Hewlett Packard Enterprise

HPE ProLiant DL180 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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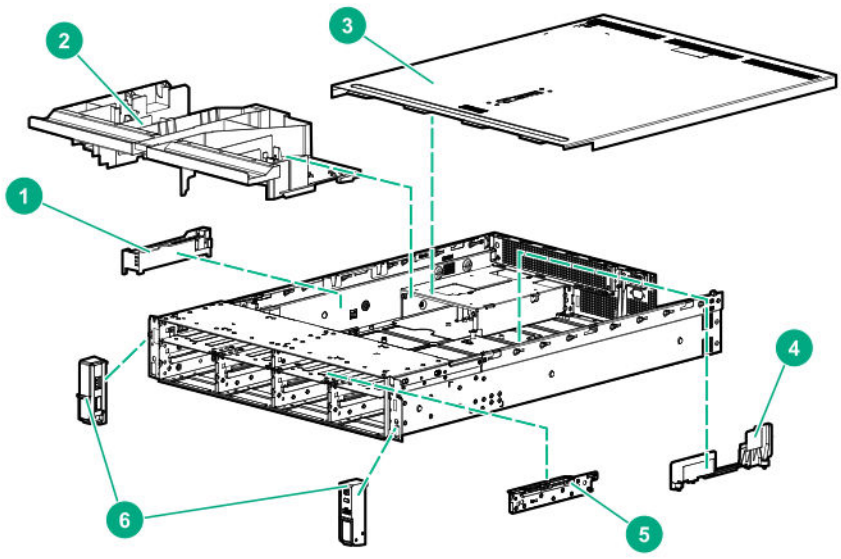
Hewlett Packard Enterprise continually improves and changes product parts. For complete and current supported spare parts information, see the Hewlett Packard Enterprise PartSurfer website:

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



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* Not shown

Energy pack holder spare part

Customer self repair: **mandatory**

Description	Spare apart number
Energy pack holder	878506-001

Air baffle spare part

Customer self repair: **mandatory**

Description	Spare part number
Air baffle	878508-001

Access panel spare part

Customer self repair: **mandatory**

Description	Spare part number
Access panel	878505-001

DIMM guard spare part

Customer self repair: **mandatory**

Description	Spare part number
DIMM guard	878507-001

LFF removable partition spare part

Customer self repair: **mandatory**

Description	Spare part number
LFF removable partition	878520-001

Chassis ear spare kit

Customer self repair: **optional**

Description	Spare part number
• Right ear • Left ear	878509-001

Front bezel spare part

Customer self repair: **mandatory**

Description	Spare part number
Front bezel	878511-001

Power supply blank spare part

Customer self repair: **mandatory**

Description	Spare part number
Power supply blank	775423-001

Drive blank spare parts

Customer self repair: **mandatory**

Description	Spare part number
SFF drive blank	670033-001
LFF drive blank	827363-001

Miscellaneous blank spare kit

Customer self repair: **mandatory**

Description	Spare part number
• Secondary riser cage blank • Fan blank (3) • Media Module blank • Rear serial port blank	878510-001

Miscellaneous blank on the front panel spare kit

Customer self repair: **mandatory**

Description	Spare part number
• 8-bay SFF drive box blank • 2-bay SFF flex ODD bay blank • LFF filler	P00729-001

System components

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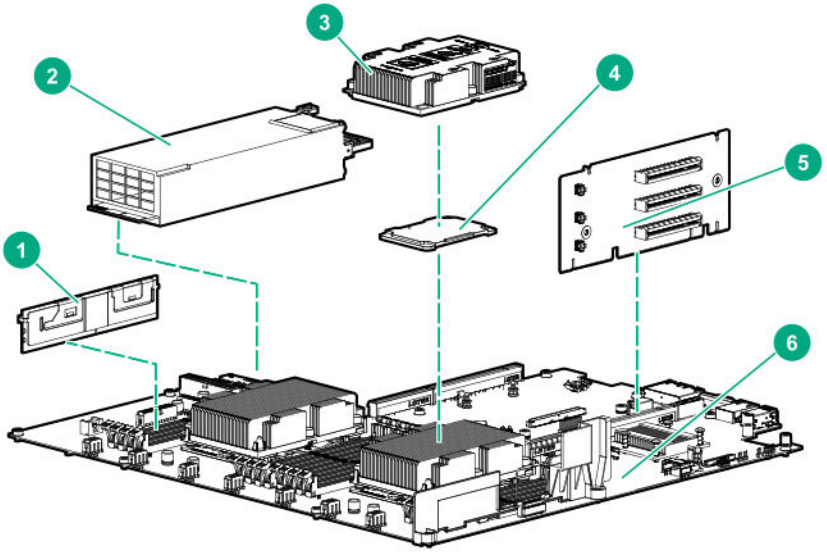

Item	Description
1	**DIMM spare parts**
2	**Flexible Slot power supply spare parts (hot-plug)**
3	**Heatsink spare part**
4	**First-generation Intel Xeon Scalable Processor spare parts** **Second-generation Intel Xeon Scalable Processor spare parts**
5	**PCIe riser board spare parts**
6	**System board assembly spare part**
7	**System battery spare part***

* Not shown

DIMM spare parts

Customer self repair: **mandatory**

Description	Spare part number
2666 MT/s DIMMs	—
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
2933 MT/s DIMMs	—

Table Continued

Description	Spare part number
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

Flexible Slot power supply spare parts (hot-plug)

Customer self repair: **mandatory**

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

Heatsink spare part

Customer self repair: **no**

Description	Spare part number
Heatsink	878536-001

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

Table Continued

Description	Spare part number
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 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 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
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 6148, 2.40 GHz, 20C, 150 W	874732-001
Intel Xeon Gold 6152, 2.10 GHz, 22C, 140 W	874730-001
Intel Xeon Platinum processor family	—
Intel Xeon Platinum 8160, 2.10 GHz, 24C, 150 W	874729-001
Intel Xeon Platinum 8164, 2.10 GHz, 26C, 150 W	875729-001

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[1]	—
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

Table Continued

Description	Spare part number
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 Sliver 4216, 2.10 GHz, 16C, 100 W	P11609-001
Intel Xeon Silver "R" processor family[1]	—
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 processor family	—
Intel Xeon Gold 5215, 2.50 GHz, 10C, 85 W	P11610-001
Intel Xeon Gold 5217, 3.00 GHz, 8C, 115 W	P11611-001
Intel Xeon Gold 5218, 2.30 GHz, 16C, 125 W	P11612-001
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 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 6248, 2.50 GHz, 20C, 150 W	P11618-001
Intel Xeon Gold 6252, 2.10 GHz, 24C, 150 W	P11619-001
Intel Xeon Gold "R" processor family[1]	—
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 processor family for 1P configurations	—
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 Platinum processor family	—

Table Continued

Description	Spare part number
Intel Xeon Platinum 8253, 2.20 GHz, 16C, 125 W	P12011-001
Intel Xeon Platinum 8256, 3.80 GHz, 4C, 105 W	P12012-001

[1] Refreshed processor models

PCIe riser board spare parts

Customer self repair: **optional**

Description	Spare part number
Two-slot PCIe riser board	878514-001
Three-slot PCIe riser board	878515-001
FlexibleLOM riser board	878516-001
x16, x8 secondary riser board	878518-001
x8, x8, x8 secondary riser board	878519-001

System board assembly spare part

Customer self repair: **optional**

Description	Spare part number
System board assembly for the first-generation Intel Xeon Scalable Processors • System board assembly • System board handle tool	878512-001
System board assembly for the first-generation and second-generation Intel Xeon Scalable Processors • System board assembly • System board handle tool	P11709-001

System battery spare part

Customer self repair: **mandatory**

Description	Spare part number
System battery	319603-001

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:

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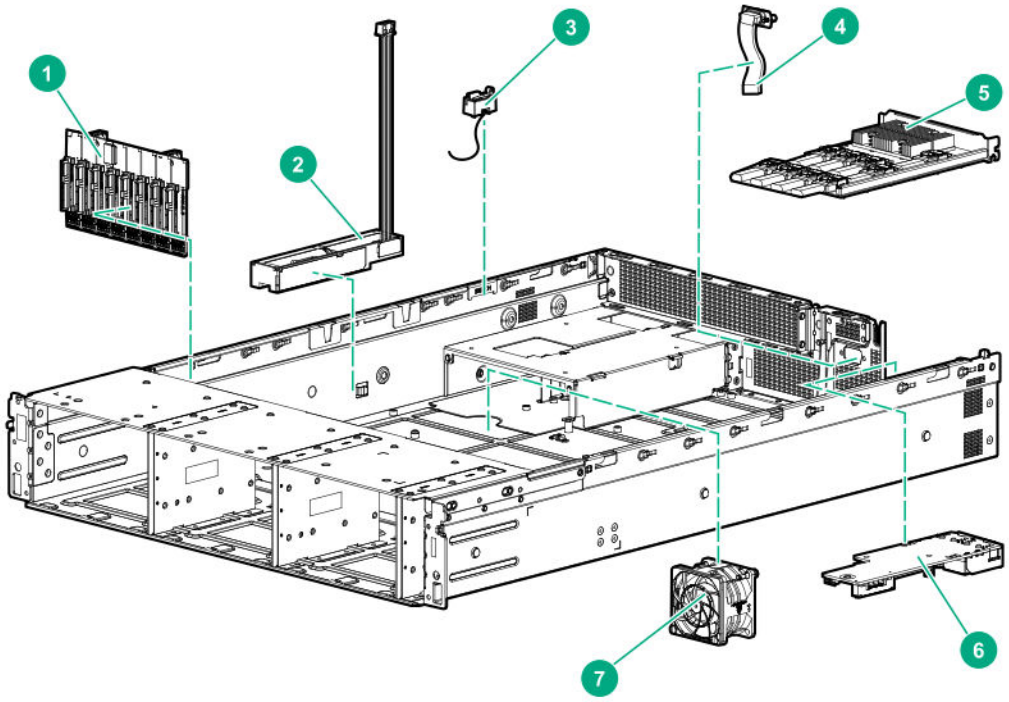

Item	Description
1	**Backplane board spare parts**
2	**Energy pack spare parts**
3	**Chassis intrusion detection switch spare part**
4	**Serial port cable spare part**
5	**12G SAS expander card spare part**
6	**Media Module adapter spare parts**
7	**Fan spare part**
8	**Cable spare parts***
9	**HPE Trusted Platform Module 2.0 spare part***

* Not shown

Backplane board spare parts

Customer self repair: **optional**

Description	Spare part number
4-bay LFF drive backplane	872885-001
8-bay SFF drive backplane	878543-001
Rear 2-bay SFF SAS/SATA drive backplane	775401-001

Energy pack spare parts

HPE Smart Storage Hybrid Capacitor spare part

Customer self repair: **mandatory**

Description	Spare part number
HPE Smart Storage Hybrid Capacitor, 145mm cable	P07473-001

HPE Smart Storage Battery spare part

Customer self repair: **mandatory**

Description	Spare part number
HPE Smart Storage Battery 96 W, 145 mm cable	878643-001

Chassis intrusion detection switch spare part

Customer self repair: **mandatory**

Description	Spare part number
Chassis intrusion detection switch	878412-001

Serial port cable spare part

Customer self repair: **mandatory**

Description	Spare part number
Serial port cable	879778-001

12G SAS expander card spare part

Customer self repair: **optional**

Description	Spare part number
12G SAS expander card	876907-001

Media Module adapter spare parts

Customer self repair: **optional**

Description	Spare part number
Media Module adapter 1GbE BT C620	872161-001
Media Module adapter 10GbE SFP+ C620	872162-001
Media Module adapter 10GbE BT C620	872163-001

Fan spare part

Customer self repair: **mandatory**

Description	Spare part number
Fan	878513-001

Cable spare parts

- **Customer self repair**: **mandatory**

Description	Spare part number
LFF Mini-SAS and power cable kit	878333-001
SFF box 1 Mini-SAS cable kit	878336-001
SFF box 2 Mini-SAS cable kit ◦ SFF box 2 Mini-SAS cable for the system board/ P408i-p/E208i-p controllers ◦ SFF box 2 Mini-SAS cable for the P408i-a/E208i-a controllers	878335-001
SFF box 3 Mini-SAS cable kit	878345-001
Mini-SAS cable kit for the P816i-a controller ◦ LFF Mini-SAS cable for the P816i-a controller ◦ Rear two-bay SFF Mini-SAS cable for the P816i-a controller	P37245-001
12G SAS expander Mini-SAS cable kit ◦ Mini-SAS cables from expander to P408i-p/E208i-p/ P408i-a/E208i-a controllers ◦ Mini-SAS cables from boxes 1, 2, 3 to expander ◦ Expander cable clip	878337-001
Rear two-bay SFF cable kit	878341-001

Table Continued

Description	Spare part number
4-bay/8-bay LFF optical drive power cable kit	878342-001
8-bay/16-bay SFF optical drive power cable kit	878343-001
Optical drive cable, 900mm	878344-001
M.2 cable kit	878786-001

- **Customer self repair**: **optional**

Description	Spare part number
iLO Service Port cable	878346-001

HPE Trusted Platform Module 2.0 spare part

Customer self repair: **no**

Description	Spare part number
HPE Trusted Platform Module Gen 10, TAA	872159-001

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 Agrée 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 spedirà 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 addizionali 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 component. 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.

Serviço de garantia 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 융통성을 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.

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Removal and replacement procedures

Required tools

You need the following items for some procedures:

- T-10 Torx screwdriver
- T-15 Torx screwdriver
- T-25 Torx screwdriver
- T-30 Torx screwdriver
- Philip-headed screwdriver
- Flat-headed screwdriver

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.

Server warnings and cautions

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. If the server is installed higher than chest level, a third person may be required to help align the server.
- Use caution when installing the server in or removing the server from the rack; it is unstable when not fastened to the rails.

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

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

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

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

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

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.

Rack warnings

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

- 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.
- Only one component is extended at a time. A rack may become unstable if more than one component is extended for any reason.

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.

WARNING: To reduce the risk of personal injury or damage to the equipment, adequately stabilize the rack before extending a component outside the rack. Extend only one component at a time. A rack may become unstable if more than one component is extended.

WARNING: When installing a server in a telco rack, be sure that the rack frame is adequately secured at the top and bottom to the building structure.

Preparation procedures

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.

  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.

Extending the server from the rack

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.

Prerequisites

T-25 Torx screwdriver

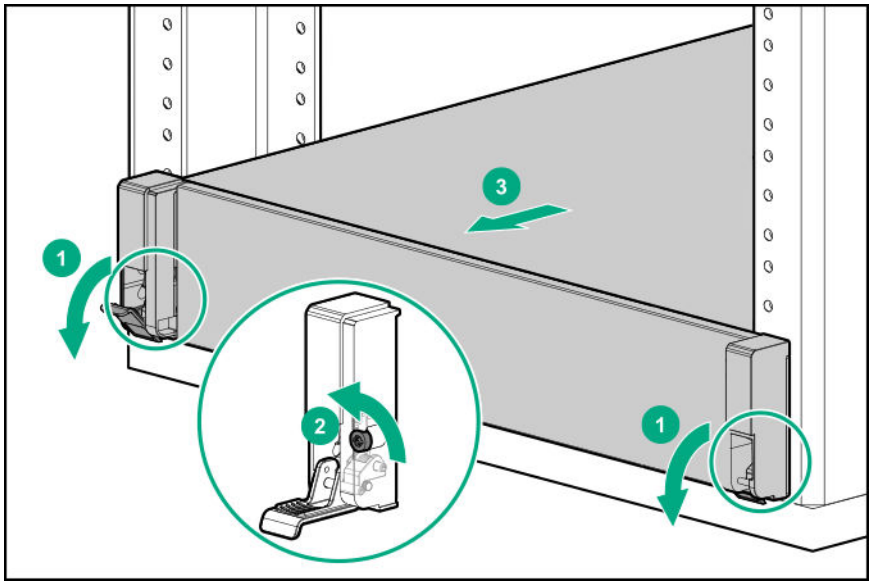
Procedure

1. If the rear panel cables are not secured with a cable management arm, do the following:
   a. **Power down the server**.
   b. Disconnect all peripheral cables from the server.
   c. Disconnect each power cord from the server.
2. Disengage the server from the rack:

a. Pull down the quick release levers on each side of the server.

b. If necessary, use a T-25 Torx screwdriver to loosen the shipping screws.

c. Slide the server out of the rack.



Removing 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 when 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.

To remove the server from a Hewlett Packard Enterprise, Compaq-branded, Telco, or a third-party rack:

Procedure

1. **Power down the server**.
2. Remove all power.
   a. Disconnect all peripheral cables from the server.
   b. Disconnect each power cord from the server.
3. **Extend the server from the rack**.
4. Remove the server from the rack.

For instructions on how to extend or remove the server from the rack, see the documentation that ships with the rack rail system.

5. Place the server on a sturdy, level surface.

Installing the server into the rack

Procedure

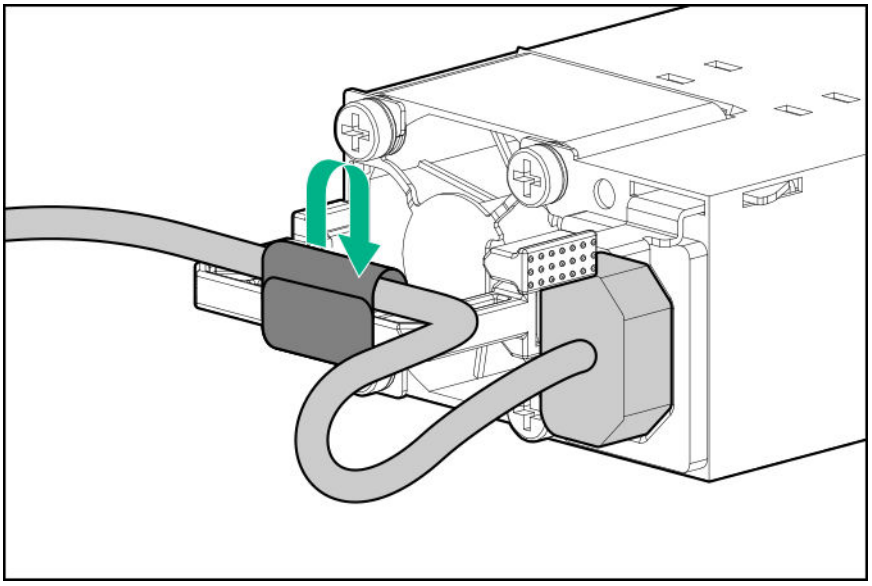
1. Observe the following alert:

   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.

2. Install the server and cable management arm into the rack. For more information, see the installation instructions that ship with the 2U Quick Deploy Rail System.
3. Connect peripheral devices to the server. For information on identifying connectors, see **Rear panel components**.

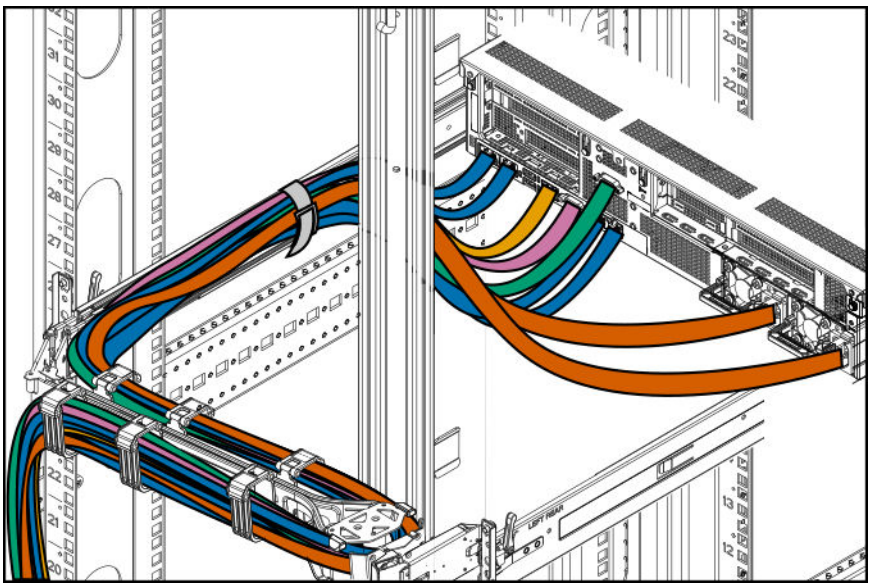
   WARNING: To reduce the risk of electric shock, fire, or damage to the equipment, do not plug telephone or telecommunications connectors into RJ-45 connectors.

4. Connect the power cord to the rear of the server.
5. Install the power cord anchors.



6. Install the rack rail hook-and-loop strap.
7. Secure the cables to the cable management arm.

   IMPORTANT: When using cable management arm components, leave enough slack in each of the cables to prevent damage to the cables when the server is extended from the rack.



8. Connect the power cord to the AC power source.

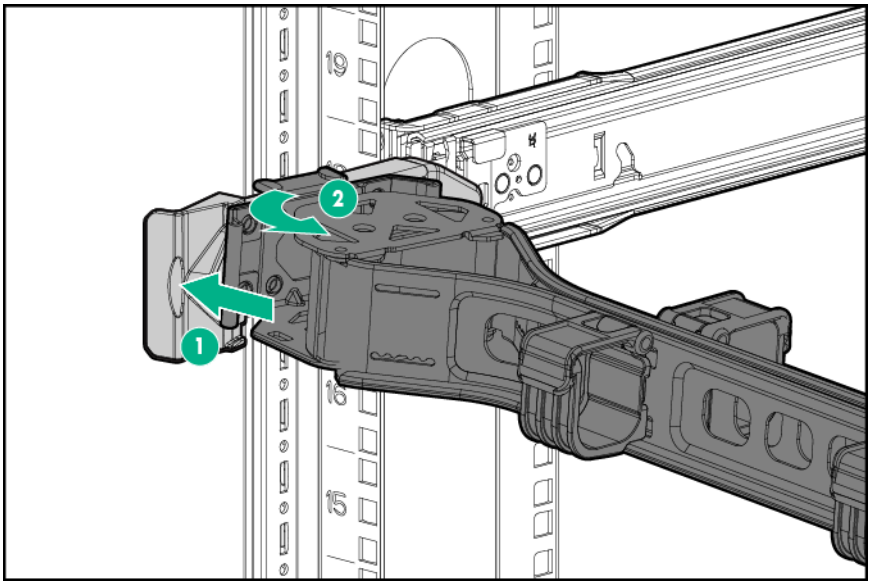
WARNING: To reduce the risk of electric shock or damage to the equipment:

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

Releasing the cable management arm

Procedure

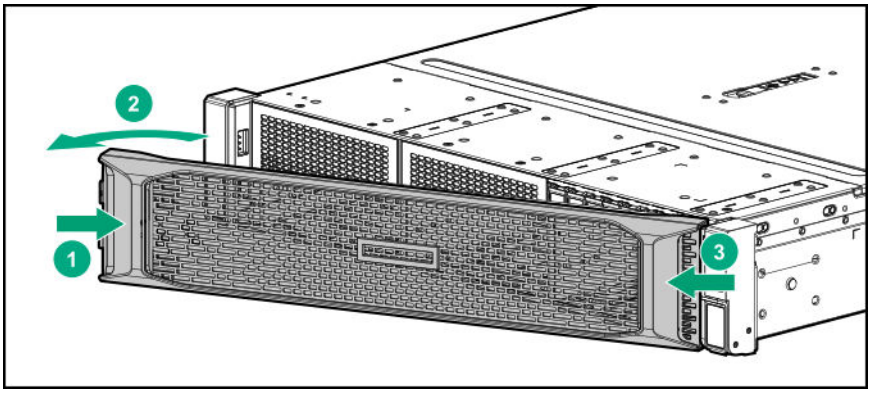
1. Remove the cable tie if installed.
2. Release the cable management arm and then swing the arm away from the rack.



Removing the bezel

Procedure

1. Remove the Kensington security lock.
2. Remove the front bezel.



Removing 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.

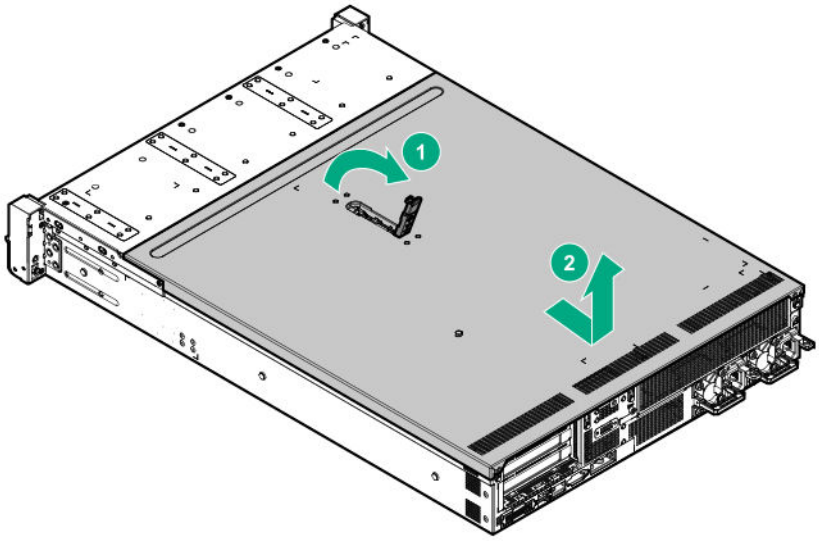
CAUTION: Do not operate the server for long periods with the access panel open or removed. Operating the server in this manner results in improper airflow and improper cooling that can lead to thermal damage.

Prerequisites

T-15 Torx screwdriver

Procedure

1. **Power down the server**.
2. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
3. Open or unlock the locking latch, slide the access panel to the rear of the chassis, and remove the access panel.



Installing the access panel

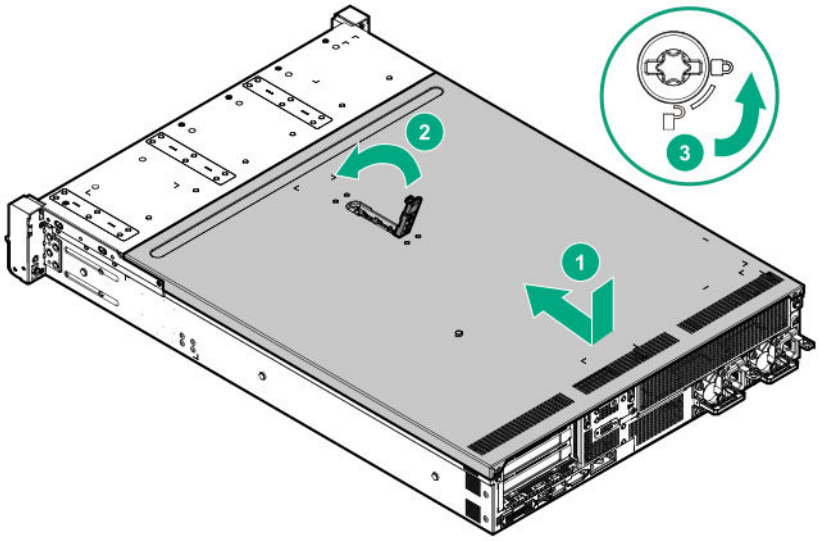
Prerequisites

- T-15 Torx screwdriver
- All internal cables must be connected and secured with clips.

Procedure

1. Place the access panel on top of the server with the latch open.

   Allow the panel to extend past the rear of the server approximately 1.25 cm (0.5 in).
2. Push down on the latch. The access panel slides to a closed position.
3. Tighten the security screw on the latch.

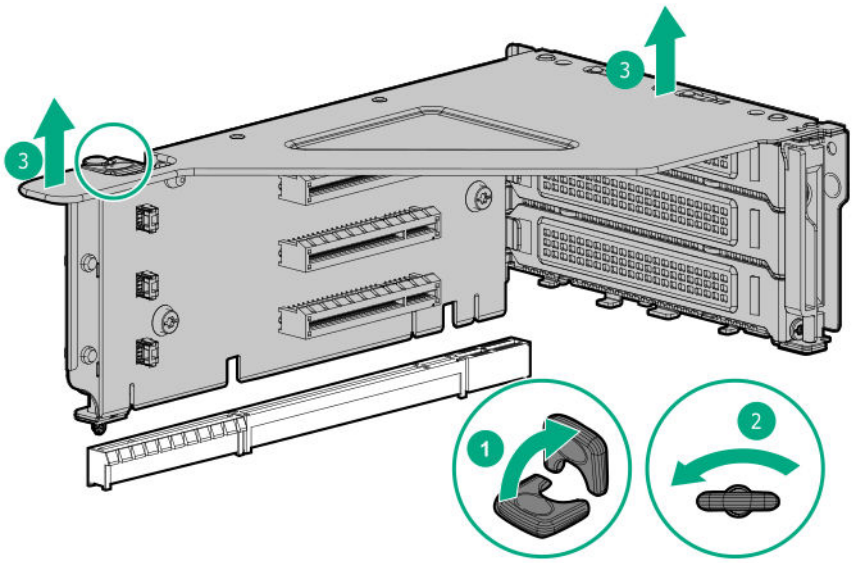


Removing a riser cage

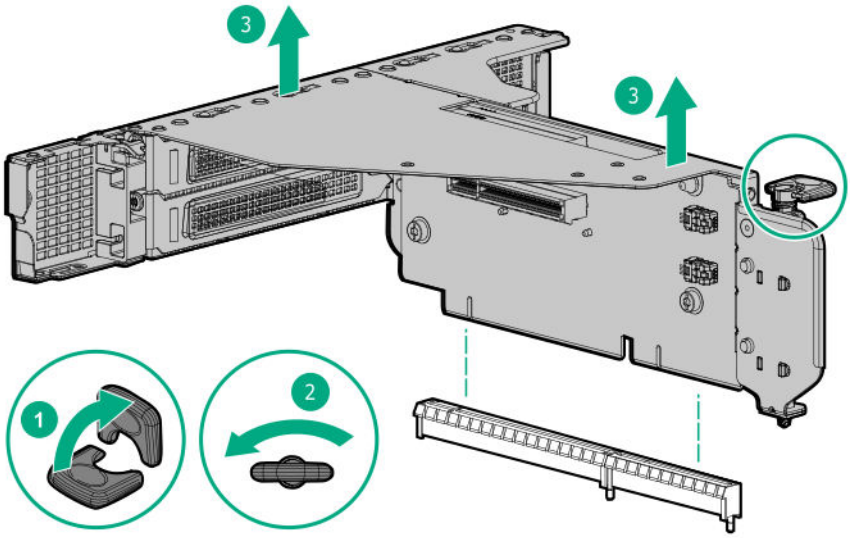
WARNING: To reduce the risk of personal injury from hot surfaces, allow the drives and the internal system components to cool before touching them.

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Disconnect all peripheral cables from the server.
5. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
6. **Remove the access panel**.
7. Disconnect any internal cables that are connected to the expansion board.
8. Remove the riser cage:
   a. Lift the release tab and then rotate it 180° counterclockwise.
   b. Grasp the riser cage at the touch points and lift it out of the chassis.
      - Primary riser cage



- Secondary riser cage



Removing the optical drive cage from the LFF chassis

Prerequisites

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

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:

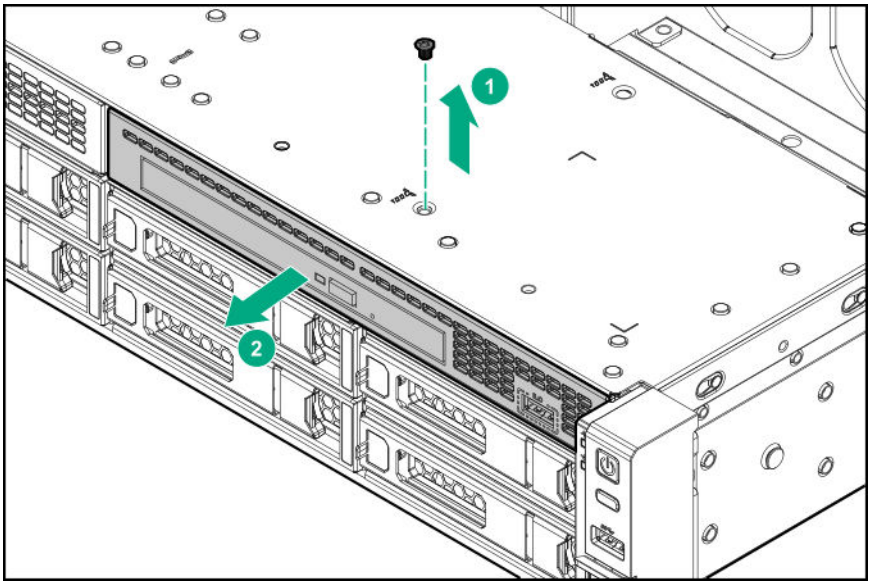
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

4. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

5. **Remove the access panel**.
6. **Remove the air baffle**.
7. **Disconnect the iLO Service Port cable from system board**.
8. If the optical drive is installed, **disconnect the optical drive cable**.
9. Remove the optical drive cage from the LFF chassis.



Removing the optical drive cage from the SFF chassis

Prerequisites

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

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:

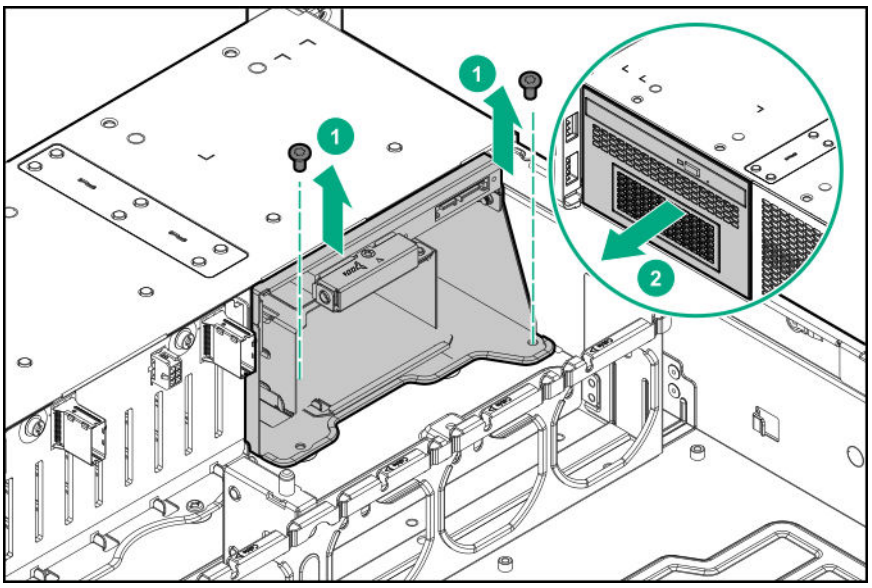
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

4. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

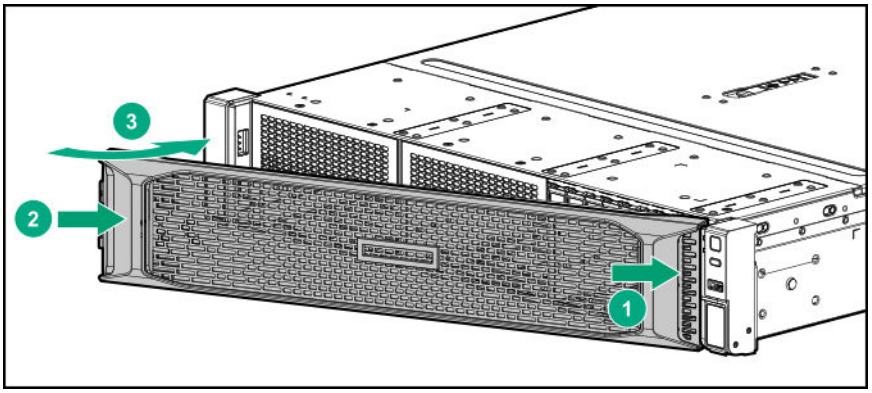
5. **Remove the access panel**.
6. If the optical drive is installed, **disconnect the optical drive cable**.
7. Remove the optical drive cage from the SFF chassis.



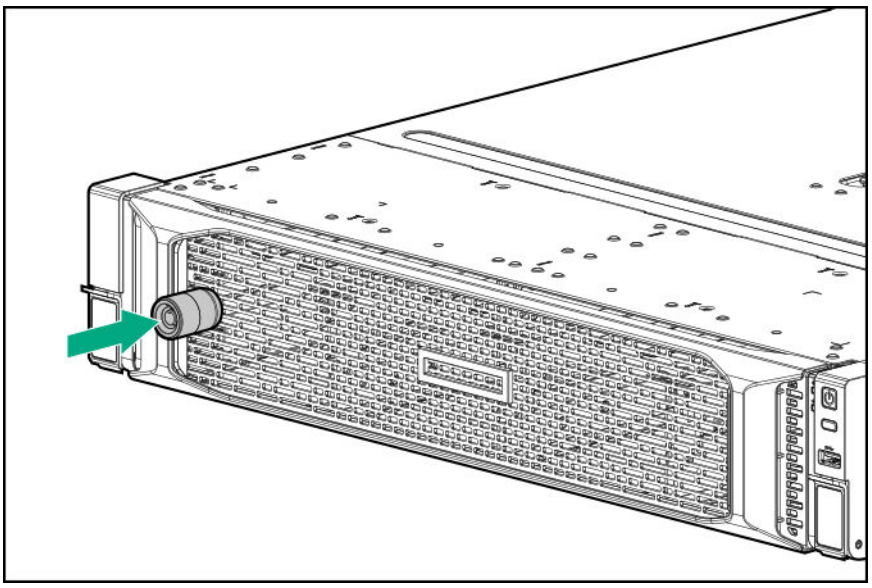
Installing the bezel and the bezel lock

Procedure

1. Install the bezel.
   a. Attach the bezel to the right latch ear.
   b. Press the latch on the bezel.
   c. While pressing the latch, rotate the bezel to attach bezel to left latch ear.



2. Install the Kensington lock.



Power up the server

Procedure

1. To power up the server, use one of the following methods:
   - Press the Power On/Standby button.
   - Use the virtual power button through iLO.

Enable the enhanced cooling function

The server generates more heat when Intel Xeon Gold 6244 Processor is installed. To maintain proper cooling, increase the fan speed.

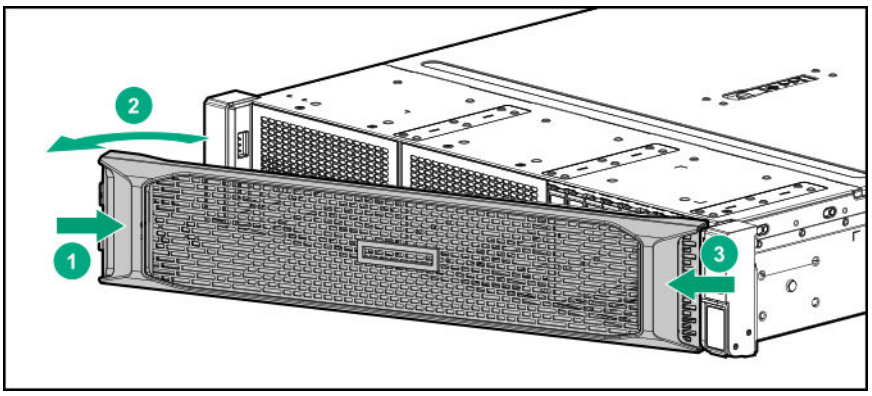
Procedure

1. From the **System Utilities** screen, select **System Configuration** > **BIOS/Platform Configuration (RBSU)** > **Advanced Options** > **Fan and Thermal Options** > **Thermal Configuration**.
2. Select **Enhanced CPU Cooling**.
3. Save your setting.

Removing and replacing the bezel

Procedure

1. Remove the Kensington security lock.
2. Remove the front bezel.



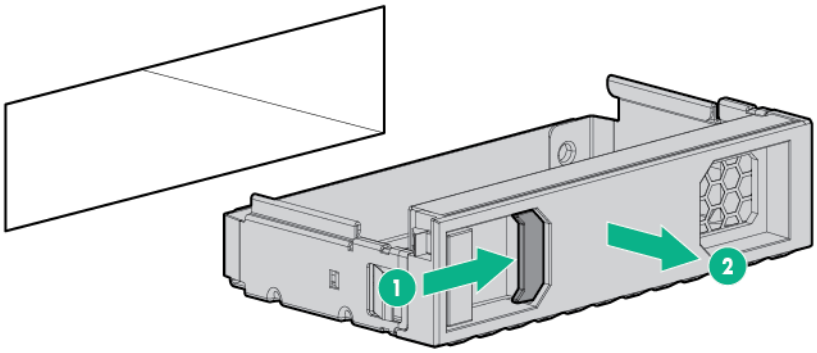
To replace the component, reverse the removal procedure.

Removing and replacing a drive blank

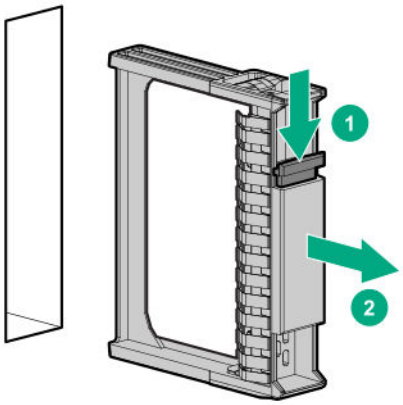
CAUTION: To prevent improper cooling and thermal damage, do not operate the server unless all bays are populated with either a component or a blank.

1. Remove the drive blank.

- LFF



- SFF



To replace the blank, slide the blank into the bay until it locks into place.

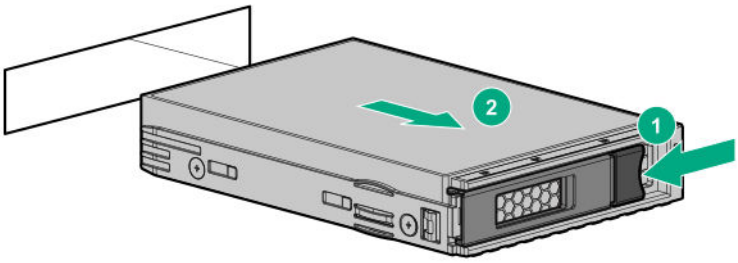
Removing and replacing a hot-plug drive

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.

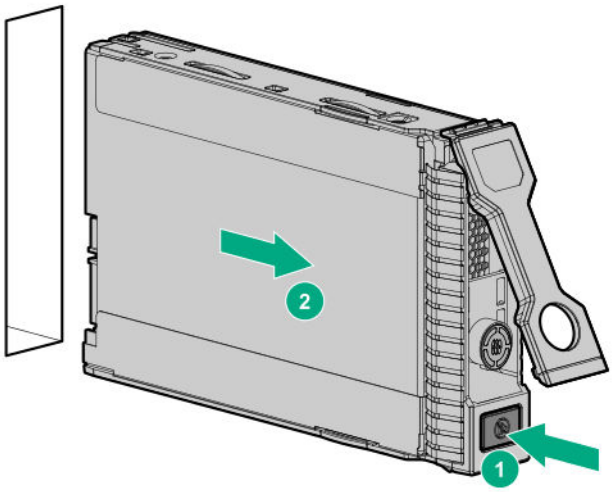
Procedure

1. Back up all server data on the drive.
2. **Determine the status of the drive from the drive LED definitions**.
3. Remove the drive.

- LFF



- SFF



To replace the component, reverse the removal procedure.

Removing and replacing the M.2 SSD enablement 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 card, 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

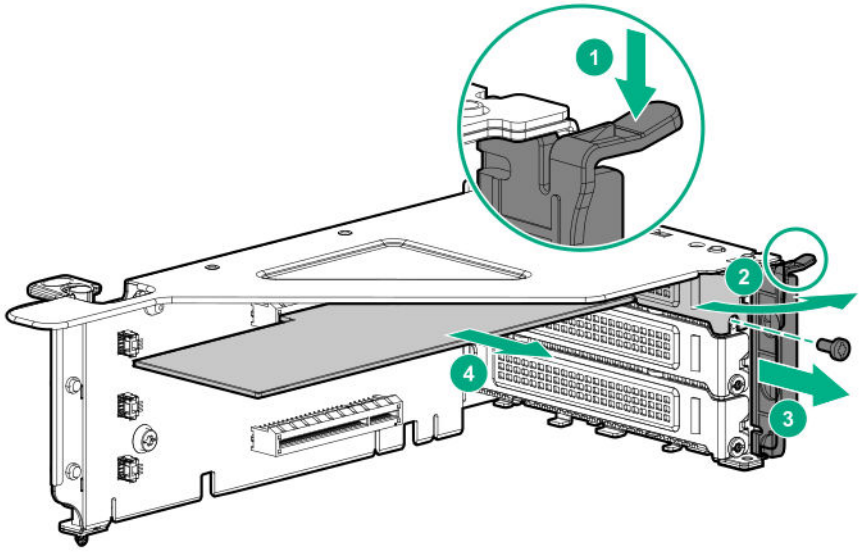
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

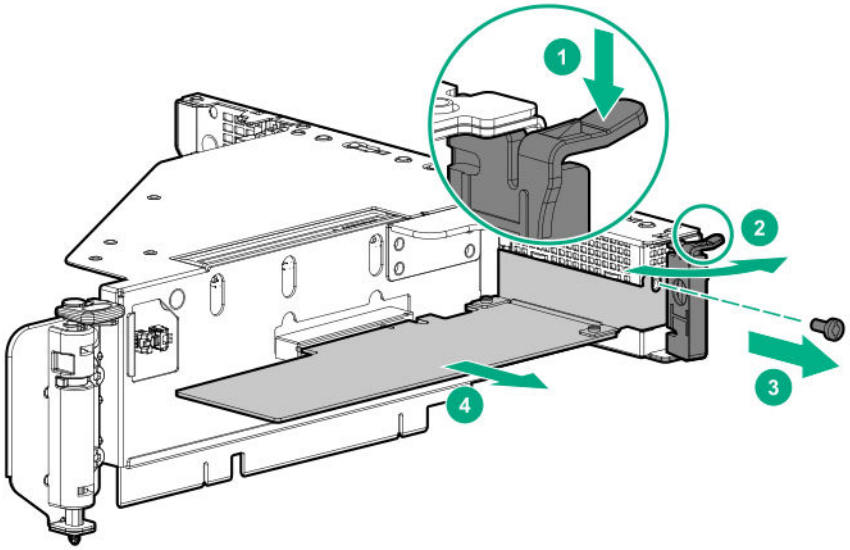
1. **Power down the server**.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. **Disconnect SATA cables from system board**.
6. **Remove the riser cage**.

7. Disconnect the M.2 SATA cables from the enablement board.
8. Remove the M.2 SSD enablement board.

- Slot 1-3



- Slot 4



To replace the component, reverse the removal procedure.

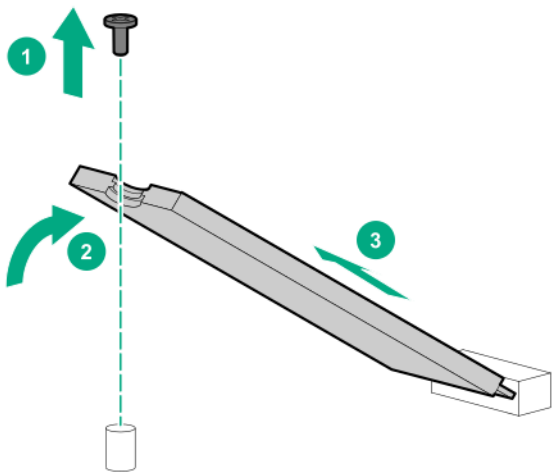
Removing and replacing an M.2 SSD

Prerequisites

Before you perform this procedure, make sure that you have a Phillips No. 1 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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. **Disconnect SATA cables from system board**.
6. **Remove the riser cage**.
7. **Remove the M.2 SSD enablement board**.
8. Remove the M.2 SSD.



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 blanks, or blanks installed. If the server supports hot-plug components, minimize the amount of time the access panel is open.

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:

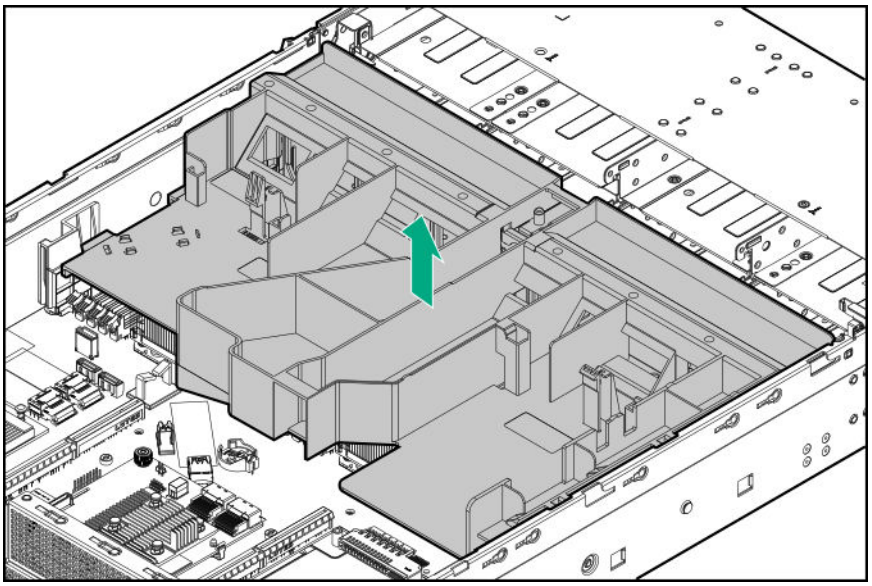
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

4. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

5. **Remove the access panel**.
6. If the 12G SAS expander is installed, **remove the riser cage**.
7. Remove the air baffle.



To replace the component, reverse the removal procedure.

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. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:

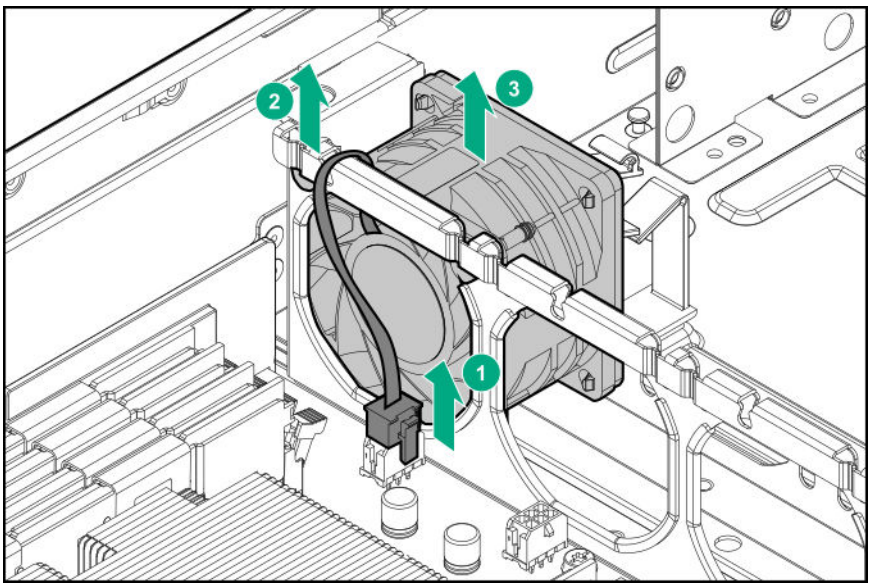
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

4. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

5. **Remove the access panel**.
6. **Remove the air baffle**.
7. Remove the fan module.



To replace the component, reverse the removal procedure.

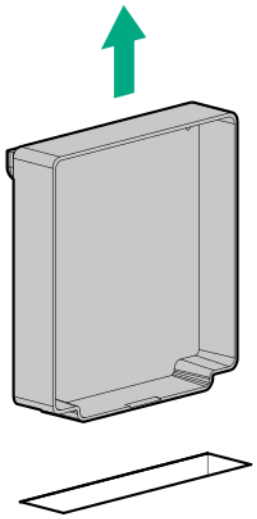
Removing and replacing a fan blank

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

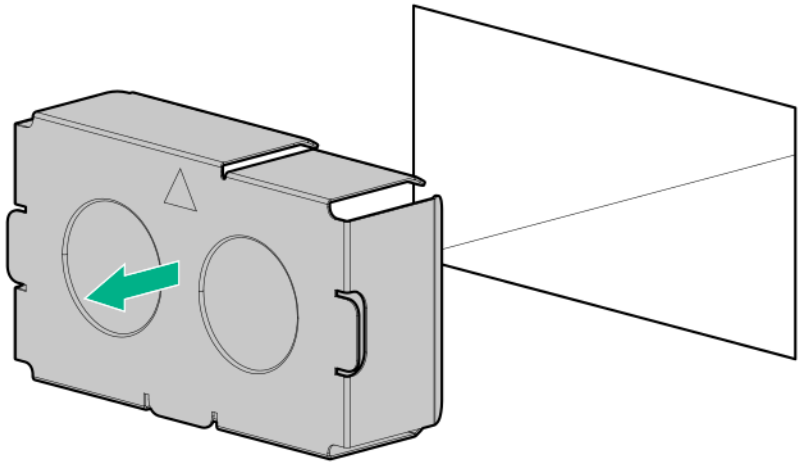
1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from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

6. **Remove the air baffle**.
7. Remove the fan blank.



To replace the component, reverse the removal procedure.

Removing and replacing a power supply blank



To replace the component, reverse the removal procedure.

Removing and replacing a hot-plug power supply

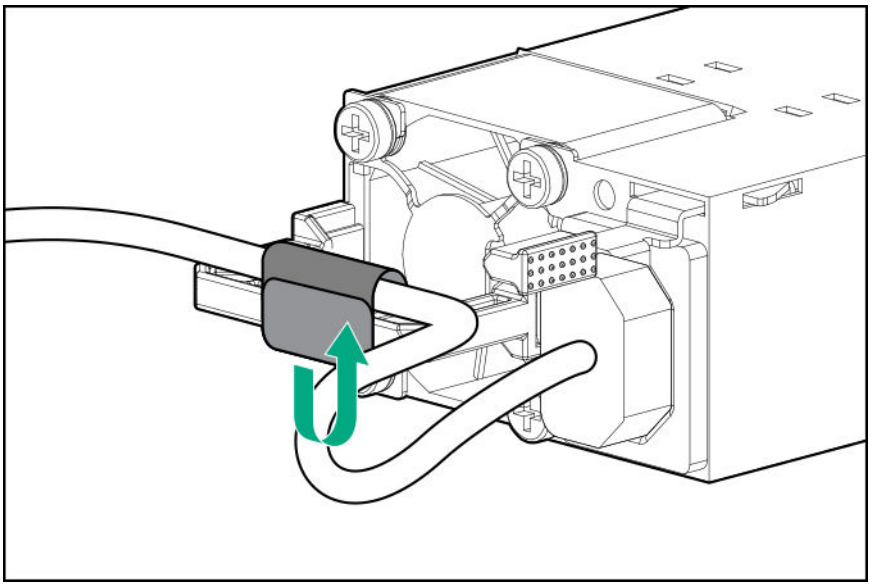
CAUTION: All power supplies installed in the server must have the same output power capacity. Verify that all power supplies have the same part number and label color. The system becomes unstable and might shut down when it detects different power supplies.

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.

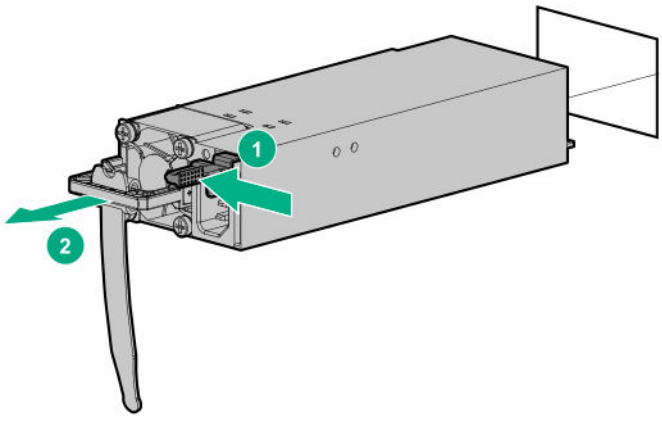
WARNING: To reduce the risk of personal injury from hot surfaces, allow the power supply or power supply blank to cool before touching it.

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. Release the strain relief strap.



4. Remove the power supply.

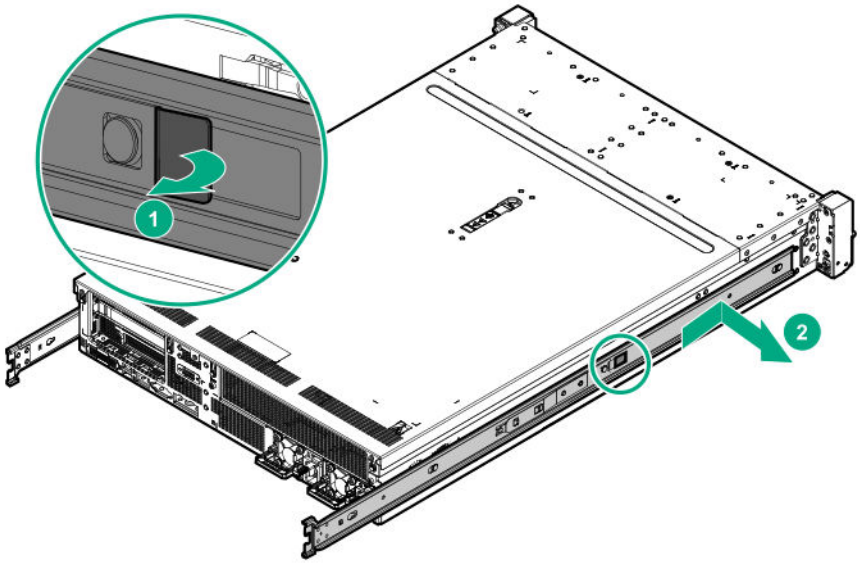


To replace the component, reverse the removal procedure.

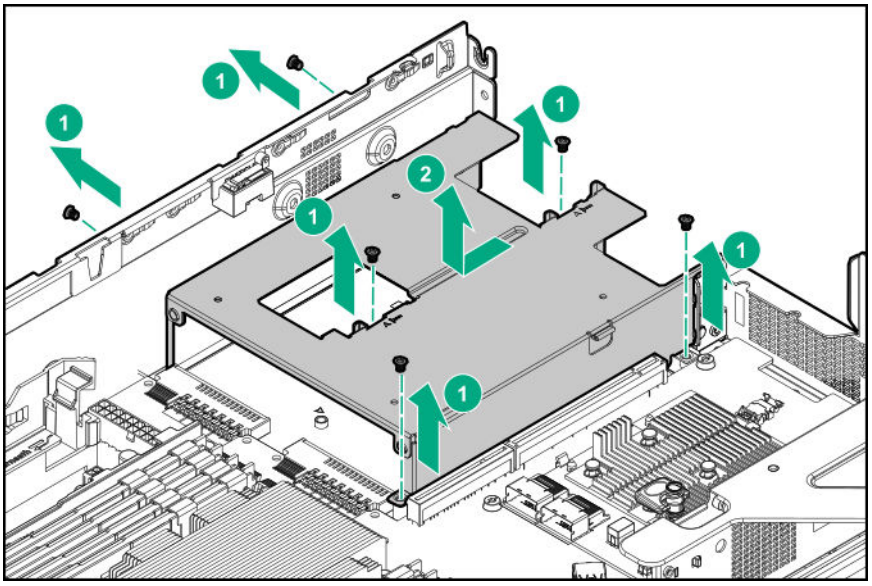
Removing the redundant power supply cage

Procedure

1. **Power down the server**.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. **Remove the server from the rack**.
4. **Remove the access panel**.
5. If installed, remove one of the following:
   - **Rear 2-bay SFF drive cage**
   - **Secondary riser cage blank**
   - **Secondary riser cage**
6. Remove the left inner rail.



7. Remove all **power supplies** or **power supply blanks** from the cage.
8. Remove the redundant power supply cage.



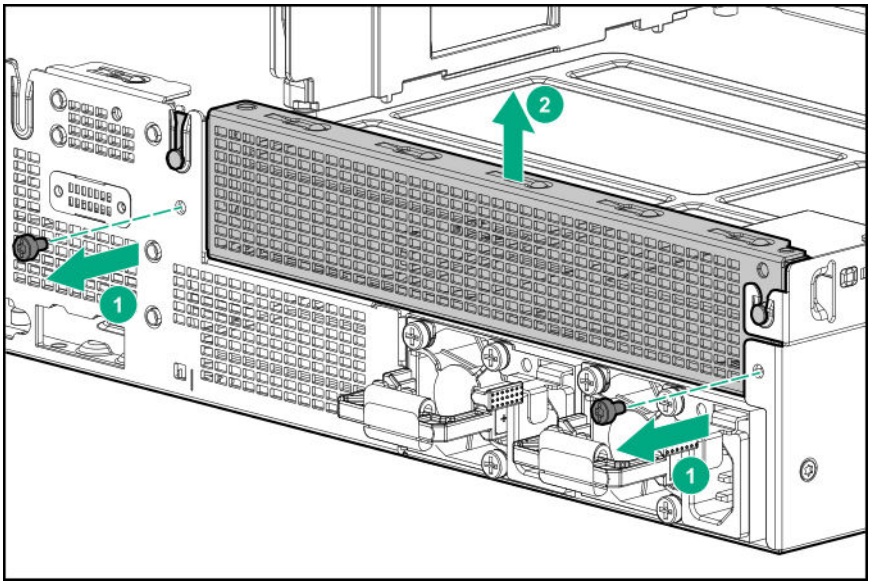
Removing and replacing the secondary riser cage blank

Prerequisites

T-15 Torx screwdriver

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. Remove the secondary riser cage blank.



To replace the component, reverse the removal procedure.

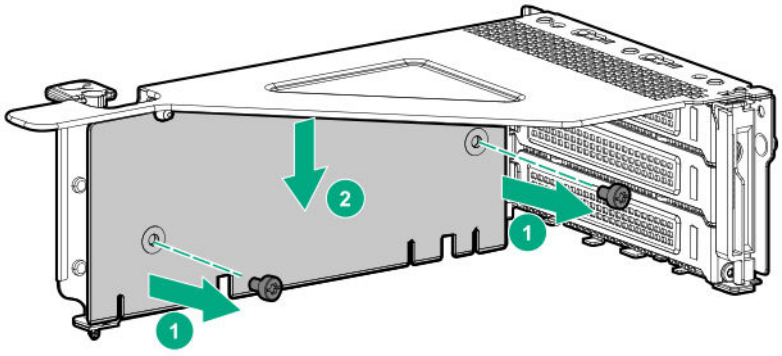
Removing and replacing a riser board

Prerequisites

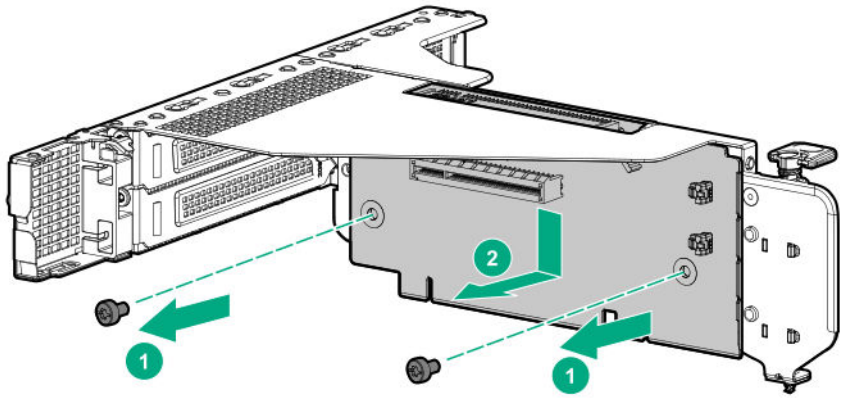
T-15 Torx screwdriver

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. **Remove the riser cage**.
6. If installed, **remove the expansion board** from the riser cage.
7. Remove the riser board.
   - Primary riser cage



- Secondary riser cage



To replace the component, reverse the removal procedure.

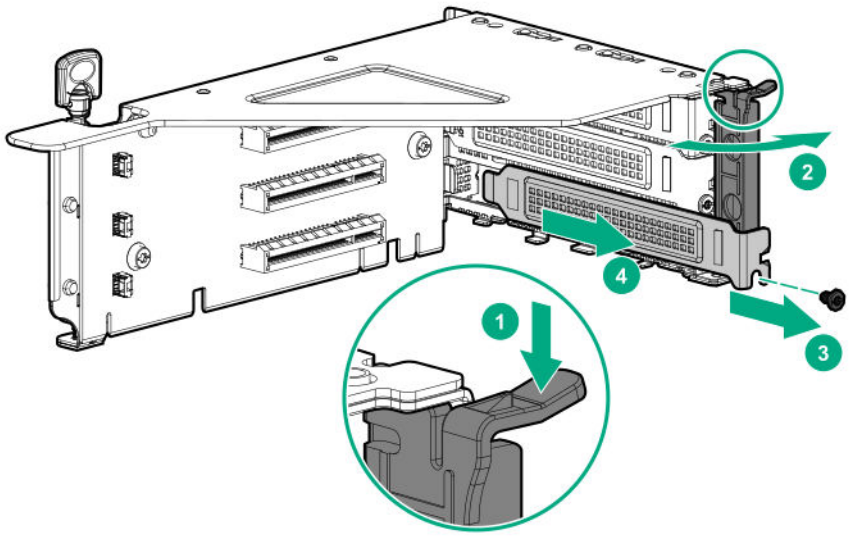
Removing and replacing an expansion slot blank

Prerequisites
T-10 Torx screwdriver

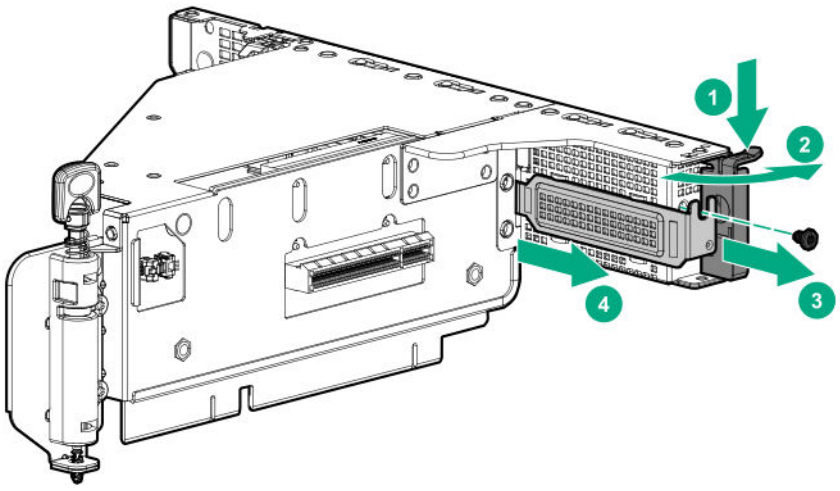
Procedure

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.

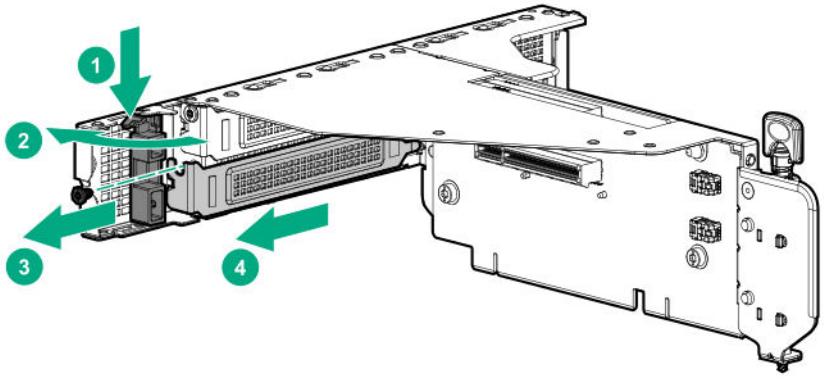
5. **Remove the riser cage**.
6. Remove the slot blank:
   a. Press the latch on the slot blank retainer.
   b. Open the slot blank retainer.
   c. Remove one T-10 screw on the slot.
   d. Remove the slot blank.
      - Primary riser cage



      - Secondary riser cage
        - Slot 4



- Slot 5 or 6



Removing and replacing an expansion board

Prerequisites

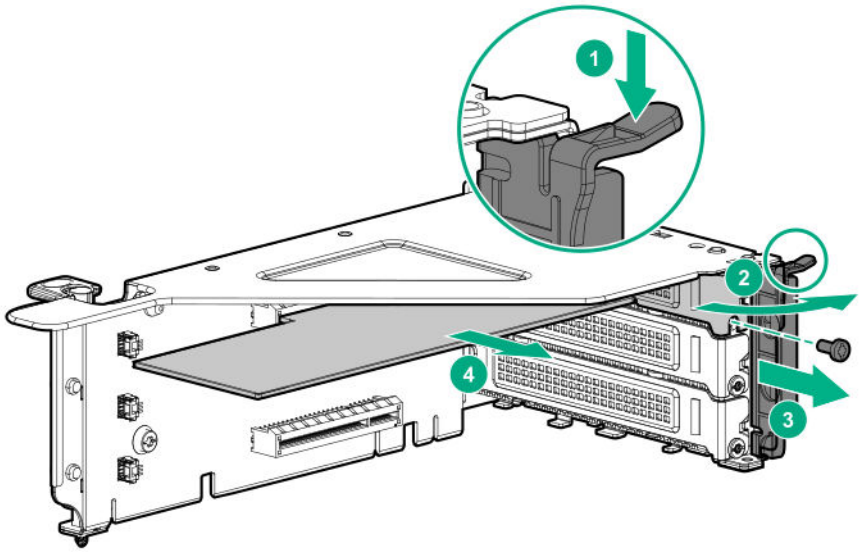
Before you perform this procedure, make sure that you have a T-10 Torx screwdriver available.

Procedure

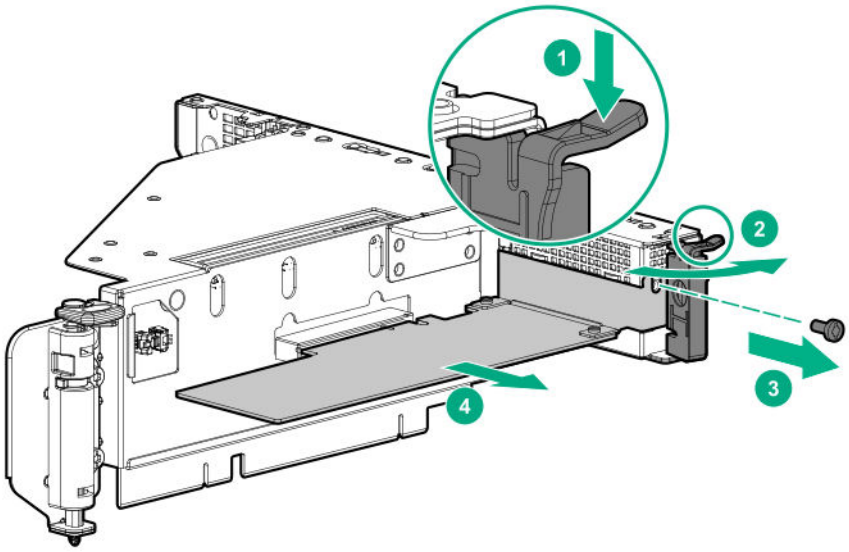
1. **Power down the server**.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

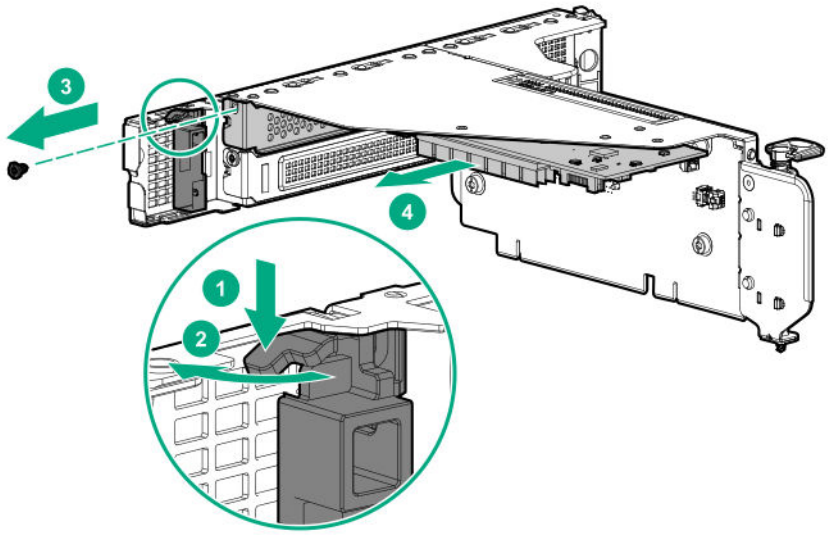
4. **Remove the access panel**.
5. Disconnect any internal cables that are connected to the expansion board.
6. **Remove the riser cage**.
7. Remove the expansion board:
   - Primary riser cage



   - Secondary riser cage
     - Slot 4



- Slot 5 or 6



To replace the component, reverse the removal procedure.

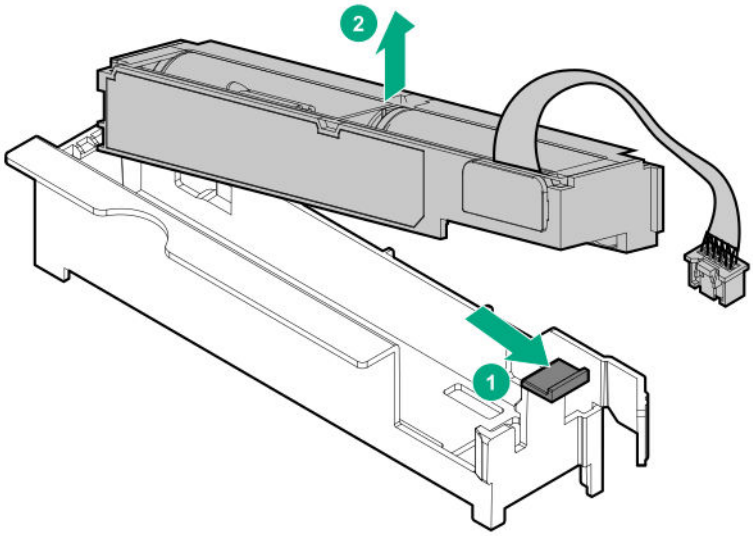
Removing and replacing the energy pack

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. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

4. **Remove the access panel**.
5. **Remove the air baffle**.
6. **Disconnect the energy pack cable**.
7. Remove the energy pack from the holder.



8. If removed, connect the nonredundant power supply cable to system board.

To replace the component, reverse the removal procedure.

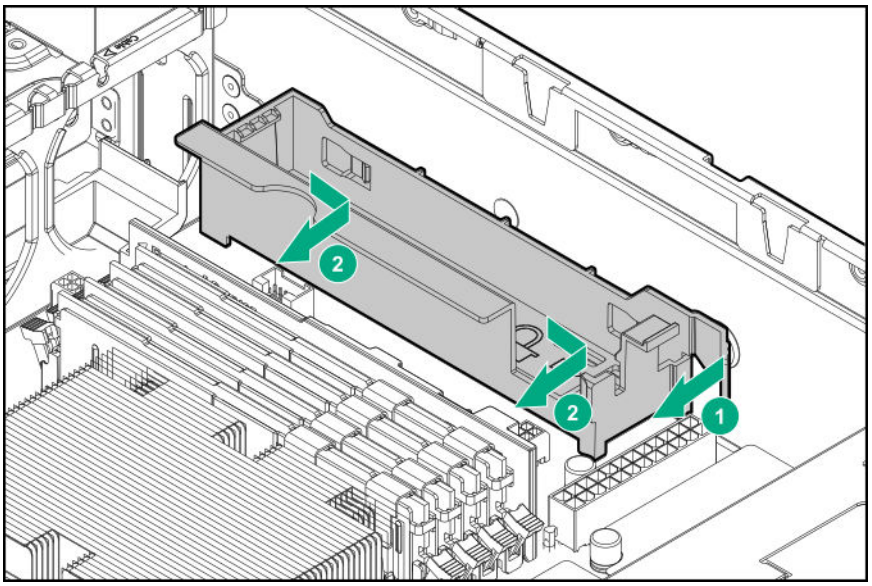
After the installation, the battery may take two hours to charge. The controller features that require backup power are not re-enabled until the battery supports the backup power.

Removing and replacing the energy pack holder

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.

5. **Remove the air baffle**.
6. **Remove the energy pack**.
7. Remove the energy pack holder.



To replace the component, reverse the removal procedure.

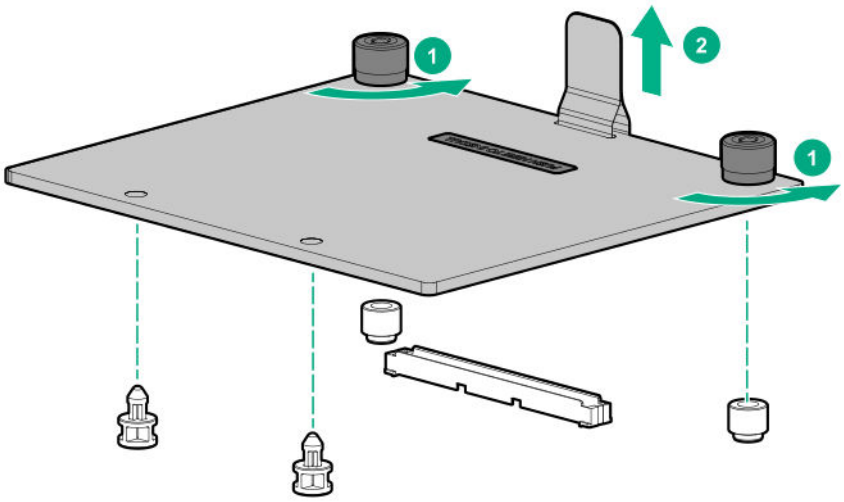
Removing and replacing a Smart Array type-a modular controller

Prerequisites

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

Procedure

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



To replace the component, reverse the removal procedure.

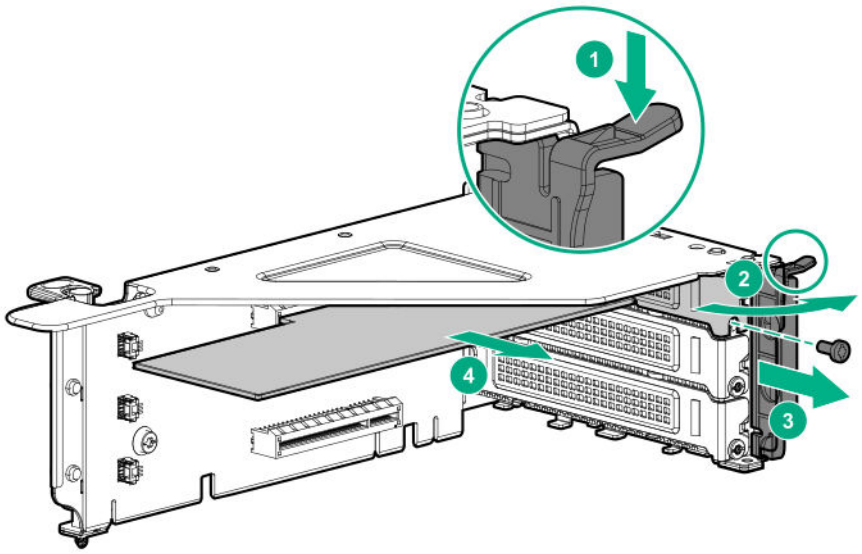
Removing and replacing a Smart Array PCIe plug-in controller

Prerequisites

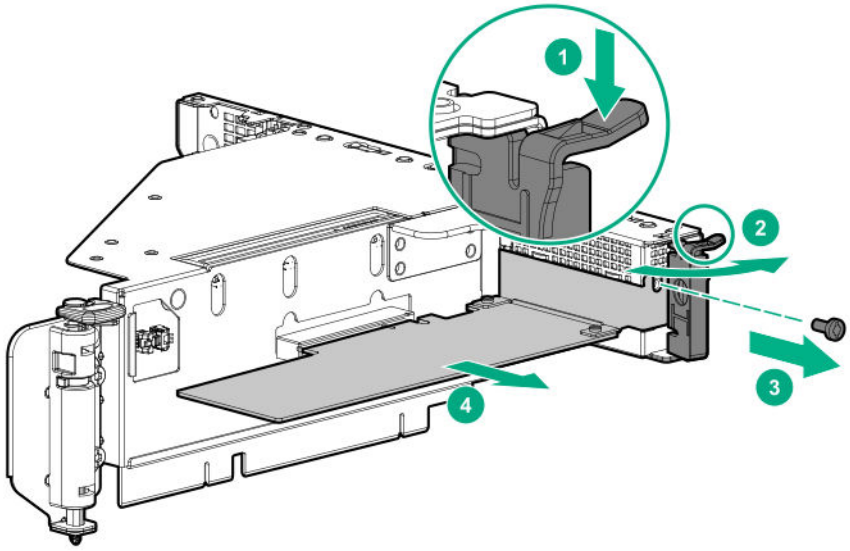
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

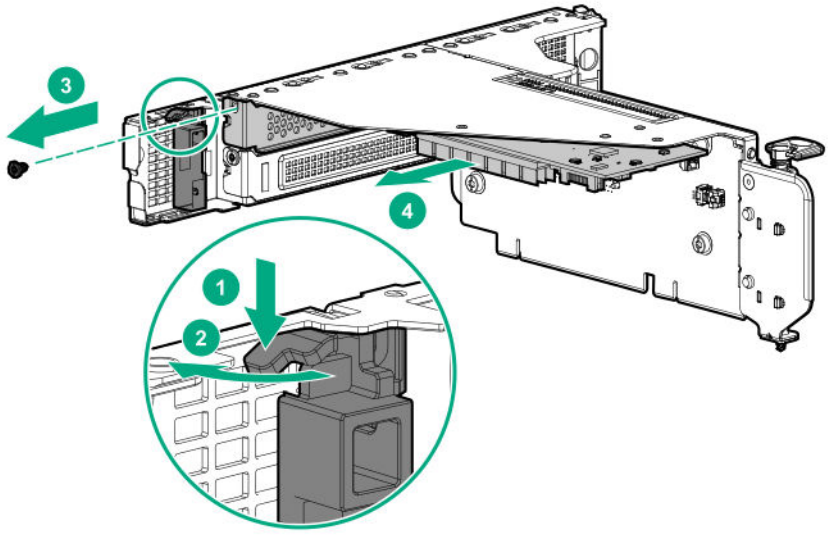
1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. **Remove the access panel**.
6. If the 12G SAS expander is installed, **remove the riser cage**.
7. **Remove the air baffle**.
8. Disconnect all cables from the storage controller.
9. Remove the storage controller:
   - Primary riser cage



- Secondary riser cage
  - Slot 4



  - Slot 5 or 6



To replace the component, reverse the removal procedure.

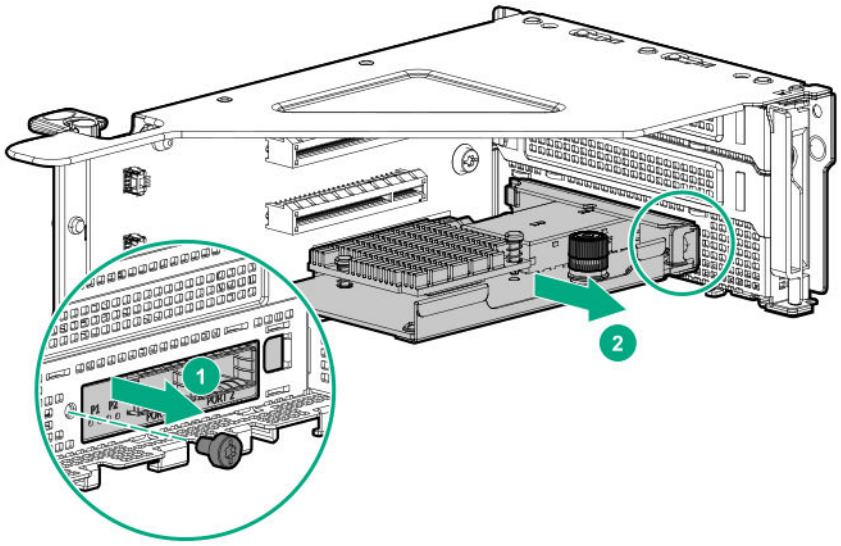
Removing and replacing the FlexibleLOM adapter

Prerequisites

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

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Disconnect the LAN segment cables.
5. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
6. **Remove the access panel**.
7. **Remove the primary riser cage**.
8. Remove the FlexibleLOM adapter.



To replace the component, reverse the removal procedure.

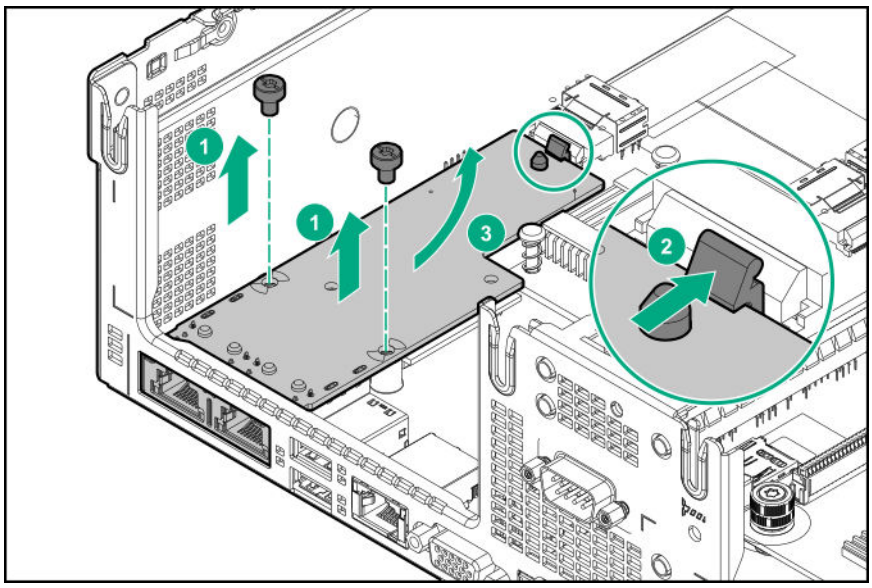
Removing and replacing the Media Module adapter

Prerequisites

T-15 Torx screwdriver

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. **Remove the primary riser cage**.
6. Remove the Media Module adapter:
   a. Remove two T-15 screws.
   b. Push the latch.
   c. Remove the Media Module adapter.



To replace the component, reverse the removal procedure.

Removing and replacing the optical drive

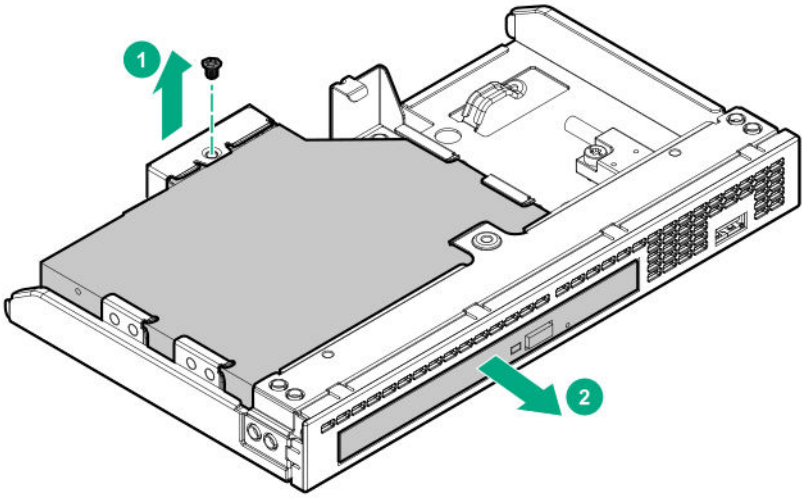
Prerequisites

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

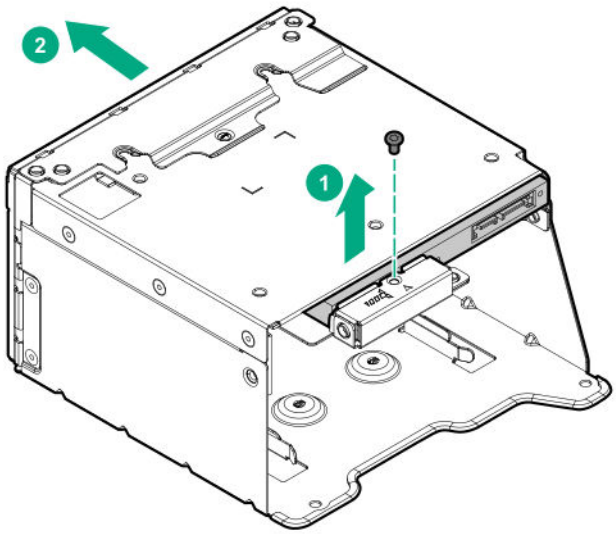
Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. **Remove the access panel**.
6. Do one of the following:
   a. **Remove the optical drive cage from the LFF chassis**.
   b. **Remove the optical drive cage from the SFF chassis**.
7. Remove the optical drive.

- LFF



- SFF



To replace the component, reverse the removal procedure.

Removing and replacing the iLO Service Port cable assembly

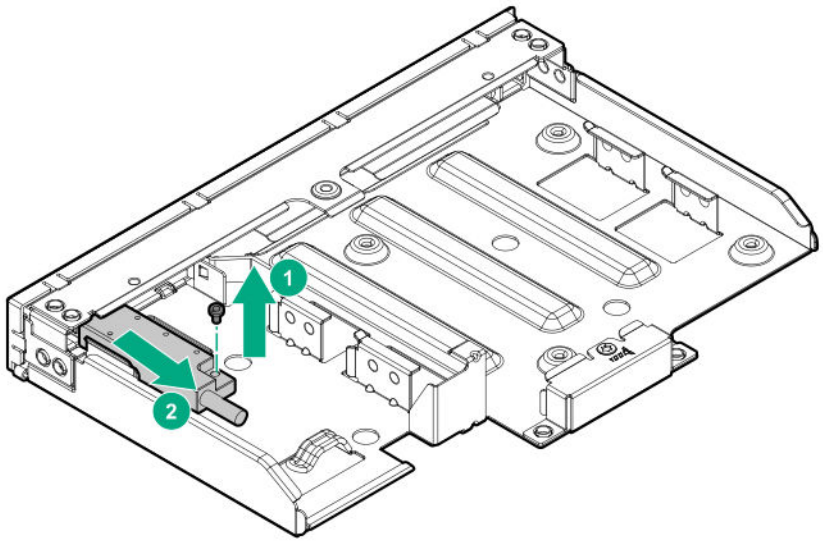
Prerequisites

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

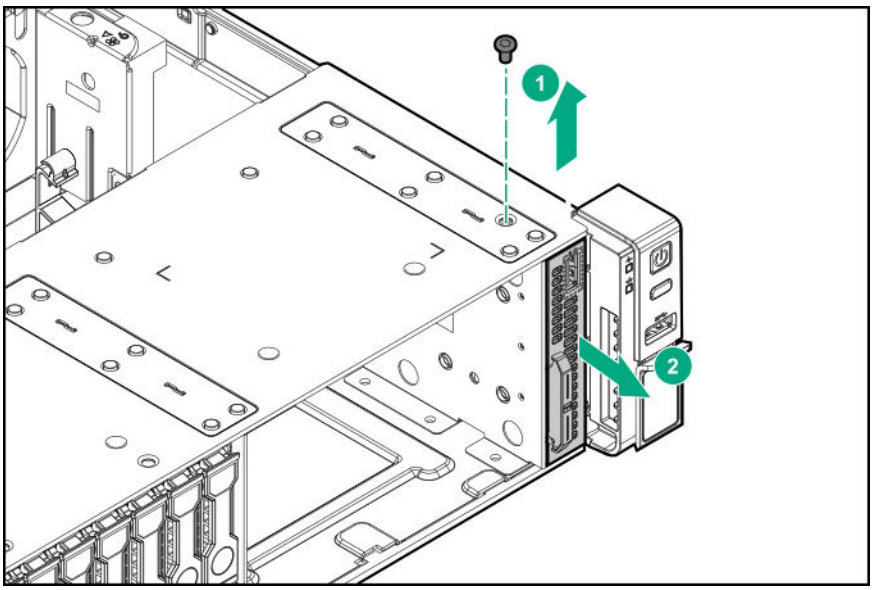
- T-15 Torx screwdriver
- T-10 Torx screwdriver

Procedure

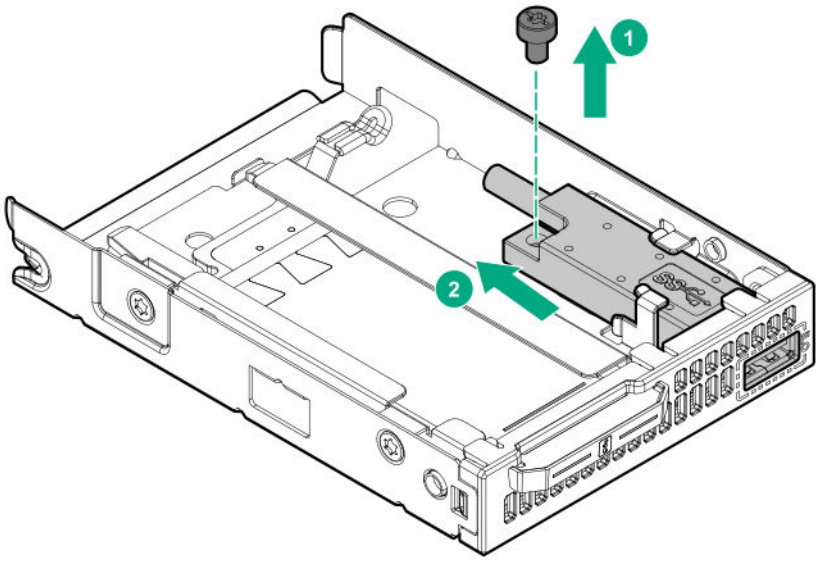
1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. **Remove the access panel**.
6. **Remove the air baffle**.
7. **Disconnect the iLO Service Port cable from system board**.
8. Do one of the following:
   - LFF
     a. **Remove the LFF optical drive cage**.
     b. Remove the iLO Service Port cable assembly.



   - SFF
     a. Remove the SFF Front IO cage.



b. Remove the iLO Service Port cable assembly.



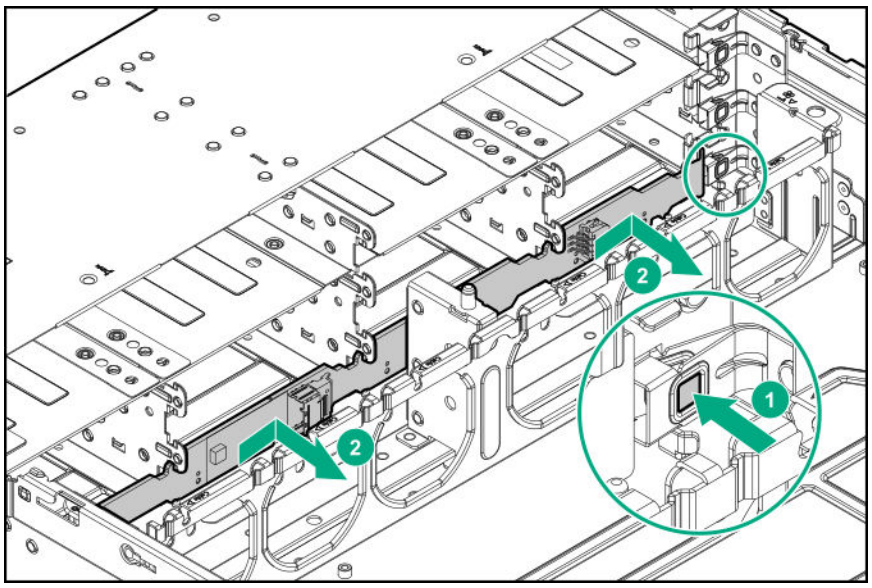
To replace the component, reverse the removal procedure.

Removing and replacing a 4-bay LFF drive backplane

Procedure

1. If installed, **remove the 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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. **Remove the access panel**.
6. **Remove the air baffle**.
7. **Remove all fan modules**.
8. **Remove all installed LFF drives**.
9. **Disconnect all cables from the 4-bay LFF drive backplane**.
10. Remove the drive backplane.



To replace the component, reverse the removal procedure.

Removing and replacing an 8-bay SFF drive backplane

Prerequisites

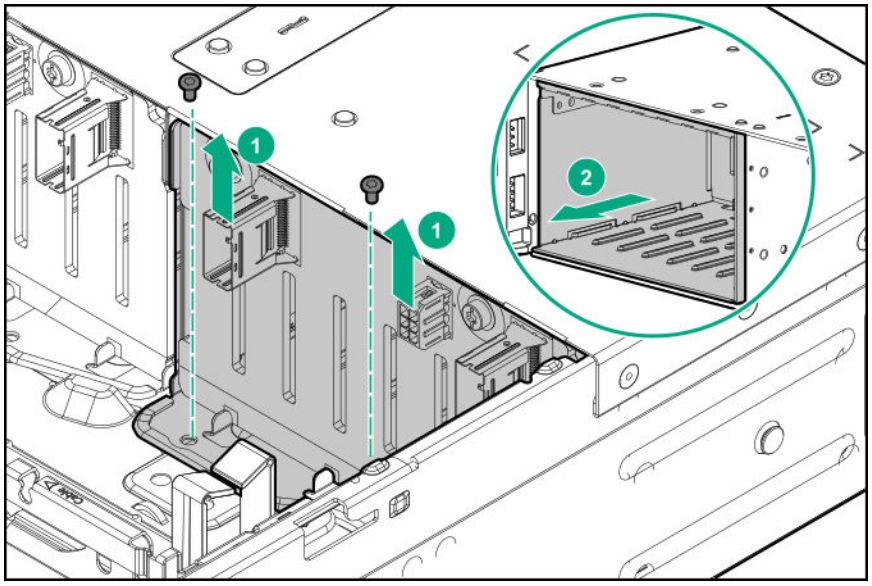
Before you perform this procedure, make sure that you have a T-15 Torx screwdriver available.

Procedure

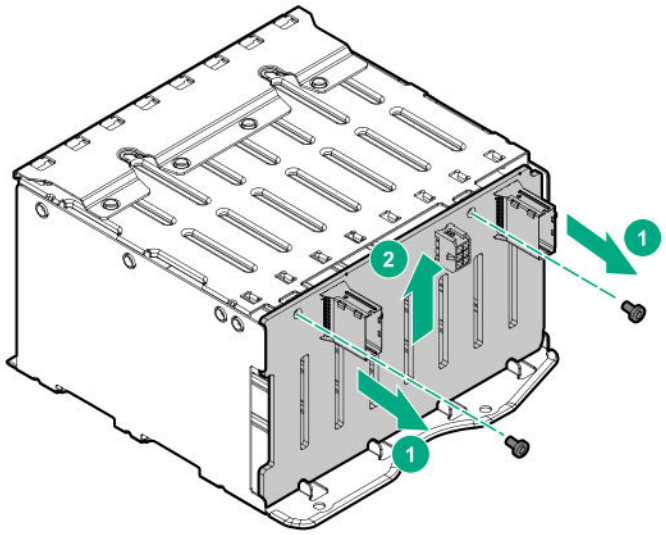
1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

5. **Remove the access panel**.
6. **Remove the air baffle**.
7. **Remove all drives in the cage**.
8. **Disconnect all cables from 8-bay SFF drive backplane**.
9. Remove the SFF drive cage.



10. Remove the SFF drive backplane.



To replace the component, reverse the removal procedure.

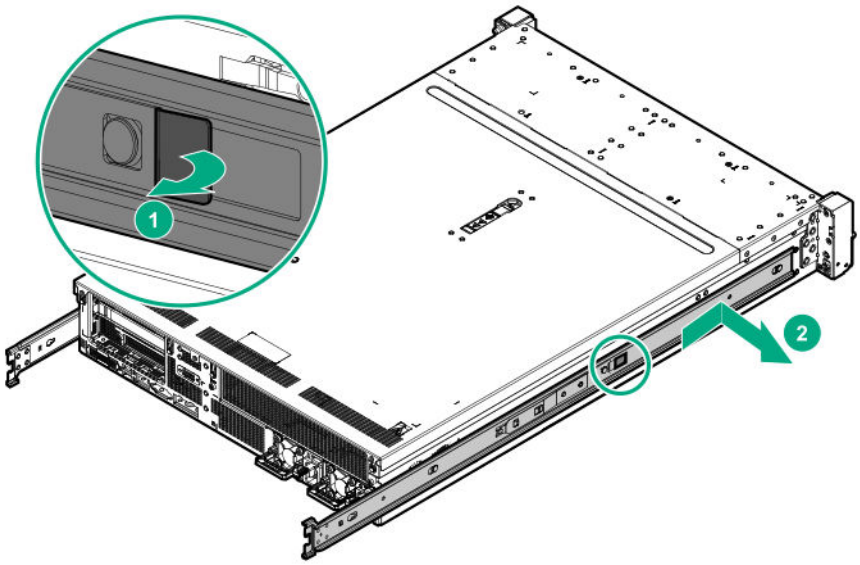
Removing the rear 2-bay SFF drive cage

Prerequisites

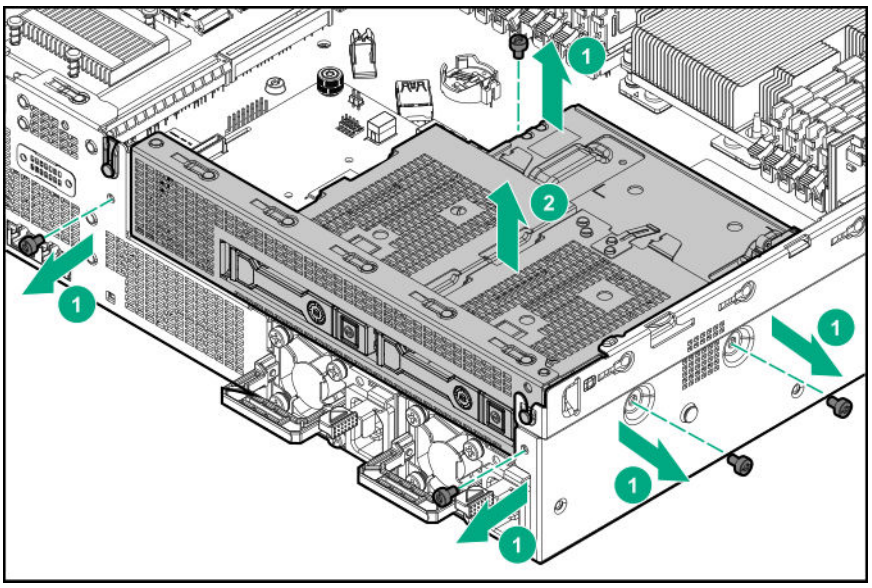
T-15 Torx screwdriver

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. **Remove the server from the rack**
4. Remove the left inner rail.



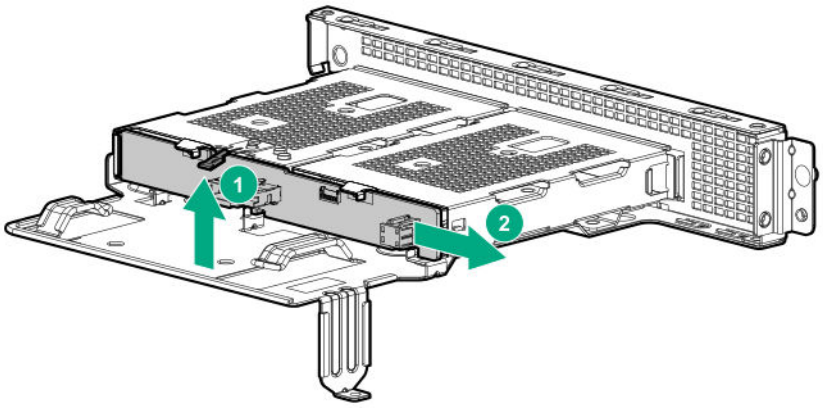
5. **Remove the access panel**.
6. **Remove the air baffle**.
7. **Remove all cables from rear 2-bay SFF drive backplane.**.
8. Remove rear 2-bay SFF SAS/SATA drive cage.



Removing and replacing the rear 2-bay SFF drive backplane

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. **Remove the access panel**.
6. **Remove the rear 2-bay SFF drive cage**.
7. **Remove the drives in the cage**.
8. Remove the rear 2-bay SFF SAS/SATA drive backplane.



To replace the component, reverse the removal procedure.

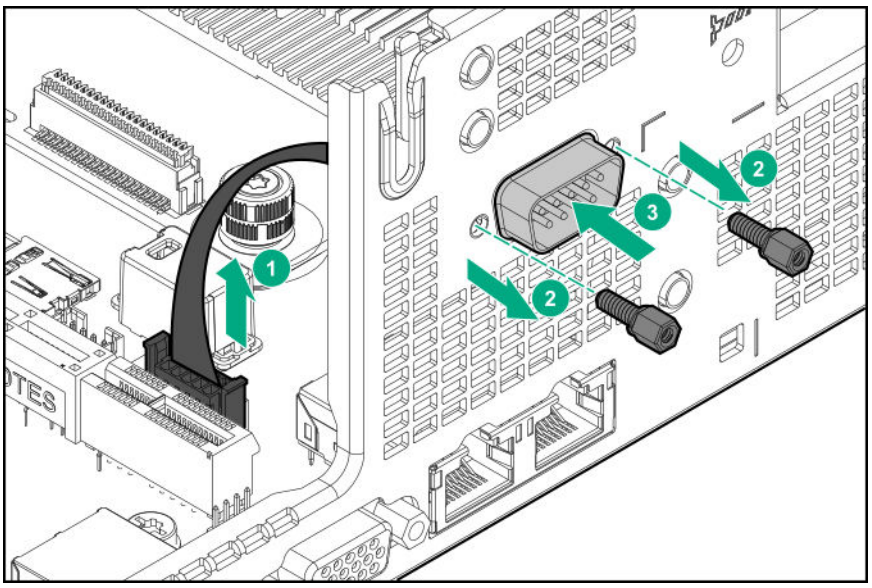
Removing and replacing the serial port

Prerequisites

Nut screwdriver

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. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. Remove the serial port.



To replace the component, reverse the removal procedure.

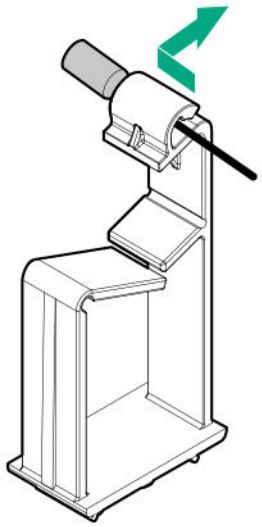
Removing and replacing chassis ears

Prerequisites

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

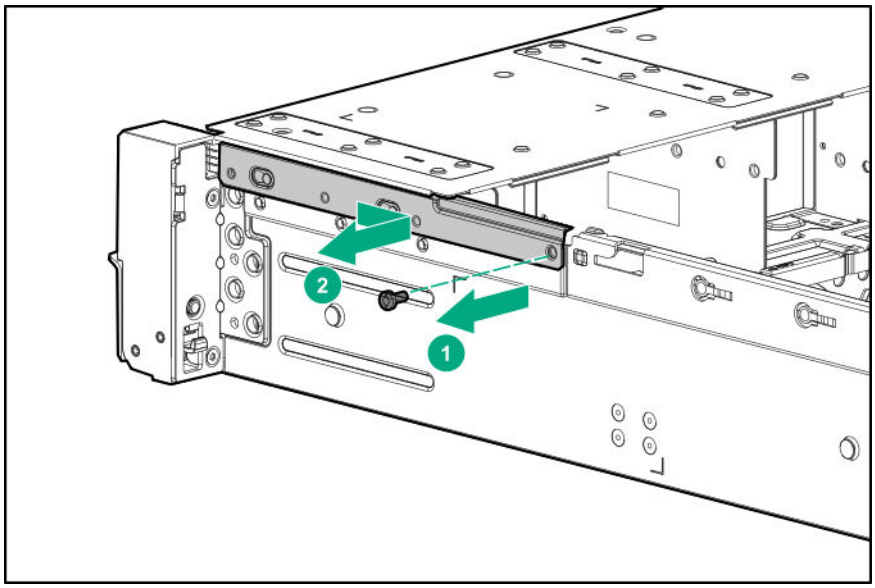
Procedure

1. **Power down the server**.
2. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
3. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
4. **Remove the access panel**.
5. **Remove the air baffle**.
6. Remove the right chassis ear assembly.
   a. Release the front I/O cabling from the server:
      - Detach the ambient thermal sensor cable from its clip.



- **Disconnect the USB 3.0 cable**.
- **Disconnect the front I/O assembly cable**.

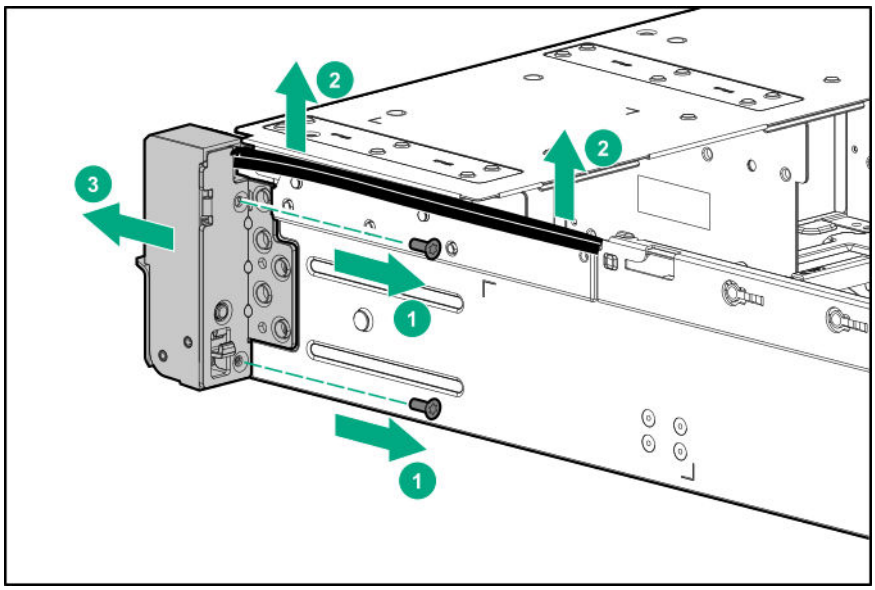
b. Remove the cable cover.



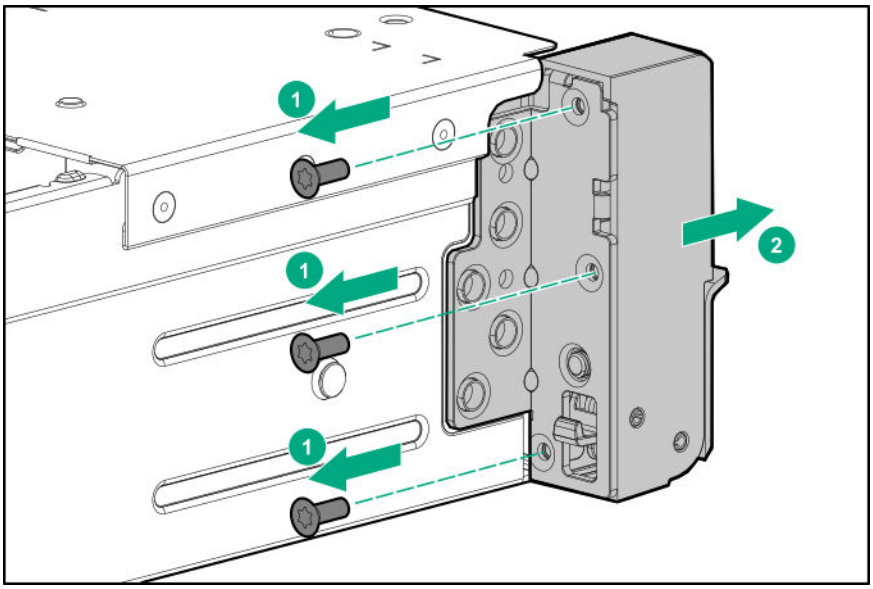
c. Release cables from the chassis compartment.

d. Remove the right ear with all the cables.

The cables include thermal sensor cable, front I/O cable, and USB 3.0 cable.



7. Remove the left chassis ear.



To replace the component, reverse the removal procedure.

Removing and replacing the DIMM guard

Prerequisites

T-15 Torx screwdriver

Procedure

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

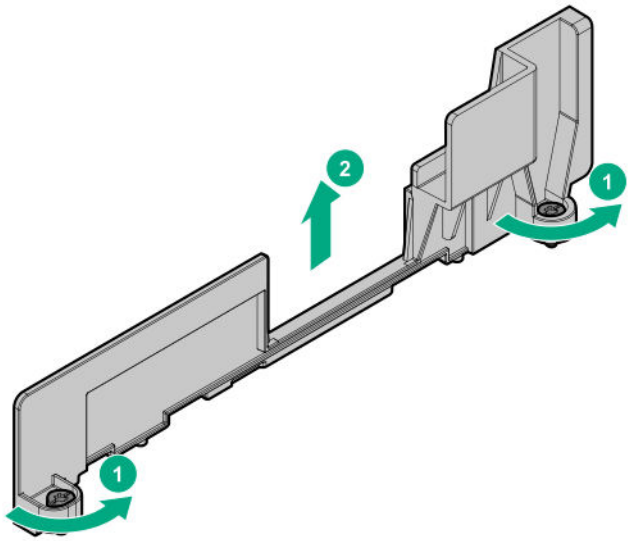
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

3. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

4. **Remove the access panel**.
5. **Remove the air baffle**.
6. Remove the DIMM guard.



7. Manage cables in the channel between DIMM guard and chassis.

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

Procedure

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

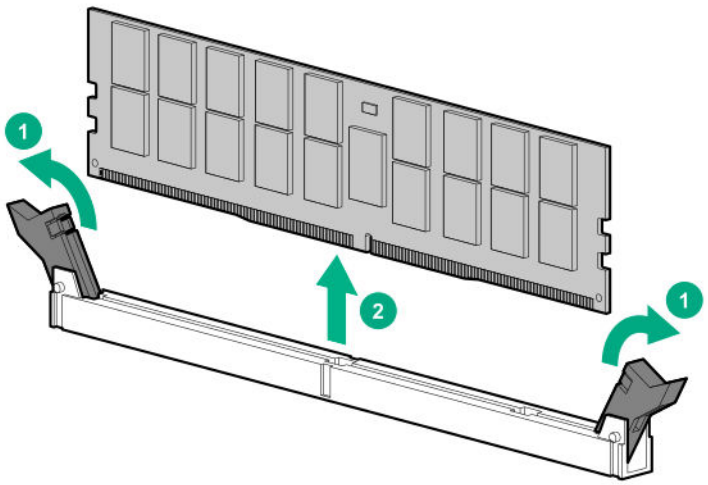
a. Disconnect each power cord from the power source.

b. Disconnect each power cord from the server.

3. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

4. **Remove the access panel**.
5. **Remove the air baffle**.
6. Remove the DIMM.



To replace the component, reverse the removal procedure.

Removing and replacing the chassis intrusion detection switch

Procedure

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

a. Disconnect each power cord from the power source.

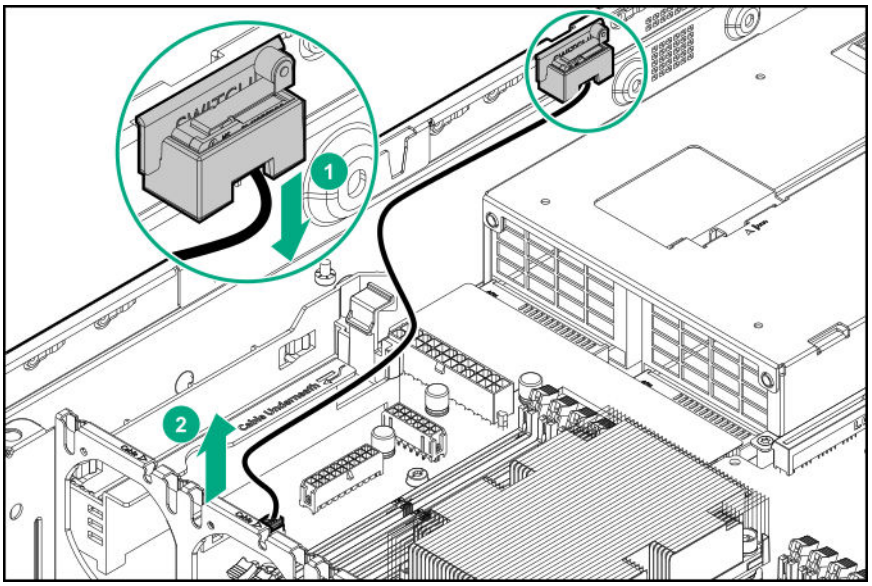
b. Disconnect each power cord from the server.

3. Do one of the following:

- **Extend the server from the rack**.
- **Remove the server from the rack**.

4. **Remove the access panel**.

5. **Remove the air baffle**.
6. Remove the chassis intrusion detection switch.



To replace the component, reverse the removal procedure.

Removing and replacing the LFF partition

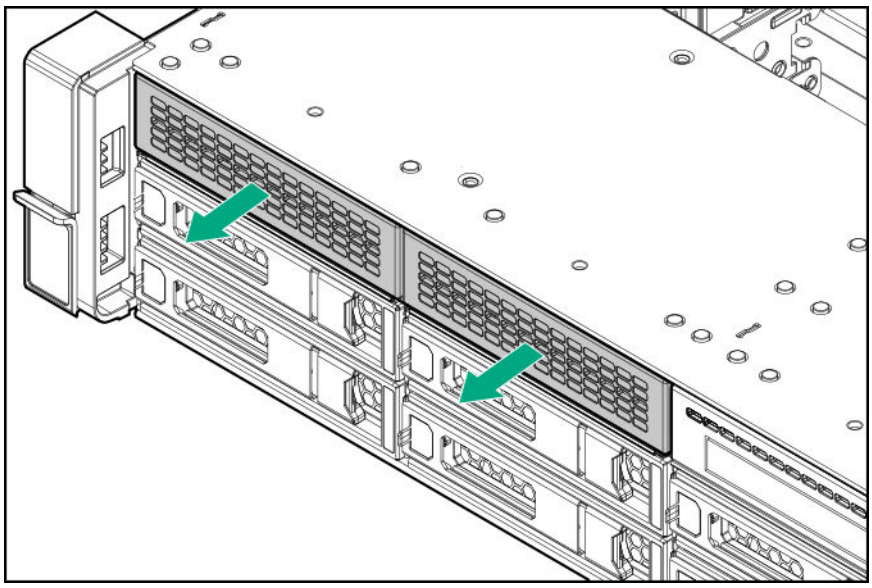
Prerequisites

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

- Flat-headed screwdriver
- T-10 Torx screwdriver

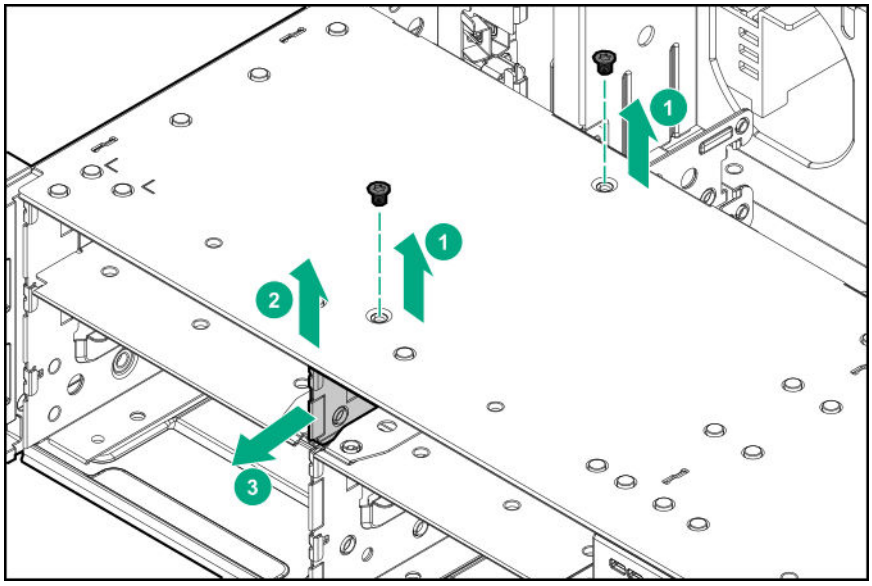
Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. Do one of the following:
   - **Extend the server from the rack**.
   - **Remove the server from the rack**.
5. Remove LFF partition.
   a. Use the flat-headed screwdriver and carefully pry the two box 1 fillers.



b. Remove two T-10 screws.

c. Lift the top cover upward slightly and pull out the partition.



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:

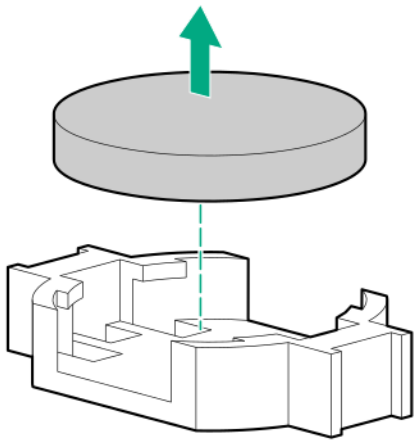
- Do not attempt to recharge the battery.
- Do not expose the battery to temperatures higher than 60°C (140°F).

- 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

Procedure

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



9. To replace the component, reverse the removal procedure.
10. 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 system board

Removing the system board

Prerequisites

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

- T-15 Torx screwdriver
- T-30 Torx screwdriver
- System board handle tool
- Processor-heatsink dust cover

Procedure

1. If installed, **remove the front bezel**.
2. **Power down the server**.
3. Remove all power:
   a. Disconnect each power cord from the power source.
   b. Disconnect each power cord from the server.
4. **Remove the server from the rack**.
5. Remove the inner rail to loose side screws on the redundant power supply cage.
6. **Remove the access panel**.
7. **Remove the air baffle**.
8. **Remove all fans**.
9. Disconnect all cables from system board.
10. **Remove the power supply**.
11. If installed, remove one of the following:
    - **Rear 2-bay SFF drive cage**
    - **Secondary riser cage**
    - **Secondary riser cage blank**
12. If installed, **remove the redundant power supply cage**.
13. **Remove the primary riser cage**.
14. **Remove the Media Module**.
15. **Remove the energy pack holder**.
16. **Remove the DIMM guard**.
17. **Remove all DIMMs**.

18. Observe the following cautions.

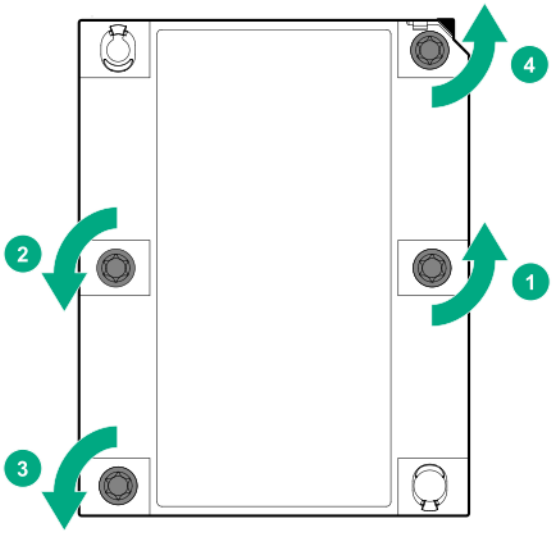
CAUTION: Be sure to loosen each heatsink nut in the order indicated. Otherwise, damage might occur to the heatsink or processor.

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.

19. Remove the processor heatsink assembly:

a. Allow the heatsink to cool.

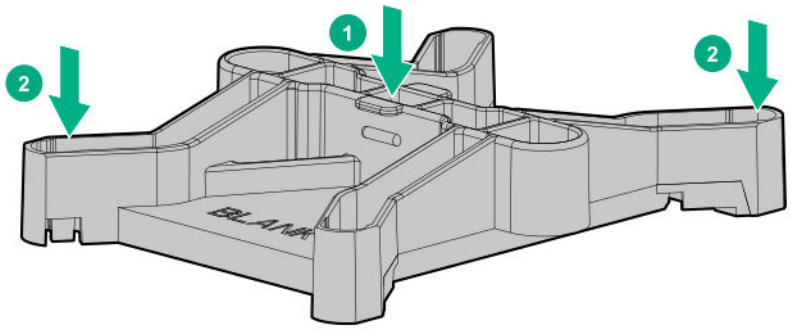
b. Loosen the heatsink nuts in the order specified by the label on the heatsink.



c. Lift the processor heatsink assembly and move it away from the system board.

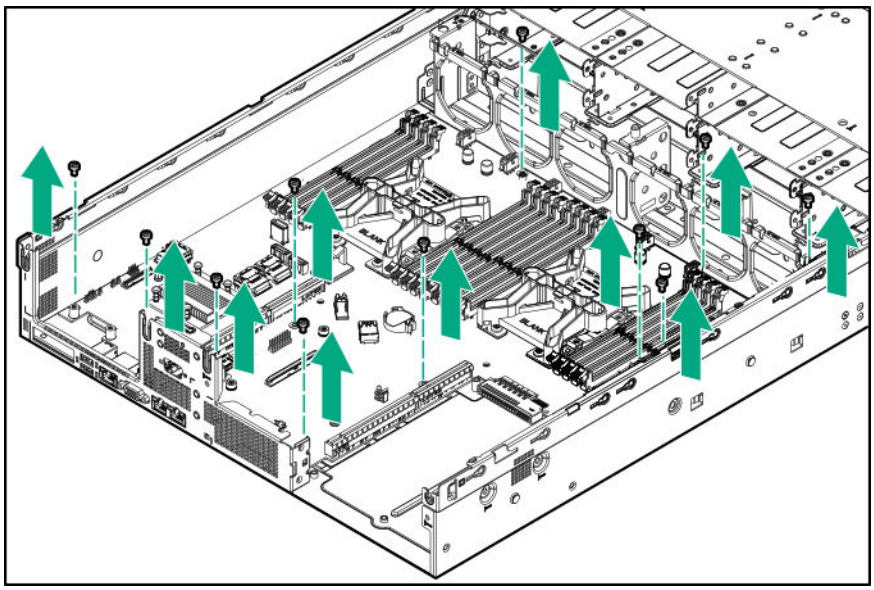
d. Turn the assembly over and place it on a work surface with the processor facing up.

e. Install the dust cover on each processor socket on the failed system board.

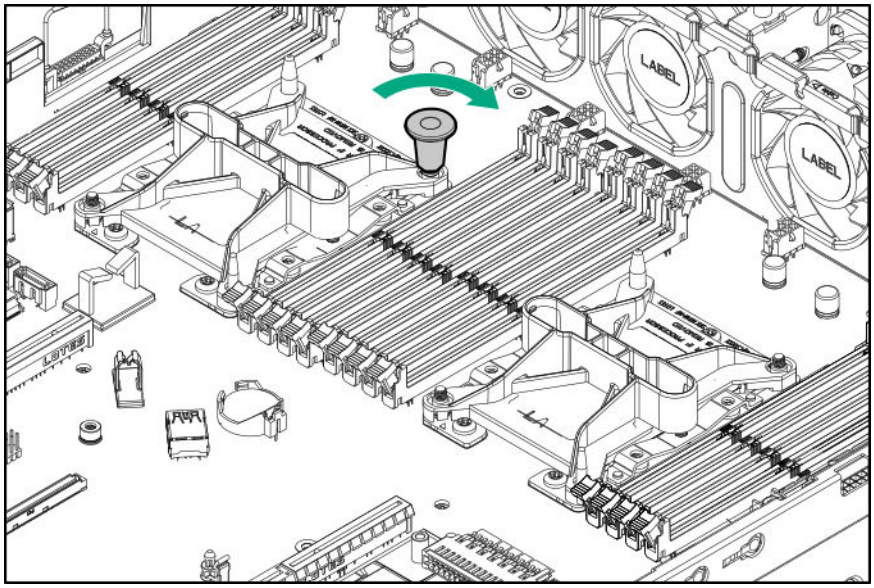


20. Remove the system board:

a. Remove screws from system board.



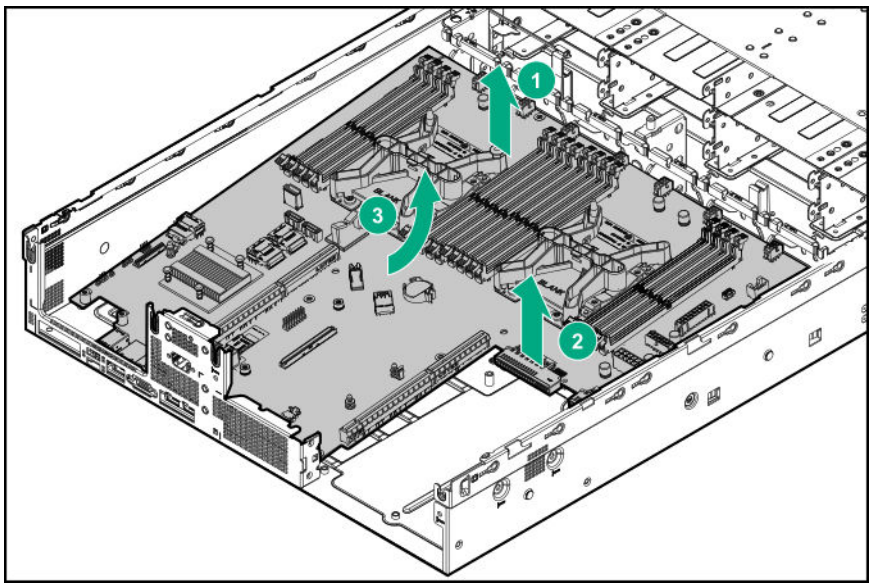
b. Install the system board handle tool on the dust cover of processor 1 shown as the following illustration.



c. Hold the handle tool to lift the system board

d. Grasp the RPS connector area to lift the system board.

e. When the front edge of system board is higher than the fan cage, remove the system board from the rear panel.



21. Remove the handle from the failed system board.

Replacing the system board

Prerequisites

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

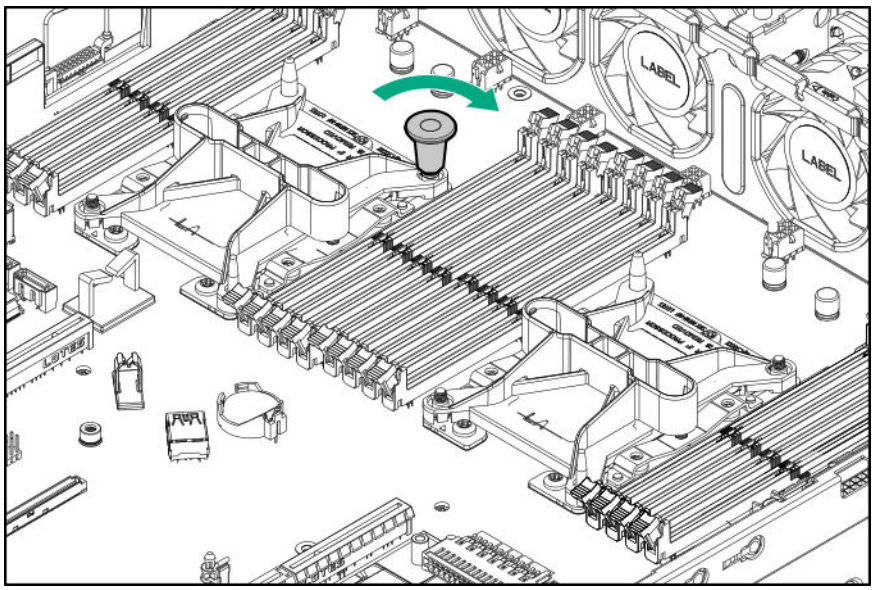
- T-15 Torx screwdriver
- T-30 Torx screwdriver
- System board handle tool
- Processor-heatsink dust cover

Procedure

1. Install the processor-heatsink dust cover on the spare system board.

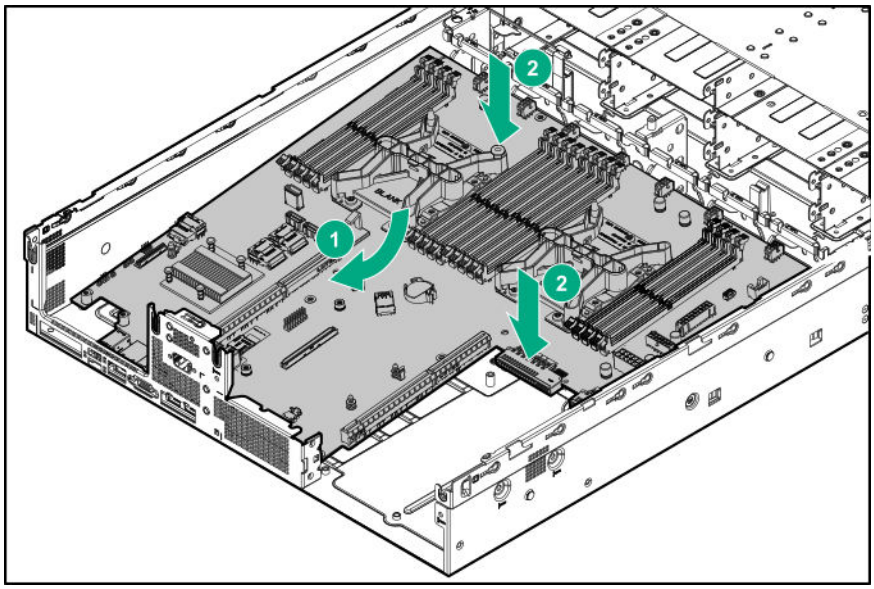
2. Install the system board:

a. Install the system board handle tool on top-right corner of bolster of processor 1.

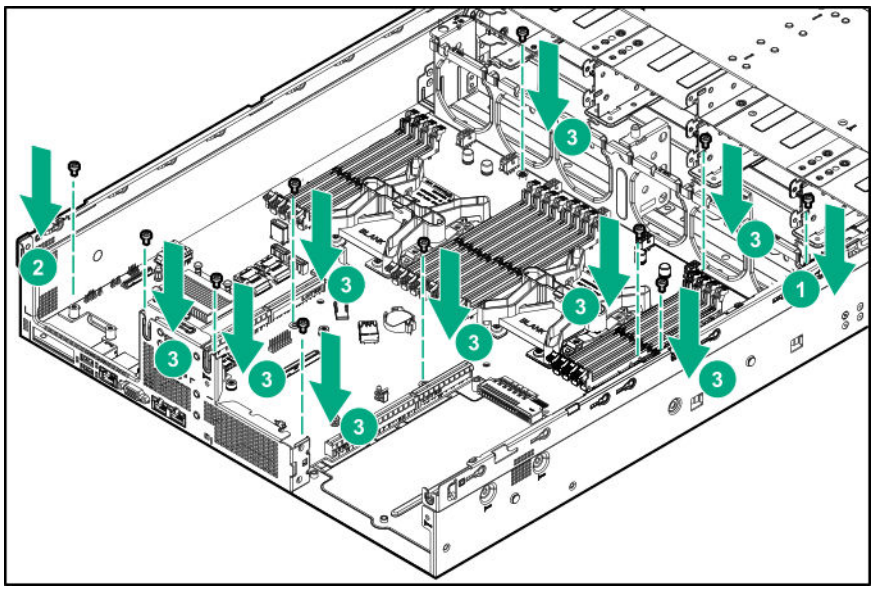


b. Hold the handle tool and RPS connector area on the system board simultaneously, and then insert the ports into the rear panel.

c. Place the front edge of the system board on the chassis.



d. Install the screws.



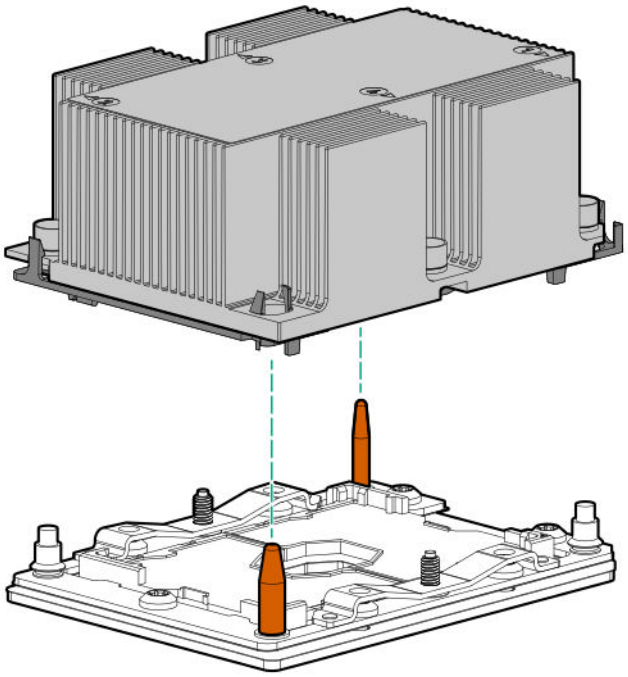
3. Install the processor heatsink assembly:

   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.

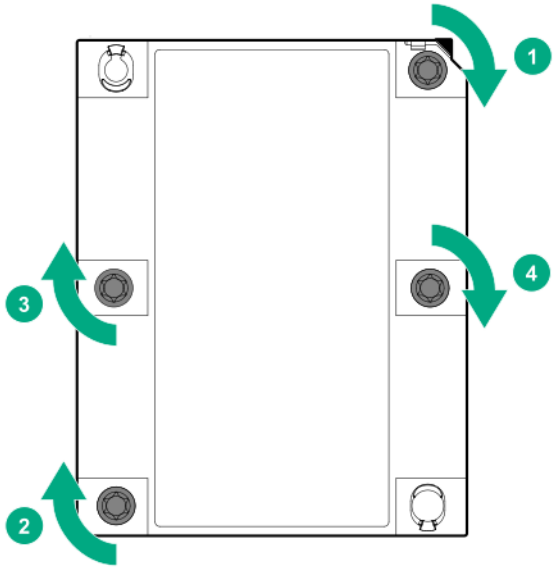
      The heatsink alignment posts are keyed. The processor will only install one way.

      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. Connect all cables.
6. **Install the access panel**.
7. **Install the server into the rack**.
8. Connect all peripheral cables to the server.
9. Connect each power cord to the server.
10. Connect each power cord to the power source.
11. **Power up the server**.
12. Ensure all firmware, including option cards and embedded devices, is updated to the same versions to ensure that the latest drivers are being used.
13. Re-enter any Secure Boot Keys that were previously added in the Secure Boot configuration.
14. If Intel Xeon Gold 6244 Processors are installed, **enable the enhanced cooling function**.
15. If removed, **install the front bezel**.
16. **Re-enter 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 (**Removing and replacing 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

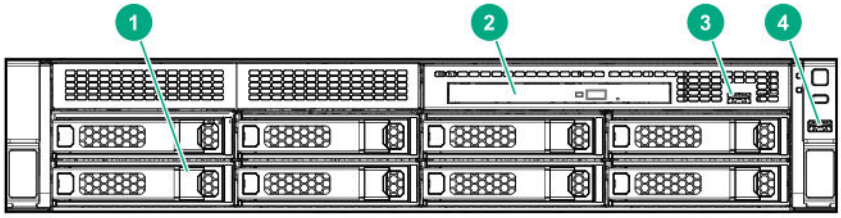
  This method requires an administrator to download the HPE SSA executables and install them. You can run HPE SSA online after launching the host operating system.

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

Component identification

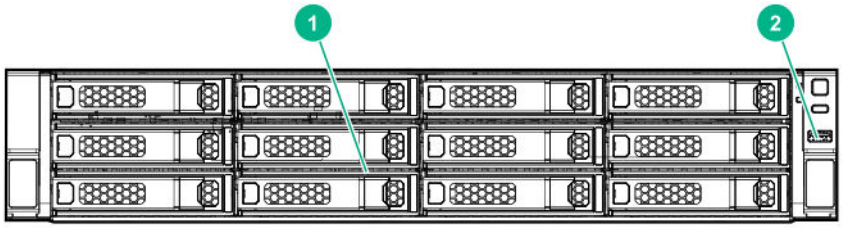
Front panel components

- **8-bay LFF drive model**



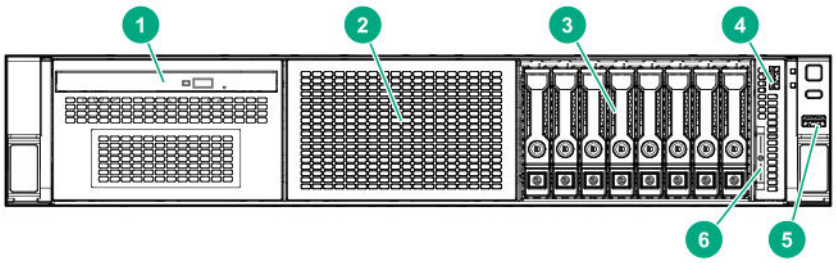
Item	Description
1	LFF drives
2	Optical drive (optional)
3	iLO Service Port
4	USB 3.0 port

- **12-bay LFF drive model**



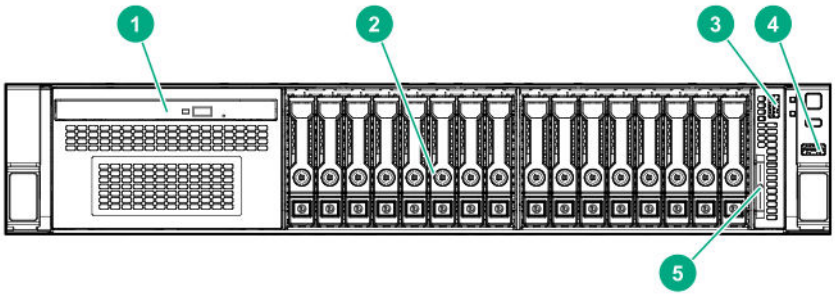
Item	Description
1	LFF drives
2	USB 3.0 port

- **8-bay SFF drive model**



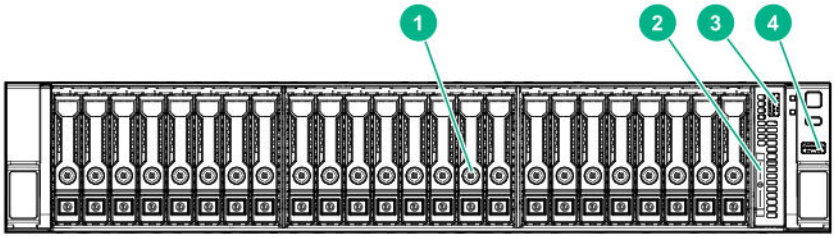
Item	Description
1	Optical drive (optional)
2	8-bay SFF drive bays (optional)
3	SFF drives
4	iLO Service Port
5	USB 3.0 port
6	**Serial number/iLO information pull tab**

- **16-bay SFF drive model**



Item	Description
1	Optical drive (optional)
2	SFF drives
3	iLO Service Port
4	USB 3.0 port
5	**Serial number/iLO information pull tab**

- 24-bay SFF drive model



Item	Description
1	SFF drives
2	**Serial number/iLO information pull tab**
3	iLO Service Port
4	USB 3.0 port

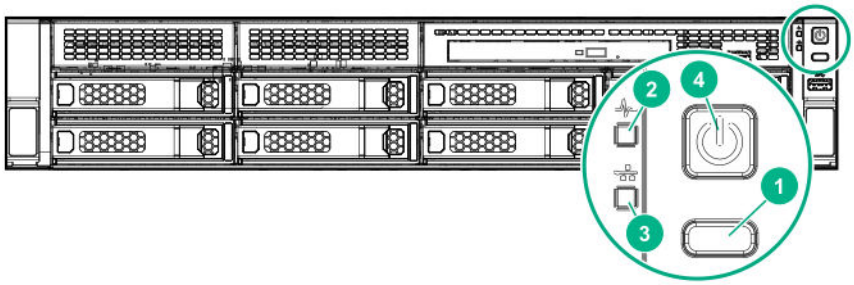
Serial number/iLO information pull tab

The serial number/iLO information pull tab is double-sided. One side shows the server serial number and the QR code labels. The other side shows the default iLO account information.

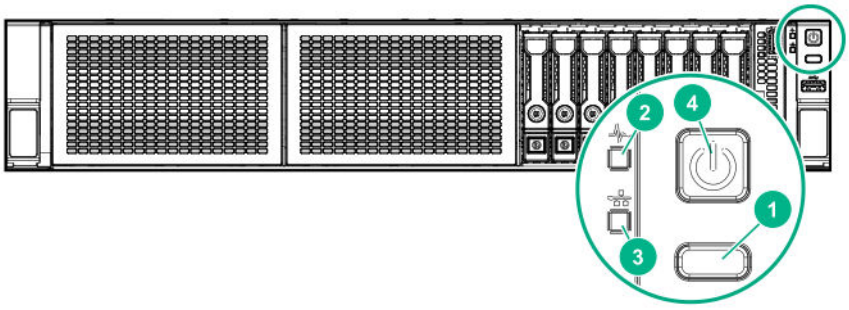
Use a mobile device to scan the QR code label to display the server mobile product page (**https://www.hpe.com/qref/dl180gen10**). This page contains links to server setup information, spare part numbers, QuickSpecs, troubleshooting resources, and other useful product links.

Front panel LEDs and buttons

- Front panel LEDs and buttons in an LFF chassis



- Front panel LEDs and buttons in an SFF chassis



Item	Description	Status
1	UID button/LED	Solid blue = Activated Flashing blue: • 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual reboot sequence initiated • 8 flashes per second = iLO manual reboot sequence in progress Off = Deactivated

Table Continued

2	Health LED	Solid green = Normal Flashing green (1 flash per second) = iLO is rebooting Flashing amber = System degraded Flashing red (1 flash per second) = System critical If the health LED indicates a degraded or critical state, review the system IML ("Integrated Management Log" on page 129) or use iLO ("HPE iLO" on page 127) to review the system health status.
3	NIC status LED	Solid green = Link to network Flashing green (1 flash per second) = Network active Off = No network activity
4	Power On/Standby button and system power LED	Solid green = System on Flashing green (1 flash per second) = Performing power on sequence Solid amber = System in standby Off = No power present If the system power LED is off, verify the following conditions: • The facility power is present. • The power supply is installed and is working correctly. • The power cord is attached and is connected to a power source. • The front I/O cable is connected.

When all four LEDs described in this table flash simultaneously, a power fault has occurred. For more information, see **Power fault LEDs**.

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**.

Power fault LEDs

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

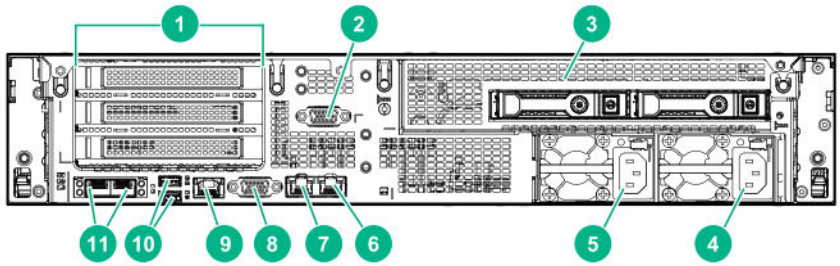
Subsystem	LED behavior
System board	1 flash
Processor	2 flashes
Memory	3 flashes
Riser board PCIe slots	4 flashes

Table Continued

Subsystem	LED behavior
FlexibleLOM	5 flashes
Removable HPE Flexible Smart Array controller	6 flashes
System board PCIe slots	7 flashes
Power backplane or storage backplane	8 flashes
Power supply	9 flashes

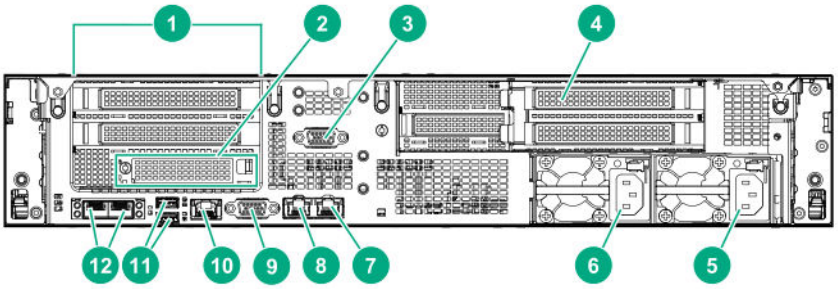
Rear panel components

Rear panel components with optional rear 2-bay SFF SAS/SATA drives



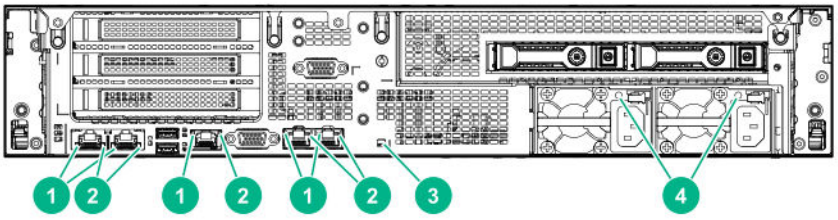
Item	Description
1	PCIe slots 1 - 3 top to bottom (primary riser for processor 1)
2	Serial port (optional)
3	Rear 2-bay SFF SAS/SATA drives (optional)
4	Flexible Slot power supply 1 (hot-plug)
5	Flexible Slot power supply 2 (hot-plug, optional)
6	NIC port 2
7	NIC port 1
8	VGA port
9	iLO Management Port
10	USB 3.0 ports (2)
11	Media Module adapter (optional NIC ports 3 - 4)

Rear panel components with optional secondary riser cage



Item	Description
1	PCIe slots 1 - 3 top to bottom (primary riser for processor 1)
2	FlexibleLOM (optional)
3	Serial port (optional)
4	PCIe slots 4 - 6 (secondary riser for processor 2, optional)
5	Flexible Slot power supply 1 (hot-plug)
6	Flexible Slot power supply 2 (hot-plug, optional)
7	NIC port 2
8	NIC port 1
9	VGA port
10	ILO Management Port
11	USB 3.0 ports (2)
12	Media Module adapter (optional NIC ports 3 - 4)

Rear panel LEDs



Item	Description	Status
1	NIC link LED	Green = Network link Off = No network link

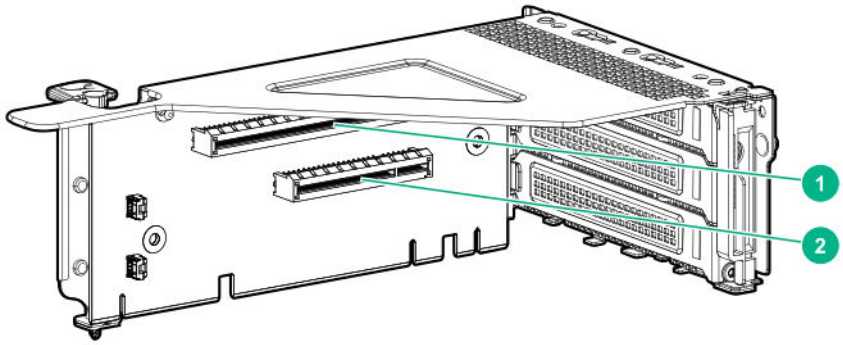
Table Continued

2	NIC activity LED	Solid green = Link to network Flashing green = Network active Off = No network activity
3	UID LED	Solid blue = Activated Flashing blue: • 1 flash per second = Remote management or firmware upgrade in progress • 4 flashes per second = iLO manual reboot sequence initiated • 8 flashes per second = iLO manual reboot sequence in progress Off = Deactivated
4	Power supply LED	Solid green = Normal Off = One or more of the following conditions exists: • Power is unavailable • Power supply failed • Power supply is in standby mode • Power supply error

PCIe riser board slot definitions

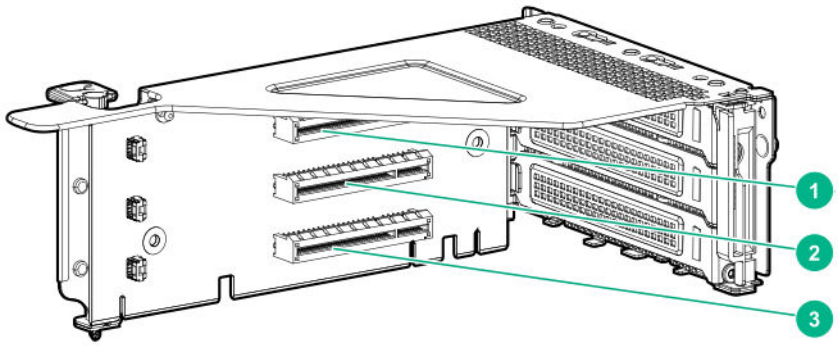
The server ships with a primary PCIe riser cage installed and a secondary PCIe riser cage blank. A second processor is required to support installation in the secondary PCIe riser location.

- Two-slot PCIe riser cage assembly: Install in the primary PCIe riser connector



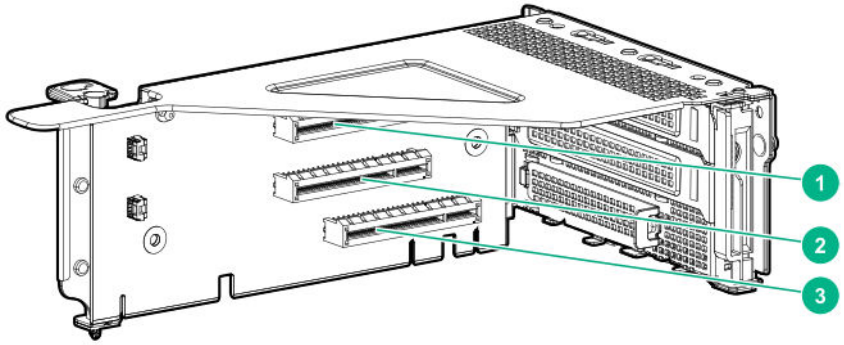
Item	Type	Form factor	Connector link width	Negotiable link width
1	PCIe 3.0	Full height, full length	x16	16, 8, 4, 1
2	PCIe 3.0	Full height, full length	x8	8, 4, 1

- Three-slot PCIe riser cage assembly: By default, installed in the primary PCIe riser connector



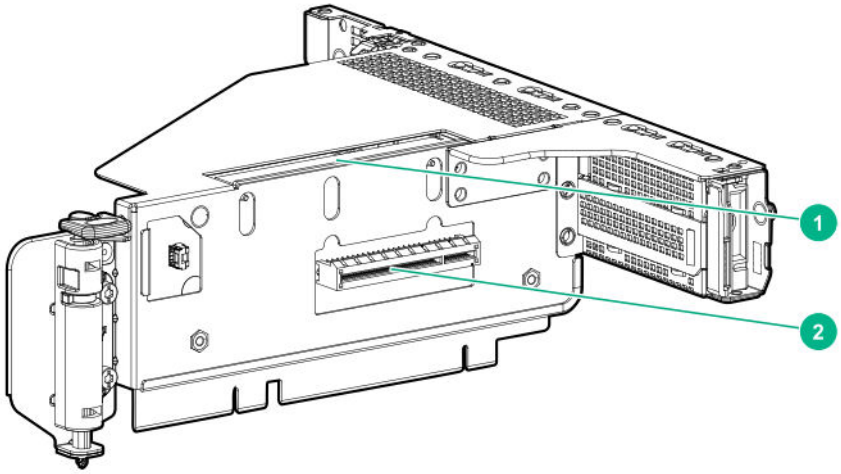
Item	Type	Form factor	Connector link width	Negotiable link width
1	PCIe 3.0	Full height, full length	x8	16, 8, 4, 1
2	PCIe 3.0	Full height, half length	x8	8, 4, 1
3	PCIe 3.0	Full height, half length	x8	8, 4, 1

- FlexibleLOM riser cage assembly: Install in the primary PCIe riser connector



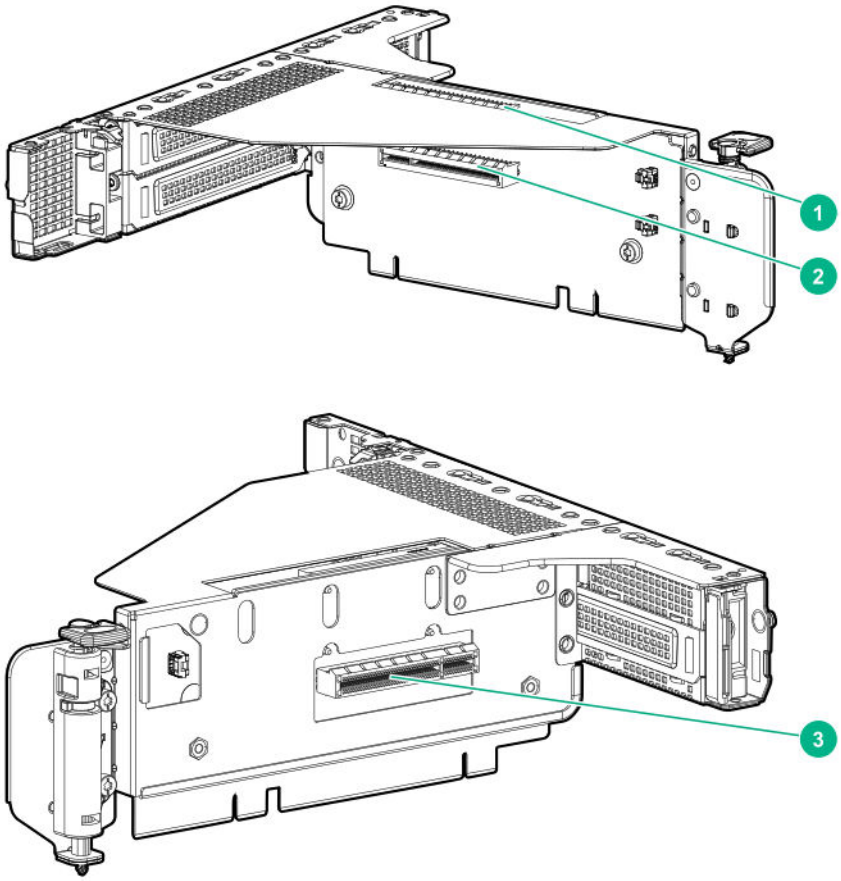
Item	Type	Form factor	Connector link width	Negotiable link width
1	PCIe 3.0	Full height, full length	x8	8, 4, 1
2	PCIe 3.0	Full height, half length	x8	8, 4, 1
3	PCIe 3.0	FlexibleLOM	x8	—

- x16, x8 secondary riser cage assembly: Install in the secondary PCIe riser connector



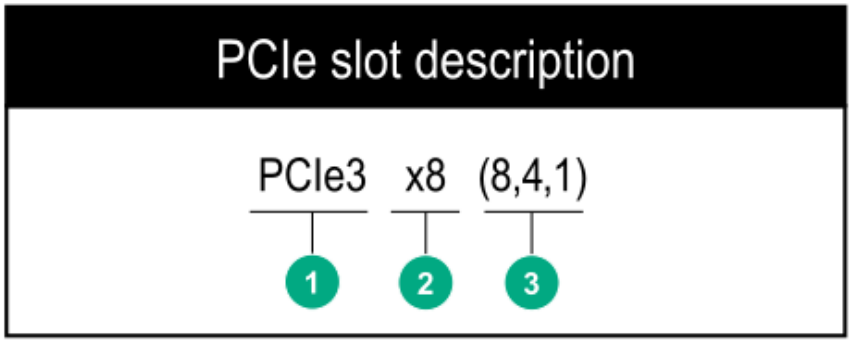
Item	Type	Form factor	Connector link width	Negotiable link width
1	PCIe 3.0	Full height, full length	x16	16, 8, 4, 1
2	PCIe 3.0	Half height, half length	x8	8, 4, 1

- x8, x8, x8 secondary riser cage assembly: Install in the secondary PCIe riser connector.



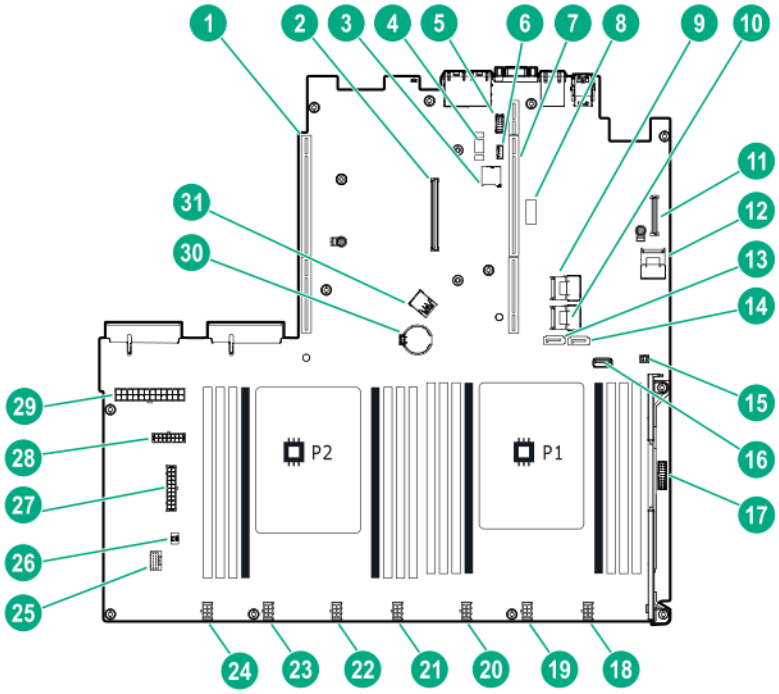
Item	Type	Form factor	Connector link width	Negotiable link width
1	PCIe 3.0	Full height, full length	x8	8, 4, 1
2	PCIe 3.0	Full height, half length	x8	8, 4, 1
3	PCIe 3.0	Half height, half length	x8	8, 4, 1

PCIe slot description



Item	Description	Definition
1	PCI Express version	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. • PCIe 1.x • PCIe 2.x • PCIe 3.x The PCIe technology is under constant development. For the latest information, see the **PCI-SIG website**.
2	Physical connector link width	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. • x1 • x2 • x4 • x8 • x16
3	Negotiable link width	These numbers correspond to the maximum link bandwidth supported by the slot.

System board components



Item	Description
1	Secondary PCIe riser connector for processor 2
2	Smart Array modular controller connector
3	microSD card slot[1]
4	TPM connector
5	Serial port connector
6	iLO Service Port connector
7	Primary PCIe riser connector for processor 1
8	**System maintenance switch**
9	Mini-SAS port 1
10	Mini-SAS port 3
11	Media Module adapter connector
12	Mini-SAS port 2
13	SATA port 5
14	SATA port 4
15	SATA management port
16	Front USB 3.0 connector

Table Continued

17	Front I/O cable connector
18	Fan connector 6
19	Fan connector 5
20	Fan connector 4
21	Fan connector (Reserved)
22	Fan connector 3
23	Fan connector 2
24	Fan connector 1
25	Energy pack connector
26	Chassis intrusion detection switch connector
27	Drive backplane power connector
28	Rear drive power connector
29	Non-hot-plug power supply connector
30	System battery
31	Internal USB 3.0 port

[1] If the memory card connected to the microSD slot is not visible in Windows Device Manager, in the menu bar, click **View** > **Show hidden device**.

System maintenance switch descriptions

Position	Default	Function
S1[1]	Off	Off = iLO security is enabled. On = iLO 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

Table Continued

Position	Default	Function
S11	—	Reserved
S12	—	Reserved

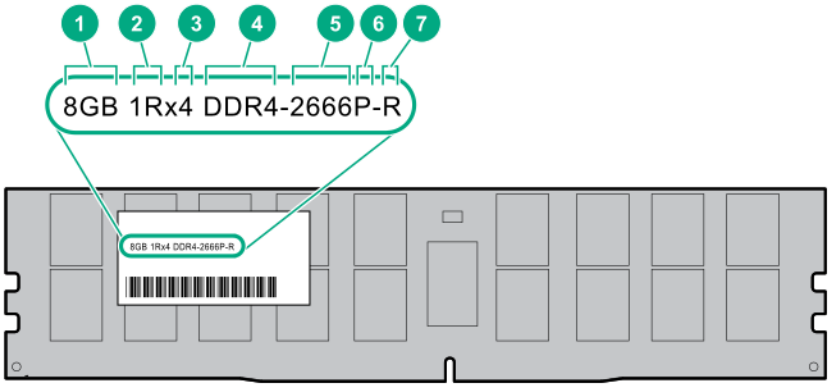
1 To access the redundant ROM, set S1, S5, and S6 to On.

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

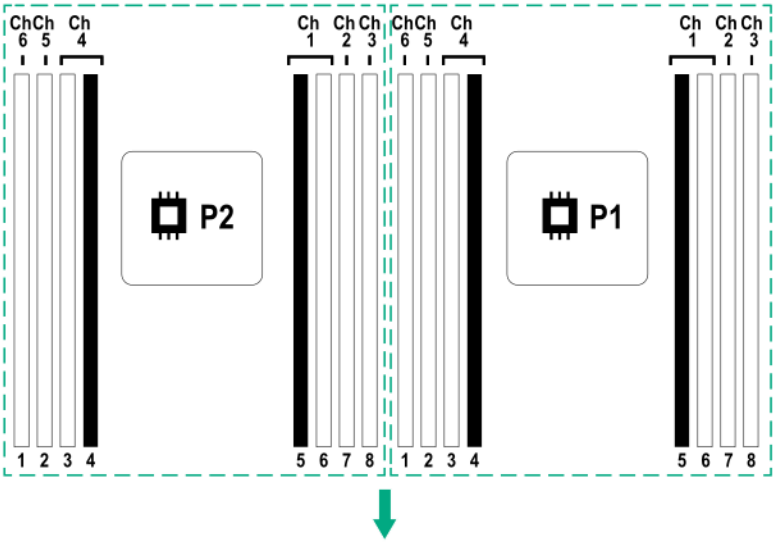
Table Continued

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

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**).

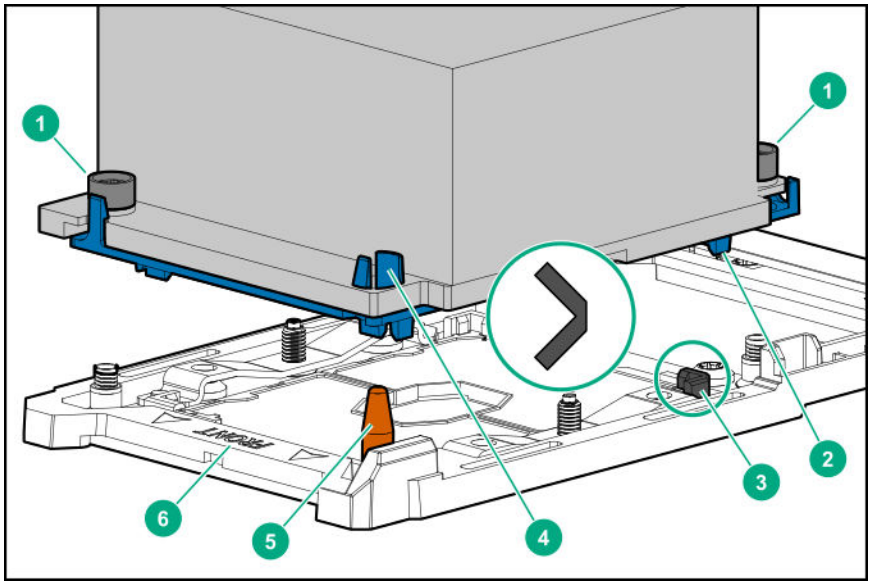
DIMM slot locations

DIMM slots are numbered sequentially (1 through 8) for each processor.



The arrow points to the front of the server.

Processor, heatsink, and socket components

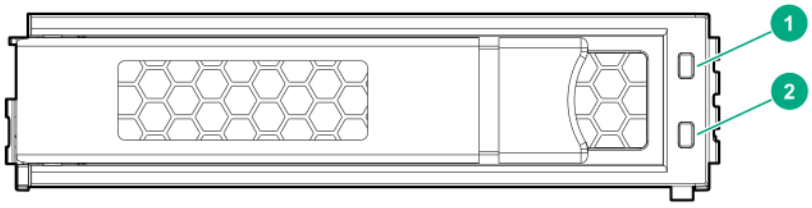


Item	Description
1	Heatsink nuts
2	Processor carrier
3	Pin 1 indicator [1]
4	Heatsink guide/keying feature
5	Alignment post
6	Heatsink keying frame

[1] Symbol also on the processor and frame.

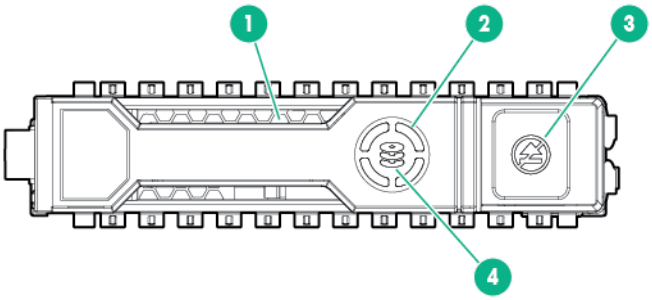
Drive LEDs and buttons

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.
		Flashing green (1 flash per second)	The drive is doing one of the following: • 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

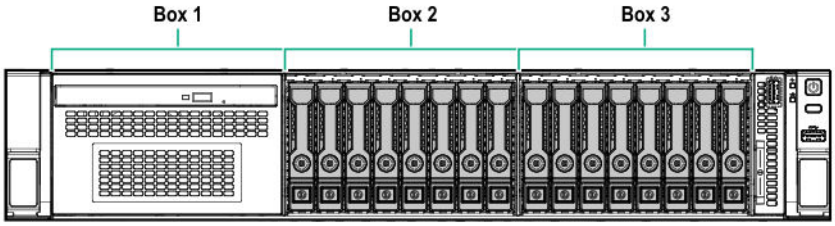


Item	LED	Status	Definition
1	Locate	Solid blue	The drive is being identified by a host application.
		Flashing blue	The drive carrier firmware is being updated or requires an update.
2	Activity ring	Rotating green	Drive activity
		Off	No drive activity
3	Do not remove	Solid white	Do not remove the drive. 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.
		Flashing green	The drive is doing one of the following: • 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.

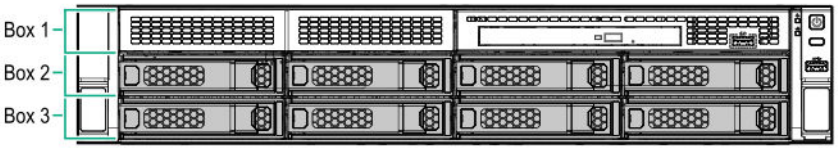
Drive box numbering

Front boxes

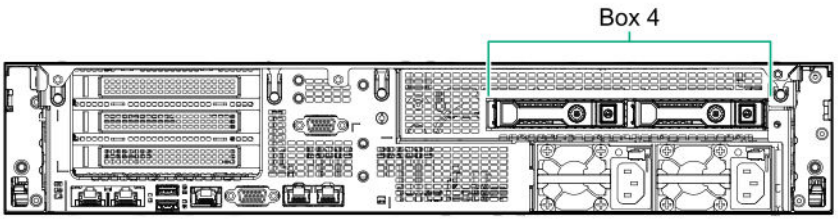
- **SFF**



- **LFF**

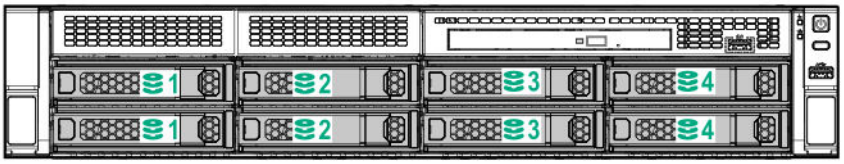


Rear box



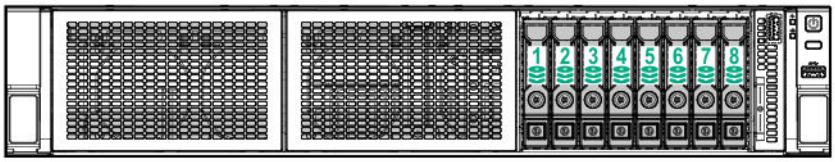
Drive bay numbering

- 8-bay LFF hot-plug drive model

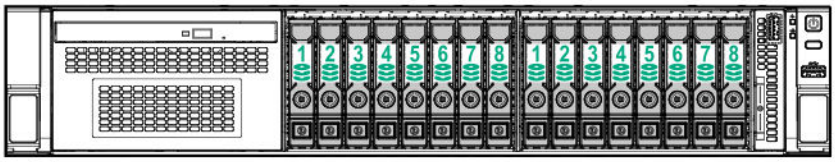


- 12-bay LFF hot-plug drive model

- 8-bay SFF hot-plug drive model

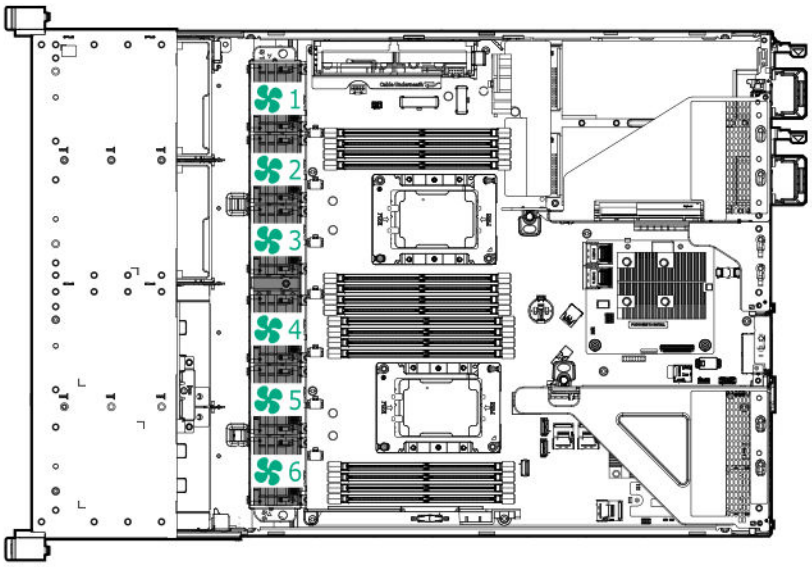


- 16-bay SFF hot-plug drive model



- 24-bay SFF hot-plug drive model

Fan bay numbering



Cabling

Cabling guidelines

The cable colors in the cabling diagrams used in this chapter are for illustration purposes only.

Observe the following guidelines when working with server cables.

Before connecting cables

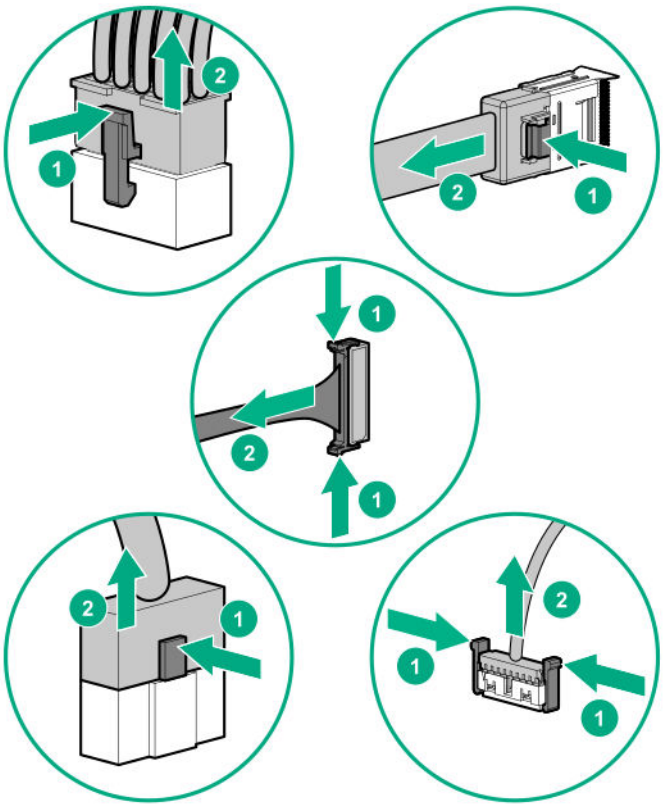
- Note the port labels on the PCA components. Not all these components are used by all servers:
  - System board ports
  - Drive and power supply backplane ports
  - Expansion board ports (controllers, adapters, expanders, risers, and similar boards)
- Note the label near each cable connector. This label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

When connecting cables

- Before connecting a cable to a port, lay the cable in place to verify the length of the cable.
- Use the internal cable management features to properly route and secure the cables.
- When routing cables, be sure that the cables are not in a position where they can be pinched or crimped.
- Avoid tight bend radii to prevent damaging the internal wires of a power cord or a server cable. Never bend power cords and server cables tight enough to cause a crease in the sheathing.
- Make sure that the excess length of cables is properly secured to avoid excess bends, interference issues, and airflow restriction.
- 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

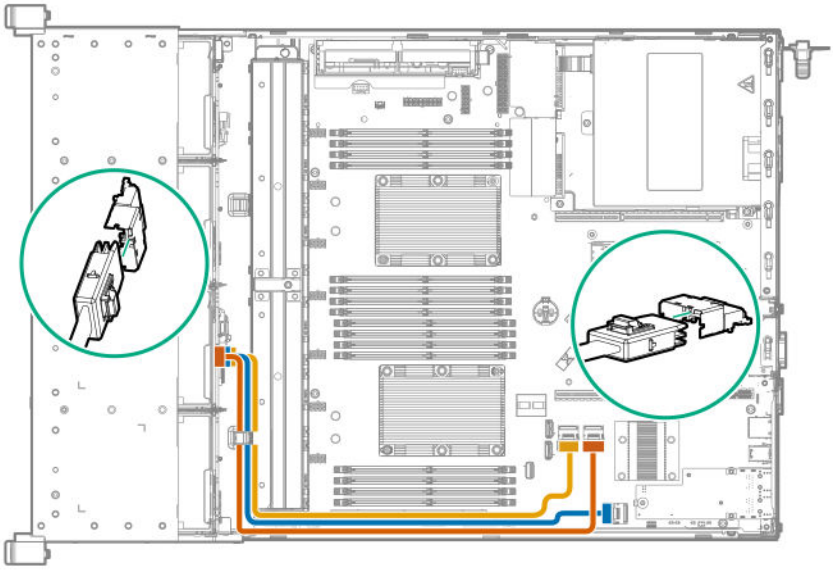
- Grip the body of the cable connector. Do not pull on the cable itself because this action can damage the internal wires of the cable or the pins on the port.
- If a cable does not disconnect easily, check for any release latch that must be pressed to disconnect the cable.



- 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.

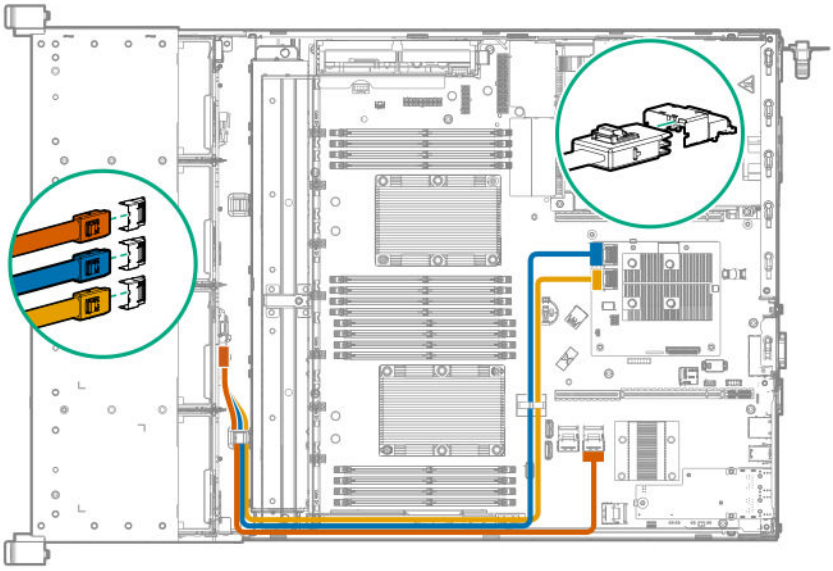
Cable routing: LFF drive model

LFF drive to system board



Color	Description
Orange	LFF box 1 to Mini-SAS port 1
Blue	LFF box 2 to Mini-SAS port 2
Gold	LFF box 3 to Mini-SAS port 3

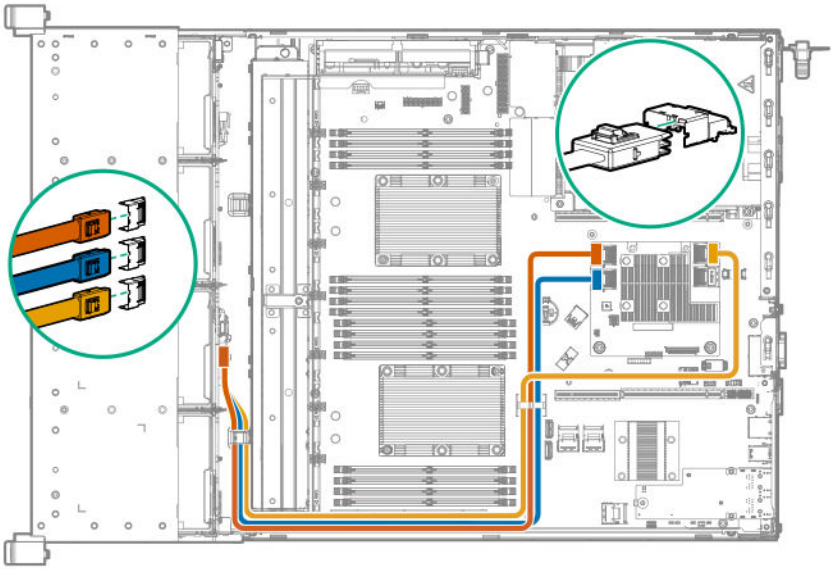
LFF drive to Smart Array P408i-a SR Gen10 controller



Color	Description
Orange	Box 1 Mini-SAS cable to the onboard SATA port 1*
Blue	Box 2 to the Smart Array P408i-a SR Gen10 controller port 1
Gold	Box 3 to the Smart Array P408i-a SR Gen10 controller port 2

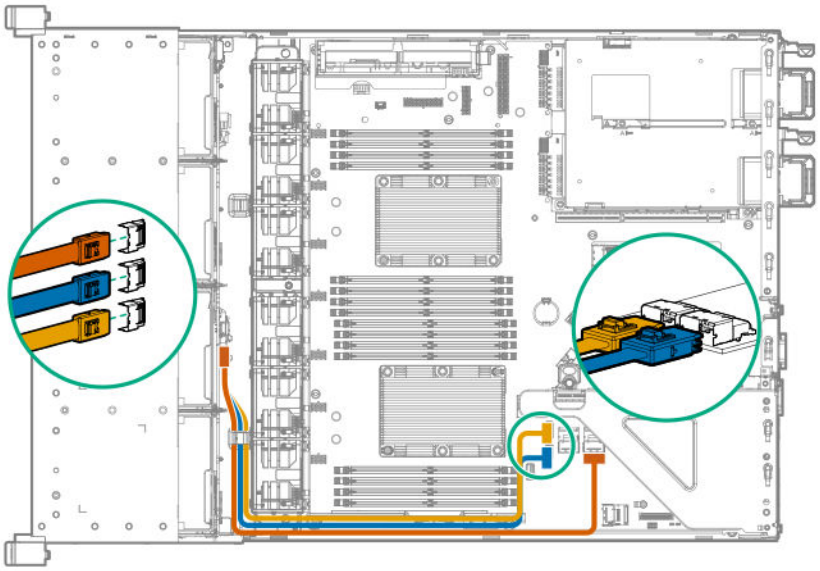
* Box 1 can be connected to a type-p controller port 1 installed in the primary riser.

LFF drive to Smart Array P816i-a SR Gen10 controller



Color	Description
Orange	Box 1 to the Smart Array P816i-a SR Gen10 controller port 1
Blue	Box 2 to the Smart Array P816i-a SR Gen10 controller port 2
Gold	Box 3 to the Smart Array P816i-a SR Gen10 controller port 3

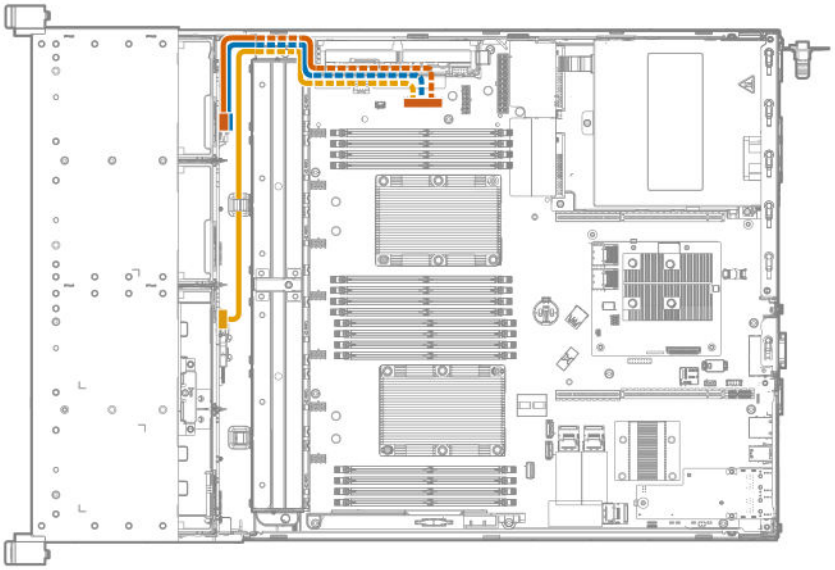
LFF drive to type-p controller



Color	Description
Orange	Box 1 Mini-SAS cable to the onboard SATA port 1*
Blue	Box 2 to the type-p controller port 1
Gold	Box 3 to the type-p controller port 2

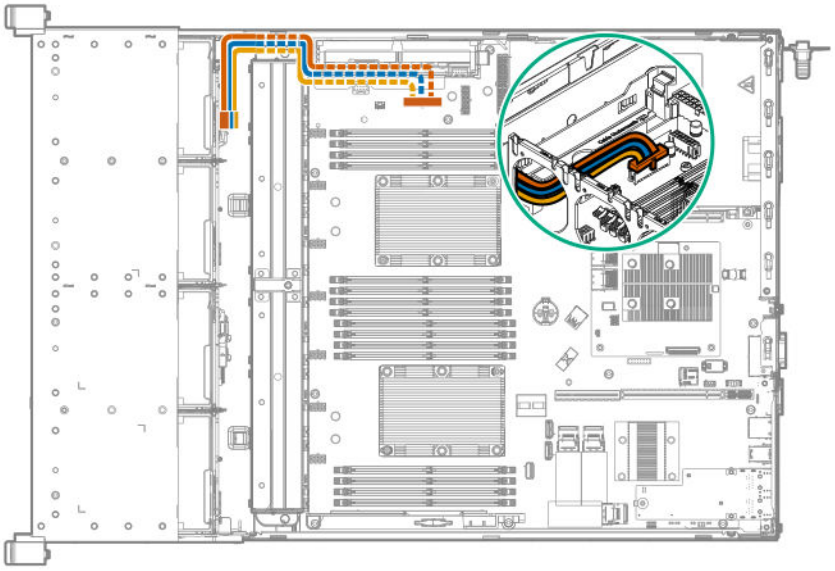
* Box 1 can be connected to a type-a controller port 1.

8-bay LFF and optical drive power cable



Color	Description
Orange	P2 power cable to LFF box 2
Blue	P3 power cable to LFF box 3
Gold	P4 power cable to the optical drive

12-bay LFF power cable



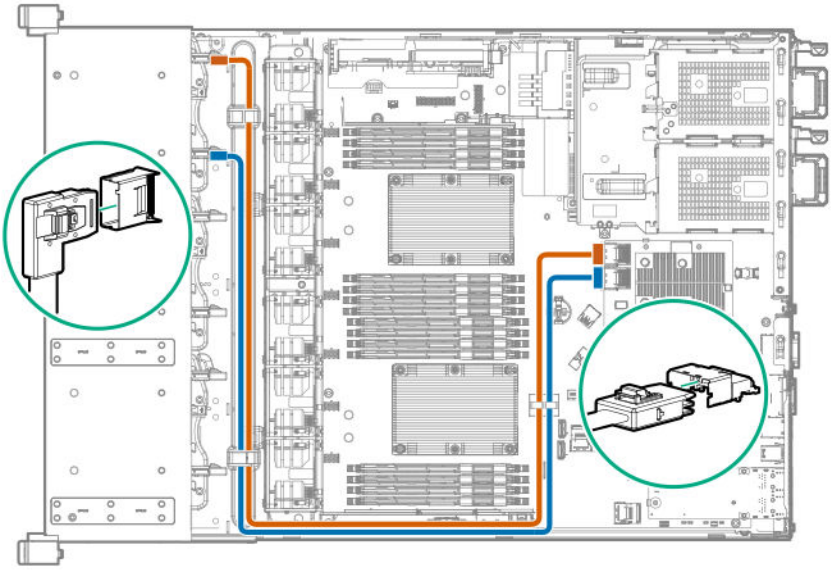
Color	Description
Orange	P2 power cable to LFF box 1

Table Continued

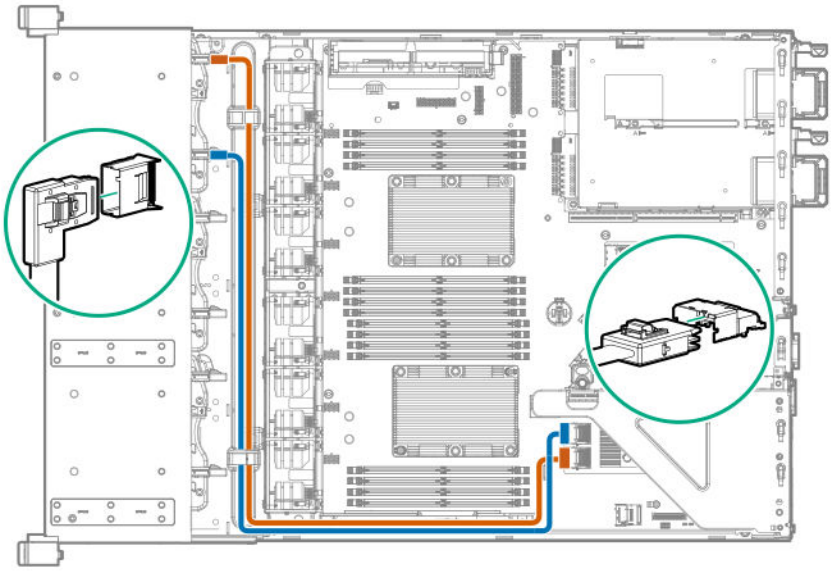
Blue	P3 power cable to LFF box 2
Gold	P4 power cable to LFF box 3

Cable routing: SFF drive model

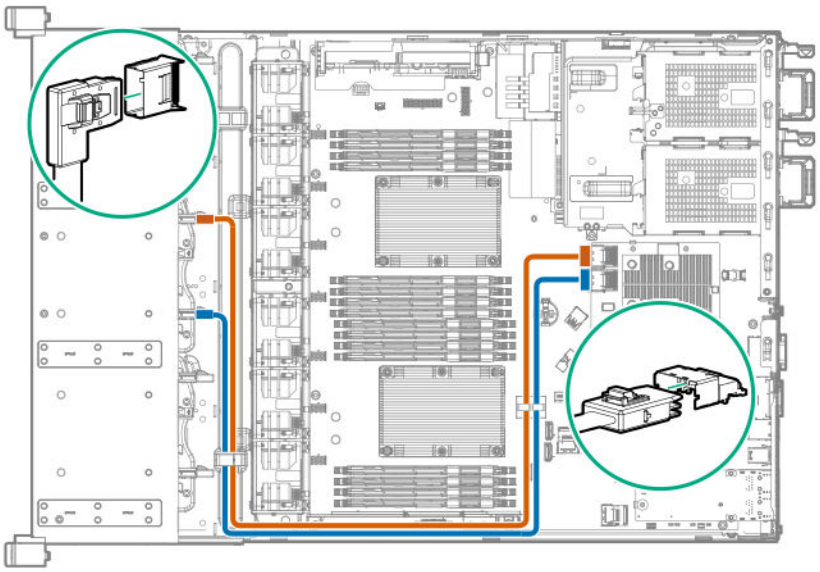
Box 1 to Smart Array P408i-a SR Gen10 controller



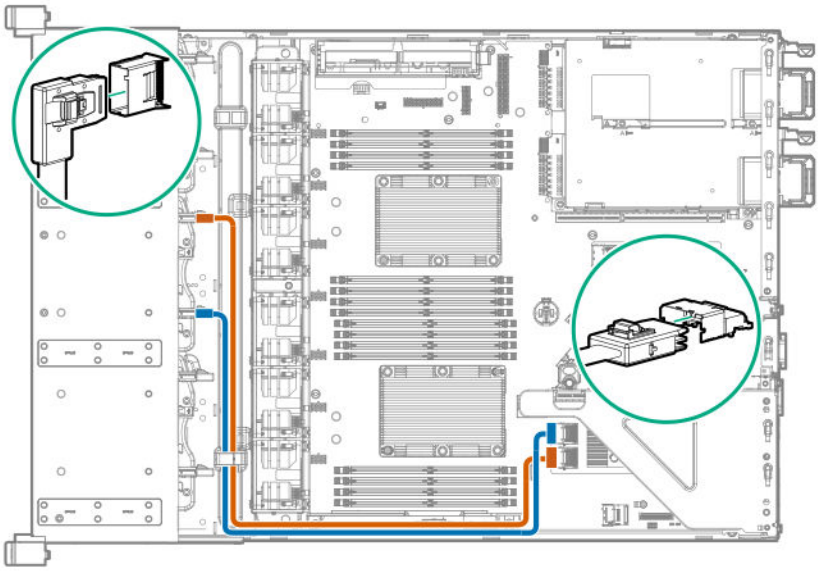
Box 1 to type-p controller



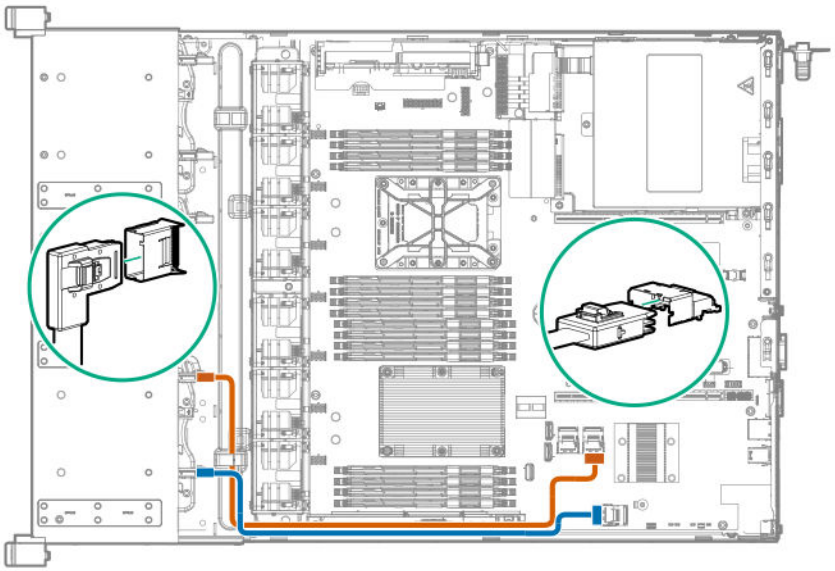
Box 2 to Smart Array P408i-a SR Gen10 controller



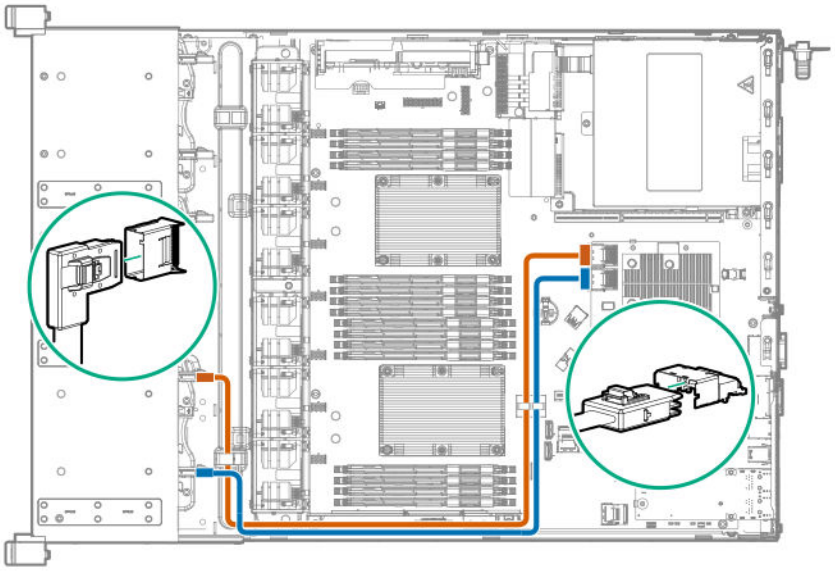
Box 2 to type-p controller



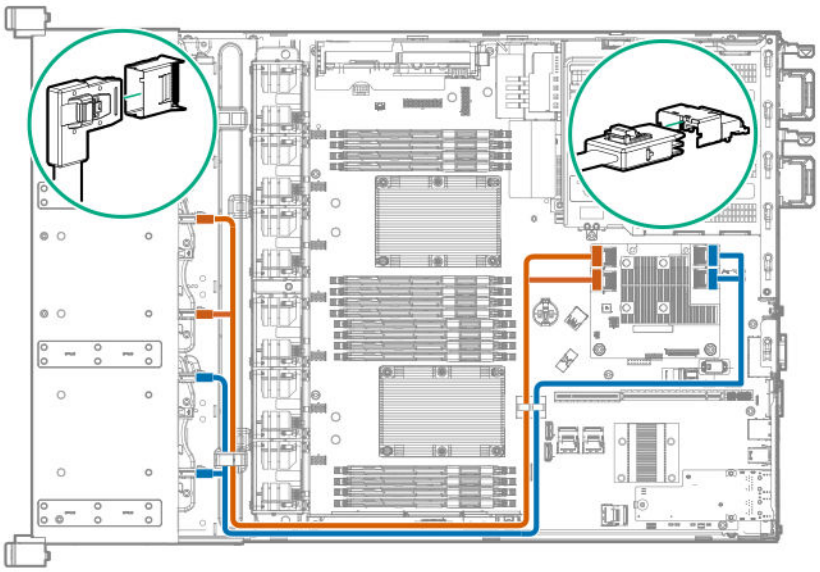
Box 3 to system board



Box 3 to Smart Array P408i-a SR Gen10 controller

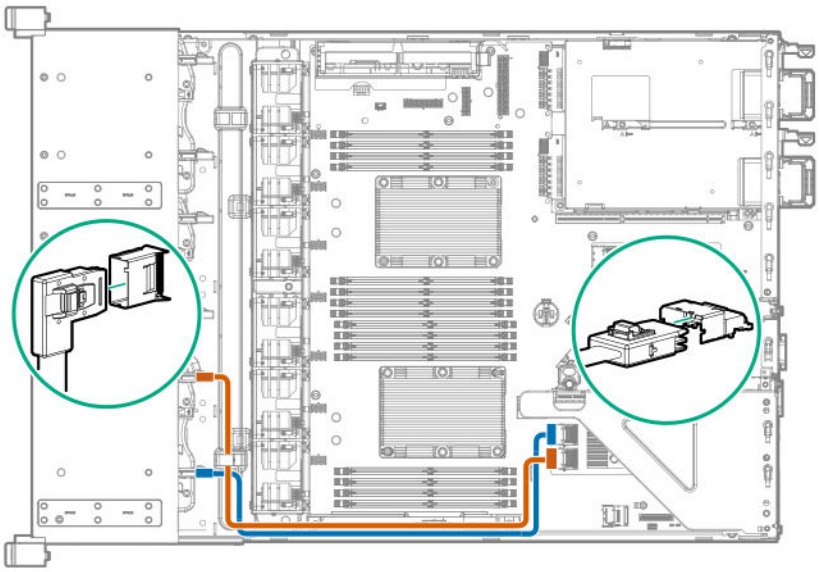


Boxes 2 and 3 to Smart Array P816i-a SR Gen10 controller

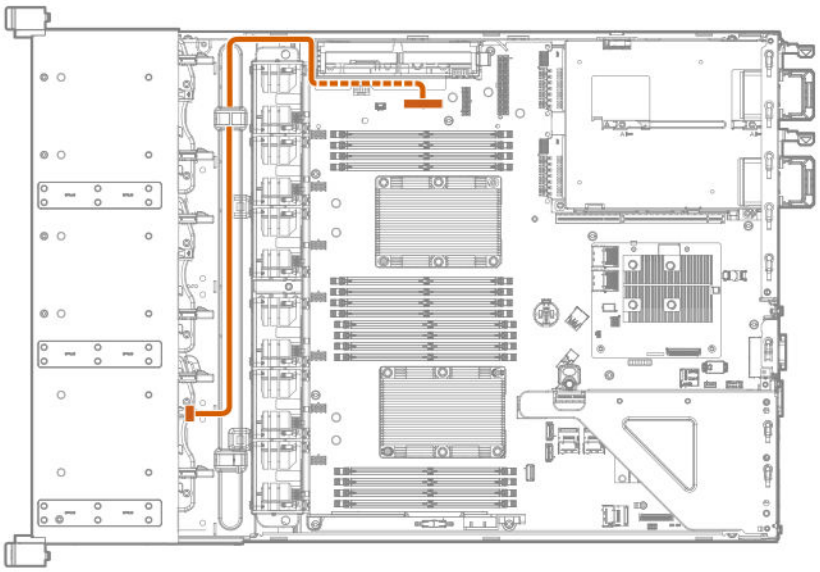


Color	Description
Orange	Box 2 to the Smart Array P816i-a SR Gen10 controller ports 1 and 2
Blue	Box 3 to the Smart Array P816i-a SR Gen10 controller ports 3 and 4

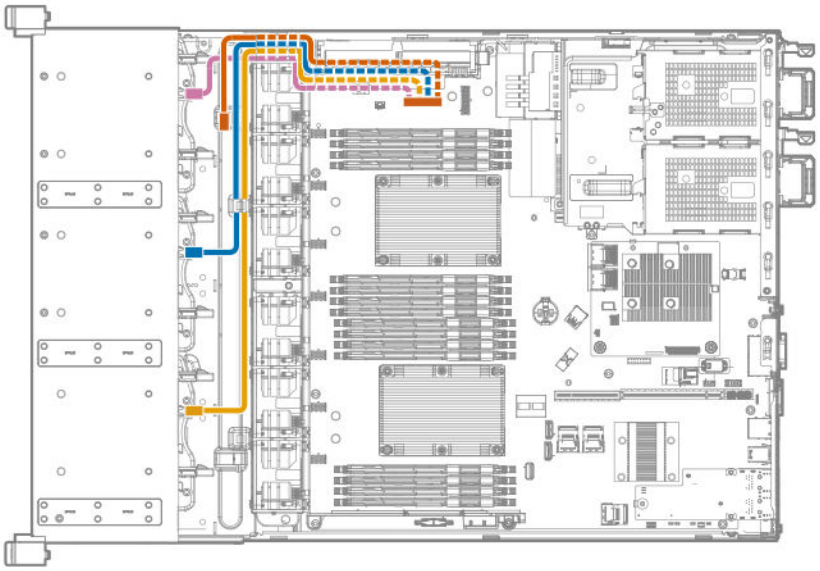
Box 3 to type-p controller



8-bay SFF power cable (default)



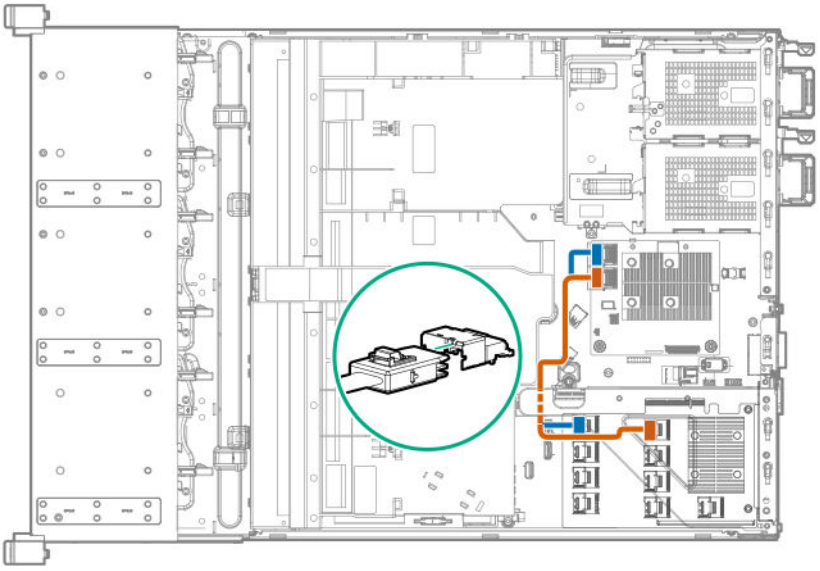
16-bay/24-bay SFF power cable



Color	Description
Pink	P2 power cable to SFF box 1
Blue	P3 power cable to SFF box 2
Gold	P4 power cable to SFF box 3
Orange	P5 power cable to optical drive

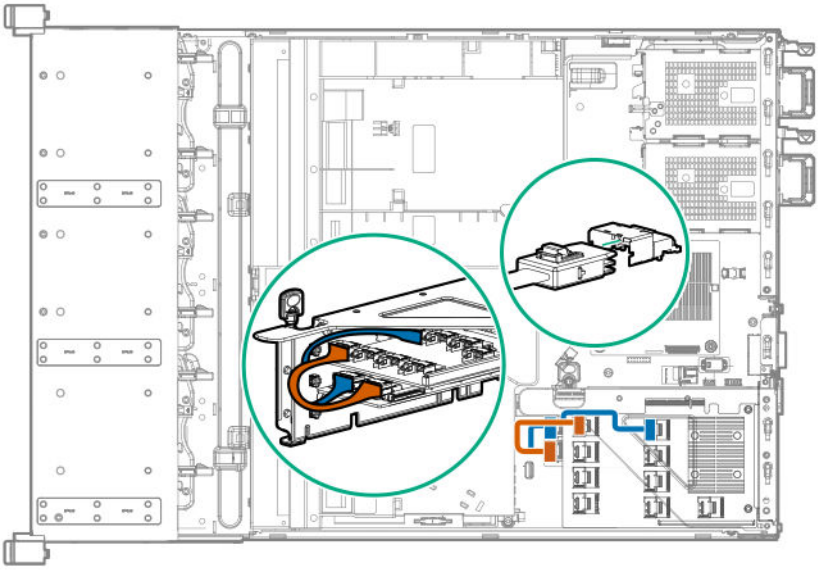
Cable routing: 12G SAS expander

- Smart Array P408i-a SR Gen10 controller to SAS expander



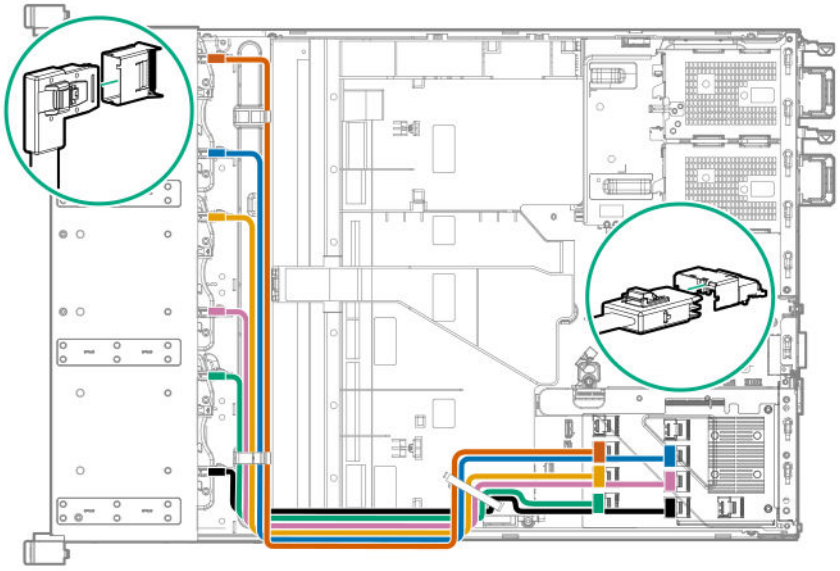
Color	Description
Blue	Smart Array P408i-a SR Gen10 controller port 1 to 12G SAS expander port 1
Orange	Smart Array P408i-a SR Gen10 controller port 2 to 12G SAS expander port 2

- Type-p controller to SAS expander



Color	Description
Orange	Type-p controller port 1 to 12G SAS expander port 1
Blue	Type-p controller port 2 to 12G SAS expander port 2

- SAS expander to SFF drives

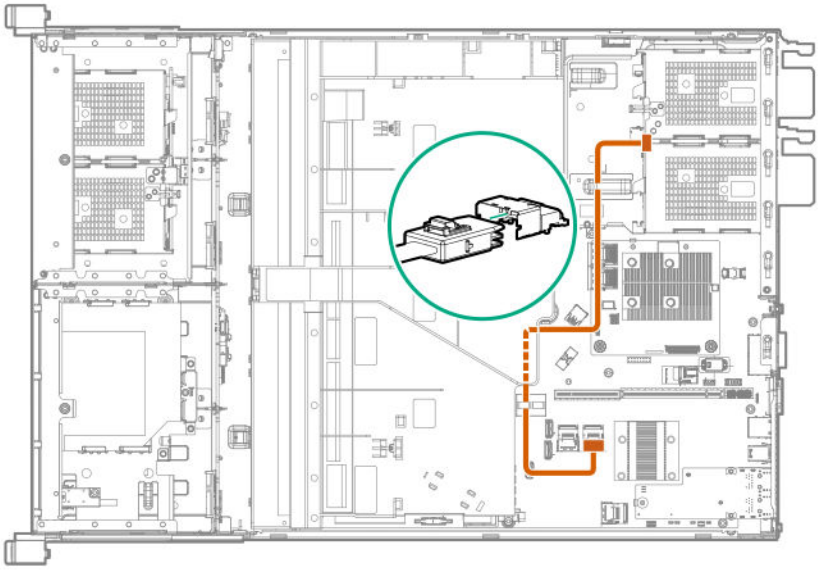


Color	Description
Orange and Blue	12G SAS expander ports 3 & 4 to SFF box 1 ports 1 & 2
Gold and Pink	12G SAS expander ports 5 & 6 to SFF box 2 ports 1 & 2
Green and Black	12G SAS expander ports 7 & 8 to SFF box 3 ports 1 & 2

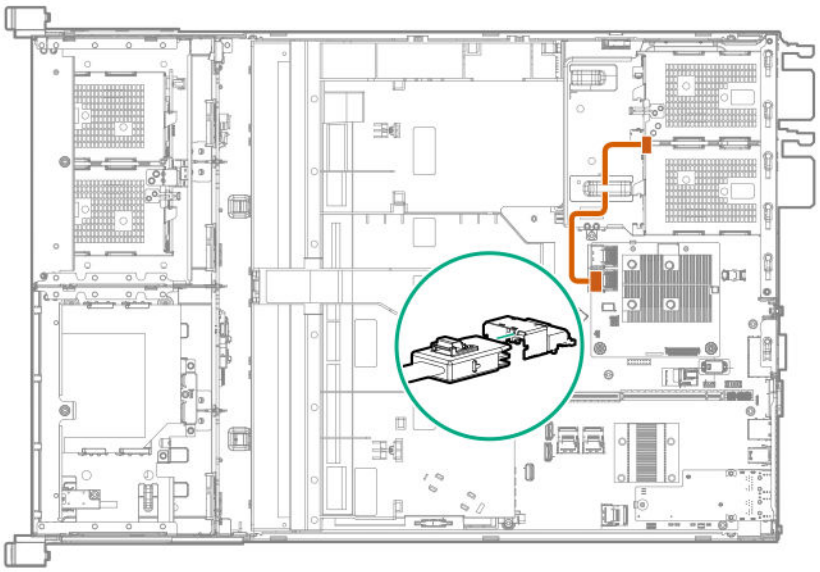
Cable routing: Rear 2-bay SFF drive

Mini-SAS cable to system board

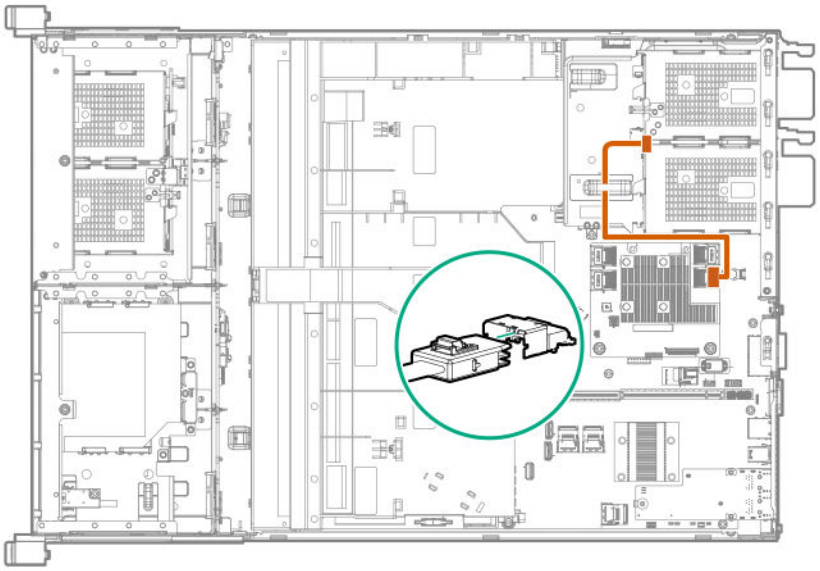
You can connect the rear 2-bay SFF drive to all Mini-SAS ports, 1, 2, or 3.



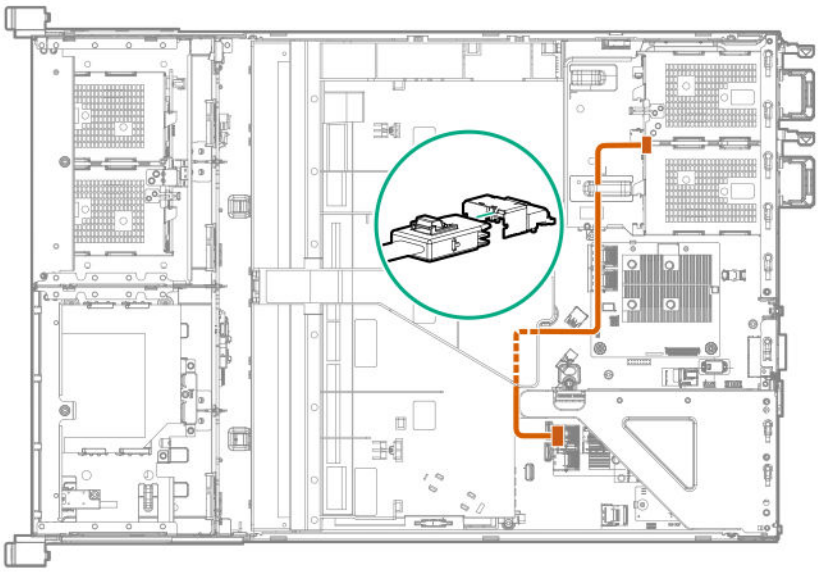
Mini-SAS cable to Smart Array P408i-a SR Gen10 controller



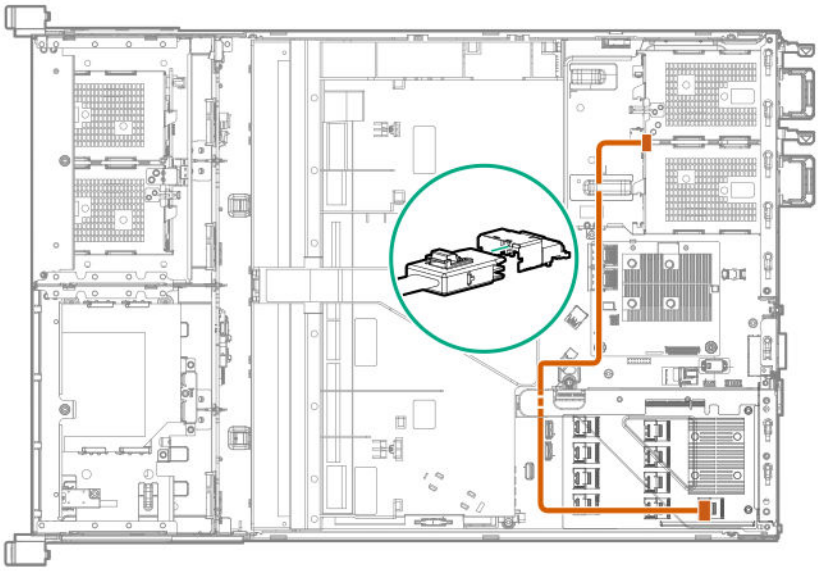
Mini-SAS cable to Smart Array P816i-a SR Gen10 controller



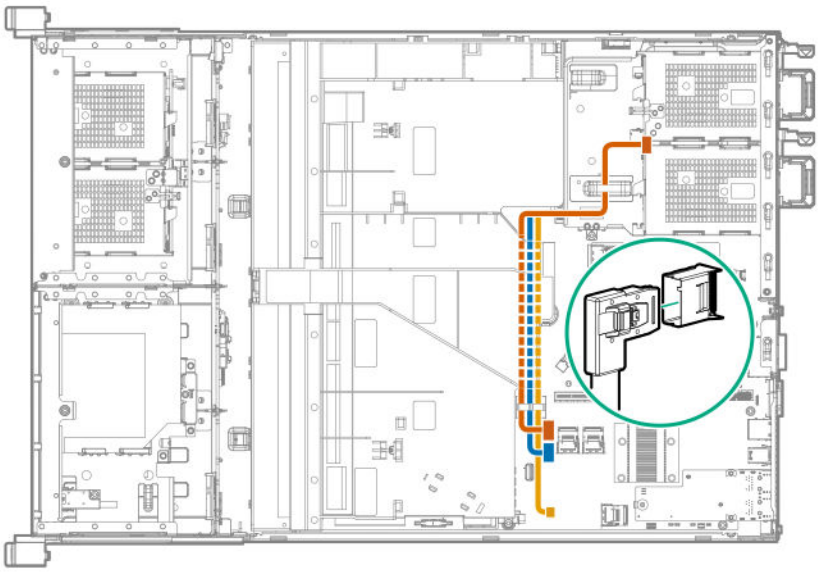
Mini-SAS cable to type-p controller



Mini-SAS cable to SAS expander

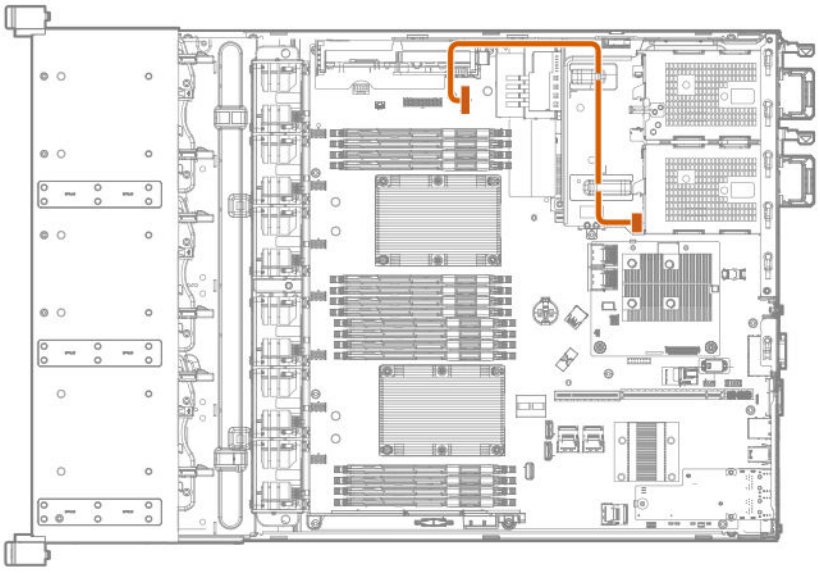


SATA cable to system board



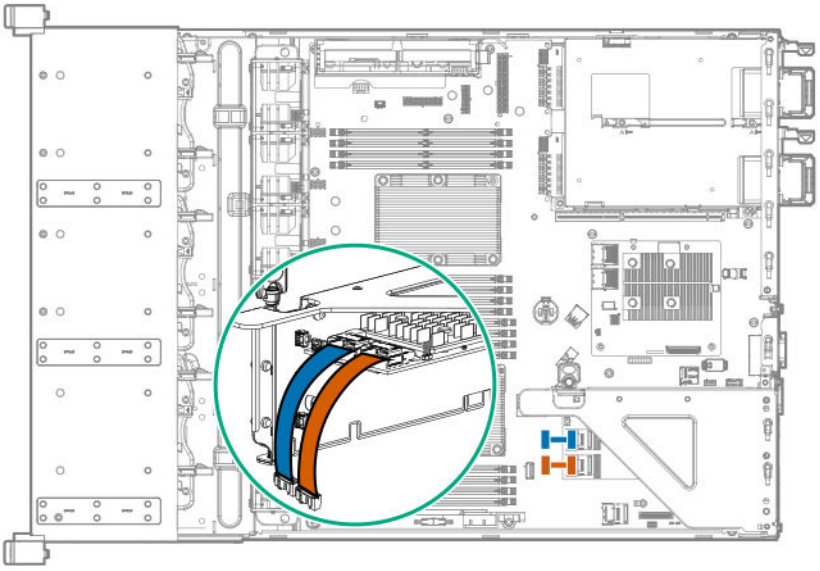
Color	Description
Orange	Rear 2-bay SFF drive backplane to SATA port 5
Blue	Rear 2-bay SFF drive backplane to SATA port 4
Gold	Rear 2-bay SFF drive backplane to SATA management port

Rear 2-bay SFF power cable

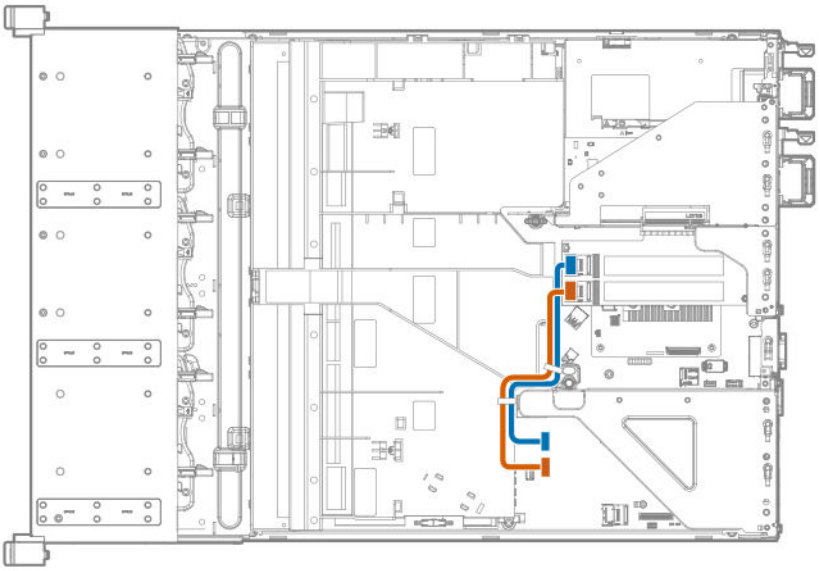


Cable routing: M.2 SSD

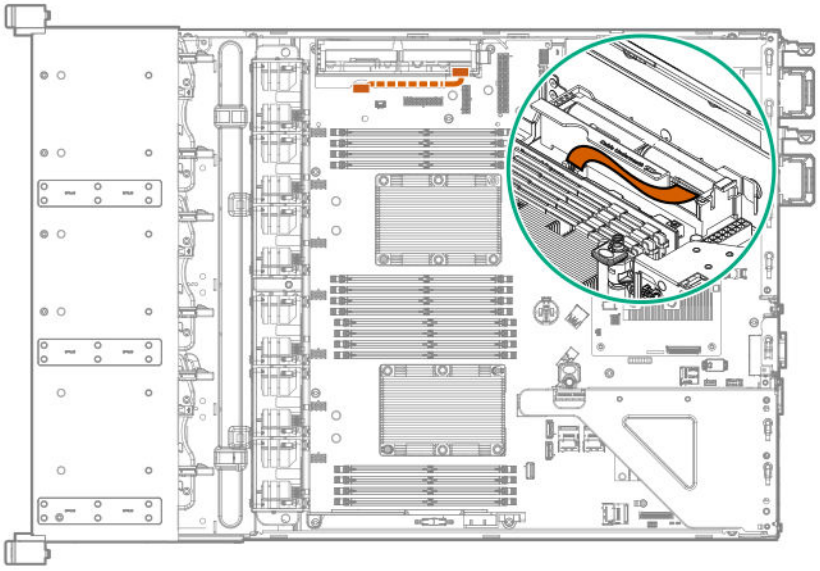
- M.2 SSD enablement board installed in primary riser



- M.2 SSD enablement board installed in secondary riser

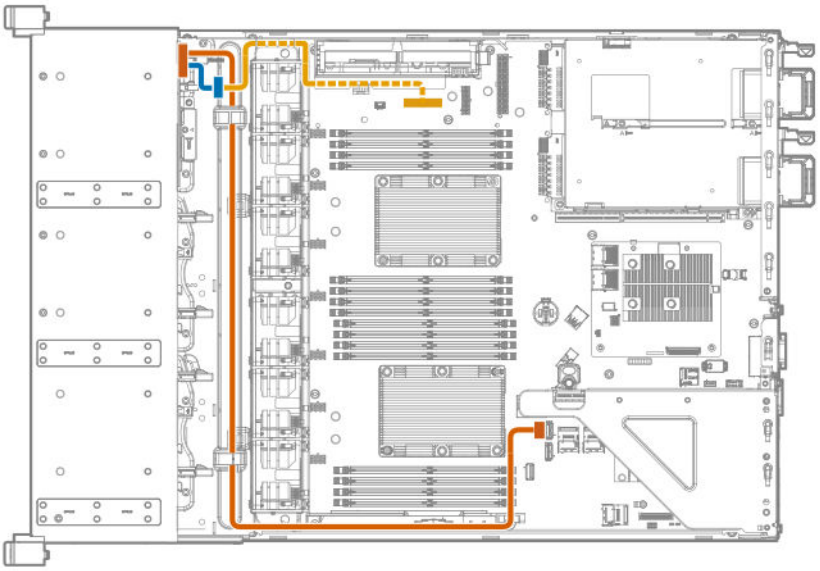


Cable routing: Energy pack



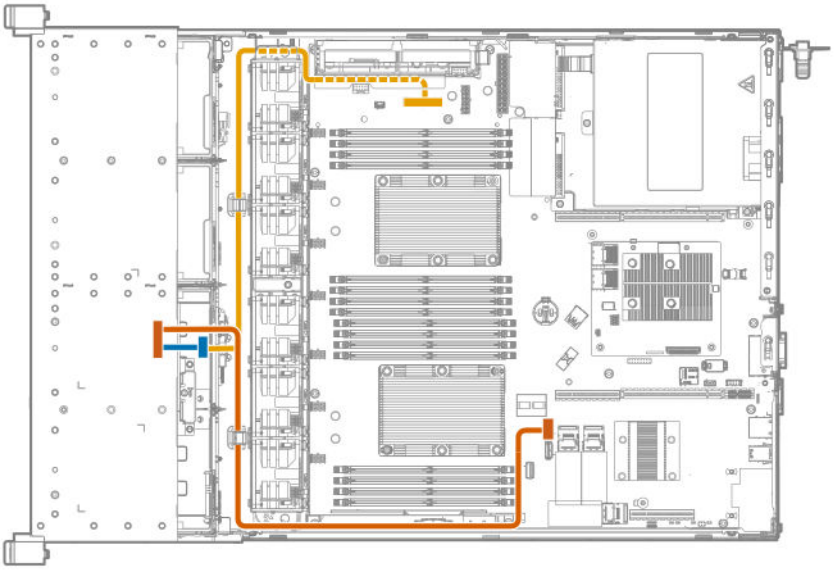
Cable routing: Optical drive

- SFF



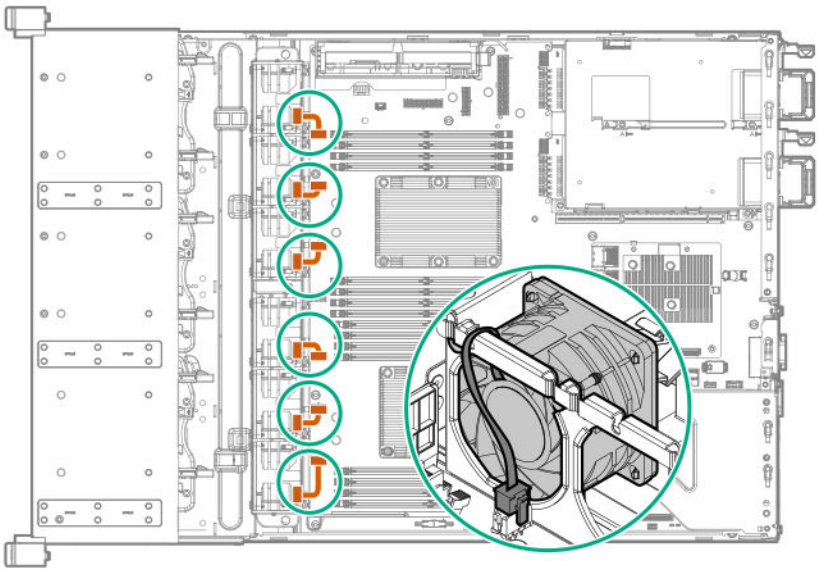
Color	Description
Orange	Optical drive signal cable to SATA port 5
Blue	Optical drive power cable
Gold	Optical drive power cable

- LFF



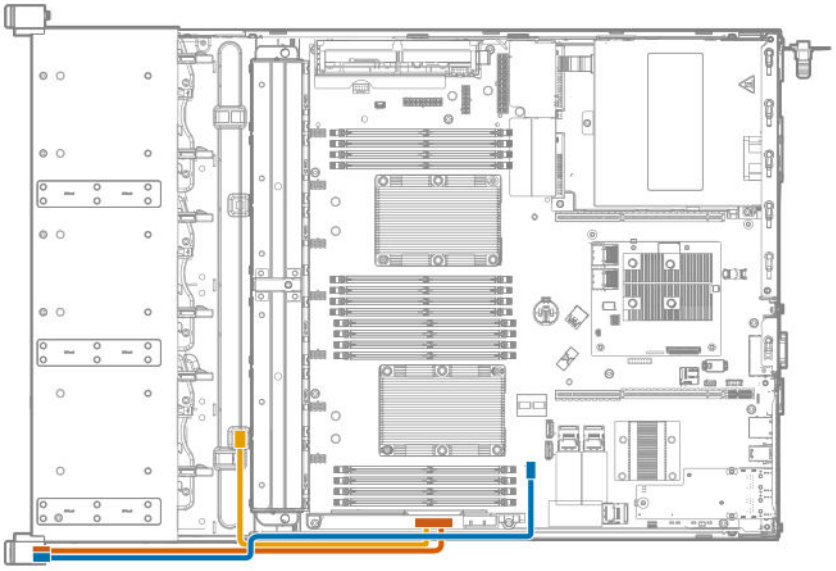
Color	Description
Orange	Optical drive signal cable to SATA port 5
Blue	Optical drive power cable
Gold	Optical drive power cable

Cable routing: Fan



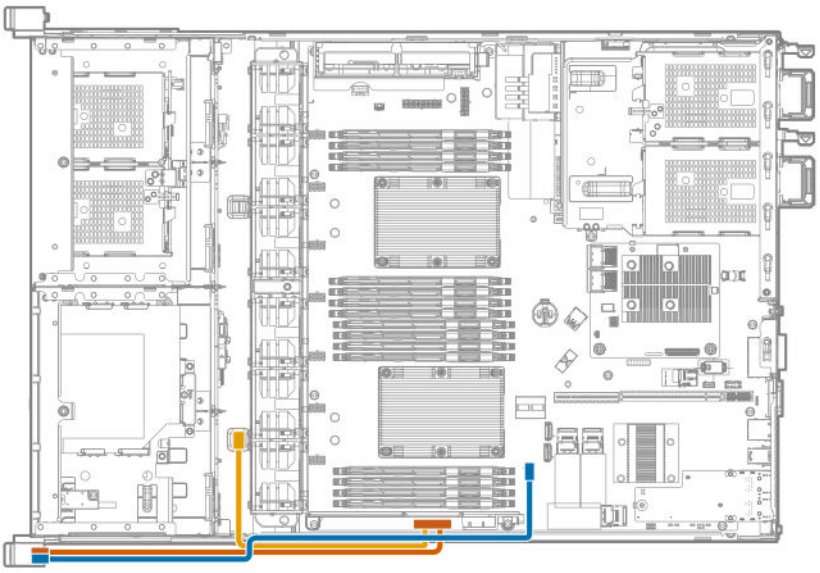
Cable routing: Front I/O

- SFF



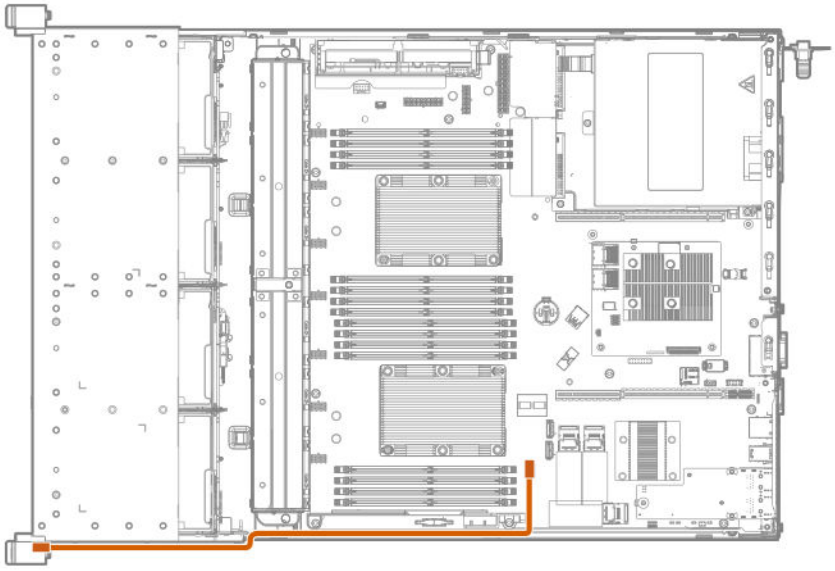
Color	Description
Orange	Front I/O cable
Blue	USB cable
Gold	Thermal sensor cable

- LFF

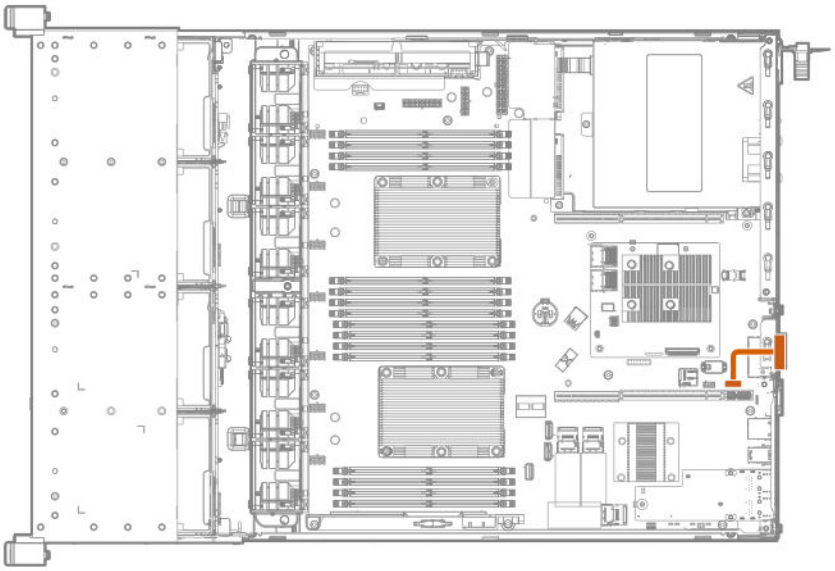


Color	Description
Orange	Front I/O cable
Blue	USB cable
Gold	Thermal sensor cable

Cable routing: USB 3.0

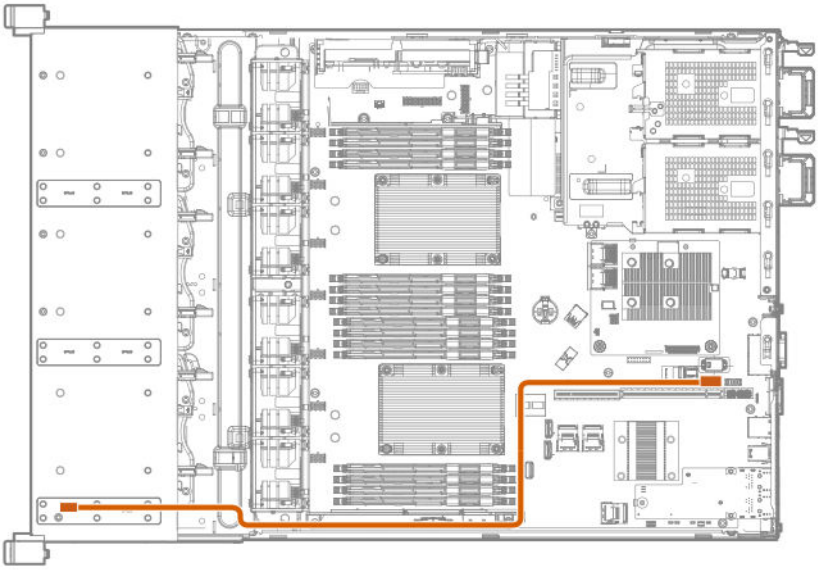


Cable routing: Serial port

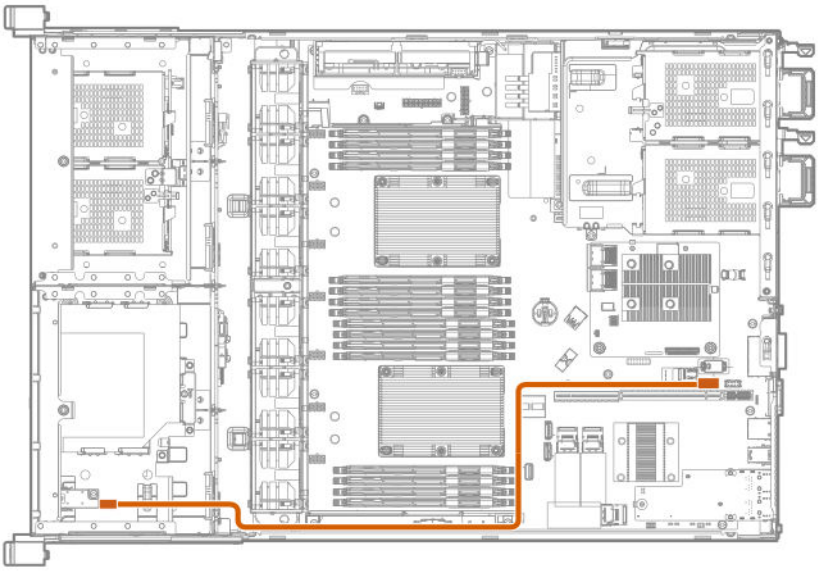


Cable routing: iLO Service Port

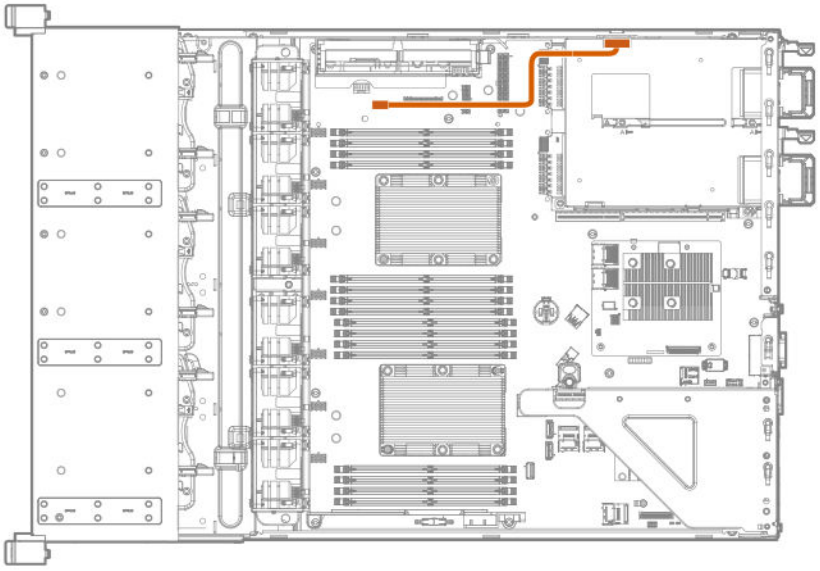
- SFF



- LFF

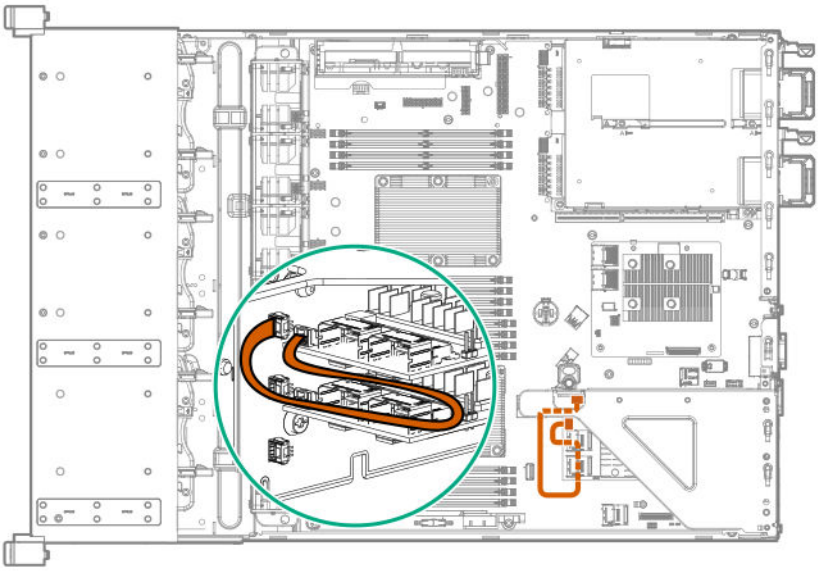


Cable routing: Chassis intrusion detection switch

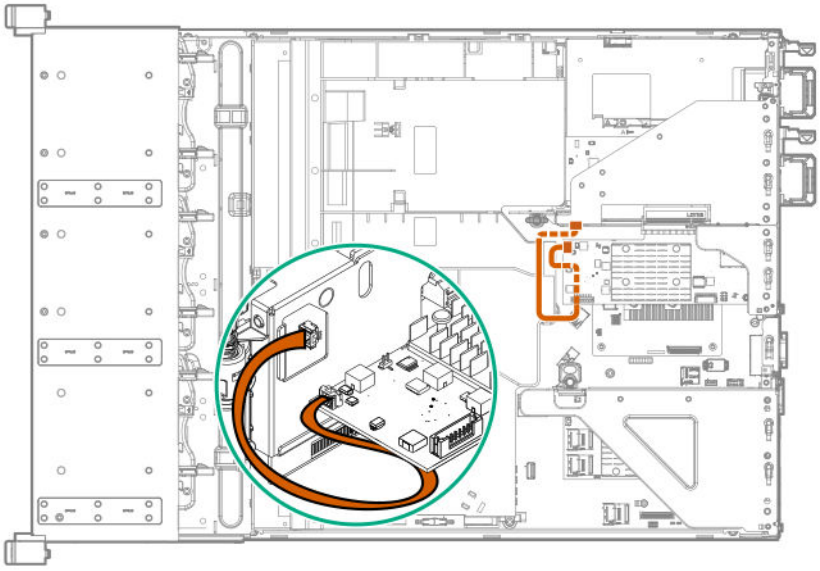


Cable routing: Controller backup power cable

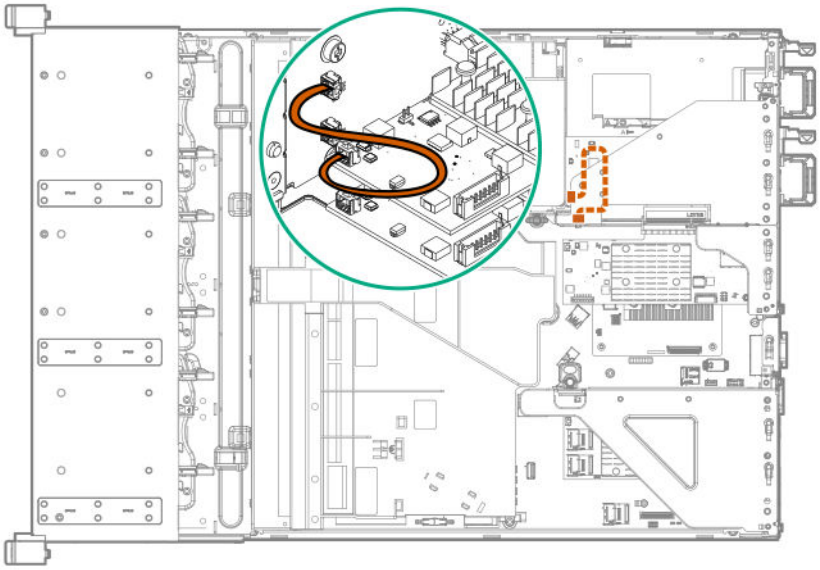
- Primary riser cage



- Secondary riser cage
  - Slot 4



- Slot 5 or 6



Specifications

Environmental specifications

Specification	Value
Temperature range [1]	—
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	Minimum to be the higher (more moisture) of -12°C (10.4°F) dew point or 8% relative humidity Maximum to be 24°C (75.2°F) dew point or 90% relative humidity
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 304.8 m (1.8°F per 1000 ft) to 3048 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 3048 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 3048 m (10,000 ft).

The approved hardware configurations for this system are listed on the **Hewlett Packard Enterprise website**.

Mechanical specifications

Dimension	Value
Height*	8.75 cm (3.44 in)
Depth*	63.47 cm (24.99 in)
Width*	44.54 cm (17.54 in)
Weight (approximate range)	13 kg to 26 kg (28 lb to 58 lb)

* These dimensions apply to all server models.

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 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 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
BTUs per hour	1902 at 100 VAC 1840 at 200 VAC 1832 at 240 VDC for China only
Power supply output	—

Table Continued

Specification	Value
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
Power supply output	—

Table Continued

Specification	Value
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	24 A at -40 VDC input 19 A at -48 VDC input, nominal input 12.4 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)	2,983 at -40 VDC input 2,951 at -48 VDC input, nominal input 2,912 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 200 VAC to 277 VAC input 800 W at 380 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

product page

https://www.hpe.com/servers/dl180-gen10

support page

https://www.hpe.com/support/dl180gen10

user documents

https://www.hpe.com/info/DL180Gen10-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

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

Documentation feedback

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