



Hewlett Packard
Enterprise

HPE ProLiant ML350 Gen10 Server Maintenance and Service 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.

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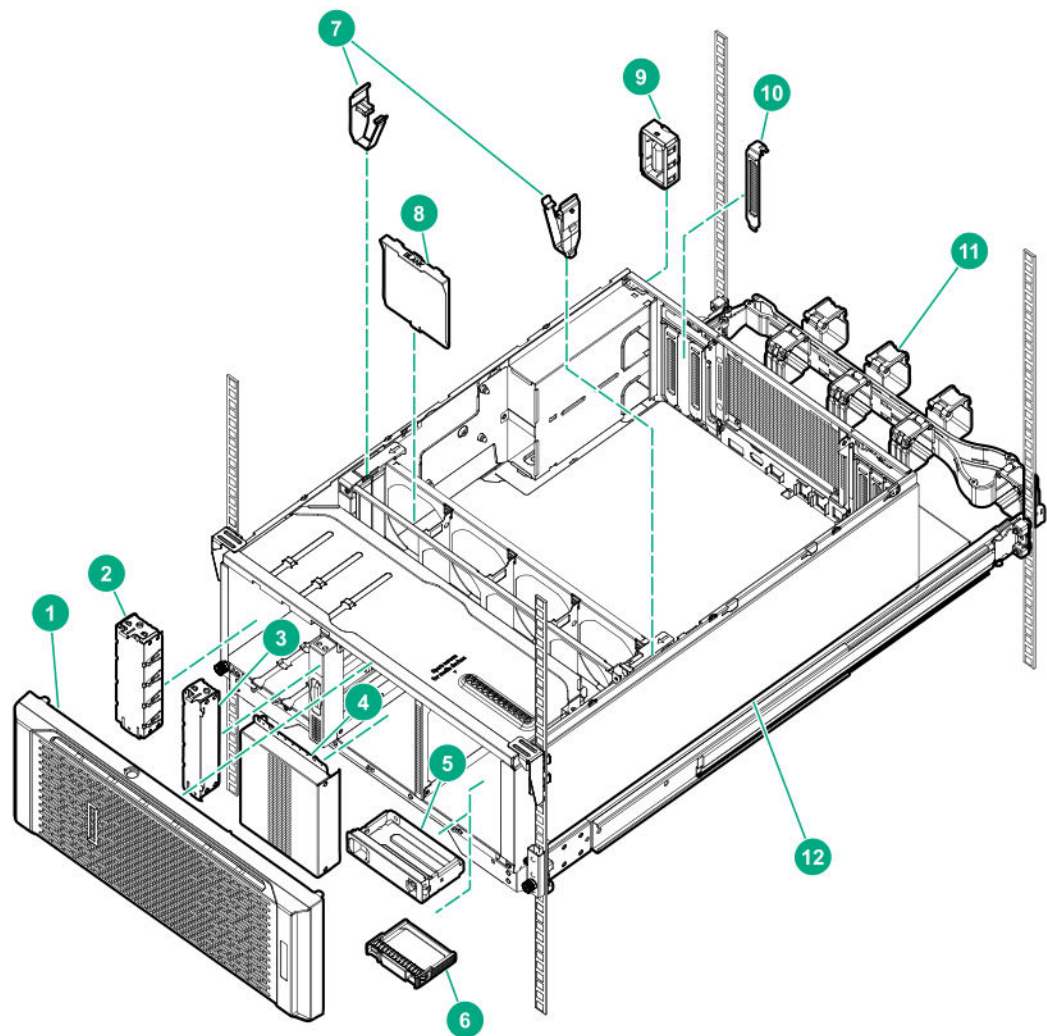
Illustrated parts catalog

This chapter lists the hardware spare parts supported by the server.

Mechanical components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported spare parts information, see the Hewlett Packard Enterprise PartSurfer website:

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



Item	Description
1	<u>Front bezel spare part</u>
2	<u>Half-height media bay blank spare part</u>
3	<u>Optical drive blank spare part</u>
4	<u>Drive cage blank spare part</u>

Table Continued



Item	Description
5	<u>LFF drive blank spare part</u>
6	<u>SFF drive blank spare part</u>
7	<u>Cable clips spare part</u>
8	<u>Fan bay 1 blank spare part</u>
9	<u>Power supply blank spare part</u>
10	<u>PCI slot blank spare part</u>
11	<u>Cable management arm spare part</u>
12	<u>Rack rails spare part</u>

Front bezel spare part

Customer self repair: Mandatory

Description	Spare part number
Front bezel	879164-001

For more information on the removal and replacement procedures, see **Removing and replacing the front bezel**.

Miscellaneous blank and cable clip spare kit

Customer self repair: Mandatory

Description	Spare part number
LFF drive blank	827363-001
SFF drive blank	670033-001
Miscellaneous blank and cable clip spare kit	879518-001
<ul style="list-style-type: none"> • Drive cage blank • Half-height media bay blank • Optical drive blank • Fan bay 1 blank • PCI slot blank • Power supply blank • Cable clips 	

For more information on the removal and replacement procedures for the LFF and SFF drive blanks, see **Removing and replacing drive blanks**.

For more information on the removal and replacement procedures for the drive cage blank, see **Removing and replacing the drive cage blank**.

For more information on the removal and replacement procedures for the half-height media bay blank, see **Removing and replacing the half-height media bay blank**.



For more information on the removal and replacement procedures for the optical drive bay blank, see **Removing and replacing the optical drive blank**.

For more information on the removal and replacement procedures for the fan bay 1 blank, see **Removing and replacing a fan blank**.

For more information on the removal and replacement procedures for the PCI slot blank, see **Removing and replacing a PCI slot blank**.

For more information on the removal and replacement procedures for the power supply blank, see **Removing and replacing the power supply blank**.

For more information on the removal and replacement procedures for the cable clips, see **Removing and replacing the cable clips**.

Cable management arm spare part

Customer self repair: Mandatory

Description	Spare part number
Cable management arm	879160-001

For more information on the removal and replacement procedures, see **Removing and replacing the cable management arm**.

Rack rails spare part

Customer self repair: Mandatory

Description	Spare part number
Server rack rails	879448-001

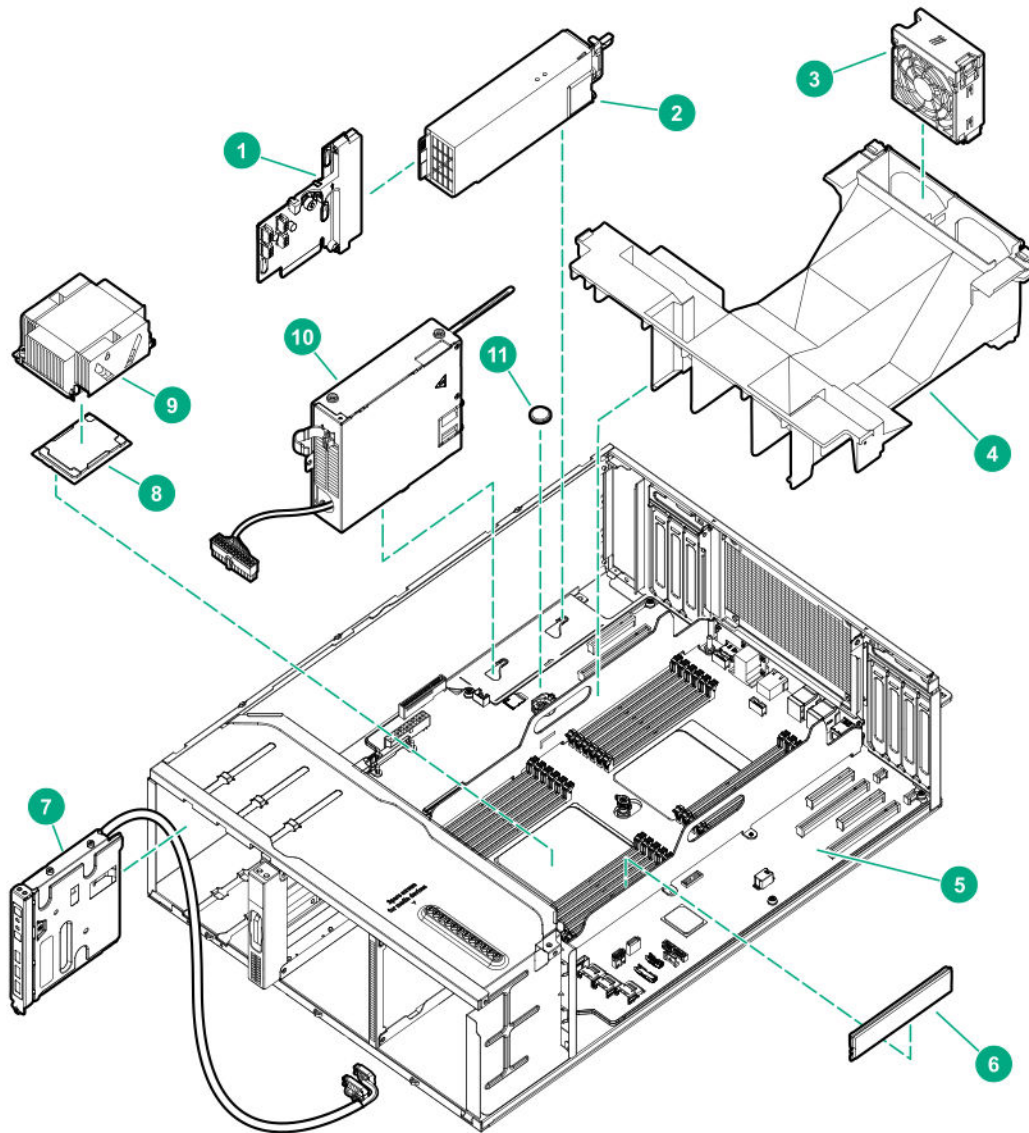
For more information on the removal and replacement procedures, see **Removing and replacing the rack rails**.

System components

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported spare parts information, see the Hewlett Packard Enterprise PartSurfer website:

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





Item	Description
1	<u>Power distribution board spare part</u>
2	<u>Flexible Slot power supply spare parts (hot-plug)</u>
3	<u>Fan spare part</u>
4	<u>Air baffle spare part</u>
5	<u>System board assembly spare parts</u>
6	<u>DIMM spare parts</u>
7	<u>Front I/O assembly spare part</u>
8	<u>First-generation Intel Xeon Scalable Processor spare parts</u> <u>Second-generation Intel Xeon Scalable Processor spare parts</u>

Table Continued



Item	Description
9	Heatsink spare parts
10	Standard power supply spare part (non-hot-plug)
11	System battery spare part

Power distribution board spare part

Customer self repair: Optional

Description	Spare part number
Power distribution board	879447-001



CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

For more information on the removal and replacement procedures, see [Removing and replacing the power distribution board](#).

Flexible Slot power supply spare parts (hot-plug)

Customer self repair: Mandatory

Description	Spare part number
HPE 500 W Flexible Slot Platinum Hot-plug Low Halogen Power Supply	866729-001
HPE 800 W Flexible Slot Platinum Hot-plug Low Halogen Power Supply	866730-001
HPE 800 W Flexible Slot Titanium Hot-plug Low Halogen Power Supply	866793-001
HPE 800 W Flexible Slot Universal Hot-plug Low Halogen Power Supply	866727-001
HPE 800 W Flexible Slot -48VDC Hot-plug Low Halogen Power Supply	866728-001
HPE 1600 W Flexible Slot Platinum Plus Hot-plug Low Halogen Power Supply	863373-001

For more information on the removal and replacement procedures, see [Removing and replacing a Flexible Slot power supply](#).

Fan spare part

Customer self repair: Mandatory

Description	Spare part number
Fan	879151-001



For more information on the removal and replacement procedures, see [Removing and replacing a fan](#).

Air baffle spare part

Customer self repair: Mandatory

Description	Spare part number
Air baffle	P08305-001

For more information on the removal and replacement procedures, see [Removing and replacing the air baffle](#).

System board assembly spare parts

Customer self repair: Optional

Description	Spare part number
System board assembly for the first-generation Intel Xeon Scalable Processors	879152-001
System board assembly for the second-generation Intel Xeon Scalable Processors	P11390-001

For more information on the removal and replacement procedures, see [Removing and replacing the system board](#).

DIMM spare parts

Customer self repair: Mandatory

Description	Spare part number
PC4-2666V DIMM spares	—
8 GB, single-rank x8 PC4-2666V-R	850879-001
16 GB, single-rank x4 PC4-2666V-R	850880-001
16 GB, dual-rank x8 PC4-2666V-R	868846-001
32 GB, dual-rank x4 PC4-2666V-R	850881-001
64 GB, quad-rank x4 PC4-2666V-L	850882-001
128 GB, octal-rank x4 PC4-2666V-L	850883-001
PC4-2933Y DIMM spares	—
8 GB, single-rank x8 PC4-2933Y-R	P06186-001
16 GB, single-rank x4 PC4-2933Y-R	P06187-001
16 GB, dual-rank x8 PC4-2933Y-R	P06188-001
32 GB, dual-rank x4 PC4-2933Y-R	P06189-001
64 GB, dual-rank x4 PC4-2933Y-R	P06192-001
64 GB, quad-rank x4 PC4-2933Y-L	P06190-001
128 GB, octal-rank x4 PC4-2933Y-L	P06191-001





CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

For more information on removal and replacement procedures, see [Removing and replacing a DIMM](#).

Front I/O assembly spare part

Customer self repair: Optional

Description	Spare part number
Front I/O assembly	879450-001

For more information on the removal and replacement procedures, see [Removing and replacing the front I/O assembly](#).

First-generation Intel Xeon Scalable Processor spare parts

Customer self repair: No

Description	Spare part number
Intel Xeon Bronze processor family	—
Intel Xeon Bronze 3104, 1.70 GHz, 6C, 85 W	875709-001
Intel Xeon Bronze 3106, 1.70 GHz, 8C, 85 W	875710-001
Intel Xeon Silver processor family	—
Intel Xeon Silver 4108, 1.80 GHz, 8C, 85 W	875712-001
Intel Xeon Silver 4110, 2.10 GHz, 8C, 85 W	875711-001
Intel Xeon Silver 4112, 2.60 GHz, 4C, 85 W	875714-001
Intel Xeon Silver 4114, 2.20 GHz, 10C, 85 W	875713-001
Intel Xeon Silver 4116, 2.10 GHz, 12C, 85 W	875716-001
Intel Xeon Gold 5100 processor family	—
Intel Xeon Gold 5115, 2.40 GHz, 10C, 85 W	875715-001
Intel Xeon Gold 5118, 2.30 GHz, 12C, 105 W	875717-001
Intel Xeon Gold 5120, 2.20 GHz, 14C, 105 W	875718-001
Intel Xeon Gold 5122, 3.60 GHz, 4C, 105 W	875719-001
Intel Xeon Gold 6100 processor family	—
Intel Xeon Gold 6126, 2.60 GHz, 12C, 125 W	875720-001
Intel Xeon Gold 6128, 3.40 GHz, 6C, 115 W	875721-001
Intel Xeon Gold 6130, 2.10 GHz, 16C, 125 W	874736-001
Intel Xeon Gold 6132, 2.60 GHz, 14C, 140 W	875722-001
Intel Xeon Gold 6134, 3.20 GHz, 8C, 130 W	875723-001

Table Continued



Description	Spare part number
Intel Xeon Gold 6136, 3.00 GHz, 12C, 150 W	875724-001
Intel Xeon Gold 6138, 2.00 GHz, 20C, 125 W	874735-001
Intel Xeon Gold 6140, 2.30 GHz, 18C, 140 W	874734-001
Intel Xeon Gold 6142, 2.60 GHz, 16C, 150 W	874733-001
Intel Xeon Gold 6144, 3.50 GHz, 8C, 150 W	875725-001
Intel Xeon Gold 6146, 3.40 GHz, 12C, 165 W	875726-001
Intel Xeon Gold 6148, 2.40 GHz, 20C, 150 W	874732-001
Intel Xeon Gold 6150, 2.70 GHz, 18C, 165 W	874731-001
Intel Xeon Gold 6152, 2.10 GHz, 22C, 140 W	874730-001
Intel Xeon Gold 6154, 3.00 GHz, 18C, 200 W	875727-001
Intel Xeon Gold "M" processor family (medium DDR memory tier support, 2 TB memory capacity per socket)	—
Intel Xeon Gold 6134M, 3.20 GHz, 8C, 130 W	878083-001
Intel Xeon Gold 6140M, 2.30 GHz, 18C, 140 W	878084-001
Intel Xeon Gold 6142M, 2.60 GHz, 16C, 150 W	878085-001
Intel Xeon Platinum processor family	—
Intel Xeon Platinum 8153, 2.00 GHz, 16C, 125 W	875728-001
Intel Xeon Platinum 8156, 3.60 GHz, 4C, 105 W	875732-001
Intel Xeon Platinum 8158, 3.00 GHz, 12C, 150 W	875733-001
Intel Xeon Platinum 8160, 2.10 GHz, 24C, 150 W	874729-001
Intel Xeon Platinum 8164, 2.10 GHz, 26C, 150 W	875729-001
Intel Xeon Platinum 8168, 2.70 GHz, 24C, 205 W	875730-001
Intel Xeon Platinum 8170, 2.10 GHz, 26C, 165 W	874728-001
Intel Xeon Platinum 8176, 2.10 GHz, 28C, 165 W	874727-001
Intel Xeon Platinum 8180, 2.50 GHz, 28C, 205 W	875731-001
Intel Xeon Platinum "M" processor family (medium DDR memory tier support, 2 TB memory capacity per socket)	—
Intel Xeon Platinum 8160M, 2.10 GHz, 24C, 150 W	878086-001
Intel Xeon Platinum 8170M, 2.10 GHz, 26C, 165 W	878087-001
Intel Xeon Platinum 8176M, 2.10 GHz, 28C, 165 W	878088-001
Intel Xeon Platinum 8180M, 2.50 GHz, 28C, 205 W	878089-001

Second-generation Intel Xeon Scalable Processor spare parts

Customer self repair: No



Description	Spare part number
Intel Xeon Bronze processor family	—
Intel Xeon Bronze 3204, 1.90 GHz, 6C, 85 W	P11604-001
Intel Xeon Bronze "R" processor family (refreshed processor model)	—
Intel Xeon Bronze 3206R, 1.90 GHz, 8C, 85 W	P19248-001
Intel Xeon Silver processor family	—
Intel Xeon Silver 4208, 2.10 GHz, 8C, 85 W	P11605-001
Intel Xeon Silver 4210, 2.20 GHz, 10C, 85 W	P11606-001
Intel Xeon Silver 4214, 2.20 GHz, 12C, 85 W	P11607-001
Intel Xeon Silver 4215, 2.50 GHz, 8C, 85 W	P11608-001
Intel Xeon Silver 4216, 2.10 GHz, 16C, 100 W	P11609-001
Intel Xeon Silver "R" processor family (refreshed processor models)	—
Intel Xeon Silver 4210R, 2.40 GHz, 10C, 100 W	P19246-001
Intel Xeon Silver 4214R, 2.40 GHz, 12C, 100 W	P19245-001
Intel Xeon Silver 4215R, 3.20 GHz, 8C, 130 W	P25089-001
Intel Xeon Gold 5200 processor family	—
Intel Xeon Gold 5215, 2.50 GHz, 10C, 85 W	P11610-001
Intel Xeon Gold 5217, 3.00 GHz, 8C, 125 W	P11611-001
Intel Xeon Gold 5218, 2.30 GHz, 16C, 125 W	P11612-001
Intel Xeon Gold 5218B, 2.30 GHz, 16C, 125 W	P12532-001
Intel Xeon Gold 5220, 2.20 GHz, 18C, 125 W	P11613-001
Intel Xeon Gold 5222, 3.80 GHz, 4C, 105 W	P11632-001
Intel Xeon Gold 6200 processor family	—
Intel Xeon Gold 6226, 2.70 GHz, 12C, 125 W	P12008-001
Intel Xeon Gold 6230, 2.10 GHz, 20C, 125 W	P11614-001
Intel Xeon Gold 6234, 3.30 GHz, 8C, 130 W	P12009-001
Intel Xeon Gold 6238, 2.10 GHz, 22C, 140 W	P12010-001
Intel Xeon Gold 6240, 2.60 GHz, 18C, 150 W	P11615-001
Intel Xeon Gold 6242, 2.80 GHz, 16C, 150 W	P11616-001
Intel Xeon Gold 6244, 3.60 GHz, 8C, 150 W	P11617-001
Intel Xeon Gold 6246, 3.30 GHz, 12C, 165 W	P12018-001
Intel Xeon Gold 6248, 2.50 GHz, 20C, 150 W	P11618-001
Intel Xeon Gold 6250, 3.90 GHz, 8C, 185 W	P25092-001
Intel Xeon Gold 6252, 2.10 GHz, 24C, 150 W	P11619-001

Table Continued



Description	Spare part number
Intel Xeon Gold 6254, 3.10 GHz, 18C, 200 W	P11620-001
Intel Xeon Gold 6256, 3.60 GHz, 12C, 205 W	P25093-001
Intel Xeon Gold "L" processor family (large DDR memory tier support, 4.5 TB memory capacity per socket)	—
Intel Xeon Gold 5215L, 2.50 GHz, 10C, 85 W	P11631-001
Intel Xeon Gold 6238L, 2.10 GHz, 22C, 140 W	P12016-001
Intel Xeon Gold 6240L, 2.60 GHz, 18C, 150 W	P12015-001
Intel Xeon Gold 6250L, 3.90 GHz, 8C, 150 W	P28864-001
Intel Xeon Gold "M" processor family (medium DDR memory tier support, 2 TB memory capacity per socket)	—
Intel Xeon Gold 5215M, 2.50 GHz, 10C, 85 W	P11626-001
Intel Xeon Gold 6238M, 2.10 GHz, 22C, 140 W	P12014-001
Intel Xeon Gold 6240M, 2.60 GHz, 18C, 150 W	P12013-001
Intel Xeon Gold "N" processor family (Networking/NFV optimized)	—
Intel Xeon Gold 6252N, 2.30 GHz, 24C, 150 W	P12023-001
Intel Xeon Gold "R" processor family (refreshed processor models)	—
Intel Xeon Gold 5218R, 2.10 GHz, 20C, 125 W	P25090-001
Intel Xeon Gold 5220R, 2.20 GHz, 24C, 150 W	P19241-001
Intel Xeon Gold 6226R, 2.90 GHz, 16C, 150 W	P25094-001
Intel Xeon Gold 6230R, 2.10 GHz, 26C, 150 W	P25095-001
Intel Xeon Gold 6238R, 2.20 GHz, 28C, 165 W	P25096-001
Intel Xeon Gold 6240R, 2.40 GHz, 24C, 165 W	P25097-001
Intel Xeon Gold 6242R, 3.10 GHz, 20C, 205 W	P25098-001
Intel Xeon Gold 6246R, 3.40 GHz, 16C, 205 W	P25099-001
Intel Xeon Gold 6248R, 3.00 GHz, 24C, 205 W	P25100-001
Intel Xeon Gold 6258R, 2.70 GHz, 28C, 205 W	P25101-001
Intel Xeon Gold "U" processor family (for single-processor configurations only)	—
Intel Xeon Gold 6208U, 2.90 GHz, 16C, 150 W	P25102-001
Intel Xeon Gold 6209U, 2.10 GHz, 20C, 125 W	P11644-001
Intel Xeon Gold 6210U, 2.50 GHz, 20C, 150 W	P11642-001
Intel Xeon Gold 6212U, 2.40 GHz, 24C, 165 W	P11643-001
Intel Xeon Gold "V" processor family (VM Density optimized)	—
Intel Xeon Gold 6222V, 1.80 GHz, 20C, 115 W	P12019-001
Intel Xeon Gold 6262V, 1.90 GHz, 24C, 135 W	P12020-001

Table Continued



Description	Spare part number
Intel Xeon Platinum processors	—
Intel Xeon Platinum 8253, 2.20 GHz, 16C, 125 W	P12011-001
Intel Xeon Platinum 8256, 3.80 GHz, 4C, 105 W	P12012-001
Intel Xeon Platinum 8260, 2.40 GHz, 24C, 165 W	P11621-001
Intel Xeon Platinum 8268, 2.90 GHz, 24C, 205 W	P11622-001
Intel Xeon Platinum 8270, 2.70 GHz, 26C, 205 W	P11623-001
Intel Xeon Platinum 8276, 2.20 GHz, 28C, 165 W	P11624-001
Intel Xeon Platinum 8280, 2.70 GHz, 28C, 205 W	P11625-001
Intel Xeon Platinum "L" processor family (large DDR memory tier support, 4.5 TB memory capacity per socket)	—
Intel Xeon Platinum 8260L, 2.40 GHz, 24C, 165 W	P11633-001
Intel Xeon Platinum 8276L, 2.20 GHz, 28C, 165 W	P11634-001
Intel Xeon Platinum 8280L, 2.70 GHz, 28C, 205 W	P11635-001
Intel Xeon Platinum "M" processor family (medium DDR memory tier support, 2 TB memory capacity per socket)	—
Intel Xeon Platinum 8260M, 2.40 GHz, 24C, 165 W	P11628-001
Intel Xeon Platinum 8276M, 2.20 GHz, 28C, 165 W	P11629-001
Intel Xeon Platinum 8280M, 2.70 GHz, 28C, 205 W	P11630-001
Intel Xeon Platinum "Y" processor family (supports Intel Speed Select Technology)	—
Intel Xeon Platinum 8260Y, 2.40 GHz, 24/20/16C, 165 W	P11638-001

Heatsink spare parts

Customer self repair: No

Description	Spare part number
Standard heatsink	879468-001
High-performance heatsink	879150-001

Standard power supply spare part (non-hot-plug)

Customer self repair: Mandatory

Description	Spare part number
HPE 500 W Low Halogen Non-hot-plug Power Supply	866726-001

This power supply is only supported when the server is in tower mode.

For more information on the removal and replacement procedures, see **Removing and replacing the non-hot-plug power supply**.



System battery spare part

Customer self repair: Mandatory

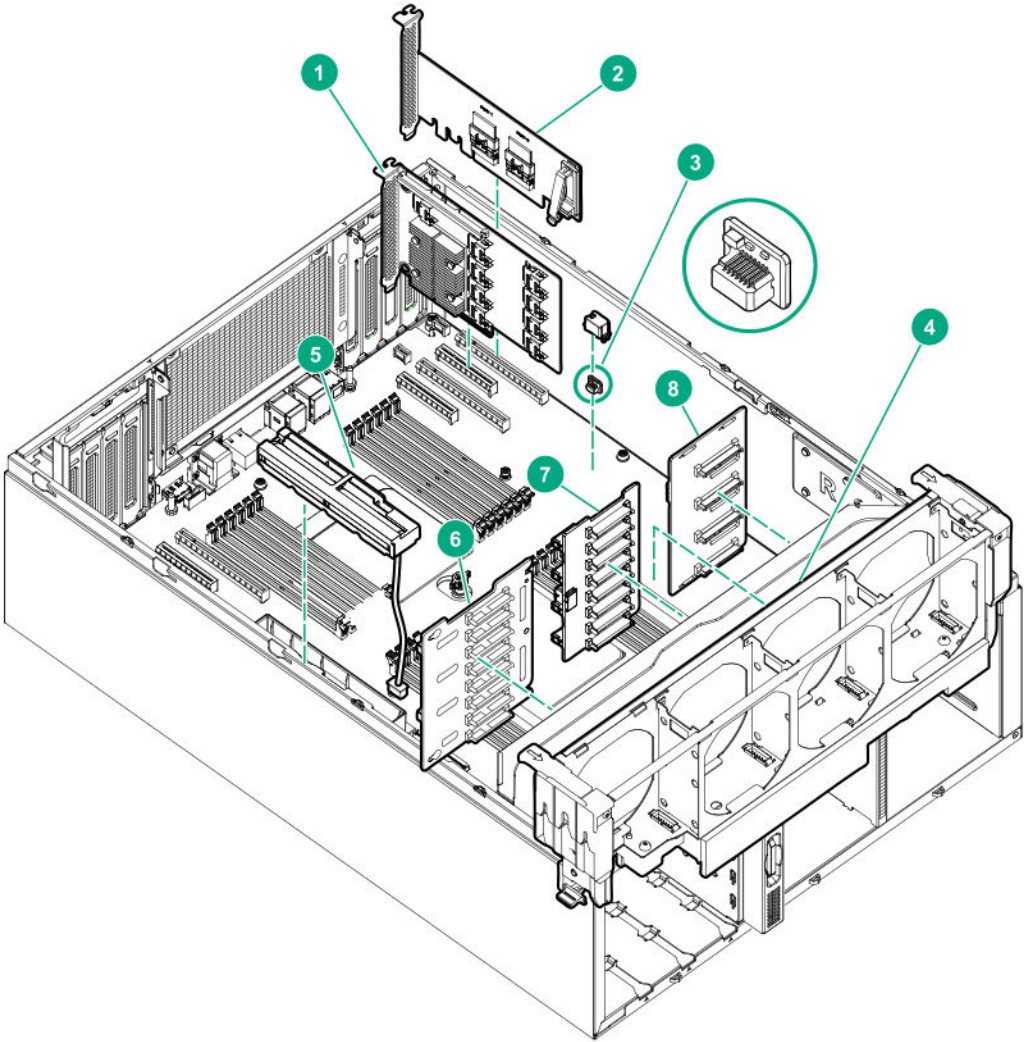
Description	Spare part number
System battery	319603-001

For more information on the removal and replacement procedures, see **Removing and replacing the system battery**.

Server options

Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported spare parts information, see the Hewlett Packard Enterprise PartSurfer website:

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



Item	Description
1	<u>HPE 12G SAS Expander Card spare part</u>
2	<u>NVMe riser board spare part</u>
3	<u>HPE Trusted Platform Module 2.0 spare part</u>
4	<u>Fan cage spare part</u>
5	<u>Energy pack spare parts</u>
6	<u>8 SFF drive backplane spare part¹</u>
7	<u>8 SFF NVMe drive backplane spare part²</u>
8	<u>4 LFF drive backplane spare part³</u>
9	<u>HPE NS204i-p NVMe OS Boot Device spare parts*</u>
10	<u>4 LFF non-hot-plug drive SATA-power split cable spare kit*</u>
11	<u>LFF hot-plug drive storage controller cables</u> <ul style="list-style-type: none"> • <u>4 LFF hot-plug drive SATA cable spare kit*</u> • <u>LFF hot-plug drive standup controller Mini-SAS X-cable spare part*</u> • <u>LFF hot-plug drive modular controller (AROC) Mini-SAS cable spare kit*</u>
12	<u>SFF hot-plug drive storage controller cables</u> <ul style="list-style-type: none"> • <u>8 SFF hot-plug drive Mini-SAS X-cable spare part*</u> • <u>SFF hot-plug drive standup controller Mini-SAS X-cable spare parts*</u> • <u>SFF hot-plug drive modular controller (AROC) Mini-SAS X-cable spare kit*</u>
13	<u>Storage controller backup power cable spare parts*</u>
14	<u>NVMe SSD cable spare parts*</u>
15	<u>LFF/SFF drive power cable spare kit*</u>
16	<u>HPE 12G SAS Expander Card cable spare kit*</u>
17	<u>Media device cable spare parts*</u>
18	<u>GPU auxiliary power cable spare kit*</u>

¹ This backplane cannot be installed in the 4 LFF non-hot-plug or hot-plug drive configurations.

² This backplane can only be installed in box 2 of SFF drive configurations.

³ This backplane cannot be installed together with the 8 SFF hot-plug drive cage option.

* Not shown

HPE 12G SAS Expander Card spare part

Customer self repair: Optional

Description	Spare part number
HPE 12G SAS Expander Card	876907-001





CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

For more information on the removal and replacement procedures, see [Removing and replacing the HPE 12G SAS Expander Card](#).

NVMe riser board spare part

Customer self repair: Optional

Description	Spare part number
NVMe riser board	879446-001



CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

For more information on the removal and replacement procedures, see [Removing and replacing the NVMe riser board](#).

HPE Trusted Platform Module 2.0 spare part

Customer self repair: No

Description	Spare part number
HPE Trusted Platform Module Gen10, TAA	872159-001

Fan cage spare part

Customer self repair: Mandatory

Description	Spare part number
Fan cage	879443-001

For more information on the removal and replacement procedures, see [Removing and replacing the fan cage](#).

Energy pack spare parts

Customer self repair: Mandatory

Description	Spare part number
HPE Smart Storage Battery 96 W, 260 mm cable	878644-001
HPE Smart Storage Hybrid Capacitor, 260 mm cable	P07474-001

For more information on the removal and replacement procedures, see [Removing and replacing an energy pack](#).

Drive backplane spare parts

Customer self repair: Optional



Description	Spare part number
4 LFF hot-plug drive backplane	878930-001
8 SFF hot-plug drive backplane	P16902-001
8 SFF NVMe SSD backplane	872971-001

For more information on the removal and replacement procedures for the 4 LFF hot-plug drive backplane, see [Removing and replacing the 4 LFF hot-plug drive backplane](#).

For more information on the removal and replacement procedures for the 8 SFF hot-plug drive backplane, see [Removing and replacing the 8 SFF hot-plug drive backplane](#).

For more information on the removal and replacement procedures for the 8 SFF NVMe SSD backplane, see [Removing and replacing the 8 SFF NVMe SSD backplane](#).

HPE NS204i-p NVMe OS Boot Device spare parts

Customer self repair: Mandatory

Description	Spare part number
HPE NS204i-p NVMe OS Boot Device	P14379-001
480 GB NVMe x4 RI M.2 22110 DS SSD	P24886-001

For more information on the removal and replacement procedures, see [Removing and replacing the HPE NS204i-p NVMe OS Boot Device option](#).

4 LFF non-hot-plug drive SATA-power split cable spare kit

Customer self repair: Mandatory

Description	Spare part number
4 LFF non-hot-plug drive SATA-power split cables for onboard SATA connection	879451-001
<ul style="list-style-type: none"> Box 1 or 2 SATA-power split cable (375 mm) Box 3 SATA-power split cable (180 mm) 	

LFF hot-plug drive storage controller cables

4 LFF hot-plug drive SATA cable spare kit

Customer self repair: Mandatory



Description	Spare part number
4 LFF hot-plug drive SATA cables for onboard SATA connection	879463-001
<ul style="list-style-type: none"> Box 1 or 2 SATA cable (550 mm) Box 3 SATA cable (250 mm) 	

LFF hot-plug drive standup controller Mini-SAS X-cable spare part

Customer self repair: Mandatory

Description	Spare part number
LFF hot-plug drive standup controller Mini-SAS X-cable for boxes 1, 2, and 3 (500 mm)	879157-001

LFF hot-plug drive modular controller (AROC) Mini-SAS cable spare kit

Customer self repair: Mandatory

Description	Spare part number
LFF hot-plug drive modular controller (AROC) Mini-SAS cables	879456-001
<ul style="list-style-type: none"> Box 1 modular controller Mini-SAS cable (500 mm) Box 1 or 2 modular controller Mini-SAS cable (280 mm) Box 2 or 3 modular controller Mini-SAS cable (500 mm) 	

SFF hot-plug drive storage controller cables

8 SFF hot-plug drive Mini-SAS X-cable spare part

Customer self repair: Mandatory

Description	Spare part number
8 SFF hot-plug drive Mini-SAS X-cable for box 3 onboard SATA connection (250 mm)	879161-001

SFF hot-plug drive standup controller Mini-SAS X-cable spare parts

Customer self repair: Mandatory



Description	Spare part number
SFF hot-plug drive multiple standup controller Mini-SAS X-cable for boxes 1, 2, and 3 (790 mm)	879158-001
SFF hot-plug drive single standup controller Mini-SAS X-cables ¹	P03215-001
<ul style="list-style-type: none"> Box 1 single standup controller Mini-SAS X-cable (1025 mm) Box 2 single standup controller Mini-SAS X-cable (880 mm) Box 3 single standup controller Mini-SAS X-cable (720 mm) 	

¹ The P00512-001 (510 mm) included in the P03215-001 spare cable kit is not for use in this server.

SFF hot-plug drive modular controller (AROC) Mini-SAS X-cable spare kit

Customer self repair: Mandatory

Description	Spare part number
SFF hot-plug drive modular controller (AROC) Mini-SAS X-cables	879156-001
<ul style="list-style-type: none"> Box 1 or 2 modular controller Mini-SAS X-cable (700 mm) Box 2 or 3 modular controller Mini-SAS X-cable (530 mm) 	

NVMe SSD cable spare parts

Customer self repair: Mandatory

Description	Spare part number
NVMe SSD data cable	879454-001
NVMe SSD power cable	879452-001

Storage controller backup power cable spare parts

Customer self repair: Mandatory

Description	Spare part number
HPE Smart Array MR controller backup power cable	P03216-001
HPE Smart Array SR controller backup power cable	878646-001

LFF/SFF drive power cable spare kit

Customer self repair: Mandatory



Description	Spare part number
LFF/SFF drive power cables	879163-001
<ul style="list-style-type: none"> Box 1 or 2 drive power cable (480 mm) Box 3 drive power cable (160 mm) 	

HPE 12G SAS Expander Card cable spare kit

Customer self repair: Mandatory

Description	Spare part number
HPE 12G SAS Expander Card cables	879460-001
<ul style="list-style-type: none"> Expander card ports 1 and 2 Mini-SAS X-cable for a modular controller Expander card ports 1 and 2 Mini-SAS X-cable for a standup controller Expander card ports 3 and 4 Mini-SAS X-cable for the drive bays 1–8 Expander card ports 5 and 6 Mini-SAS X-cable for the drive bays 9–16 Expander card ports 7 and 8 Mini-SAS X-cable for the drive bays 17–24 	

Media device cable spare parts

Customer self repair: Mandatory

Description	Spare part number
LTO/RDX drive cables	879453-001
<ul style="list-style-type: none"> LTO tape drive SAS-power Y-cable RDX USB 3.0 cable LTO/RDX power extension Y-cable 	
Optical drive SATA-power cable	879159-001

GPU auxiliary power cable spare kit

Customer self repair: Mandatory



Description	Spare part number
GPU auxiliary power cables <ul style="list-style-type: none"> Processor 1 GPU auxiliary power cable (1000 mm) Processor 2 GPU auxiliary power cable (180 mm) 	879154-001



Customer self repair

Hewlett Packard Enterprise products are designed with many Customer Self Repair (CSR) parts to minimize repair time and allow for greater flexibility in performing defective parts replacement. If during the diagnosis period Hewlett Packard Enterprise (or Hewlett Packard Enterprise service providers or service partners) identifies that the repair can be accomplished by the use of a CSR part, Hewlett Packard Enterprise will ship that part directly to you for replacement. There are two categories of CSR parts:

- **Mandatory**—Parts for which customer self repair is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.
- **Optional**—Parts for which customer self repair is optional. These parts are also designed for customer self repair. If, however, you require that Hewlett Packard Enterprise replace them for you, there may or may not be additional charges, depending on the type of warranty service designated for your product.

NOTE: Some Hewlett Packard Enterprise parts are not designed for customer self repair. In order to satisfy the customer warranty, Hewlett Packard Enterprise requires that an authorized service provider replace the part. These parts are identified as "No" in the Illustrated Parts Catalog.

Based on availability and where geography permits, CSR parts will be shipped for next business day delivery. Same day or four-hour delivery may be offered at an additional charge where geography permits. If assistance is required, you can call the Hewlett Packard Enterprise Support Center and a technician will help you over the telephone. Hewlett Packard Enterprise specifies in the materials shipped with a replacement CSR part whether a defective part must be returned to Hewlett Packard Enterprise. In cases where it is required to return the defective part to Hewlett Packard Enterprise, you must ship the defective part back to Hewlett Packard Enterprise within a defined period of time, normally five (5) business days. The defective part must be returned with the associated documentation in the provided shipping material. Failure to return the defective part may result in Hewlett Packard Enterprise billing you for the replacement. With a customer self repair, Hewlett Packard Enterprise will pay all shipping and part return costs and determine the courier/carrier to be used.

For more information about the Hewlett Packard Enterprise CSR program, contact your local service provider.

Parts only warranty service

Your Hewlett Packard Enterprise Limited Warranty may include a parts only warranty service. Under the terms of parts only warranty service, Hewlett Packard Enterprise will provide replacement parts free of charge.

For parts only warranty service, CSR part replacement is mandatory. If you request Hewlett Packard Enterprise to replace these parts, you will be charged for the travel and labor costs of this service.

Réparation par le client (CSR)

Les produits Hewlett Packard Enterprise comportent de nombreuses pièces CSR (Customer Self Repair = réparation par le client) afin de minimiser les délais de réparation et faciliter le remplacement des pièces défectueuses. Si pendant la période de diagnostic, Hewlett Packard Enterprise (ou ses partenaires ou mainteneurs agréés) détermine que la réparation peut être effectuée à l'aide d'une pièce CSR, Hewlett Packard Enterprise vous l'envoie directement. Il existe deux catégories de pièces CSR :

- **Obligatoire**—Pièces pour lesquelles la réparation par le client est obligatoire. Si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.
- **Facultatif**—Pièces pour lesquelles la réparation par le client est facultative. Ces pièces sont également conçues pour permettre au client d'effectuer lui-même la réparation. Toutefois, si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, l'intervention peut ou non vous être facturée, selon le type de garantie applicable à votre produit.



REMARQUE: Certaines pièces Hewlett Packard Enterprise ne sont pas conçues pour permettre au client d'effectuer lui-même la réparation. Pour que la garantie puisse s'appliquer, Hewlett Packard Enterprise exige que le remplacement de la pièce soit effectué par un Mainteneur Agréé. Ces pièces sont identifiées par la mention "Non" dans le Catalogue illustré.

Les pièces CSR sont livrées le jour ouvré suivant, dans la limite des stocks disponibles et selon votre situation géographique. Si votre situation géographique le permet et que vous demandez une livraison le jour même ou dans les 4 heures, celle-ci vous sera facturée. Pour toute assistance, appelez le Centre d'assistance Hewlett Packard Enterprise pour qu'un technicien vous aide au téléphone. Dans les documents envoyés avec la pièce de rechange CSR, Hewlett Packard Enterprise précise s'il est nécessaire de lui retourner la pièce défectueuse. Si c'est le cas, vous devez le faire dans le délai indiqué, généralement cinq (5) jours ouvrés. La pièce et sa documentation doivent être retournées dans l'emballage fourni. Si vous ne retournez pas la pièce défectueuse, Hewlett Packard Enterprise se réserve le droit de vous facturer les coûts de remplacement. Dans le cas d'une pièce CSR, Hewlett Packard Enterprise supporte l'ensemble des frais d'expédition et de retour, et détermine la société de courses ou le transporteur à utiliser.

Pour plus d'informations sur le programme CSR de Hewlett Packard Enterprise, contactez votre Mainteneur Agréé local.

Service de garantie "pièces seules"

Votre garantie limitée Hewlett Packard Enterprise peut inclure un service de garantie "pièces seules". Dans ce cas, les pièces de rechange fournies par Hewlett Packard Enterprise ne sont pas facturées.

Dans le cadre de ce service, la réparation des pièces CSR par le client est obligatoire. Si vous demandez à Hewlett Packard Enterprise de remplacer ces pièces, les coûts de déplacement et main d'œuvre du service vous seront facturés.

Riparazione da parte del cliente

Per abbreviare i tempi di riparazione e garantire una maggiore flessibilità nella sostituzione di parti difettose, i prodotti Hewlett Packard Enterprise sono realizzati con numerosi componenti che possono essere riparati direttamente dal cliente (CSR, Customer Self Repair). Se in fase di diagnostica Hewlett Packard Enterprise (o un centro di servizi o di assistenza Hewlett Packard Enterprise) identifica il guasto come riparabile mediante un ricambio CSR, Hewlett Packard Enterprise lo spedisce direttamente al cliente per la sostituzione. Vi sono due categorie di parti CSR:

- **Obbligatorie**—Parti che devono essere necessariamente riparate dal cliente. Se il cliente ne affida la riparazione ad Hewlett Packard Enterprise, deve sostenere le spese di spedizione e di manodopera per il servizio.
- **Opzionali**—Parti la cui riparazione da parte del cliente è facoltativa. Si tratta comunque di componenti progettati per questo scopo. Se tuttavia il cliente ne richiede la sostituzione ad Hewlett Packard Enterprise, potrebbe dover sostenere spese aggiuntive a seconda del tipo di garanzia previsto per il prodotto.

NOTA: alcuni componenti Hewlett Packard Enterprise non sono progettati per la riparazione da parte del cliente. Per rispettare la garanzia, Hewlett Packard Enterprise richiede che queste parti siano sostituite da un centro di assistenza autorizzato. Tali parti sono identificate da un "No" nel Catalogo illustrato dei componenti.

In base alla disponibilità e alla località geografica, le parti CSR vengono spedite con consegna entro il giorno lavorativo seguente. La consegna nel giorno stesso o entro quattro ore è offerta con un supplemento di costo solo in alcune zone. In caso di necessità si può richiedere l'assistenza telefonica di un addetto del centro di supporto tecnico Hewlett Packard Enterprise. Nel materiale fornito con una parte di ricambio CSR, Hewlett Packard Enterprise specifica se il cliente deve restituire dei componenti. Qualora sia richiesta la resa ad Hewlett Packard Enterprise del componente difettoso, lo si deve spedire ad Hewlett Packard Enterprise entro un determinato periodo di tempo, generalmente cinque (5) giorni lavorativi. Il componente difettoso deve essere restituito con la documentazione associata nell'imballo di spedizione fornito. La mancata restituzione del componente può comportare la fatturazione del ricambio da parte di Hewlett Packard Enterprise. Nel caso di riparazione da parte del cliente, Hewlett Packard Enterprise sostiene tutte le spese di spedizione e resa e sceglie il corriere/vettore da utilizzare.

Per ulteriori informazioni sul programma CSR di Hewlett Packard Enterprise, contattare il centro di assistenza di zona.

Servizio di garanzia per i soli componenti

La garanzia limitata Hewlett Packard Enterprise può includere un servizio di garanzia per i soli componenti. Nei termini di garanzia del servizio per i soli componenti, Hewlett Packard Enterprise fornirà gratuitamente le parti di ricambio.



Per il servizio di garanzia per i soli componenti è obbligatoria la formula CSR che prevede la riparazione da parte del cliente. Se il cliente invece richiede la sostituzione ad Hewlett Packard Enterprise dovrà sostenere le spese di spedizione e di manodopera per il servizio.

Customer Self Repair

Hewlett Packard Enterprise Produkte enthalten viele CSR-Teile (Customer Self Repair), um Reparaturzeiten zu minimieren und höhere Flexibilität beim Austausch defekter Bauteile zu ermöglichen. Wenn Hewlett Packard Enterprise (oder ein Hewlett Packard Enterprise Servicepartner) bei der Diagnose feststellt, dass das Produkt mithilfe eines CSR-Teils repariert werden kann, sendet Ihnen Hewlett Packard Enterprise dieses Bauteil zum Austausch direkt zu. CSR-Teile werden in zwei Kategorien unterteilt:

- **Zwingend**—Teile, für die das Customer Self Repair-Verfahren zwingend vorgegeben ist. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.
- **Optional**—Teile, für die das Customer Self Repair-Verfahren optional ist. Diese Teile sind auch für Customer Self Repair ausgelegt. Wenn Sie jedoch den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen möchten, können bei diesem Service je nach den für Ihr Produkt vorgesehenen Garantiebedingungen zusätzliche Kosten anfallen.

HINWEIS: Einige Hewlett Packard Enterprise Teile sind nicht für Customer Self Repair ausgelegt. Um den Garantieanspruch des Kunden zu erfüllen, muss das Teil von einem Hewlett Packard Enterprise Servicepartner ersetzt werden. Im illustrierten Teilekatalog sind diese Teile mit „No“ bzw. „Nein“ gekennzeichnet.

CSR-Teile werden abhängig von der Verfügbarkeit und vom Lieferziel am folgenden Geschäftstag geliefert. Für bestimmte Standorte ist eine Lieferung am selben Tag oder innerhalb von vier Stunden gegen einen Aufpreis verfügbar. Wenn Sie Hilfe benötigen, können Sie das Hewlett Packard Enterprise Support Center anrufen und sich von einem Mitarbeiter per Telefon helfen lassen. Den Materialien von Hewlett Packard Enterprise, die mit einem CSR-Ersatzteil geliefert werden, können Sie entnehmen, ob das defekte Teil an Hewlett Packard Enterprise zurückgeschickt werden muss. Wenn es erforderlich ist, das defekte Teil an Hewlett Packard Enterprise zurückzuschicken, müssen Sie dies innerhalb eines vorgegebenen Zeitraums tun, in der Regel innerhalb von fünf (5) Geschäftstagen. Das defekte Teil muss mit der zugehörigen Dokumentation in der Verpackung zurückgeschickt werden, die im Lieferumfang enthalten ist. Wenn Sie das defekte Teil nicht zurückschicken, kann Hewlett Packard Enterprise Ihnen das Ersatzteil in Rechnung stellen. Im Falle von Customer Self Repair kommt Hewlett Packard Enterprise für alle Kosten für die Lieferung und Rücksendung auf und bestimmt den Kurier-/Frachtdienst.

Weitere Informationen über das Hewlett Packard Enterprise Customer Self Repair Programm erhalten Sie von Ihrem Servicepartner vor Ort.

Parts-only Warranty Service (Garantieservice ausschließlich für Teile)

Ihre Hewlett Packard Enterprise Garantie umfasst möglicherweise einen Parts-only Warranty Service (Garantieservice ausschließlich für Teile). Gemäß den Bestimmungen des Parts-only Warranty Service stellt Hewlett Packard Enterprise Ersatzteile kostenlos zur Verfügung.

Für den Parts-only Warranty Service ist das CSR-Verfahren zwingend vorgegeben. Wenn Sie den Austausch dieser Teile von Hewlett Packard Enterprise vornehmen lassen, werden Ihnen die Anfahrt- und Arbeitskosten für diesen Service berechnet.

Reparaciones del propio cliente

Los productos de Hewlett Packard Enterprise incluyen muchos componentes que el propio usuario puede reemplazar (Customer Self Repair, CSR) para minimizar el tiempo de reparación y ofrecer una mayor flexibilidad a la hora de realizar sustituciones de componentes defectuosos. Si, durante la fase de diagnóstico, Hewlett Packard Enterprise (o los proveedores o socios de servicio de Hewlett Packard Enterprise) identifica que una reparación puede llevarse a cabo mediante el uso de un componente CSR, Hewlett Packard Enterprise le enviará dicho componente directamente para que realice su sustitución. Los componentes CSR se clasifican en dos categorías:



- **Obligatorio**—Componentes cuya reparación por parte del usuario es obligatoria. Si solicita a Hewlett Packard Enterprise que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.
- **Opcional**—Componentes cuya reparación por parte del usuario es opcional. Estos componentes también están diseñados para que puedan ser reparados por el usuario. Sin embargo, si precisa que Hewlett Packard Enterprise realice su sustitución, puede o no conllevar costes adicionales, dependiendo del tipo de servicio de garantía correspondiente al producto.

NOTA: Algunos componentes de Hewlett Packard Enterprise no están diseñados para que puedan ser reparados por el usuario. Para que el usuario haga valer su garantía, Hewlett Packard Enterprise pone como condición que un proveedor de servicios autorizado realice la sustitución de estos componentes. Dichos componentes se identifican con la palabra "No" en el catálogo ilustrado de componentes.

Según la disponibilidad y la situación geográfica, los componentes CSR se enviarán para que lleguen a su destino al siguiente día laborable. Si la situación geográfica lo permite, se puede solicitar la entrega en el mismo día o en cuatro horas con un coste adicional. Si precisa asistencia técnica, puede llamar al Centro de asistencia técnica de Hewlett Packard Enterprise y recibirá ayuda telefónica por parte de un técnico. Con el envío de materiales para la sustitución de componentes CSR, Hewlett Packard Enterprise especificará si los componentes defectuosos deberán devolverse a Hewlett Packard Enterprise. En aquellos casos en los que sea necesario devolver algún componente a Hewlett Packard Enterprise, deberá hacerlo en el periodo de tiempo especificado, normalmente cinco días laborables. Los componentes defectuosos deberán devolverse con toda la documentación relacionada y con el embalaje de envío. Si no enviara el componente defectuoso requerido, Hewlett Packard Enterprise podrá cobrarle por el de sustitución. En el caso de todas sustituciones que lleve a cabo el cliente, Hewlett Packard Enterprise se hará cargo de todos los gastos de envío y devolución de componentes y escogerá la empresa de transporte que se utilice para dicho servicio.

Para obtener más información acerca del programa de Reparaciones del propio cliente de Hewlett Packard Enterprise, póngase en contacto con su proveedor de servicios local.

Servicio de garantía exclusivo de componentes

La garantía limitada de Hewlett Packard Enterprise puede que incluya un servicio de garantía exclusivo de componentes. Según las condiciones de este servicio exclusivo de componentes, Hewlett Packard Enterprise le facilitará los componentes de repuesto sin cargo adicional alguno.

Para este servicio de garantía exclusivo de componentes, es obligatoria la sustitución de componentes por parte del usuario (CSR). Si solicita a Hewlett Packard Enterprise que realice la sustitución de estos componentes, tendrá que hacerse cargo de los gastos de desplazamiento y de mano de obra de dicho servicio.

Customer Self Repair

Veel onderdelen in Hewlett Packard Enterprise producten zijn door de klant zelf te repareren, waardoor de reparatieduur tot een minimum beperkt kan blijven en de flexibiliteit in het vervangen van defecte onderdelen groter is. Deze onderdelen worden CSR-onderdelen (Customer Self Repair) genoemd. Als Hewlett Packard Enterprise (of een Hewlett Packard Enterprise Service Partner) bij de diagnose vaststelt dat de reparatie kan worden uitgevoerd met een CSR-onderdeel, verzendt Hewlett Packard Enterprise dat onderdeel rechtstreeks naar u, zodat u het defecte onderdeel daarmee kunt vervangen. Er zijn twee categorieën CSR-onderdelen:

- **Verplicht**—Onderdelen waarvoor reparatie door de klant verplicht is. Als u Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht.
- **Optioneel**—Onderdelen waarvoor reparatie door de klant optioneel is. Ook deze onderdelen zijn ontworpen voor reparatie door de klant. Als u echter Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, kunnen daarvoor extra kosten in rekening worden gebracht, afhankelijk van het type garantieservice voor het product.

OPMERKING: Sommige Hewlett Packard Enterprise onderdelen zijn niet ontwikkeld voor reparatie door de klant. In verband met de garantievoorwaarden moet het onderdeel door een geautoriseerde Service Partner worden vervangen. Deze onderdelen worden in de geïllustreerde onderdelencatalogus aangemerkt met "Nee".



Afhankelijk van de leverbaarheid en de locatie worden CSR-onderdelen verzonden voor levering op de eerstvolgende werkdag. Levering op dezelfde dag of binnen vier uur kan tegen meerkosten worden aangeboden, indien dit mogelijk is gezien de locatie. Indien assistentie is gewenst, belt u het Hewlett Packard Enterprise Support Center om via de telefoon ondersteuning van een technicus te ontvangen. Hewlett Packard Enterprise vermeldt in de documentatie bij het vervangende CSR-onderdeel of het defecte onderdeel aan Hewlett Packard Enterprise moet worden geretourneerd. Als het defecte onderdeel aan Hewlett Packard Enterprise moet worden teruggezonden, moet u het defecte onderdeel binnen een bepaalde periode, gewoonlijk vijf (5) werkdagen, retourneren aan Hewlett Packard Enterprise. Het defecte onderdeel moet met de bijbehorende documentatie worden geretourneerd in het meegeleverde verpakkingsmateriaal. Als u het defecte onderdeel niet terugzendt, kan Hewlett Packard Enterprise u voor het vervangende onderdeel kosten in rekening brengen. Bij reparatie door de klant betaalt Hewlett Packard Enterprise alle verzendkosten voor het vervangende en geretourneerde onderdeel en kiest Hewlett Packard Enterprise zelf welke koerier/transportonderneming hiervoor wordt gebruikt.

Neem contact op met een Service Partner voor meer informatie over het Customer Self Repair programma van Hewlett Packard Enterprise.

Garantieservice "Parts Only"

Het is mogelijk dat de Hewlett Packard Enterprise garantie alleen de garantieservice "Parts Only" omvat. Volgens de bepalingen van de Parts Only garantieservice zal Hewlett Packard Enterprise kosteloos vervangende onderdelen ter beschikking stellen.

Voor de Parts Only garantieservice is vervanging door CSR-onderdelen verplicht. Als u Hewlett Packard Enterprise verzoekt deze onderdelen voor u te vervangen, worden u voor deze service reiskosten en arbeidsloon in rekening gebracht

Reparo feito pelo cliente

Os produtos da Hewlett Packard Enterprise são projetados com muitas peças para reparo feito pelo cliente (CSR) de modo a minimizar o tempo de reparo e permitir maior flexibilidade na substituição de peças com defeito. Se, durante o período de diagnóstico, a Hewlett Packard Enterprise (ou fornecedores/parceiros da Hewlett Packard Enterprise) concluir que o reparo pode ser efetuado pelo uso de uma peça CSR, a Hewlett Packard Enterprise enviará a peça diretamente ao cliente. Há duas categorias de peças CSR:

- **Obrigatória**—Peças cujo reparo feito pelo cliente é obrigatório. Se desejar que a Hewlett Packard Enterprise substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.
- **Opcional**—Peças cujo reparo feito pelo cliente é opcional. Essas peças também são projetadas para o reparo feito pelo cliente. No entanto, se desejar que a Hewlett Packard Enterprise as substitua, pode haver ou não a cobrança de taxa adicional, dependendo do tipo de serviço de garantia destinado ao produto.

OBSERVAÇÃO: Algumas peças da Hewlett Packard Enterprise não são projetadas para o reparo feito pelo cliente. A fim de cumprir a garantia do cliente, a Hewlett Packard Enterprise exige que um técnico autorizado substitua a peça. Essas peças estão identificadas com a marca "No" (Não), no catálogo de peças ilustrado.

Conforme a disponibilidade e o local geográfico, as peças CSR serão enviadas no primeiro dia útil após o pedido. Onde as condições geográficas permitirem, a entrega no mesmo dia ou em quatro horas pode ser feita mediante uma taxa adicional. Se precisar de auxílio, entre em contato com o Centro de suporte técnico da Hewlett Packard Enterprise para que um técnico o ajude por telefone. A Hewlett Packard Enterprise especifica nos materiais fornecidos com a peça CSR de reposição se a peça com defeito deve ser devolvida à Hewlett Packard Enterprise. Nos casos em que isso for necessário, é preciso enviar a peça com defeito à Hewlett Packard Enterprise, você deverá enviar a peça com defeito de volta para a Hewlett Packard Enterprise dentro do período de tempo definido, normalmente em 5 (cinco) dias úteis. A peça com defeito deve ser enviada com a documentação correspondente no material de transporte fornecido. Caso não o faça, a Hewlett Packard Enterprise poderá cobrar a reposição. Para as peças de reparo feito pelo cliente, a Hewlett Packard Enterprise paga todas as despesas de transporte e de devolução da peça e determina a transportadora/serviço postal a ser utilizado.

Para obter mais informações sobre o programa de reparo feito pelo cliente da Hewlett Packard Enterprise, entre em contato com o fornecedor de serviços local.



Service de garantie apenas para peças

A garantia limitada da Hewlett Packard Enterprise pode incluir um serviço de garantia apenas para peças. Segundo os termos do serviço de garantia apenas para peças, a Hewlett Packard Enterprise fornece as peças de reposição sem cobrar nenhuma taxa.

No caso desse serviço, a substituição de peças CSR é obrigatória. Se desejar que a Hewlett Packard Enterprise substitua essas peças, serão cobradas as despesas de transporte e mão-de-obra do serviço.

カスタマーセルフリペア

修理時間を短縮し、故障部品の交換における高い柔軟性を確保するために、Hewlett Packard Enterprise製品には多数のカスタマーセルフリペア（CSR）部品があります。診断の際に、CSR部品を使用すれば修理ができるとHewlett Packard Enterprise（Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店）が判断した場合、Hewlett Packard Enterpriseはその部品を直接、お客様に発送し、お客様に交換していただきます。CSR部品には以下の2種類があります。

- 必須 - カスタマーセルフリペアが必須の部品。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様に請求されます。
- 任意 - カスタマーセルフリペアが任意である部品。この部品もカスタマーセルフリペア用です。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、お買い上げの製品に適用される保証サービス内容の範囲内においては、別途費用を負担していただくことなく保証サービスを受けることができます。

注：Hewlett Packard Enterprise製品の一部の部品は、カスタマーセルフリペアの対象外です。製品の保証を継続するためには、Hewlett Packard EnterpriseまたはHewlett Packard Enterprise正規保守代理店による交換作業が必須となります。部品カタログには、当該部品がカスタマーセルフリペア除外品である旨が記載されています。

部品供給が可能な場合、地域によっては、CSR部品を翌営業日に届くように発送します。また、地域によっては、追加費用を負担いただくことにより同日または4時間以内に届くように発送することも可能な場合があります。サポートが必要なときは、Hewlett Packard Enterpriseサポートセンターに電話していただければ、技術者が電話でアドバイスします。交換用のCSR部品または同梱物には、故障部品をHewlett Packard Enterpriseに返送する必要があるかどうかが表示されています。故障部品をHewlett Packard Enterpriseに返送する必要がある場合は、指定期限内（通常は5営業日以内）に故障部品をHewlett Packard Enterpriseに返送してください。故障部品を返送する場合は、届いた時の梱包箱に関連書類とともに入れてください。故障部品を返送しない場合、Hewlett Packard Enterpriseから部品費用が請求されます。カスタマーセルフリペアの際には、Hewlett Packard Enterpriseは送料および部品返送費を全額負担し、使用する宅配便会社や運送会社を指定します。

部品のみ保証サービス

Hewlett Packard Enterprise保証サービスには、部品のみ保証サービスが適用される場合があります。このサービスでは、交換部品は無償で提供されます。

部品のみ保証サービスにおいては、CSR部品をお客様により交換作業していただくことが必須になります。当該部品について、もしもお客様がHewlett Packard Enterpriseに交換作業を依頼される場合には、その修理サービスに関する交通費および人件費がお客様のご負担となります。



客户自行维修

Hewlett Packard Enterprise 产品提供许多客户自行维修 (CSR) 部件，以尽可能缩短维修时间和在更换缺陷部件方面提供更大的灵活性。如果在诊断期间 Hewlett Packard Enterprise (或Hewlett Packard Enterprise 服务提供商或服务合作伙伴) 确定可以通过使用 CSR 部件完成维修，Hewlett Packard Enterprise 将直接把该部件发送给您进行更换。有两类 CSR 部件：

- **强制性的** — 要求客户必须自行维修的部件。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。
- **可选的** — 客户可以选择是否自行维修的部件。这些部件也是为客户自行维修设计的。不过，如果您要求 Hewlett Packard Enterprise 为您更换这些部件，则根据为您的产品指定的保修服务类型，Hewlett Packard Enterprise 可能收取或不再收取任何附加费用。

注：某些 Hewlett Packard Enterprise 部件的设计并未考虑客户自行维修。为了满足客户保修的需要，Hewlett Packard Enterprise 要求授权服务提供商更换相关部件。这些部件在部件图解目录中标记为“否”。

CSR 部件将在下一个工作日发运（取决于备货情况和允许的地理范围）。在允许的地理范围内，可在当天或四小时内发运，但要收取额外费用。如果需要帮助，您可以致电 Hewlett Packard Enterprise 技术支持中心，将会有技术人员通过电话为您提供帮助。Hewlett Packard Enterprise 会在随更换的 CSR 部件发运的材料中指明是否必须将有缺陷的部件返还给 Hewlett Packard Enterprise。如果要求您将有缺陷的部件返还给 Hewlett Packard Enterprise，那么您必须在规定的期限内（通常是五 (5) 个工作日）将缺陷部件发给 Hewlett Packard Enterprise。有缺陷的部件必须随所提供的发运材料中的相关文件一起返还。如果未能送还有缺陷的部件，Hewlett Packard Enterprise 可能会要求您支付更换费用。客户自行维修时，Hewlett Packard Enterprise 将承担所有相关运输和部件返回费用，并指定快递商/承运商。

有关 Hewlett Packard Enterprise 客户自行维修计划的详细信息，请与您当地的服务提供商联系。

仅部件保修服务

您的 Hewlett Packard Enterprise 有限保修服务可能涉及仅部件保修服务。根据仅部件保修服务条款的规定，Hewlett Packard Enterprise 将免费提供更换的部件。

仅部件保修服务要求进行 CSR 部件更换。如果您请求 Hewlett Packard Enterprise 更换这些部件，则必须为该服务支付差旅费和人工费用。



客戶自行維修

Hewlett Packard Enterprise 產品設計了許多「客戶自行維修」(CSR) 的零件以減少維修時間，並且使得更換瑕疵零件時能有更大的彈性。如果在診斷期間，Hewlett Packard Enterprise (或 Hewlett Packard Enterprise 服務供應商或維修夥伴) 辨認出此項維修工作可以藉由使用 CSR 零件來完成，則 Hewlett Packard Enterprise 將直接寄送該零件給您作更換。CSR 零件分為兩種類別：

- **強制的** — 客戶自行維修所使用的零件是強制性的。如果您要求 Hewlett Packard Enterprise 更換這些零件，Hewlett Packard Enterprise 將會向您收取此服務所需的外出費用與勞動成本。
- **選購的** — 客戶自行維修所使用的零件是選購的。這些零件也設計用於客戶自行維修之用。不過，如果您要求 Hewlett Packard Enterprise 為您更換，則可能需要也可能不需要負擔額外的費用，端視針對此產品指定的保固服務類型而定。

備註：某些 Hewlett Packard Enterprise 零件沒有消費者可自行維修的設計。為符合客戶保固，Hewlett Packard Enterprise 需要授權的服務供應商更換零件。這些零件在圖示的零件目錄中，被標示為「否」。

基於材料取得及環境允許的情況下，CSR 零件將於下一個工作日以快遞寄送。在環境的允許下當天或四小時內送達，則可能需要額外的費用。若您需要協助，可致電 Hewlett Packard Enterprise 支援中心，會有一位技術人員透過電話來協助您。不論損壞的零件是否必須退回，Hewlett Packard Enterprise 皆會在與 CSR 替換零件一起運送的材料中註明。若要將損壞的零件退回 Hewlett Packard Enterprise，您必須在指定的一段時間內（通常為五 (5) 個工作天），將損壞的零件寄回 Hewlett Packard Enterprise。損壞的零件必須與寄送資料中隨附的相關技術文件一併退還。如果無法退還損壞的零件，Hewlett Packard Enterprise 可能要向您收取替換費用。針對客戶自行維修情形，Hewlett Packard Enterprise 將負責所有運費及零件退還費用，並指定使用何家快遞/貨運公司。

如需 Hewlett Packard Enterprise 的 CSR 方案詳細資訊，請連絡您當地的服務供應商。

僅限零件的保固服務

您的「Hewlett Packard Enterprise 有限保固」可能包含僅限零件的保固服務。在僅限零件的保固服務情況下，Hewlett Packard Enterprise 將免費提供替換零件。

針對僅限零件的保固服務，CSR 零件替換是強制性的。如果您要求 Hewlett Packard Enterprise 更換這些零件，Hewlett Packard Enterprise 將會向您收取此服務所需的外出費用與勞動成本。



고객 셀프 수리

Hewlett Packard Enterprise 제품은 수리 시간을 최소화하고 결함이 있는 부품 교체 시 더욱 용통성을 발휘할 수 있도록 하기 위해 고객 셀프 수리(CSR) 부품을 다량 사용하여 설계되었습니다. 진단 기간 동안 Hewlett Packard Enterprise(또는 Hewlett Packard Enterprise 서비스 공급업체 또는 서비스 협력업체)에서 CSR 부품을 사용하여 수리가 가능하다고 판단되면 Hewlett Packard Enterprise는 해당 부품을 바로 사용자에게 보내어 사용자가 교체할 수 있도록 합니다. CSR 부품에는 두 가지 종류가 있습니다.

- **필수** - 고객 셀프 수리가 의무 사항인 필수 부품. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.
- **선택 사항** - 고객 셀프 수리가 선택 사항인 부품. 이 부품들도 고객 셀프 수리가 가능하도록 설계되었습니다. 하지만 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 사용자가 구입한 제품에 해당하는 보증 서비스 유형에 따라 추가 비용 없이 교체가 가능할 수 있습니다.

참고: 일부 Hewlett Packard Enterprise 부품은 고객 셀프 수리가 불가능하도록 설계되었습니다. Hewlett Packard Enterprise는 만족스러운 고객 보증을 위해 공인 서비스 제공업체를 통해 부품을 교체하도록 하고 있습니다. 이러한 부품들은 Illustrated Parts Catalog에 “No”라고 표시되어 있습니다.

CSR 부품은 재고 상태와 지리적 조건이 허용하는 경우 다음 영업일 납품이 가능하도록 배송이 이루어집니다. 지리적 조건이 허용하는 경우 추가 비용이 청구되는 조건으로 당일 또는 4시간 배송이 가능할 수도 있습니다. 도움이 필요하시면 Hewlett Packard Enterprise Support Center로 전화하십시오. 전문 기술자가 전화로 도움을 줄 것입니다. Hewlett Packard Enterprise는 결함이 발생한 부품을 Hewlett Packard Enterprise로 반환해야 하는지 여부를 CSR 교체 부품과 함께 배송된 자료에 지정합니다. 결함이 발생한 부품을 Hewlett Packard Enterprise로 반환해야 하는 경우에는 지정된 기간 내(통상 영업일 기준 5일)에 Hewlett Packard Enterprise로 반환해야 합니다. 이때 결함이 발생한 부품은 제공된 포장 재료에 넣어 관련 설명서와 함께 반환해야 합니다. 결함이 발생한 부품을 반환하지 않는 경우 Hewlett Packard Enterprise가 교체 부품에 대해 비용을 청구할 수 있습니다. 고객 셀프 수리의 경우, Hewlett Packard Enterprise는 모든 운송 및 부품 반환 비용을 부담하며 이용할 운송업체 및 택배 서비스를 결정합니다.

Hewlett Packard Enterprise CSR 프로그램에 대한 자세한 내용은 가까운 서비스 제공업체에 문의하십시오.

부품 제공 보증 서비스

Hewlett Packard Enterprise 제한 보증에는 부품 제공 보증 서비스가 포함될 수 있습니다. 이러한 경우 Hewlett Packard Enterprise는 부품 제공 보증 서비스의 조건에 따라 교체 부품만을 무료로 제공합니다.

부품 제공 보증 서비스 제공 시 CSR 부품 교체는 의무 사항입니다. 사용자가 Hewlett Packard Enterprise에 이 부품의 교체를 요청할 경우 이 서비스에 대한 출장비 및 작업비가 청구됩니다.



Removal and replacement procedures

This chapter provides detailed instructions on how to remove and replace component spare parts.

Safety considerations

Before performing service procedures, review all the safety information.

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 ± 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.

Symbols on equipment

The following symbols might be found on the equipment to indicate the presence of potentially hazardous conditions.



This symbol indicates the presence of hazardous energy circuits or electric shock hazards. Refer all servicing to qualified personnel.

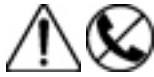
WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure. Refer all maintenance, upgrades, and servicing to qualified personnel.



This symbol indicates the presence of electric shock hazards. The area contains no user or field serviceable parts. Do not open for any reason.

WARNING: To reduce the risk of injury from electric shock hazards, do not open this enclosure.





This symbol on an RJ-45 receptacle indicates a network interface connection.

WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into this receptacle.



This symbol indicates the presence of a hot surface or hot component. If this surface is contacted, the potential for injury exists.

WARNING: To reduce the risk of injury from a hot component, allow the surface to cool before touching.



This symbol indicates that the component exceeds the recommended weight for one individual to handle safely.

WARNING: To reduce the risk of personal injury or damage to the equipment, observe local occupational health and safety requirements and guidelines for manual material handling.



These symbols, on power supplies or systems, indicate that the equipment is supplied by multiple sources of power.

WARNING: To reduce the risk of injury from electric shock, remove all power cords to disconnect power from the system completely.

Rack warnings and cautions



WARNING: When all components are removed, the server weighs 21 kg (46.30 lb). When all components are installed, the server can weigh up to 41 kg (90.39 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 21 kg (46.30 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 stabilized 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, observe the following precautions:

- The leveling jacks are extended to the floor.
- The full weight of the rack rests on the leveling jacks.
- The stabilizing feet are attached to the rack if it is a single-rack installation.
- The racks are coupled together in multiple-rack installations.



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

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



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



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

- You must fully understand the static and dynamic load carrying capacity of the rack and be sure that it can accommodate the weight of the server.
- Be sure sufficient clearance exists for cabling, installation and removal of the server, and movement of the rack doors.



IMPORTANT: The HPE ProLiant ML350 Gen10 Server cable management arm is not supported on Compaq-branded 7000 series racks.

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.

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

AVERTISSEMENT: Pour réduire les risques d'incendie ou de brûlures après le retrait du module batterie :

- N'essayez pas de démonter, d'écraser ou de percer le module batterie.
- Ne court-circuitiez pas ses contacts externes.
- Ne jetez pas le module batterie dans le feu ou dans l'eau.

Après avoir déconnecté l'alimentation, une tension peut subsister dans la batterie durant 1 à 160 secondes.



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



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



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



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

Preparation procedures

To access components and perform certain upgrade, maintenance, or service procedure, you must perform one or more of the procedures described in this section.

Prerequisites

Before powering down the server for an upgrade, maintenance, or service procedure, perform a backup of critical server data and programs.

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 initiates a controlled shutdown of applications and the OS before the server enters standby mode.

- Press and hold the Power On/Standby button for more than 4 seconds to force the server to enter standby mode.

This method forces the server to enter standby mode without properly exiting applications and the OS. If an application stops responding, you can use this method to force a shutdown.

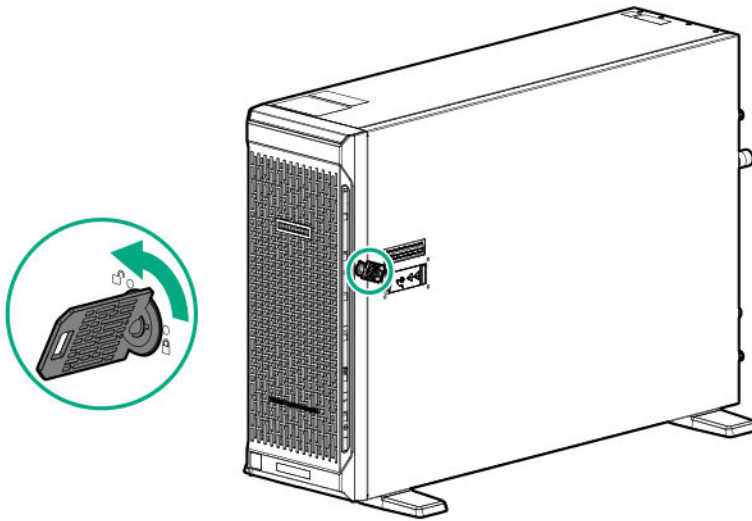
- Use a virtual power button selection through iLO 5.

This method initiates a controlled remote shutdown of applications and the OS before the server enters standby mode.

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

Unlock the front bezel

While pressing the key against the lock, rotate the key to the unlock position.

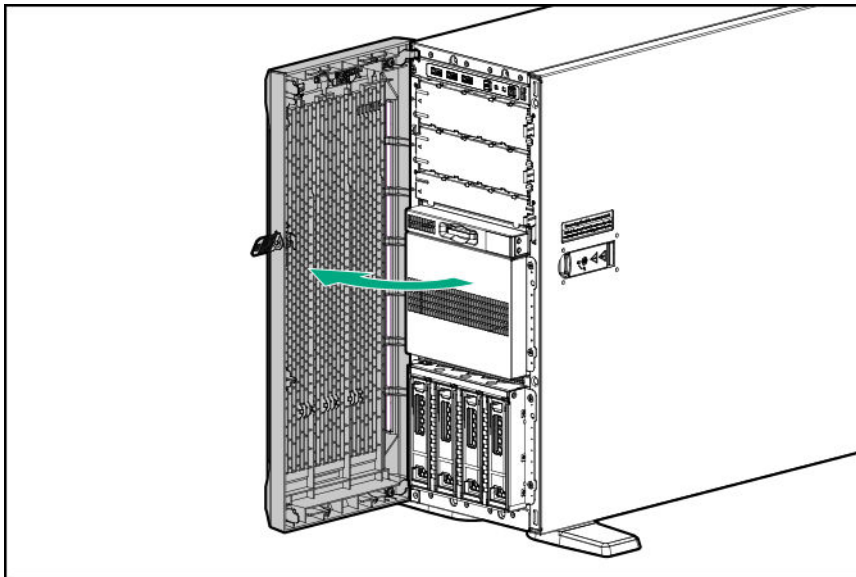


Open the front bezel

Procedure

1. Unlock the front bezel.
2. Open the front bezel.

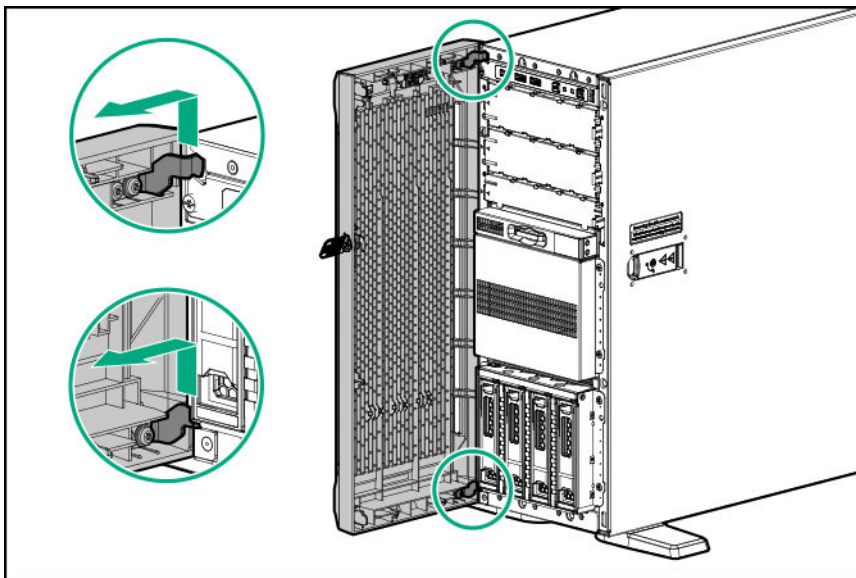




Remove the front bezel

Procedure

1. **Unlock the front bezel.**
2. **Open the front bezel.**
3. Release the bezel hinges from the chassis.

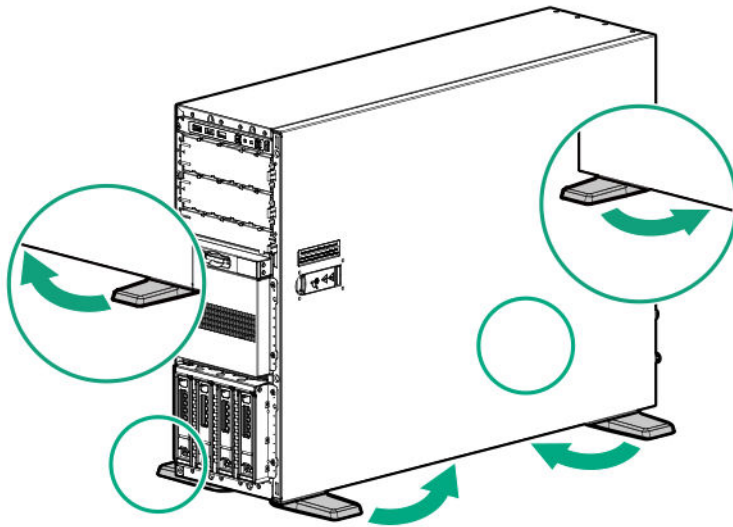


Position the tower server for hardware configuration

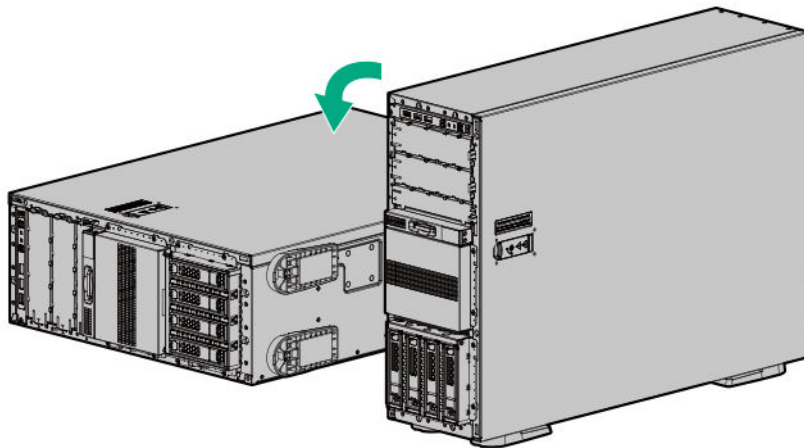
Procedure

1. Rotate the chassis feet inward.





2. Place the server on a flat, level surface with the access panel facing up.



Extend the server from the rack

Procedure

1. If the rear panel cables are not secured by a cable management arm, do the following:
 - a. **Power down the server.**
If you are physically powering down the server, **open the front bezel to access the power button**. Close the bezel after the server is powered down.
 - b. Disconnect all peripheral cables from the server.
 - c. Disconnect each power cord from the server.

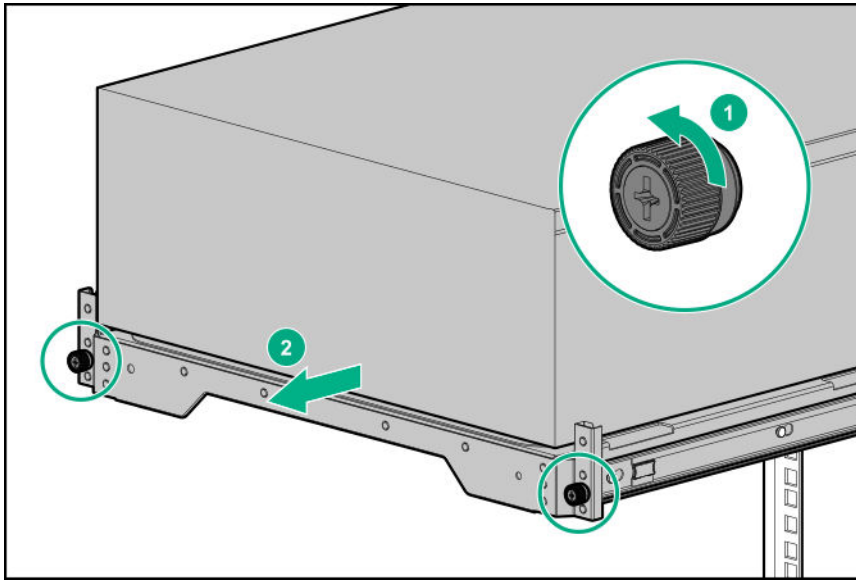


WARNING: To reduce the risk of personal injury or equipment damage, be sure that the rack is adequately stabilized before extending a component from the rack.

2. Slide the server tray out of the rack:

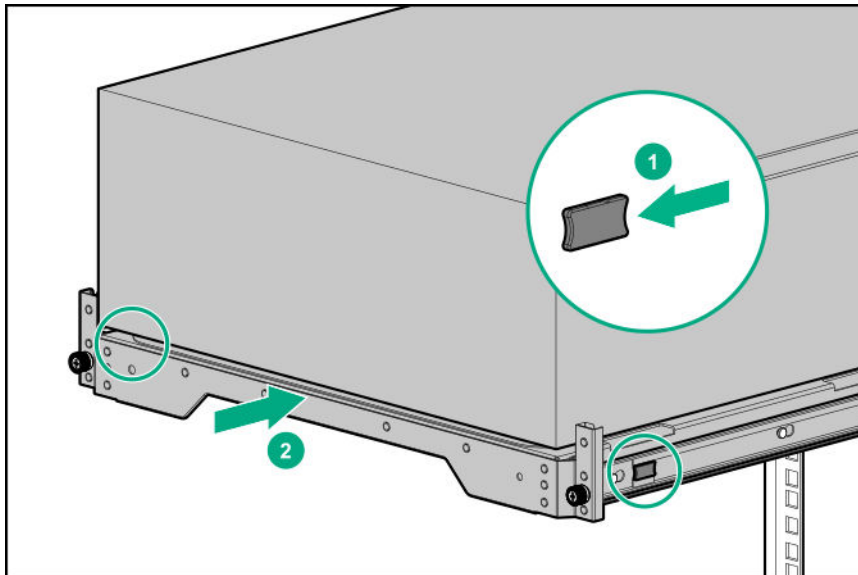


- a. Loosen the server tray thumbscrews.
- b. Grasp the tray notch to slide the server out of the rack.

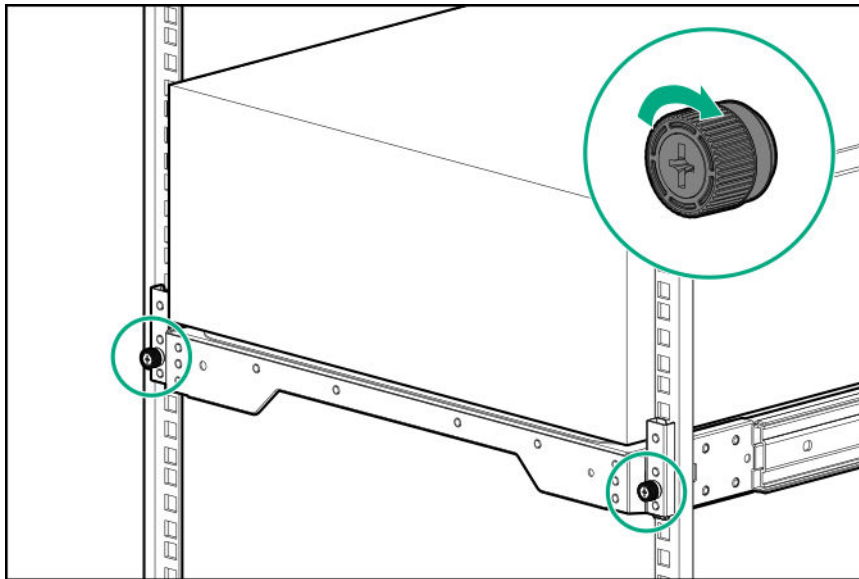


WARNING: To reduce the risk of personal injury, be careful when pressing the server rail-release latches and sliding the server into the rack. The sliding rails could pinch your fingers.

3. After performing the installation or maintenance procedure, slide the server tray into the rack:
 - a. Press and hold the blue release latches on both rails, and then slide the server tray back into the rack.



- b. Tighten the server tray thumbscrews.



4. If the rear panel cables were disconnected because a cable management arm is not in use, do the following:
 - a. Connect each power cord to the server.
 - b. Connect all peripheral cables to the server.
 - c. **Power up the server.**

Remove the server from the rack



WARNING: This server is heavy. To reduce the risk of personal injury or damage to the equipment:

- 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. Hewlett Packard Enterprise recommends that a minimum of two people are required for all rack server installations. A third 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; it is unstable when not fastened to the rails.

Prerequisites

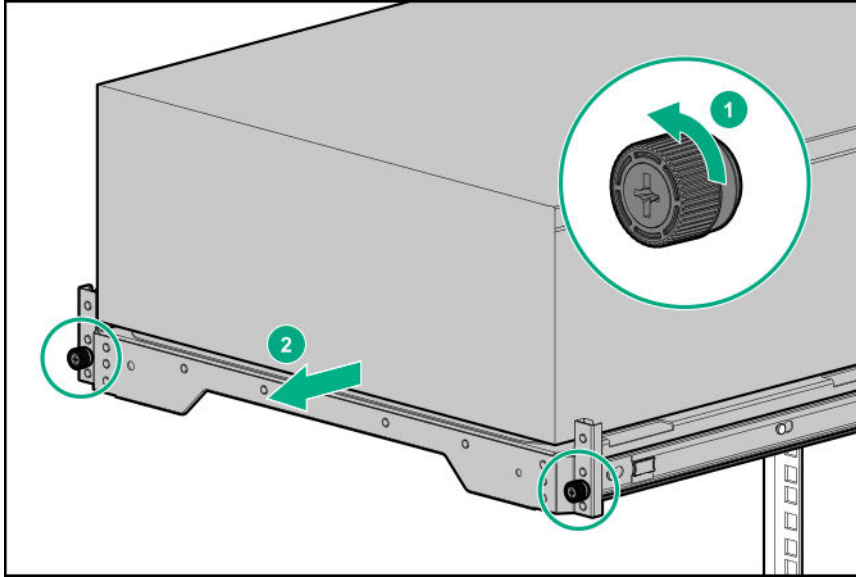
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

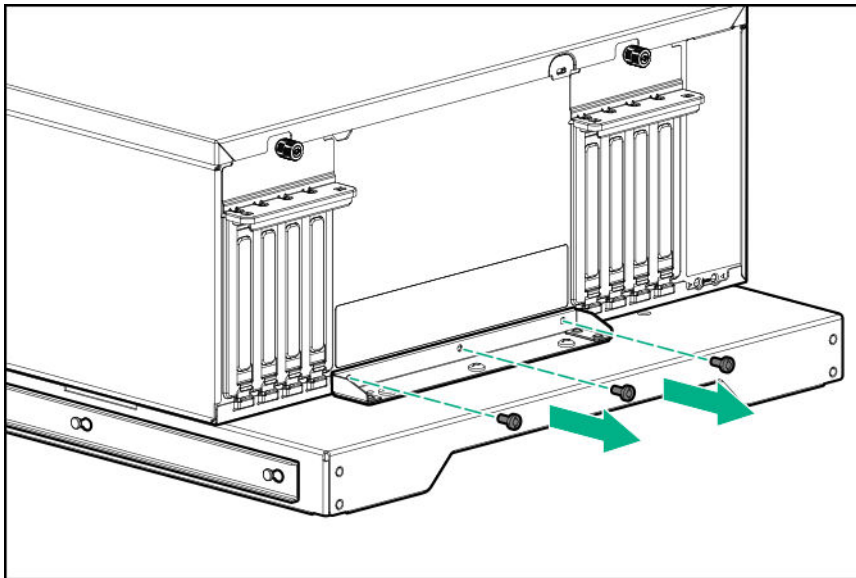
1. **Power down the server.**
2. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
3. Disconnect all peripheral cables from the server.



4. If installed, unlock and remove the security padlock and/or the Kensington security lock.
For more information, see the lock documentation.
5. Slide the server tray out of the rack:
 - a. Loosen the server tray thumbscrews.
 - b. Grasp the tray notch to slide the server out of the rack.

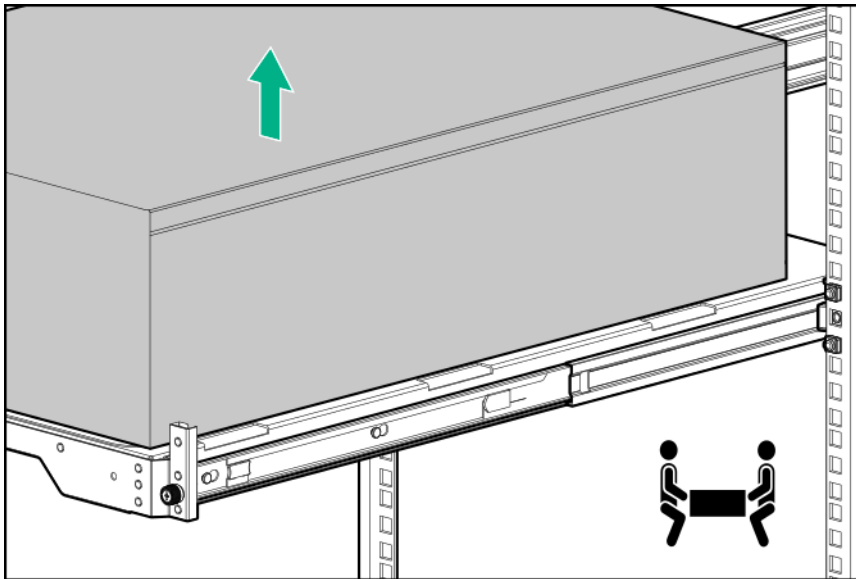


6. Remove the chassis rear bracket screws.



7. Remove the server from the tray.





8. Place the server on a flat, level surface with access panel facing up.

Remove the access panel

-
- ⚠ WARNING:** To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.
-
- ⚠ CAUTION:** To prevent damage to electrical components, take the appropriate anti-static precautions before beginning any installation, removal, or replacement procedure. Improper grounding can cause electrostatic discharge.
-
- ⚠ CAUTION:** Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.
-

Prerequisites

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

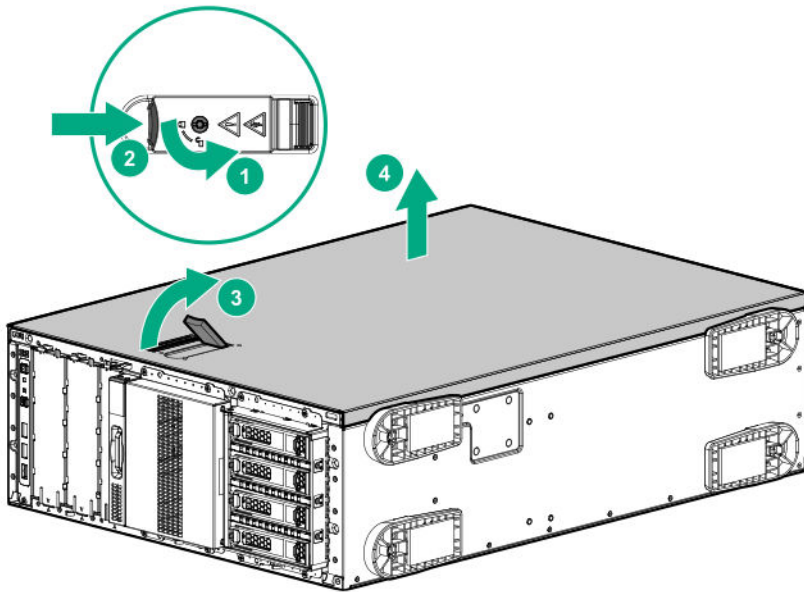
Procedure

1. **Remove the front bezel.**
2. **Power down the server.**
3. If you are removing the access panel as part of a non-hot-plug installation or maintenance procedure, remove all power from the server:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
 - c. Disconnect all peripheral cables from the server.
4. If installed, unlock and remove the security padlock and/or the Kensington security lock.

For more information, see the lock documentation.



5. If the front bezel key is hanging from the padlock eye, remove the key.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. Remove the access panel:
 - a. If necessary, unlock the access panel latch.
 - b. Press the release button and pull up the latch to disengage the access panel from the chassis.
 - c. Lift up the rear side of the access panel to remove the panel from the chassis.



Remove the air baffle



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

Procedure

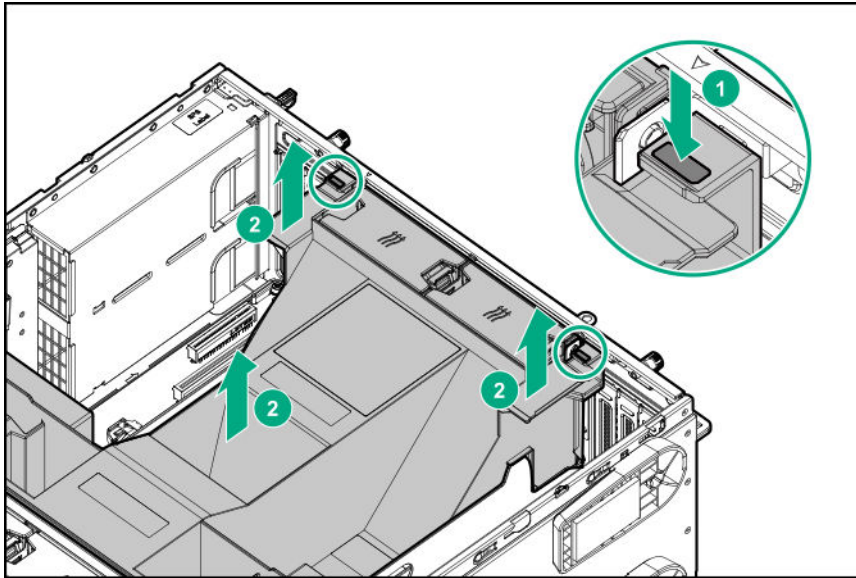
1. **Remove the front bezel.**
2. **Power down the server.**
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:



- Server in tower mode: **Position the tower server for hardware configuration.**
- Server in rack mode: **Extend the server from the rack.**

6. Remove the access panel.

7. While pressing the blue air baffle latches, lift up the baffle from the chassis.



Remove the fan cage

Procedure

1. Remove the front bezel.

2. Power down the server.

3. Remove all power:

- Disconnect each power cord from the power source.
- Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. Do one of the following:

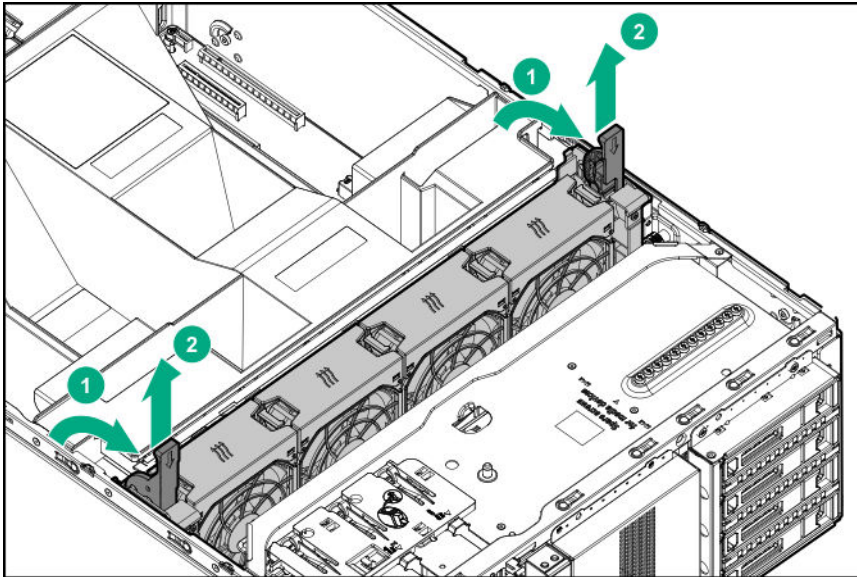
- Server in tower mode: **Position the tower server for hardware configuration.**
- Server in rack mode: **Extend the server from the rack.**

6. Remove the access panel.

7. Remove the fan cage:

- Open the blue latches to a 90° angle.
- Use the latches to pull up the fan cage out of the chassis.

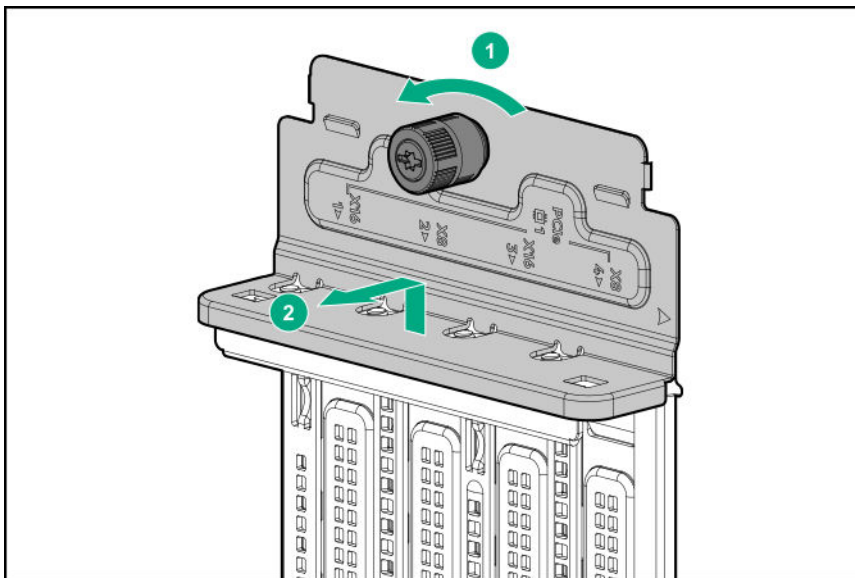




Remove the PCI blank retainer

Procedure

1. Perform the pre-removal steps required by the standup plug-in board removal or replacement procedure.
2. Remove the PCI blank retainer:
 - a. Loosen the retainer thumbscrew.
 - b. Slide the retainer up, then remove it from the chassis.



Power up the server

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

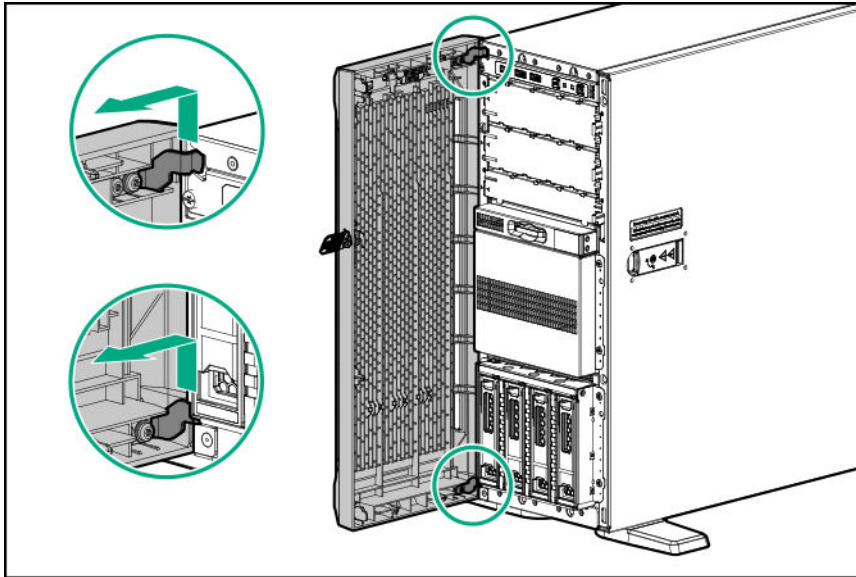


- Press the Power On/Standby button.
- Use the virtual power button through iLO.

Removing and replacing the front bezel

Procedure

1. **Unlock the front bezel.**
2. **Open the front bezel.**
3. Release the bezel hinges from the chassis.



To replace the component, reverse the removal procedure.

Removing and replacing drives

Removing and replacing an LFF non-hot-plug drive

Prerequisites

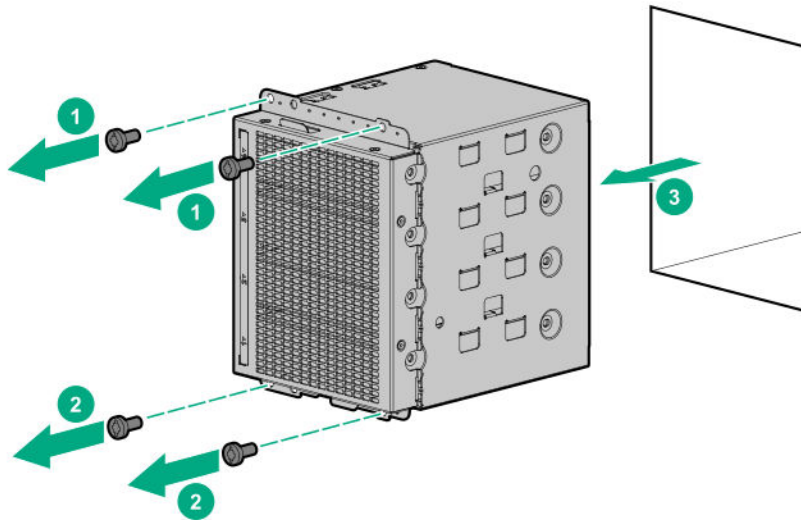
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

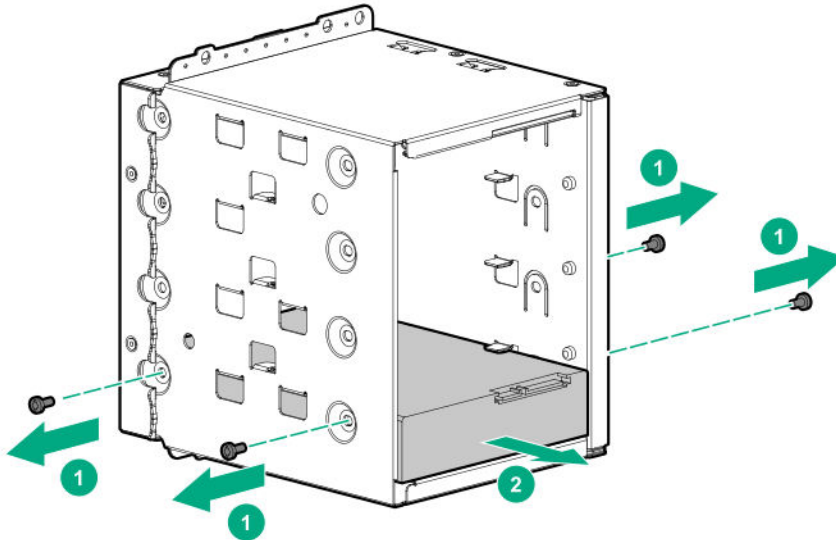
1. Back up all server data on the drive.
2. **Remove the front bezel.**
3. **Power down the server.**
4. Remove all power:



- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the air baffle.**
9. If installed, **remove the fan cage.**
10. Remove the non-hot-plug drive cage:
 - a. Disconnect the SATA-power split cables from the drives.
 - b. Remove the drive cage.



11. Remove the drive.



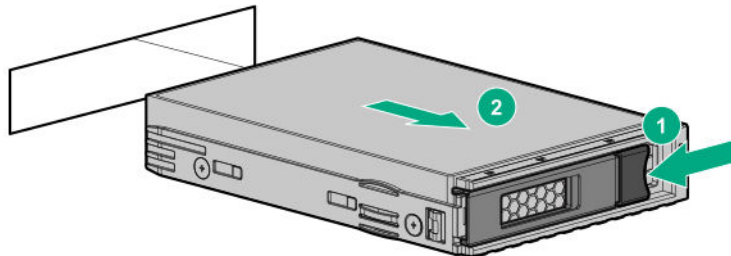
To replace the component, reverse the removal procedure.

Removing and replacing an LFF hot-plug drive

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. Back up all server data on the drive.
2. **Open the front bezel.**
3. **Determine the status of the drive from the drive LED definitions.**
4. Remove the drive.



To replace the component, reverse the removal procedure.

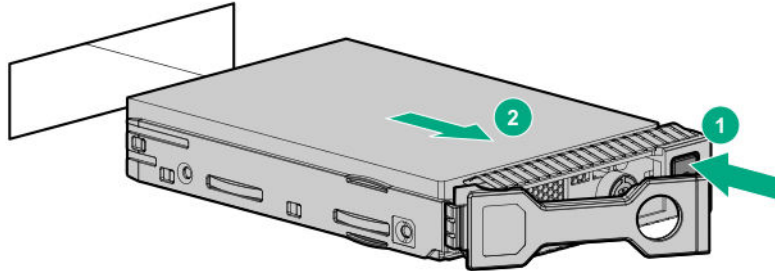
Removing and replacing an SFF hot-plug drive

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. Back up all server data on the drive.
2. **Open the front bezel.**
3. **Determine the status of the drive from the drive LED definitions.**
4. Remove the drive.



To replace the component, reverse the removal procedure.

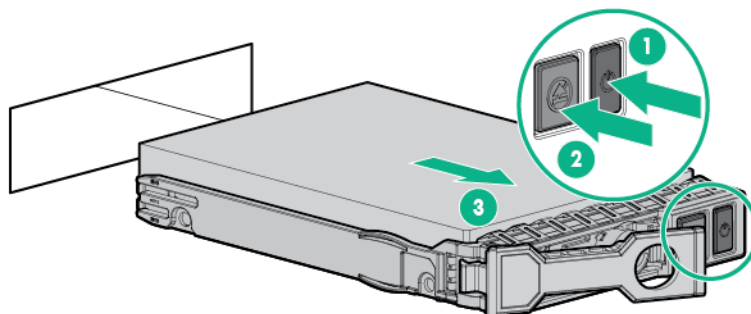
Removing and replacing an NVMe SSD

An NVMe SSD is a PCIe bus device. Devices attached to a PCIe bus cannot be removed without allowing the device and the bus to complete and cease signal/traffic flow.

Procedure

1. Back up all server data on the drive.
2. **Open the front bezel.**
3. **Observe the LED status of the drive** and determine if it can be removed.

Wait until the flashing stops and the Do Not Remove button is no longer illuminated.
4. Remove the drive:
 - a. Press the Power button.
The Do Not Remove LED flashes white.
 - b. Press the Do Not Remove button.
 - c. Remove the drive.



To replace the component, reverse the removal procedure.

Removing and replacing the drive cage blank

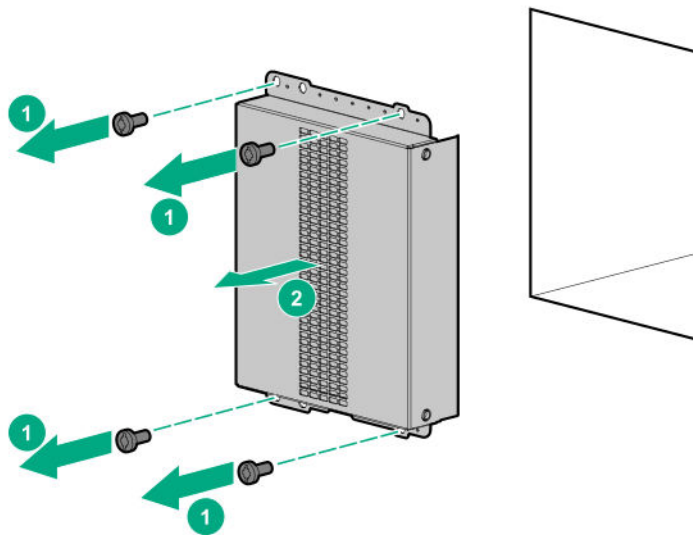
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

Prerequisites

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

Procedure

1. Open the front bezel.
2. Remove the drive cage blank from box 2 or 3.



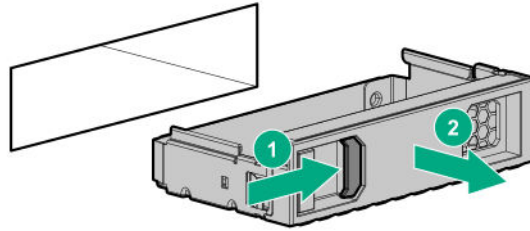
To replace the component, reverse the removal procedure.

Removing and replacing drive blanks

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.

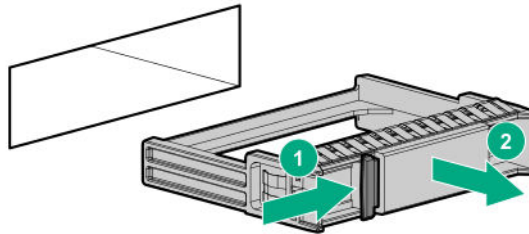
Procedure

1. Open the front bezel.
2. Remove the drive blank:
 - LFF drive blank



To replace the LFF drive blank, slide the blank into the bay until it clicks into place.

- SFF drive blank



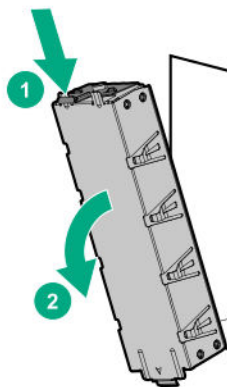
To replace the SFF drive blank, while pressing the release latch, slide the component into the bay until it is fully seated.

Removing and replacing the half-height media bay blank

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. **Open the front bezel.**
2. While pressing the latch on the optical drive blank, pull out the blank from the bay.



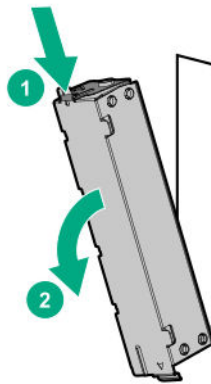
To replace the component, insert the tab on the blank into the slot on the media bay.

Removing and replacing the optical drive blank

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. **Open the front bezel.**
2. While pressing the latch on the optical drive blank, pull out the blank from the bay.



To replace the component, insert the tab on the blank into the slot on the optical drive bay.

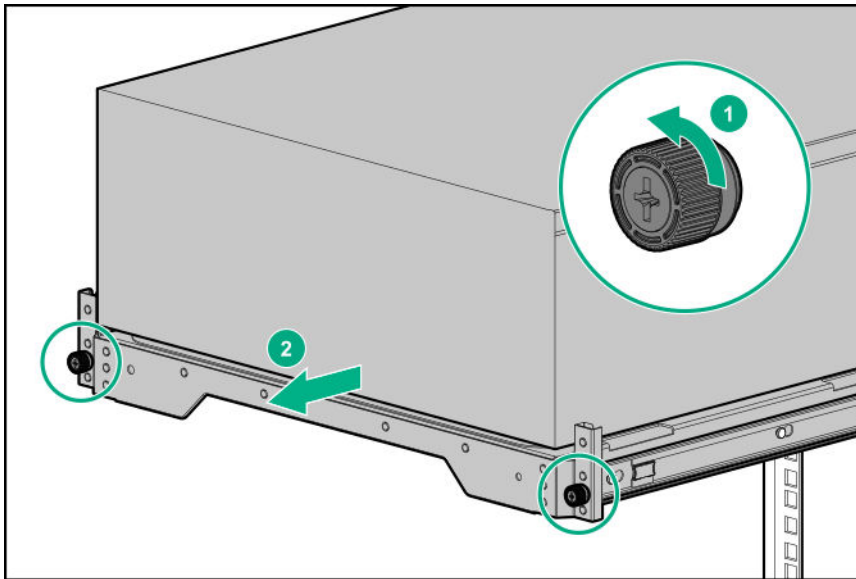
Removing and replacing the cable management arm

CAUTION: Support the CMA during the removal/replacement procedure. Do not allow the CMA to hang by its own weight during the procedure.

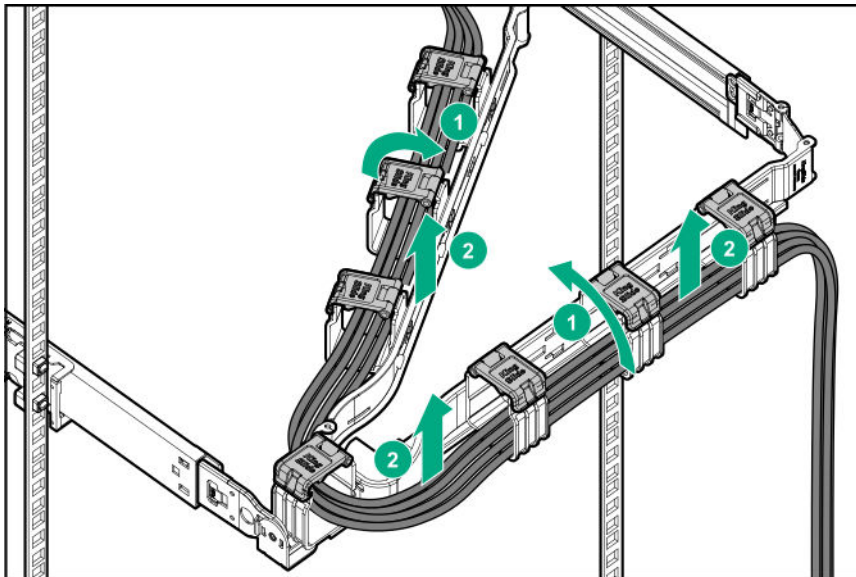
Procedure

1. Slide the server tray out of the rack:
 - a. Loosen the server tray thumbscrews.
 - b. Grasp the tray notch to slide the server out of the rack.

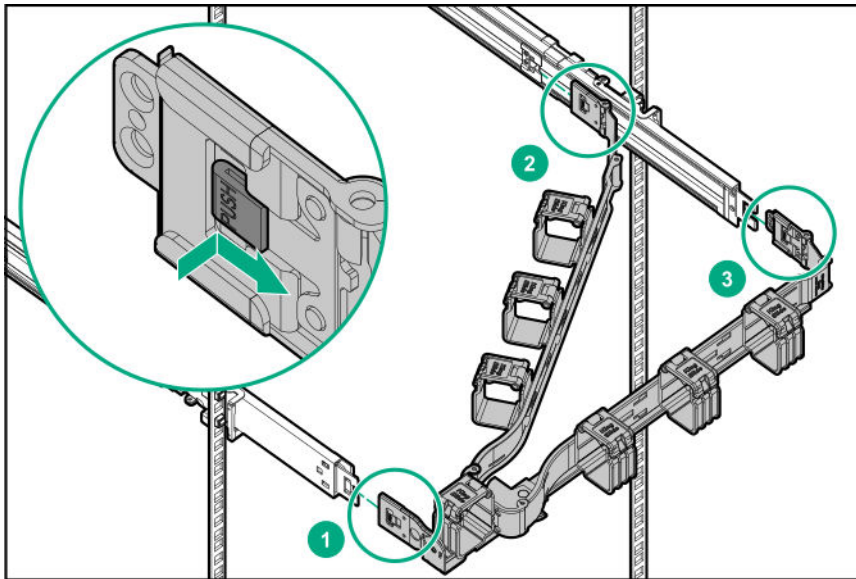




2. Open the cable clamps and remove the cables routed through the CMA.



3. Remove the CMA from the rack:
 - a. Press the latch on the outer rail of the right CMA and slide out the CMA arm.
 - b. Press the blue latch on the left inner and outer rails of the CMA , and then slide out the CMA.



To replace the component, reverse the removal procedure.

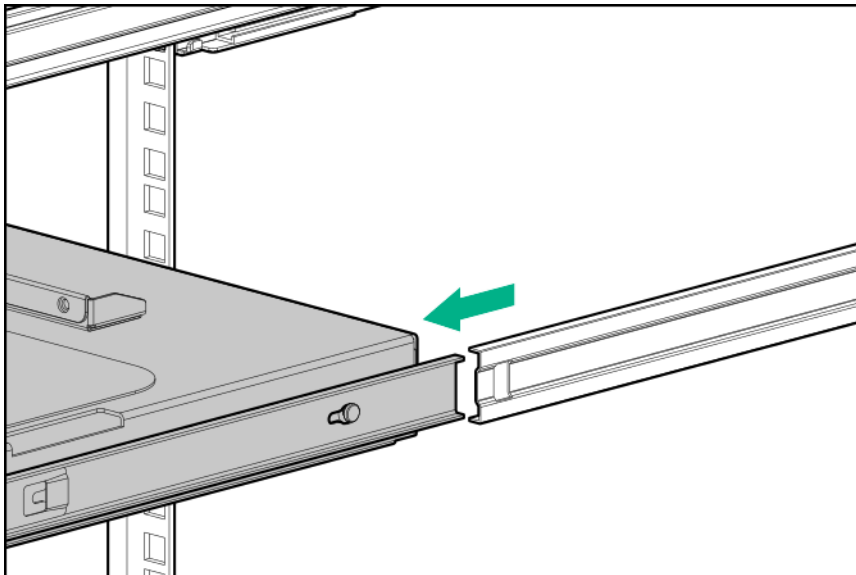
Removing and replacing the rack rails

Prerequisites

If you are replacing a rack mounting rail and the rear shipping screws are installed, make sure that you have a Phillips No. 2 screwdriver available.

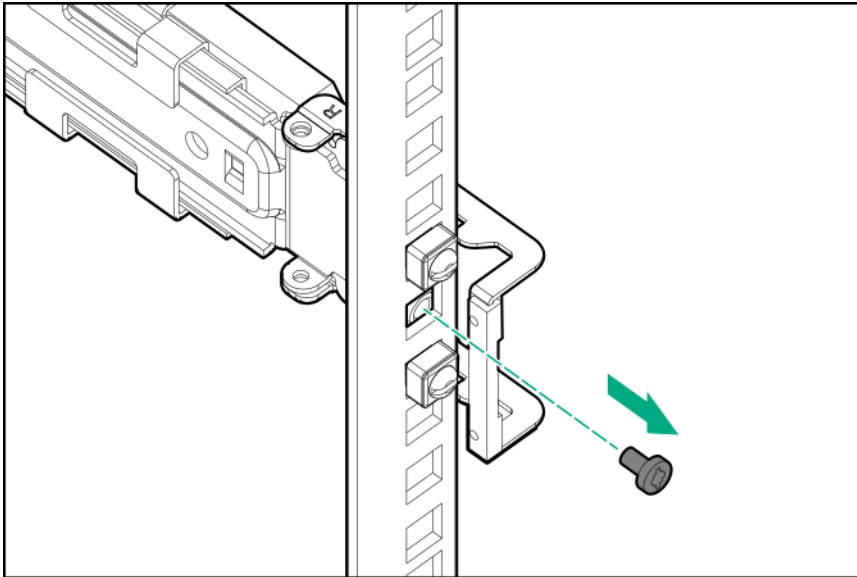
Procedure

1. **Remove the server from the rack.**
2. Slide out the server tray from the rack.

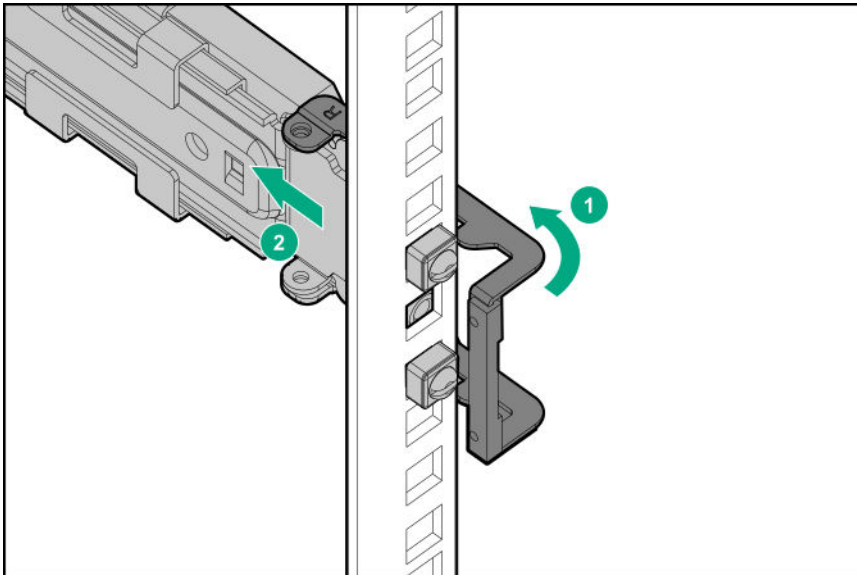


3. If you are replacing a rack mounting rail, do the following:
 - a. If installed, remove the shipping screw from the rear rack column.



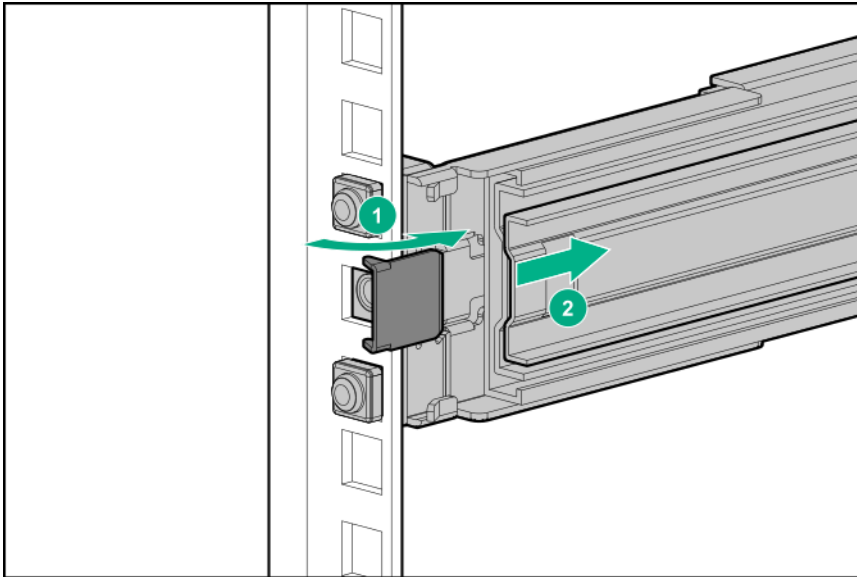


- b.** Retract and hold the rear retention bracket.
- c.** Slide out the rear end of the rail to disengage it from the rear rack column.



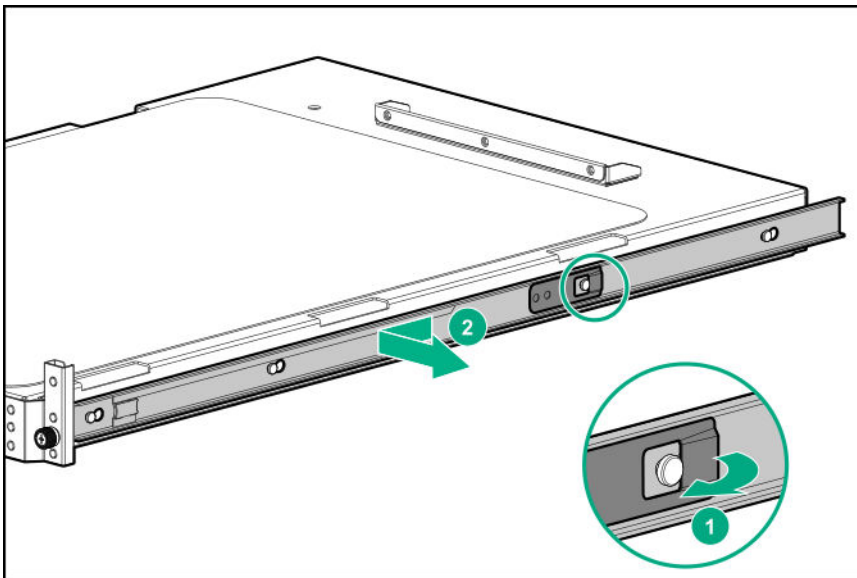
- d.** Retract and hold the front retention bracket.
- e.** Slide out the front end of the rail to disengage it from the front rack column.





4. If you are replacing a rack sliding rail, do the following:

- a. Slightly pull the rail latch to unlock the rail.
- b. Slide the rail towards the front to disengage it from the alignment pins on the server tray, and then remove the rail from the server tray.



To replace the component, reverse the removal procedure.

Removing and replacing a Flexible Slot power supply



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



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



CAUTION: Mixing different types of power input modules 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 input modules in the same server should have the same output and efficiency ratings. Verify that all power input modules have the same part number and label color.

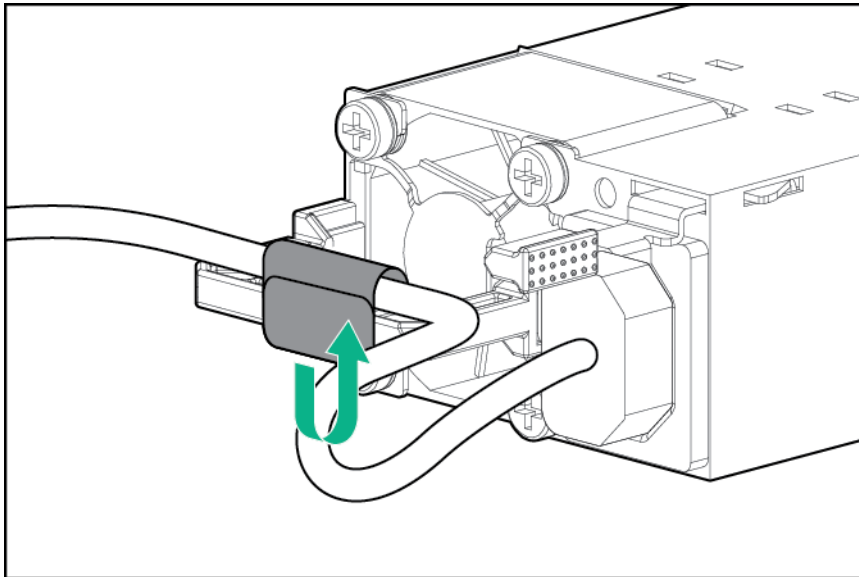
Procedure

1. If the server is using a single power supply, remove all power from the server:

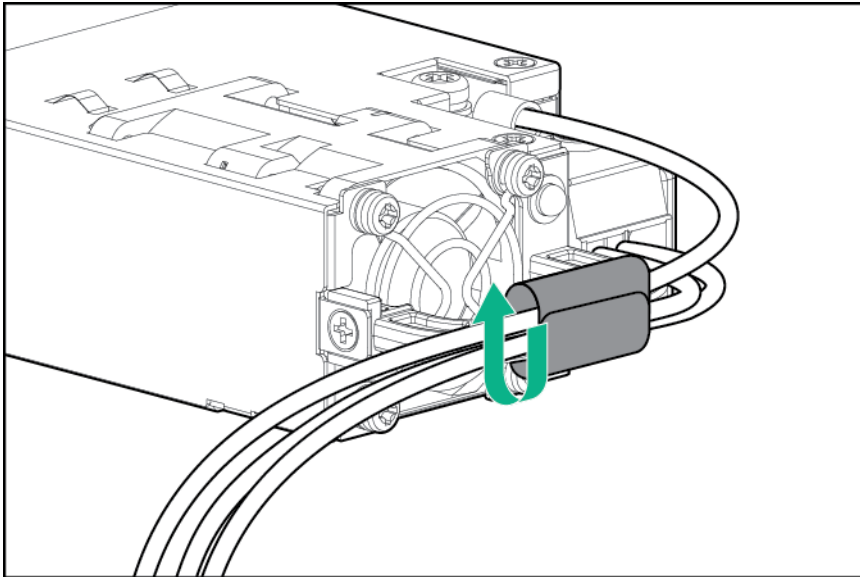
- a. Back up all server data.
- b. **Power down the server.**
- c. Disconnect all peripheral cables from the server.

2. Release the power cords, wires, and cables from the strain relief strap.

- AC power supply

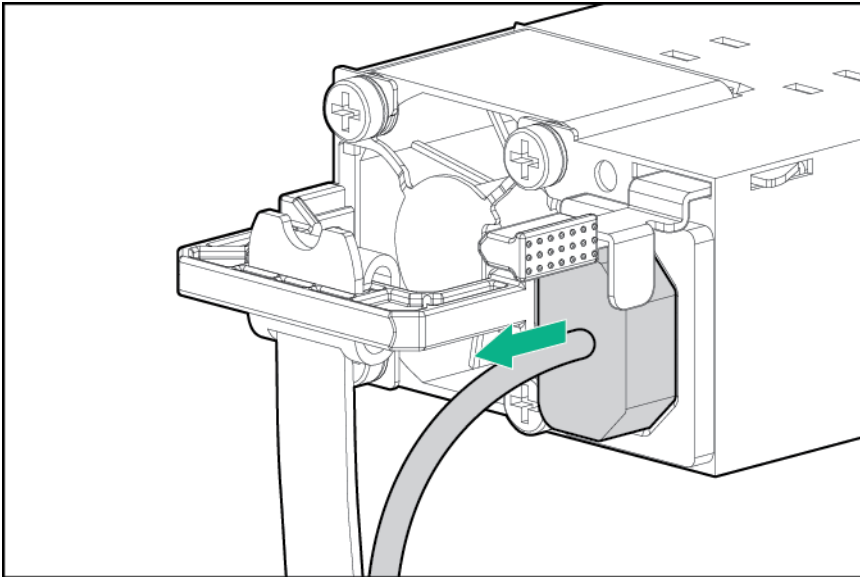


- DC power supply

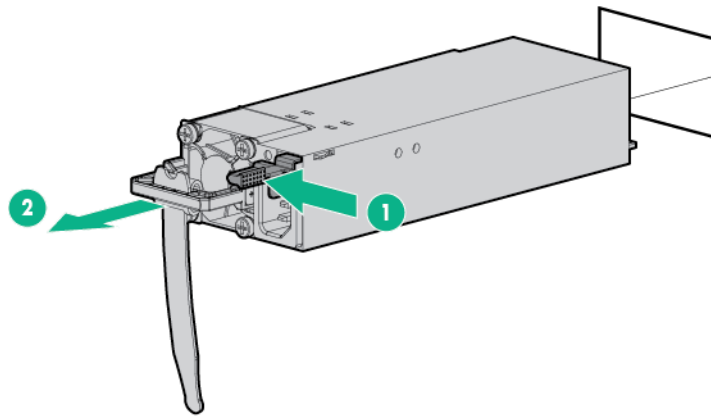


3. For an AC power supply, do the following:

- a.** Disconnect the power cord from the power supply.

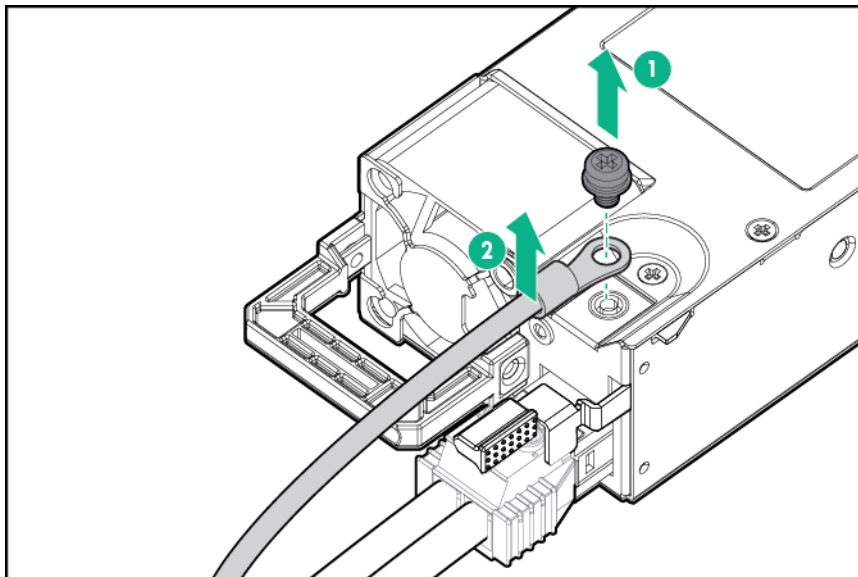


- b.** Remove the power supply.

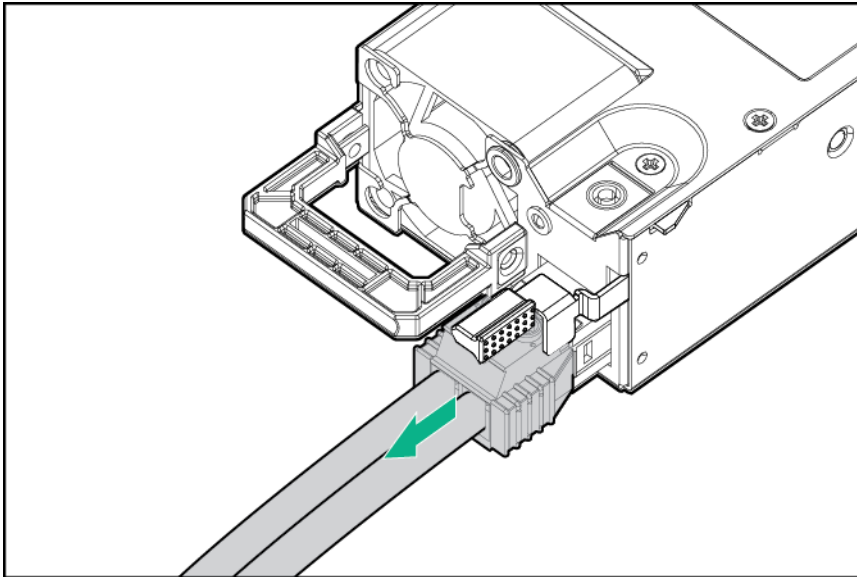


4. For a DC power supply, do the following:

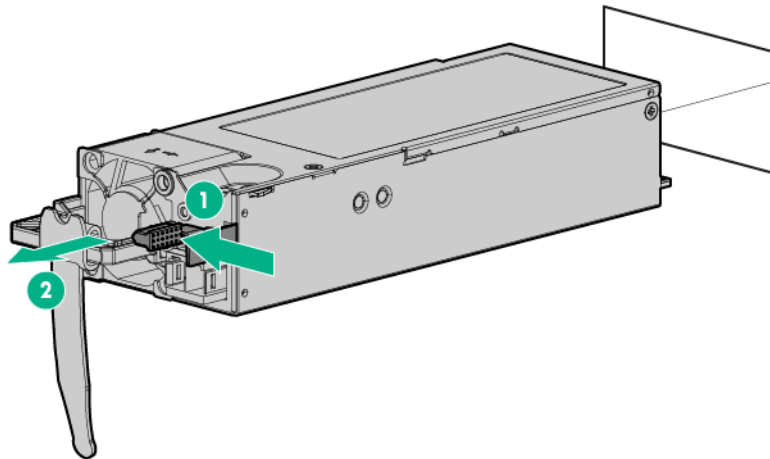
- a.** Slide the power supply out of the bay just enough to access the ground cable screw.
- b.** Detach the ground (earthed) cable from the power supply.



- c.** Remove the terminal block connector from the power supply.



d. Remove the power supply.



To replace the component, reverse the removal procedure.

Removing and replacing the non-hot-plug power supply

Prerequisites

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

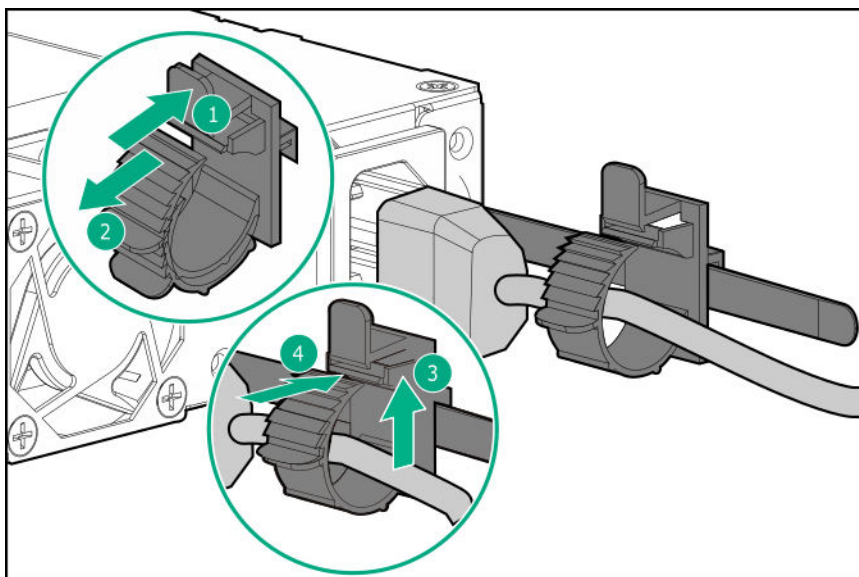


WARNING: To reduce the risk of personal injury from hot surfaces, allow the power supply and the power supply blank to cool before touching them.

Procedure

1. **Remove the front bezel.**
2. **Power down the server.**
3. Release the power cord from the strain relief clip.

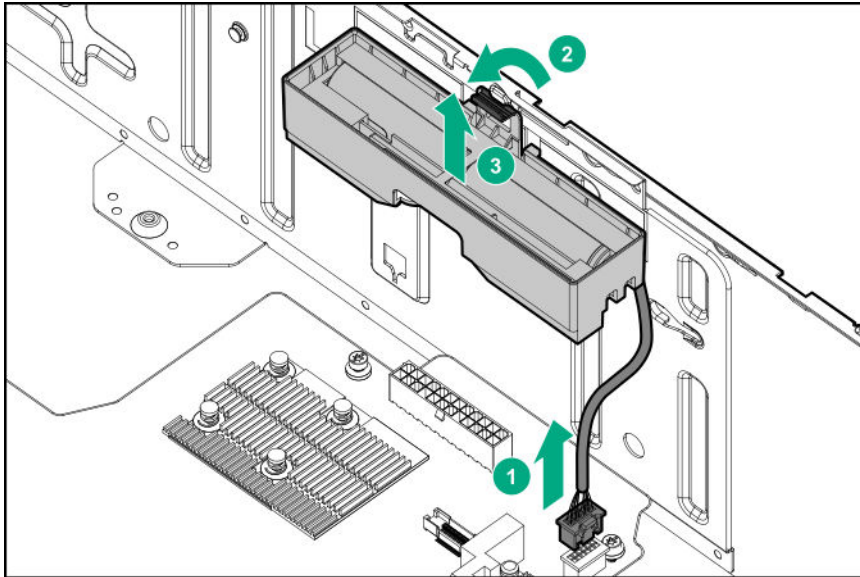




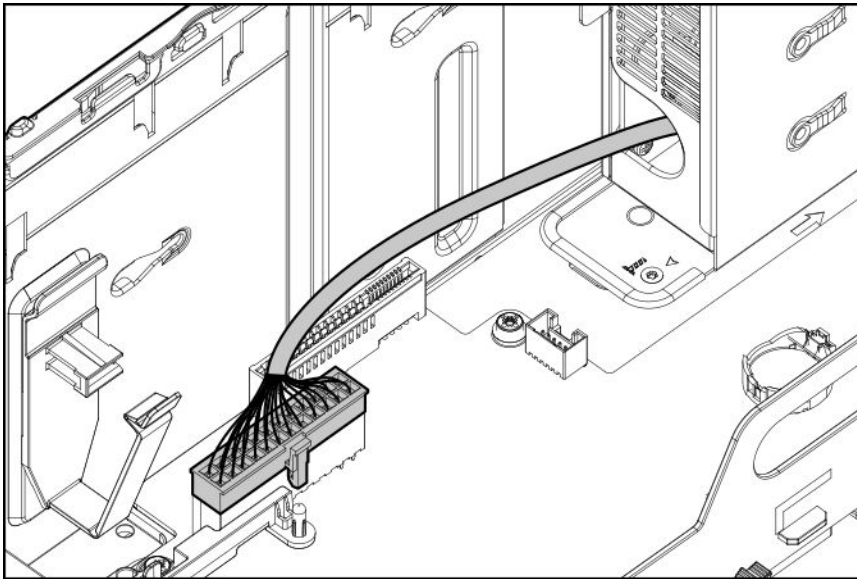
4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the air baffle.**
9. **Observe the guidelines for managing cables.**

⚠ CAUTION: The snap-in latch of the energy pack holder is flexible. However, to avoid damaging this latch, do not apply too much pressure on this latch when removing or installing the energy pack from the chassis.

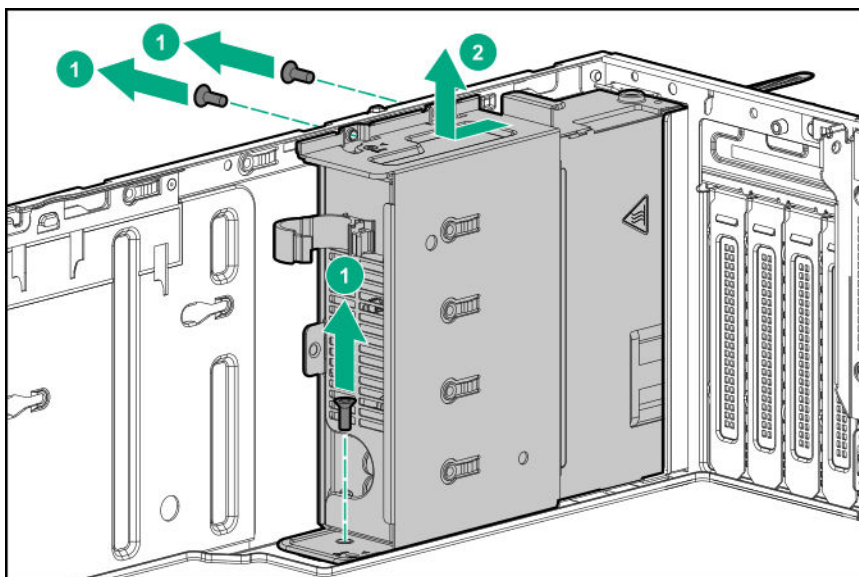
10. Remove the energy pack holder:
 - a. If an energy pack is installed, disconnect the energy pack cable.
 - b. While carefully holding the snap-in latch in the open position, slide the energy pack holder up to disengage it from the chassis.



- 11.** Disconnect the non-hot-plug power supply cable.



- 12.** Remove the non-hot-plug power supply.



To replace the component, reverse the removal procedure.

Removing and replacing the power supply blank



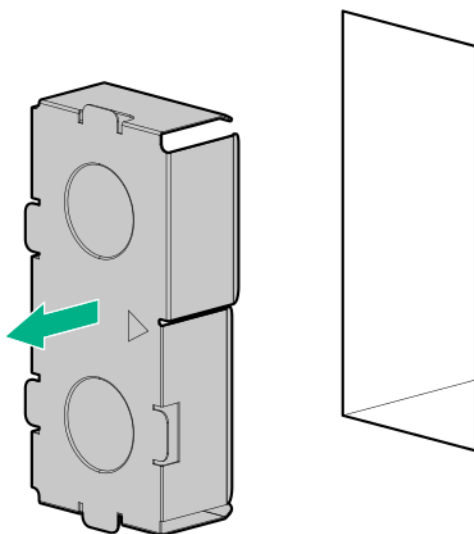
WARNING: To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.



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

Procedure

Remove the power supply blank.



To replace the component, reverse the removal procedure.

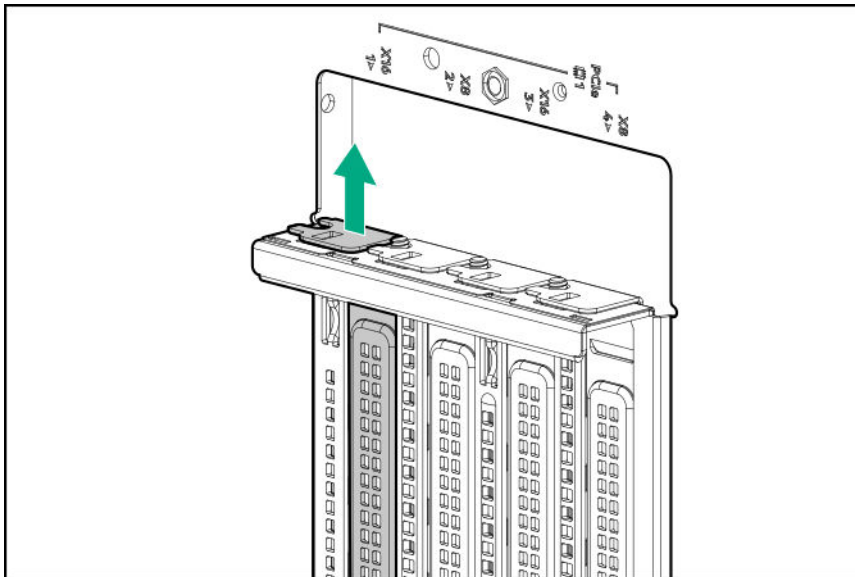


Removing and replacing a PCI slot blank

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

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the PCI blank retainer.**
8. Remove the PCI slot blank.



To replace the component, reverse the removal procedure.

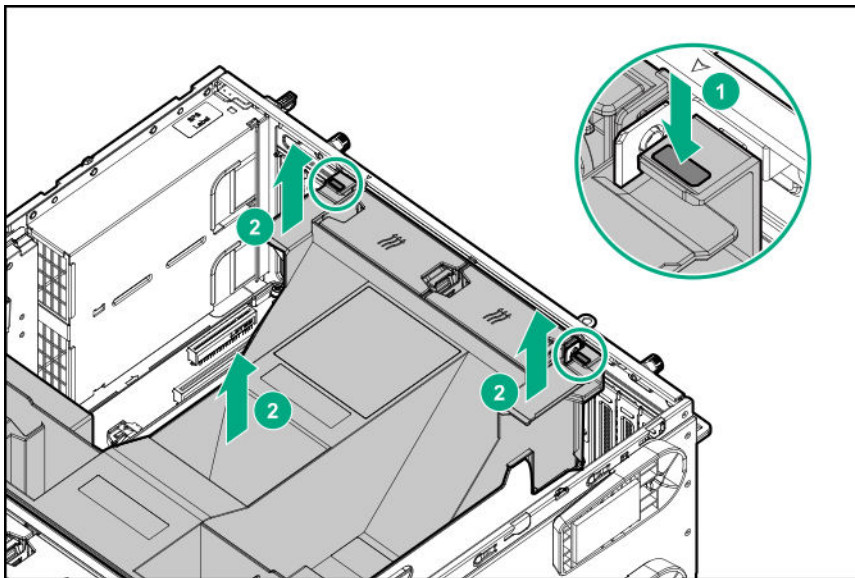


Removing and replacing the air baffle

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

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. While pressing the blue air baffle latches, lift up the baffle from the chassis.



To replace the component, reverse the removal procedure.

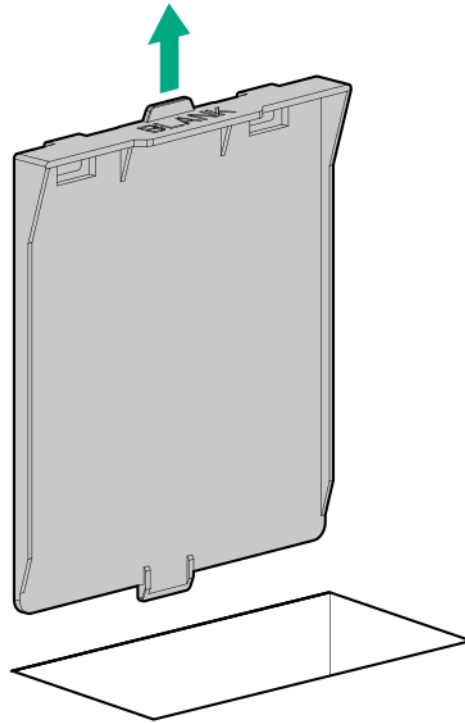
Removing and replacing a fan blank

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 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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. Remove the fan blank.



To replace the component, reverse the removal procedure.

Fan replacement

Fan population and hot-plug support

The number of fans installed in the server determines fan redundancy. When redundant fan mode is enabled, hot-plug fan operation is supported.



In this server, fan operation can either be one of the following:

- Hot-plug – A failed fan can be replaced without powering down the server
- Non-hot-plug – To replace a failed fan, the user must either:
 - Keep the server powered on and complete the fan replacement within 30 seconds of opening the access panel, or
 - Power down and disconnect all power from the server before removing the access panel for fan replacement.

Bay 1	Bay 2	Bay 3	Bay 4	Bay 5	Bay 6	Redundant hot-plug support
—	—	—	—	Fan	Fan	No
Blank	Fan	Fan	Fan	Fan	Fan	No
Fan	Fan	Fan	Fan	Fan	Fan	Yes

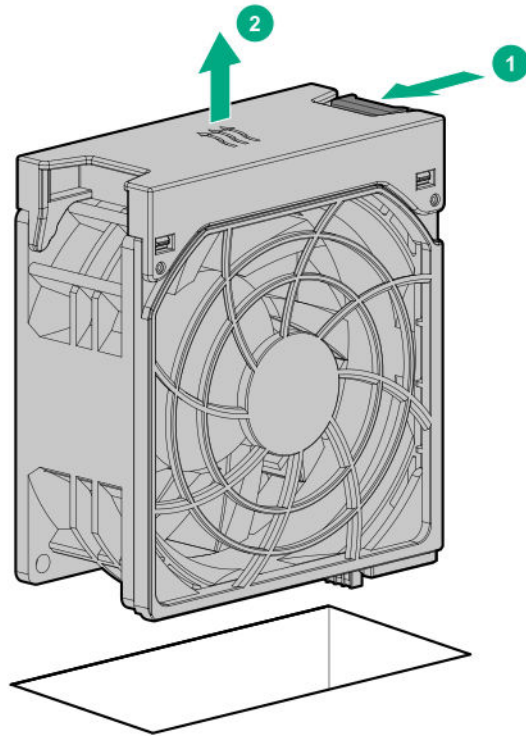
Removing and replacing a fan

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 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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. While pressing the fan release latch, pull up the fan from the bay.





To replace the component, reverse the removal procedure.

When installing the fan replacement, make sure that the fan clicks into place.

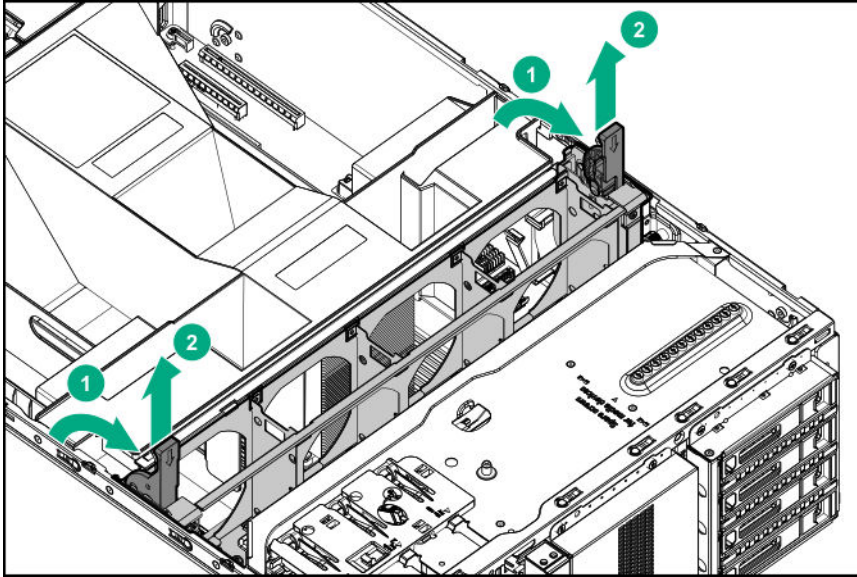
Removing and replacing the fan cage

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. If the blank is installed in fan bay 1, **remove the blank.**
8. **Remove the fans from the cage.**
9. Remove the fan cage:



- a. Open the blue latches to a 90° angle.
- b. Use the latches to pull up the fan cage out of the chassis.



CAUTION: To prevent system damage due to cables being inadvertently caught under the fan cage, make sure that all the system cables that are routed through the front cable channel are properly secured in the metal cable tabs before installing the fan cage replacement.

When replacing the component, reverse the removal procedure.

Removing and replacing media devices

Removing and replacing a SAS LTO tape drive

Prerequisites

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

Procedure

1. **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:



- Server in tower mode: **Position the tower server for hardware configuration.**
- Server in rack mode: **Extend the server from the rack.**

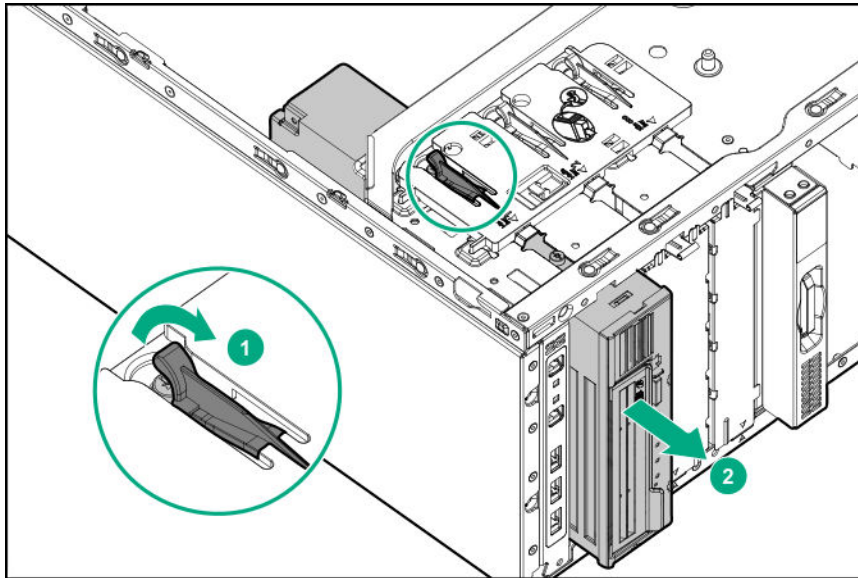
6. Remove the access panel.

7. Remove the air baffle.

8. Remove the fan cage.

9. Disconnect the SAS-power Y-cable from the LTO tape drive.

10. Pull up and hold the blue release latch, and then remove the LTO tape drive.



To replace the component, reverse the removal procedure.

Before installing the replacement LTO tape drive in the media bay, install the mounting screws included in the spare kit on the tape drive.

Removing and replacing a USB RDX drive

Prerequisites

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

Procedure

1. Remove the front bezel.

2. Power down the server.

3. Remove all power:

- Disconnect each power cord from the power source.
- Disconnect each power cord from the server.

4. Disconnect all peripheral cables from the server.

5. Do one of the following:



- Server in tower mode: **Position the tower server for hardware configuration.**
- Server in rack mode: **Extend the server from the rack.**

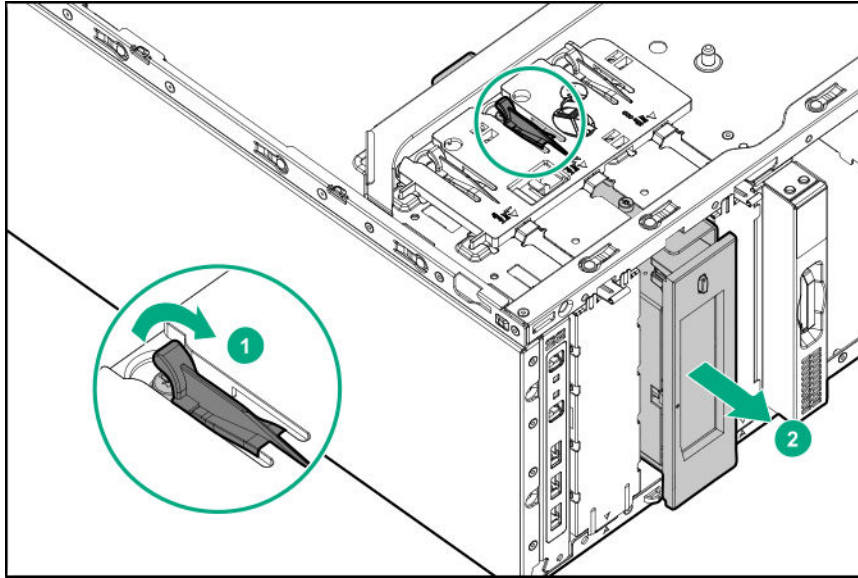
6. Remove the access panel.

7. Remove the air baffle.

8. If installed, remove the fan cage.

9. Disconnect the power and USB cables from the RDX drive.

10. Pull up and hold the blue release latch, and then remove the RDX drive.



To replace the component, reverse the removal procedure.

Before installing the replacement RDX drive in the media bay, install the mounting screws included in the spare kit on the RDX drive.

Removing and replacing a SATA optical drive

Prerequisites

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

- T-15 Torx screwdriver
- Phillips No. 1 screwdriver

Procedure

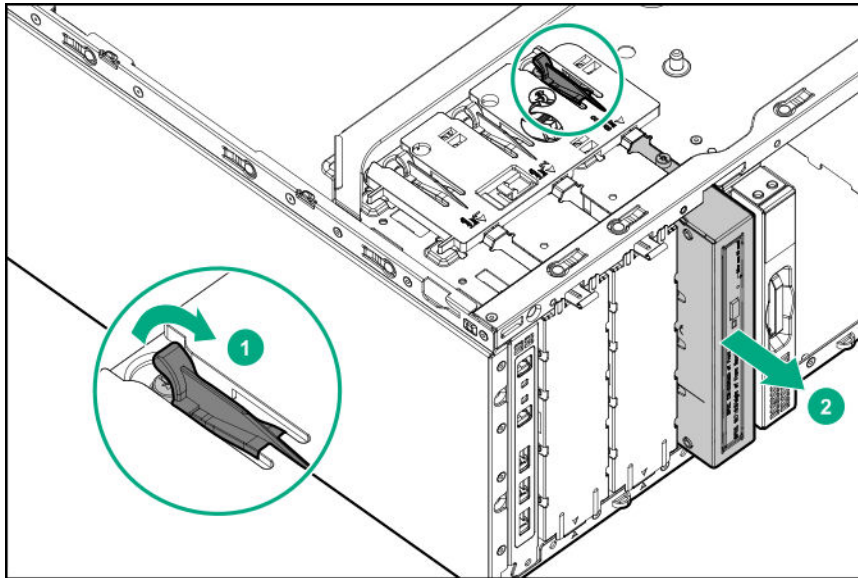
1. Remove the front bezel.

2. Power down the server.

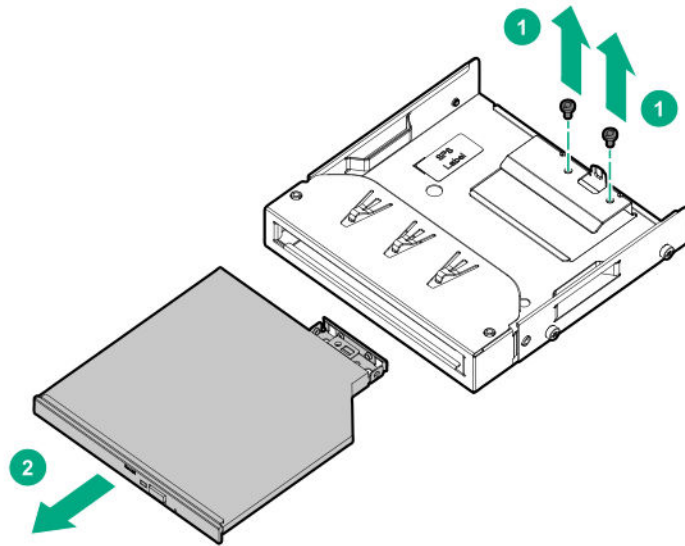
3. Remove all power:



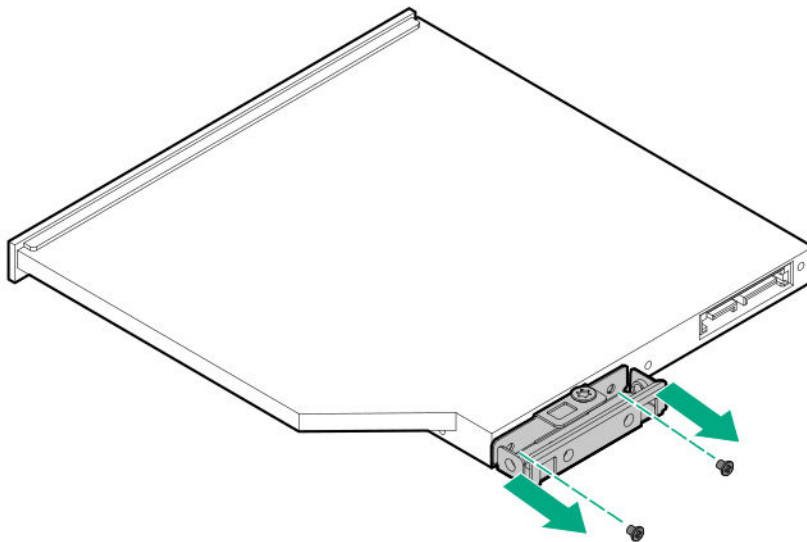
- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. If installed, **remove the fan cage.**
9. Disconnect the SATA-power cable from the optical drive.
10. Pull up and hold the blue release latch, and then remove the optical drive cage.



11. Remove the optical drive from the drive cage.



12. Remove the optical drive bracket.



To replace the component, reverse the removal procedure.

Removing and replacing the front I/O assembly

Prerequisites

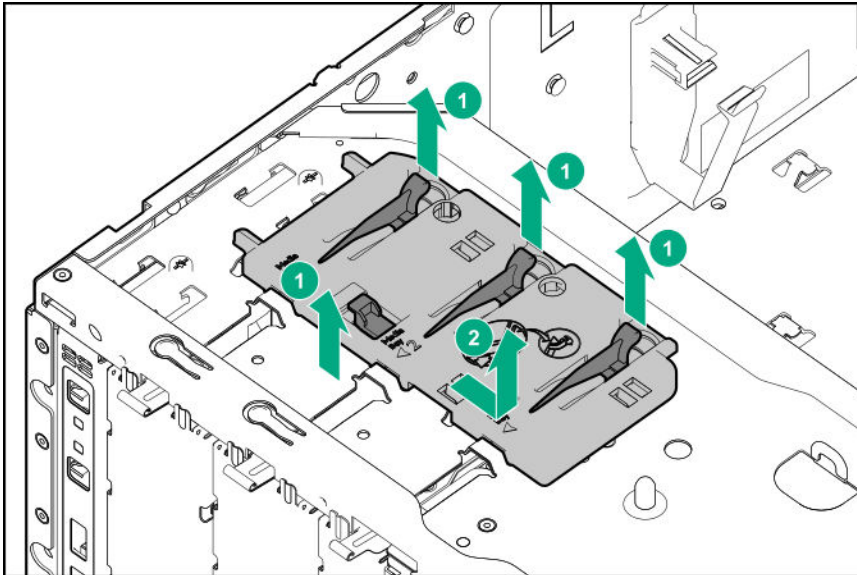
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

- 1. Remove the front bezel.**
- 2. Power down the server.**
- 3. Remove all power:**

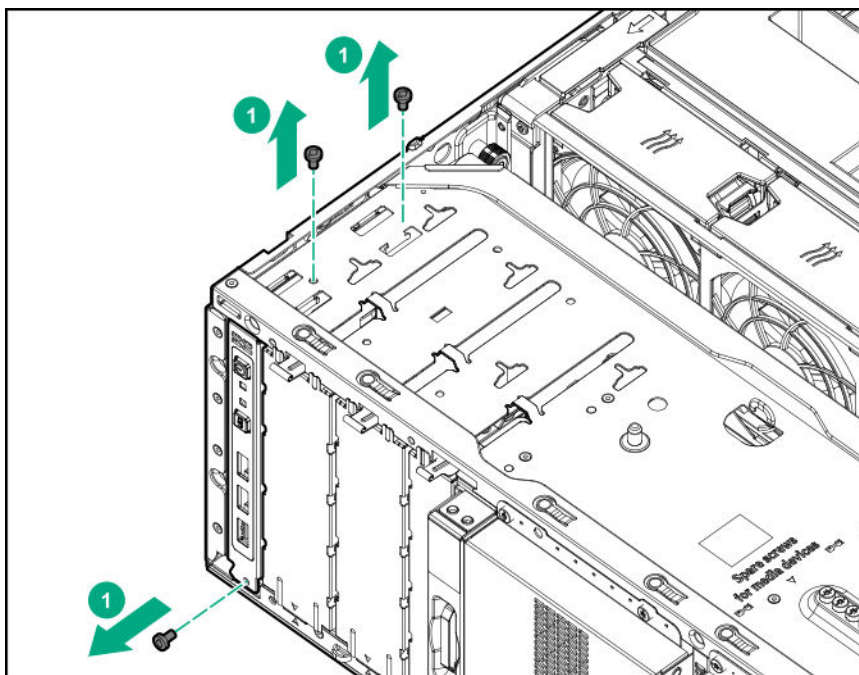


- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. If installed, **remove the fan cage.**
9. Remove the blue media device retainer:
 - a. Release the drive latches.
 - b. Slide the retainer as shown, and then remove the retainer from the chassis.



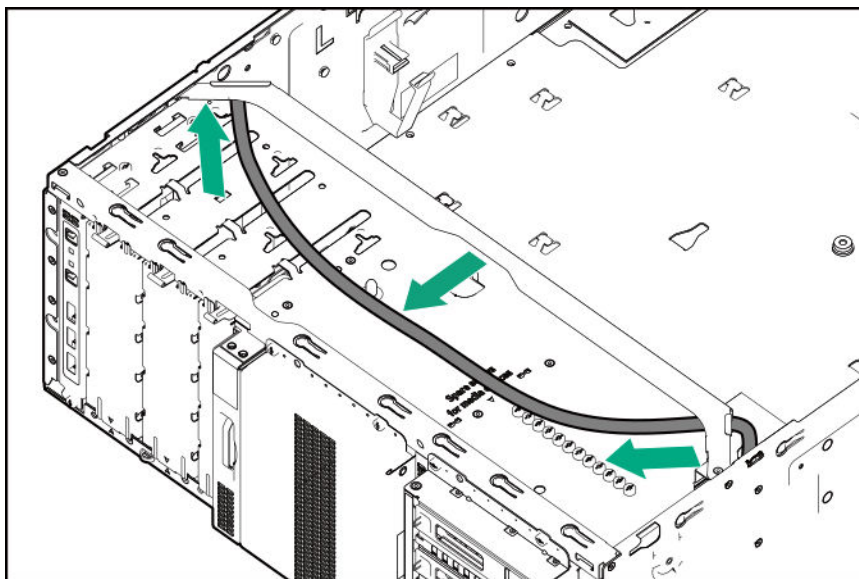
10. Remove the front I/O cage screws.



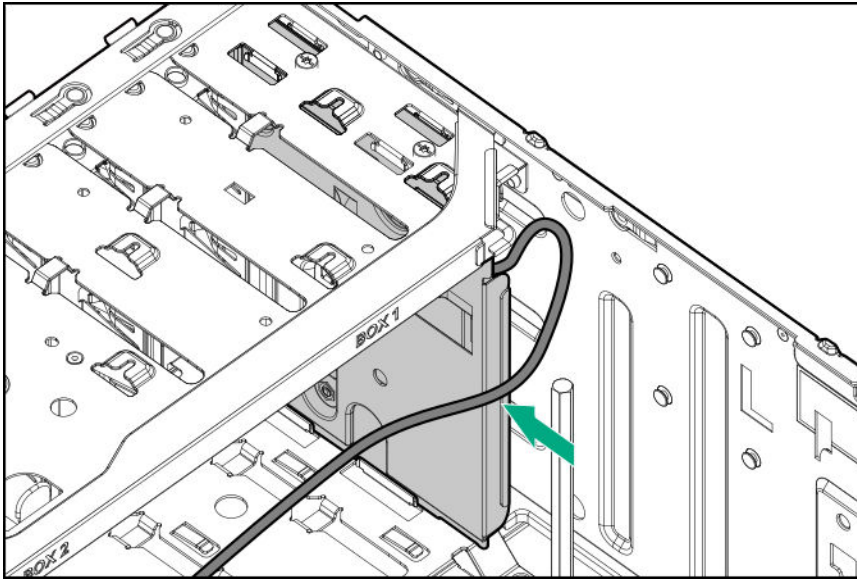


11. Disconnect the front I/O and front USB cables from the system board.

12. Release the front I/O cable assembly from the cable channel on top of the drive boxes.



13. Remove the front I/O assembly from the chassis.



To replace the component, reverse the removal procedure.

Removing and replacing the 4 LFF hot-plug drive backplane

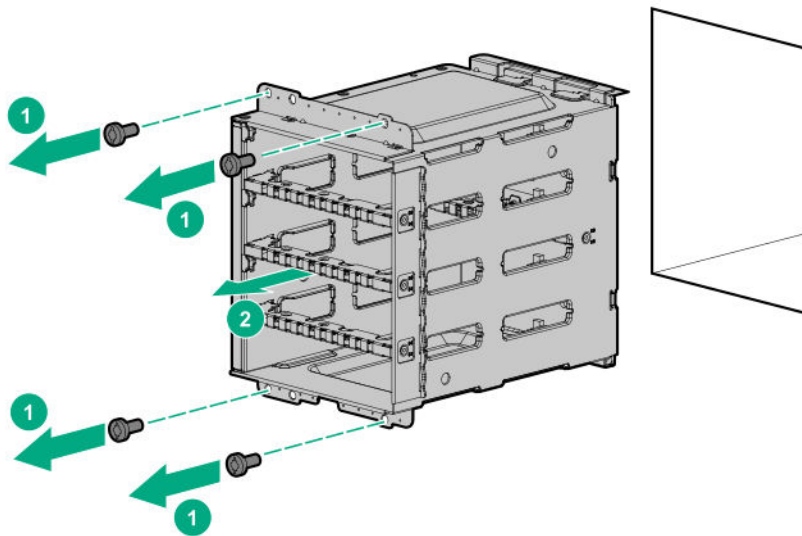
Prerequisites

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

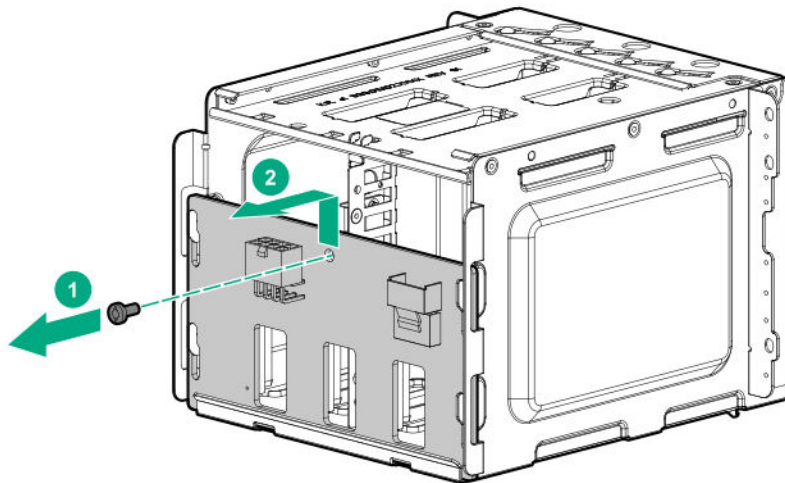
Procedure

1. **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. **Remove all drives connected to the drive backplane that is being replaced.**
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the air baffle.**
9. If installed, **remove the fan cage.**
10. Disconnect the drive power and controller cables from the backplane.
11. Remove the drive cage.





12. Remove the drive backplane.



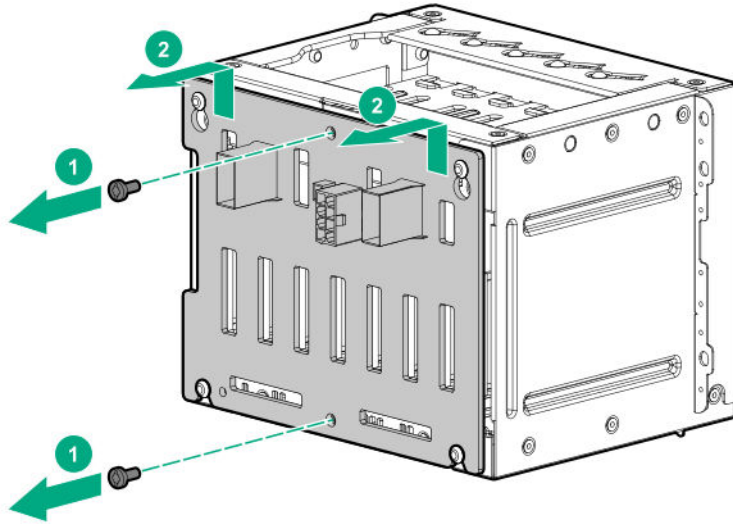
To replace the component, reverse the removal procedure.

Removing and replacing the 8 SFF hot-plug drive backplane

Prerequisites

- Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.
- If you ordered the 8 SFF hot-plug drive cage assembly spare part 792352-001, remove the backplane from this new spare part. The drive cage used in the 792352-001 spare does not fit the HPE ProLiant ML350 Gen10 server chassis.

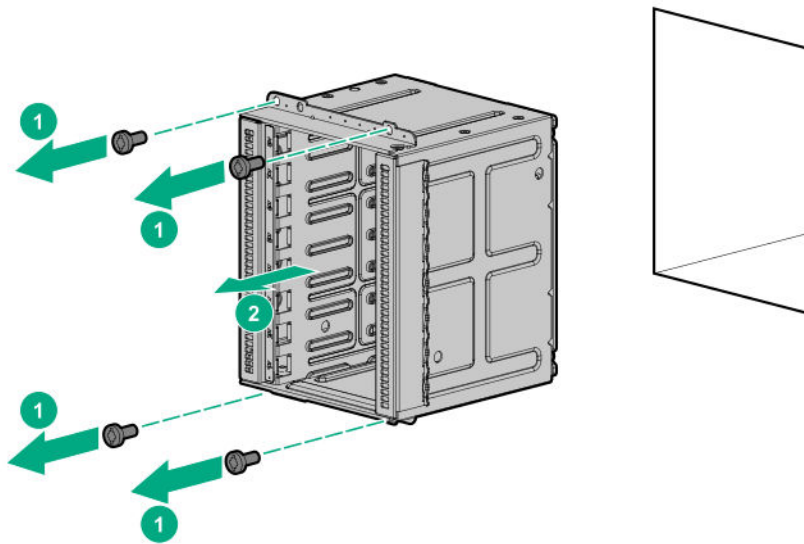




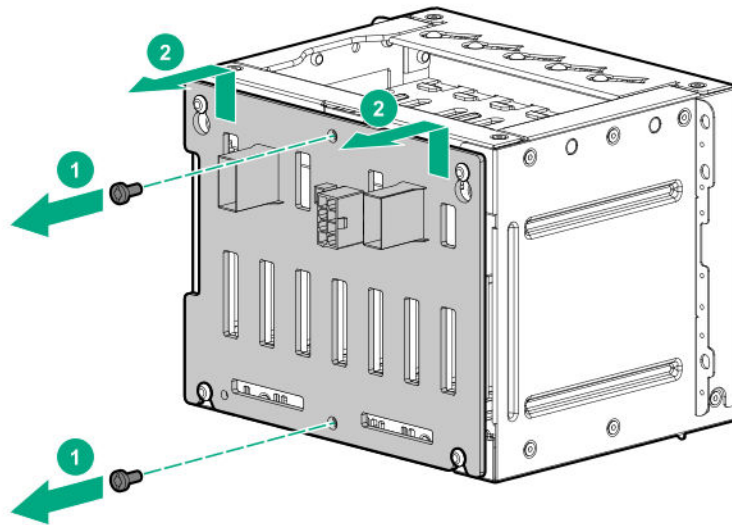
Procedure

1. **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. **Remove all drives connected to the drive backplane that is being replaced.**
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the air baffle.**
9. If installed, **remove the fan cage.**
10. Disconnect the drive power and controller cables from the backplane.
11. Remove the drive cage.





12. Remove the drive backplane.



To replace the component, reverse the removal procedure.

Removing and replacing the 8 SFF NVMe SSD backplane

Prerequisites

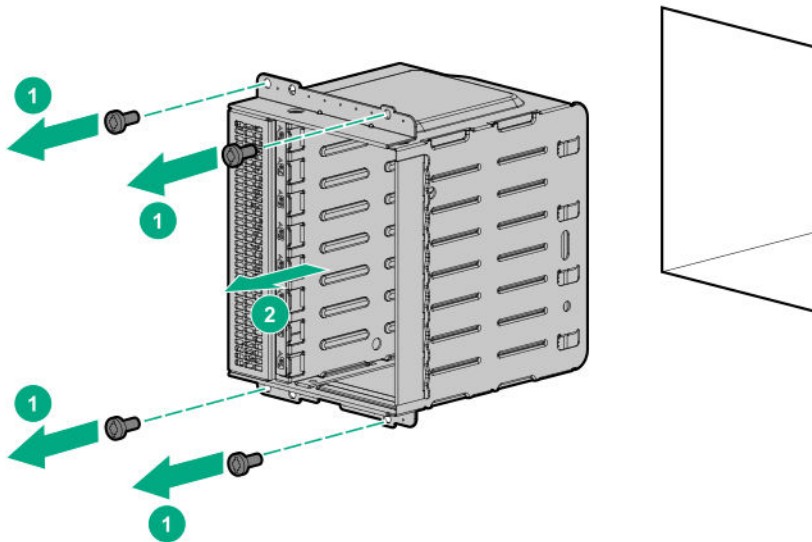
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

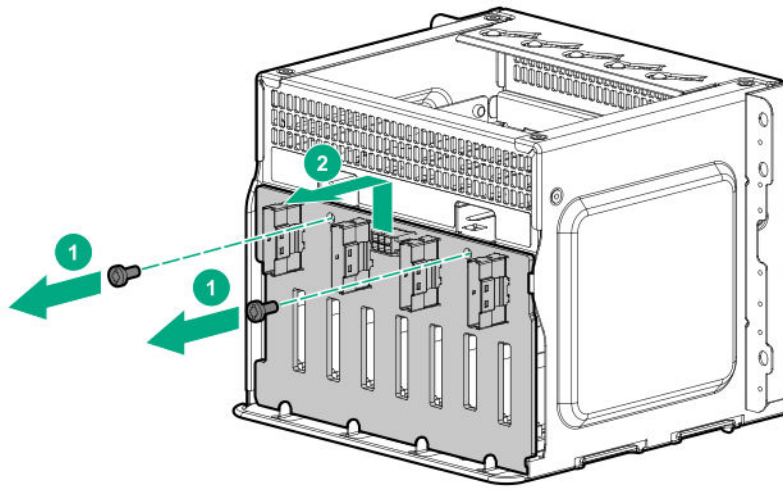
- 1. Remove the front bezel.**
- 2. Power down the server.**
- 3.** Remove all power:



- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. **Remove all drives connected to the drive backplane that is being replaced.**
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the air baffle.**
9. **Remove the fan cage.**
10. Disconnect the drive power and controller cables from the backplane.
11. Remove the drive cage.



12. Remove the drive backplane.



To replace the component, reverse the removal procedure.

DIMM-processor compatibility

The installed processor determines the type of DIMM that is supported in the server:

- First-generation Intel Xeon Scalable processors support DDR4-2666 DIMMs.
- Second-generation Intel Xeon Scalable processors support DDR4-2933 DIMMs.

Mixing DIMM types is not supported. Install only the supported DDR4-2666 or DDR4-2933 DIMMs in the server.

Removing and replacing a DIMM

⚠ CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

Procedure

1. **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:



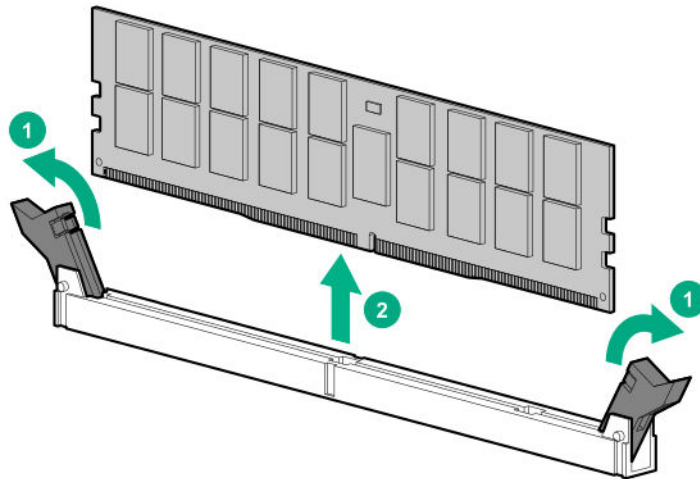
- Server in tower mode: **Position the tower server for hardware configuration.**
- Server in rack mode: **Extend the server from the rack.**

6. Remove the access panel.

7. Remove the air baffle.

8. If you are removing a DIMM for processor 2, and the fan cage is present, **remove the fan cage.**

9. Remove the DIMM.



To replace the component, reverse the removal procedure.

For DIMM configuration information, see the **Hewlett Packard Enterprise website.**

Removing and replacing a standup storage controller

⚠ CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either an expansion slot cover or an expansion board installed.

⚠ CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

Prerequisites

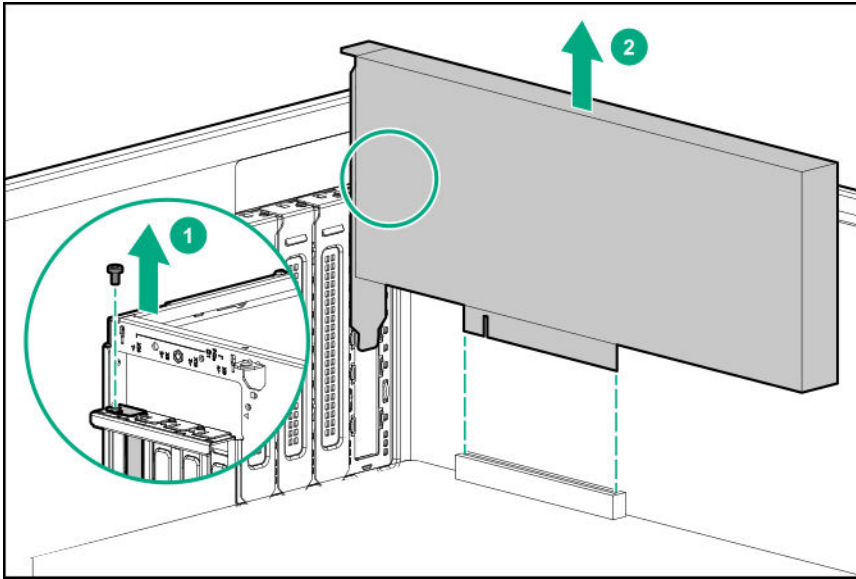
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

- 1. 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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. **Remove the PCI blank retainer.**
9. Disconnect all cables from the storage controller.
10. Remove the standup storage controller.



To replace the component, reverse the removal procedure.

Removing and replacing a modular storage controller (AROC)

⚠ CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

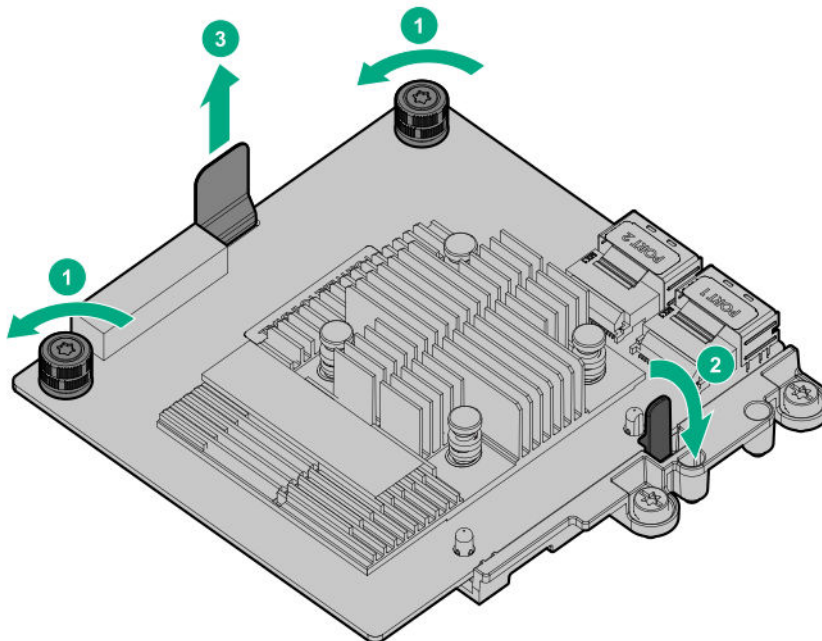
Prerequisites

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



Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. Disconnect all cables from the storage controller.
9. Remove the modular storage controller:
 - a. Loosen the controller board thumbscrews.
 - b. Release the snap-in latch.
 - c. Use the pull-up tab to remove the controller from the system board.



To replace the component, reverse the removal procedure.



Removing and replacing the HPE 12G SAS Expander Card

⚠ CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all PCI slots have either an expansion slot cover or an expansion board installed.

⚠ CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

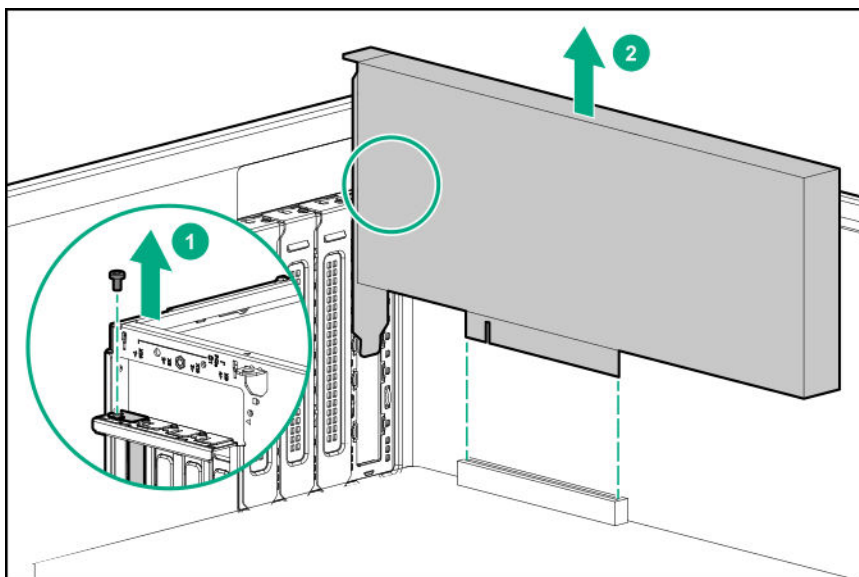
Prerequisites

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

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. **Remove the PCI blank retainer.**
9. Disconnect all cables from the SAS expander card.
10. Remove the SAS expander card.





To replace the component, reverse the removal procedure.

Removing and replacing the NVMe riser board

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

CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

Prerequisites

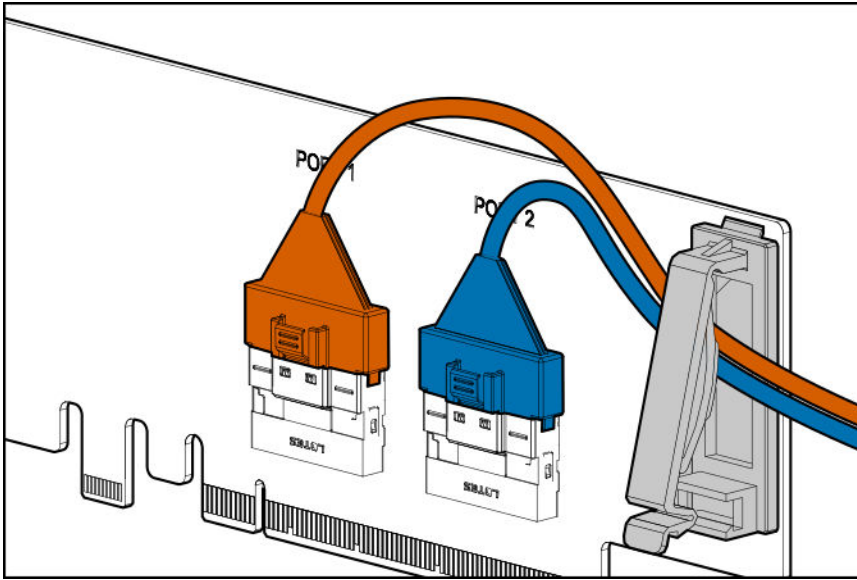
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

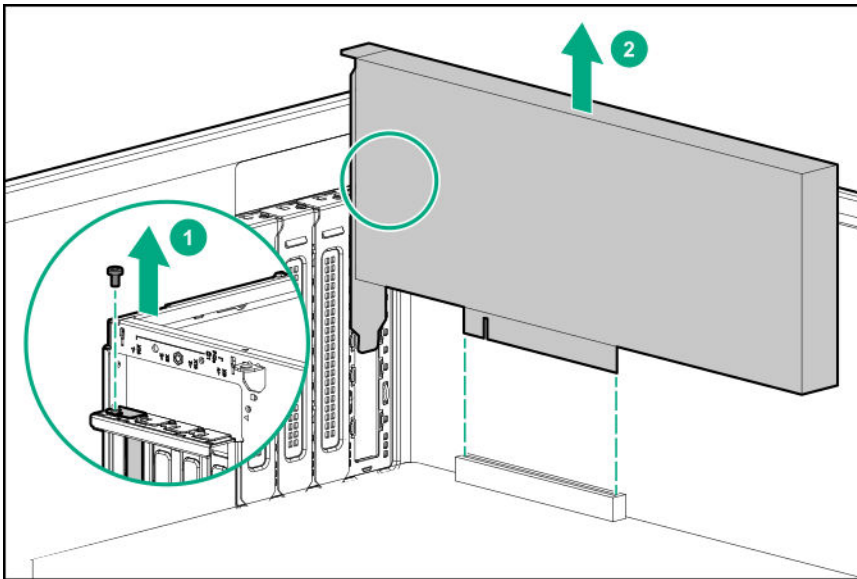
1. **Remove the front bezel.**
2. **Power down the server.**
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**



7. **Remove the air baffle.**
8. **Remove the PCI blank retainer.**
9. Release the NVMe SSD data cables from the clip on the riser board.



10. Disconnect the NVMe SSD data cables from the riser board.
11. Remove the NVMe riser board.



To replace the component, reverse the removal procedure.

Removing and replacing the M.2 SATA SSD option



Removing and replacing the M.2 SATA SSD enablement board



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 improper cooling and thermal damage, do not operate the server unless all PCI slots have either an expansion slot cover or an expansion board installed.



CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

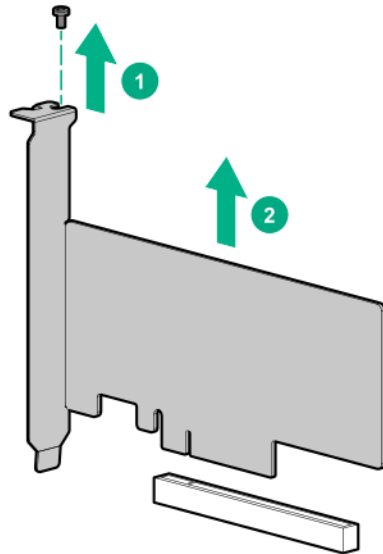
Prerequisites

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

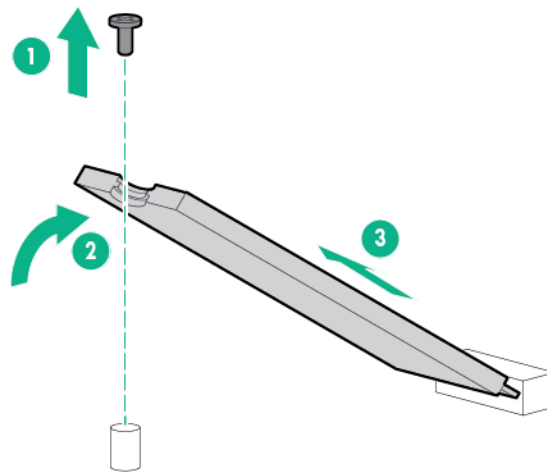
Procedure

1. Back up all server data.
2. **Remove the front bezel.**
3. **Power down the server.**
4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the PCI blank retainer.**
9. **Remove the air baffle.**
10. Disconnect the M.2 SATA cables from the enablement board.
11. Remove the M.2 SSD enablement board.





12. Remove the M.2 SSDs.



Retain these SSDs for installation onto the replacement enablement board.

To replace the component, reverse the removal procedure.

Removing and replacing an M.2 SATA SSD



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: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

Prerequisites

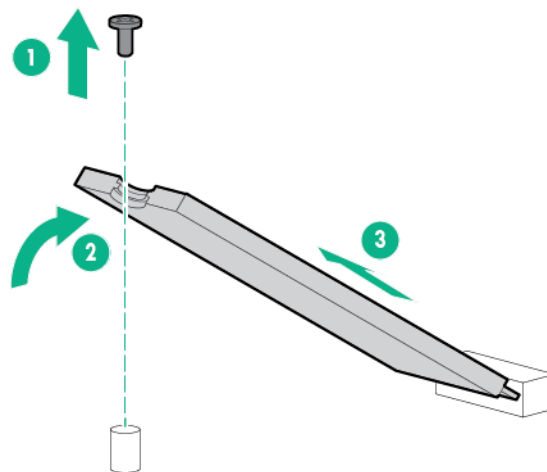
Before you perform this procedure , make sure that the following items are available:



- T-15 Torx screwdriver
- Phillips No. 1 screwdriver

Procedure

1. Back up all server data.
2. **Remove the front bezel.**
3. **Power down the server.**
4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the PCI blank retainer.**
9. **Remove the air baffle.**
10. **Remove the M.2 SSD enablement board.**
11. Remove the M.2 SSD.



To replace the component, reverse the removal procedure.



Removing and replacing the HPE NS204i-p NVMe OS Boot Device option

Removing and replacing the boot device



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: The boot device and the drives installed on the boot device are not hot-pluggable. To remove the boot device, or a drive from the boot device, you must first power down the server.



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



CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

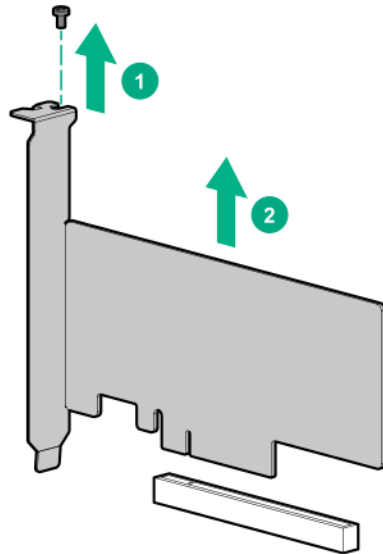
Prerequisites

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

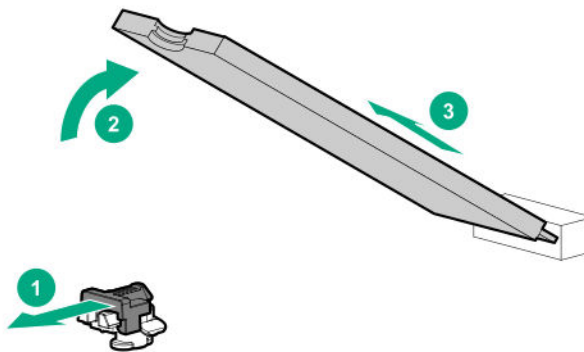
Procedure

1. Back up all server data.
2. **Remove the front bezel.**
3. **Power down the server.**
4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the PCI blank retainer.**
9. **Remove the air baffle.**
10. Remove the boot device.





11. Remove the drives from the boot device.



Retain these drives for installation onto the replacement boot device.

To replace the component, reverse the removal procedure.

Removing and replacing a boot device drive

The boot device supports two M.2 NVMe 22110 (110 mm) or 22080 (80 mm) SSDs. The SSDs can be of same physical size, or one of each size, and can be installed at the same time. Depending on the SSD size, you might need to **relocate the M.2 drive retaining latches** on the boot device.



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: The boot device and the drives installed on the boot device are not hot-pluggable. To remove the boot device, or a drive from the boot device, you must first power down the server.



CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

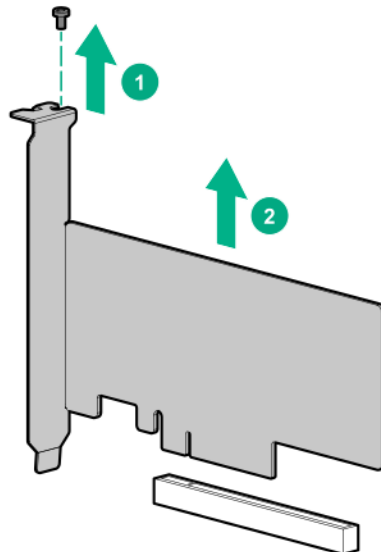
Prerequisites

Before you perform this procedure:

- Review the **boot device drive bay LEDs** to identify the failed drive.
- Make sure that you have a T-15 Torx screwdriver available.

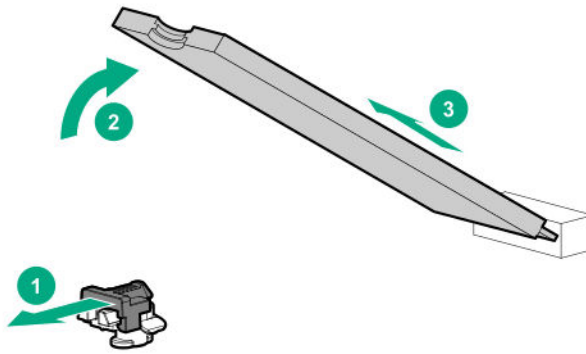
Procedure

1. Back up all server data.
2. **Remove the front bezel.**
3. **Power down the server.**
4. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
5. Disconnect all peripheral cables from the server.
6. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
7. **Remove the access panel.**
8. **Remove the PCI blank retainer.**
9. **Remove the air baffle.**
10. Remove the boot device.



11. Remove the failed drive from the boot device.



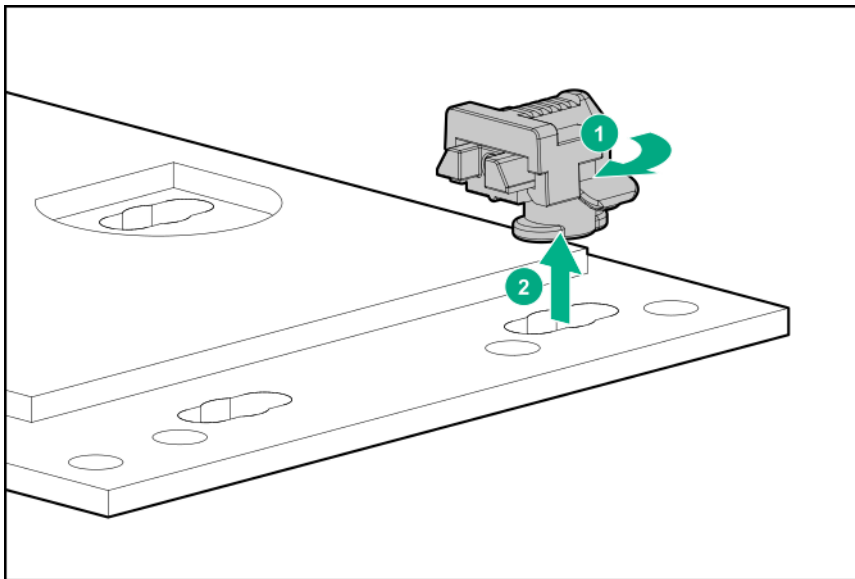


To replace the component, reverse the removal procedure.

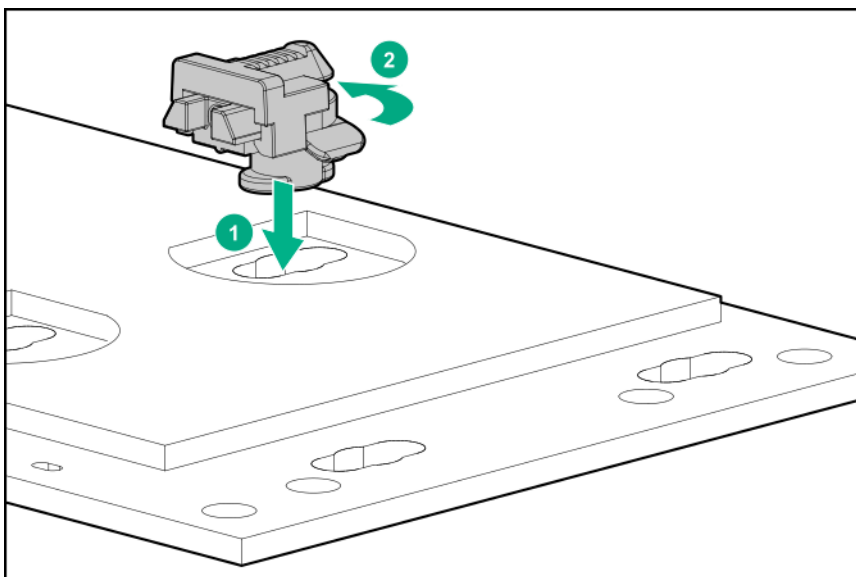
Relocating the M.2 drive retaining latches

Procedure

1. If your spare kit includes an 80 mm replacement drive, remove the retaining latch from its current location.



2. Install the retaining latch at the 80 mm drive location.



Removing and replacing an expansion board

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

CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

Prerequisites

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

Procedure

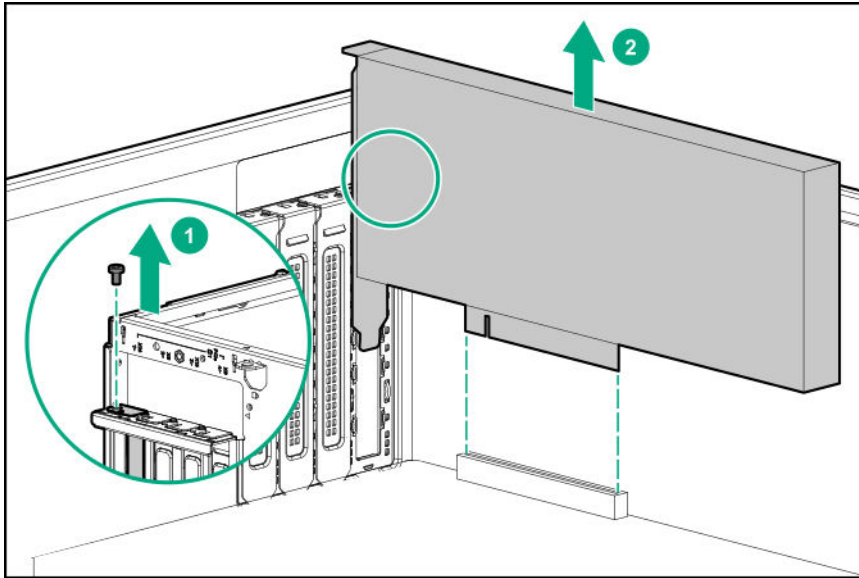
1. **Remove the front bezel.**
2. **Power down the server.**
3. Remove all power:
 - a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**

8. Remove the PCI blank retainer.

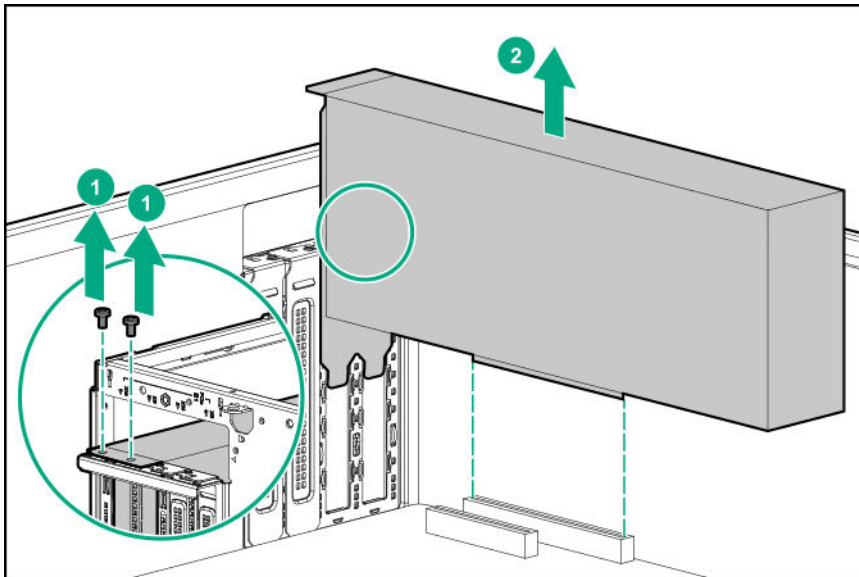
9. Disconnect any internal cables that are connected to the expansion board.

10. Remove the expansion board:

- Single-width expansion board



- Double-width expansion board



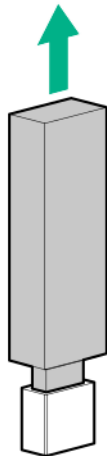
To replace the component, reverse the removal procedure.



Removing and replacing an internal USB device

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. Remove the USB device from the internal USB port.



To replace the component, reverse the removal procedure.

Removing and replacing an energy pack

Procedure

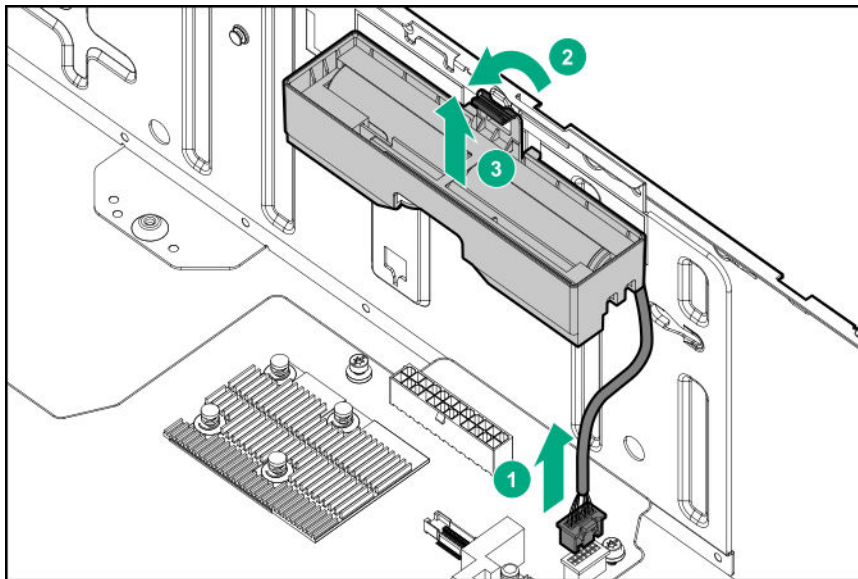
1. **Remove the front bezel.**
2. **Power down the server.**
3. Remove all power:



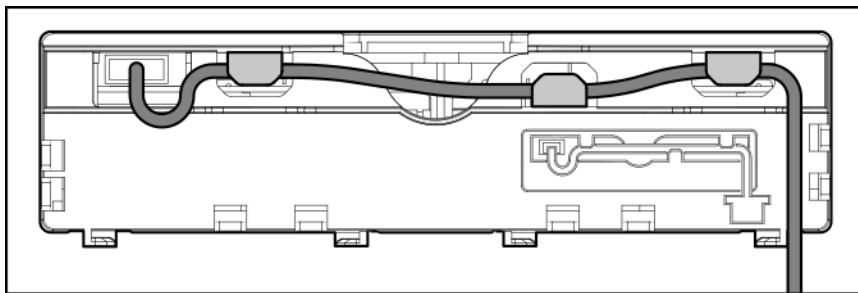
- a. Disconnect each power cord from the power source.
 - b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**

⚠ CAUTION: The snap-in latch of the energy pack holder is flexible. However, to avoid damaging this latch, do not apply too much pressure on this latch when removing or installing the energy pack from the chassis.

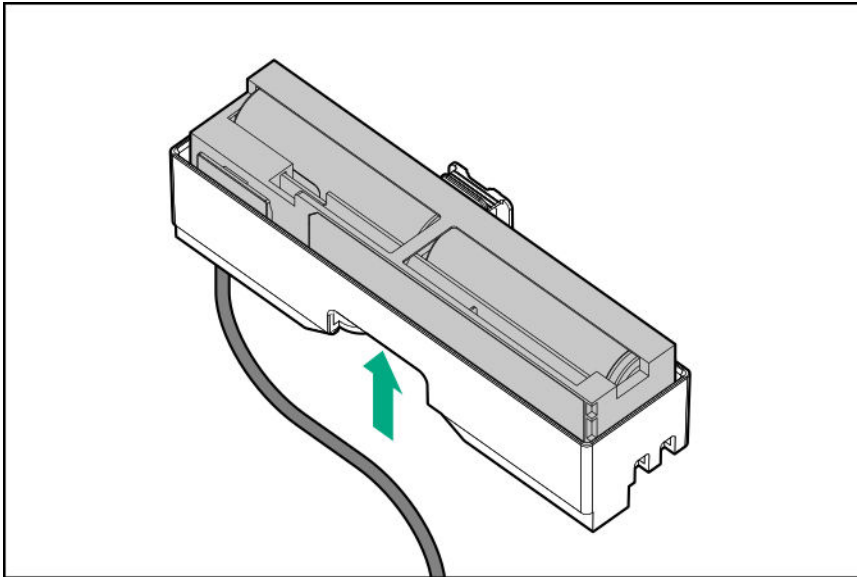
8. Remove the energy pack assembly:
 - a. Disconnect the energy pack cable.
 - b. While carefully holding the snap-in latch in the open position, slide the energy pack holder up to disengage it from the chassis.



9. Release the energy pack cable from the holder cable clips.



10. Remove the energy pack from the holder.



To replace the component, reverse the removal procedure.

Removing and replacing the power distribution board

CAUTION: Before replacing a DIMM, expansion board, or other similar PCA components due to a perceived hardware error, make sure first that the component is firmly seated in the slot. Do not bend or flex circuit boards when reseating components.

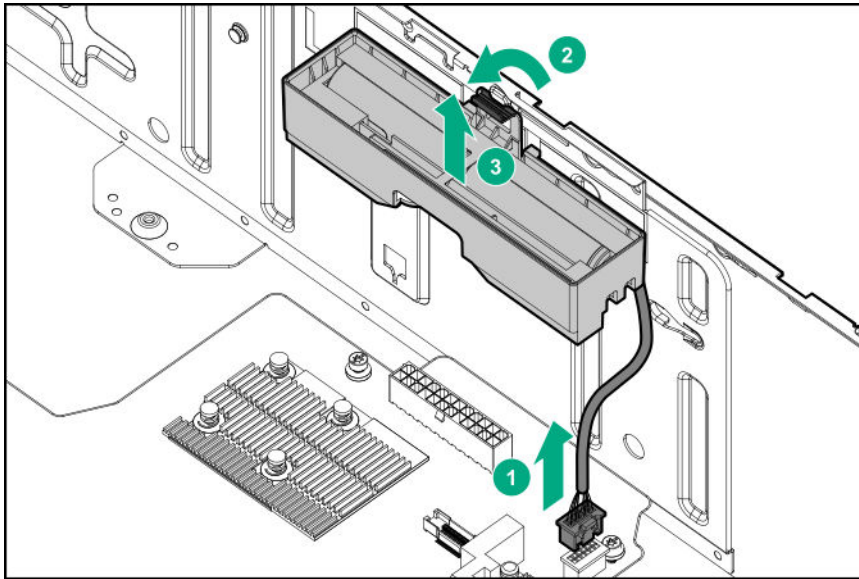
Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**

CAUTION: The snap-in latch of the energy pack holder is flexible. However, to avoid damaging this latch, do not apply too much pressure on this latch when removing or installing the energy pack from the chassis.

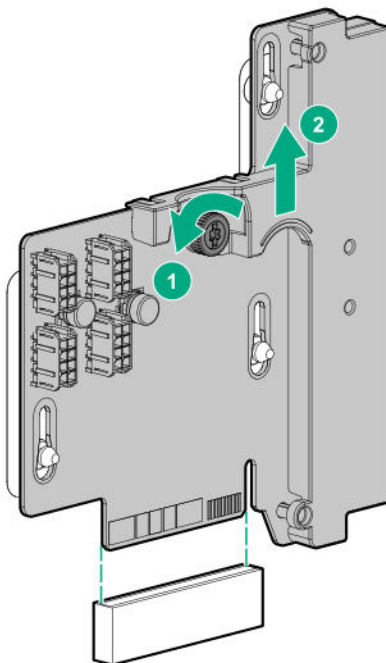
8. Remove the energy pack holder:

- a. If an energy pack is installed, disconnect the energy pack cable.
- b. While carefully holding the snap-in latch in the open position, slide the energy pack holder up to disengage it from the chassis.



9. Remove all power supplies.

10. If present, disconnect all the GPU auxiliary power cables from the power distribution board.
11. Remove the power distribution board.



To replace the component, reverse the removal procedure.

System battery replacement



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

- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).
- Do not expose the battery to extremely low air pressure as it might lead to explosion or leakage of flammable liquid or gas.
- Do not disassemble, crush, puncture, short external contacts, or dispose the battery in fire or water.
- If the server no longer automatically displays the correct date and time, then replace the battery that provides power to the real-time clock. Under normal use, battery life is 5 to 10 years.

Removing and replacing the system battery

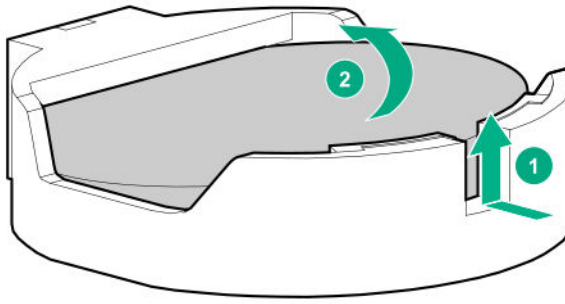
Prerequisites

Before you perform this procedure make sure you have a small flat-bladed, nonconductive tool available.

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. **Locate the battery on the system board.**
9. Use a small flat-bladed, nonconductive tool to carefully lift the front of the battery from the socket.
10. Remove the battery.





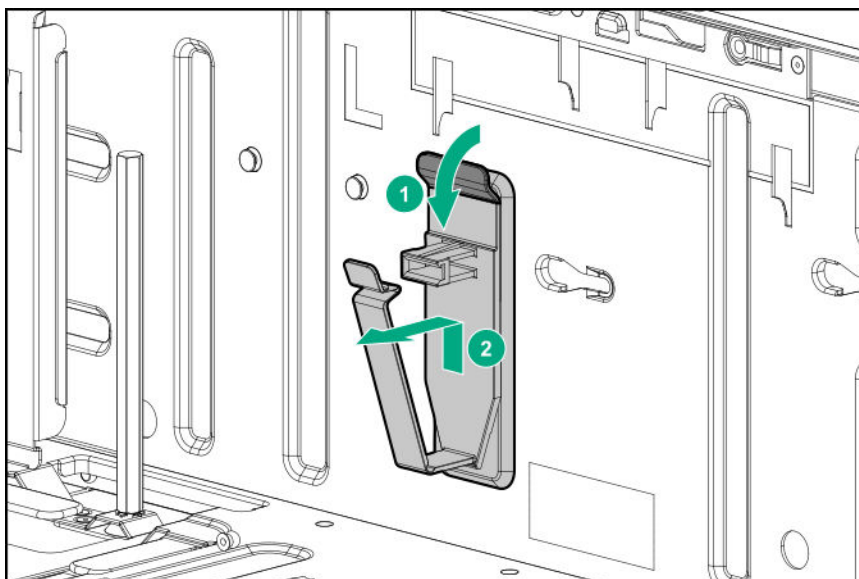
11. To replace the component, reverse the removal procedure.
12. Properly dispose of the old battery.
For more information about battery replacement or proper disposal, contact an authorized reseller or an authorized service provider.

Removing and replacing the cable clips

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**
8. Open the cable clip.
9. Release all cables from the clip.
10. Press and hold the latch, and then slide the clip up to remove it from the chassis.





To replace the component, reverse the removal procedure.

Removing and replacing the system board

Removing the system board

Prerequisites

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

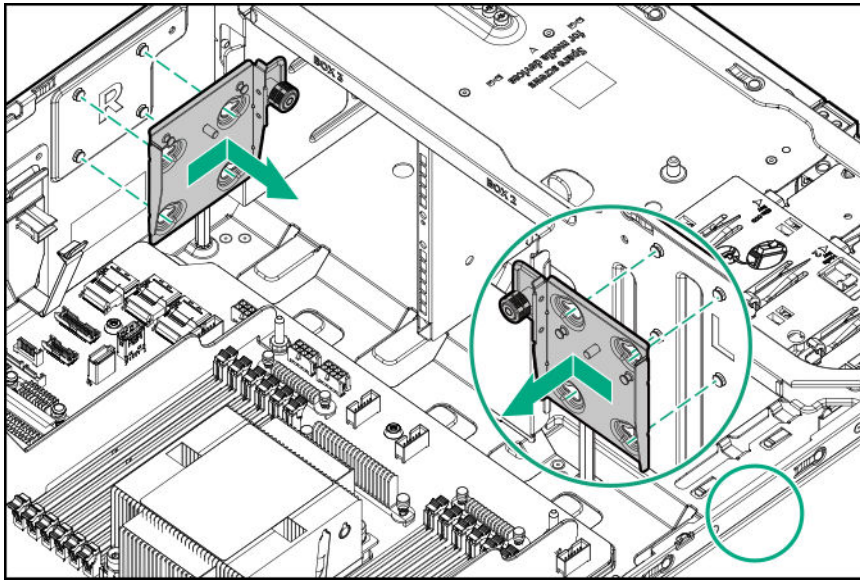
- T-15 Torx screwdriver
- T-30 Torx screwdriver

Procedure

1. **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:
 - Server in tower mode: **Position the tower server for hardware configuration.**
 - Server in rack mode: **Extend the server from the rack.**
6. **Remove the access panel.**
7. **Remove the air baffle.**



8. If installed, **remove the fan cage**.
9. Remove the fan cage brackets:
 - a. Retract and hold the blue spring plunger.
 - b. Slide the bracket towards the front of the chassis to release it.



- c. Repeat steps a–b to remove the other bracket.
10. **Remove all DIMMs**.
11. **Remove the cable clips**.
12. If installed, remove these server options from the system board:
 - **Modular storage controller**
 - **Standup expansion boards**
 - **Power distribution board**
 - **Energy pack**
13. Disconnect all cables from the system board.
14. Observe the following cautions.



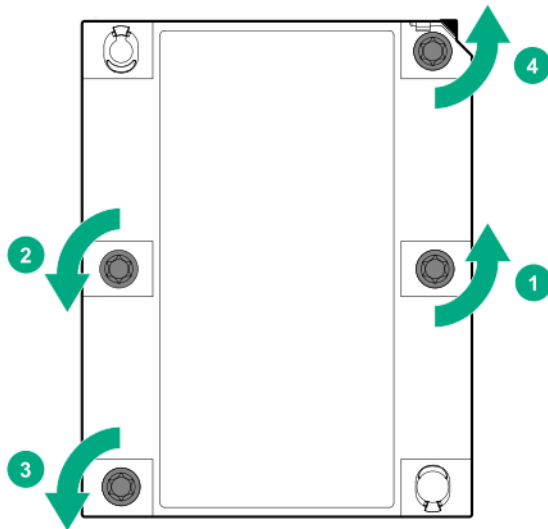
CAUTION: Be sure to loosen each heatsink nut in the order indicated. Otherwise, damage might occur to the heatsink or processor.



CAUTION: Install the processor heatsink assembly as soon as possible after removing it. Do not leave the processor socket unpopulated for extended periods of time.

15. Remove the processor heatsink assembly:
 - a. Allow the heatsink to cool.
 - b. Using a T-30 Torx screwdriver, loosen the heatsink nuts.

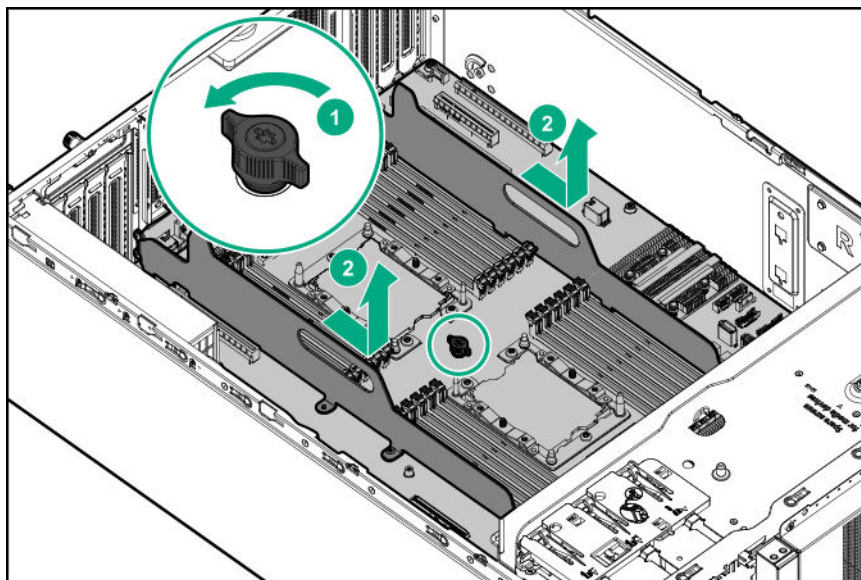




- c. Lift the processor heatsink assembly up and away from the system board.

16. Remove the system board:

- a. Loosen the captive screw located in the middle of the system board.
- b. Remove the system board, using the handles to lift the board out of the chassis.



Replacing the system board

Prerequisites

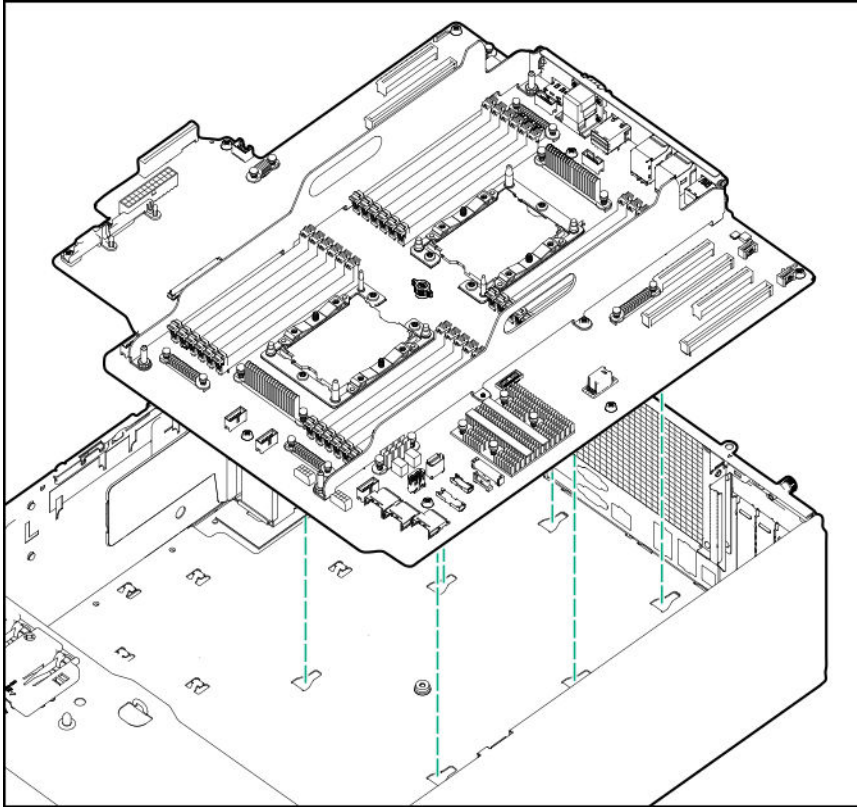
Before you perform this procedure make sure you have the following items available:

- T-15 Torx screwdriver
- T-30 Torx screwdriver

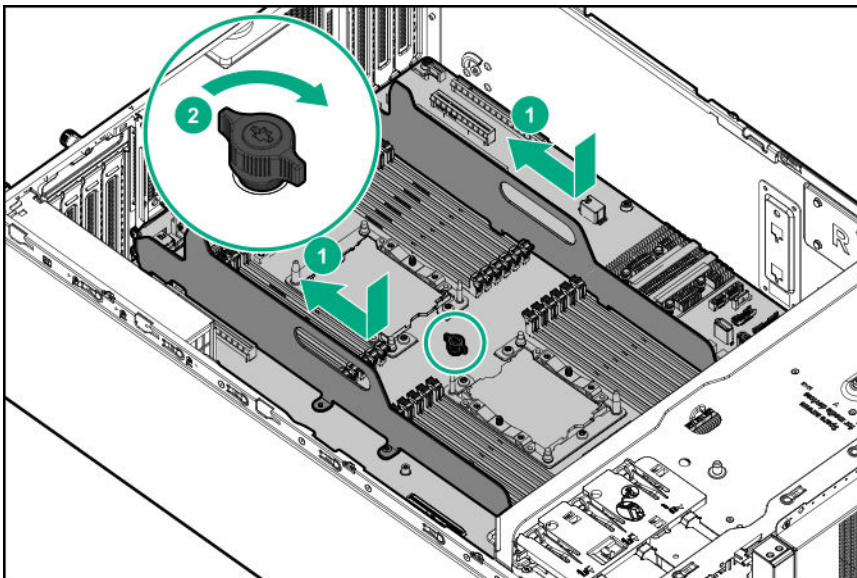


Procedure

1. Position the system board over the alignment tabs on the chassis.



2. Install the spare system board.



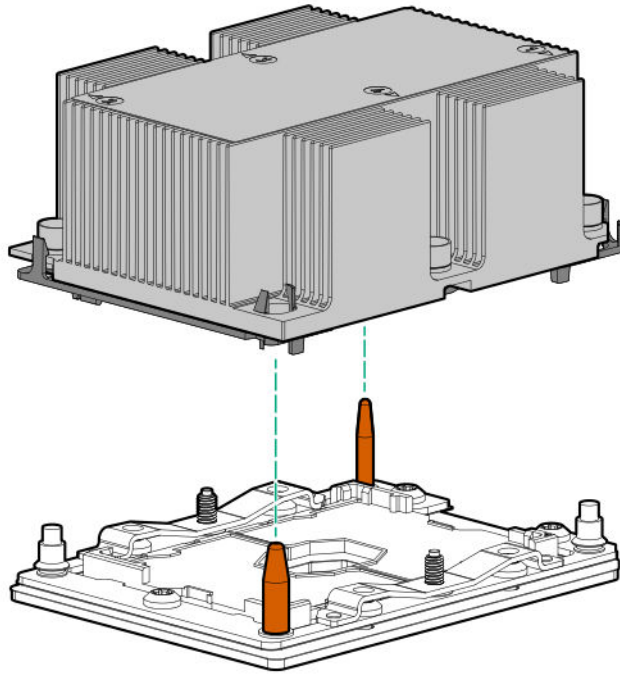
3. Install the processor heatsink assembly:

- a. Locate and align the Pin 1 indicator on the processor frame and the socket.
- b. Align the processor heatsink assembly with the heatsink alignment posts and gently lower it down until it sits evenly on the socket.



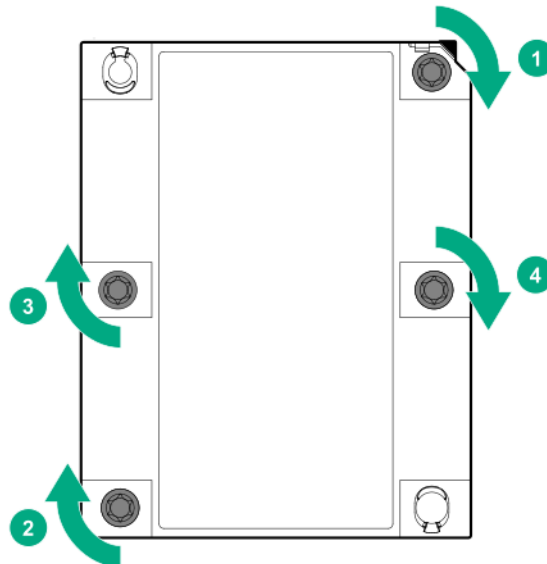
The heatsink alignment posts are keyed. The processor will only install one way.

A standard heatsink is shown, your heatsink might look different.



CAUTION: Be sure to tighten each heatsink nut fully in the order indicated. Otherwise, boot failure or intermittent shutdowns might occur.

- c. Using a T-30 Torx screwdriver, tighten the nuts until they stop.



- 4. Install all components removed from the failed system board.
- 5. Install the cable clips.
- 6. If removed, install the fan cage brackets and the fan cage.



7. Install the air baffle.
8. Install the access panel.
9. Install the front bezel.
10. Do one of the following:
 - Server in tower mode: Position the tower server for operation.
 - Server in rack mode: Slide the server into the rack.
11. Connect all peripherals cables to the server.
12. Connect each power cord to the server.
13. Connect each power cord to the power source.
14. Power up the server.
15. Ensure all firmware, including option cards and embedded devices, is updated to the same versions to ensure that the latest drivers are being used.
16. Re-enter any Secure Boot Keys that were previously added in the Secure Boot configuration.
17. Re-enter the server serial number and the product ID (**Re-entering the server serial number and product ID**).

Re-entering the server serial number and product ID

After you replace the system board, the server serial number and the product ID must be configured:

Procedure

1. Access System Utilities. During POST, press **F9**.
2. On the System Utilities home screen, select **System Configuration > BIOS/Platform Configuration (RBSU) > Advanced Options > Advanced Service Options**.
3. Select the Serial Number field and press **Enter**.

The following alert appears:

```
The serial number is modified by qualified service personnel and must match
the serial number located on the chassis.
```

4. Click **OK**.
5. Type the serial number and press **Enter**.
6. Select the Product ID field and press **Enter**.

The following alert appears:

```
Product ID is modified only by qualified personnel. This value must match
the product ID located on the chassis.
```

7. Type the product ID and press **Enter**.
8. Press **F10** to save the configuration.

The procedure is complete.



HPE Trusted Platform Module 2.0 Gen10 Option

The HPE Trusted Platform Module 2.0 Gen10 Option is not a customer-removable part.



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

If you suspect a TPM board failure, leave the TPM installed and remove the system board. Contact a Hewlett Packard Enterprise authorized service provider for a replacement system board and TPM board.



Troubleshooting

NMI functionality

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

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

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

Troubleshooting resources

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

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

To access troubleshooting resources for your product, see the Hewlett Packard Enterprise Information Library:

- For Gen10 servers, see <https://www.hpe.com/info/gen10-troubleshooting>.
- For Gen10 Plus servers, see <https://www.hpe.com/info/gen10plus-troubleshooting>.



Diagnostic tools

Product QuickSpecs

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

UEFI System Utilities

The UEFI System Utilities is embedded in the system ROM. Its features enable you to perform a wide range of configuration activities, including:

- Configuring system devices and installed options.
- Enabling and disabling system features.
- Displaying system information.
- Selecting the primary boot controller or partition.
- Configuring memory options.
- Launching other preboot environments.

HPE servers with UEFI can provide:

- Support for boot partitions larger than 2.2 TB. Such configurations could previously only be used for boot drives when using RAID solutions.
- Secure Boot that enables the system firmware, option card firmware, operating systems, and software collaborate to enhance platform security.
- UEFI Graphical User Interface (GUI)
- An Embedded UEFI Shell that provides a preboot environment for running scripts and tools.
- Boot support for option cards that only support a UEFI option ROM.

Selecting the boot mode

This server provides two **Boot Mode** configurations: UEFI Mode and Legacy BIOS Mode. Certain boot options require that you select a specific boot mode. By default, the boot mode is set to **UEFI Mode**. The system must boot in **UEFI Mode** to use certain options, including:

- Secure Boot, UEFI Optimized Boot, Generic USB Boot, IPv6 PXE Boot, iSCSI Boot, and Boot from URL
- Fibre Channel/FCoE Scan Policy

NOTE: The boot mode you use must match the operating system installation. If not, changing the boot mode can impact the ability of the server to boot to the installed operating system.

Prerequisite

When booting to **UEFI Mode**, leave **UEFI Optimized Boot** enabled.



Procedure

1. From the **System Utilities** screen, select **System Configuration > BIOS/Platform Configuration (RBSU) > Boot Options > Boot Mode**.
2. Select a setting.
 - **UEFI Mode** (default)—Configures the system to boot to a UEFI compatible operating system.
 - **Legacy BIOS Mode**—Configures the system to boot to a traditional operating system in Legacy BIOS compatibility mode.
3. Save your setting.
4. Reboot the server.

Secure Boot

Secure Boot is a server security feature that is implemented in the BIOS and does not require special hardware. Secure Boot ensures that each component launched during the boot process is digitally signed and that the signature is validated against a set of trusted certificates embedded in the UEFI BIOS. Secure Boot validates the software identity of the following components in the boot process:

- UEFI drivers loaded from PCIe cards
- UEFI drivers loaded from mass storage devices
- Preboot UEFI Shell applications
- OS UEFI boot loaders

When Secure Boot is enabled:

- Firmware components and operating systems with boot loaders must have an appropriate digital signature to execute during the boot process.
- Operating systems must support Secure Boot and have an EFI boot loader signed with one of the authorized keys to boot. For more information about supported operating systems, see <https://www.hpe.com/servers/ossupport>.

You can customize the certificates embedded in the UEFI BIOS by adding or removing your own certificates, either from a management console directly attached to the server, or by remotely connecting to the server using the iLO Remote Console.

You can configure Secure Boot:

- Using the **System Utilities** options described in the following sections.
- Using the iLO RESTful API to clear and restore certificates. For more information, see the Hewlett Packard Enterprise website (<https://www.hpe.com/info/redfish>).
- Using the `secboot` command in the Embedded UEFI Shell to display Secure Boot databases, keys, and security reports.

Launching the Embedded UEFI Shell

Use the **Embedded UEFI Shell** option to launch the Embedded UEFI Shell. The Embedded UEFI Shell is a preboot command-line environment for scripting and running UEFI applications, including UEFI boot loaders. The Shell also provides CLI-based commands you can use to obtain system information, and to configure and update the system BIOS.



Prerequisites

Embedded UEFI Shell is set to **Enabled**.

Procedure

1. From the **System Utilities** screen, select **Embedded Applications > Embedded UEFI Shell**.

The **Embedded UEFI Shell** screen appears.

2. Press any key to acknowledge that you are physically present.

This step ensures that certain features, such as disabling **Secure Boot** or managing the **Secure Boot** certificates using third-party UEFI tools, are not restricted.

3. If an administrator password is set, enter it at the prompt and press **Enter**.

The `Shell>` prompt appears.

4. Enter the commands required to complete your task.

5. Enter the `exit` command to exit the Shell.

iLO Service Port

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

- Download the Active Health System Log to a supported USB flash drive.

When you use this feature, the connected USB flash drive is not accessible by the host operating system.

- Connect a client (such as a laptop) with a supported USB to Ethernet adapter to access the following:
 - iLO web interface
 - Remote console
 - iLO RESTful API
 - CLI

When you use the iLO Service Port:

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

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

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

Intelligent Provisioning

Intelligent Provisioning is a single-server deployment tool embedded in ProLiant servers and HPE Synergy compute modules. Intelligent Provisioning simplifies server setup, providing a reliable and consistent way to deploy servers.



NOTE:

- Rapid Setup Software is only available on the ProLiant 300 Series servers or below. When you launch F10 mode from the POST screen, you are prompted to select whether you want to enter the Intelligent Provisioning or HPE Rapid Setup Software mode.
- After you have selected a mode, you must reprovision the server to change the mode that launches when you boot to F10.

Intelligent Provisioning prepares the system for installing original, licensed vendor media and Hewlett Packard Enterprise-branded versions of OS software. Intelligent Provisioning also prepares the system to integrate optimized server support software from the Service Pack for ProLiant (SPP). SPP is a comprehensive systems software and firmware solution for ProLiant servers, server blades, their enclosures, and HPE Synergy compute modules. These components are preloaded with a basic set of firmware and OS components that are installed along with Intelligent Provisioning.

! **IMPORTANT:** HPE ProLiant DX/XL servers do not support operating system installation with Intelligent Provisioning, but they do support the maintenance features. For more information, see "Performing Maintenance" in the Intelligent Provisioning user guide and online help.

After the server is running, you can update the firmware to install additional components. You can also update any components that have been outdated since the server was manufactured.

To access Intelligent Provisioning:

- Press **F10** from the POST screen and enter either Intelligent Provisioning or HPE Rapid Setup Software.
- From the iLO web interface using **Lifecycle Management**. **Lifecycle Management** allows you to access Intelligent Provisioning without rebooting your server.

Intelligent Provisioning operation

NOTE: Intelligent Provisioning 3.40 and later requires iLO firmware version 2.10 or later.

Intelligent Provisioning includes the following components:

- Critical boot drivers
- Active Health System (AHS)
- Erase Utility
- Deployment Settings

! **IMPORTANT:**

- Although your server is preloaded with firmware and drivers, Hewlett Packard Enterprise recommends updating the firmware upon initial setup. Also, downloading and updating the latest version of Intelligent Provisioning ensures the latest supported features are available.
- For ProLiant servers, firmware is updated using the Intelligent Provisioning Firmware Update utility.
- Do not update firmware if the version you are currently running is required for compatibility.

NOTE: Intelligent Provisioning does not function within multihomed configurations. A multihomed host is one that is connected to two or more networks or has two or more IP addresses.



Intelligent Provisioning provides installation help for the following operating systems:

- Microsoft Windows Server
- Red Hat Enterprise Linux
- SUSE Linux Enterprise Server
- VMware ESXi/vSphere Custom Image
- ClearOS

Not all versions of an OS are supported. For information about specific versions of a supported operating system, see the OS Support Matrix on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/ossupport>).

HPE Insight Remote Support

Hewlett Packard Enterprise strongly recommends that you register your device for remote support to enable enhanced delivery of your Hewlett Packard Enterprise warranty, HPE support services, or Hewlett Packard Enterprise contractual support agreement. Insight Remote Support supplements your monitoring continuously to ensure maximum system availability by providing intelligent event diagnosis, and automatic, secure submission of hardware event notifications to Hewlett Packard Enterprise, which will initiate a fast and accurate resolution, based on your product's service level. Notifications can be sent to your authorized Hewlett Packard Enterprise Channel Partner for onsite service, if configured and available in your country.

For more information, see *Insight Remote Support and Insight Online Setup Guide for ProLiant Servers and BladeSystem c-Class Enclosures* on the **Hewlett Packard Enterprise website**. Insight Remote Support is available as part of Hewlett Packard Enterprise Warranty, HPE support services, or Hewlett Packard Enterprise contractual support agreement.

HPE InfoSight for servers

The HPE InfoSight portal is a secure web interface hosted by HPE that allows you to monitor supported devices through a graphical interface.

HPE InfoSight for servers:

- Combines the machine learning and predictive analytics of HPE InfoSight with the health and performance monitoring of Active Health System (AHS) and HPE iLO to optimize performance and predict and prevent problems
- Provides automatic collection and analysis of the sensor and telemetry data from AHS to derive insights from the behaviors of the install base to provide recommendations to resolve problems and improve performance

For more information on getting started and using HPE InfoSight for servers, go to: <https://www.hpe.com/info/infosight-servers-docs>.

USB support

Hewlett Packard Enterprise Gen10 and Gen10 Plus servers support all USB operating speeds depending on the device that is connected to the server.

External USB functionality

Hewlett Packard Enterprise provides external USB support to enable local connection of USB devices for server administration, configuration, and diagnostic procedures.

For additional security, external USB functionality can be disabled through USB options in UEFI System Utilities.



HPE Smart Storage Administrator

HPE SSA is the main tool for configuring arrays on HPE Smart Array SR controllers. It exists in three interface formats: the HPE SSA GUI, the HPE SSA CLI, and HPE SSA Scripting. All formats provide support for configuration tasks. Some of the advanced tasks are available in only one format.

The diagnostic features in HPE SSA are also available in the standalone software HPE Smart Storage Administrator Diagnostics Utility CLI.

During the initial provisioning of the server or compute module, an array is required to be configured before the operating system can be installed. You can configure the array using SSA.

HPE SSA is accessible both offline (either through HPE Intelligent Provisioning or as a standalone bootable ISO image) and online:

- Accessing HPE SSA in the offline environment

! **IMPORTANT:** If you are updating an existing server in an offline environment, obtain the latest version of HPE SSA through Service Pack for ProLiant before performing configuration procedures.

Using one of multiple methods, you can run HPE SSA before launching the host operating system. In offline mode, users can configure or maintain detected and supported devices, such as optional Smart Array controllers and integrated Smart Array controllers. Some HPE SSA features are only available in the offline environment, such as setting the boot controller and boot volume.

- Accessing HPE SSA in the online environment

This method requires an administrator to download the HPE SSA executables and install them. You can run HPE SSA online after launching the host operating system.

For more information, see *HPE Smart Array SR Gen10 Configuration Guide* at the [Hewlett Packard Enterprise website](#).

HPE MR Storage Administrator

HPE MR Storage Administrator is a web-based application that enables you to monitor, configure, maintain, and troubleshoot the HPE Smart Array MR controller. MR Storage Administrator enables you to view, create, and manage storage configurations.

! **IMPORTANT:** The HPE MR Storage Administrator manages **only** the HPE Smart Array MR controllers. It does not manage HPE Smart Array SR controllers.

- **Monitoring and configuring:** MR Storage Administrator enables you to monitor the controllers and configure the drives on the controller. It displays the status of the controller cards, logical drives, and drives on the controller. The device status icons notify you if there are drive failures and other events that require your immediate attention. Email notifications about the status of the server are sent based on your alert settings. The system errors and events are recorded and displayed in an event log file. You can also import or clear foreign configurations.

! **IMPORTANT:** Limited alerting and monitoring is available through iLO when HPE Agentless Management Service is installed. The HPE Smart Array P824i-p MR Gen10 controller supports limited alerts through iLO using the AMS agent.

- **Maintaining:** Using MR Storage Administrator, you can perform system maintenance tasks, such as updating the controller firmware.
- **Troubleshooting:** MR Storage Administrator displays information related to drive failures, device failures, and other issues. It also provides recommendations and displays contextual links, helping you to locate the drives/devices that



have issues and troubleshoot them. You can also download a report of the devices and their configurations, properties, and settings and send it to Hewlett Packard Enterprise Support for further troubleshooting.

Obtain MR Storage Administrator installation files through the Service Pack for ProLiant, or SPP, which you can download from the Hewlett Packard Enterprise website (<https://www.hpe.com/servers/spp/download>). Be sure to use the latest SPP version for the server.

For more information about the MR Storage Administrator, see *MR Storage Administrator User Guide* on the Hewlett Packard Enterprise website (<https://www.hpe.com/info/P824i-pdocs>).

StorCLI

The Storage Command Line Interface (StorCLI) tool is the command line management software designed for the HPE Smart Array MR controller. StorCLI is a command line interface that is designed to be easy to use, consistent, and easy to script.

Obtain StorCLI through the Service Pack for ProLiant, or SPP, which you can download from <https://www.hpe.com/servers/spp/download>. Be sure to use the latest SPP version for the server.

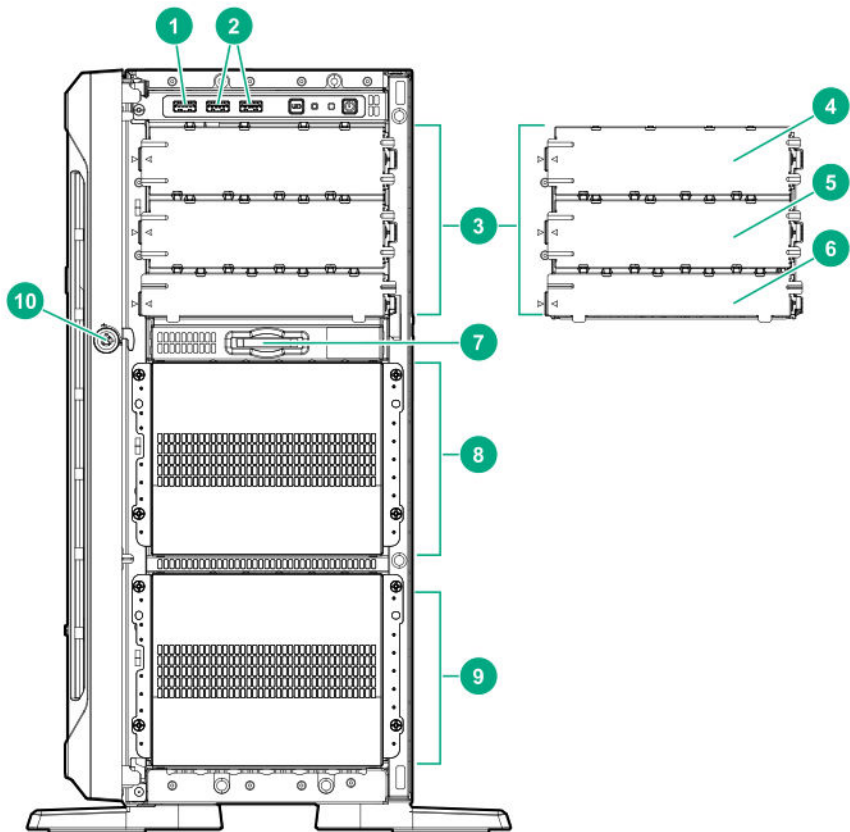
For more information about StorCLI, see *StorCLI User Guide* on the Hewlett Packard Enterprise website <https://www.hpe.com/info/P824i-pdocs>.



Component identification

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

Front panel components



Item	Description
1	iLO Service Port
2	USB 3.0 ports (2)
3	Box 1 ¹
4	Half-height media bay 1 (for SAS LTO tape drive option or USB RDX drive option) ²
5	Half-height media bay 2 (for USB RDX drive option) ²
6	Optical drive bay (for slim-type SATA optical drive option) ²
7	<u>Serial number/iLO information pull tab</u>

Table Continued



Item	Description
8	Box 2 ^{1, 3}
9	Box 3 ¹
10	Front bezel lock

¹ All three boxes support LFF and SFF drive cage options. This server supports mixed LFF + SFF hot-plug drive configurations.

² The media drive options are only supported in box 1.

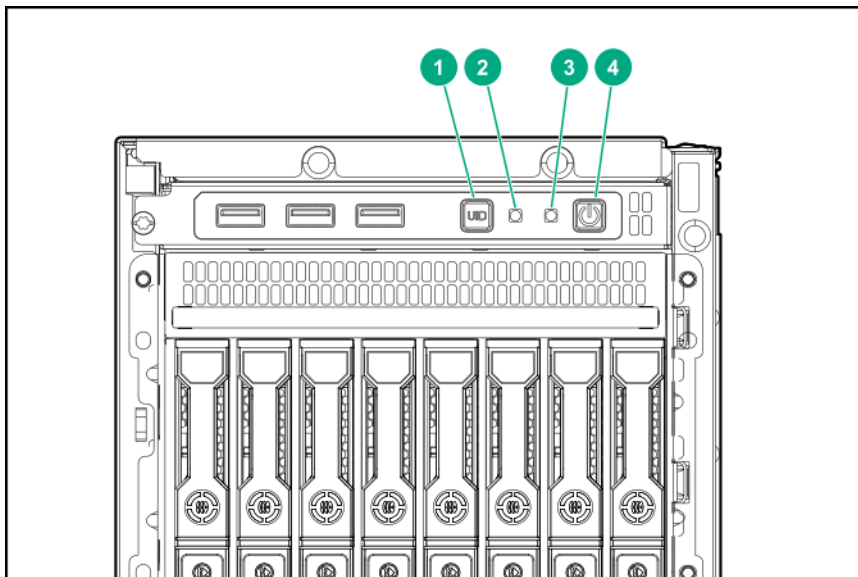
³ In SFF models, box 2 supports the 8 NVMe SSD Express Bay enablement option.

Serial number/iLO information pull tab

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 and QR code label.

Use a mobile device to scan the QR code label to display the server mobile product page (<https://www.hpe.com/qref/ml350gen10>). This page contains links to server setup information, spare part numbers, QuickSpecs, troubleshooting resources, and other useful product links.

Front panel LEDs and buttons



Item	Description	Status	Definition
1	UID button/LED ¹	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
2	NIC status LED ¹	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	Health LED ¹	Solid green	Normal
		Flashing green	iLO is rebooting
		Flashing amber	System degraded ²
		Flashing red	System critical ²
4	Power On/Standby button and system power LED ¹	Solid green	System on
		Flashing green	Performing power-on sequence
		Solid amber	System in standby
		Off	No power present ³

¹ When all four LEDs described in this table flash simultaneously, a power fault has occurred. For more information, see **Front panel LED power fault codes**.

² If the health LED indicates a degraded or critical state, review the system IML or use iLO to review the system health status.

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

Server UID LED

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

Toggling the UID LED on and off locally

Procedure

- 1. Remove the front bezel.**
2. Do one of the following:





- To turn on the UID LED, press the UID button.
This action illuminates both the front and rear UID LEDs blue.
- To turn off the UID LED, press the UID button again.

The procedure is complete.

Toggling the UID LED on and off remotely

Procedure

1. Log in to the iLO web interface.
2. Do one of the following:
 - To turn on the UID LED, click the UID icon  .
This action illuminates both the front and rear UID LEDs blue.
 - To turn off the UID LED, click the UID icon  again.

The iLO control icons are available from any iLO page. For more information, see the iLO user guide on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/ilo-docs>).

The procedure is complete.

UID button functionality

The UID button can be used to display the Server Health Summary when the server will not power on. For more information, see the latest *HPE iLO 5 User Guide* on the [Hewlett Packard Enterprise website](#).

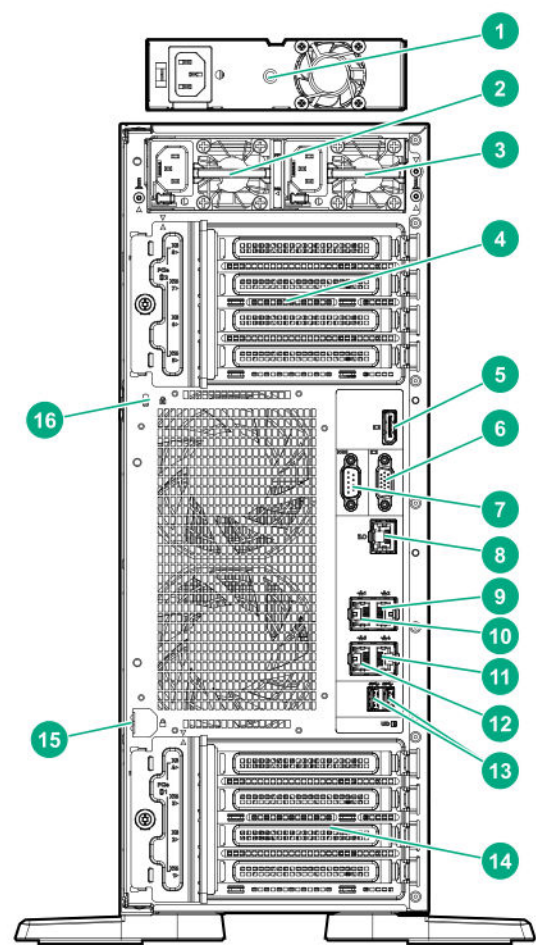
Front panel LED power fault codes

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

Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes
FlexibleLOM	5 flashes
Storage controllers	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes



Rear panel components



Item	Description
1	Standard power supply (non-hot-plug) ¹
2	Flexible Slot power supply 2 (hot-plug)
3	Flexible Slot power supply 1 (hot-plug)
4	PCIe expansion slots 5-8 (bottom to top)
5	Display port
6	VGA port
7	Serial port
8	iLO management port

Table Continued

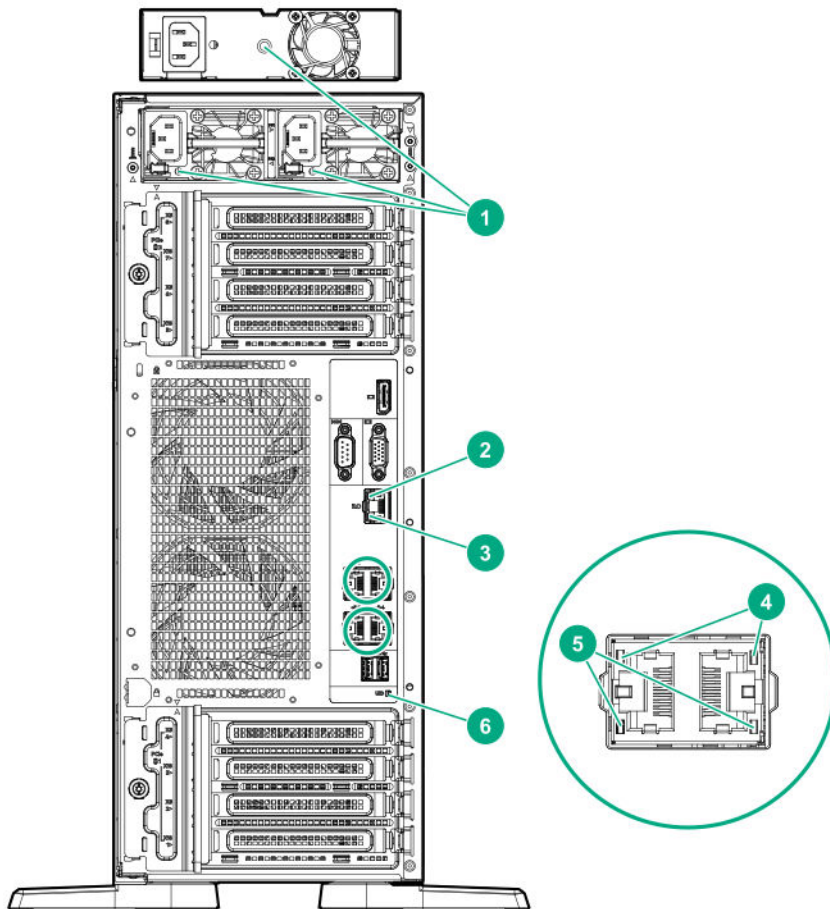


Item	Description
9	NIC port 2 (1Gb) ²
10	NIC port 1 (1Gb) ²
11	NIC port 4 (1Gb) ²
12	NIC port 3 (1Gb) ²
13	USB 3.0 ports (2)
14	PCIe expansion slots 1-4 (bottom to top)
15	Padlock eye
16	Kensington security slot

¹ The non-hot-plug power supply is only supported in LFF non-hot-plug drive configurations.

² These NIC ports do not support the 100 Mb/s and 10 Mb/s speeds.

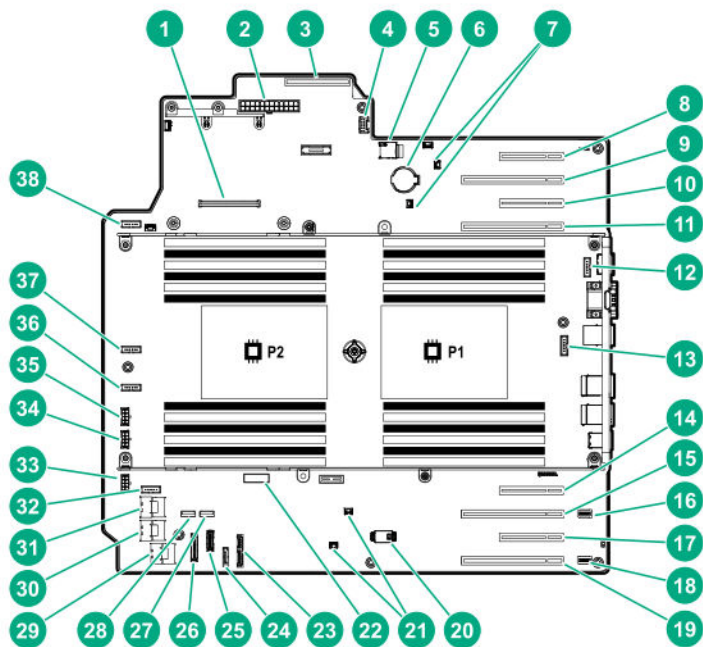
Rear panel LEDs



Item	LED	Status	Definition
1	Power supply	Solid green	Normal
		Off	System is off or power supply has failed.
2	iLO status	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
3	iLO link	Solid green	Network link
		Off	No network link
4	NIC status	Solid green	Linked to network
		Flashing green	Network active
		Off	No network activity
5	NIC link	Solid green	Network link
		Off	No network link
6	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 • 8 flashes per sec = iLO manual reboot sequence in progress
		Off	Deactivated



System board components



Item	Description
1	Smart Array modular controller connector (AROC)
2	Standard power supply connector
3	Power distribution board connector
4	Energy pack connector
5	microSD card slot
6	System battery
7	Storage controller backup power connectors (2)
8	Slot 8 PCIe3 x8 (8, 4, 1) ¹
9	Slot 7 PCIe3 x16 (16, 8, 4, 1) ¹
10	Slot 6 PCIe3 x8 (8, 4, 1) ¹
11	Slot 5 PCIe3 x16 (16, 8, 4, 1) ¹
12	Fan connector 5

Table Continued



Item	Description
13	Fan connector 6
14	Slot 4 PCIe3 x8 (4, 1) ²
15	Slot 3 PCIe3 x16 (16, 8, 4, 1) ²
16	NVMe riser sideband connector for PCIe slot 3
17	Slot 2 PCIe3 x8 (4, 1) ²
18	NVMe riser sideband connector for PCIe slot 1
19	Slot 1 PCIe3 x16 (16, 8, 4, 1) ²
20	TPM connector
21	Storage controller backup power connectors (2)
22	<u>System maintenance switch</u>
23	Power and x1 SATA port 5
24	x1 SATA port 4
25	Front USB cable connector
26	Front I/O cable connector
27	Internal USB 2.0 port
28	Internal USB 3.0 port
29	x4 SATA port 2
30	x4 SATA port 1
31	x4 SATA port 3
32	Fan connector 4
33	Box 3 drive power connector
34	Box 2 drive power connector
35	Box 1 drive power connector

Table Continued



Item	Description
36	Fan connector 3
37	Fan connector 2
38	Fan connector 1

¹ The PCIe3 expansion slots 5–8 are associated with processor 2.

² The PCIe3 expansion slots 1–4 are associated with processor 1.

System maintenance switch descriptions

Position	Default	Function
S1 ¹	Off	Off = iLO 5 security is enabled. On = iLO 5 security is disabled.
S2	Off	Reserved
S3	Off	Reserved
S4	Off	Reserved
S5 ¹	Off	Off = Power-on password is enabled. On = Power-on password is disabled.
S6 ^{1, 2, 3}	Off	Off = No function On = Restore default manufacturing settings
S7	Off	Reserved
S8	—	Reserved
S9	—	Reserved
S10	—	Reserved
S11	—	Reserved
S12	—	Reserved

¹ To access the redundant ROM, set S1, S5, and S6 to On.

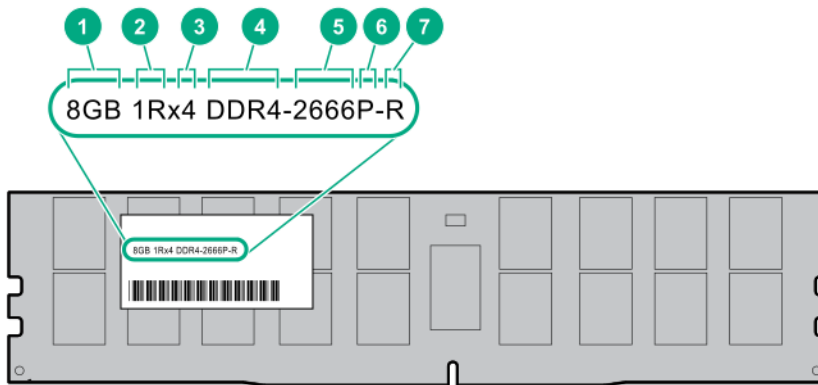
² When the system maintenance switch position 6 is set to the On position, the system is prepared to restore all configuration settings to their manufacturing defaults.

³ 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 **Secure Boot**.

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.





Item	Description	Example
1	Capacity	8 GB 16 GB 32 GB 64 GB 128 GB
2	Rank	1R = Single rank 2R = Dual rank 4R = Quad rank 8R = Octal rank
3	Data width on DRAM	x4 = 4-bit x8 = 8-bit x16 = 16-bit
4	Memory generation	PC4 = DDR4
5	Maximum memory speed	2133 MT/s 2400 MT/s 2666 MT/s 2933 MT/s

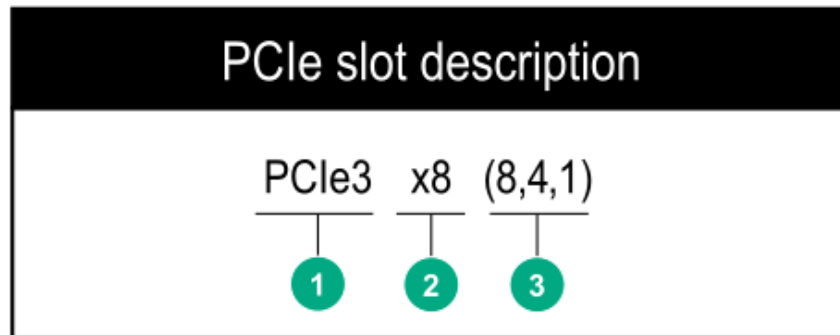
Table Continued



Item	Description	Example
6	CAS latency	<p>P = CAS 15-15-15</p> <p>T = CAS 17-17-17</p> <p>U = CAS 20-18-18</p> <p>V = CAS 19-19-19 (for RDIMM, LRDIMM)</p> <p>V = CAS 22-19-19 (for 3DS TSV LRDIMM)</p> <p>Y = CAS 21-21-21 (for RDIMM, LRDIMM)</p> <p>Y = CAS 24-21-21 (for 3DS TSV LRDIMM)</p>
7	DIMM type	<p>R = RDIMM (registered)</p> <p>L = LRDIMM (load reduced)</p> <p>E = Unbuffered ECC (UDIMM)</p>

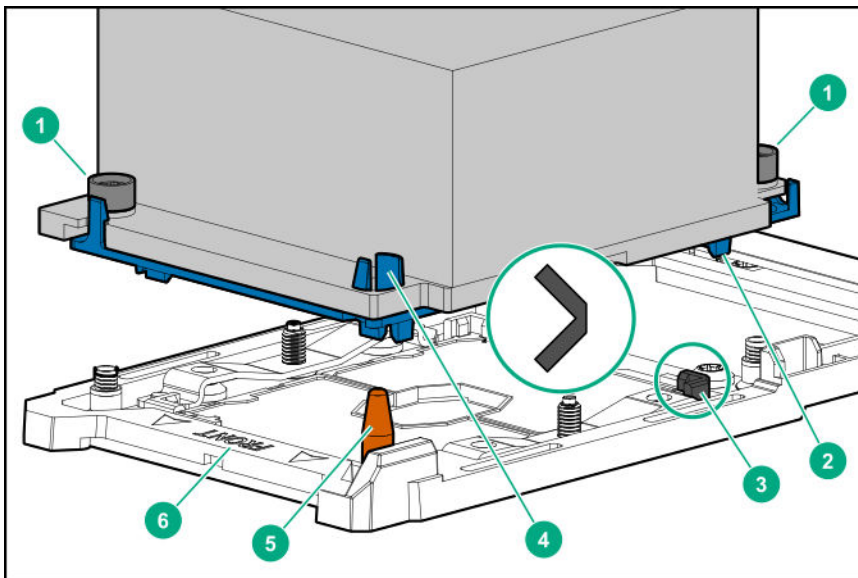
For more information about product features, specifications, options, configurations, and compatibility, see the HPE DDR4 SmartMemory QuickSpecs on the Hewlett Packard Enterprise website (<https://www.hpe.com/support/DDR4SmartMemoryQS>).

PCIe slot description



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

Processor, heatsink, and socket components

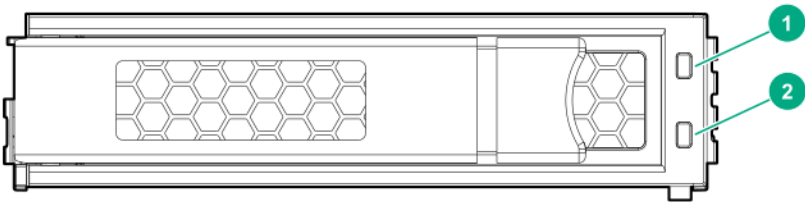


Item	Description
1	Heatsink nuts
2	Processor carrier
3	Pin 1 indicator ¹
4	Heatsink guide/keying feature
5	Alignment post
6	Heatsink keying frame

¹ Symbol also on the processor and frame.

Drive LEDs and buttons

Low-profile LFF drive LED definitions



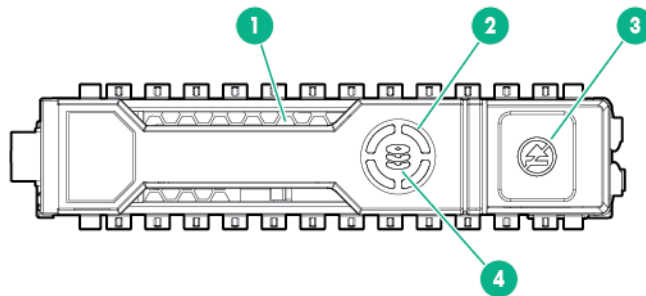
Item	LED	Status	Definition
1	Fault \Locate	Solid amber	The drive has failed.
		Solid blue	The drive is operating normally and being identified by a management application.
		Flashing amber/blue (1 flash per second)	The drive has failed, or a predictive failure alert has been received for this drive; it also has 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.
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.

Table Continued



Item	LED	Status	Definition
		Flashing green (1 flash per second)	The drive is doing one of the following: <ul style="list-style-type: none"> • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Off	The drive is not configured by a RAID controller or a spare drive.

Smart Carrier (SC) drive LED definitions



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. Removing the drive causes one or more of the logical drives to fail.
		Off	Removing the drive does not cause a logical drive to fail.
4	Drive status	Solid green	The drive is a member of one or more logical drives.

Table Continued

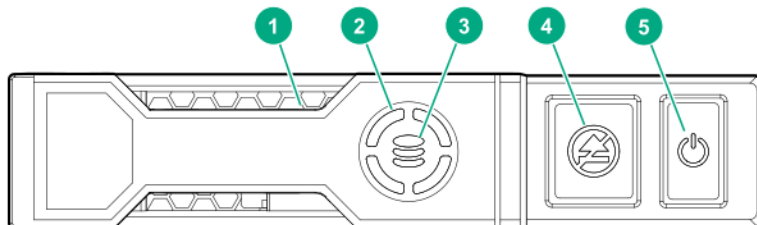


Item	LED	Status	Definition
		Flashing green	The drive is doing one of the following: <ul style="list-style-type: none"> • Rebuilding • Performing a RAID migration • Performing a strip size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing • Spare part activation
		Flashing amber/ green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller or a spare drive.

Smart Carrier NVMe (SCN) drive LED definitions

The NVMe drive is a PCIe bus device. A device attached to a PCIe bus cannot be removed without allowing the device and bus to complete and cease the signal/traffic flow.

⚠ CAUTION: Do not remove an NVMe drive from the drive bay while the Do not remove LED is flashing. The Do not remove LED flashes to indicate that the device is still in use. Removing the NVMe drive before the device has completed and ceased signal/traffic flow can cause loss of data.



Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Drive status	Solid green	The drive is a member of one or more logical drives.

Table Continued



Item	LED	Status	Definition
		Flashing green	The drive is doing one of the following: <ul style="list-style-type: none"> • Rebuilding • Performing a RAID migration • Performing a stripe size migration • Performing a capacity expansion • Performing a logical drive extension • Erasing
		Flashing amber/ green	The drive is a member of one or more logical drives and predicts the drive will fail.
		Flashing amber	The drive is not configured and predicts the drive will fail.
		Solid amber	The drive has failed.
		Off	The drive is not configured by a RAID controller.
4	Do not remove	Solid white	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing white	The drive ejection request is pending.
		Off	The drive has been ejected.
5	Power	Solid green	Do not remove the drive. The drive must be ejected from the PCIe bus prior to removal.
		Flashing green	The drive ejection request is pending.
		Off	The drive has been ejected.

Drive bay numbering

Drive bay numbering depends on how the drive backplane is connected. In this server, the backplane can be connected to the:

- Embedded Smart Array controller through the onboard SATA ports
- Smart Array type-a modular (AROC) and type-p standup plug-in storage controllers
- SAS expander card

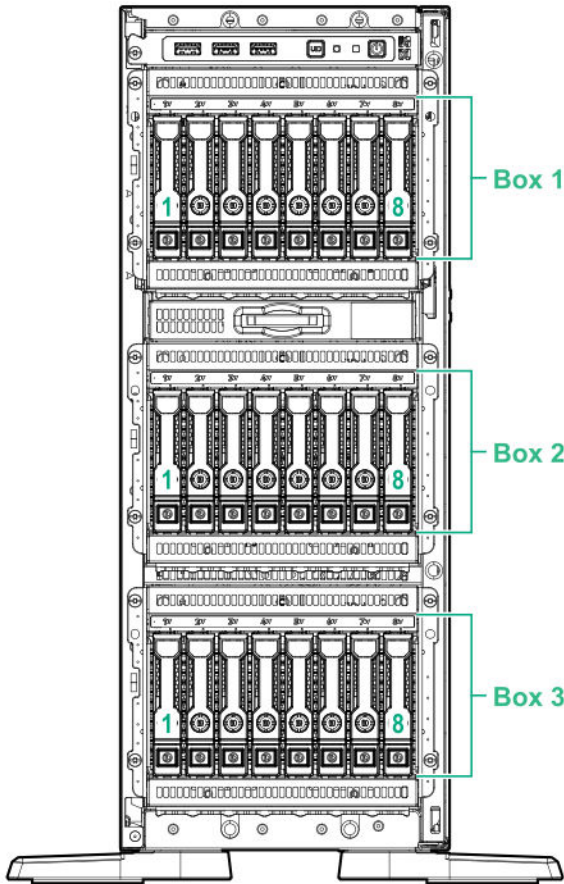
When the backplane is connected to a storage controller, the drive bay numbering for each drive box starts at 1.

When the backplane is connected to a SAS expander, all drive boxes are treated as a single box 1. This means the drive bay numbering is continuous.

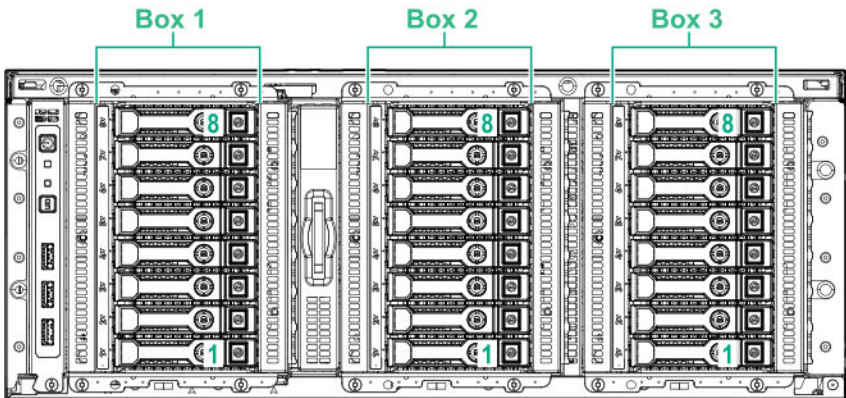


SFF drive bay numbering: Smart Array controller

Tower orientation

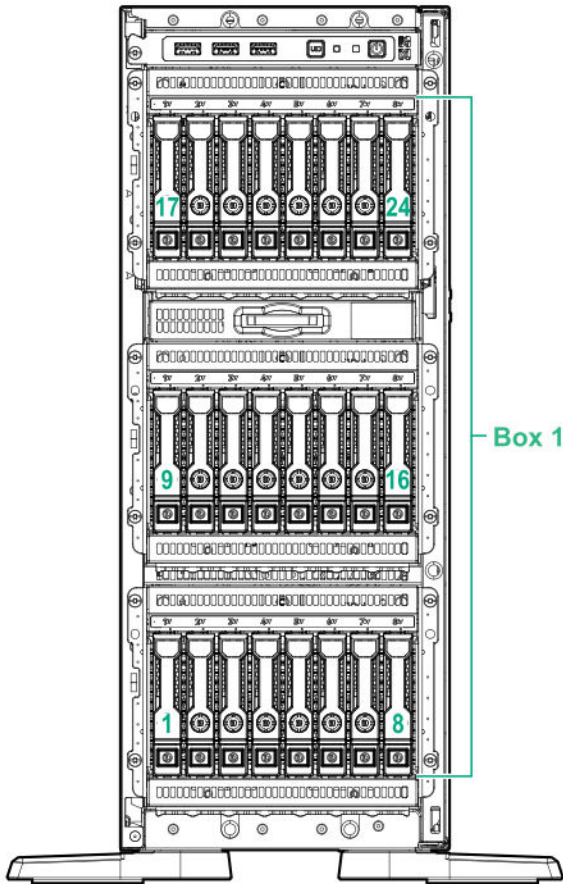


Rack orientation

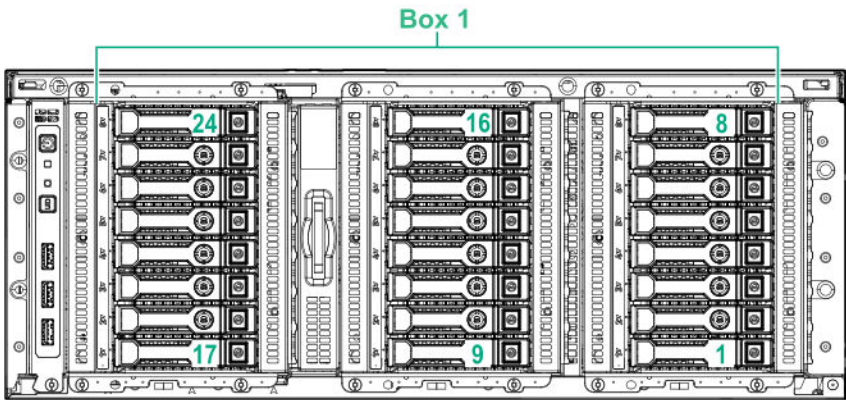


SFF drive bay numbering: SAS expander

Tower orientation

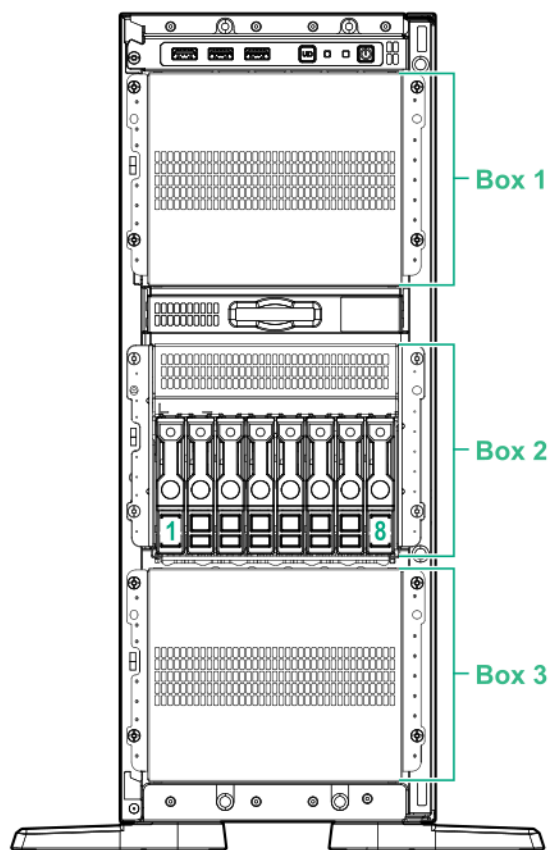


Rack orientation

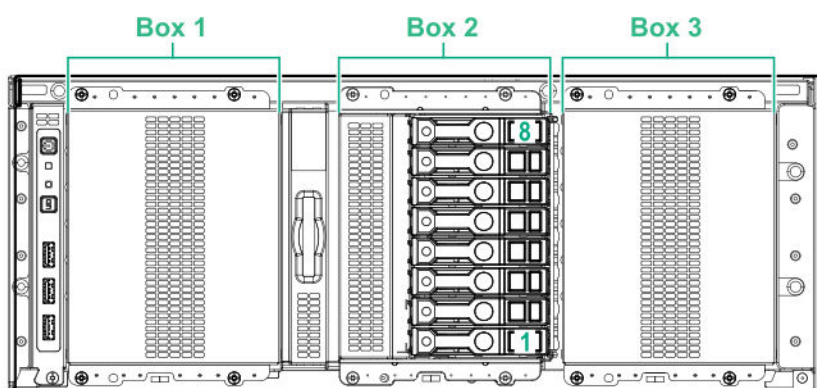


NVMe drive bay numbering

Tower orientation

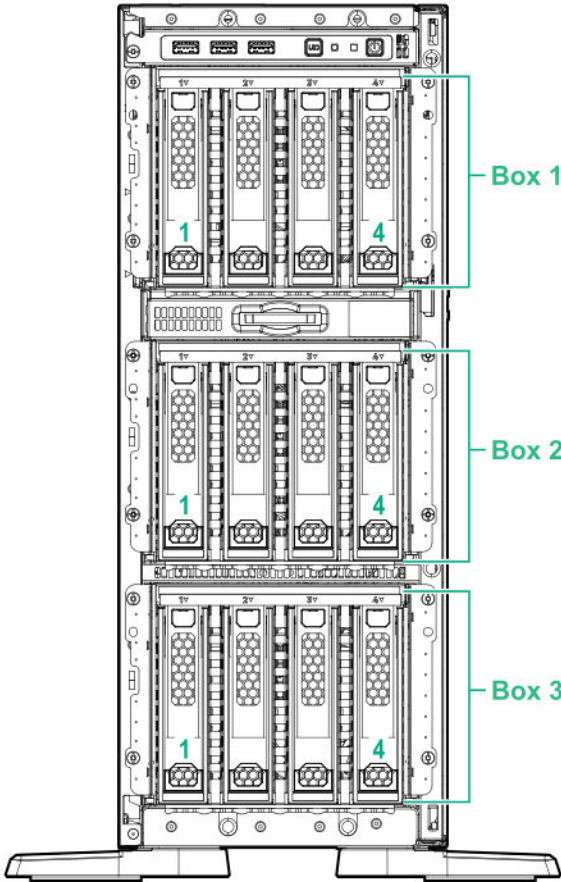


Rack orientation

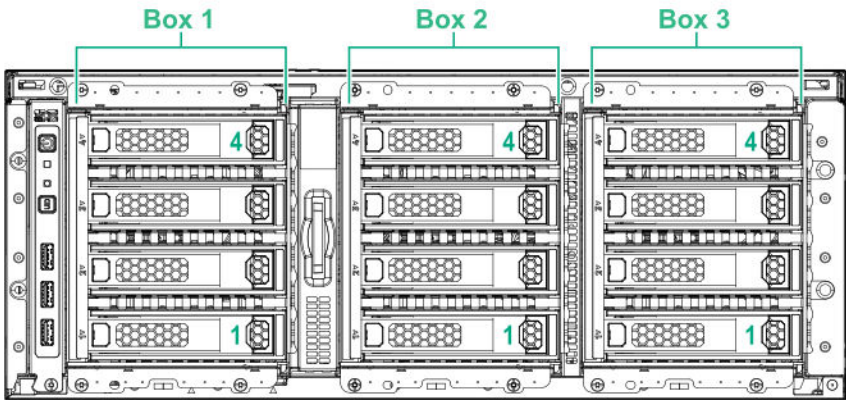


LFF drive bay numbering: Smart Array controller

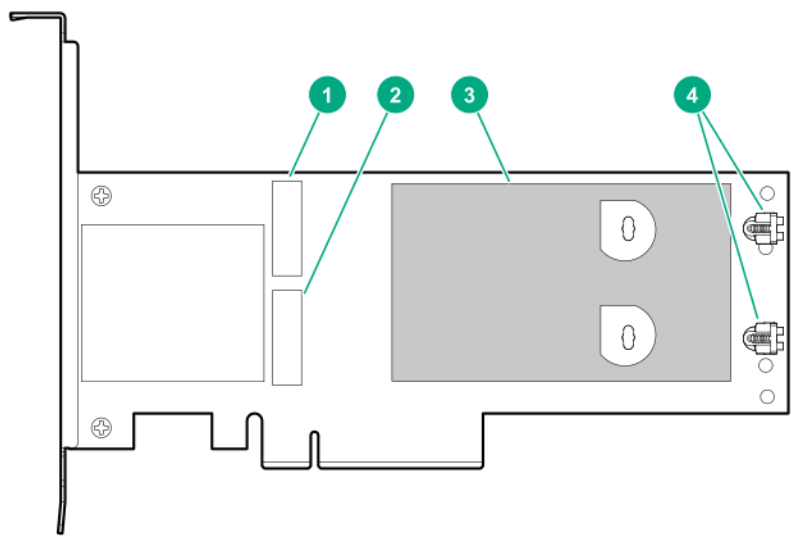
Tower orientation



Rack orientation

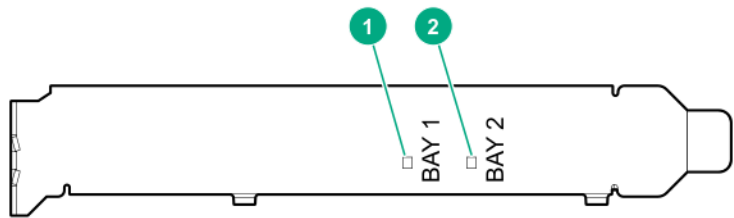


HPE NS204i-p NVMe OS Boot Device components



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

HPE NS204i-p NVMe OS Boot Device LED definitions

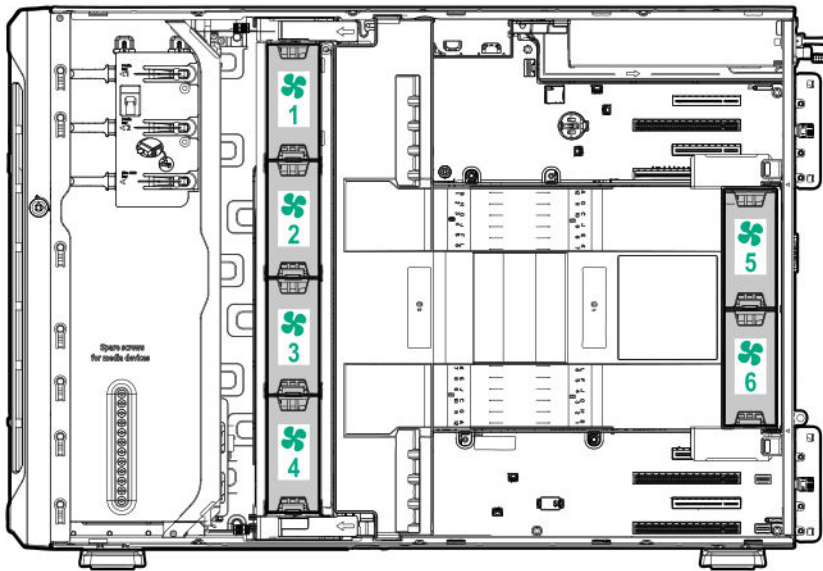


Item	Description	Fault LED status
1	Bay 1 LED	Off: Normal
2	Bay 2 LED	Flashing 1Hz: Drive predictive failure Amber: Drive failure

Fan bay numbering

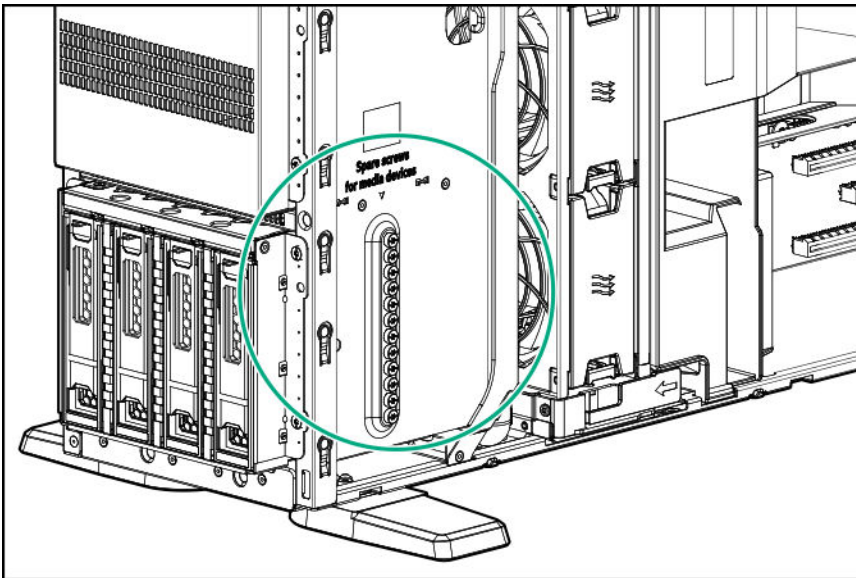
Fans 5 and 6 are preinstalled in the chassis while fans 1–4 are preinstalled in the fan cage option.





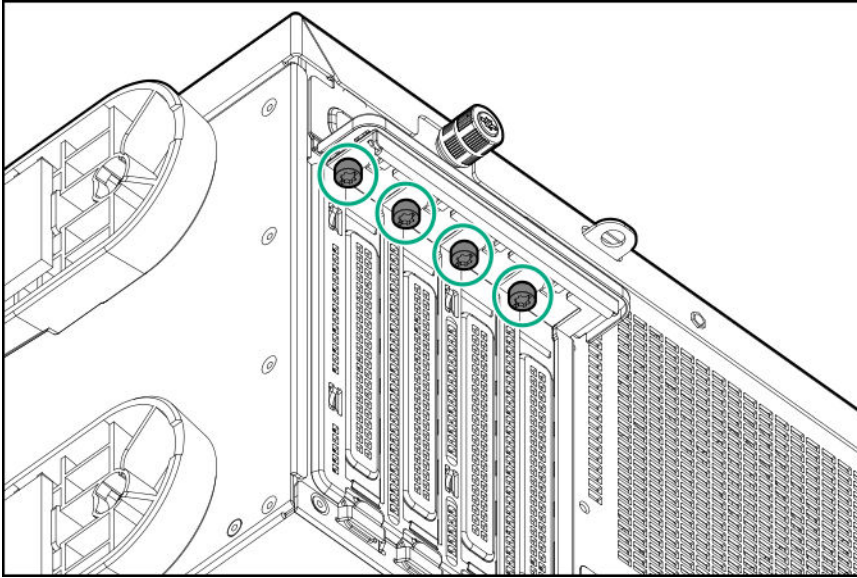
Media device screws

There are 12 T-15 Torx screws on the server chassis. These screws are provided as spare screws for installing media devices.



Expansion board screws

There are T-15 Torx screws located on the underside of the PCI blank retainer. These are screws for installing PCIe standup plug-in expansion board options.



Cabling

Cabling guidelines

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

Observe the following guidelines when working with server cables.

Before connecting cables

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

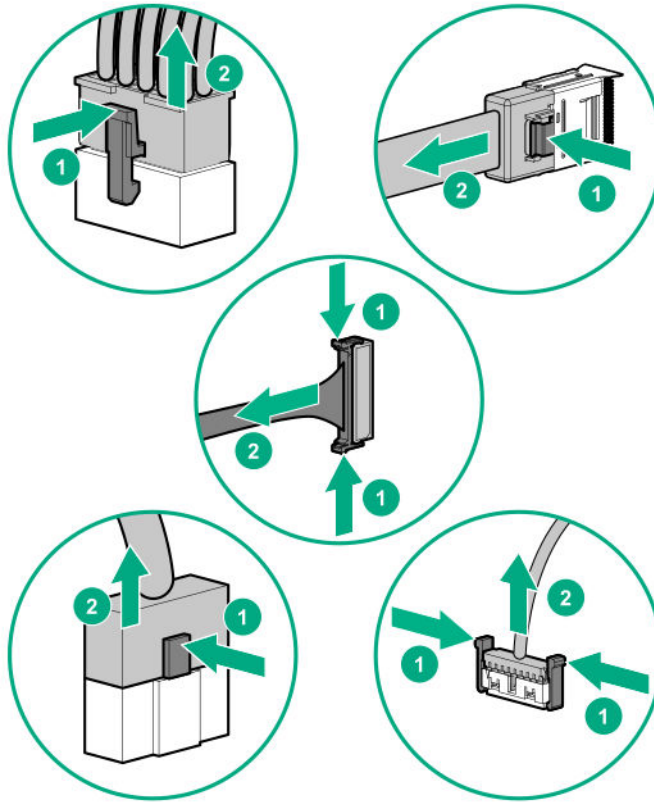
When connecting cables

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

When disconnecting cables

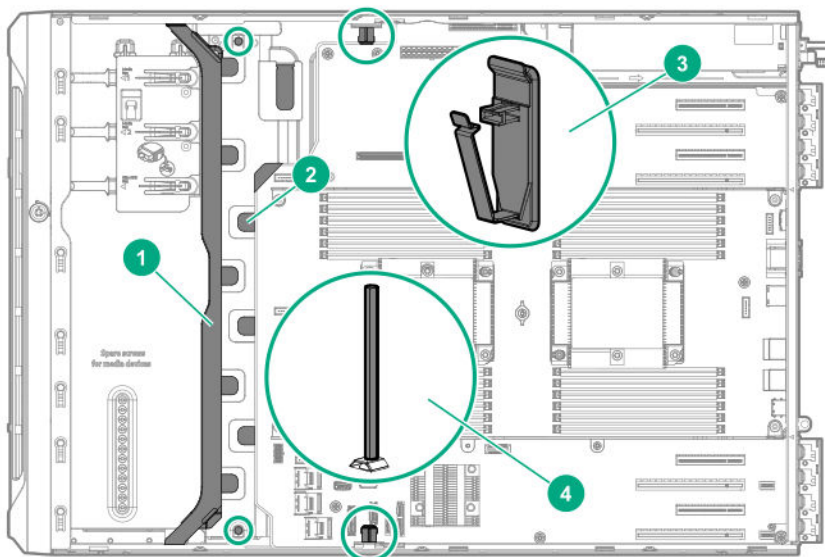
- Grip the body of the cable connector. Do not pull on the cable itself because this action can damage the internal wires of the cable or the pins on the port.
- If a cable does not disconnect easily, check for any release latch that must be pressed to disconnect the cable.





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

Internal cabling management



Item	Description
1	Front I/O cable assembly channel
2	Front cable channel with metal tabs
3	Cable clips
4	Alignment posts

Storage cabling

Storage controller cables

LFF non-hot-plug drive embedded controller cables

For controller cabling diagrams, see the [LFF non-hot-plug drive onboard SATA port cabling](#).

Cable location	Cable part number	From box #	To port #
Default in the server chassis	876493-002	Box 3	Onboard SATA port 1
Included in the non-hot-plug drive cage option	876492-002	Box 1 or 2	Onboard SATA port 2 or 3

LFF hot-plug drive controller cables

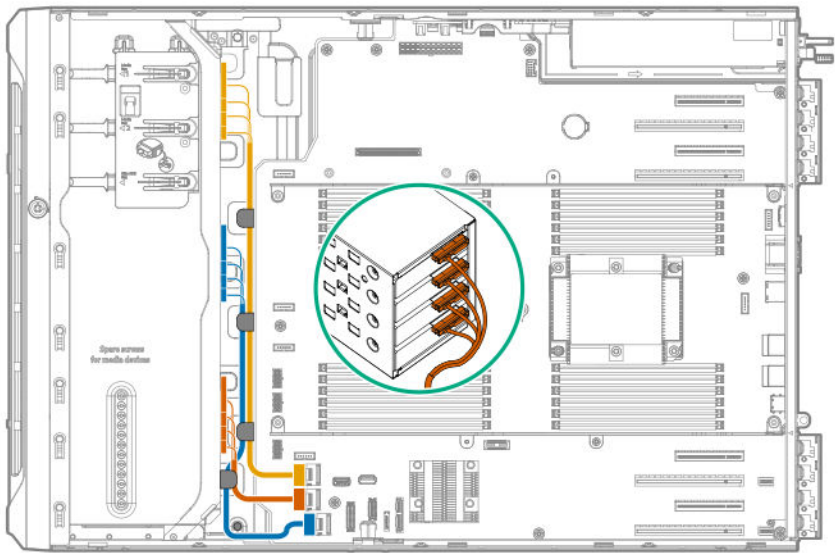
Controller type	Cable kit part number	Cable part number	From box #	To port #
<u>Embedded controller</u>	877578-B21	876487-001	Box 1 or 2	Onboard SATA ports 2 and 3
		876488-001	Box 3	Onboard SATA port 1
<u>Type-p standup plug-in controller</u>	874574-B21	876500-001	Box 1, 2, or 3	Controller port 1 or 2
<u>Type-a modular controller (AROC)</u>	874573-B21	876499-001	Box 1	Controller port 3
		876501-001	Box 1 or 2	Controller port 2
		876498-001	Box 2 or 3	Controller port 1

SFF hot-plug drive controller cables

Controller type	Cable kit part number	Cable part number	From box #	To port #
<u>Embedded controller</u>	877579-B21	876486-001	Box 3	Onboard SATA ports 1 and 2
<u>Type-p standup plug-in controller</u>	874575-B21	876485-001	Box 1, 2, or 3	Controller ports 1 and 2
	P00614-B21 ¹	P00511-001	<ul style="list-style-type: none"> P1 slot installation: Box 1 P2 slot installation: Box 3 	<ul style="list-style-type: none"> P1 slot installation: Controller ports 1 and 2 P2 slot installation: Controller ports 5 and 6
		P00509-001	Box 2	Controller ports 3 and 4
		P00510-001	<ul style="list-style-type: none"> P1 slot installation: Box 3 P2 slot installation: Box 1 	<ul style="list-style-type: none"> P1 slot installation: Controller ports 5 and 6 P2 slot installation: Controller ports 1 and 2
<u>Type-a modular controller (AROC)</u>	877575-B21	876497-001	Box 1 or 2	Controller ports 3 and 4
		876496-001	Box 2 or 3	Controller ports 1 and 2

¹ The P00512-001 cable (510 mm) included in the P00614-B21 cable kit is not for use in this server.

LFF non-hot-plug drive onboard SATA port cabling



Cable color	Description
Gold	Box 1 SATA-power split cable to the onboard SATA port 3
Blue	Box 2 SATA-power split cable to the onboard SATA port 2
Orange	Box 3 SATA-power split cable to the onboard SATA port 1

LFF hot-plug drive controller cabling

LFF hot-plug drive onboard SATA port cabling



Cable color	Description
Gold	Box 1 Mini-SAS cable to the onboard SATA port 3
Blue	Box 2 Mini-SAS cable to the onboard SATA port 2
Orange	Box 3 Mini-SAS cable to the onboard SATA port 1

LFF hot-plug drive standup controller cabling (SAS/SATA)

Slot 1 standup controller + onboard SATA port 1 cabling



Cable color	Description
Gold	Box 1 Mini-SAS X-cable to the standup controller port 2
Blue	Box 2 Mini-SAS X-cable to the standup controller port 1
Orange	Box 3 Mini-SAS cable to the onboard SATA port 1

Slots 1 and 3 standup controller cabling



Cable color	Description
Gold	Box 1 Mini-SAS cable to the slot 3 controller port 1
Blue	Box 2 Mini-SAS X-cable to the slot 1 controller port 2
Orange	Box 3 Mini-SAS X-cable to the slot 1 controller port 1

LFF hot-plug drive modular controller cabling (SAS/SATA)

Modular controller + onboard SATA port 1 cabling



Cable color	Description
Gold	Box 1 Mini-SAS cable to the modular controller port 2
Blue	Box 2 Mini-SAS cable to the modular controller port 1
Orange	Box 3 Mini-SAS cable to the onboard SATA port 1

Modular controller cabling



Cable color

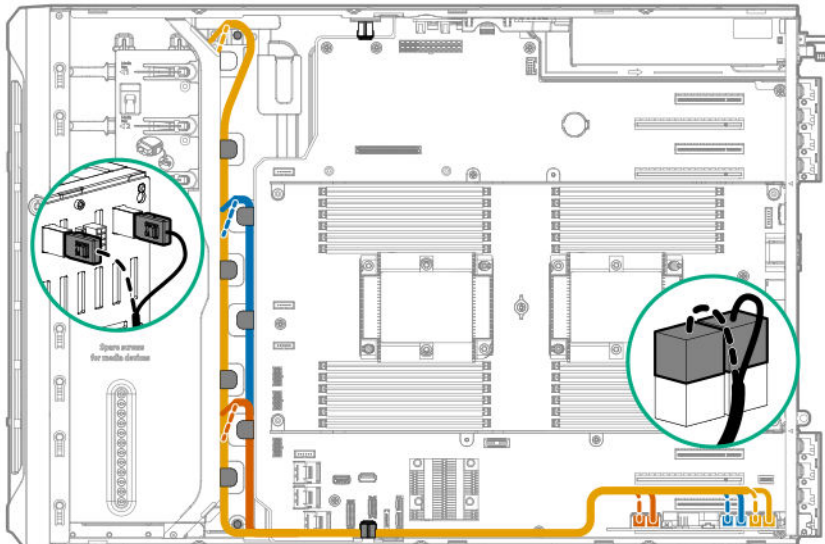
Description

Gold	Box 1 Mini-SAS cable to the modular controller port 3
Blue	Box 2 Mini-SAS cable to the modular controller port 2
Orange	Box 3 Mini-SAS cable to the modular controller port 1

SFF hot-plug drive controller cabling

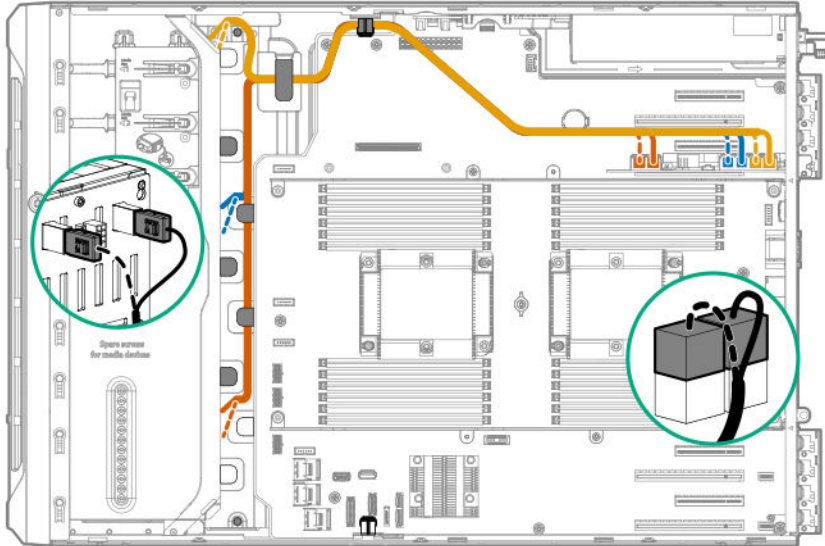
SFF hot-plug drive single standup controller cabling (SAS/SATA)

SFF hot-plug drive single standup controller cabling for P1 installation (SAS/SATA)



Cable color	Description
Gold	Box 1 Mini-SAS X-cable to standup controller ports 1 and 2
Blue	Box 2 Mini-SAS X-cable to standup controller ports 3 and 4
Orange	Box 3 Mini-SAS X-cable to standup controller ports 5 and 6

SFF hot-plug drive single standup controller cabling for P2 installation (SAS/SATA)



Cable color	Description
Gold	Box 1 Mini-SAS X-cable to standup controller ports 1 and 2
Blue	Box 2 Mini-SAS X-cable to standup controller ports 3 and 4
Orange	Box 3 Mini-SAS X-cable to standup controller ports 5 and 6

SFF hot-plug drive multiple standup controller cabling (SAS/SATA)



Cable color	Description
Gold	Box 1 Mini-SAS X-cable to the slot 5 standup controller ports 1 and 2
Blue	Box 2 Mini-SAS X-cable to the slot 1 standup controller ports 1 and 2
Orange	Box 3 Mini-SAS X-cable to the slot 3 standup controller ports 1 and 2

SFF hot-plug drive modular controller cabling (SAS/SATA)

Modular controller + onboard SATA ports 1 and 2 cabling



Cable color	Description
Gold	Box 1 Mini-SAS X-cable to the modular controller ports 3 and 4
Blue	Box 2 Mini-SAS X-cable to the modular controller ports 1 and 2
Orange	Box 3 Mini-SAS X-cable to the onboard SATA ports 1 and 2

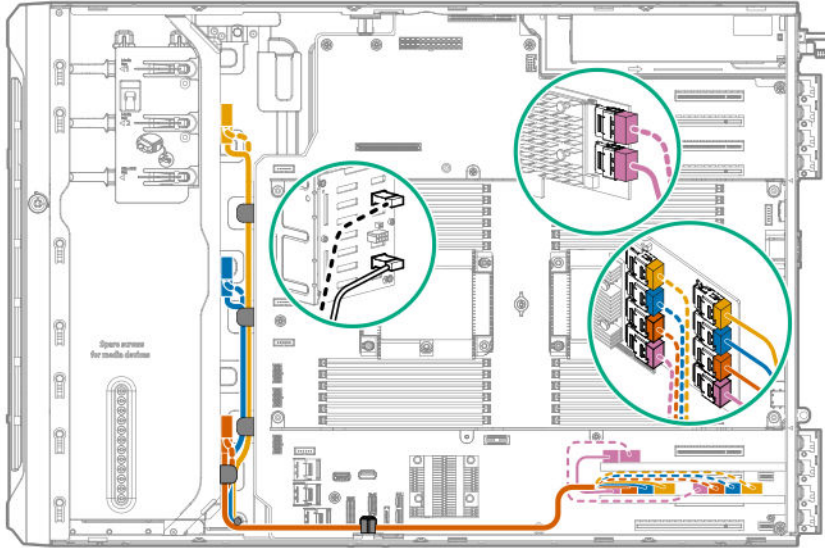
Modular controller cabling



Cable color	Description
—	Box 1 is empty or occupied by media devices .
Blue	Box 2 Mini-SAS X-cable to the modular controller ports 3 and 4
Orange	Box 3 Mini-SAS X-cable to the modular controller ports 1 and 2

SFF hot-plug drive SAS expander cabling (SAS/SATA)

SAS expander card with standup controller cabling



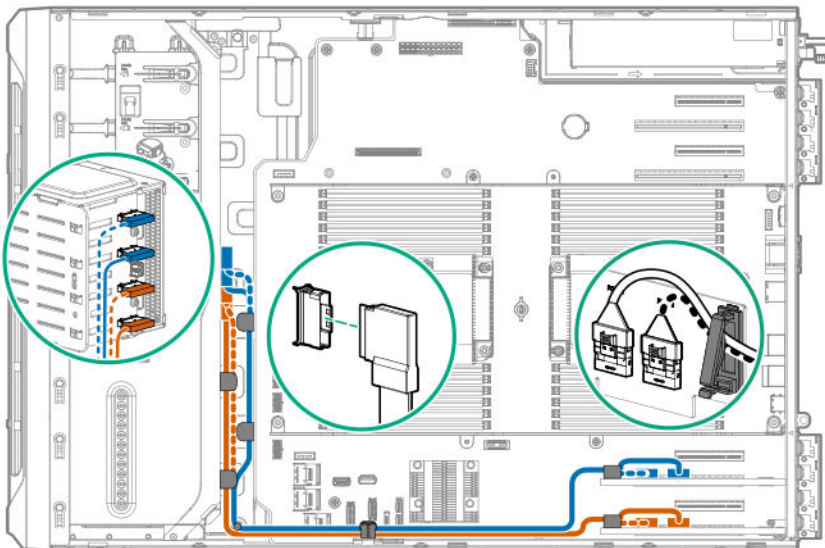
Cable color	Description
Gold	Box 1 Mini-SAS X-cable to the expander ports 7 and 8
Blue	Box 2 Mini-SAS X-cable to the expander ports 5 and 6
Orange	Box 3 Mini-SAS X-cable to the expander ports 3 and 4
Pink	Slot 3 standup controller Mini-SAS X-cable to the slot 2 expander ports 1 and 2

SAS expander card with modular controller cabling



Cable color	Description
Pink	Modular controller Mini-SAS X-cable to expander ports 1 and 2
Gold	Box 1 Mini-SAS X-cable to the expander ports 7 and 8
Blue	Box 2 Mini-SAS X-cable to the expander ports 5 and 6
Orange	Box 3 Mini-SAS X-cable to the expander ports 3 and 4

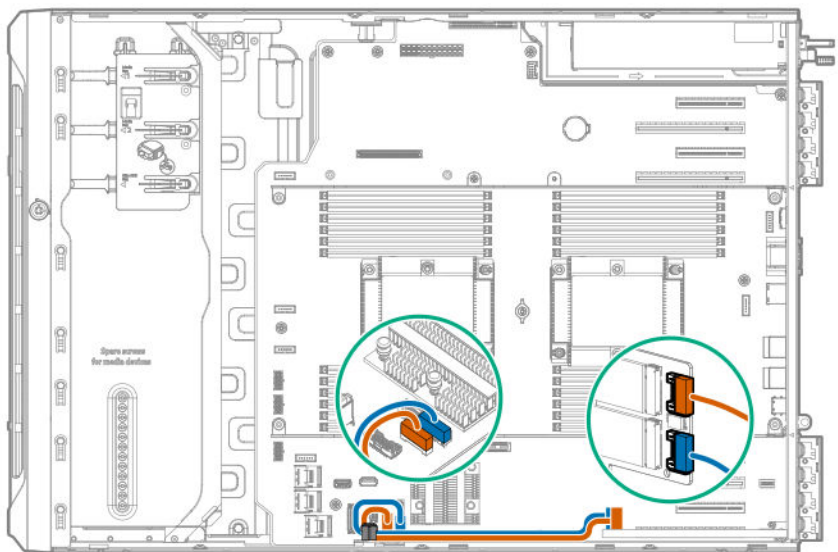
NVMe SSD data cabling



Cable color	Description
Blue	NVMe SSD backplane to the slot 3 NVMe riser board ports 1 and 2
Orange	NVMe SSD backplane to the slot 1 NVMe riser board ports 1 and 2

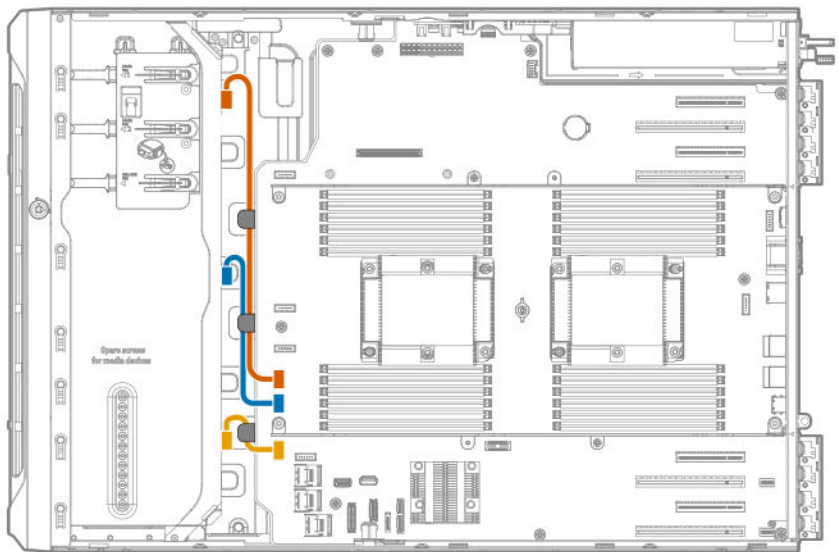
M.2 SATA SSD cabling

The server supports the installation of one M.2 SATA SSD enablement board in the PCIe3 expansion slots 1–4. The illustration below shows the enablement board in slot 1. Cable routing from slots 3–4 will follow the same path.



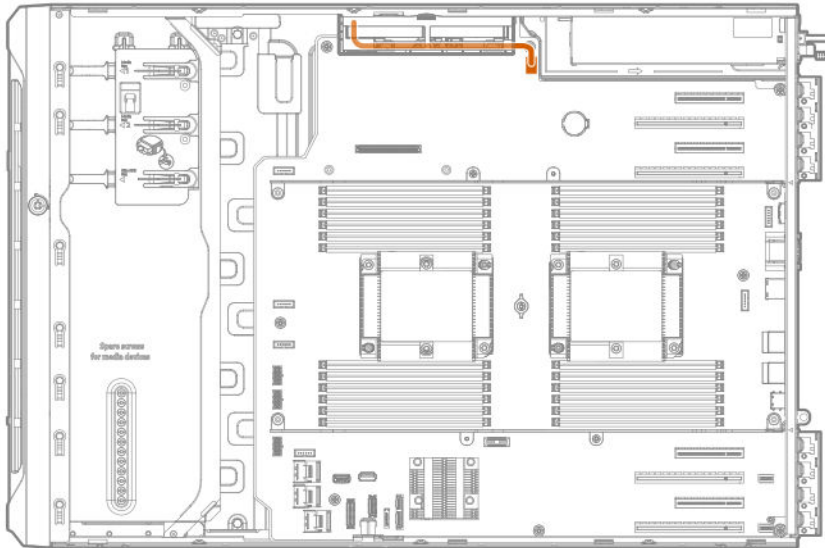
Cable color	Desription
Orange	M.2 SSD port 1 SATA cable to onboard SATA port 4
Blue	M.2 SSD port 2 SATA cable to onboard SATA port 5

Drive power cabling



Cable color	Description
Orange	Box 1 drive power connector cable
Blue	Box 2 drive power connector cable
Gold	Box 3 drive power connector cable

Energy pack cabling

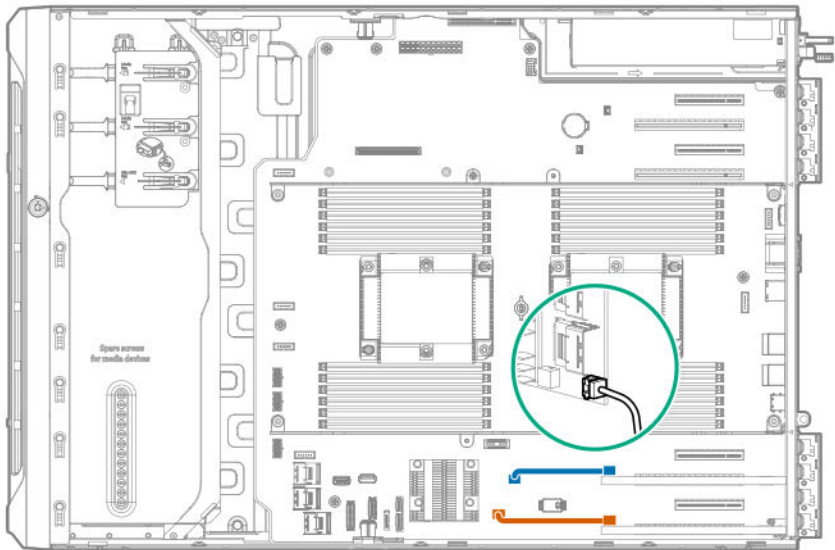


Storage controller backup power cabling

The storage controller backup power connector in your controller might be in a different location from what is shown in the following illustrations. For more information on the location of the backup power connector in your controller, see the controller user guide from the information library:

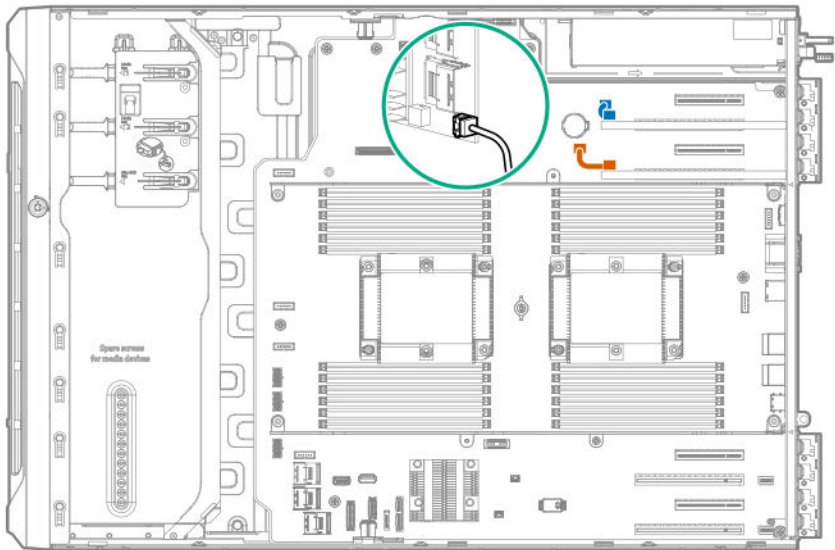
<https://www.hpe.com/info/smartstorage-docs>

Smart Array P-class storage controllers in slots 1 and 3



Cable color	Description
Blue	Slot 3 storage controller backup power cable
Orange	Slot 1 storage controller backup power cable

Smart Array P-class storage controllers in slots 5 and 7



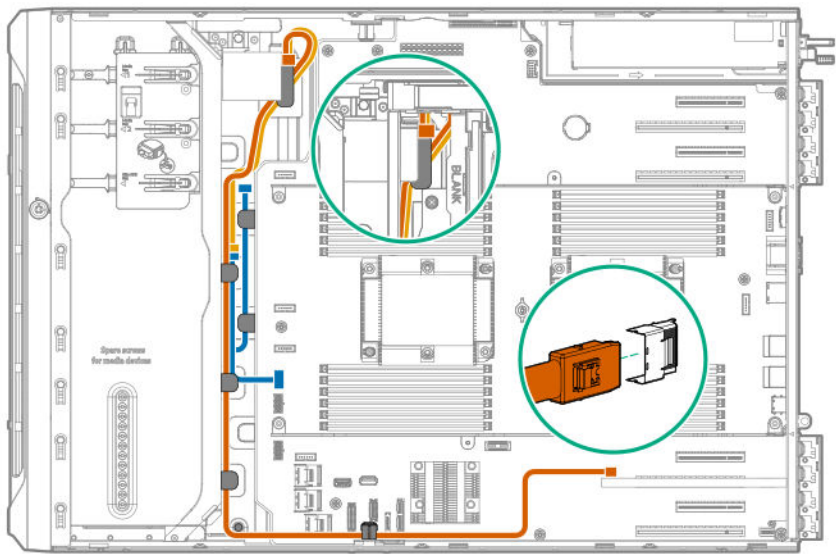
Cable color	Description
Blue	Slot 7 storage controller backup power cable
Orange	Slot 5 storage controller backup power cable

Media device cabling



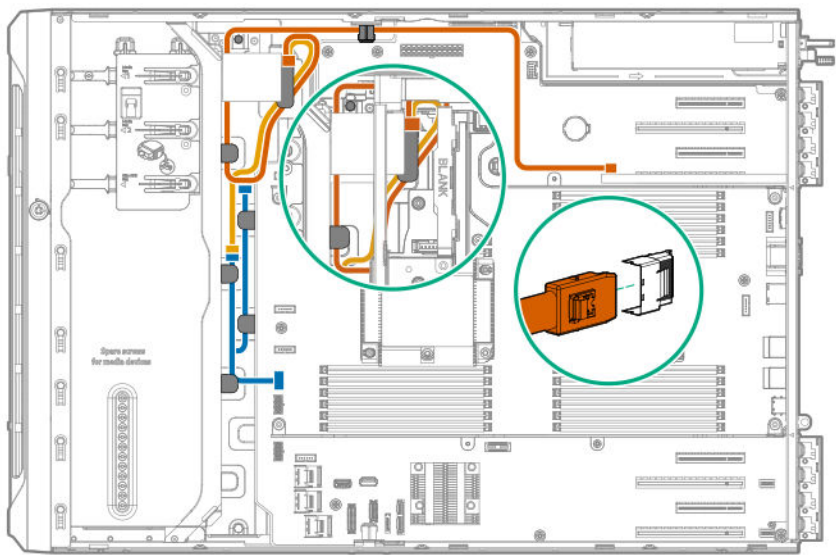
SAS LTO tape drive cabling

LTO tape drive cabling with the standup controller in slot 3



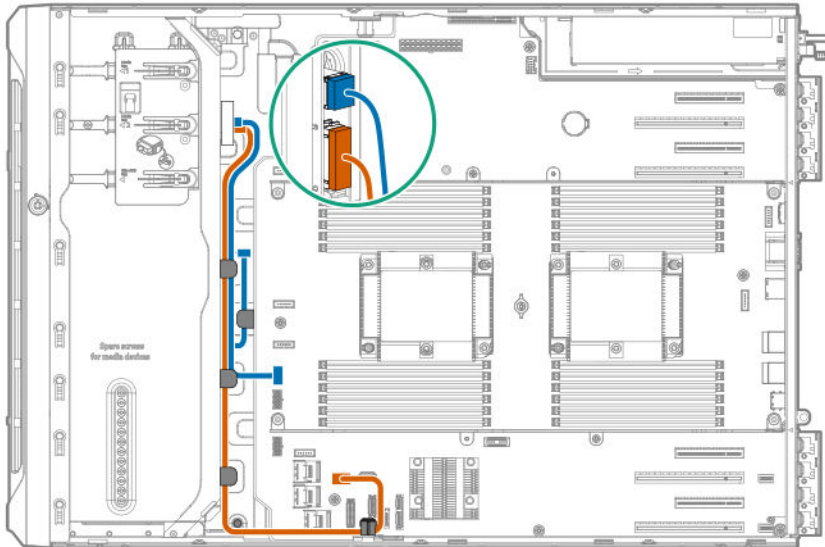
Cable color	Description
Gold	Power connector of the LTO tape drive power-SAS Y-cable to the LTO/RDX power Y-cable
Blue	LTO/RDX power Y-cable to the drive box 1 power connector
Orange	SAS connector of the LTO tape drive power-SAS Y-cable to the slot 3 standup controller

LTO tape drive cabling with the standup controller in slot 5



Cable color	Description
Orange	SAS connector of the LTO tape drive power-SAS Y-cable to the slot 5 standup controller
Gold	Power connector of the LTO tape drive power-SAS Y-cable to the LTO/RDX power Y-cable
Blue	LTO/RDX power Y-cable to the drive box 1 power connector

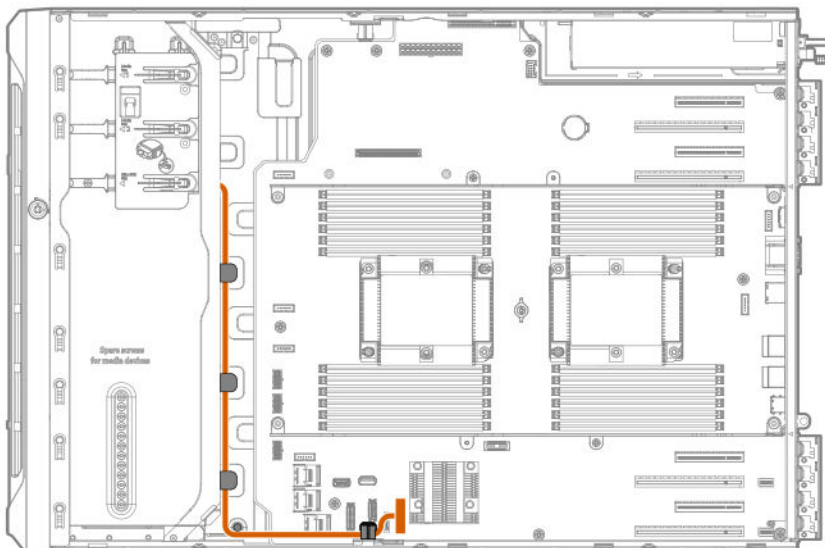
USB RDX drive cabling



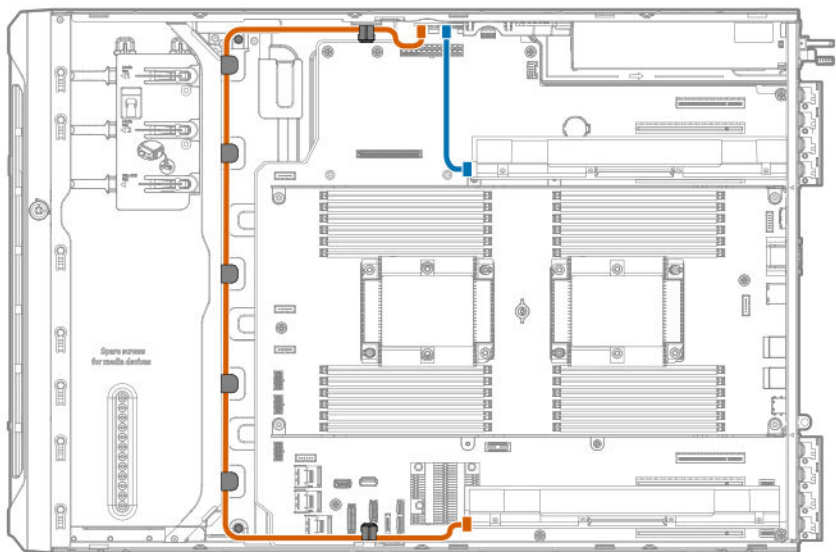
Cable color	Description
Blue	LTO/RDX power Y-cable to the drive box 1 power connector
Orange	RDX USB cable to the internal USB port 3.0

SATA optical drive cabling

Optical drive SATA cable to onboard SATA port 5

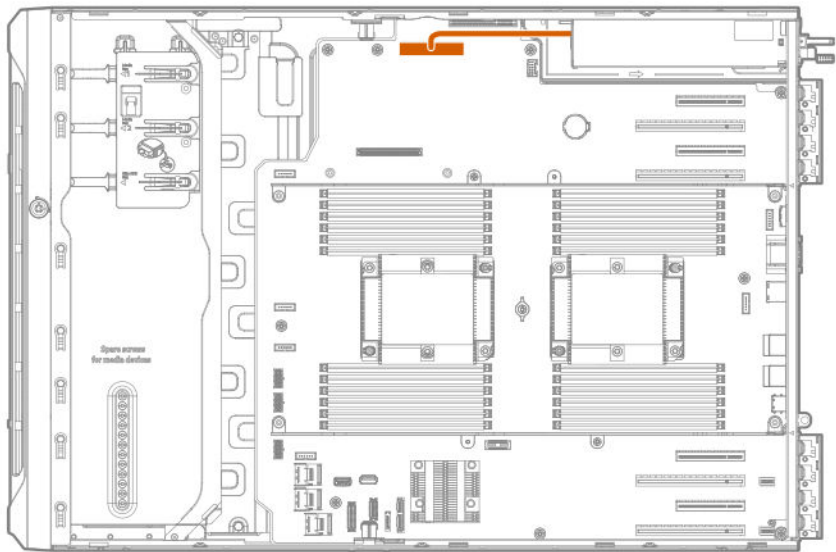


GPU auxiliary power cabling



Cable color	Description
Orange	Processor 1 GPU auxiliary power cable to PDB
Blue	Processor 2 GPU auxiliary power cable to PDB

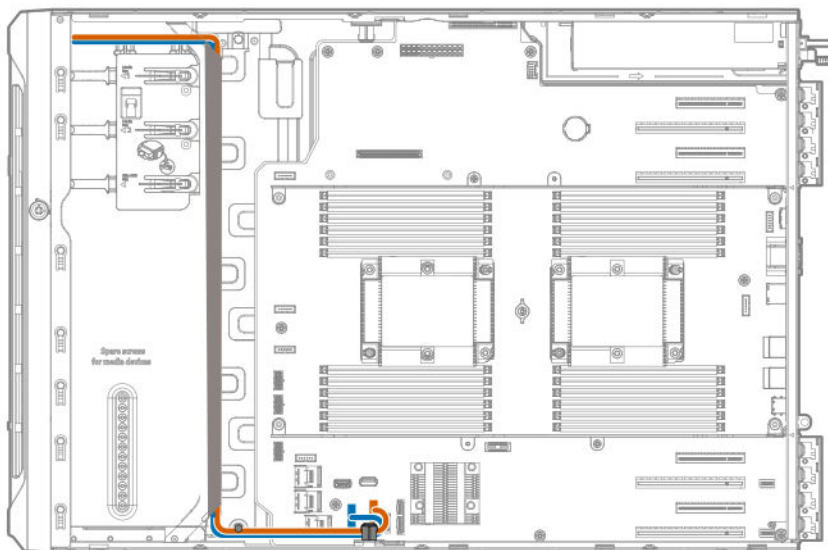
Standard power supply cabling (non-hot-plug)



Front I/O module cabling

The front I/O module cable is routed underneath the cable channel on top of the drive boxes.





Cable color	Description
Blue	Front I/O cable
Orange	Front USB cable



Specifications

Environmental specifications

Specification	Value
Temperature range¹	—
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
Nonoperating	5% to 95%
	38.7°C (101.7°F), maximum wet bulb temperature

¹ All temperature ratings shown are for sea level. An altitude derating of 1.0°C per 305 m (1.8°F per 1000 ft) to 3050 m (10,000 ft) is applicable. No direct sunlight allowed. Maximum rate of change is 20°C per hour (36°F per hour). The upper limit and rate of change might be limited by the type and number of options installed.

For certain approved hardware configurations, the supported system inlet temperature range is extended:

- 5°C to 10°C (41°F to 50°F) and 35°C to 40°C (95°F 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 (2953 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 3050 m (10,000 ft).

The approved hardware configurations for this system are listed on the [Hewlett Packard Enterprise website](#).

Mechanical specifications

Specification	Value
Tower model	—
Height	46.25 cm (18.21 in)
Depth	64.8 cm (25.51 in)
Width	17.4 cm (6.85 in)
Weight, minimum	21 kg (46.30 lb)

Table Continued



Specification	Value
Weight, maximum	41 kg (90.39 lb)
Rack model	—
Height	17.4 cm (6.85 in)
Depth	64.8 cm (25.51 in)
Width	44.5 cm (17.52 in)
Weight, minimum	21 kg (46.30 lb)
Weight, maximum	41 kg (90.39 lb)

Power supply specifications

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

- **HPE 500W Low Halogen Non-hot-plug Power Supply**
This power supply is only supported when the server is in tower mode.
- **HPE 500W Flex Slot Platinum Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Platinum Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Titanium Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot Universal Hot-plug Low Halogen Power Supply**
- **HPE 800W Flex Slot -48VDC Hot-plug Low Halogen Power Supply**
- **HPE 1600 W Flex Slot Platinum Hot-plug Low Halogen Power Supply**

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

HPE 500W Low Halogen Non-hot-plug Power Supply

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz

Table Continued



Specification	Value
Rated input current	5.8 A at 100 VAC
	2.3 A at 240 VAC
	2.7 A at 240 VDC for China only
Maximum rated input power	578 W at 100 VAC
	557 W at 240 VAC
BTUs per hour	1953 at 100 VAC
	1882 at 240 VAC
Power supply output	—
Rated steady-state power	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only

HPE 500W Flex Slot Platinum Hot-plug Low Halogen Power Supply

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 240 VAC
	240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
	Not applicable to 240 VDC
Rated input current	5.6 A at 100 VAC
	2.7 A at 200 VAC
	2.3 A at 240 VDC for China only
Maximum rated input power	557 W at 100 VAC
	539 W at 200 VAC
	537 W at 240 VDC for China only

Table Continued



Specification	Value
BTUs per hour	1902 at 100 VAC
	1840 at 200 VAC
	1832 at 240 VDC for China only
Power supply output	—
Rated steady-state power	500 W at 100 VAC to 127 VAC input
	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only
Maximum peak power	500 W at 100 VAC to 127 VAC input
	500 W at 100 VAC to 240 VAC input
	500 W at 240 VDC input for China only

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

Specification	Value
Input requirements	—
Rated input voltage	100 VAC to 127 VAC
	200 VAC to 240 VAC
	240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
	Not applicable to 240 VDC
Rated input current	9.1 A at 100 VAC
	4.4 A at 200 VAC
	3.6 A at 240 VDC for China only
Maximum rated input power	899 W at 100 VAC
	867 W at 200 VAC
	864 W at 240 VDC for China only
BTUs per hour	3067 at 100 VAC
	2958 at 200 VAC
	2949 at 240 VAC for China only

Table Continued



Specification	Value
Power supply output	—
Rated steady-state power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 100 VAC to 127 VAC input 800 W at 100 VAC to 240 VAC input 800 W at 240 VDC input for China only

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

Specification	Value
Input requirements	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz Not applicable to 240 VDC
Rated input current	4.35 A at 200 VAC 3.62 A at 240 VAC 3.62 A at 240 VDC for China only
Maximum rated input power	851 W at 200 VAC 848 W at 240 VAC 848 W at 240 VDC for China only
BTUs per hour	2905 at 200 VAC 2893 at 240 VAC 2893 at 240 VDC for China only
Power supply output	—
Rated steady-state power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only
Maximum peak power	800 W at 200 VAC to 240 VAC input 800 W at 240 VDC input for China only



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

Specification	Value
Input requirements	—
Rated input voltage	200 VAC to 277 VAC 380 VDC
Rated input frequency	50 Hz to 60 Hz
Rated input current	4.4 A at 200 VAC 3.1 A at 277 VAC 2.3 A at 380 VDC
Maximum rated input power	869 W at 200 VAC 865 W at 230 VAC 861 W at 277 VAC 863 W at 380 VDC
BTUs per hour	2964 at 200 VAC 2951 at 230 VAC 2936 at 277 VAC 2943 at 380 VDC
Power supply output	—
Rated steady-state power	800 W at 200 VAC to 277 VAC input
Maximum peak power	800 W at 200 VAC to 277 VAC input

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

Specification	Value
Input requirements	—
Rated input voltage	-40 VDC to -72 VDC -48 VDC nominal input
Rated input current	22.1 A at -40 VDC input 18.2 A at -48 VDC input, nominal input 12.0 A at -72 VDC input

Table Continued



Specification	Value
Rated input power (W)	874 W at -40 VDC input
	865 W at -48 VDC input, nominal input
	854 W at -72 VDC input
Rated input power (BTUs per hour)	2983 at -40 VDC input
	2951 at -48 VDC input, nominal input
	2912 at -72 VDC input
Power supply output	—
Rated steady-state power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power (W)	800 W at -40 VDC to -72 VDC
Maximum peak power	800 W at -40 VDC to -72 VDC input



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

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



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

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

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

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

Specification	Value
Input requirements	—
Rated input voltage	200 VAC to 240 VAC 240 VDC for China only
Rated input frequency	50 Hz to 60 Hz
Rated input current	8.7 A at 200 VAC 7.2 A at 240 VAC
Maximum rated input power	1734 W at 200 VAC 1725 W at 240 VAC
BTUs per hour	5918 at 200 VAC 5884 at 240 VAC
Power supply output	—
Rated steady-state power	1600 W at 200 VAC to 240 VAC input 1600 W at 240 VDC input
Maximum peak power	2200 W for 1 ms (turbo mode) at 200 VAC to 240 VAC input



Websites

General websites

Hewlett Packard Enterprise Information Library

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

Single Point of Connectivity Knowledge (SPOCK) Storage compatibility matrix

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

Storage white papers and analyst reports

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

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

Product websites

HPE ProLiant ML350 Gen10 Server product page

<https://www.hpe.com/servers/ml350-gen10>

HPE ProLiant ML350 Gen10 Server user documents

<https://www.hpe.com/info/ml350gen10-docs>

Support and other resources

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

ClearCARE technical support

Support for ClearOS and ClearVM is not provided by Hewlett Packard Enterprise. Support for ClearOS and ClearVM is purchased and delivered by ClearCenter. You can purchase single support incidents by submitting a support ticket to ClearCenter, or you can purchase a Bronze, Silver, Gold, or Platinum ClearCARE subscription. For more information, go to the ClearOS website:

<https://www.clearos.com/>

Several levels of professional technical support are available to licensed users. For more information, go to the ClearCARE support website:

<https://www.clearos.com/products/support/clearcare-overview>

Accessing updates

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

Hewlett Packard Enterprise Support Center

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



Hewlett Packard Enterprise Support Center: Software downloads

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

My HPE Software Center

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

- To subscribe to eNewsletters and alerts:

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

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

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



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

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 will initiate a fast and accurate resolution based on your product's service level. 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.

Remote support and Proactive Care information

HPE Get Connected

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

HPE Proactive Care services

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

HPE Datacenter Care services

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

HPE Proactive Care service: Supported products list

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

HPE Proactive Care advanced service: Supported products list

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

Proactive Care customer information

Proactive Care central

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

Proactive Care service activation

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

Warranty information

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

HPE ProLiant and IA-32 Servers and Options

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



HPE Enterprise and Cloudline Servers

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

HPE Storage Products

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

HPE Networking Products

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

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>

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Acronyms and abbreviations

3DS TSV

three-dimensional stacked through-silicon via (integrated circuit packaging technology)

AHCI

advanced host controller interface

AHS

Active Health System

API

application program interface

CAS

column address strobe

CMA

cable management arm

CSR

customer self repair

DDR4

double data rate-4

FCoE

Fibre Channel over Ethernet

GPU

graphics processing unit

HPE SSA

HPE Smart Storage Administrator

IEC

International Electrotechnical Commission

iLO

Integrated Lights-Out

IML

Integrated Management Log

ISO

International Organization for Standardization

LFF

large form factor

LRDIMM

load reduced dual in-line memory module



LTO

linear tape-open

NFV

network functions virtualization

NVMe

nonvolatile memory express

PCA

printed circuit assembly

PCIe

Peripheral Component Interconnect Express

PDB

power distribution board

POST

Power-On Self-Test

PXE

Preboot eXecution Environment

QR code

quick response code

RBSU

ROM-Based Setup Utility

RDIMM

registered dual in-line memory module

REACH

Registration, Evaluation, Authorization, Restriction of Chemicals (European Union chemical regulatory framework)

REST

Representational State Transfer

RoHS

Restriction of Hazardous Substances

SAS

serial attached SCSI

SATA

serial ATA

SD

secure digital

SFF

small form factor



SMB

small and medium business

SPP

Service Pack for ProLiant

SSD

solid state device

StorCLI

Storage Command Line Interface

TPM

Trusted Platform Module

UDIMM

unregistered dual in-line memory module

UEFI

Unified Extensible Firmware Interface

UID

unit identification

UPS

uninterruptible power supply

VM

virtual machine

