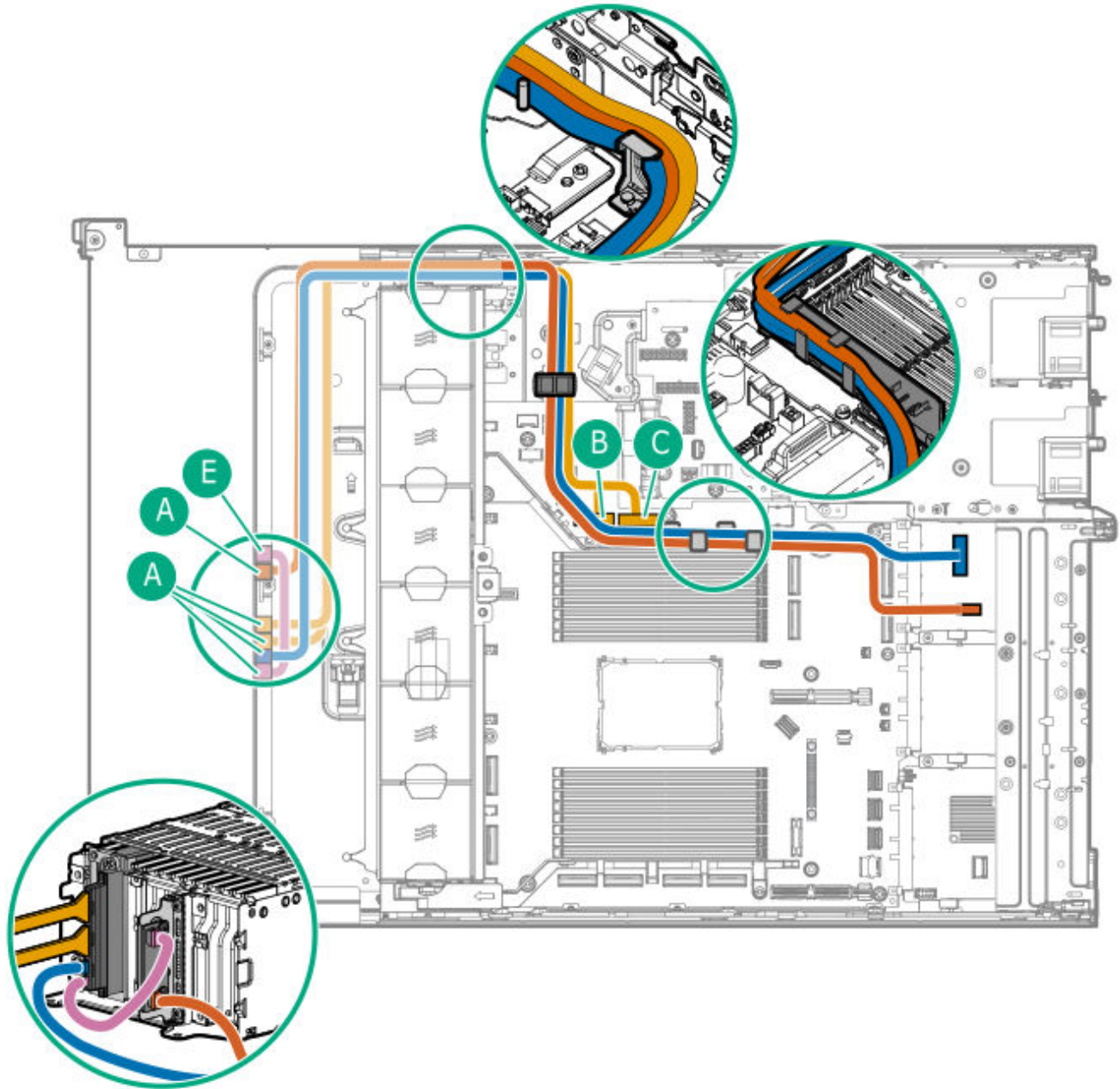


IMPORTANT

Servers that use Intel Xeon 6 65x1P/67x1P processors are considered rich I/O (RIO) configurations with 64 lanes of CXL 2.0 and up to 96 lanes of PCIe 5.0.

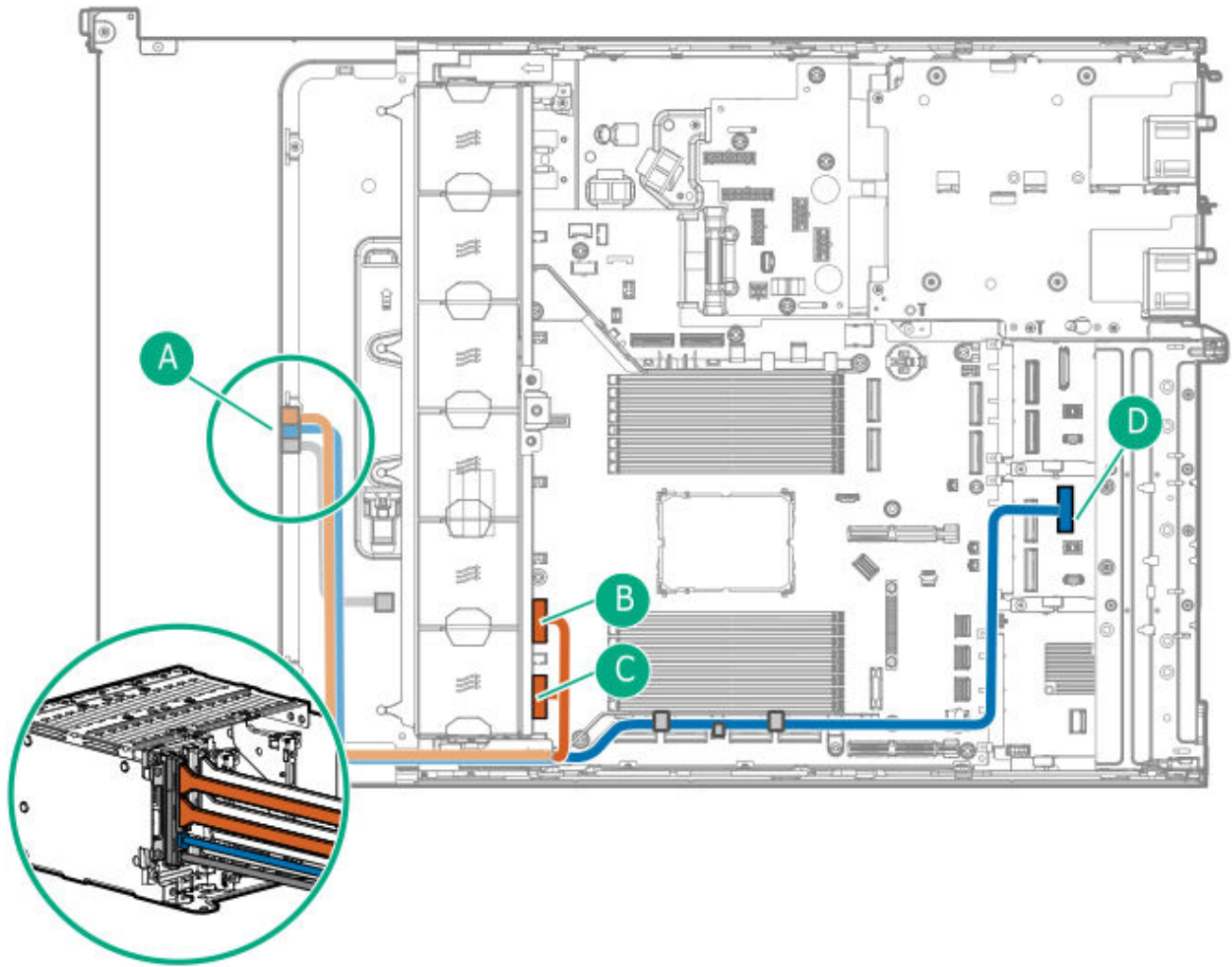
- Primary front OCP NIC cabling is for the Box 2, Bay 9 OCP slot.
- Secondary front OCP NIC cabling is for the Box 2, Bay 11 OCP slot.

Primary front OCP NIC cabling



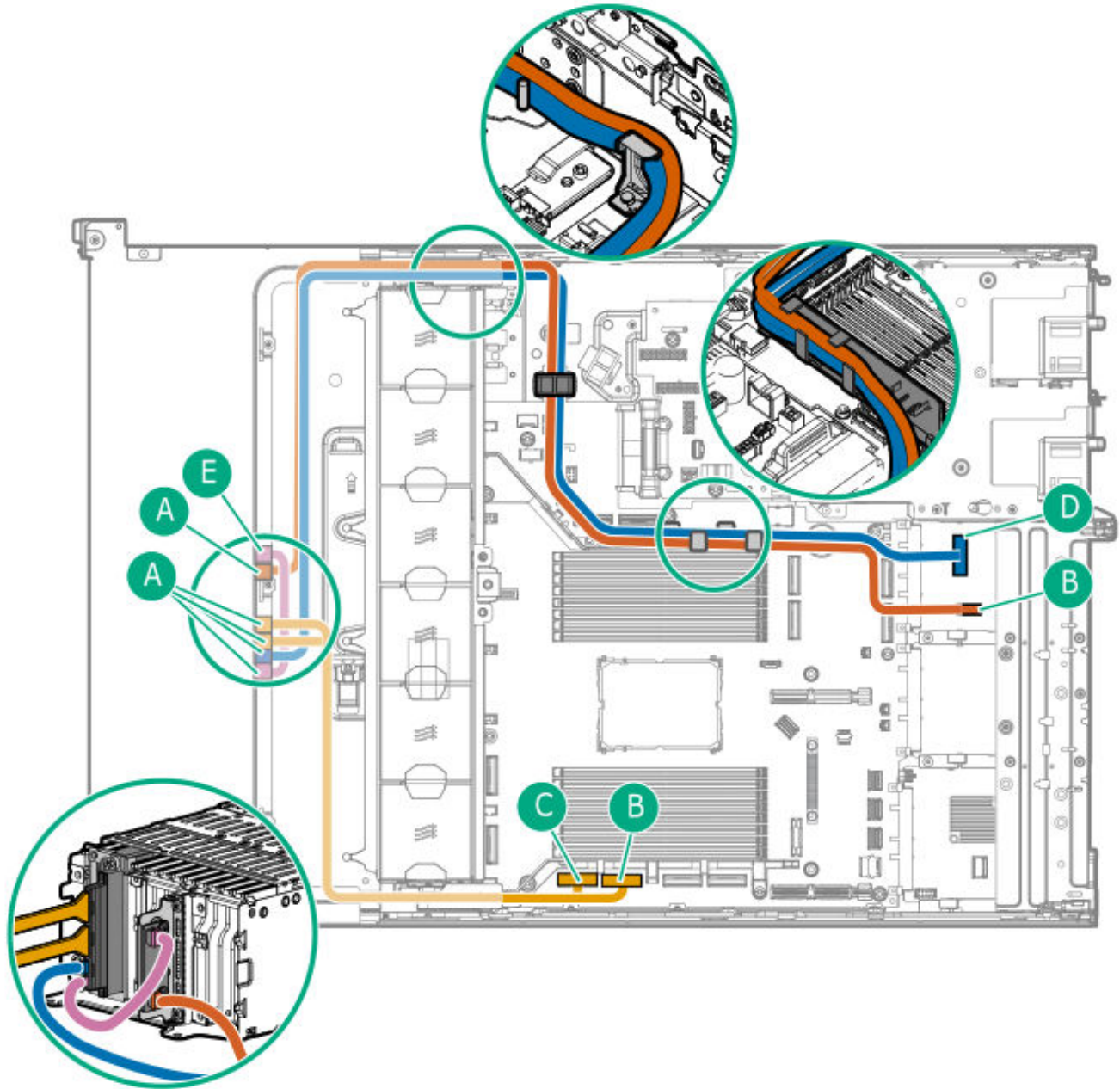
Cable part number	Color	From	To
P73927-001	Orange	PHY board	OCP NIC interposer
P71941-001	Blue	Front OCP NIC cable	OCP NIC interposer
	Gold		M-XIO port 6
			M-XIO port 4
	Pink		PHY board

Secondary front OCP NIC cabling



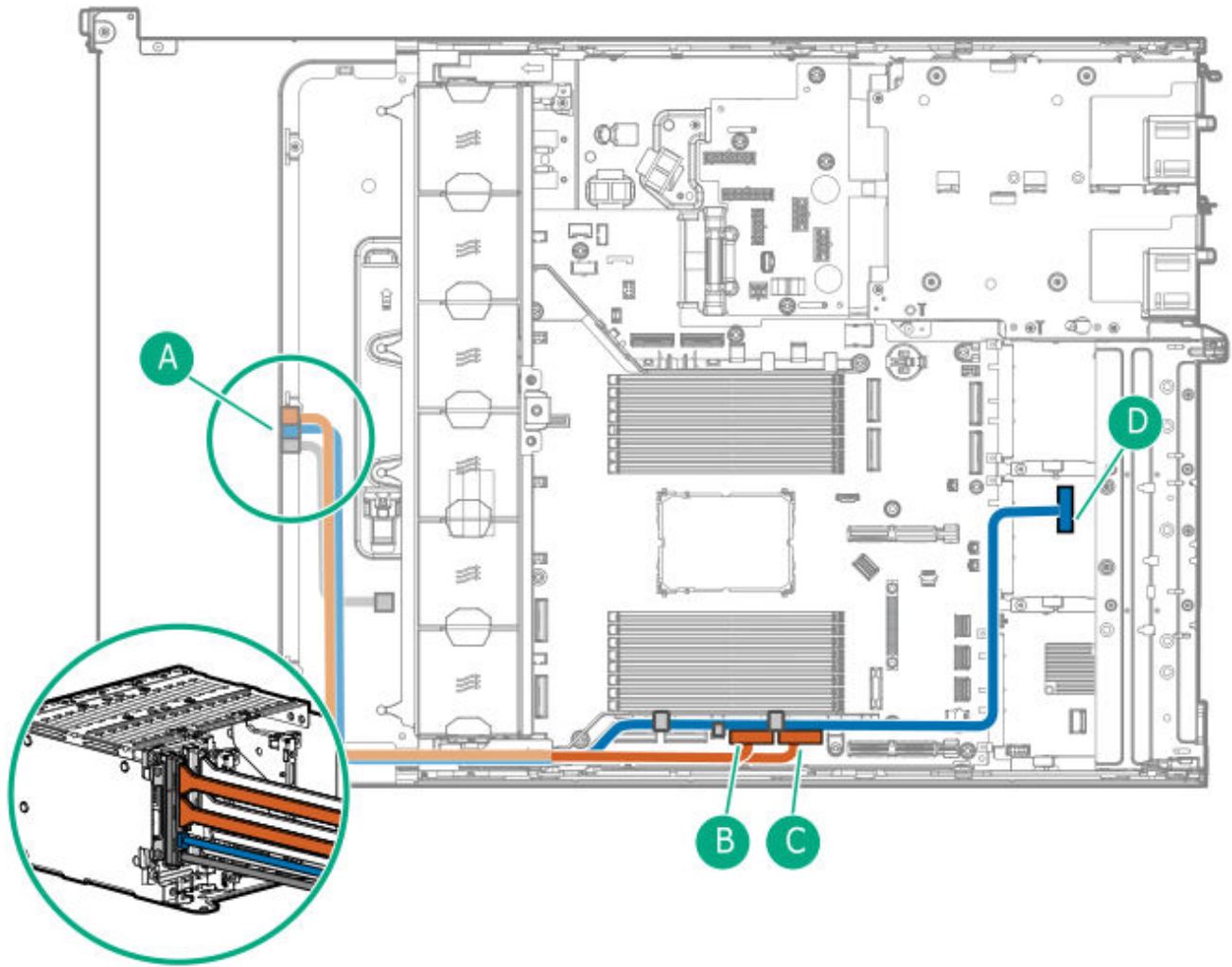
Cable part number	Color	From	To
P71941-001	Orange	Front OCP NIC cable	M-XIO port 0
			M-XIO port 2
	Blue		OCP NIC interposer

Primary front OCP NIC cabling for the rich I/O configuration



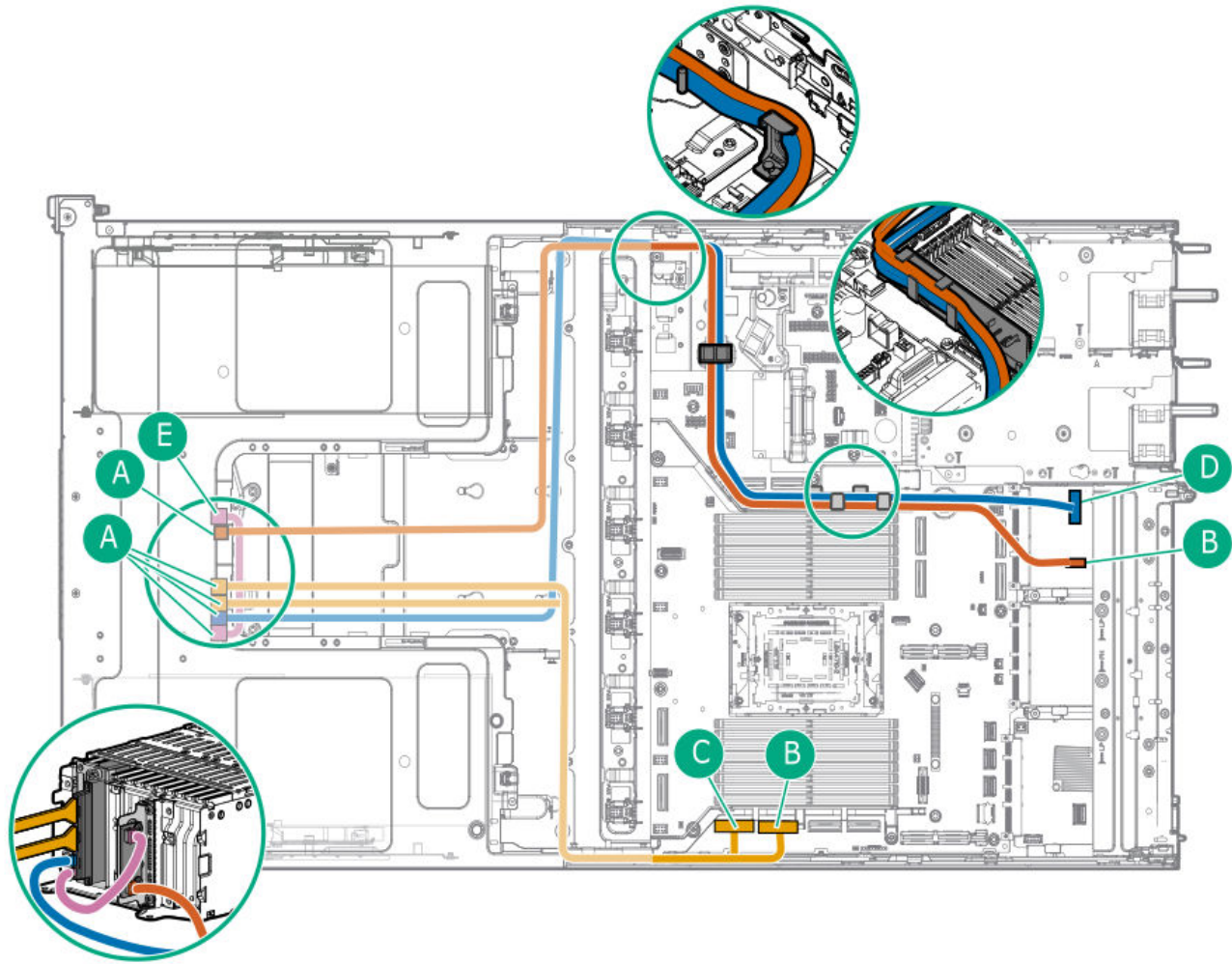
Cable part number	Color	From	To
P73927-001	Orange	PHY board	OCP NIC interposer
P71941-001	Blue	Front OCP NIC cable	OCP NIC interposer
	Gold		M-XIO port 7
			M-XIO port 5
	Pink		PHY board

Secondary front OCP NIC cabling for the rich I/O configuration



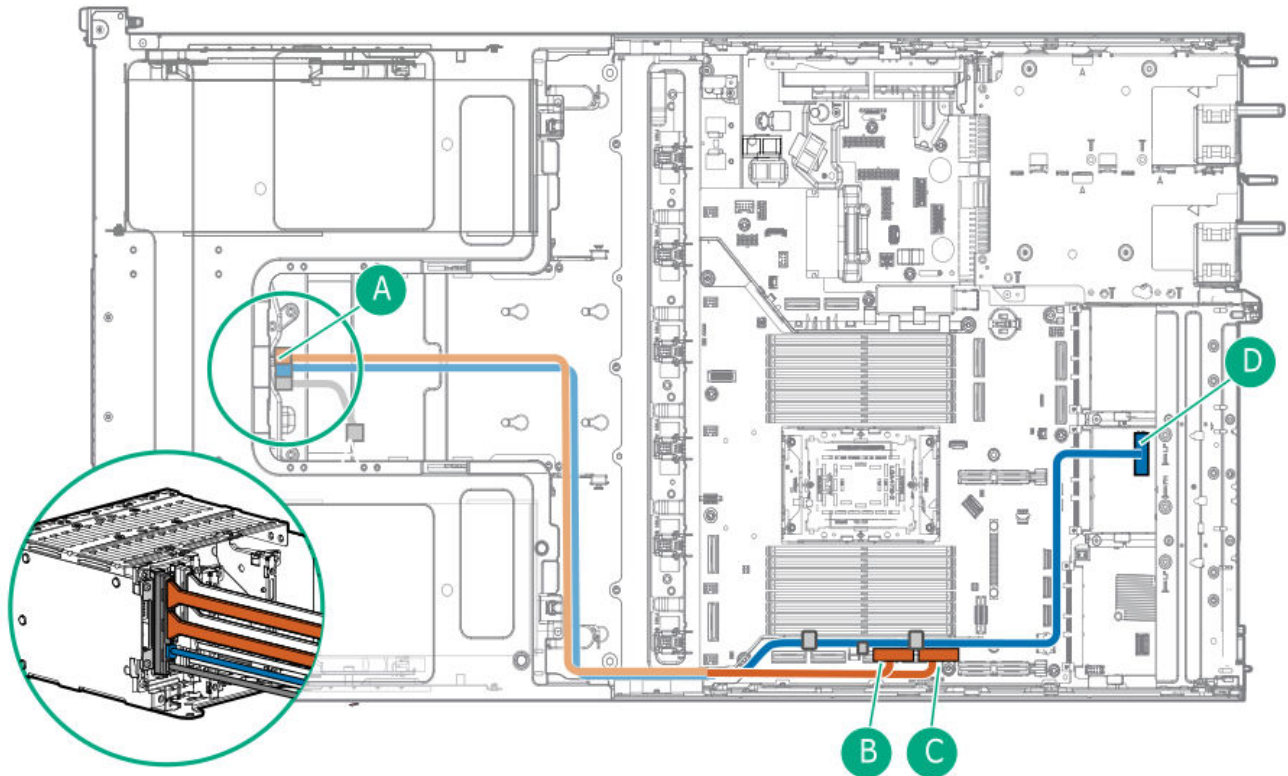
Cable part number	Color	From	To
P71941-001	Orange	Front OCP NIC cable	M-XIO port 1
			M-XIO port 3
	Blue		OCP NIC interposer

Primary front OCP NIC cabling for the GPU-optimized configuration



Cable part number	Color	From	To
P73927-001	Orange	PHY board	OCP NIC interposer
P71944-001	Blue	Front OCP NIC cable	OCP NIC interposer
	Gold		M-XIO port 7
			M-XIO port 5
	Pink		PHY board

Secondary front OCP NIC cabling for the GPU-optimized configuration



Cable part number	Color	From	To
P71944-001	Orange	Front OCP NIC cable	M-XIO port 1
			M-XIO port 3
	Blue		OCP NIC interposer

Front OCP NIC and PHY board cabling in the rich I/O configuration

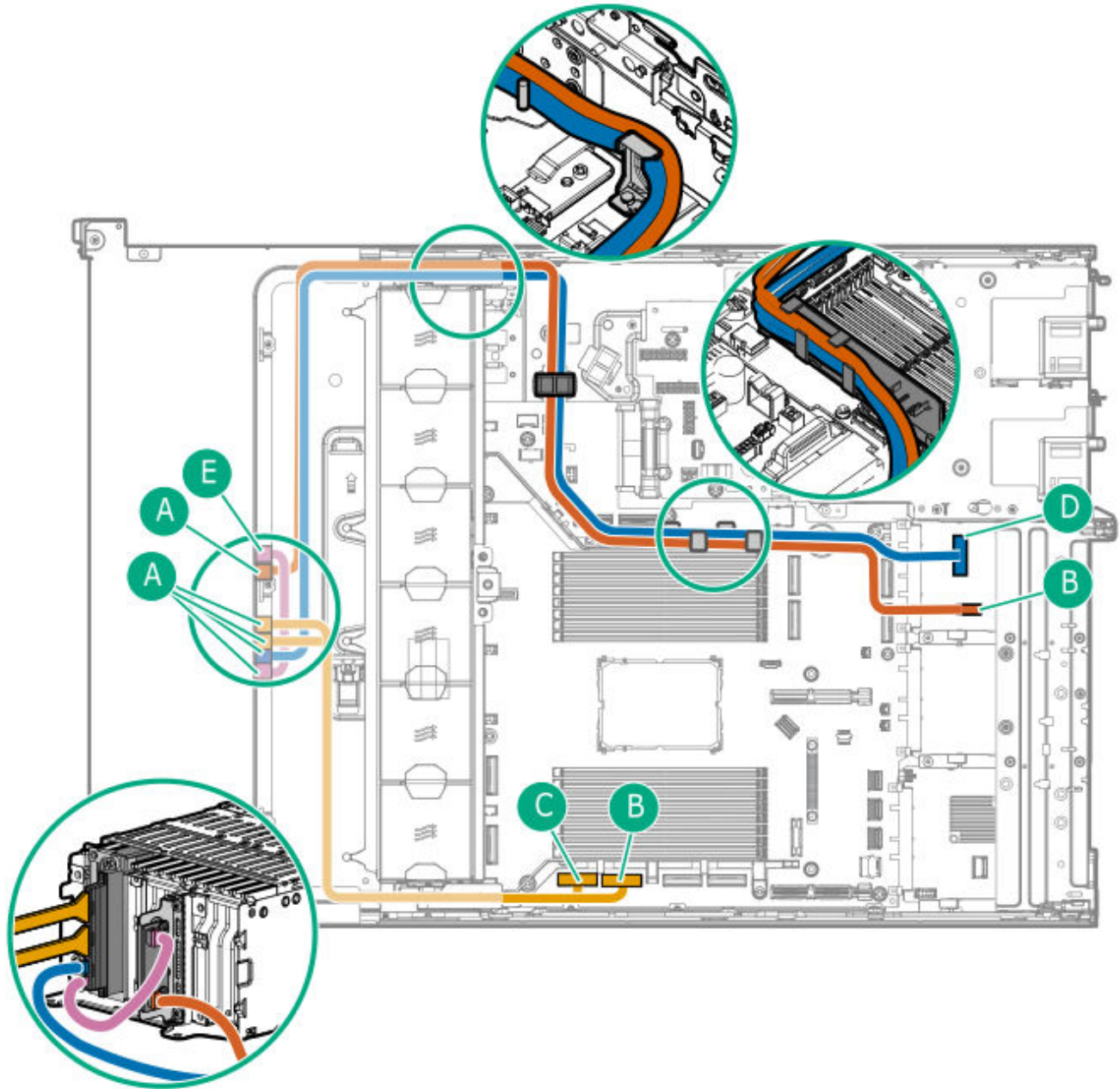


IMPORTANT

Servers that use Intel Xeon 6 65x1P/67x1P processors are considered rich I/O (RIO) configurations with 64 lanes of CXL 2.0 and up to 96 lanes of PCIe 5.0.

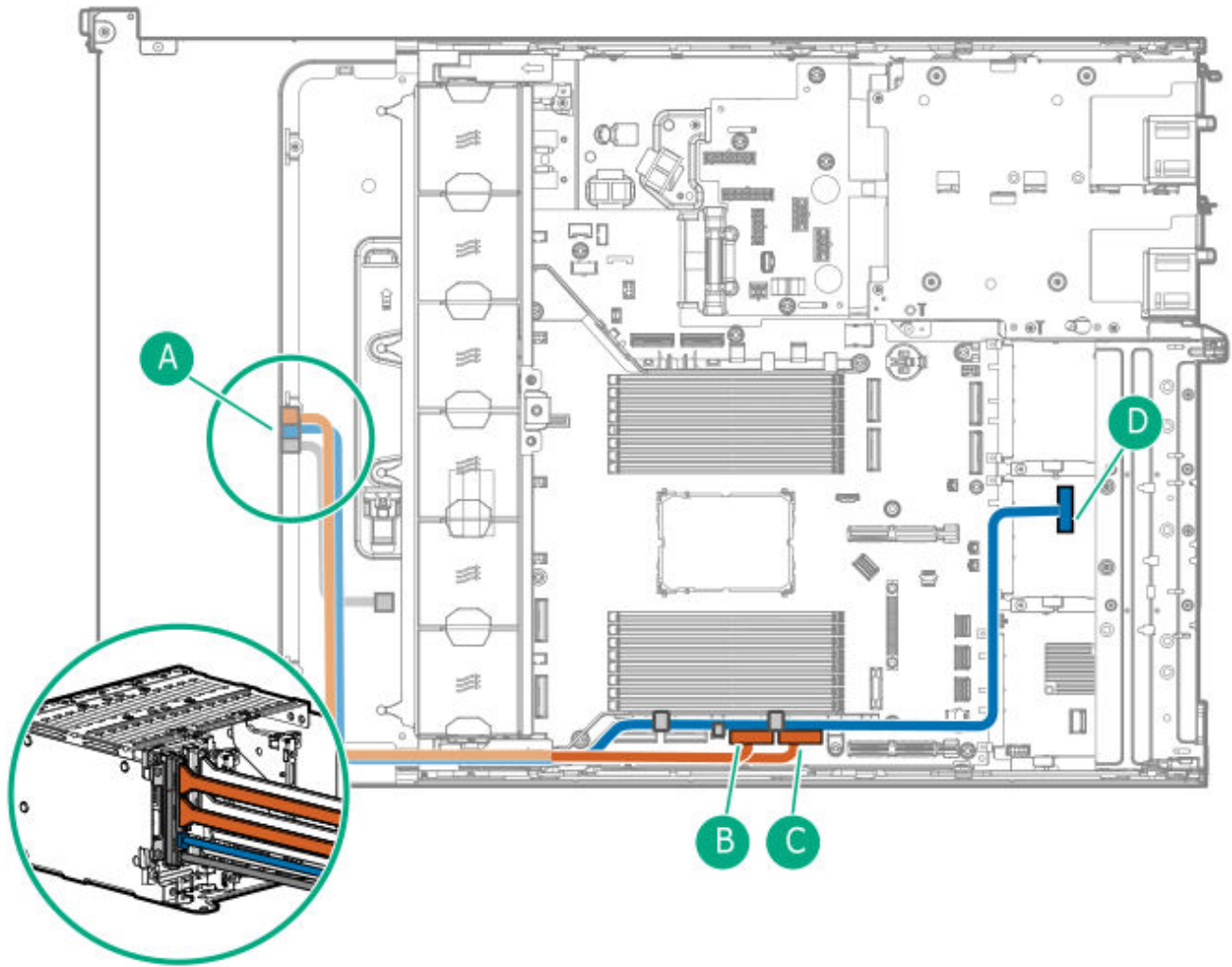
- Primary front OCP NIC cabling is for the Box 2, Bay 9 OCP slot.
- Secondary front OCP NIC cabling is for the Box 2, Bay 11 OCP slot.

Primary front OCP NIC cabling



Cable part number	Color	From	To
P73927-001	Orange	PHY board	OCP NIC interposer
P71941-001	Blue	Front OCP NIC cable	OCP NIC interposer
	Gold		M-XIO port 7
			M-XIO port 5
	Pink		PHY board

Secondary front OCP NIC cabling



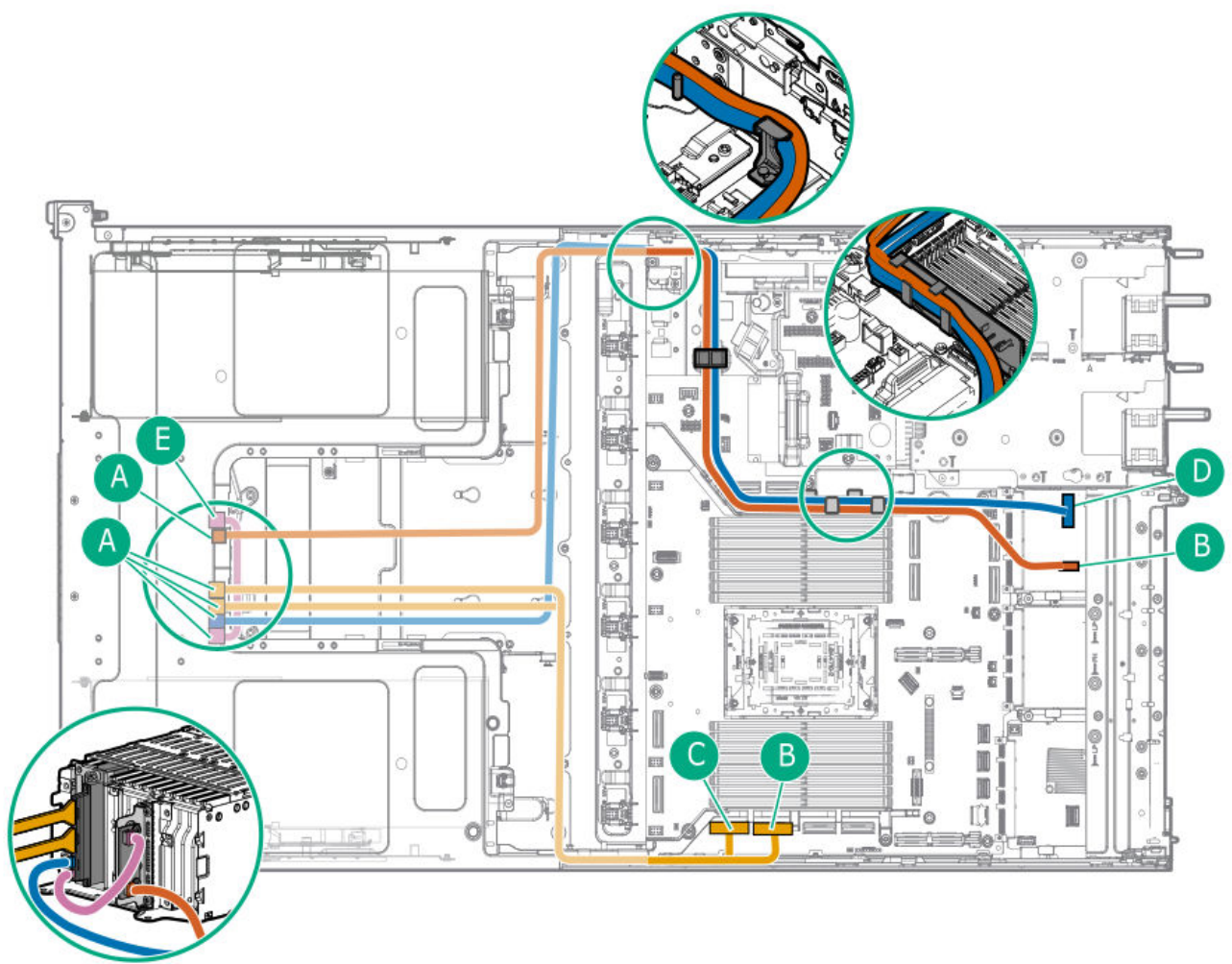
Cable part number	Color	From	To
P71941-001	Orange	Front OCP NIC cable	M-XIO port 1
			M-XIO port 3
	Blue		OCP NIC interposer

Front OCP NIC and PHY board cabling in the GPU-optimized configuration

! **IMPORTANT**
 Servers that use Intel Xeon 6 65x1P/67x1P processors are considered rich I/O (RIO) configurations with 64 lanes of CXL 2.0 and up to 96 lanes of PCIe 5.0.

- Primary front OCP NIC cabling is for the Box 2, Bay 9 OCP slot.
- Secondary front OCP NIC cabling is for the Box 2, Bay 11 OCP slot.

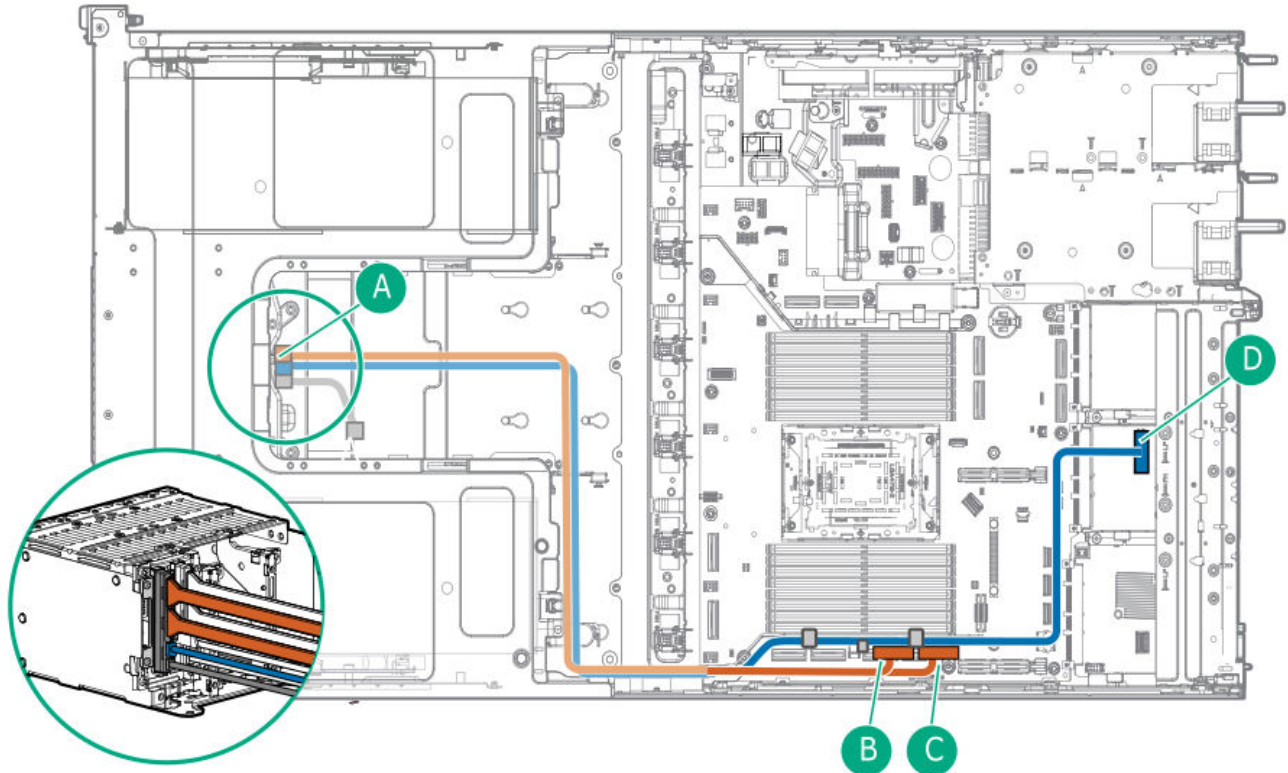
Primary front OCP NIC cabling



Cable part number	Color	From	To
P73927-001	Orange	PHY board	OCP NIC interposer

Cable part number	Color	From	To
P71944-001	Blue	Front OCP NIC cable	OCP NIC interposer
	Gold		M-XIO port 7
			M-XIO port 5
	Pink		PHY board

Secondary front OCP NIC cabling

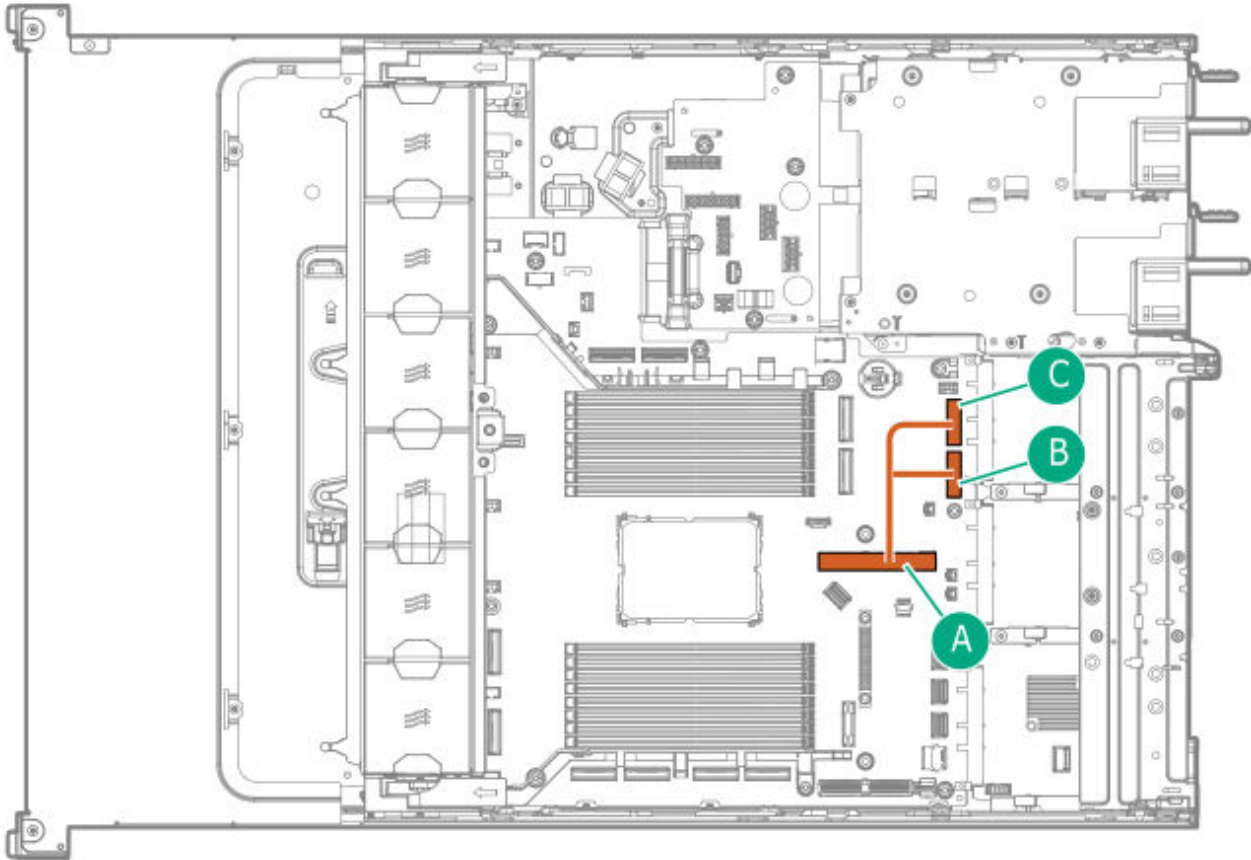


Cable part number	Color	From	To
P71944-001	Orange	Front OCP NIC cable	M-XIO port 1
			M-XIO port 3
	Blue		OCP NIC interposer

Rear OCP enablement cabling

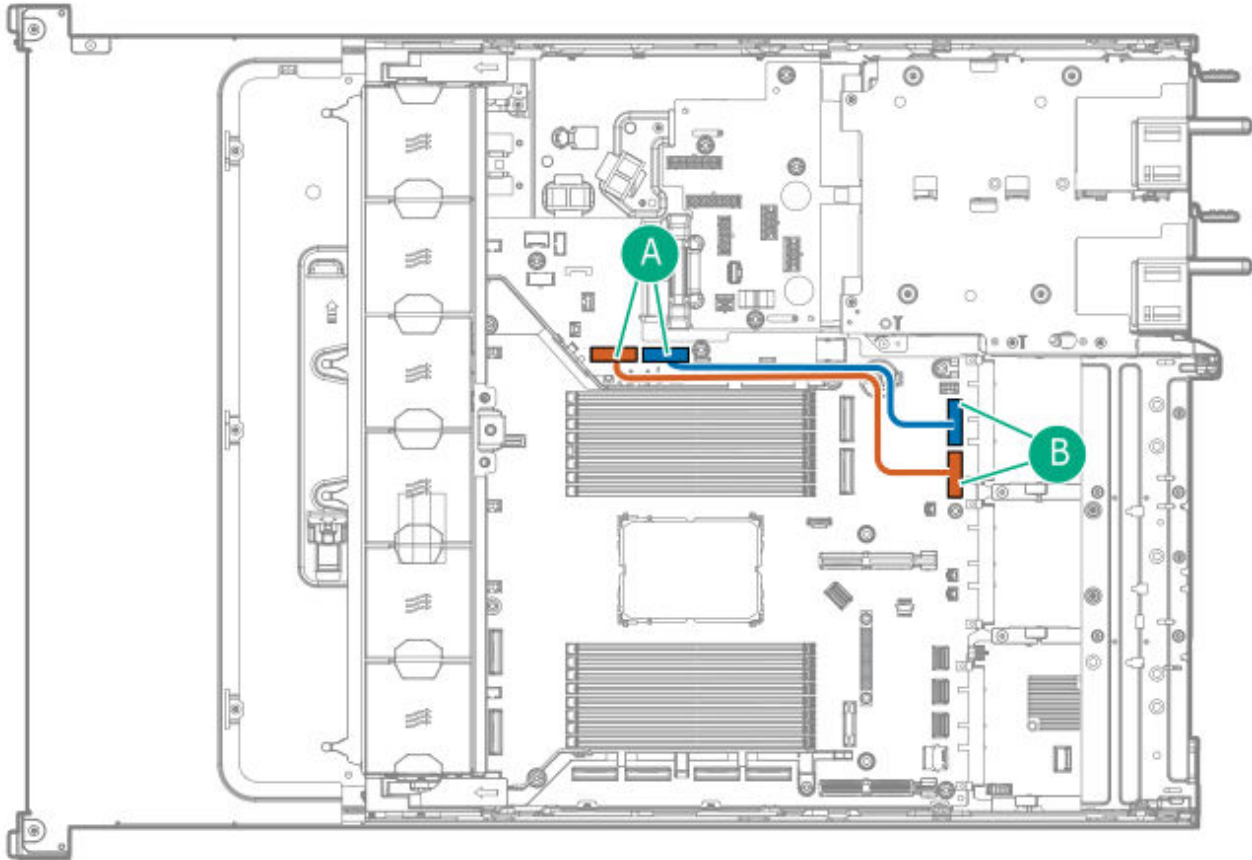
Slot 20 OCP A is configured to operate at x16 bandwidth speed by default.

Secondary riser blank configuration



Cable part number	Color	From	To
P73494-001	Orange	Secondary riser connector	MCIO OCP B-1 input port MCIO OCP B-2 input port

Secondary riser cage configuration



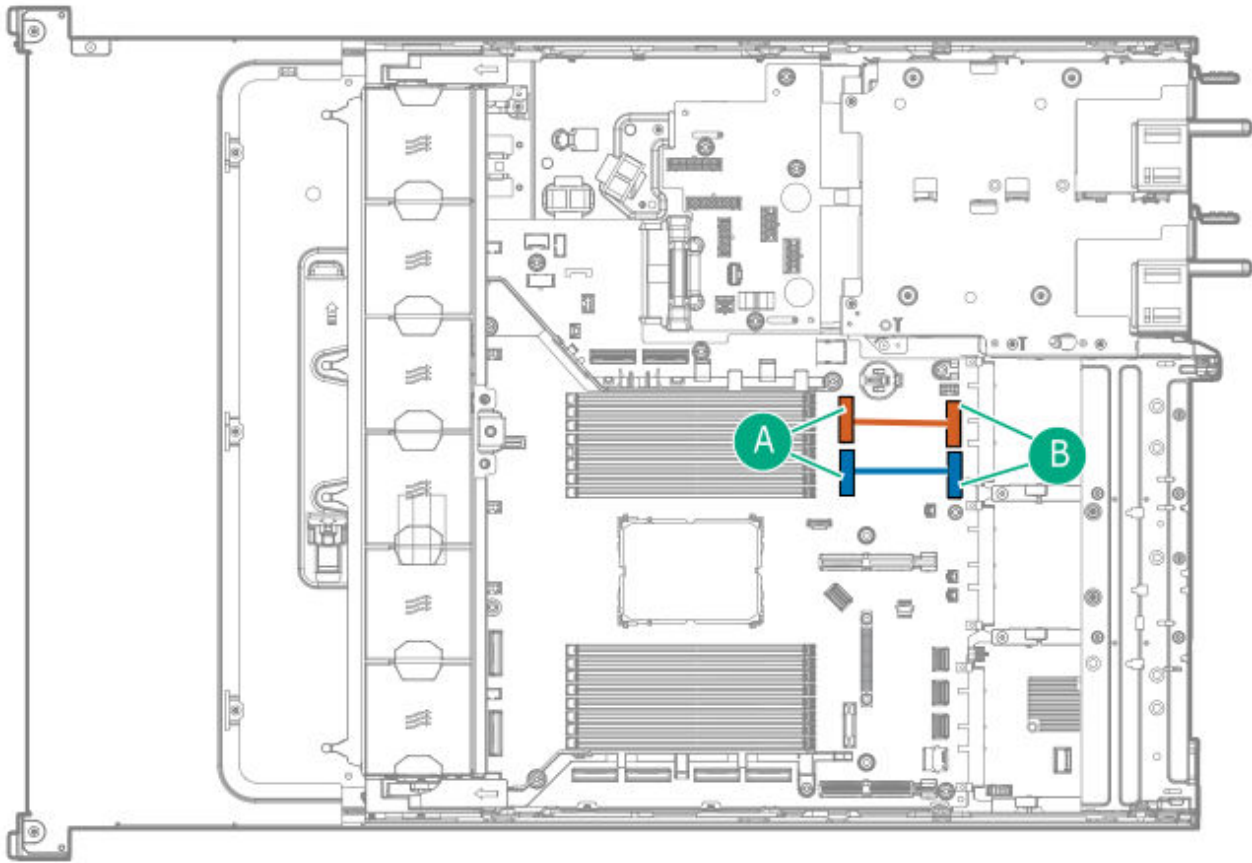
Cable part number	Color	From	To
P75507-001	Orange	M-XIO port 6	MCIO OCP B-1 input port
P75506-001	Blue	M-XIO port 4	MCIO OCP B-2 input port

Rich I/O configuration



IMPORTANT

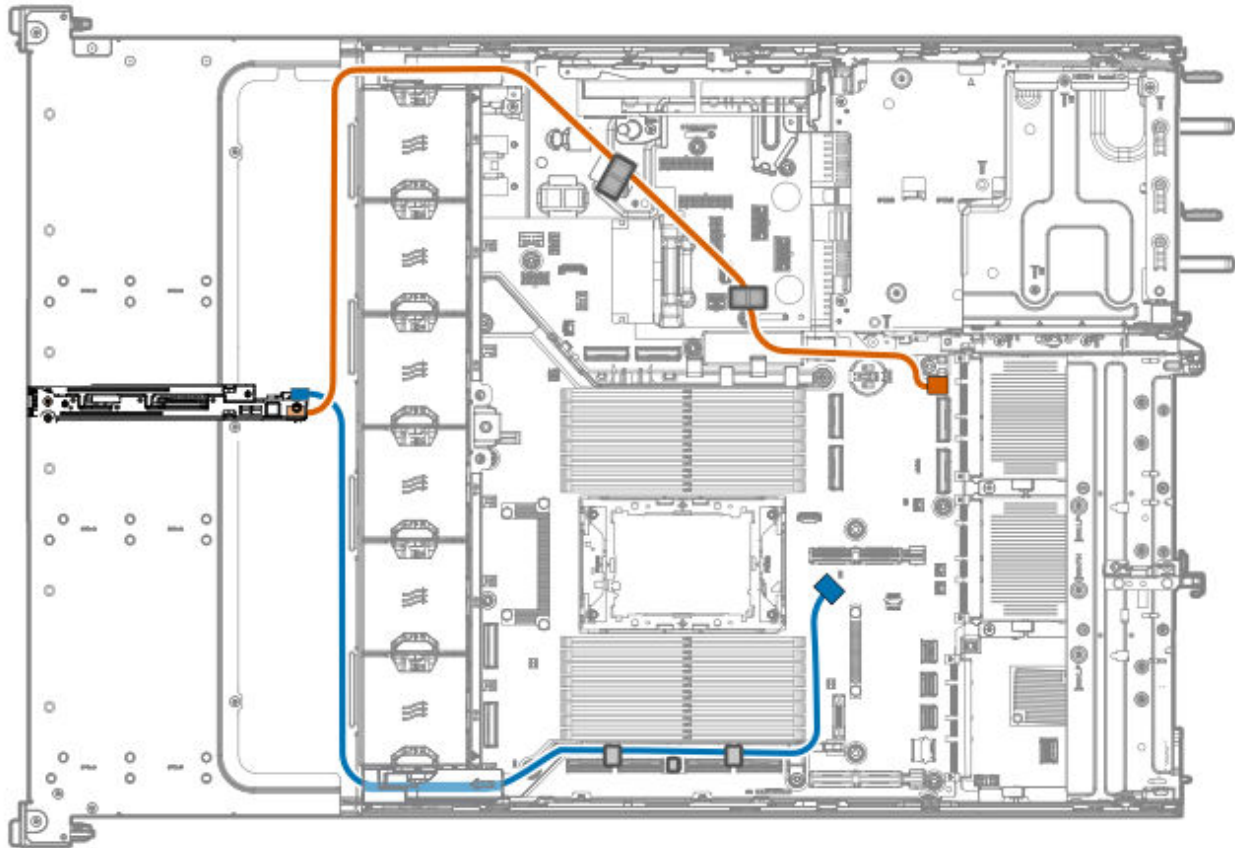
Servers that use Intel Xeon 6 65x1P/67x1P processors are considered rich I/O (RIO) configurations with 64 lanes of CXL 2.0 and up to 96 lanes of PCIe 5.0.



Cable part number	Color	From	To
P75591-001	Orange	M-XIO port 17	MCIO OCP B-1 input port
	Blue	M-XIO port 13	MCIO OCP B-2 input port

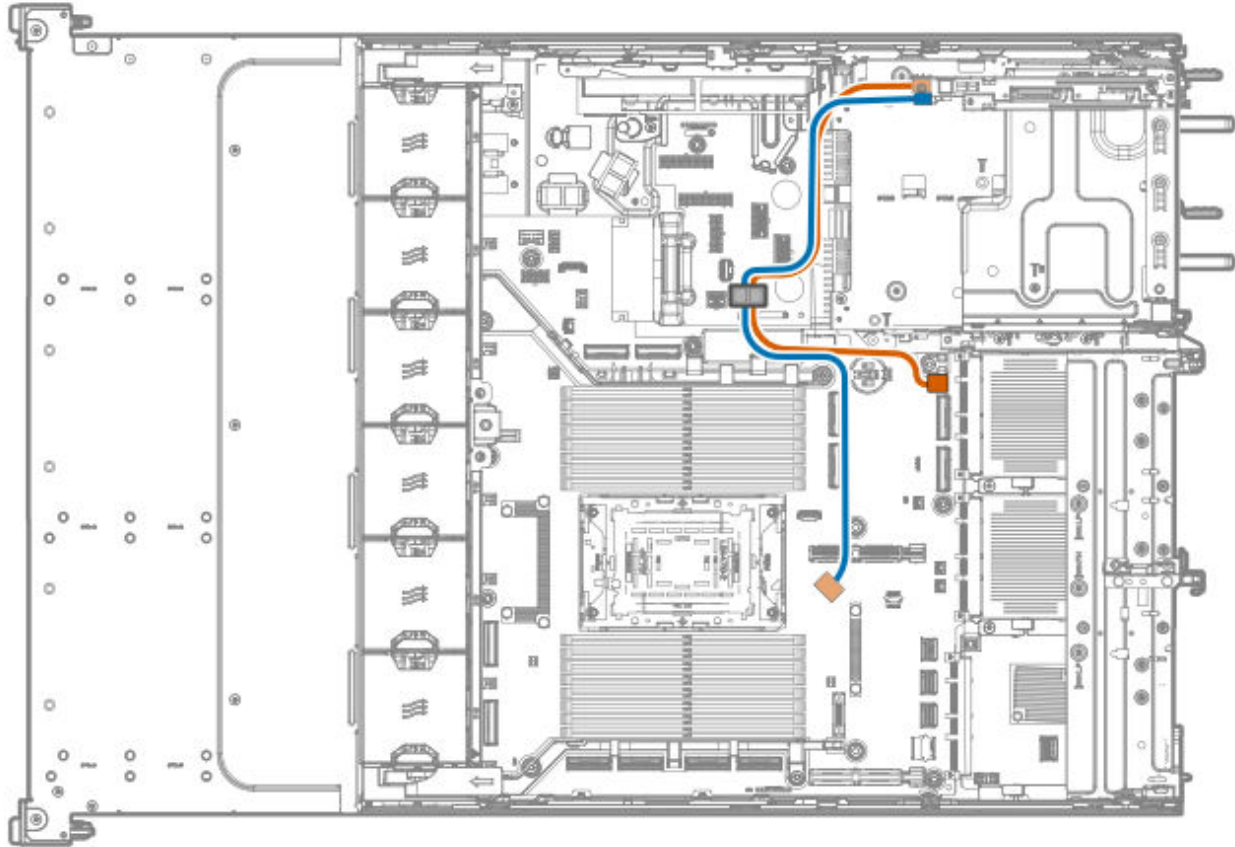
HPE NS204i-u Boot Device V2 cabling

Front HPE NS204i-u Boot Device V2



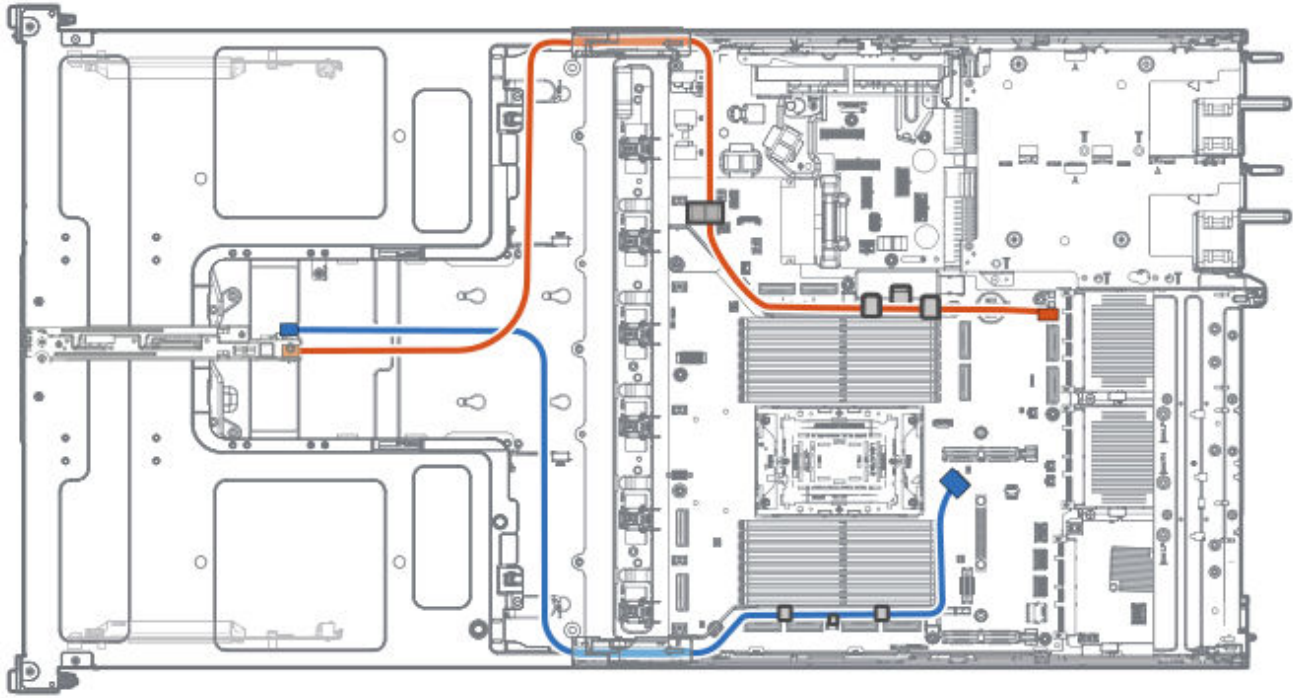
Cable part number	Cable color	From	To
P74729-001	Orange	HPE NS204i-u Boot Device V2	NS204i-u power connector
P74730-001	Blue		NS204i-u signal connector

Rear HPE NS204i-u Boot Device V2



Cable part number	Cable color	From	To
P63720-001	Orange	HPE NS204i-u Boot Device V2	NS204i-u power connector
P72024-001	Blue		NS204i-u signal connector

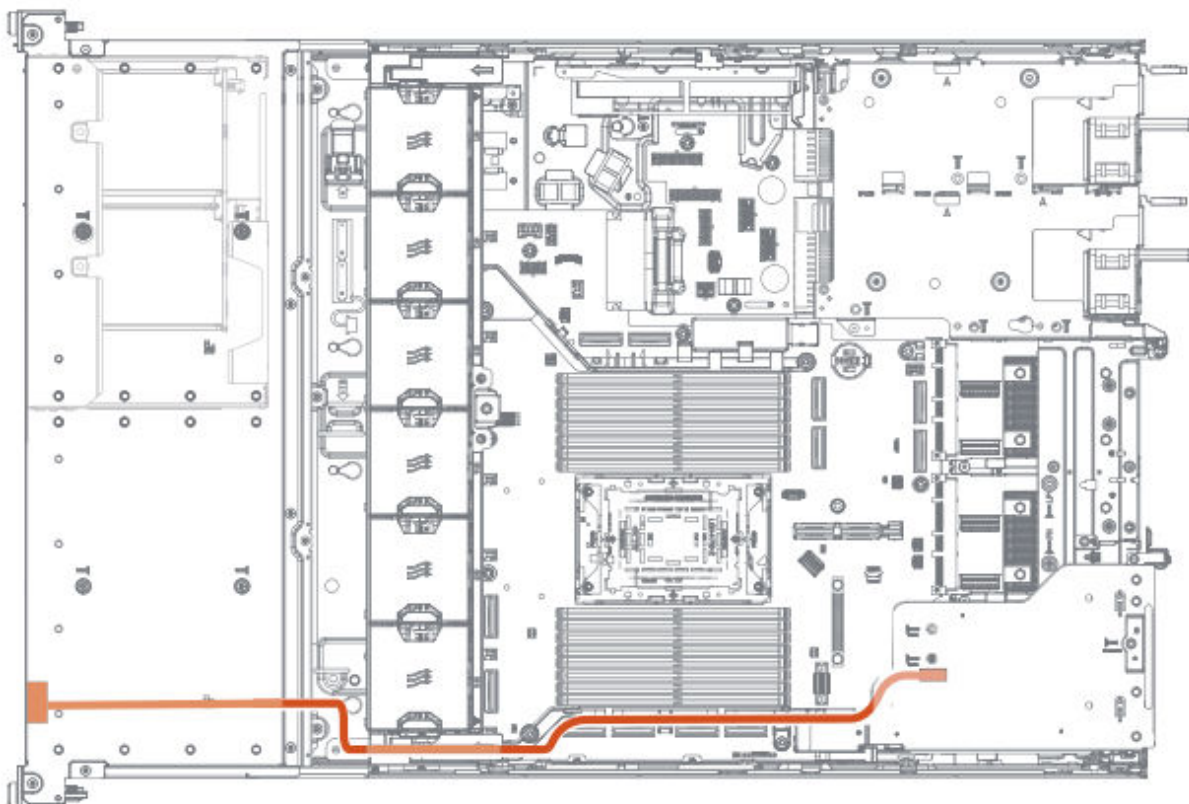
GPU-optimized configuration



Cable part number	Cable color	From	To
P74729-001	Orange	HPE NS204i-u Boot Device V2	NS204i-u power connector
P74730-001	Blue		NS204i-u signal connector

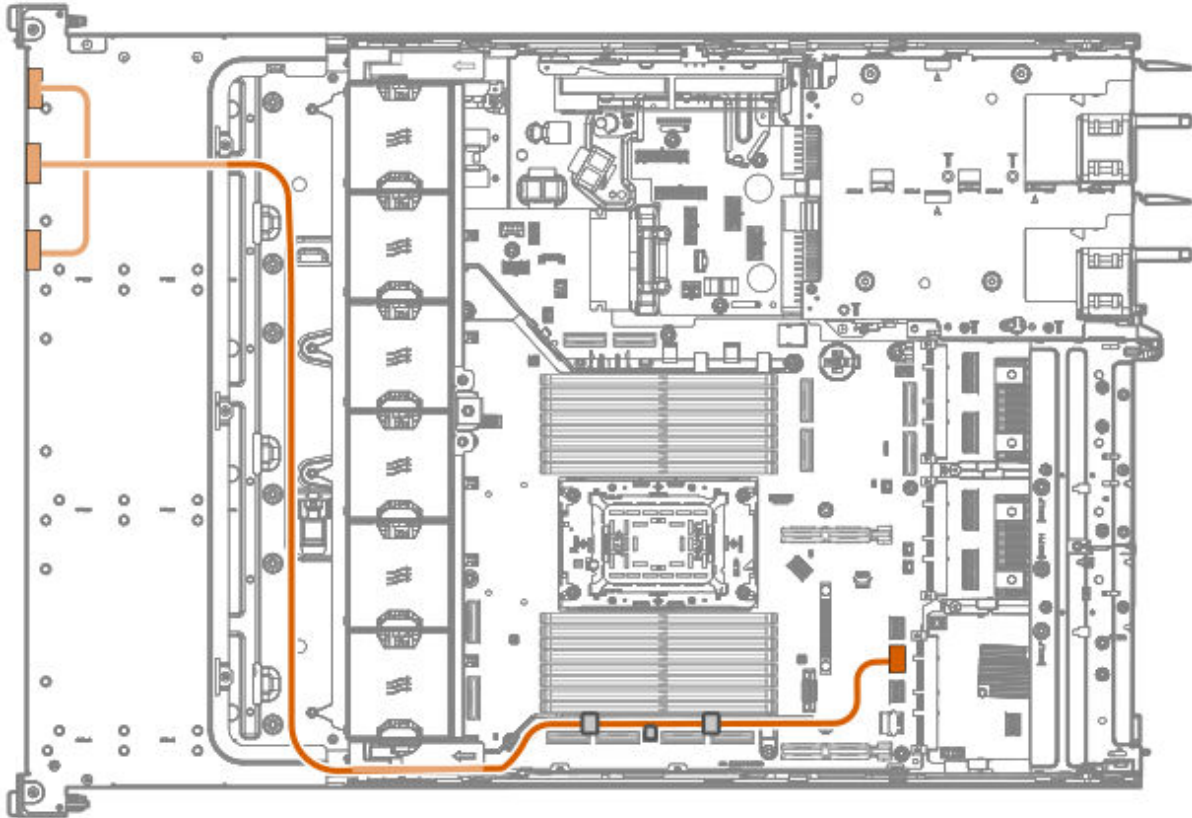
Universal media bay cabling

LFF drive configuration



Cable part number	Color	From	To
P75279-001	Orange	DisplayPort	USB 2.0 / DisplayPort cable connector

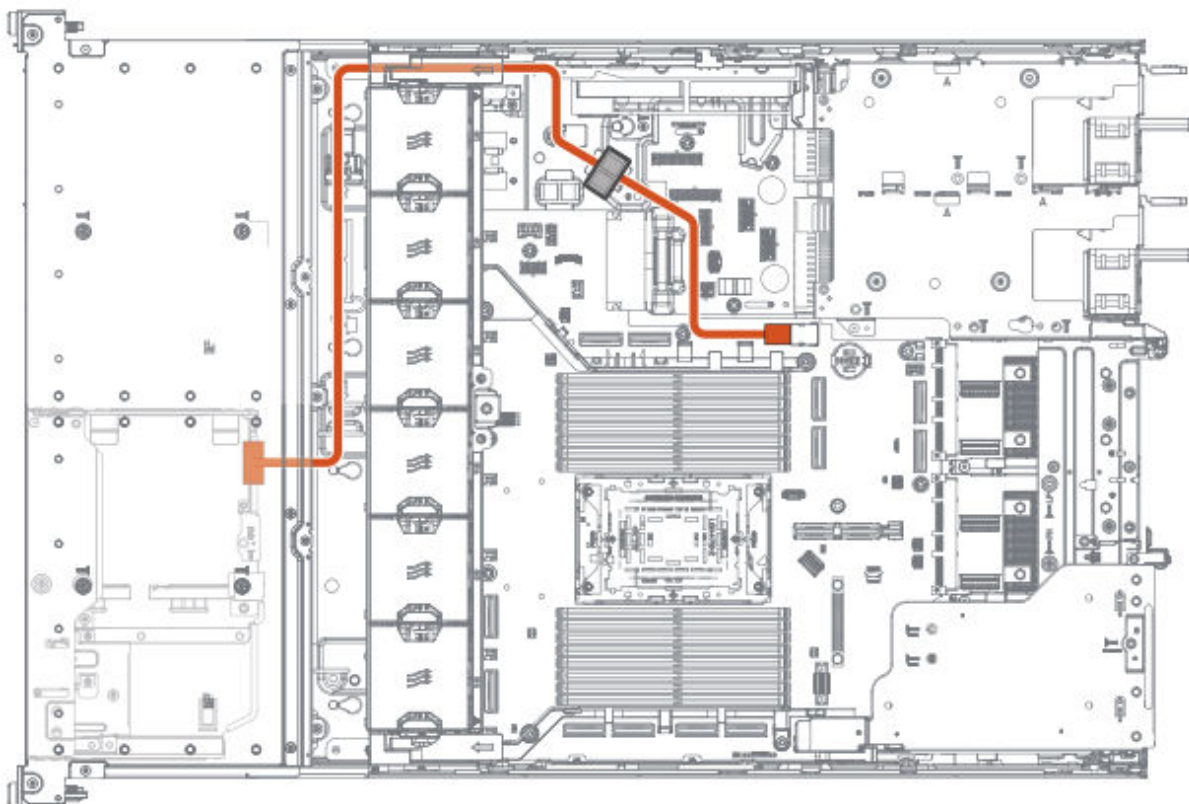
SFF / E3.S drive configuration



Cable part number	Color	From	To
P75280-001	Orange	DisplayPort USB 2.0 ports	USB 2.0 / DisplayPort cable connector

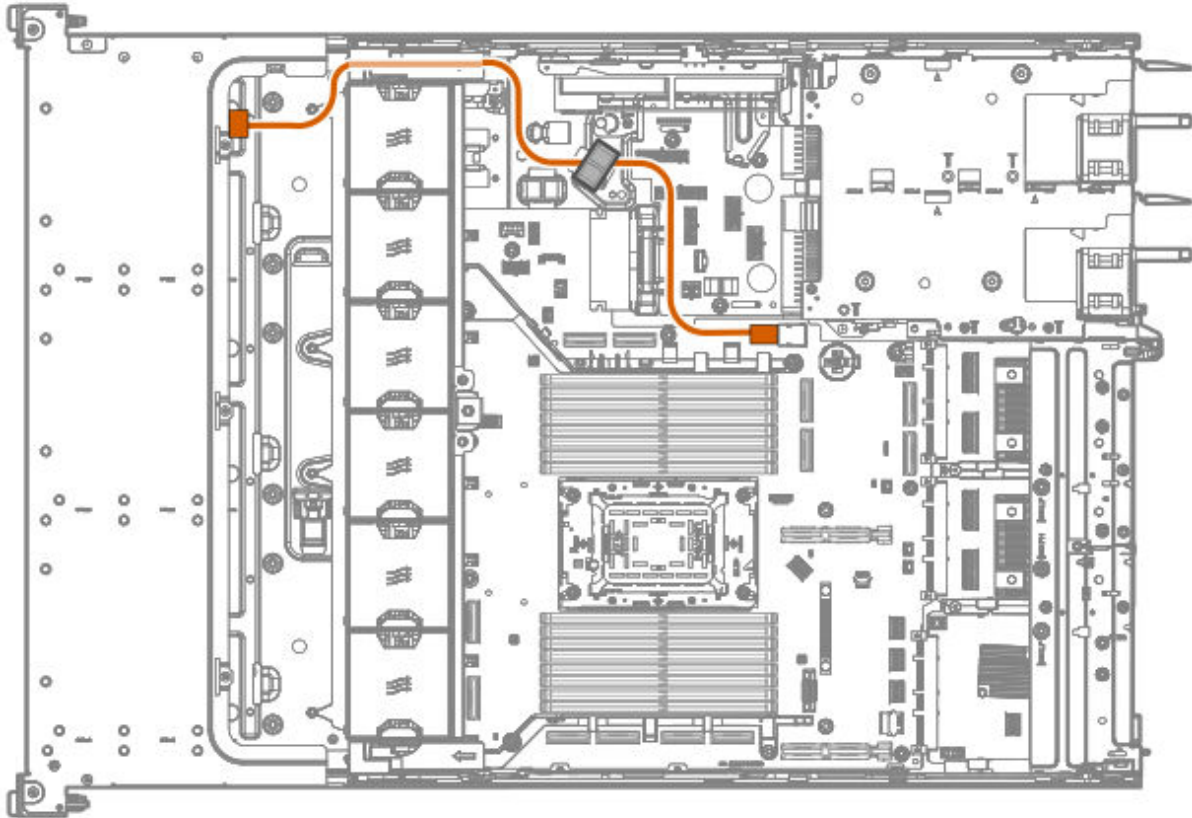
Optical drive cabling

LFF drive configuration



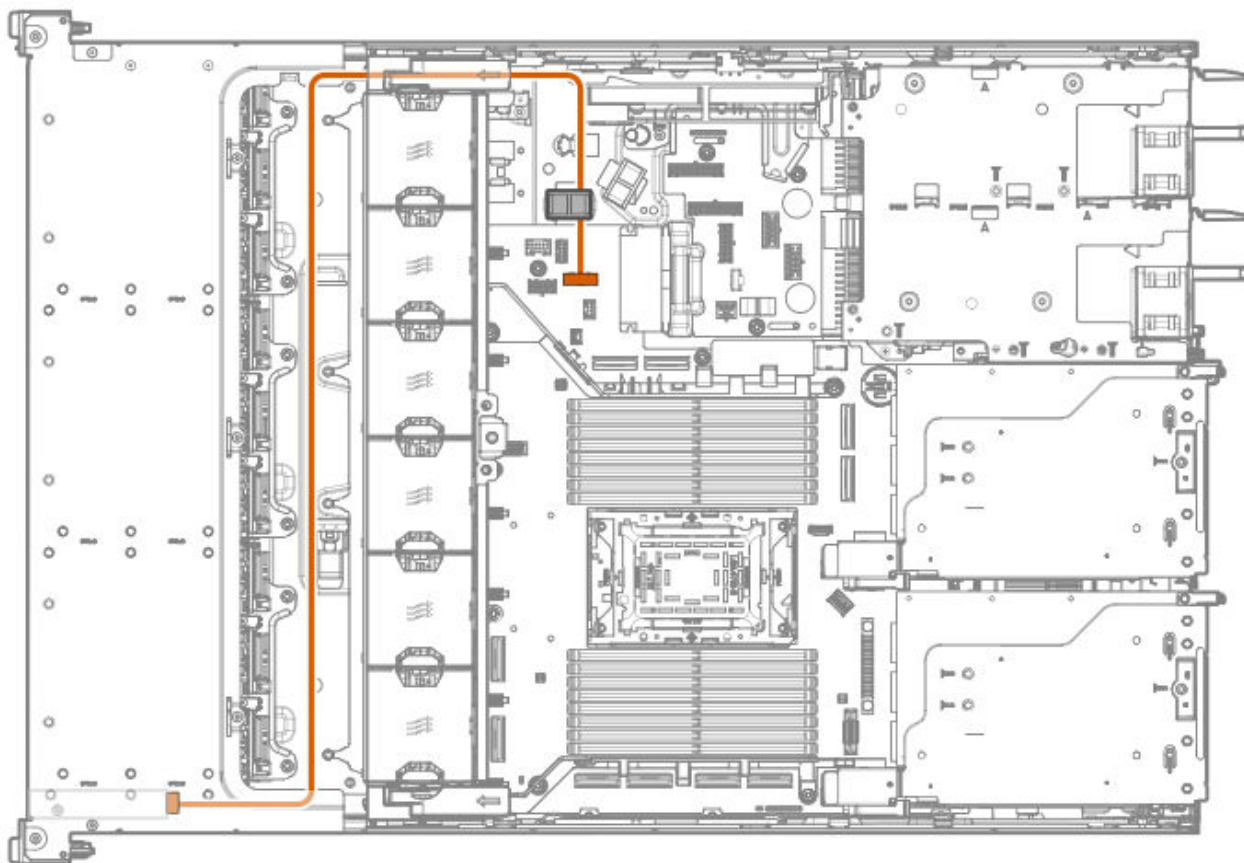
Cable part number	Color	From	To
P73776-002	Orange	Optical drive	USB 3.2 Gen 1 port

SFF / E3.S drive configuration



Cable part number	Color	From	To
P73776-002	Orange	Optical drive	USB 3.2 Gen 1 port

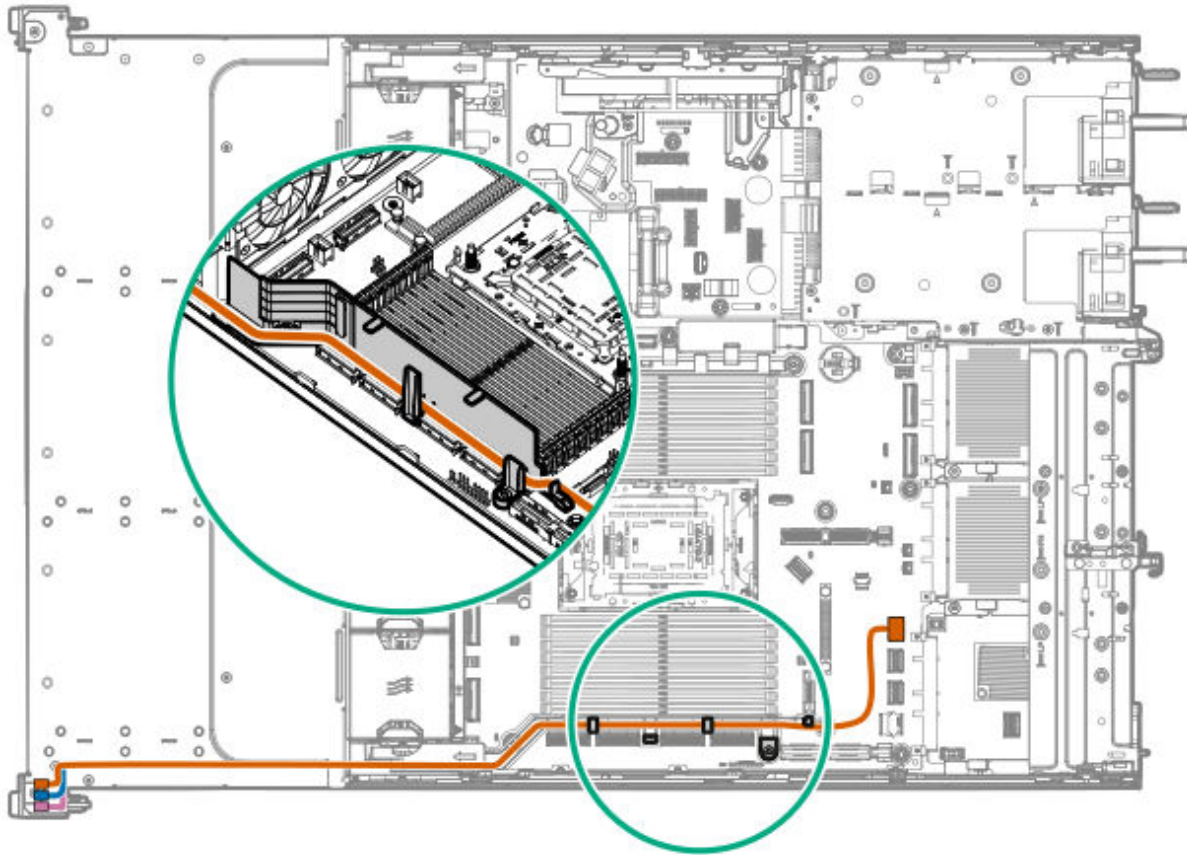
System Insight Display cabling



Cable part number	Color	From	To
P48971-001	Orange	System Insight Display	SID connector

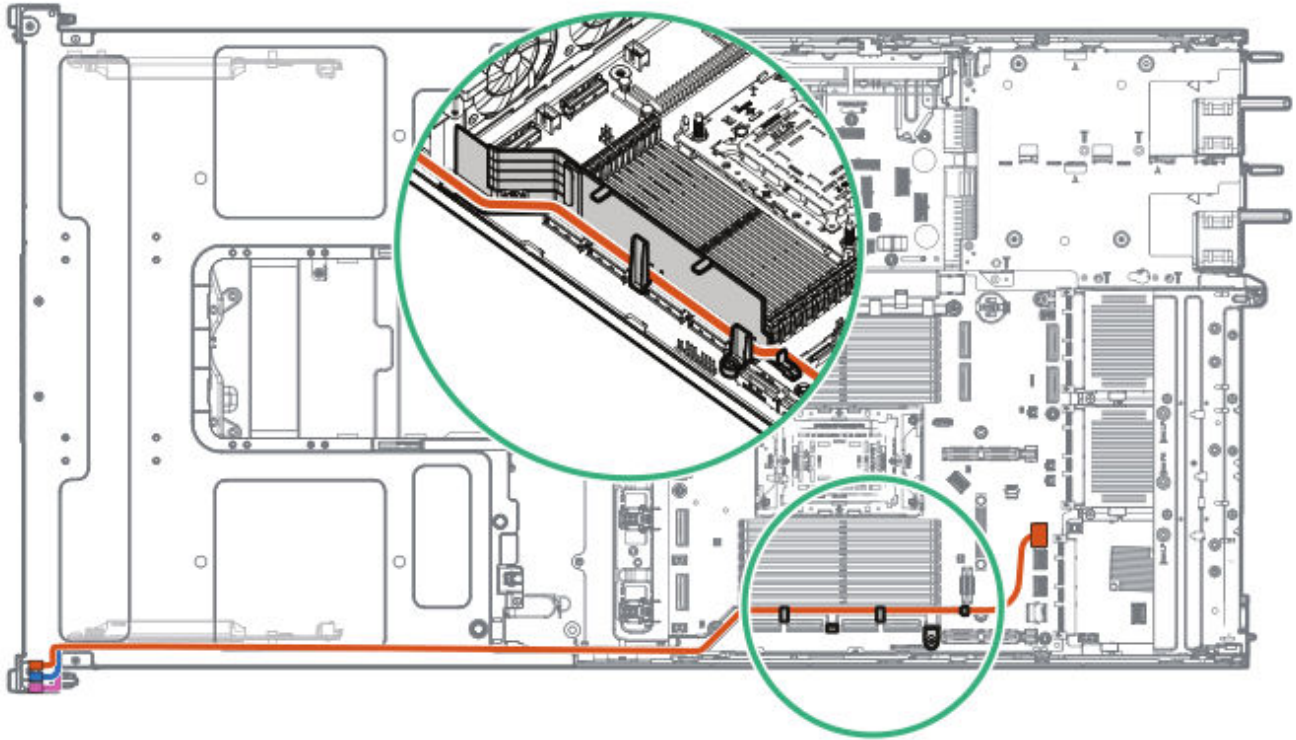
Front I/O cabling

LFF / SFF / E3.S drive configuration



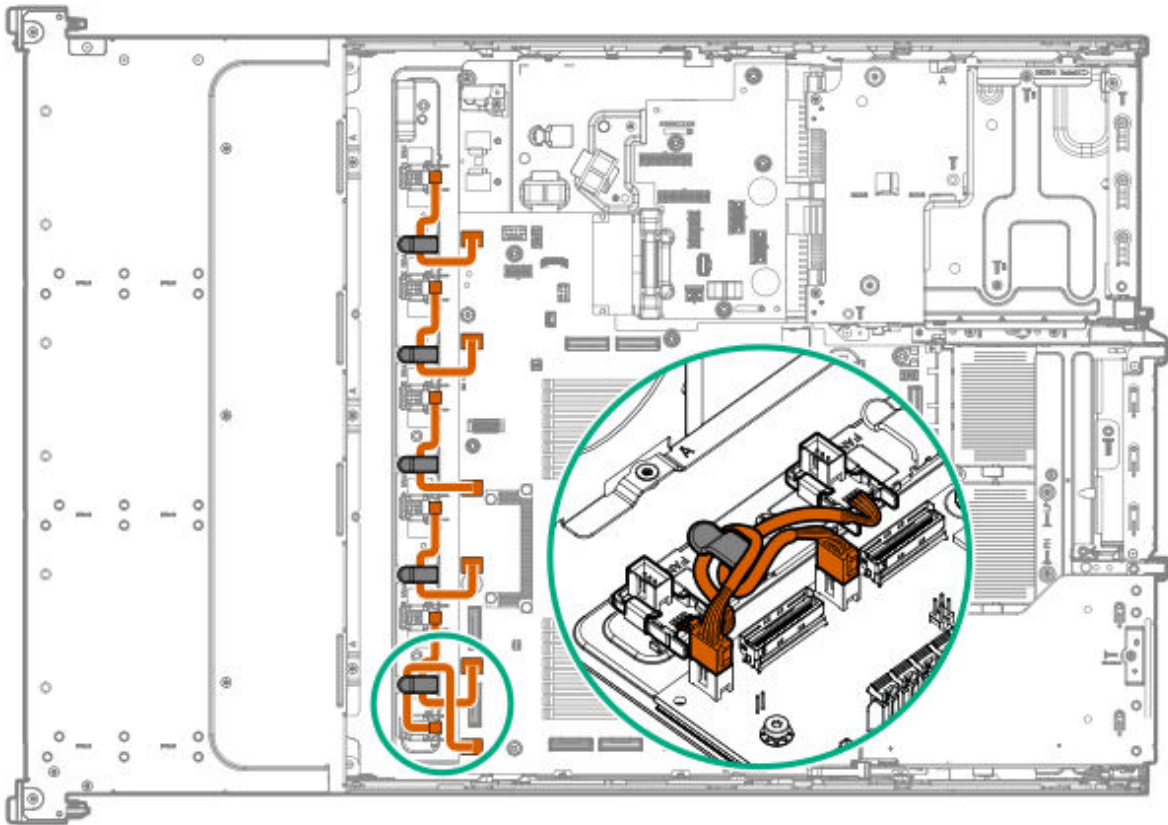
Cable part number	Color	From	To
P71909-002	Orange	Front LEDs and buttons	Front I/O connector
	Blue	USB 3.2 Gen 1 port	
	Pink	iLO service port	

GPU-optimized configuration



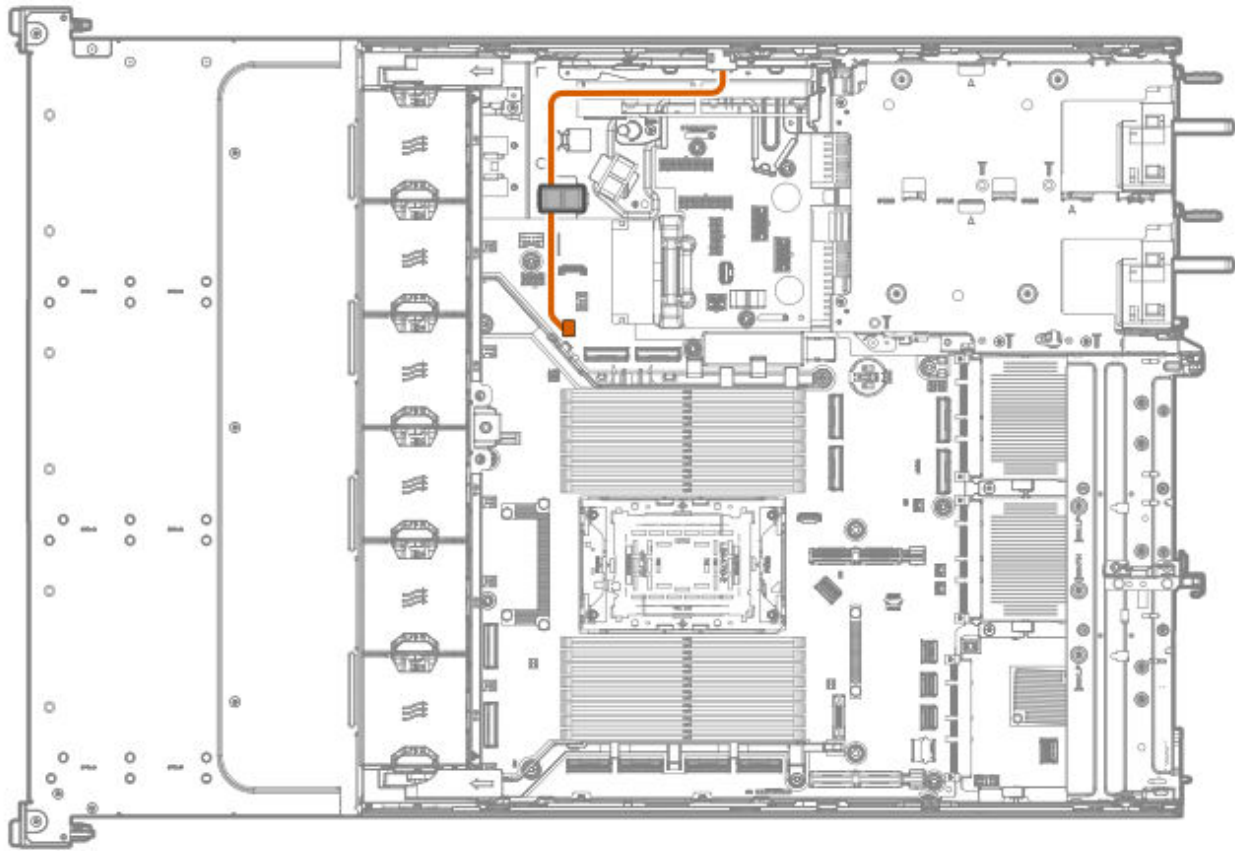
Cable part number	Color	From	To
P71909-002	Orange	Front LEDs and buttons	Front I/O connector
	Blue	USB 3.2 Gen 1 port	
	Pink	iLO service port	

Fan cabling



Cable part number	Cable color	From	To
P71914-001	Orange	Fans 1 to 6	Fan connectors 1 to 6

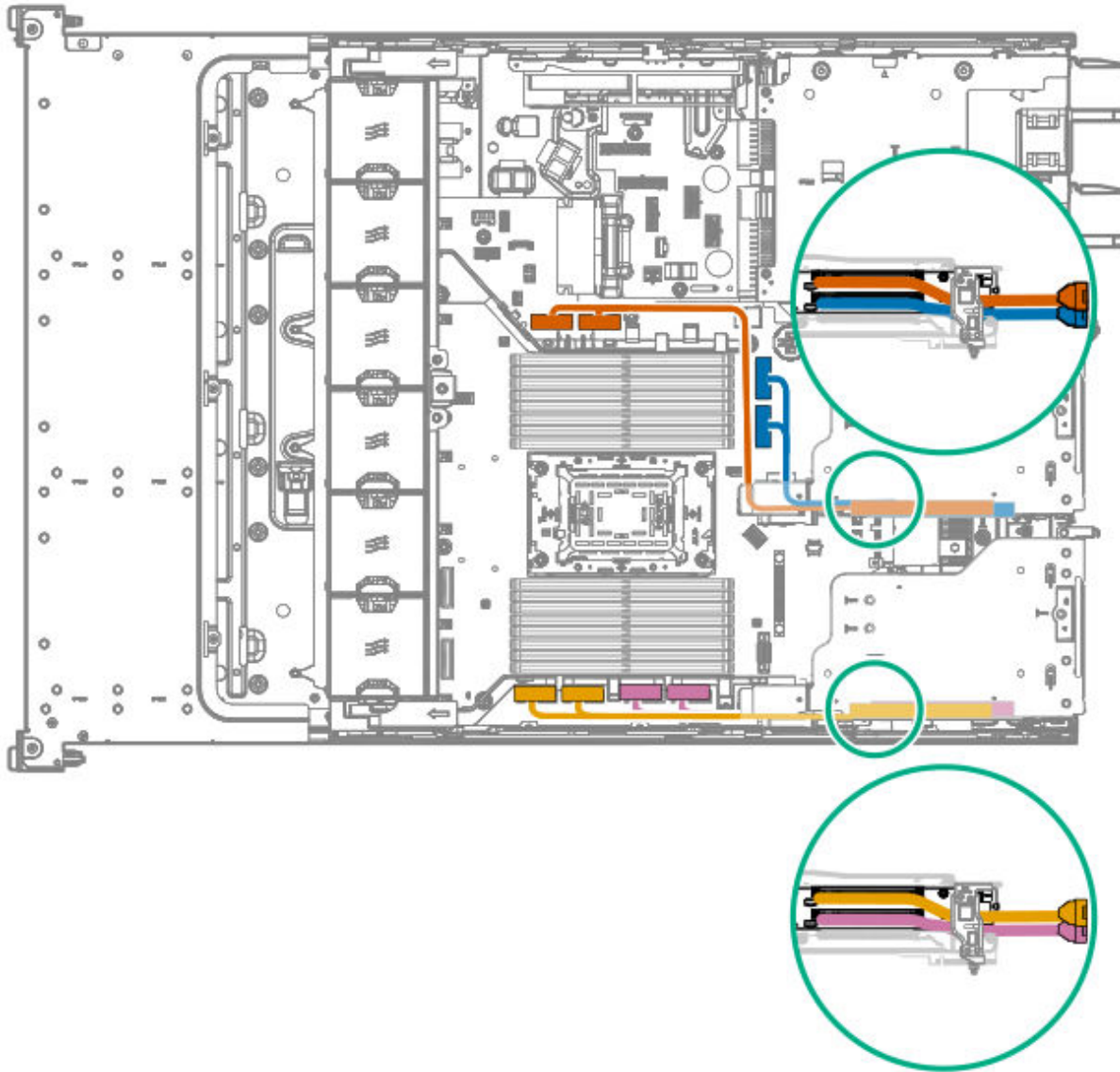
Chassis intrusion detection switch cabling



Cable part number	Cable color	From	To
P54901-001	Orange	Chassis intrusion detection switch	Chassis intrusion detection switch connector

PCIe captive riser and power cabling

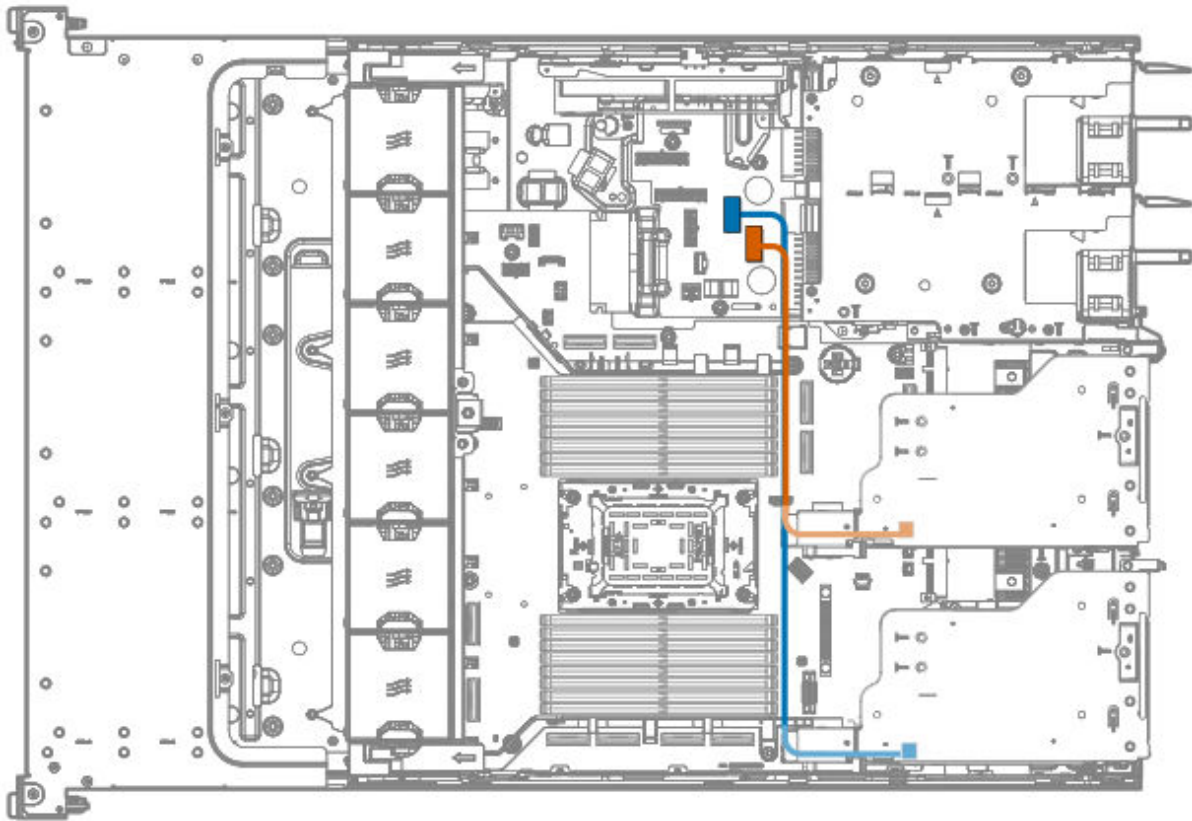
PCIe captive riser cabling



Cable part number	Cable color	From	To
P71882-001	Orange	Slot 4	M-XIO port 6
			M-XIO port 4
	Blue	Slot 5	M-XIO port 17
			M-XIO port 13
	Gold	Slot 1	M-XIO port 7

Cable part number	Cable color	From	To
			M-XIO port 5
	Pink	Slot 2	M-XIO port 1
			M-XIO port 3

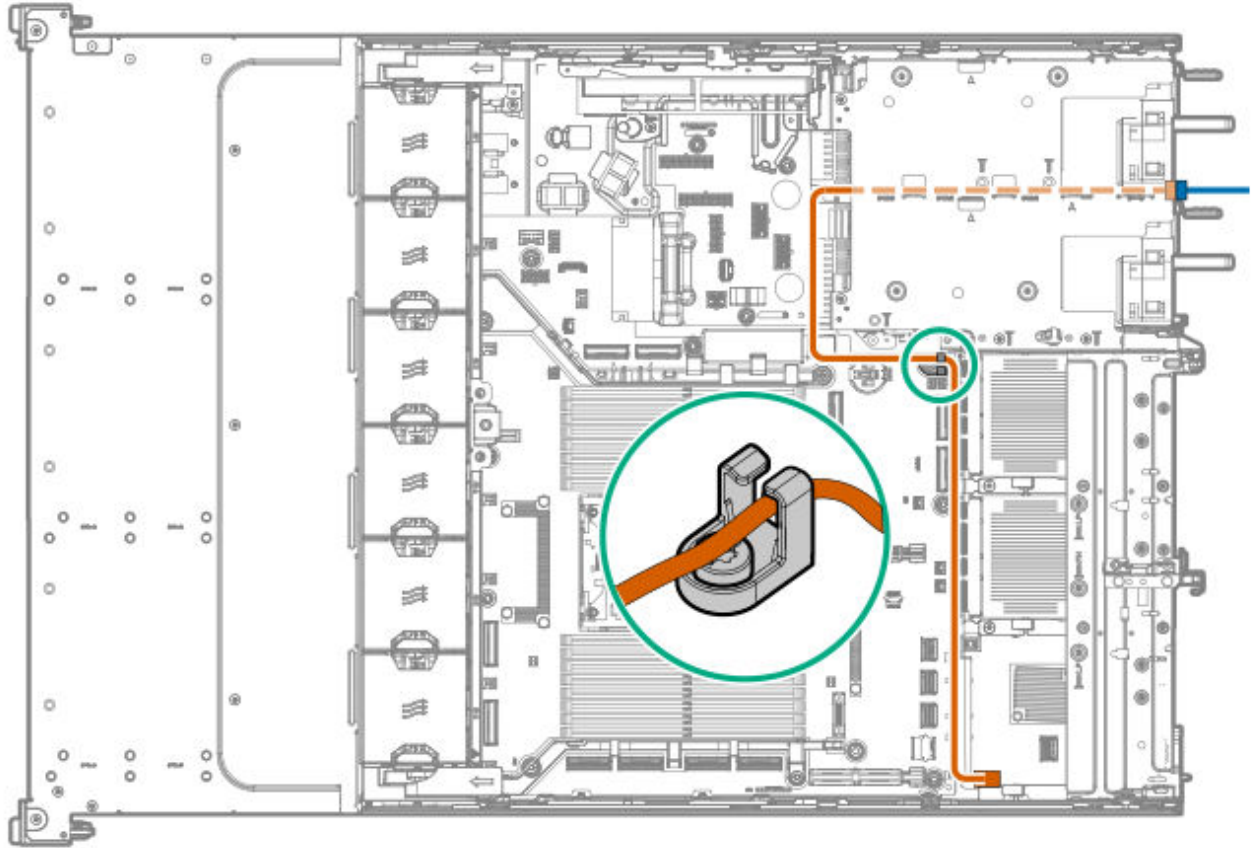
PCIe captive riser power cabling



Cable part number	Cable color	From	To
P75259-001	Orange	Slot 4 Slot 5	2 x 6 M-PIC power connector
P75255-001	Blue	Slot 1 Slot 2	2 x 6 M-PIC power connector

Serial port cabling

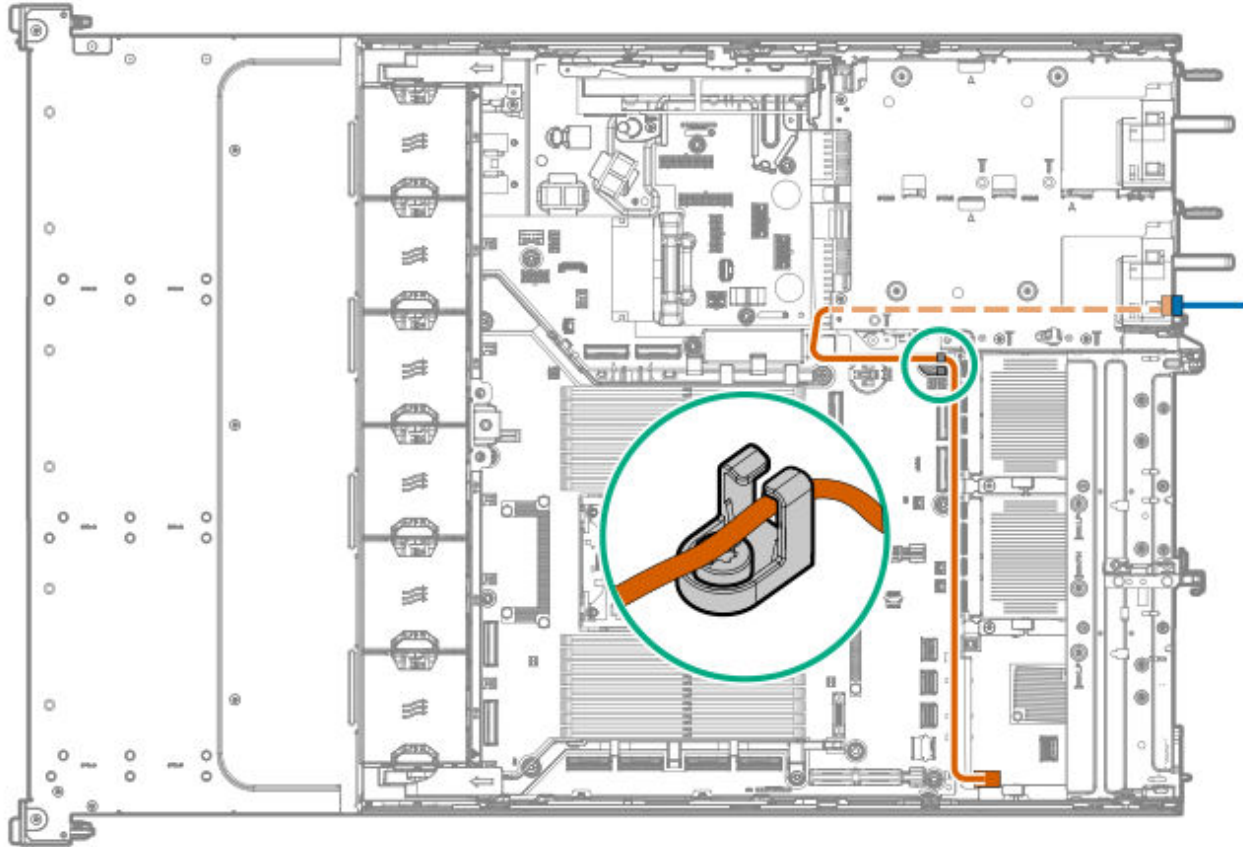
60-mm M-CRPS configuration



Cable part number	Cable color	From	To
P73744-001	Orange	Serial port cable connector ¹	iX port cable
P71826-001	Blue	iX port cable	Serial port dongle

¹ This port is located on the [HPE ProLiant Compute iLO 7 DC-SCM](#).

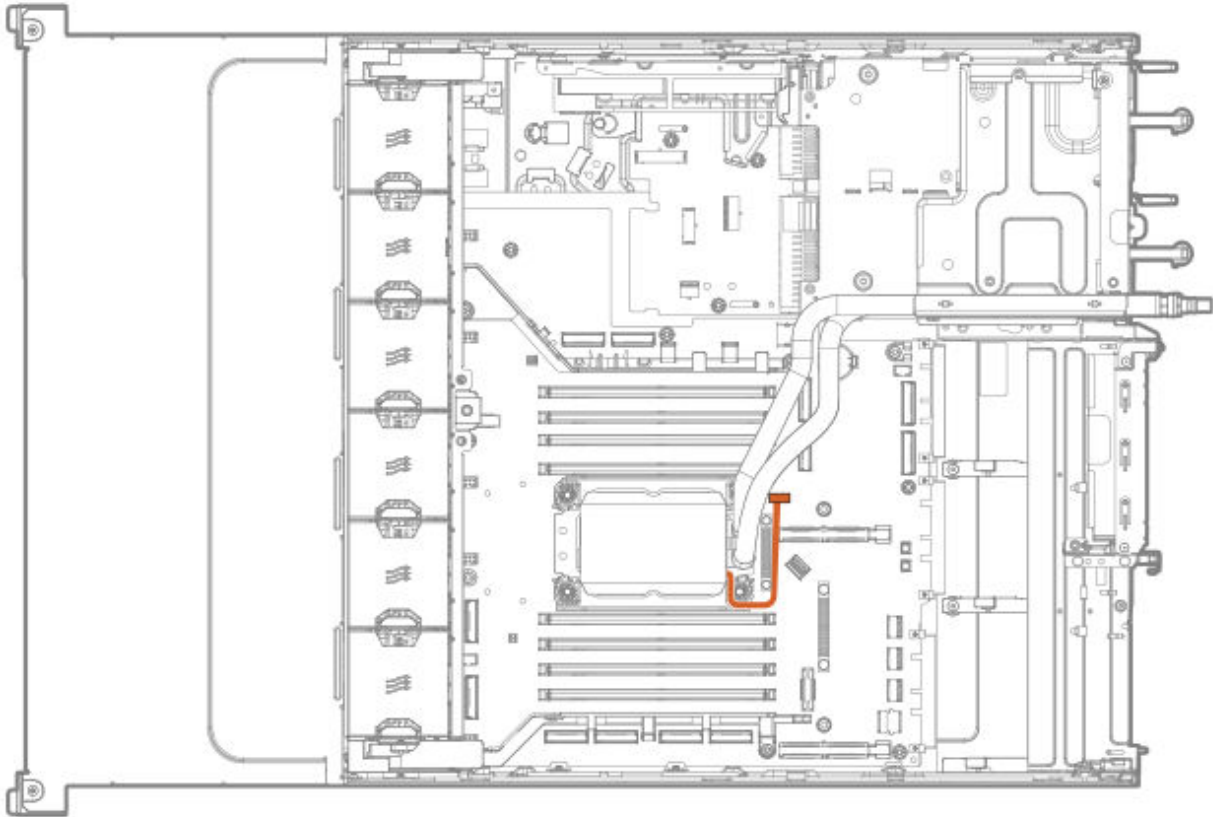
73.5-mm M-CRPS configuration



Cable part number	Cable color	From	To
P73744-001	Orange	Serial port cable connector ¹	iX port cable
P71826-001	Blue	iX port cable	Serial port dongle

¹ This port is located on the [HPE ProLiant Compute iLO 7 DC-SCM](#).

DLC module cabling



Cable color	From	To
Orange	Direct liquid cooling module	Liquid cooling connector

Configuration resources

Use the following resources to find documentation for configuring and managing your server.

- Some utilities might not apply to your server. For information about server compatibility with the products listed in this chapter, see the product QuickSpecs (<https://www.hpe.com/info/quickspecs>).
- Products ordered from HPE Factory Express might have already been configured with some or all the configurations in this chapter. To determine if any additional setup is required, see your HPE Factory Express order.

- For one-stop access to version-specific software and firmware documentation, including the latest product release notes, see this quick links page:

<https://www.hpe.com/support/hpeproductdocs-quicklinks>

Subtopics

[Updating firmware or system ROM](#)

[Configuring the server](#)

[Configuring storage controllers](#)

[Deploying an OS](#)

[Configuring security](#)

[Server management](#)

[Managing Linux-based high performance compute clusters](#)

Updating firmware or system ROM

To	Use
Download service packs	<ul style="list-style-type: none"> • Service Pack for HPE ProLiant https://www.hpe.com/servers/spp/download • Get an overview of SPP and its ecosystem https://www.hpe.com/support/SPP-overview-views-en
Deploy service packs to a single server	Smart Update Manager https://www.hpe.com/support/hpesmartupdatemanager-quicklinks
Deploy service packs to multiple servers	HPE OneView https://www.hpe.com/support/hpeoneview-quicklinks
Updating iLO or system firmware in a single server	iLO user guide https://www.hpe.com/support/hpeilodocs-quicklinks

To	Use
<ul style="list-style-type: none"> • Enable policy-based management of server or server group firmware for distributed server infrastructure • Monitor server compliance with a configured firmware baseline • Receive automatic iLO firmware updates • Receive baseline update alerts 	<p>HPE Compute Ops Management</p> <p>https://www.hpe.com/support/hpe-gl-com-quicklinks</p>

Configuring the server

To configure	Use
Single server (GUI)	<ul style="list-style-type: none"> • Intelligent Provisioning https://www.hpe.com/support/hpeintelligentprovisioning-quicklinks • iLO remote console or web interface https://www.hpe.com/support/hpeilodocs-quicklinks • UEFI System Utilities https://www.hpe.com/support/hpeuefisystemutilities-quicklinks • HPE Compute Ops Management https://www.hpe.com/support/hpe-gl-com-quicklinks
Single server (scripting)	<ul style="list-style-type: none"> • RESTful Interface Tool https://www.hpe.com/support/restfulinterface/docs

To configure

Use

- Python iLO Redfish Library (python-ilorest-library)
<https://github.com/HewlettPackard/python-ilorest-library>
- Scripting Tools for Windows Powershell
<https://www.hpe.com/info/powershell/docs>
- iLO RESTful API
<https://servermanagementportal.ext.hpe.com/>
- HPE Compute Ops Management API
<https://developer.greenlake.hpe.com/>

Multiple servers (either UI or scripting)

- HPE OneView ¹
<https://www.hpe.com/support/hpeoneview-quicklinks>
- HPE Compute Ops Management
<https://www.hpe.com/support/hpe-gl-com-quicklinks>
 - **Server settings:** Define server-specific parameters such as firmware baselines, and then apply them to server groups.
 - **Server groups:** Organize servers into custom-defined sets with associated server settings, and then apply group-specific policies to create a consistent configuration across the servers in the group.

¹ 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 <https://www.hpe.com/support/hpeilodocs-quicklinks>.

Configuring storage controllers

Controller type	Documentation
HPE MR controller user guides	<ul style="list-style-type: none">• HPE MR Gen11 Controller User Guide https://hpe.com/support/MR-Gen11-UG<ul style="list-style-type: none">◦ MR Gen11 controller configuration: https://www.hpe.com/support/MR-Gen11-configuration◦ MR Gen11 controller RAID creation: https://www.hpe.com/support/MR-Gen11-RAID-creation
HPE MR controller configuration guides	<ul style="list-style-type: none">• HPE MR Storage Administrator User Guide https://www.hpe.com/support/MRSA• HPE StorCLI User Guide https://www.hpe.com/support/StorCLI• HPE StorCLI2 User Guide https://www.hpe.com/support/StorCLI2
Intel VROC for HPE Gen12	<ul style="list-style-type: none">• Intel Virtual RAID on CPU for HPE User Guide https://www.hpe.com/support/VROC-UG• Intel VROC NVMe RAID quick installation: https://www.hpe.com/support/VROC-NVMe-RAID-installation <p>OS-specific configuration guides:</p> <ul style="list-style-type: none">• Intel Virtual RAID on CPU (Intel VROC) for Windows User Guide https://docs.graidtech.com/vroc/User_Guides/000094004_Intel_Virtual_RAID_on_CPU_Intel_VROC_User_Guide_for_Windows/

Controller type

Documentation

- Intel Virtual RAID on CPU (Intel VROC) for Linux User Guide

https://docs.graidtech.com/vroc/User_Guides/000094694_Intel_Virtual_RAID_on_CPU_Intel_VROC_User_Guide_for_Linux/

- Intel Volume Management Device Driver for VMware ESXi User Guide

https://docs.graidtech.com/vroc/User_Guides/000094787_Intel_Virtual_RAID_on_CPU_Intel_VROC_User_Guide_for_VMware_ESXi/

Deploying an OS

For a list of supported operating systems, see the HPE Servers Support & Certification Matrices:

<https://www.hpe.com/support/Servers-Certification-Matrices>

To	See
Deploy an OS using HPE Compute Ops Management	HPE Compute Ops Management User Guide https://www.hpe.com/support/hpe-gl-com-quicklinks
Deploy an OS using Intelligent Provisioning	Intelligent Provisioning user guide https://www.hpe.com/support/hpeintelligentprovisioning-quicklinks
Deploy an OS using iLO virtual media	iLO user guide https://www.hpe.com/support/hpeilodocs-quicklinks
Configure the server to boot from a PXE server	UEFI System Utilities User Guide for HPE Compute servers https://www.hpe.com/support/UEFIGen12-UG-en
Configure the server to boot from a SAN	HPE Boot from SAN Configuration Guide

To

See

<https://www.hpe.com/info/boot-from-san-config-guide>

Configuring security

To

See

Implement server security best practices.

- HPE Compute Security Reference Guide

<https://www.hpe.com/info/server-security-reference-en>

- HPE iLO 7 Security Technology Brief

<https://www.hpe.com/support/ilo7-security-en>

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 servers and HPE Synergy

<https://www.hpe.com/info/server-config-lock-UG-en>

Server management

To monitor

See

Single server

HPE iLO

<https://www.hpe.com/support/hpeilodocs-quicklinks>

Multiple servers

HPE OneView

To monitor	See
	https://www.hpe.com/support/hpeoneview-quicklinks
Single or multiple servers	HPE Compute Ops Management https://www.hpe.com/support/hpe-gl-com-quicklinks

Managing Linux-based high performance compute clusters

To	Use
Provision, manage, and monitor clusters.	HPE Performance Cluster Manager https://www.hpe.com/support/hpcm_manuals
Optimize your applications.	HPE Performance Analysis Tools https://www.hpe.com/info/perftools
Optimize software library for low latency and high bandwidth, both on-node and off-node, for point-to-point and collective communications.	HPE Cray Programming Environment User Guide https://www.hpe.com/info/cray-pe-user-guides

Troubleshooting

Subtopics

[NMI functionality](#)

[Front panel LED power fault codes](#)

[Troubleshooting resources](#)

NMI functionality

An NMI crash dump enables administrators to create crash dump files when a system is 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.

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
OCP adapter	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

Troubleshooting resources

If you need help troubleshooting, see the latest articles for your server.

<https://www.hpe.com/info/dl340gen12-ts>

Safety, warranty, and regulatory information

Subtopics

[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>

Subtopics

[Notices for Eurasian Economic Union](#)

[Turkey RoHS material content declaration](#)

Notices for Eurasian Economic Union



Manufacturer and Local Representative Information

Manufacturer information:

Hewlett Packard Enterprise Company, 1701 E Mossy Oaks Road, Spring, TX 77389 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

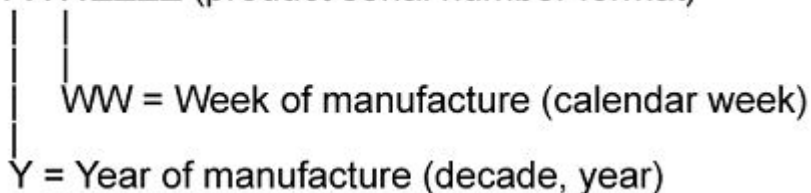
Local representative information Kazakh:

- **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 қ., Бостандық ауданы, Әл-Фараби даңғылы, 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.

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 [warranty check tool](#).

Specifications

Provides environmental, mechanical, and power supply specifications for the server.

Subtopics

[Environmental specifications](#)

[Mechanical specifications](#)

[Power supply specifications](#)

Environmental specifications

Specifications	Value
Temperature range	—
Operating	10°C to 35°C (50°F to 95°F)
Nonoperating	-30°C to 60°C (-22°F to 140°F)
Relative humidity (noncondensing)	—
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
Altitude	—
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 might be limited by the type and number of options installed.

System performance under standard operating support might be reduced if operating above 30°C (86°F) or with a faulty fan installed.

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).
- 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 in the Extended Ambient Temperature Guidelines for Gen12 Servers:

<https://www.hpe.com/support/ASHRAEGen12>

Mechanical specifications

Specification	Value
Dimensions	—
Height	8.75 cm (3.45 in)
Depth	LFF drive configuration: 65.61 cm (25.83 in) SFF/E3.S drive configuration: 63.95 cm (25.18 in) GPU-optimized configuration: 83.71 cm (32.96 in)
Width	44.80 cm (17.64 in)
Weight, approximate values—LFF drive configuration	—
Minimum ¹	18.98 kg (41.84 lb)
Maximum ²	32.88 kg (72.49 lb)
Weight, approximate values—SFF drive configuration	—
Minimum ¹	17.60 kg (38.80 lb)
Maximum ³	30.90 kg (68.12 lb)
Weight, approximate values—E3.S drive configuration	—
Minimum ¹	17.40 kg (38.36 lb)
Maximum ⁴	30.71 kg (67.70 lb)
Weight, approximate values—GPU-optimized configuration	—
Minimum ⁵	26.50 kg (58.42 lb)
Maximum ⁶	36.30 kg (80.03 lb)

¹ The minimum configuration includes 1 drive, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, 1 type-p storage controller, and 6 standard fans.

² The maximum configuration includes 12 drives, 1 processor, 2 power supplies, 1 high performance heatsink, 16 DIMMs, 1 type-p storage controller, and 6 high performance fans.

- 3 The maximum configuration includes 24 drives, 1 processor, 2 power supplies, 1 high performance heatsink, 16 DIMMs, 1 type-p storage controller, and 6 high performance fans.
- 4 The maximum configuration includes 36 drives, 1 processor, 2 power supplies, 1 high performance heatsink, 16 DIMMs, 1 type-p storage controller, and 6 high performance fans.
- 5 The minimum configuration includes 1 single-width GPU, 1 drive, 1 processor, 1 power supply, 1 standard heatsink, 1 DIMM, 1 type-p storage controller, and 6 standard fans.
- 6 The maximum configuration includes 4 double-width GPUs, 12 drives, 1 processor, 2 power supplies, 1 high performance heatsink, 16 DIMMs, 1 type-p storage controller, and 6 high performance fans.

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

Subtopics

- [**HPE 800 W M-CRPS Platinum Hot-plug Power Supply**](#)
- [**HPE 1000 W M-CRPS Titanium Hot-plug Power Supply**](#)
- [**HPE 1300 W M-CRPS -48 VDC Hot-plug Power Supply**](#)
- [**HPE 1500 W M-CRPS Titanium Hot-plug Power Supply**](#)
- [**HPE 2200 W M-CRPS -48 VDC Hot-plug Power Supply**](#)
- [**HPE 2400 W M-CRPS Titanium Hot-plug Power Supply**](#)
- [**HPE 3200 W M-CRPS Titanium Hot-plug Power Supply**](#)

HPE 800 W M-CRPS Platinum Hot-plug Power Supply

Specification	Value
Energy efficiency certification	80 Plus Platinum, 94%
Input requirements	—
Rated input voltage	Low-line input voltage: 100 VAC to 120 VAC High-line input voltage: 200 VAC to 240 VAC 240 VDC for China
Rated input frequency	50 Hz to 60 Hz
Rated input current	8 A at 100 VAC to 120 VAC

Specification	Value
	5 A at 200 VAC to 240 VAC
Maximum rated input power	723 W at 100 VAC 717 W at 110 VAC 713 W at 120 VAC 864 W at 200 VAC 863 W at 208 VAC 861 W at 230 VAC 860 W at 240 VAC 861 W at 240 VDC
BTUs per hour	2466 at 100 VAC 2447 at 110 VAC 2433 at 120 VAC 2949 at 200 VAC 2946 at 208 VAC 2938 at 230 VAC 2935 at 240 VAC 2939 at 240 VDC
Power supply output	—
Rated steady-state power	Low-line input voltage: 650 W at 100 VAC to 120 VAC High-line input voltage: 800 W at 200 VAC to 240 VAC input
Maximum peak power	650 W at 100 VAC to 120 VAC 800 W at 200 VAC to 240 VAC input
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	60.00 mm (2.36 in)

HPE 1000 W M-CRPS Titanium Hot-plug Power Supply

Specification	Value
Energy efficiency certification	80 Plus Titanium, 96%
Input requirements	—
Rated input voltage	Low-line input voltage: 100 VAC to 120 VAC High-line input voltage: 200 VAC to 240 VAC 240 VDC for China
Rated input frequency	50 Hz to 60 Hz
Rated input current	10 A at 100 VAC 6 A at 200 VAC
Maximum rated input power	800 W at 100 VAC 1000 W at 200 VAC
BTUs per hour	3044 at 100 VAC 3680 at 200 VAC
Power supply output	—
Rated steady-state power	Low-line input voltage: 800 W at 100 VAC to 120 VAC High-line input voltage: 1000 W at 200 VAC to 240 VAC input
Maximum peak power	800 W at 100 VAC to 120 VAC 1000 W at 200 VAC to 240 VAC input
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	60.00 mm (2.36 in)

HPE 1300 W M-CRPS -48 VDC Hot-plug Power Supply

Specification	Value
Input requirements	—
Rated input voltage	-48 VDC to -60 VDC
Rated input frequency	DC input
Rated input current	37 A at -40 VDC
Maximum rated input power	<ul style="list-style-type: none">• 1447 W at 40 VDC• 1435 W at -48 VDC• 1417 W at -72 VDC
BTUs per hour	<ul style="list-style-type: none">• 4916 at -40 VDC• 4880 at -48 VDC• 4819 at -72 VDC
Power supply output	—
Rated steady-state power	1300 W
Maximum peak power	1300 W at -48 VDC to -60 VDC
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	60.00 mm (2.36 in)

HPE 1500 W M-CRPS Titanium Hot-plug Power Supply

Specification	Value
Energy efficiency certification	80 Plus Titanium, 96%
Input requirements	—

Specification	Value
Rated input voltage	Low-line input voltage: 100 VAC to 110 VAC Low-line input voltage: 110 VAC to 120 VAC High-line input voltage: 200 VAC to 240 VAC 240 VDC for China
Rated input frequency	50 Hz to 60 Hz
Rated input current	12 A at 100 VAC 12 A at 110 VAC 9 A at 200 VAC
Maximum rated input power	1000 W at 100 VAC 1100 W at 110 VAC 1500 W at 200 VAC
BTUs per hour	3792 at 100 VAC 5560 at 200 VAC
Power supply output	—
Rated steady-state power	Low-line input voltage: 1000 W at 100 VAC to 110 VAC Low-line input voltage: 1100 W at 110 VAC to 120 VAC High-line input voltage: 1500 W at 200 VAC to 240 VAC input
Maximum peak power	1000 W at 100 VAC to 110 VAC 1100 W at 110 VAC to 120 VAC 1500 W at 200 VAC to 240 VAC input
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	60.00 mm (2.36 in)

HPE 2200 W M-CRPS -48 VDC Hot-plug Power Supply

Specification	Value
Input requirements	—
Rated input voltage	-48 VDC to -60 VDC
Rated input frequency	DC input
Rated input current	62.5 A at -40 VDC
Maximum rated input power	<ul style="list-style-type: none">• 2420 W at -40 VDC• 2393 W at -48 VDC• 2260 W at -72 VDC
BTUs per hour	<ul style="list-style-type: none">• 8258 at -40 VDC• 8163 at -48 VDC• 8052 at -72 VDC
Power supply output	—
Rated steady-state power	2200 W
Maximum peak power	2200 W at -48 VDC to -60 VDC
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	73.50 mm (2.89 in)

HPE 2400 W M-CRPS Titanium Hot-plug Power Supply

Specification	Value
Energy efficiency certification	80 Plus Titanium, 96%
Input requirements	—

Specification	Value
Rated input voltage	Low-line input voltage: 100 VAC to 127 VAC High-line input voltage: 200 VAC to 240 VAC 240 VDC for China
Rated input frequency	50 Hz to 60 Hz
Rated input current	14.5 A at 100 to 127 VAC 14.5 A at 200 to 240 VAC
Maximum rated input power	1290 W at 100 VAC 1279 W at 120 VAC 1275 W at 127 VAC 2551 W at 200 VAC 2549 W at 208 VAC 2541 W at 230 VAC 2539 W at 240 VAC 2541 W at 240 VDC
BTUs per hour	4403 at 100 VAC 4364 at 120 VAC 4349 at 127 VAC 8705 at 200 VAC 8696 at 208 VAC 8671 at 230 VAC 8662 at 240 VAC 8672 at 240 VDC
Power supply output	—
Rated steady-state power	Low-line input voltage: 1200 W at 100 VAC to 127 VAC High-line input voltage: 2400 W at 200 VAC to 240 VAC input
Maximum peak power	1200 W at 100 VAC to 127 VAC 2400 W at 200 VAC to 240 VAC input
Dimensions	—

Specification	Value
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	73.50 mm (2.89 in)

HPE 3200 W M-CRPS Titanium Hot-plug Power Supply

Specification	Value
Energy efficiency certification	80 Plus Titanium, 96%
Input requirements	—
Rated input voltage	100 VAC to 127 VAC 200 VAC to 240 VAC 240 VDC for China
Rated input frequency	50 Hz to 60 Hz
Rated input current	16 A at 100 VAC to 127 VAC 16 A at 200 VAC to 240 VAC
Maximum rated input power	1504 W at 100 VAC 1727 W at 120 VAC 1723 W at 127 VAC 3100 W at 200 VAC 3207 W at 208 VAC 3433 W at 230 VAC 3429 W at 240 VAC 3436 W at 240 VDC
BTUs per hour	5132 at 100 VAC 5894 at 120 VAC 5878 at 127 VAC 10577 at 200 VAC 10941 at 208 VAC

Specification	Value
	11713 at 230 VAC
	11699 at 240 VAC
	11724 at 240 VDC
Power supply output	—
Rated steady-state power	1600 W at 100 VAC to 127 VAC 3200 W at 200 VAC to 240 VAC input
Maximum peak power	1600 W at 100 VAC to 127 VAC 3200 W at 200 VAC to 240 VAC
Dimensions	—
Height	40.00 mm (1.57 in)
Depth	185.00 mm (7.28 in)
Width	73.50 mm (2.89 in)

Websites

Websites provide links to HPE tools, resources, and product documentation.

General websites

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

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

Product white papers and analyst reports

<https://www.hpe.com/us/en/resource-library>

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

Product websites

HPE ProLiant Compute DL340 Gen12 Server user documents

<https://www.hpe.com/info/dl340gen12-docs>

Support and other resources

Subtopics

[Accessing Hewlett Packard Enterprise Support](#)

[HPE product registration](#)

[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

HPE product registration

To gain the full benefits of the Hewlett Packard Enterprise Support Center and your purchased support services, add your contracts and products to your account on the HPESC.

- When you add your contracts and products, you receive enhanced personalization, workspace alerts, insights through the dashboards, and easier management of your environment.
- You will also receive recommendations and tailored product knowledge to self-solve any issues, as well as streamlined case creation for faster time to resolution when you must create a case.

To learn how to add your contracts and products, see <https://www.hpe.com/info/add-products-contracts>.

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>

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>



IMPORTANT

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

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.

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 Tech Care Service

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

HPE Complete Care Service

<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, click the **Feedback** button on the page of an opened document on the Hewlett Packard Enterprise Support Center portal (<https://www.hpe.com/support/hpesc>). Use this feature to send any errors, suggestions, or comments. This process captures all document information.